August 20, 1982

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, *et al.*	)	Docket Nos. 50-440 50-441
	)	
(Perry Nuclear Power Plant, Units 1 and 2)	)	

APPLICANTS' ANSWER TO SUNFLOWER ALLIANCE, INC. ET AL. SECOND SET OF INTERROGATORIES TO APPLICANTS

Applicants for their answers to Sunflower Alliance, Inc. *et al*. ("Sunflower") Second Set of Interrogatories to Applicants, dated April 30, 1982, state as follows:

Applicants hereby respond to the interrogatories directed to Issue #6. All documents supplied to Sunflower for examination will be produced at Perry Nuclear Power Plant ("PNPP"). Arrangements to examine the documents can be made by contacting Mr. Ron Wiley of The Cleveland Electric Illuminating Company at (216)-259-3767. Applicants will provide copies of any of the produced documents, or portions thereof, which Sunflower requests, at Applicants' cost of duplication. Arrangements for obtaining copies can be made with Mr. Wiley.

Applicants' counsel conferred by telephone with Mr. Daniel D. Wilt, Sunflower's counsel, on August 13, 1982, with regard to Applicants' objections. Applicants' counsel explained to Mr. Wilt that Applicants would object to certain of the interrogatories on the basis of relevancy for the reasons given in Applicants' answers to Sunflower's First Set of Interrogatories to Applicants, as further explicated in "Applicants' Substantive Answer To 'Sunflower Alliance, Inc. et al. Motion To Applicant To Compel Discovery'" (July 23, 1982), and as discussed in detail during the August 13, 1982, prehearing telephone conference conducted by the Licensing Board. Specifically, Applicants' counsel told Mr. Wilt that Applicants would object to those interrogatories that are not directed to whether Applicants should automate their Standby Liquid Control System ("SLCS"). No agreement between Applicants' counsel and Mr. Wilt was reached as to the scope of Issue #6.

RESPONSES

1. Produce every document in possession of Applicant pertaining to BWRs that was used in the preparation of or cited in NUREG-0460, Volumes 1, 2, 3, and 4. (All those listed in Bibliography or References)

Response:

Issue #6 is concerned with whether Applicants should automate their SLCS. The Issue is not concerned with the possibility or consequences of ATWS events generally, or with any systems other than SLCS which may be used to mitigate ATWS events. Applicants, therefore, object to the Interrogatory as irrelevant and beyond the scope of Issue #6 to the extent that the Interrogatory is directed at documents unrelated to SLCS initiation. See 10 C.F.R. § 2.740(b)(1); "Applicants' Substantive Answer To 'Sunflower Alliance, Inc. et al. Motion To Applicant To Compel Discovery,'" filed July 23, 1982, at 17-21. Documents related to SLCS initiation will be supplied for examination at PNPP.

2. Produce any and all documents pertaining to ATWS in BWRs.

Response:

Applicants will supply for examination only those documents related to SLCS initiation. See Response to Interrogatory #1, supra.

3. Produce all documents, correspondence, transcripts, or minutes prepared since the publication of NUREG-0460, Volume 4 (March 1980) pertaining to ATWS in BWRs, including any GE documents.

Response:

Applicants will supply for examination only those documents related to SLCS initiation. See Response to Interrogatory #1, supra.

4. One of the modifications included in Alternative 4A for GE BWRs is modification of the scram discharge volume. Describe this modification in detail for the Perry Plant BWR/6 model. Has this been done at Perry?

Response:

Issue #6 is not concerned with modifications to the scram discharge volume, or any ATWS mitigation systems other than SLCS. Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See 10 C.F.R. § 2.740(b)(1).

5. Where does the PNPP design presently stand in regard to the alternatives listed in NUREG-0460, Vol. 4? E.g., does the current plant design implement Alternative 2A, 3A, or 4A?

Response:

Applicants' current design for the SLCS implements Alternative 2A of NUREG-0460. However, as noted in the attached letter by Dalwyn R. Davidson to A. Schwencer, dated August 13, 1982, Applicants' SLCS design will have the capability of implementing Alternative 3A.

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6 to the extent that it is directed at any ATWS mitigation systems other than SLCS. See Responses to Interrogatories #1 and #4, supra.

6. What constitutes scram failure in a BWR/6 such as Perry? E.g., describe the combination of the following failures which will result in the loss of control of reactivity and failure to attain hot shutdown: insufficient rod insertion speed, percent of length withdrawn which results in failure, number and location of failed rods which results in scram failure.

