

1/8/73

BEFORE THE  
UNITED STATES OF AMERICA  
ATOMIC ENERGY COMMISSION

In the Matter of

CONSOLIDATED EDISON COMPANY )  
OF NEW YORK (Indian Point, ) Docket No. 50-247  
Unit No. 2) )

STATEMENT BY  
CITIZENS COMMITTEE FOR THE PROTECTION OF THE  
ENVIRONMENT WITH RESPECT TO  
UNRESOLVED RADIOLOGICAL  
SAFETY ISSUES

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Several matters related to the radiological safety of Indian Point #2 remain outstanding and unresolved. The purpose of this statement is to set forth our position with respect to the next steps which should be taken to ensure an orderly resolution of these matters. We are addressing our comments solely to the question of the impact of these issues on the resolution of Applicant's request for a full term, full power license. We take no position on these issues with respect to the 50% testing license application.

REACTOR PRESSURE VESSEL INTEGRITY

In its Initial Decision on the 50% testing license the Board expressed concern with the problem of pressure vessel integrity as it relates to full power operation. See Initial

Decision pp. 16-17. It also certified a question relating to the scope of the proper inquiry by the Board into reactor vessel integrity. By Memorandum and Order of October 26, 1972, the Commission responded to the certified question (p. 4):

We adopt the view expressed by the staff as consistent with the language of the regulation and the underlying Statement of Considerations. Where there are matters raised in a case that are "special safety significance", supplementary measures in respect to the facility under review are an appropriate subject of hearing exploration. The certified question, insofar as it deals with the admission of evidence pertaining to pressure vessel integrity in licensing proceedings, is therefore, answered in the negative. 5/

5/ To warrant inquiry, the evidence must be directed to the existence of special considerations involving a particular facility in issue. Licensing Boards, in their discretion, are empowered to exclude contentions or challenges which have no substantial or prima facie basis, or which merely amount to generalized attacks upon the standards presently required by the regulations.

Consistent with this decision this Board requested Applicant to provide certain documents and data relevant to the reactor vessel. (Tr. 7431-7433) We have also been investigating the problem and believe that there is additional information

which should be brought to the Board's attention. There is a March, 1970 draft report entitled "The Radiation - Embrittlement of Pressure Vessel Steels and the Safety of Nuclear Reactor Pressure Vessels" by M.S. Wechsler then at Oak Ridge National Laboratory. That report, in part, expresses concern about vessel integrity following radiation exposure which produces embrittled steel. In service inspection and fracture toughness requirements covered in proposed regulation 10 CFR Part 50, Appendix G, Paragraphs IV and V are both closely related to the problems of embrittlement. Both were raised by the Board here and may present special Indian Point No. 2 problems (Tr. 7431-32). Obviously the Oak Ridge analysis of the significance of these factors for vessel integrity is important.

Another document which is extremely relevant to reactor vessel integrity at Indian Point #2 is the United Kingdom Atomic Energy Authority report "The Application of the Stress Concentration Theory of Fracture Mechanics to the Assessment of the Fast Fracture Characteristics of Thick Walled Nuclear Reactor Pressure Vessels" by Irvine and Quirk (August, 1971). This document concludes, inter alia that propagation of cracks in the vessel "can only result in complete catastrophic destruction of the reactor vessel" (p. 21). Thus the inspection reports on the vessel requested by the Board (Tr. 7431) which

locate cracks and provide base line data for subsequent surveillance will have to be examined with this problem in mind and the crack size and number/<sup>included</sup>in this vessel assessed against the possible consequences of crack growth where there is break before leak rather than the converse.

As to this issue we will want to study the data produced by the Applicant before making our contentions more specific. We also believe that the Staff should make Dr. Wechsler available to testify so that he can analyze the Indian Point #2 vessel in light of the propositions set forth in his article which we understand is now being up dated. It appears to us that the Indian Point #2 vessel may not meet all Appendix G requirements particularly with respect to inservice inspection. Given the geographic proximity of Indian Point #2 to 8 million people this plant presents special hazards to public safety. Those hazards were certainly part of the reason that the original plant design included a mechanism designed to ameliorate the consequences of vessel rupture. Now that the crucible has been eliminated, the unique risks associated with Indian Point #2 become more significant and require special study to see if pressure vessel rupture at this plant is in fact a less likely consequence than elsewhere.

FUEL DENSIFICATION

In its decision Consolidated Edison (Indian Point #2) ALAB-75, October 27, 1972, the Appeal Board ruled inter alia (pp. 5-6):

There will be ample opportunity to bring to the attention of the Commission or of the Licensing Board, as appropriate, any new evidence as to the safety of the fuel elements for this plant.

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The exceptions of the Citizens Committee for the Protection of the Environment to the initial decision of July 14, 1972, are denied, without prejudice to such other motion or application as it may later be advised to make concerning the safety of the fuel elements.

The Regulatory Staff position is (Supplemental Response to CCPE Exceptions, August 25, 1972):

To the extent that the request is directed to operation in excess of 20%, we would urge the Appeal Board to hold in abeyance any action on that portion of the intervenor's request pending the completion of the regulatory staff's evaluation and the submission to the Appeal Board of a supplemental response reflecting the regulatory staff's position regarding operation of the Indian Point Unit No. 2, at power levels above 20% of full power.

