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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD DOCKETED  
USNRC

Before Administrative Judges:

Peter B. Bloch, Chairman

Dr. Jerry R. Kline

Dr. Glenn O. Bright

\*82 DEC 30 P2:58

In the Matter of

CLEVELAND ELECTRIC ILLUMINATING  
COMPANY, et al.

OFFICE OF SECRETARY  
Docket Nos. 50-440-OL  
50-441-OL  
BRANCH

(Perry Nuclear Power Plant, Units 1 & 2)

December 30, 1982

MEMORANDUM AND ORDER  
(Concerning Summary Disposition)

The Staff of the Nuclear Regulatory Commission (staff) has requested summary disposition of Issues 4 (performance of a full scale 30 degree sector steam test), 11 (the weight accorded to increased local employment and tax levels by the environmental impact statement)(EIS) and 12 (failure to consider adequately the economic effects of serious nuclear accidents in the EIS). Cleveland Electric Illuminating Company, et al., (applicant) separately supports the staff position on all three issues. Ohio Citizens for Responsible Energy (OCRE) did not oppose summary disposition for Issue 12. Sunflower Alliance, Inc., et al., "withdrew" Issue 11. OCRE opposed summary disposition for Issue 4.

We conclude that summary disposition of all three issues should be granted. See our order of December 22, 1982 for a discussion of the standards applicable to summary disposition.

I ISSUE 4

Issue #4 states:

The safety of Applicant's emergency core cooling system has not been demonstrated with appropriate experimental data because a full scale 30 degree sector steam test has not been performed.

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Since all parties agree that a full scale 30 degree sector steam test (test) has been performed, the Board has no alternative but to conclude that it has been performed and to summarily dismiss Issue #4. OCRE Response to NRC Staff's Motion for Summary Disposition of Issue #4 (November 14, 1982) at i, Material Fact #3. The issue admitted into this proceeding merely states that the test has not been performed. There was no issue admitted concerning the adequacy of a planned test and no basis for such a contention ever was provided. Since the test was done, there is no rational basis for retaining the contention in the hearing.

As has been our general practice, we have nevertheless examined the data before us to determine whether or not to declare a sua sponte issue, which we would do if there were a serious safety or environmental issue that required our exploration. This examination is presented in Part IV of this memorandum; it concludes that there is no basis for pursuing this issue sua sponte.

## II ISSUE #11

Issue #11 states:

The Environmental Impact Statement (EIS) accords too much weight to increased employment and tax revenues to the local community, factors which may not be weighed directly in the cost-benefit balance.

However, the EIS was modified to cure the problem that allegedly infected the predecessor document, the Draft Environmental Statement. The modification makes it clear that indirect benefits, such as employment and tax revenues, have not been included in in the cost-benefit balance. Affidavit of Brian J. Richter, attached to Staff Motion for Summary Disposition of Issues 11 and 12, at 2, ¶7. Consequently, Sunflower withdrew this contention, and summary disposition must be granted because there is no remaining genuine issue of fact. See Notice of Withdrawal of Issue #11 (November 10, 1982).

## III ISSUE #12

Issue #12 states:

The Final Environmental Statement for the Perry Nuclear Power Plant is deficient because it has not adequately considered the economic effects of serious nuclear accidents, using a technique similar to that used in NUREG/CR-2591.

However, Brian J. Richter, a staff economist, submitted an affidavit in support of the Staff's Motion, containing facts that have not been controverted by OCRE and that preclude any genuine issue of fact with respect to this contention. Mr. Richter states that the model used in NUREG/CR-2591, developed by the Bureau of Economic Analysis of the Department of Commerce (BEA Model), is developmental and contains some data-base problems that result in significant overestimates of costs. Richter Affidavit at 2-3, ¶¶5-6. He also states that the FES treatment of the socioeconomic impacts of serious reactor accidents is "detailed and thorough" and in compliance with the Commission's statement of interim policy, "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969" (45 Fed. Reg. 40101-04, June 13, 1980). Id. at 5, ¶10. Additionally, he concludes from his experience with the use of the BEA model in the preparation of other recent FES's that "the addition of a BEA analysis in the Perry FES would not significantly affect the cost-benefit conclusions reached therein."

Since OCRE does not oppose the staff motion, we accept the staff's statement of material facts, supported by the Richter affidavit, as true. OCRE Response to NRC Staff's Motion for Summary Disposition of Issue #12 (December 14, 1982) at 1. Hence, we conclude that the FES treatment of accident costs is thorough and that there is no reason to believe that the treatment would be improved or the conclusions changed by the use of the BEA model. Summary disposition of Issue #12, must therefore be granted.