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Responses to Interrogatories #1 and #4, supra.

7. Describe in detail, along with their frequency of occurrence for each year of plant operation, any and all transients capable of initiating reactor scram in a BWR/6.

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Responses to Interrogatories #1 and #4, supra.

8. Describe all scram system failures, including common-mode failures, capable of producing ATWS in a BWR/6.

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Responses to Interrogatories #1 and #4, supra.

9. Describe in detail the Reactor Protection System for the Perry Plant, including but not limited to the following: the means of initiating and implementing control rod scram, types of sensors and trip signals generated, which parameters are monitored, and how the scram system is both redundant and diverse, both in equipment and function: name all components of the scram system (both electrical and mechanical) and give the vendors for all components, for all systems and back-ups.

Response:

Issue #6 is concerned with whether Applicants should automate their SLCS. The Issue is not concerned with the Reactor Protection System. Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See 10 C.F.R. § 2.740(b)(1).

10. For each of the transients listed in #7 above (and for any transient not listed in the response to #7 but included in Table A.2, Vol. 4 of NUREG-0460), perform a time-domain analysis, specific to the Perry Plant, assuming that control rod scram does not occur, but that the recirculation pump trip does function and the SLCS, as presently designed, is manually operated. Assume all plant systems to be as currently described in the FSAR. Include in the analysis any and all plant systems and functions affected by ATWS and any consequences thereof, including but not limited to core integrity,

containment integrity, suppression pool effects, reactor internals, ECCS functions, dilution of SLCS boron by EECS, power oscillations, and offsite radiation doses to the public. Present the analysis in this manner: the transient begins at t=0; list time of occurrence for each major action or consequence during the ATWS (e.g., RPT, SLCS activation, containment isolation, and maximum and minimum values of the following parameters to be presented graphically) until such time as either the reactor is brought into cold shutdown or core melting occurs. List all assumptions made for operator actions. Present the following parameters graphically as a function of time (use appropriate units and scales): neutron flux, power levels, RPV pressure, steamline pressure, water level in RPV, heat flux, and fuel cladding temperature and radiation doses to public at site boundary, 5 mile radius, 10 mile, 20 mile and 50 mile radii.

Also perform the analysis as described above the the [sic] following conditions:

(1) As above, only with automatic SLCS.

(2) Full implementation of Alternate 4A.

Response:

Applicants have not conducted a time-domain analysis similar to that requested by the Interrogatory. Applicants are under no obligation to conduct analyses or tests in response to discovery requests, but only are under an obligation to provide information already known to Applicants or in Applicants' possession or control. Applicants are aware of two documents which contain a form of time-domain analysis: General Electric Company document NEDO-24222 "Assessment of BWR Mitigation of ATWS, Volume I" (February,1981), and General Electric Company document NEDE-25518, "Design Analysis and SAR Inputs for ATWS Performance and Standby Liquid Control System" (December,

1981). NEDO-24222 will be supplied for examination at Perry Nuclear Power Plant. NEDE-25518 is proprietary, and will be sent to Mr. Daniel D. Wilt under the terms of the Protective Agreement signed by Mr. Wilt.

11. According to Section 15.8.1 of FSAR, "the probability of an ATWS has been assumed to be significantly less than the probability of a design basis event. Because it is so extremely remote, the NRC will require some specific changes to plant hardware rather than treat ATWS as a design basis event..."

(a) Give the specific numerical probabilities and of a design basis event. How were these probabilities determined?

(b) What is the basis of the assumption that; (ATWS) "is significantly less than" p(DBE)? Provide all calculations and supporting documents substantiating this basis.

(c) Define quantitatively the terms "significantly less than" and "extremely remote".

(d) Describe in detail the "specific changes to plant hardware" that the NRC will require. When will these changes be required?

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Responses to Interrogatories #1 and #4, supra.

12. Answer #9, above, for the Alternate Rod Insertion (ARI) System.

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Responses to Interrogatories #1 and #4, supra.

13. Describe all operator actions required in the event of an ATWS. Upon what information will the operator rely as a basis for these actions? At what time into the ATWS will these actions be taken?

Response:

In the event of the occurrence of an ATWS, the operator will monitor the automatic initiation of the backup scram systems and the average power range monitors. Following the automatic initiation of the backup scram systems, if reactor power remains above specified levels or cannot be determined, the operator will manually activate the SLCS within two minutes of the ATWS event.

