UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Dr. Jerry R. Kline
Mr. Frederick J. Shon

In the Matter of

Docket Nos. 50-440-OL
50-441-OL

CLEVELAND ELECTRIC ILLUMINATING
COMPANY, et al.

(Perry Nuclear Power Plant, Units 1 & 2)

November 8, 1982

MEMORANDUM AND ORDER
(Concerning Motion to Compel: Standby Liquid Control System)

On September 20, 1982, Ohio Citizens for Responsible Energy (OCRE) filed a motion to compel Cleveland Electric Illuminating Co, et al. (applicant) to answer interrogatories concerning the possible need for an automated standby liquid control system (SLCS). (The motion initially requested that the Staff of the Nuclear Regulatory Commission also be compelled to answer, but OCRE has informed us by telephone that it intends to file a separate motion concerning that portion of its request.)

Our review of the motion persuades us that OCRE has demonstrated a need to obtain information and has indicated, through its questions and supportive filings, the nature of the information it needs. However, our review of the questions that have been asked leaves us with the uncomfortable feeling that the answers will leave substantial gaps of essential information. Consequently, our principal response to OCRE's Motion to Compel is to propound Board questions that should be answered before the deadline for filing direct testimony. See Vermont Yankee Nuclear Power Corporation (Vermont Yankee Nuclear Power Station), ALAB-124, 6 AEC 358, 362 (1973)(a Licensing Board is required by the Atomic Energy Act to insure that the public health and safety are not compromised and it cannot simply sit back like

an umpire). In addition, we have considered the merits of OCRE's specific requests and have granted a portion of the motion to compel.

We recognize that some of the information desired by the Board has already been supplied in response to OCRE interrogatories. However, it would be helpful to us to have a coherent set of answers to our questions, without regard to whether some of the information has already been filed. Our questions, which follow, should be answered fully and completely:

1. List each of the Anticipated Transient Without Scram (ATWS) precursor events that might call for activation of the Perry Nuclear Power Plant's (Perry) SLCS and for which there is some research or opinion, either among applicant's employees or in published literature, that the event may require activation of the SLCS (at Perry or at another boiling water reactor). (You may indicate your best estimate of the expected frequency with which each ATWS precursor event might lead to a demand on the SLCS.)

2. For each of the events listed in 1., above:

(a) provide a description or detailed chart that indicates the operator actions that are expected to take place from the beginning of the event until the point at which the operator may have to decide to activate the SLCS. Describe each of the actions in enough detail for OCRE to be able to know how time-consuming these actions are. Be sure to describe in detail the operation of the Alternate Rod Insertion System.

(b) provide a fault-tree analysis, or similar verbal discussion, indicating the instruments on which the operator must rely and the likelihood of various instrument, instrument-reading or diagnostic errors that the operator might make in implementing the expected operator actions indicated in (a).

(c) indicate your basis for believing that, in the scenarios covered in (a) and (b), the operator may be expected to complete the expected actions and have adequate time to activate the SLCS.

(d) indicate your basis for believing that, in the scenarios covered in (a) and (b), the operator may be expected to confidently and correctly diagnose the problems existing in the reactor and to activate the SLCS in a timely fashion.

(e) indicate any uncertainties concerning the ability of operators to make correct diagnoses and take correct actions in each of these situations in which SLCS activation is called for, even when these situations may be complicated by one or more instrument failures. Describe each of the plant parameters that the operators must follow, the changes in those pa-

rameters that would occur in each relevant event, and the inferences the operator would need to make from one or more parameters in order to reach a correct conclusion.

(f) discuss the likelihood of power oscillations during an ATWS and the effect of such oscillations on the ability of operators to make correct diagnoses and take correct actions. Would the possibility of power oscillations favor a manual or an automated SLCS?

(g) indicate your best estimate of the likelihood that an operator might incorrectly fail to activate the SLCS, and provide the basis for your estimate.

3. What is the overall probability that the operator will be called on to activate the SLCS? What is the basis for your belief?

4. What is the total cost to the company for each incorrect activation of the SLCS, including cleanup costs and costs of lost power generation?

5. How frequently will operators be confronted with a situation in which they might perceive that they needed to decide whether or not to activate the SLCS? In what percentage of these situations should they decide to activate the SLCS?

