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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of,

VIRGINIA ELECTRIC AND POWER COMPANY

(North Anna Nuclear Power Station,
Units 1 and 2)

Docket Nos. 50-338 OL
50-339 OL

NRC STAFF'S RESPONSE TO UCS BRIEF AMICUS CURIAE

I. INTRODUCTION

On October 26, 1978, the Atomic Safety and Licensing Appeal Board (Appeal Board) issued an Order granting a motion on behalf of the Union of Concerned Scientists (UCS) for leave to file a brief amicus curiae, and providing the parties an opportunity to respond to the brief. This response constitutes the NRC Staff's reply to the UCS brief.

The Staff discerns two assertions raised by the UCS in its brief: 1) that the Staff improperly relied on WASH-1400 as a basis for allowing the continued operation of North Anna Unit 1, and 2) that the Staff was in effect challenging the Commission's regulations by justifying the continued operation of the North Anna Unit 1 upon WASH-1400 - derived probabilities and not upon a finding that the facility complies with applicable standards. Crucial to each of UCS's assertions is the assumption that the Staff had to rely on WASH-1400 in order to conclude that a turbine missile problem did not exist at North Anna. As will be discussed below, the Staff did not in fact rely on WASH-1400 for this conclusion.

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II. DISCUSSION

A. The Staff Did Not Rely Upon WASH-1400

The UCS, in its brief at page 3, argues that the "linchpin of the Staff's rationale is the alleged low probability, derived from WASH-1400 of a turbine missile event." This argument is relied on by UCS as a basis for all of its arguments in its brief. However, UCS is simply not correct in making this underlying assumption.

The Staff based its conclusions regarding risks from turbine missile accidents at North Anna upon historically observed probabilities, and not upon WASH-1400 conclusions (See, SER, Supplement 2 (Staff Exhibit No. 3), §10.7). The Staff, in its "Response to Atomic Safety and Licensing Appeal Board's Request for Information on the North Anna Units 1 and 2 Regarding Missiles" dated September 15, 1977 (Staff Response), summarized the conservatisms that it employed in analyzing the turbine missile risks at the North Anna Units 1 and 2 facility. For example, as indicated on pages 4 and 5 of the Response, the use of historically observed probabilities for estimating turbine failure, in lieu of more realistic probabilities associated with modern turbines which have substantial improvements in materials and overspeed protection, is itself a conservatism. A second conservatism used by the Staff involved the estimation of turbine missile strike probabilities with respect to safety related plant structures. In arriving at this estimate, the Staff assumed the creation of more missiles than would necessarily result, based on observed failures (Response, p.5). A third conservatism resulted from the assumption that given a missile strike on a structure,

the probability for penetration and damage to safety-related equipment was unity. This assumption ignores the existence of structural barriers and the possibility that a missile might not strike or, if it did strike, that it might not damage the safety-related equipment inside of the structure (Id.). As indicated by the Staff, these conservatisms are built into the methods and criteria used in the North Anna Units 1 and 2 proceeding to evaluate probabilities in order to compensate for the uncertainties in the available data and state-of-the-art analytical methods which Task Action Plan A-37 was initiated to quantify.

In addition to the specified conservatisms, the Staff required VEPCO to commit to certain protective measures. These measures relate to certain turbine valve inspection, maintenance, and testing procedures which were incorporated into the technical specifications for the North Anna Unit 1 operating license (§§4.7.1.7, 4.7.1.8.1 and 4.7.1.8.2), and which will also be a part of the Unit 2 operating license when issued. The Staff concluded that the conservatisms, in addition to the protective measures incorporated into the license, provide an acceptable level of protection for the North Anna facility, and that the conclusions produced upon completion of Task Action Plan A-37 will not result in additional requirements for the facility (Response, pp. 5, 6; see also, SER, Suppl. 2, §10.7). Accordingly, the Staff does not consider the turbine missile risk analysis for North Anna Units 1 and 2 to be dependent on Task A-37, and concludes the matter to be resolved for North Anna Units 1 and 2 (Response, pp. 5, 6).

