

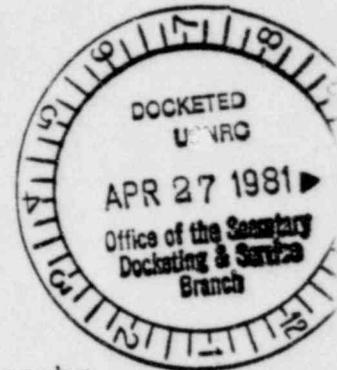
RELATED CORRESPONDENCE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	Docket No. 50-367
)	
NORTHERN INDIANA PUBLIC SERVICE COMPANY)	(Construction Permit Extension)
)	
(Bailly Generating Station, Nuclear-1))	April 23, 1981
)	

NORTHERN INDIANA PUBLIC SERVICE COMPANY'S
SECOND SET OF INTERROGATORIES TO
THE STATE OF ILLINOIS



Northern Indiana Public Service Company (NIPSCO) hereby serves its Second Set of Interrogatories to the State of Illinois (hereinafter "Illinois"), pursuant to 10 C.F.R. § 2.740b. Each interrogatory is to be answered fully in writing, under oath or affirmation, and include all pertinent information known to Illinois. Each answer should clearly indicate the interrogatory to which it is intended to be responsive.

Under NRC regulations (10 C.F.R. § 2.740(e)) parties are required to supplement responses to interrogatories under certain circumstances when new and/or different information becomes available.

"Illinois" shall include all agents, employees, attorneys, investigators, and all other persons directly or indirectly subject to its control in any way.

"Documents" means all written or recorded material of any kind or character known to Illinois or in its possession, custody, or



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control, including, without limitation, letters, correspondence, telegrams, memoranda, notes, records, minutes, contracts, agreements, records or notations of telephone or personal conversations or conferences, inter-office communications, microfilm, bulletins, circulars, pamphlets, studies, notices, summaries, reports, books, articles, treatises, teletype messages, invoices, tape recordings, and work-sheets.

When used with respect to a document, "identify" means, without limitation, to state its date, the type of document (e.g., letter, memorandum, telegram, chart, photograph, sound reproduction, etc.), the author and addressees, the present location and the custodian, and a description of its contents.

When used with respect to a person, "identify" means, without limitation, to state his or her name, address, occupation, and professional qualifications.

If Illinois cannot answer any portion of any of the Interrogatories in full, after exercising due diligence to do so, so state, and answer to the extent possible, specifying the inability to answer the remainder and stating when Illinois expects to be able to answer the unanswered portions.

NIPSCO'S INTERROGATORIES^{*/}

8. (a) For what period of time do you contend that the Bailly site will be dewatered during the extended period of construction?

^{*/} Numbering of the following Interrogatories continues from NIPSCO's First Set of Interrogatories to Illinois (April 10, 1981).

- (b) For what period of time do you contend that the Bailly site was dewatered between May 1, 1974 and September 1, 1979?
 - (c) What period of dewatering of the Bailly site was assessed in connection with issuance of Construction Permit No. CPPR-104?
 - (d) By what incremental period does the sum of your answers to Interrogatories 8(a) and 8(b) exceed your answer to Interrogatory 8(c)?
 - (e) Please provide the bases for your answers to Interrogatories 8(a), 8(b), and 8(c).
9. (a) What total volume of water do you contend will be removed from the Bailly site as a result of dewatering during the extended period of construction?
- (b) What total volume of water do you contend was removed from the Bailly site as a result of dewatering between May 1, 1974 and September 1, 1979?
- (c) What was the total volume of water removal from the Bailly site which was assessed in connection with issuance of Construction Permit No. CPPR-104?