6. What have you done to investigate whether there are situations in which operators might have difficulty deciding whether or not to activate the SLCS? How long from the occurrence of an ATWS would you expect it to take for the control room instruments to register the occurrence of an ATWS? How much additional time would it take for operators to decide whether to activate the SLCS in ambiguous situations, and how much additional time would it take to effectuate their decision? How long (total) do you expect it would take for the operators to activate the SLCS in unambiguous situations? What percentage of ATWS events do you expect to result in ambiguous instrument readings?

In addition to framing our own questions, we have considered the merits of each CCRE interrogatory, even though the set of interrogatories was prefaced with a statement of purpose applicable generally to ATWS events and not limited to the SLCS contention. We have decided that interrogatory 20, dealing with operator actions that might be taken prior to deciding whether to manually actuate the SLCS, should be answered. In response to interrogatory 28 applicant should provide information on the differential risk, if any, that boration would be defeated by subsequent dilution when a manual SLCS is employed, as contrasted to when an automated SLCS is employed. Sim-

ilarly, applicant should respond to interrogatory 31 by explaining whether the expected cost of inadvertent activation of an automated SLCS could be reduced by using a different neutron poison, other than boron.

Interrogatories covering the following subjects are denied as irrelevant to the admitted contention: modifications of the scram discharge volume, applicant's total ATWS mitigation program, a definition of scram failure and the sources of loss of control of reactivity, a listing of all transients capable of initiating reactor scram in a BWR/6, a description of all scram failures, a description of the Reactor Protection System and the Alternate Rod Insertion System, the probability and risk of ATWS, a description of all operator actions in ATWS, the conditions for activation of the recirculation pump trip and its conformity to appropriate standards, the reliability of the alternate rod insertion system and the reactor protection system and the standby liquid control system (nonconformity to Appendix C of Volume 3, NUREG-0460 is not relevant to the comparative advantage of a manual or automated system), the probabilities of ATWS, the efficacy of the ATWS mitigation system, dependence of ATWS or scram systems on electrical power, and power oscillations.

We reject applicant's argument, on page 14 of its answer to the motion to compel, that information not directly relevant to Perry is irrelevant for purposes of discovery. At the discovery stage, information about other reactors may well inform OCRE about what analyses to perform on the Perry configuration. Furthermore, if there is enough similarity among relevant systems, analyses of other plants may prove to be admissible in this case, and draft system operating procedures that are relevant to the admitted interrogatories should be produced because changes from the draft to the present system may help to inform OCRE of areas of uncertainty on which to concentrate its analytical and litigation efforts. In particular the draft system operating procedure given to the BWR owner's group should be produced.

We are aware that the Board's questions have narrowed the scope of OCRE's requests about ATWS events considerably, in the interest of reasonably limiting the scope of discovery to matters relevant to the admitted contention. In the event that OCRE has reason to believe that specific ATWS events should have been included in applicant's response to Board questions, it will be permitted to inquire further into the omission. In addition, if OCRE has reason to believe that one or more of the precursor sequences identified by applicant is particularly important to its argument, it may pursue the basis for applicant's conclusions concerning the frequency of occurrence of these sequences. In the interest of efficiently concluding this process, therefore, applicant should include complete documentation of the sources of its information concerning expected probabilities.

O R D E R

For all the foregoing reasons and based on consideration of the entire record in this matter, it is this 8th day of November, 1982,

ORDERED

(1) Cleveland Electric Illuminating Company, et al., (applicant) shall fully answer the questions set forth in the accompanying memorandum and shall file its answers by the deadline for filing direct testimony.

(2) Applicant also should answer OCRE interrogatories and discovery requests to the extent that the Board has concluded, in the course of this decision, that additional answers should be forthcoming.

(3) In all other respects, the Motion to Compel Discovery from Applicant, filed by Ohio Citizens for Responsible Energy on September 20, 1982, is denied.

FOR THE
ATOMIC SAFETY AND LICENSING BOARD

Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE

Jerry R. Kline,
ADMINISTRATIVE JUDGE

Frederick J. Shon
ADMINISTRATIVE JUDGE

Bethesda, Maryland