

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

April 28, 1980

ADJUDICATORY

SECY-A-80-62

COMMISSIONER ACTION

For: The Commissioners

From: James A. Fitzgerald
Assistant General Counsel

Subject: COMMISSION REVIEW OF ALAB-589
(VIRGINIA ELECTRIC AND POWER COMPANY)

Facilities: North Anna Nuclear Power Station, Units 1 and 2.

Purpose: To inform the Commission of an Appeal Board decision/which, in my opinion, EX 5

Discussion:

ALAB-589 is an interim decision in which the Appeal Board found that the hazard posed by turbine missiles pending the next inspection at North Anna is not sufficient to halt operation of Unit 1 or to withhold the license for Unit 2. Without ruling on the long-term significance of turbine disk cracking, the Appeal Board held that because the development of turbine cracks is time-related, any cracks are unlikely to approach critical size before December, 1980. Unit 1 is scheduled for refueling at that time and VEPCO has committed itself to a turbine inspection. The Appeal Board expects the results of that inspection to yield information upon which to base new judgments about the continued safe operation of the two units. Since Unit 2 had not yet been licensed at the time ALAB-589 was issued, the Board believed that it should have a final decision on the turbine missile matter before disk cracking would become a significant safety hazard there. */

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 5
FOIA- 92-436


*/ A low power license was issued for Unit 2 on April 11, 1980.

It does not appear, however, that the issuance of the low-power license would alter the Appeal Board's judgment as it is based on the limited number of hours of operation prior to the December outage.

Regarding the Applicant's commitment to inspecting the turbine in December, the Appeal Board mandated that any proposed deviation from that commitment be immediately reported to it. In addition, the Appeal Board tentatively concluded that the previously scheduled oral hearing in this proceeding was no longer necessary in light of the written testimony submitted.

[Based on the record before us, _____] E1.5

Recommendation:


James A. Fitzgerald
Assistant General Counsel

Attachment: ALAB-589

Commissioners' comments should be provided directly to the Office of the Secretary by c.o.b. ~~Tuesday, May 13, 1980.~~

Wednesday, May 7,

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT May 6, 1980, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

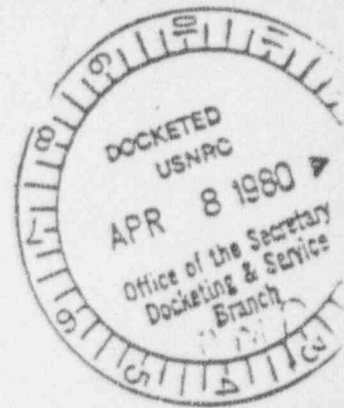
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar



SERVED APR 8

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

MEMORANDUM AND ORDER

April 7, 1980

(ALAB-589)

During the course of our review of the Licensing Board's decision in this operating license proceeding, ^{1/} we raised two safety issues on our own initiative. See ALAB-491, 8 NRC 245 (1978). Last June, we conducted an evidentiary hearing on both issues. We disposed of one of them earlier this year by deciding that the continuing settlement of the ground beneath the service water pumphouse did not pose an unmanageable problem. ALAB-578, 11 NRC ____ (February 11, 1980).

1/ That Board had found no barrier to the award of operating licenses for both units. The Unit 1 full-power license was issued on April 1, 1978 and commercial operation of that unit began on June 6, 1978. No license for Unit 2 has yet been issued.

