

10/22/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)

CLEVELAND ELECTRIC ILLUMINATING)
COMPANY, ET AL.)

(Perry Nuclear Power Plant,)
Units 1 and 2))

Docket Nos. 50-440 OL
50-441 OL

NRC STAFF ANSWERS TO OCRE FOURTH
SET OF INTERROGATORIES TO NRC STAFF

Ohio Citizens for Responsible Energy ("OCRE") on August 30, 1982 served its "Ohio Citizens for Responsible Energy Fourth Set of Interrogatories to NRC Staff" ("OCRE Fourth Set of Interrogatories"). Under the provisions of 10 C.F.R. Section 2.720(h)(2)(ii), written interrogatories to be answered by the NRC Staff are to be filed with the presiding officer. Upon making the necessary finding under that provision, the presiding officer may require the Staff to answer the interrogatories. However, in the spirit of cooperation between the parties and to expedite the completion of discovery in this proceeding, but without waiving the provisions of Section 2.720(h)(2)(ii) with respect to any other interrogatories which may be addressed to the Staff, the Staff is voluntarily providing the Staff's answers to OCRE Fourth Set of

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Interrogatories together with supporting affidavits of the NRC Staff who prepared the responses. The response to Interrogatories 4-2 and 4-3 has been deferred until the Staff has completed its review.

Respectfully submitted,

Nathene A. Wright

Nathene A. Wright
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 22nd day of October 1982

Issue #5: Scram Discharge Volume

- 4-1. Has the PNPP SDV design met all the criteria and recommendations of IE Bulletins 80-14 and 80-17 (and supplements), the 8/1/80 letter from Michelson (AEOD) to H. Denton (NRR), and Section 4 of the BWR Scram Discharge System Safety Evaluation, dated 12/1/80? Describe in detail any criteria not met, and indicate why these deviations are permissible.

NRC Staff Response

The criteria and recommendations of IE Bulletins 80-14 and 80-17 (and supplements) provided a technical basis for continued operation of licensed plants until a long term resolution was achieved. These bulletins required tests and verification of scram system functions as well as verification of shutdown procedures in the event of scram failures. The recommendations of IE Bulletin 80-14 and 80-17 (and supplements) and the 8/1/80 letter from Michelson were integrated into the long term requirements provided in the BWR Scram Discharge System Safety Evaluation. The design of the Perry SPV complies with the requirements of the BWR Scram Discharge System Safety Evaluation as discussed in Section 4.6 of the Staff's Safety Evaluation Report (NUREG-0887) dated May 1982.

- 4-2. In the Staff's opinion, could suppression pool swell hydrodynamic loading on the SDV, SDIV, or HCUs and associated piping cause pipe breaks or any other damage to these components? Could pool swell

disrupt instrumentation in the SDIV or valves in the HDU, thereby impairing the scram function?

NRC Staff Response

Deferred.

4-3. Would water from an SDV pipe break flashing to steam pressurize the containment? Would this condition harm any equipment located in the containment which was not qualified for this condition?

NRC Staff Response

Deferred.

4-4. In the Staff's opinion, does the long common vent line for both banks of the PNPP SDV have the potential for degrading SDV performance, as identified in IE Bulletin 80-17, Supplement 1?

NRC Staff Response

The vent line for the PNPP SDV does not have the potential for degrading SDV performance as identified in IE Bulletin 80-17, Supplement 1. The Perry design provides close hydraulic coupling by utilizing two separate headers, with an integral instrumented volume (IV) at the end of each header. Also, refer to the response for 4-1.

Issue #9: Polymer Degradation

4-5. When will the final rule on environmental qualification of electrical equipment be published?

NRC Staff Response

The Commission is currently reviewing a proposed final rule. The schedule for affirmation by the Commission has not been established.

4-6. Will PNPP, Units 1 and 2, be required to comply with the provisions of 10 CFR 50.49 when it is published? If not, why not? If so, give the time schedule for compliance.

NRC Staff Response

Yes, if the rule is issued as currently proposed Licensees would be required to comply by November 30, 1985.

4-7. Explain why the requirement for realistic dose-rate testing (for normal operating conditions) was deleted in the final version of 10 CFR 50.49(e)(4).

NRC Staff Response

The purpose of the proposed rule is to codify the Commission's requirements in NUREG-0588 and the DOR Guidelines, which contain no dose rate requirement. Where equipment is qualified by testing, dose rate effects must be considered under the aging provisions of the rule as proposed. The proposed rule addresses broad areas relating to qualification. Details such as dose rate effects will be addressed in Regulatory Guide 1.89, Revision 1.

4-8. Will the testing of synergistic effects required by 10 CFR 50.49(e)(7) include the sequential factors identified in NUREG/CR-2156?

NRC Staff Response

Yes, if the rule is issued as currently proposed, NUREG-0588 would require the test sequence to be justified as the most severe for the item being tested.

4-9. Does the staff intend to promulgate a rule on environmental qualification of mechanical equipment? If so, when? When would PNPP have to comply with any such rule?

NRC Staff Response

The staff is in the early stages of planning a rule on mechanical equipment qualification. No schedule has been established. Compliance by PNPP with the rule would be as specified therein upon its promulgation by the Commission.

4-10. Produce NUREG-0588, Regulatory Guide 1.89, and any other documents on environmental qualification of equipment pertaining to a radiation environment.