No supplemental response indicating the Staff's position on more than 20% power has been filed. However, on November 14, 1972 the Staff published a Report on Fuel Densification which concludes, inter alia:

1. Pressurized fuel may not preclude collapse unless the amount of pressurization is determined in reference to an analysis of plant operating conditions and any rod can collapse. (pp. 4, 7, 70-71)
2. Fuel densification occurs in pressurized and unpressurized fuel and fuel manufactured by Westinghouse is known to densify. (p. 69)
3. Analyses must be done of all reactors to determine whether densification will cause limits on cladding strain, critical heat flux and centerline temperatures to be exceeded. (p. 71)
4. The effects of fuel densification on the LOCA analysis must be analyzed. (p. 71)
5. If calculations show that some rods could collapse then power levels, steam generator leak and peak clad temperature limits must be altered. (pp. 71-72)

Applicant was advised of these Report conclusions and received the Report on or before December 1, 1972. No response by it has been served on CCPE and we assume none has been filed.

In the meantime the Staff, in the course of its analysis of the Point Beach No. 2 Reactor, Wisconsin Electric Power Company (Docket No. 50-301), another Westinghouse Reactor with similar core design, discovered substantial areas in which it needed additional data from Westinghouse in order to evaluate the response by the Point Beach Applicant to the Staff Densification Report. Staff letter dated December 22, 1972 from R.C. DeYoung (Docket No. 50-301). The breath and depth of the Staff questions indicate that far more needs to be done before the Staff can take a position on the safe power level, if any for a Westinghouse reactor.

Obviously more needs to be done by the Staff and the Applicant here before this Board and CCPE can review any proposal for operation of Indian Point #2 at levels in excess of 20%. To expedite this process we are filing today a request to the Staff for data pertinent to fuel densification. The request is the same as one filed previously in Point Beach No. 2. Moreover, we are also filing a request for a simultaneous hearing in Point Beach No. 2 and Indian Point No. 2 with respect to fuel densification because at the heart of any review of Indian Point #2 or Point Beach #2 will be the Westinghouse

analyses and their validity and the Staff analyses and their validity as it relates to plants with pre-pressurized fuel. This simultaneous hearing, presided over by both Hearing Boards, will facilitate resolution of the issue and avoid the need to duplicate substantial testimony and cross-examination. To the extent that variations in the review of the two plants exist, these can be handled separately immediately following the simultaneous hearing.

We urge that this hearing be held shortly after the Staff review is completed and the Staff and Applicant have produced all relevant data underlying their analyses. Any data alleged to be proprietary by any party should be reviewed by the appropriate Licensing Board and a determination made with respect to the proprietary claim prior to release of the documents. We understand that Westinghouse claims that reports of abnormal occurrences are proprietary and if they so claim here we will vigorously oppose that claim.

#### THIN-WALLED VALVES

We understand that on June 21, 1972 a letter was sent by the AEC to all Applicants. We have not received a copy of such a letter to Con Ed. The letter raises a question with respect to the existence of valves related to plant

safety systems which may have wall thicknesses which do not meet design criteria. We have no knowledge of the existence of a response by Con Ed with respect to this issue. We believe the Board should order Con Ed and the Staff to serve on the parties a copy of all correspondence between them relevant to this issue in order to permit all parties and the Board to determine what review of the matter should be undertaken in this hearing.

STEAM LINE AND FEEDWATER  
PIPE RUPTURE

By letter dated December 19, 1972, and received by Counsel for CCPE on January 5, 1973, the Staff stated that there was a need for further analyses and documentation of consequences of the outside containment rupture of feedwater and steam lines and that until this analysis and documentation had been provided there was insufficient evidence to establish that Design Criterion No. 4 (10 CFR Part 50, Appendix A) had been met. A preliminary analysis of the problem by the Staff did disclose that:

We note however that the auxiliary feedwater pumps are located in an enclosure adjacent to the main steam and feedwater line containment penetrations. From this it appears that damage to the auxiliary feedwater system might result from a postulated pipe failure in the main steam or feedwater lines.

The proposed resolution of this problem and the appropriate analyses and documents must be submitted to the parties and to the Board for its review prior to any further operating authorization for Indian Point #2. When we have seen the further Staff and Applicant submittals we will determine if we will want to have discovery, cross-examination or submittal of direct testimony with respect to this issue.

CONCLUSION

The four matters discussed above need not be handled simultaneously. Resolution of some may be able to occur earlier than others. We understand that the Appeal Board has recently ordered an early resolution of the fuel densification issue in Point Beach No. 2 and, provided Applicant and Staff here and there cooperate with early production of documents and data, we will be prepared to meet that schedule. The other issues may not be ready for hearing by that time. The speed with which the hearing and resolution will proceed now depends upon the Applicant and the Staff and their willingness to promptly complete the required analyses and produced the relevant documents.

Respectfully submitted,



Anthony Z. Roisman  
Counsel for Citizens Committee  
for the Protection of the  
Environment

Dated: January 8, 1973