At that time, we reserved decision on the other plant safety issue, that relating to turbine missiles (i.e., to the likelihood that pieces of the turbine would break off and cause unacceptable damage -- in terms of safety consequences -- to other plant systems). We held up our decision because new developments bearing on the resolution of the turbine missile question had been brought to our attention. Specifically, cracking of turbine disks had been uncovered at a number of facilities employing equipment made by the same manufacturer that supplied the North Anna turbines.^{2/}

We tentatively scheduled a supplemental hearing to consider that new information. See our unpublished memorandum of February 12, 1980. The applicant requested, however, that before we went ahead with the hearing we first consider whether our concerns might be satisfied by certain information it would furnish us in writing.^{3/} Upon reviewing that material together with the NRC staff's appraisal of the matter, a majority of this Board made three determinations which were embodied in an unpublished order issued on March 3, 1980. First, the submissions went "a long way toward establishing that operation of North Anna 1 need not be halted now in order to conduct a lengthy inspection of its turbine". Second,

^{2/} Additionally, we were advised that the manufacturer was re-analyzing the potential amount of energy associated with the missiles created by turbine disk disintegration.

^{3/} Otherwise, that information would have formed the foundation for testimony at the hearing.

there consequently was no need to proceed with the hearing (at least as it was then scheduled). Third, the applicant and the staff should be called upon to explain further (again in writing) the underpinnings of certain analyses employed by them in arriving at their conclusions.^{4/}

We now have that further explanation before us. It furnishes necessary support for the conclusions previously advanced. On the basis of it, we are able to determine that the turbine disk cracking being experienced elsewhere is not likely to occur to any hazardous extent at North Anna Unit 1 prior to the next refueling shutdown, now scheduled for December of this year. That is because the development of the cracking phenomenon is time-related; in light of the number of hours the Unit 1 turbine will have been in operation, we can say with reasonable assurance on the basis of the record now before us (reflecting experience elsewhere) that any cracks that might develop would not have had time to approach critical size by then.^{5/} The applicant has made a commitment to have the turbine inspected during the December

^{4/} Dr. Buck dissented from so much of the March 3 order as sought this additional information. In his view, not shared by the majority, the information already supplied was sufficient to permit continued operation of Unit 1 until the next scheduled shutdown (see pp. 3-4, infra).

^{5/} As noted above, Unit 2 has not yet begun operation. Our final decision on the turbine missile question should thus be rendered long before disk cracking might become a problem for that unit.

shutdown;^{6/} that inspection will be capable of detecting any substantial cracking that may actually have occurred. And the results of the inspection will furnish a foundation for new judgments about the safety of any operations beyond that point. For now, the recent developments relating to the turbine missile problem do not require either that operation of Unit 1 be halted or that Unit 2 be kept out of operation.

This is not to say, however, that we now have the final word on the long-term significance of the disk cracking phenomenon. For example, we do not know the extent of its impact on the continuing validity of certain portions of the evidence that was adduced before us at the hearing last year, which dealt with the turbine missile question in terms of the plant's full lifetime. Indeed, it will be some time before the extent of that impact will be known.^{7/} Of at least equal importance, there is nothing now before us which might explain the basic reasons for the surprisingly early crack formation in turbine blades of the same type and manufacture as those used in the North Anna units. We will expect the papers supplied to us

^{6/} See "VEPCO's Responses to Site Specific General Questions on * * * Unit 1", Nos. I.B, II and IV. Needless to say, any proposed deviation from that commitment must be immediately reported to us.

^{7/} The applicant's present estimate is that it will be this October before it will be able to advise us finally either on that score or with regard to the results of the reanalysis which is being done on the subject of missile energy (see fn. 2, supra).

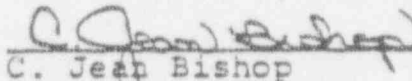
later this year to address in some detail what has been ascertained regarding the causes of the early cracking, as well as the steps being taken to correct the problem.

In the circumstances, we will continue to defer our decision on the turbine missile question.^{8/} Implicit, of course, in our taking such a step is our tentative conclusion, based on our study of the record thus far, that the safety concerns that motivated us to call the hearing in the first place were otherwise adequately addressed in the testimony.

Final decision deferred.

It is so ORDERED.

FOR THE APPEAL BOARD


C. Jean Bishop
Secretary to the
Appeal Board

^{8/} It remains to be seen whether a supplemental hearing will be needed before we reach that decision.