



Despite good faith efforts, the Staff has been unable to communicate with Mr. Robert Alexander, the proponent of the interrogatories, and discuss the Staff objections. In compliance with the Board's Order of July 28, 1981, the Staff made several unsuccessful attempts on Friday, October 30, 1981 to reach Mr. Alexander. Late on that date the Staff finally succeeded in reaching an acquaintance of Mr. Alexander, who indicated that Mr. Alexander should be available Monday, November 2, 1981, between 8:45 and 9:00 a.m. EST. Attempts to reach Mr. Alexander on Monday morning were also unsuccessful.

Interrogatory Nos. 1-1 through 1-17

1-1. To what extent does the potential for thermal shock similar to that mentioned in the Times article [September 27, 1981] exist for the RPV at PNPP in the event the ECCS is actuated?

1-2. What temperature is cooling water for the ECCS maintained at prior to actuation of the ECCS?

1-3. Does the temperature referred to in 1-2 vary due to seasonal causes, ie. is that temperature cooler in the winter months? If so, please provide monthly breakdown of those temperatures. Please indicate any other causes of that temperature variance.

1-4. Where is the ECCS cooling water kept or drawn from? Please indicate whether it is kept within the containment building or without.

1-5. Give a year by year projection throughout PNPP's expected operating life (use full power years) of the RPV's reference temperature. If these projections have not been calculated or are not possible, please indicate why.

1-6. Please give the projections requested in 1-5 on a normal years of operation basis. If these projections have not been calculated or are not possible, please indicate why.

1-7. What is the greatest and/or most rapid temperature decrease the RPV has been designed for? Describe that decrease in terms of range and time and particularly with regard to uneven cooling and internal stresses resulting therefrom. For example, describe the effects of rapid cooling on interaction between the RPV liner and the remainder of the RPV thickness.

1-8. Describe the composition of the RPV in terms of what layers there are, what the various metallic elements included are, and particularly those portions or attributes of the RPV that would be most susceptible to rapid cooling and/or thermal shock.

1-9. What differences, if any, exist in the plans for operation of the ECCS from one season to the next? For example, is winter operation of ECCS any different than summer operation? Describe those differences, if any.

1-10. The Times article mentioned four options a utility had to decrease the risk of cracking the RPV via rapid cooling. They were: (1) rearranging the fuel to reduce bombardment at the edges of the core; (2) preheating the water that might be used for cooling in an emergency; (3) changing the plant's automatic controls to prevent repressurization at low temperature; and (4) treating the metal itself, which "would require removing the core--a project never before undertaken in a commercial reactor." Please comment on the feasibility and/or practicability of each of these four options with regard to applicability at PNPP.

1-11. Please list all communications, correspondences, etc. between the Staff (or other NRC divisions) and Applicant with regard to the issue of RPV embrittlement by radiation. Please provide a brief summary of the contents of each such communication.

1-12. In the time frame coming after casting and before initial criticality, what defects are most likely to be spotted in the RPV? What defects are least likely to be spotted? Please give the procedures and tests used for the detection of RPV defects during that period.

1-13. To what extent may cracks in the RPV be repaired after one year of full-power use? Describe extent of postulated crack and technique to be utilized, if any, in its repair.

1-14. Would Staff admit that a six inch or greater, vertical beltline crack in a PNPP-type RPV after more than one full-power year would be either technically and/or economically non-feasible to repair? Why or why not?

1-15. What is the life expectancy of the RPV in full-power year? In real-time years assuming 60% operating capacity?

1-16. Please list all documents, reports, or other sources used or relied upon in the preparation of answers to the previous interrogatories.

1-17. Please list all persons who assisted with the preparation of the previous interrogatories. For each person listed, indicate that person's employer, his title/position/rank, and his occupational history of preceding ten (10) years eg. who has he worked for?

Answer

Staff objects to these interrogatories. It is an axiom of Commission practice that all discovery requests must be relevant to the subject matter of the proceeding; that is, they may "relate only to those matters in controversy which have been identified by the [Licensing Board following a special] prehearing conference." 10 C.F.R. § 2.740(b)(1); Pennsylvania Power and Light Company (Susquehanna, Units 1 and 2), ALAB-613, 12 NRC 317, 322 (1980). Thus, discovery is not available as an aid to drafting contentions which are not yet in issue.

This precept is violated by the type of discovery sought in these seventeen interrogatories. OCRE is attempting "to uncover information on reactor pressure vessel ("RPV") integrity" at the Perry plant<sup>3/</sup> in the hope that its originally proposed Contention 6 "might properly be exhumed and/or amended as a litigable contention."<sup>4/</sup> In its Special Prehearing Conference Memorandum and Order of July 28, 1981,<sup>5/</sup> the Board rejected this proposed contention on several grounds. Thus discovery on its merits has clearly been precluded by that Order.