- (d) By what incremental volume does the sum of your answers to Interrogatories 9(a) and 9(b) exceed your answer to Interrogatory 9(c)?
 - (e) Please provide the bases for your answers to Interrogatories 9(a), 9(b), and 9(c).
10. (a) The environmental assessment at the construction permit stage contemplated dewatering to what elevation?
- (b) For what period of time was dewatering to the elevation specified in your answer to Interrogatory 10(a) contemplated?
- (c) Please provide the bases for your answer to Interrogatories 10(a) and 10(b).
11. (a) If the Bailly site is continuously dewatered to the elevation specified in your answer to Interrogatory 10(a), how long after the onset of such dewatering will the groundwater levels in the Bailly site area reach equilibrium as a result of dewatering (discounting variations in the groundwater levels from factors other than dewatering)?
- (b) Please specify the depth of drawdown of the groundwater levels which you contend will

result from continuous dewatering to the elevation specified in your answer to Interrogatory 10(a) at distances of 700 feet, 1/2 mile, and 1 mile from the excavation.

- (c) Please specify the rate of dewatering (vol./min.) which you contend will occur as a result of continuous dewatering to the elevation specified in your answer to Interrogatory 10(a).
12. If the Bailly site is continuously dewatered to the elevation specified in your answer to Interrogatory 10(a), how long after the onset of such dewatering will the environmental impacts as a result of such dewatering reach an equilibrium (discounting variations in environmental impacts from factors other than dewatering)?
13. Do your answers to Interrogatories 11(a), 11(b), 11(c), and 12 bound the results which would be obtained if the Bailly site were dewatered to an elevation higher than that specified in your answer to Interrogatory 10(a)?
14. (a) Do you contend that an incremental environmental impact during the extended period of construction will result from
- (1) dewatering during the incremental period specified in your answer to Interrogatory 8(d)?

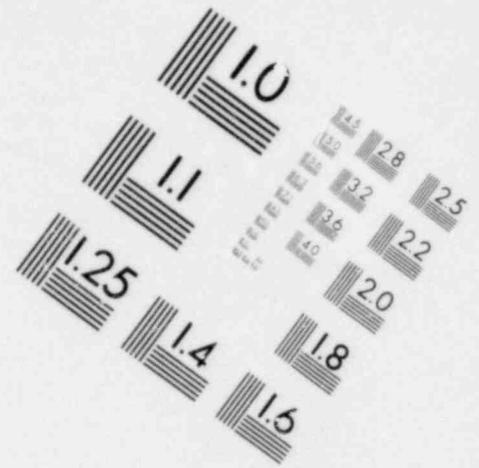
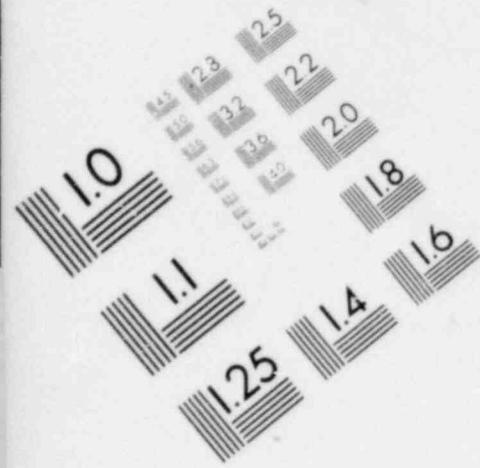
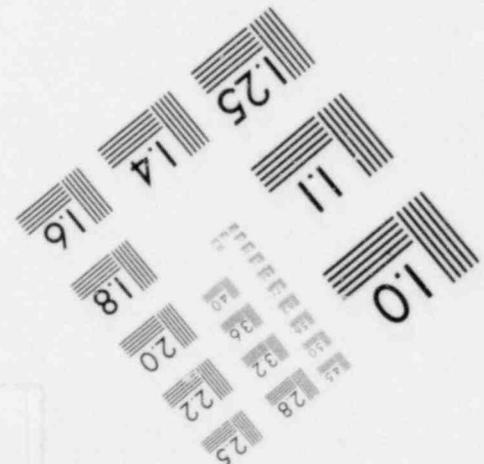
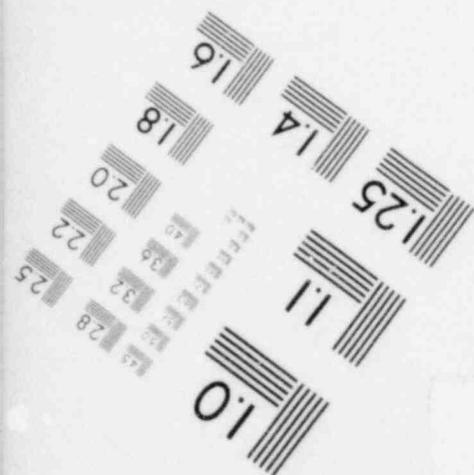
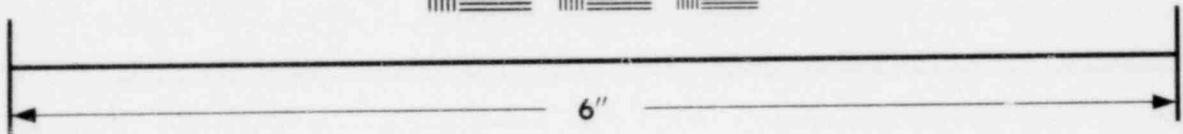
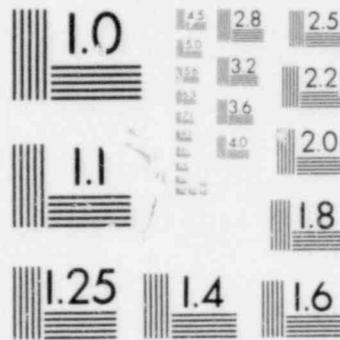


