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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

|                                     |   |                          |
|-------------------------------------|---|--------------------------|
| In the Matter of                    | ) |                          |
| VIRGINIA ELECTRIC AND POWER COMPANY | ) | Docket Nos. 50-338 SP    |
|                                     | ) | 50-339 SP                |
| (North Anna Power Station,          | ) | (Proposed Amendment to   |
| Units 1 and 2)                      | ) | Operating License NPF-4) |

INTERROGATORIES TO NRC STAFF FROM CEF

Intervenor Citizens' Energy Forum (CEF) hereby requests that the Nuclear Regulatory Commission (NRC) Staff, pursuant to 10 CFR §2.740b, answer separately and fully, in writing under oath or affirmation, the following interrogatories within 14 days of service hereof. The person answering each question should set forth his or her name and title, and should identify any other individual who furnishes information on which the answer to the question is based. In addition, for each contention herein named, identify the person or persons (if any) whom the NRC staff intends to have testify on the subject matter of that issue. State the professional qualifications of that person, and provide a summary of his or her proposed testimony. Also identify fully any books or other documents to be relied upon in presenting testimony on that contention.

Contention 1: Thermal Effects

1-1 What is the basis for the statement in section 4.3 of the Environmental Impact Appraisal by the Office of Nuclear

Reactor Regulation Relative to a Proposed Increase in Storage Capacity of the Spent Fuel Pool (hereafter referred to as EIA), dated April 2, 1979, that "any additional atmospheric effects of its operation such as fogging and icing are unlikely to occur offsite"? Provide the facts and analyses leading to such conclusion.

- 1-2 What is the basis for the statement in section 4.3 of the EIA that "The addition of  $5.6 \times 10^6$  Btu/hr to the total discharge from Units 1 and 2... would not have noticeable incremental effects on aquatic biota or the environment."? Provide the facts and analyses leading to such conclusion.
- 1-3 How much of the 1,905,600 gpm of water which is drawn from Lake Anna to circulate through the steam generators is returned to the lake after going through the waste heat treatment facility? How much is lost through evaporation? What percentage of the total water from the lake lost through evaporation will be due to the additional heat to be dissipated if the proposed modification is carried out?

Contention 2: Radioactive Emissions

- 2-1 The Safety Evaluation by the Office of Nuclear Reactor Regulation Relating to Modification of the Spent Fuel Storage Racks (hereafter referred to as SER), dated Jan. 29, 1979, states that "The fuel racks could slide under seismic conditions..." What would the effect be on the

pool and racks, and on the  $k_{eff}$  in the pool, if these seismic conditions were to cause 2 or more racks to slide closer together than the planned 14" center-to-center spacing? How far, and in what directions, are the racks designed to slide under seismic conditions?

2-2 The SER states that "we conclude that the likelihood of a heavy load handling accident is sufficiently small so that the acceptability of the proposed modification is not affected..." On what basis is this conclusion reached? In what specific way was such a likelihood calculated?

2-3 Section 4.4.1 of the EIA states that "most of the gaseous fission products have short half-lives and decay to insignificant levels within a few months." What are the rest of the gaseous fission products, those with longer half-lives? Provide a detailed list of all gaseous fission products expected from spent fuel assemblies to be stored in the pool.

2-4 Section 4.4.3 of the EIA states

Storing additional spent fuel assemblies should not increase the bulk water temperature during normal refuelings above the 140°F used in the design analysis. Therefore, it is not expected that there will be any significant change in the annual release of tritium or iodine from that previously evaluated in the FES.

How do the bulk water temperatures relate to the expected release of  $H_3$  or I from the spent fuel pool?

#### Contention : Corrosion

5-1 What will be the effect of the 40% heat load increase (as

cited in the SER) on the rate of corrosion of the zirconium alloy cladding of the spent fuel assemblies? What will be the effect on the corrosion rate of the stainless steel racks?

- 5-2 The SER states, in section 2.6, that "the additional spent fuel in the pool will increase the amount of corrosion and fission products introduced into the cooling water to some extent..." What effect on workers is postulated through maintenance of the fuel pool purification system (e.g. changing filters) given this additional load on the purification system?
- 5-3 What procedures does the NRC require or recommend for the detection of defective spent fuel storage racks?
- 5-4 What procedures are required or recommended by the NRC in the event of discovery of defective spent fuel storage racks?
- 5-5 What are the costs, advantages, and disadvantages of using (a) boron panels, and (b) borated water, in spent fuel pools?

Respectfully submitted,

*Irwin B. Kroot*

Irwin B. Kroot, for CEF

Dated this 31st day of May,  
1979, in Bethesda, Maryland.

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that the foregoing Interrogatories to NRC Staff from CEF has been mailed this 31st day of May, 1979, by deposit in the U.S. Mail, first class, to the following:

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