In its motion, OCRE also has asked that the EIS be amended to reflect the existence of the BEA analysis. Because staff could do that much voluntarily, we asked staff by telephone whether it would consent to that agree-

ment. Our question was asked on December 28, 1982 and answered in the negative on December 29, 1982.

In the absence of staff agreement, the only power the Board has to alter the FES is through its adjudicative powers. Having concluded that Issue #12 must be summarily dismissed, we therefore lack the power to order any further clarification in the document, no matter how innocuous such a clarification might be. Consequently, we will not order the change suggested by OCRE.

#### IV ADEQUACY OF 30° SECTOR STEAM TEST

Based on the record before us, we see no reason to consider the adequacy of the core spray methodology to be an important safety issue that we should consider sua sponte. We have examined the affidavit filed with us by W.A. Sutherland, manager of the LOCA Systems Technology organization of the General Electric Corporation. Dr. Sutherland has a PhD in mechanical engineering and extensive professional experience with heat transfer and thermal-hydraulics questions. His thoughtful affidavit provides us with confidence that there is no important safety question for us to inquire into.

First, Dr. Sutherland has persuaded us that the 30° sector steam test is not necessary for validating convective heat transfer coefficients, as required in Section I.D.6 of Appendix K to Part 50. The validating tests are documented in APED-5529, "Core Spray and Core Flooding Heat Transfer Effectiveness in a Full-Scale Boiling Water Reactor Bundle."

Next, we are convinced that the principal effects of steam on spray distribution are due to "thermodynamic effects due to steam condensation" (occurring within 6" from the nozzle) and "hydrodynamic effects due to flow field interaction" (occurring beyond 6" from the nozzle, where the flow field of different nozzles intersects) Sutherland Affidavit at 5, ¶9. Furthermore, General Electric has devised a sound method for measuring nozzle performance in steam and simulating its characteristics with analagous nozzles performing in an air environment. Id. at 6. Consequent-

ly, there is reasonable assurance of nozzle performance even without tests in a steam environment.

Nevertheless, a full-scale 30 degree sector steam test was performed. Id. at 6, ¶12. That test confirmed applicant's predictions about the core spray distribution. Id. at 9-10.

OCRE questions the spray-nozzle design based on tests conducted in Japan. OCRE Statement of Material Facts at v-vi, ¶6. However, those tests are not applicable to the BWR 6 nozzles, which were designed for minimum sensitivity to condensation and are different from the nozzles tested in Japan. Sutherland Affidavit at 11.

Additionally, OCRE raised several questions about the conservatism of the 30° sector test or its failure to measure system performance under LOCA conditions. These questions have been answered by Dr. Sutherland, who provides reasons why the tests are conservative (e.g. sparger overlap in the center two feet of the core, absence of steam in the bypass region causing less spray distribution in the adjoining area) or why certain conditions need not be considered (steam flows of greater than 20,000 lbs per hour, full core, provide adequate core cooling; two-phase froth buildup will occur at pressures of 73.5 psia and above and this froth will provide adequate core cooling).

Although applicant apparently has not addressed OCRE's material statements of fact 5.(d)-(f), we do not see any serious concern over the adequacy of the core spray distribution arising from these statements. APED-5529 merely states that "extrapolation of the results to values of these variables other than those tested must be done with caution." That statement does not address a specific deficiency in the spray distribution testing. Similarly, a finding that partially heated fuel bundles are cooled less effectively than fully heated bundles does not concern us. If the fully heated bundles are cooled effectively, then cladding overheating will not occur and there will not be any serious safety effects.

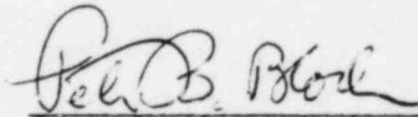
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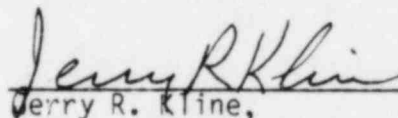
For all the foregoing reasons and based on consideration of the entire record in this matter, it is this 30th day of December, 1982,

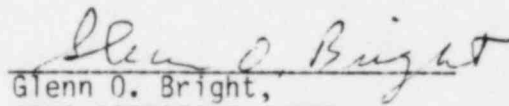
ORDERED

Summary Dispcsition is granted with respect to issues 4, 11 and 12.

FOR THE  
ATOMIC SAFETY AND LICENSING BOARD

  
Peter B. Bloch, Chairman  
ADMINISTRATIVE JUDGE

  
Jerry R. Kline,  
ADMINISTRATIVE JUDGE

  
Glenn O. Bright,  
ADMINISTRATIVE JUDGE

Bethesda, Maryland