NRC Staff Response

These two documents are available from:

GPO Sales Program
Division of Technical Information & Document Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

A recent Sandia report, NUREG/CR-2553 "Ethylene Propylene Cable Degradation During LOCA Research Tests: Tensile Properties at the Completion of Accelerated Aging" may be of interest. This report is available from the above address.

Numerous other references may be found in these reports and can be obtained from the above address if published by the NRC or from the author, technical society etc. responsible for the report.

NUREG's and Regulatory Guides are also available for inspection and copying at the Public Document Room (PDR), 1717 M Street, N.W., Washington, D.C.

4-11. Produce any and all documents pertaining to the Perry environmental qualification program for electrical and mechanical equipment.

NRC Staff Response

The Perry program is described in the FSAR, Section 3.11. The only other document the staff has used or expects to use is the GE Topical Report NEDE-24326-P referenced in CEI's August 18, 1982 letter to the Staff. This report is proprietary. Non-proprietary documents used by Staff in its review of PNPP are available in the PDR; proprietary documents are not.

4-12. In the Staff's opinion, could the failures of GE Type HFA Relays described in IE Information Notice 82-13 have been caused by radiation-induced embrittlement of polymers used therein?

NRC Staff Response

No. Relays are used in plant areas with very low radiation doses where no degradation is expected, including consideration of the data presented by Sandia.

4-13. Where were the cables "in service in a nuclear application ... and found to exhibit substantial deterioration" (NUREG/CR-2156) used? I.e., in a commercial nuclear power plant? Give the name of the facility.

NRC Staff Response

They were used at the Savannah River Nuclear Reactor which is not a commercial reactor.

4-14. Has any polymer degradation been reported in any commercial nuclear power plants? If so, provide all details.

NRC Staff Response

The question as presently stated is too broad for the Staff to answer. The details for equipment experiencing polymer degradation, however, can be found in Licensee Event Reports which are available in the NRC Public Document Room at 17117 H Street, Washington, D.C. When a significant safety concern is identified in LER's, the Staff issues IE Bulletins, Circulars, or Information Notices, as appropriate, to ensure that all licensees and license applicants take the necessary corrective actions.

4-15. Has further research been conducted on dose-rate and synergistic effects on polymer degradation by Sandia Laboratories (or others)? If so, provide details of the research.

NRC Staff Response

See the response to Interrogatory 4-10.

4-16. Identify all documents (NRC and others) in which dose-rate and synergistic effects on polymer degradation are described.

NRC Staff Response

See response to Interrogatory 4-10.

4-17. Has research been conducted on dose-rate and synergistic effects on polymers other than those identified in NUREG/CR-2156 and NUREG/CR-2157 (polyethylene, polyvinyl chloride, polyolefin, ethylene propylene rubber, chlorosulfonated polyethylene, and chloroprene rubber)? If so, with what results?

NRC Staff Response

See response to Interrogatory 4-10.

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)	50-441 OL
(Perry Nuclear Power Plant, Units 1 and 2))	

AFFIDAVIT OF NICHOLAS E. FIORAVANTE

I, Nicholas E. Fioravante, being duly sworn, state as follows:

1. I am a Mechanical Engineer, in the Auxiliary Systems Branch, Division of Systems Integration, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission.

2. I am the NRC staff member responsible for the responses to Interrogatories 4-1 and 4-4 of OCRE's Fourth Set of Interrogatories to the Staff, dated August 30, 1982.

3. These answers are true and accurate to the best of my knowledge and belief.

Nicholas E. Fioravante

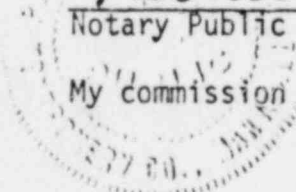
Nicholas E. Fioravante

Subscribed and sworn to before
me this 22nd day of October 1982

Patricia F. Fichette

Notary Public

My commission expires: 7/1/86



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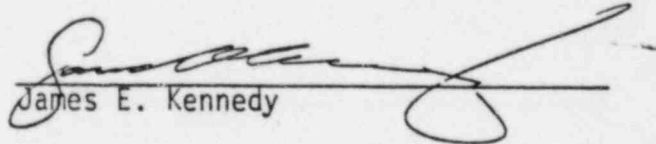
AFFIDAVIT OF JAMES E. KENNEDY

I, James E. Kennedy, being duly sworn, state as follows:

1. I am an Equipment Qualification Engineer in the Equipment Qualification Branch, Division of Engineering, Environmental Section, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission.

2. I am the NRC staff member responsible for the answers to Interrogatories 4-5 through 4-17 of OCRE's Fourth Set of Interrogatories to the Staff, dated August 30, 1982.

3. This response is true and accurate to the best of my knowledge and belief.



 James E. Kennedy

Subscribed and sworn to before
 me, this 21 day of October 1982



 Notary Public

My commission expires: 7/1/86

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CERTIFICATE OF SERVICE

I hereby certify that copies of NRC STAFF ANSWERS TO OCRE FOURTH SET OF INTERROGATORIES TO NRC STAFF in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk through deposit in the Nuclear Regulatory Commission's internal mail system, this 22nd day of October, 1982.

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Nathene A. Wright

Nathene A. Wright
Counsel for NRC Staff