14. How many transients occurred in each of the years 1978, 1979, and 1980?

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Responses to Interrogatories #1 and #4, supra.

15. Does PNPP have the recirculation pump trip initiated by high pressure? What other conditions can initiate the RPT? Explain how this feature mitigates the consequences of ATWS: about what % negative reactivity does the RPT contribute? When was (or will be) the RPT feature installed?

Response:

Issue #6 is concerned with whether Applicants should automate their SLCS. The Issue is not concerned with the recirculation pump trip. Applicants thus object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See 10 C.F.R. § 2.740(b)(1).

16. Show that the RPT hardware conforms with the appropriate standard, below:

(1) If installed before July 1, 1981, the approved Hatch or Monticello designs (supply the appropriate design)

(2) If installed after July 1, 1981, Appendix C of Vol. 3, NUREG-0460.

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Response to Interrogatory #15, supra.

17. Demonstrate that the ARI system meets the criteria of IEEE Standard 279, and that the RPT and SLCS logic meet the criteria of Appendix C of Vol. 3, NUREG-0460.

Response:

Issue #6 is concerned with whether Applicants should automate their SLCS. The Issue is not concerned with the alternate rod insertion system or the recirculation pump trip. See Responses to Interrogatories #12 and #15, supra. Nor are the nine criteria identified in Appendix C of Volume 3 of NUREG-0460 related to whether the SLCS should or should not be automated. Applicants, therefore, object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See 10 C.F.R. § 2.740(b)(1).

18. Have the code verification tests for BWRs described on p. B-3 of Vol. 4, NUREG-0460 been performed? If not, why not, and when will they be performed? If so, what were the results of these tests?

Response:

Issue #6 is not concerned with the code verification tests for BWR's described in NUREG-0460, Volume 4. Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See 10 C.F.R. § 2.740(b)(1).

19. What parts of the scram system, back-up scram systems, and ATWS mitigation systems depend on electrical power? What is the back-up source of power for these systems in the event of the loss of all off-site power? How quickly is this back-up source available?

Response:

The SLCS components which rely on electrical power for operation are two positive displacement pumps, two explosive valves, two motor operated tank shut-off valves, and associated local valves and controls. Should off-site power be lost, backup power from the diesel generators would be available within ten seconds for the operation of this equipment.

20. Describe in detail the manual scram capabilities at PNPP. What is the sequence of operation? What is the speed of rod insertion? How much time elapses from the initiation of the manual scram until its completion? When is manual scram used.

Response:

Issue #6 is concerned with whether Applicants should automate their SLCS. The Issue is not concerned with the manual scram capabilities at PNPP. Applicants, therefore, object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See 10 C.F.R. § 2.740(b)(1).

21. Describe the effects of power oscillations, such as are described on p. A-67, Vol. 4, NUREG-0460, on fuel and containment integrity and any other affected system at PNPP.

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See 10 C.F.R. § 2.740(b)(1); "Applicants' Substantive Answer To 'Sunflower Alliance, Inc. et al. Motion To Applicant To Compel Discovery,'" filed July 23, 1982, at 20-21.

22. Give a cost estimate for the installation of an automated standby liquid control system at PNPP, Units 1 and 2; provide documentation to support this estimate. Include in the estimate any necessary modifications to other systems, e.g., addition of sufficient diesel generator capacity. Also give a cost estimate for the complete implementation of Alternative 4A as described in Vol. 4 of NUREG-0460.

Response:

As noted in the attached letter by Dalwyn R. Davidson to A. Schwencer, dated August 13, 1982, Applicants will have the capability of automating their SLCS. The cost of activating this capability once it has been installed is estimated to be less than ten thousand dollars. Because Applicants now are committed to installing the equipment necessary to automate their SLCS, the cost of installing this equipment is not a relevant issue in this proceeding.

Applicants object to the portion of the Interrogatory that is not directed at whether Applicants should automate their SLCS. See Response to Interrogatory #1, supra. In this regard, it should be noted that the SLCS initiation mechanism

of Alternative 4A is no different from the initiation mechanism of Alternative 3A, which Applicants will have the capability of implementing. See Response to Interrogatory #5, supra.