IMAGE EVALUATION
TEST TARGET (MT-3)



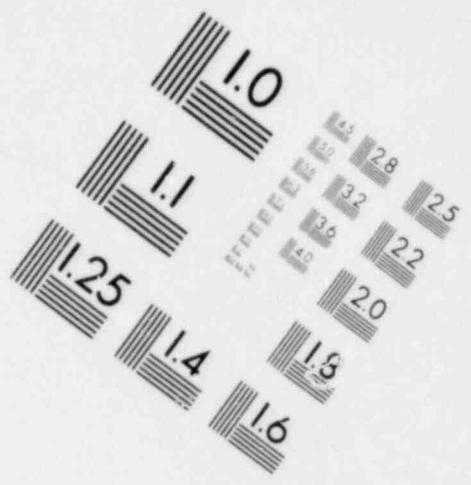
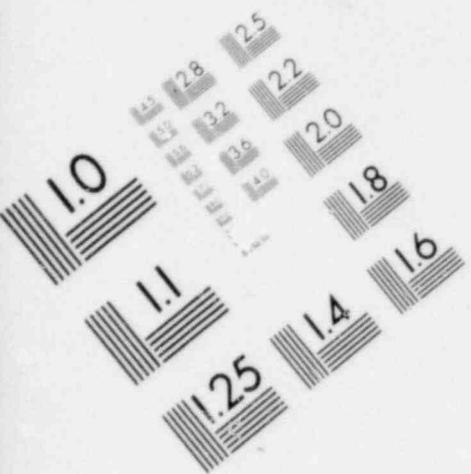
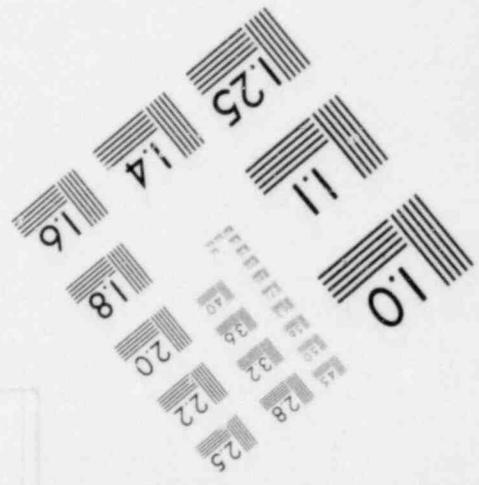
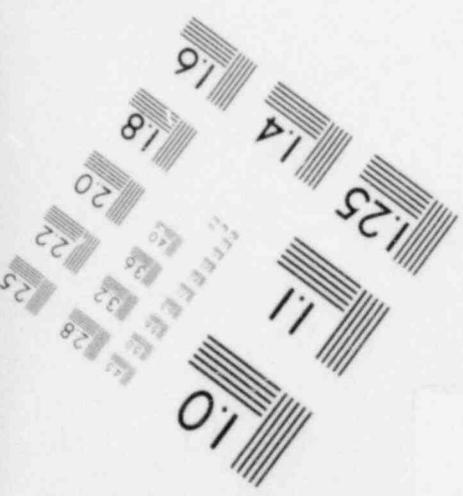
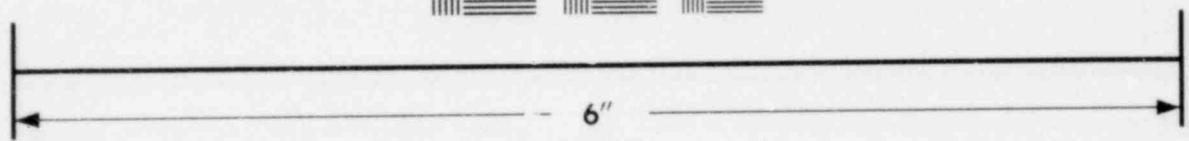
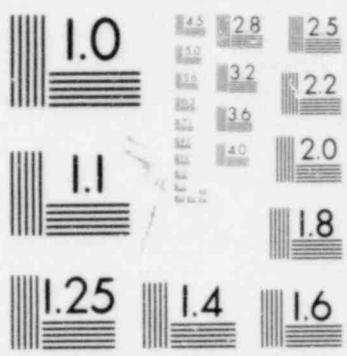