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<sup>3/</sup> Interrogatories, op. cit., at 1.

<sup>4/</sup> Id., Proposed Contention 6 read as follows:

OCRE contends that Applicant has not provided reasonable assurance that its operating activities can be conducted without endangering the health and safety of OCRE members and the public in that

- A. Cracks in the pressure vessel would be very difficult to detect before they led to catastrophic failure.
- B. The growth of small cracks, though harmless at first, would necessitate their repair in reactor conditions. Currently, no equipment is available to grind out and soundly weld up craked regions in radioactive steel by remote automatic methods. If the cracks were not fixed and permitted to grow, Applicant would then have the decision of either taking the chance of running the reactor or shutting it down at a fraction of its planned economic life.

Nature, vol. 283 at 84 (Feb. 28, 1980).

OCRE's Supplement to its Petition for Leave to Intervene, dated April 30, 1981, at 2-3.

<sup>5/</sup> Special Prehearing Conference Memorandum and Order Concerning Party Status, Motions to Dismiss and to Stay, the Admissibility of Contentions and the Adoption of Special Discovery Procedures, July 28, 1981, at 87-88.

Interrogatory No. 1-18

Please provide CEI's response to IEB 81-03.

Answer

The Staff has treated Interrogatories 1-18, 1-23 and 1-24 as requests for the production of documents. The documents are attached.

Interrogatory No. 1-19

Present a cost effectiveness analysis of the various forms of corbicula control and related cleaning operations. Please integrate the environmental implications of each control form within the analysis. Include in the analysis at least the following control forms: (1) backflushing; (2) high velocity flushes using compressed air; (3) use of wires, etc. in portions of components that are accessible to such; (4) chlorine introduction; (5) chemical cleaning; and (6) combinations of the above control forms. This Intervenor needs to know Staff's estimation of feasibility for each method: Which ones are feasible? Why or why not?

Answer

Staff objects in part to this interrogatory for two reasons. First, this interrogatory requires for its response that the Staff undertake an elaborate analysis. This is impermissible discovery.<sup>6/</sup> A party can be asked to answer with respect to facts in its possession; it cannot be required to create new information.<sup>7/</sup>

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<sup>6/</sup> Houston Lighting and Power Co. (South Texas, Units 1 and 2), LBP-80-11, 11 NRC 477, 478-479 (1980).

<sup>7/</sup> E.g., 4A Moore's Federal Practice, Para. 33-20.

Second, the request is not "reasonably calculated to lead to the discovery of admissible evidence."<sup>8/</sup> Issue <sup>9/</sup> concerns the potential safety implications which could result if Asiatic clams are allowed to affect safety-related cooling systems. Neither the cost effectiveness nor the environmental implications of hypothetical forms of clam control are at issue in this proceeding.

We have not yet analyzed the feasibility of specific methods for controlling Asiatic clams at the Perry plant, if these clams should eventually be found there.

Interrogatory No. 1-20

Please produce the Technical Specifications governing flow requirements for all safety-related portions of the service water system at PNPP.

Answer

The Staff has treated this interrogatory as a request for the production of documents. The document requested does not yet exist. Technical Specifications, as a general rule, are produced six months

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<sup>8/</sup> 10 C.F.R. § 2.740(b)(1).

<sup>9/</sup> Issue 7 reads as follows:

ISSUE #7: Applicant has not demonstrated that Asiatic clams, corbicula fluminea, will not foul its safety-related cooling systems and it has not demonstrated how it could adequately cope with these clams should they be present. Order of July 28, 1981, supra, at 84.

prior to the date for loading fuel. In this case, the fuel loading date is projected to be in mid-1983.

Interrogatory No. 1-21

How likely is the event at Arkansas Nuclear One (PNO-IV 80-28A) to occur at PNPP. Please give bases for answer.

Answer

The Asiatic clam, Corbicula fluminea, is present in the western basin of Lake Erie, and was first collected in December 1980. It was recorded from the lake proper in shallow water (depth of 3 feet, or approximately 1 meter) nearshore on a sand bottom. Corbicula also has been found in or near the effluent discharge canals (primarily shoreline types) of several once-through cooling power plants in the western basin and Maumee Bay, including Michigan and Ohio Waters.

On April 10, 1981, the NRC Office of Inspection and Enforcement issued a Bulletin to holders of operating licenses and construction permits that required them to indicate the known occurrence of Corbicula in the vicinity of nuclear power plants, to inspect plant equipment for fouling by Corbicula, and to describe of methods (in use or planned) for preventing and detecting fouling by Corbicula. The Applicant, Cleveland Electric Illuminating Company, responded to the Bulletin on June 18, 1981.