23. Give an estimate of the cost and downtime associated with the cleanup of an inadvertant activation of the SLCS. Give the waste storage tank capacity and evaporator capacity; compare these with other BWRs, and indicate how these systems are involved in the boron cleanup.

Response:

The principal cost resulting from an inadvertent activation of the SLCS would be the downtime of approximately one week needed to clean the water. At approximately one and one-half million dollars per day (in 1984 dollars), a week's downtime would cost Applicants approximately ten and one-half million dollars. An indeterminate additional amount of downtime also might be necessary to determine why the SLCS activated inadvertently. The cost of cleaning the water would be approximately one-half to one million dollars. The capacities of the waste storage tanks and the evaporators, and how they are used in the cleanup process, are described in Applicants' Response to Interrogatory #24, infra.

24. Describe in detail the boron cleanup procedure used after the activation of the SLCS.

Response:

Activation of the SLCS will necessitate cleaning the reactor water to remove the boron pumped into the vessel. This would be accomplished by flushing the vessel with clean water, followed with recirculation of the coolant through the reactor water cleanup system. The water will be processed and stored for reuse in the liquid radwaste system. This system has the following waste storage tanks that can be used to store the water for processing: two waste collector system tanks, with a capacity of 35,000 gallons each; two floor drain collector system tanks, with a capacity of 35,000 gallons each; and, two chemical waste system tanks, with a capacity of 20,000 gallons each. To remove the boron from the water, the water will be passed through one or both of the plant evaporators, each of which have a capacity of 30 gallons per minute. Finally, the water will be processed through a mixed-bed ion exchange demineralizer. The water then can be reused.

25. Define the term "SLC system" as used in Sec. 9.3.5.3 of FSAR. Exactly which components are part of this system? Does the SLCS include the piping and spargers, or only the pumps, storage tank, valves, and logic?

Response:

The SLC System referred to in Section 9.3.5.3 of the FSAR is described in detail in Section 9.3.5.2 of the PNPP FSAR. The SLCS includes the piping to the connection to the HPCS line, as shown in Figure 9.3-19 of the PNPP FSAR. Also note the changes in the SLCS design documented in the attached letter by Dalwyn R. Davidson to A. Schwencer, dated August 13, 1982.

26. Provide diagrams and isometric drawings of the SLCS piping into the reactor pressure vessel.

Response:

The following Unit 1 diagrams will be supplied for examination at PNPP: flow diagrams D-302-691 and D-302-701, piping drawings D-304-691 and D-304-692, and piping isometric D-314-691 (sheet 3). There are no substantial differences between the Unit 1 and Unit 2 diagrams.

27. According to Sec. 9.3.5.1.1 of FSAR, "A fast scram of the reactor or operational control of fast reactivity transients is not specified to be accomplished by this system (SLCS)" Also, Sec. 9.3.5.3 states that "the system is never expected to be needed for safety reasons..." According to these statements, the SLCS is not expected to function as an ATWS mitigation system. Yet it was listed as such in Sec. 15.8.1. Explain this apparent discrepancy. Exactly why is the SLCS incorporated in the plant design?

Response:

Section 15.8.1 was amended by Amendment 7 to the PNPP FSAR (May 27, 1982). SLCS is not listed in the amended section. Nevertheless, the SLCS can be used for ATWS mitigation purposes, and neither of the cited statements from § 9.3.5 of the FSAR is inconsistent with that fact. As for the first statement, a system can operate to mitigate ATWS events without providing "a fast scram of the reactor or operational control of fast reactivity transients." SLCS is precisely such a system. As for the second statement, it should be noted that the statement in its entirety reads: "The system is never expected to be needed for safety reasons because of the large number of independent control rods available to shut down the reactor." There is no inconsistency between the fact that the system probably will never need to be implemented, and the fact that it will mitigate an ATWS event should it ever need to be implemented. The SLCS was incorporated in the BWR design to provide backup capability in reactivity control, as stated in the safety design bases. See PNPP FSAR § 9.3.5.1.1(a).

28. What provisions will be made to ensure that, after SLCS activation, the boron will not be diluted by the ECCS to such an extent that recriticality may occur (see NUREG-0460, Vol. 4, p. A-68)?

Response:

Issue #6 is concerned with whether Applicants should automate their SLCS. T' Issue is unrelated to any postulated dilution of the boron solution. Applicants, therefore, object to the Interrogator s irrelevant and beyond the scope of Issue #6. See 10 C.F.R. § 2.740(b)(1).