IMAGE EVALUATION
TEST TARGET (MT-3)



- (2) dewatering of the incremental volume of water specified in your answer to Interrogatory 9(d)?
 - (3) other causes? If yes, please specify the cause[s].
- (b) Please describe in detail the incremental environmental impact which will result from each of the causes specified in your answer to Interrogatory 14(a).
15. Are the incremental environmental impacts described in your answer to Interrogatory 14(b) irreversible in whole or part once dewatering during the extended period of construction is completed?
16. If your answer to Interrogatory 15 is yes, please specify which impacts are irreversible.
17. If the incremental environmental impacts described in your answer to Interrogatory 14(b) are reversible in whole or part once dewatering during the extended period of construction is completed:
- (a) please specify which impacts are reversible in whole or part;
 - (b) please specify the degree to which those impacts are reversible;
 - (c) please specify the time required to complete the reversal process for each impact.

18. (a) Are you contending that dewatering of Bailly during the extended period of construction will cause different groundwater levels at distances of 700 feet, 1/2 mile and 1 mile from the excavation than occurred as a result of dewatering prior to September 1, 1979?
- (b) Are you contending that dewatering of Bailly during the extended period of construction will cause different direction or rates of groundwater flow at distances of 700 feet, 1/2 mile and 1 mile from the excavation than occurred as a result of dewatering prior to September 1, 1979?
- (c) Are you contending that dewatering of Bailly during the extended period of construction will cause the groundwater at distances of 700 feet, 1/2 mile and 1 mile from the excavation to exhibit different chemical characteristics than occurred as a result of dewatering prior to September 1, 1979?
- (d) Are you contending that dewatering of Bailly during the extended period of construction will cause the groundwater to be different in any other respects than occurred as a result of dewatering prior to September 1, 1979?

- (e) If your answer to Interrogatory 18(a), 18(b), 18(c), or 18(d) is yes,
- i. please describe each difference, specifying, e.g., its magnitude, geographic extent, and duration;
 - ii. please describe the bases for contending that each difference will occur;
 - iii. please describe the incremental environmental impact which will be caused by each difference.
- (f) If your answers to Interrogatories 18(a), 18(b), 18(c), and 18(d) are no, please describe the respects in which the environmental impacts attributable to dewatering during the extended period of construction of Bailly will differ in kind or degree from those impacts, if any, which occurred as a result of dewatering prior to September 1, 1979.
19. (a) Are you contending that the extra period of dewatering of Bailly (as distinct from any changes in the parameters of the groundwater which will allegedly occur after September 1, 1979, as a result of dewatering during the extended period of construction) will cause an incremental environmental impact?