WASH-1400 does not form a basis for the conclusions regarding turbine missiles contained in the Staff's Response and in §10.7 of Supplement 2 of the Safety Evaluation Report for North Anna Units 1 and 2. The Response does contain a reference to Task Action Plan A-37, a copy of which was attached to the Response. This Task Action Plan references WASH-1400. However, Task Action Plan A-37 was supplied for information purposes only in response to the Appeal Board's August 25, 1978 decision (ALAB-491), and was not a substitute for the analyses performed for this proceeding that have been documented in the North Anna Safety Evaluation Reports. Thus, the Staff did not mean to imply by providing the Task Action Plan that it was in any way relying on the expected results of Task A-37 or on WASH-1400 for its conclusions regarding risks from turbine missile accidents at North Anna Units 1 and 2.^{1/}

^{1/} Since neither Task Action Plan A-37 nor WASH-1400 were relied on by the Staff in the North Anna Units 1 and 2 proceeding, the use of WASH-1400 in this Task Action Plan is not of particular significance to the Appeal Board in its review of this proceeding. However, the Staff wishes to make some comments in response to the UCS Brief regarding the use of WASH-1400 in this Plan.

The UCS references the Commission's interim policy statement that states, inter alia, that the contents of WASH-1400 do not constitute an appropriate basis for licensing decisions (See 39 F.R. 30964 (August 27, 1978)). Although this reference is correct, it should also be noted that the Commission policy statement did not bar all reference whatsoever to WASH-1400. The policy statement did indicate that neither the lower level consequences nor the lower level risks indicated in WASH-1400 should be relied on to relax existing requirements or to change safety or environmental regulations.

WASH-1400 is not relied on for either of these purposes in Task Action Plan A-37, but is referenced therein only as background information supporting the Staff's independent conclusion regarding the risk from turbine missile accidents on operating LWRs. Thus, the Staff submits that WASH-1400 was not improperly referenced in Task A-37 and was not used in a manner which is contrary to the Commission's interim policy statement.

B. 'The Staff's Analysis Does Not Represent an Attack on the Commission's Regulations

The UCS also alleges that the Staff cannot find that safety systems at North Anna are adequately protected from turbine missiles without relying on WASH-1400 (Brief, p. 3). The Staff infers that UCS is also arguing that, absent any other basis for supporting the Staff conclusions regarding the low risk of turbine missiles at North Anna, the Staff is circumventing General Design Criteria 4 (GDC-4) (Brief, pp.2, 3). GDC-4 requires that structures, systems and components important to safety be appropriately protected against, inter alia, the effects of missiles (10 CFR Part 50, App. A, I, 4). This failure to comply with GDC 4, the argument apparently continues, constitutes an improper attack on the regulations (Brief, pp.6, 7).

This UCS argument rests upon the incorrect assumption that the Staff relied on WASH-1400 for its conclusions regarding turbine missile risks at North Anna. The Staff listed the assumptions upon which its turbine missile conclusions rested on pages 4-6 of the Response. The list did not contain WASH-1400-derived probabilities. As stated previously, the Staff utilized several conservatisms in its analysis of turbine missile risks. Despite these conservatisms, the Staff imposed certain requirements on VEPCO regarding inspections, maintenance and testing procedures. It was upon these bases, and not WASH-1400, that the Staff was able to conclude that an acceptable level of protection exists for North Anna with respect to turbine missiles (Response, p.6). Accordingly, the applicable regulatory requirement regarding turbine missiles, GDC-4, is

satisfied. Thus, the Staff's analysis on turbine missile risks at North Anna Units 1 and 2 does not constitute a challenge to the regulations. -

III. CONCLUSION

For the reasons discussed above the Staff urges the Appeal Board to find that the allegations raised by the UCS in its Brief are without merit.

Respectfully submitted,

Daniel T. Swanson

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Dated at Bethesda, Maryland
this 16th day of November, 1978

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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S RESPONSE TO UCS BRIEF AMICUS CURIAE" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 16th day of November, 1978:

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