29. The FSAR describes the neutron poison used in the SLCS as sodium pentaborate, produced by dissolving stoichiometric quantities of borax and boric acid in demineralized water. These boron compounds are described as consisting of natural boron. Does this mean that the boron is a mixture of the 2 predominant isotopes in the ratio that they occur naturally, i.e., 5B/10 at 19.78% and 5B/11 at 80.22%? Boron-10 is the only isotope that is effective at neutron capture; thus, if the sodium penaborate is 80% boron-11, is not the poison then only 20% effective? Has this effect been considered in the assessment of the SLCS capabilities?

Response:

Issue #6 is concerned with whether Applicants should automate their SLCS. The properties or effectiveness of the neutron poison used in the SLCS is unrelated to the automation of the system. Applicants, therefore, object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See 10 C.F.R. § 2.740(b)(1).

30. What boron isotope or mixture of isotopes is used in the control rods?

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Responses to Interrogatories #28 and #29, supra.

31. Has the use of different chemicals as neutron poisons, e.g., gadolinium, been investigated? If not, why not? If so, with what results?

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Responses to Interrogatories #28 and #29, supra.

32. Demonstrate that the initial test procedure for the SLCS described in Sec. 14.2.12.1.5 of FSAR will verify proper mixing of the boron solution, in accordance with Regulatory Guide 1.68, Appendix A.1.b(3).

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Responses to Interrogatories #28 and #29, supra.

33. What is the concentration, in moles/liter, of the sodium pentaborate solution?

Response:

Applicants object to the Interrogatory as irrelevant and beyond the scope of Issue #6. See Responses to Interrogatories #28 and #29, supra.

34. What is the SLCS injection rate, in gallons/minute? Include the effects of piping resistance in this answer.

Response:

As stated in the attached letter from Dalwyn R. Davidson to A. Schwencer, dated August 13, 1982, the SLCS injection rate is 86 gallons per minute. Piping resistance will not affect the flow rate as the pumps are of the positive displacement type.

35. Perform a value/impact analysis, like that in NUREG-0460, specific to PNPP for: (1) the automation of the SLCS (2) complete implementation of Alternative 4A. Both modifications are assumed to be made during construction on both Units 1 and 2.

Response:

Applicants have not performed such a value/impact analysis, and are under no obligation to perform such an analysis in response to a discovery request. See Response to Interrogatory #10, supra. Moreover, Issue #6 is not concerned with implementation of Alternative 4A, and Applicants object to

that portion of the interrogatory as irrelevant and beyond the scope of Issue #6. See response to Interrogatory #1, supra.

36. Demonstrate that Fig. 9.3-19 (GAI Dwg. D-302-641) is that of the SLCS (in FSAR). If not, provide the correct diagram of the SLCS.

Response:

Figure 9.3-19 of the PNPP FSAR was revised by Amendment 7 to the FSAR (May 27, 1982), and now is a diagram of the SLCS.

Respectfully submitted,

SHAW, PITTMAN, POTTS & TROWBRIDGE

By: _____
Jay E. Silberg, P.C.
Robert L. Willmore

Counsel for Applicants
1800 M Street, N.W.
Washington, D.C. 20036

(202) 822-1000

Dated: August 20, 1982

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
P O BOX 5000 ■ CLEVELAND, OHIO 44101 ■ TELEPHONE (216) 622-9800 ■ ILLUMINATING BLDG ■ 55 PUBLIC SQUARE
Serving The Best Location in the Nation

Dalwyn R. Davidson
VICE PRESIDENT
SYSTEM ENGINEERING AND CONSTRUCTION

August 13, 1982

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Perry Nuclear Power Plant
Docket Nos. 50-440; 50-441
ATWS Mitigation Design Features

Dear Mr. Schwencer:

In a meeting on July 20, 1982, between CEI and members of NRR, we discussed our plans for changing several systems associated with the mitigation of a postulated ATWS event. The Perry Nuclear Power Plant (PNPP) construction schedule and the current ATWS rulemaking schedule have made it necessary for us to anticipate potential future requirements. We believe it to be in our best interest to modify the current design and install these systems during our construction as opposed to waiting until the construction of these systems impacts our construction schedule or operations. The inclusion of these systems is based on the proposed rulemaking and is not based on a belief by CEI that these systems are needed to mitigate an ATWS event. As such, we maintain our support of industry comments on the proposed ATWS rule.