- (b) If yes,
 - i. please describe the impact, and
 - ii. please provide the bases for your contention.
20. You have contended that the "additional period of construction time [sought] is sufficient to cause some of the rare species, particularly the 'Bog indicator' [Indicator] plants to disappear from the dunes ecosystem"*/
- (a) Please identify the "rare species" mentioned above.
 - (b) Please specify the periods and rates of dewatering of the Bailly site which are required to cause the above plants "to disappear."
 - (c) Please provide the bases for your contention.
21. You have contended that the Indiana Dunes National Lakeshore would be adversely affected by "a deficiency of water, a surplus in water characteristics, an increase in the rate or change of direction of water flow, [or] dilution of the existing water"**/
- (a) Please specify the "water" to which you are referring.

*/ "Supplemental Petition of the State of Illinois," Contention 3.A., p. 8 (Feb. 26, 1980).

**/ "Supplemental Petition of the State of Illinois," Contention 3.A., p. 9 (Feb. 26, 1980).

- (b) Please specify the numerical values for the parameters of the water which you are using as a reference for determining whether a deficiency, surplus, or a change in the water occurs.
- (c) Please describe the adverse effects upon the Indiana Dunes National Lakeshore which will result from
- i. deficiencies of water;
 - ii. surpluses of water;
 - iii. changes in water characteristics;
 - iv. changes in water-flow direction;
 - v. changes in water-flow rates; and
 - vi. dilution.
- (d) Using the values specified in your answer to Interrogatory 21(b) as a reference, please specify the magnitude of change in the following parameters of the groundwater of the Indiana Dunes National Lakeshore which can occur before any adverse impact will result in the Indiana Dunes National Lakeshore:
- i. groundwater level;
 - ii. groundwater flow rate;
 - iii. groundwater flow direction;
 - iv. groundwater characteristics.

- (e) Using the values specified in your answer to Interrogatory 21(b) as a reference, please specify the magnitude of change in the following parameters of the groundwater in the Indiana Dunes National Lakeshore which you allege will occur as a result of dewatering during the extended period of construction.
- i. groundwater level;
 - ii. groundwater flow rate;
 - iii. groundwater flow direction;
 - iv. groundwater characteristics.
- (f) Please describe the environmental impact which you allege will result from the change in items specified in your answer to Interrogatory 21(e).
- (g) Please identify all documents upon which you relied and persons whom you consulted in answering Interrogatories 21(b) through 21(f).
- (h) Please provide calculations upon which your answers to Interrogatories 21(b) through 21(f) are based.
22. You have contended that "[d]ewatering can alter subsoil structure in such a way that it can change the reaction to seismic occurrences."^{*/}
- (a) What are the bases for this contention?

^{*/} "Supplemental Petition of the State of Illinois," Contention 3.E., p. 11 (Feb. 26, 1980).

- (b) (1) Are you contending that dewatering of the Bailly site prior to September 1, 1979, has altered the subsoil structure beneath Bailly? If yes,
- (2) Please describe in detail the manner in which the subsoil structure has been altered.
- (3) Please identify any empirical data which supports your contention.
- (4) Please specify all other bases for your contention.
- (c) (1) If your answer to Interrogatory 22(b)(1) is yes, are you contending that this alleged alteration in the subsoil structure beneath Bailly N-1 will affect the vibratory ground motion in the event of a seismic occurrence? If yes,
- (2) Please provide the bases for your contention.
- (3) Please specify the effects upon the response parameters (acceleration, velocity, displacement, period, duration) and in the soil stability characteristics for the Safe Shutdown Earthquake.
- (4) Please provide the calculations by which your answers to Interrogatory 22(c)(3) were derived.

- (5) Please specify the effects upon the response parameters (acceleration, velocity, displacement, period, duration) and in the soil stability characteristics for the Operating Basis Earthquake.
 - (6) Please provide the calculations from which your answers to Interrogatory 22(c)(5) were derived.
- (d)
- (1) Are you contending that the effects specified in your answer to Interrogatory 22(c)(3) will render Bailly N-1 unable to withstand the loads induced by the Safe Shutdown Earthquake? If yes,
 - (2) Please specify those structures, systems, or components of Bailly N-1 which, contrary to 10 C.F.R. Part 100 Appendix A, § VI(a)(1), will not remain functional in the event of a Safe Shutdown Earthquake.
 - (3) Please provide the calculations by which your answer to Interrogatory 22(d)(2) was derived.
- (e)
- (1) Are you contending that the effects specified in your answer to Interrogatory 22(c)(5) will render Bailly N-1 unable to withstand the loads induced by the Operating Basis Earthquake? If yes,