The presence of the clams in the western basin of Lake Erie renders their eventual presence near Perry as likely. Thermal discharges appear to be conducive to the clam's presence and survival in the lake. The net

flow of water in Lake Erie is from the west to the east, thus the meroplanktonic clam larvae eventually could establish the species in the central and eastern basin. Thermal discharges from power plants along the southshore of the lake might provide refuge for the clams. The discharge structure of the Perry plant, however, is an offshore, submerged, high-velocity diffuser that should provide no thermal habitat or refuge for the clams.

The Staff has not yet analyzed the methods for detecting and preventing potential flow blockage at Perry caused by corbicula. Therefore, it has not assessed the likelihood at Perry of the type of flow blockage found at Arkansas.

1. Clark, A.H., "Corbicula fluminea, in Lake Erie," The Nautilus, 95(2): 83-84, 1981.
2. U.S. Nuclear Regulatory Commission, "Final Environmental Statement related to the Operation of Enrico Fermi Atomic Power Plant, Unit No. 2," Washington, DC 1981.
3. Letter from D.A. Wells, Detroit Edison Company, to J.G. Keppler, USNRC, dated July 7, 1981, in response to NRC IE Bulletin No. 81-03.
4. U.S. Nuclear Regulatory Commission Office of Inspection and Enforcement, IE Bulletin 81-03, "Flow Blockage of Cooling Water to Safety System Components by Corbicula sp. (Asiatic Clam) and Mytilus sp. (Mussel)," April 10, 1981.
5. Letter from D.R. Davidson, The Cleveland Electric Illuminating Company, to J.G. Keppler, USNRC, dated June 18, 1981, in response to NRC IE Bulletin No. 81-03.

Interrogatory No. 1-22

- Please list all safety-related components that are potentially affected by presence of corbicula at PNPP.

Answer

The Emergency Service Water System for the Perry plan is the only safety-related component which takes water from Lake Erie. Thus, it is the only safety system that may potentially be affected directly by the presence of Corbicula. The Emergency Service Water System:

- (a) supplies water for:
  - (1) flooding the containment for post-accident recovery,
  - (2) providing emergency makeup to the fuel pool (Unit 1 system only), and
  - (3) providing emergency makeup to the emergency closed cooling system surge test.
- (b) services the following equipment:
  - (1) Loop A - RHR heat exchanger A
    - Heat exchanger for Diesel Generator A
    - Emergency Closed Cooling Heat Exchanger A
  - (2) Loop B - same as above but train B
  - (3) Loop C - HPCS Diesel Generator Heat Exchanger
    - HPCS Pump Room Cooler

References: PNP FSAR Sec. 9.2.1, 9.2.5 and 9.5.5.

Interrogatory Nos. 1-23 and 1-24

1-23. Please provide Toledo Edison's response to IEB 81-03 (regarding the Davis-Besse plant).

1-24. Please provide Detroit Edison's response to IEB 81-03 (regarding the Enrico Fermi plant, Unit No. 2).

Answer

See answer to Interrogatory 1-18.

Interrogatory No. 1-25

Is the Staff aware of any impact on safety-related components at PNPP by the decomposition of corbicula and the chemicals released thereby? If so, please itemize and explain those impacts. If not, has Staff considered the matter?

Answer

In view of the fact that no corbicula have been found in the vicinity of the Perry site, there has been no impact on safety-related components at Perry by the decomposition of corbicula and any resulting chemicals released. The Staff has not yet reviewed whether, even if corbicula should enter and decompose within the Emergency Service Water System, their decomposition would adversely affect the safe operation of this system.

Interrogatory No. 1-26

Answer Interrogatories 1-16 and 1-17 as they relate to Interrogatories 1-18 - 1-25.

Answer

In preparation of its responses, the Staff relied upon the materials noted at the end of each response. Resumes of the Staff who answered these interrogatories are attached.

I hereby certify that the information detailed above is true and accurate to the best of my personal knowledge.

Dean Houston

Dean Houston  
(Answers to Interrogatory Nos. 1-19,  
1-20, 1-21 and 1-25)

Clarence R. Hickey, Jr.

Clarence R. Hickey, Jr.  
(Answer to Interrogatory No. 1-21)

Nicholas E. Fioravante

Nicholas E. Fioravante  
(Answer to Interrogatory - 22)

Subscribed and sworn to before me  
this 2nd day of November 1981.

Mark J. Jolley  
Notary Public

My Commission Expires: July 1, 1982

James H. Thessin

James H. Thessin  
Counsel for NRC Staff  
(Objections to Interrogatories  
1-1 through 1-17 and 1-19)