The basic changes to be made to the Perry plant include the following:

(1) An increased flow capacity for the Standby Liquid Control System from 43 gpm to 86 gpm. This will involve increasing the size of both pumps' suction lines as well as changing the reactor vessel injection point to the HPCS header. Although the design includes both manual and automatic initiation capability, only manual initiation will be functional. The existing pumps will be used.

(2) An upgrade to safety grade of the Recirculation Pump Trip initiation circuitry.

(3) A control grade feedwater runback feature.

(4) An Alternate Rod Insertion system which is redundant to the Reactor Protection System scram logic.

The details of the above described design will be submitted as an amendment to the Perry FSAR by January 1983.

We believe that this design along with appropriate emergency operating procedures and training adequately address the ATWS issue for PNPP.

Very truly yours,

Dalwyn R. Davidson

Dalwyn R. Davidson
Vice President
System Engineering and Construction

DRD:WEC:mb

cc: Jay Silberg, Esq.
John Stefano
Max Gildner

CLEVELAND ELECTRIC ILLUMINATING COMPANY

CLEVELAND, OHIO

Frank R. Stead, being duly sworn according to law, deposes that he is Manager, Nuclear Engineering Department of Cleveland Electric Illuminating Company and that the facts set forth in the foregoing Applicants' Answers to Sunflower Alliance Interrogatories 1, 2, 3, 5, 13, 19, 22, 25, 26, 34, and 36 dated April 30, 1982, are true and correct to the best of his knowledge, information and belief.

Frank R. Stead

Sworn to and subscribed
before me this 20th day
of AUGUST, 1982.

Joseph C. Szwejkowski

JOSEPH C. SZWEJKOWSKI
Notary Public, State of Ohio Cuyah. Cty
My Commission Expires July 14, 1986

CLEVELAND ELECTRIC ILLUMINATING COMPANY

CLEVELAND, OHIO

Steve F. Kensicki, being duly sworn according to law, deposes that he is General Supervising Engineer, Radiation Protection Section of Cleveland Electric Illuminating Company and that the facts set forth in the foregoing Applicants' Answers to Sunflower Alliance Interrogatories 23, and 24 dated April 30, 1982, are true and correct to the best of his knowledge, information and belief.

Steven F. Kensicki

Sworn to and subscribed
before me this 20th day
of August, 1982.

Joseph C. Szwejkowski

JOSEPH C. SZWEJKOWSKI
Notary Public, State of Ohio - Cuya. Cty
My Commission Expires July 14, 1986

AFFIDAVIT

HENRY C. PFEFFERLEN, being duly sworn according to law, deposes and says that he is the Manager, BWR Licensing Programs, of General Electric Company, and that the facts set forth in the foregoing Applicant's Answer to Sunflower Alliance's second set of Interrogatories No.'s 10 and 27 (Issue #6) dated April 30, 1982, are true and correct to the best of his knowledge, information and belief.

8/20/82
Date

HENRY C. PFEFFERLEN

STATE OF CALIFORNIA)
COUNTY OF SANTA CLARA) ss:

On August 20, 1982, before the undersigned, a Notary Public for the State of California, personally appeared HENRY C. PFEFFERLEN, known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he has executed the same.

Subscribed and sworn to before me on August 20, 1982.

OFFICIAL SEAL
KAREN S. VOGELHUBER
NOTARY PUBLIC - CALIFORNIA
SANTA CLARA COUNTY
My Commission Expires Dec. 21, 1984

NOTARY PUBLIC, STATE OF CALIFORNIA

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

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THE CLEVELAND ELECTRIC	)	Docket Nos. 50-440
ILLUMINATING COMPANY, *ET AL.*	)	50-441
	)	
(Perry Nuclear Power Plant,	)	
Units 1 and 2)	)	

CERTIFICATE OF SERVICE

This is to certify that copies of the foregoing "Applicants' Answer to Sunflower Alliance, Inc. *et al.* Second Set of Interrogatories to Applicants" were served by deposit in the United States Mail, First Class, postage prepaid, this 20th day of August, 1982, to all those on the attached service list.

ROBERT L. WILLMORE

Dated: August 20, 1982

NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, et al.	)	Docket Nos. 50-440 50-441
	)	
(Perry Nuclear Power Plant, Units 1 and 2	)	

SERVICE LIST

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