- (2) Please specify those structures, systems, or components of Bailly N-1 which, contrary to 10 C.F.R. Part 100 Appendix A, § VI(a)(2), will not remain functional in the event of an Operating Basis Earthquake.
 - (3) Please provide the calculations by which your answer to Interrogatory 22(e)(2) was derived.
- (f)
- (1) Are you contending that the alleged alteration in the subsoil structure beneath Bailly identified in your answer to Interrogatory 22(b) will affect the susceptibility of the Bailly site to surface faulting? If yes,
 - (2) Please provide the bases for your contention.
 - (3) Please specify the effect upon the magnitude of and probability for surface faulting at the Bailly site.
 - (4) Please provide the calculations by which your answer to Interrogatory 22(f)(3) was derived.
- (g)
- (1) Are you contending that the effects specified in your answer to Interrogatory 22(f)(3) will render Bailly N-1 unable to withstand surface faulting as required by 10 C.F.R. Part 100, Appendix A § VI(b)(3)? If yes,

- (2) Please specify those structures, systems, or components of Bailly N-1 which will be unable to withstand such surface faulting.
 - (3) Please provide the calculations by which your answer to Interrogatory 22(g)(2) was derived.
- (h)
- (1) Are you contending that the alleged alteration in the subsoil structure beneath Bailly identified in your answer to Interrogatory 22(b) will affect the magnitude of seismically-induced floods and waves at the Bailly site? If yes,
 - (2) Please provide the bases for your contention.
 - (3) Please specify the effects upon the magnitude of such floods and waves.
 - (4) Please provide the calculations from which your answer to Interrogatory 22(h)(3) was derived.
- (i)
- (1) Are you contending that the effects specified in your answer to Interrogatory 22(h)(3) will render Bailly N-1 unable to withstand, consistently with 10 C.F.R. Part 100, Appendix A, § VI(c), such floods and waves? If yes,

- (2) Please specify that part of the design of Bailly N-1 which is defective in response to such floods and waves.
 - (3) Please provide the calculations from which your answer to Interrogatory 22(i)(2) was derived.
- (j) (1) Are you contending that dewatering of the Bailly site during the extended period of dewatering will alter the subsoil structure beneath Bailly? If yes,
- (2) Please describe in detail the manner in which the subsoil structure will be altered.
 - (3) Please identify any empirical data which supports your contention.
 - (4) Please specify all other bases for your contention.
- (k) (1) If your answer to Interrogatory 22(j)(1) is yes, are you contending that the alleged alteration in the subsoil structure beneath Bailly N-1 will affect the vibratory ground motion in the event of a seismic occurrence? If yes,
- (2) Please provide the bases for your contention.

- (3) Please specify the effects upon the response parameters (acceleration, velocity, displacement, period, duration) and in the soil stability characteristics for the Safe Shutdown Earthquake.
 - (4) Please provide the calculations by which your answers to Interrogatory 22(k)(3) were derived.
 - (5) Please specify the effects upon the response parameters (acceleration, velocity, displacement, period, duration) and in the soil stability characteristics for the Operating Basis Earthquake.
 - (6) Please provide the calculations from which your answers to Interrogatory 22(k)(5) were derived.
- (1) (1) Are you contending that the effects specified in your answer to Interrogatory 22(k)(3) will render Baily N-1 unable to withstand the loads induced by the Safe Shutdown Earthquake? If yes,
- (2) Please specify those structures, systems, or components of Baily N-1 which, contrary to 10 C.F.R. Part 100, Appendix A, § VI(a)(1)

will not remain functional in the event of a Safe Shutdown Earthquake.

(3) Please provide the calculations by which your answer to Interrogatory 22 (1) (2) was derived.

- (m) (1) Are you contending that the effects specified in your answer to Interrogatory 22(k) (5) will render Bailly N-1 unable to withstand the loads induced by the Operating Basis Earthquake? If yes,
- (2) Please specify those structures, systems, or components of Bailly N-1 which, contrary to 10 C.F.R. Part 100, Appendix A, § VI(a) (2), will not remain functional in the event of an Operating Basis Earthquake.
- (3) Please provide the calculations by which your answer to Interrogatory 22(m) (2) was derived.
- (n) (1) Are you contending that the alleged alteration in the subsoil structure beneath Bailly identified in your answer to Interrogatory 22(j) will affect the susceptibility of the Bailly site to surface faulting? If yes,
- (2) Please provide the bases for your contention.

- (3) Please specify the effects upon the magnitude of and probability for surface faulting at the Bailly site.
 - (4) Please provide the calculations by which your answer to Interrogatory 22(n)(3) was derived.
- (o) (1) Are you contending that the effect specified in your answer to Interrogatory 22(n)(3) will render Bailly N-1 unable to withstand surface faulting as required by 10 C.F.R. Part 100, Appendix A, § VI(b)(3)? If yes,
- (2) Please specify those structures, systems, or components of Bailly N-1 which will be unable to withstand such surface faulting.
 - (3) Please provide the calculations by which your answer to Interrogatory 22(o)(2) was derived.
- (p) (1) Are you contending that the alleged alteration in the subsoil structure beneath Bailly identified in your answer to Interrogatory 22(j) will affect the magnitude of seismically-induced floods and waves at the Bailly site? If yes,

- (2) Please provide the bases for your contention.
 - (3) Please specify the effects upon the magnitude of such floods and waves.
 - (4) Please provide the calculations by which your answer to Interrogatory 22(p)(3) was derived.
- (q) (1) Are you contending that the effects specified in your answer to Interrogatory 22(p)(3) will render Bailly N-1 unable to withstand, consistently with 10 C.F.R. Part 100, Appendix A, § VI(c), such floods and waves? If yes,
- (2) Please specify that part of the design of Bailly N-1 which is defective in response to such floods and waves.
 - (3) Please provide the calculations from which your answer to Interrogatory 22(q)(2) was derived.

23. The licensing board in the construction permit proceeding found that NIPSCO "will not engage in any dewatering activities during the operation of" Bailly N-1.*

- (a) Are you contending that the alleged alteration of subsoil structure at the Bailly site as a result of dewatering will persist after dewatering has ceased prior to operation of Bailly?

*/ Northern Indiana Public Service Co. (Bailly Generating Station, Nuclear-1), LBP-74-19, 7 AEC 557, 589 (1974).

- (b) If your answer to Interrogatory 23(a) is no, please specify the manner in which dewatering of the Bailly site during the extended period of construction will result in a violation of 10 C.F.R. Part 100.
 - (c) If your answer to Interrogatory 23(a) is yes,
 - (1) Please provide the bases for your contention.
 - (2) Please specify whether cessation of dewatering will affect the subsoil structure beneath Bailly. If yes,
 - i. Please describe the impact of cessation of dewatering upon the subsoil structure.
 - ii. Please state whether your answers to Interrogatory 22 accounted for the impact of cessation of dewatering upon the subsoil structure.
 - iii. Please provide answers to Interrogatory 22 which account for the impact of cessation of dewatering upon the subsoil structure if you have not previously done so.
24. You have contended that "the load bearing capacity of the plant and its foundation will be affected as will the effects of a core melt in a situation of altered

water tables."^{*}/ The licensing board in the construction permit proceeding found that NIPSCO "will not engage in any dewatering activities during the operation of" Bailly.^{**}/

- (a) Are you contending that the water table at the Bailly site will be affected by dewatering after dewatering has ceased prior to operation of Bailly?
- (b) If your answer to Interrogatory 24(a) is yes,
 - (1) Please specify the magnitude, range, and duration of the effect.
 - (2) Please provide the calculations by which your answer to Interrogatory 24(b)(1) was derived.
- (c) If your answer to Interrogatory 24(a) is no, please identify any manner in which dewatering of the Bailly site during the extended period of construction will allegedly result in a violation of the Commission's regulations.
- (d) Please describe how the load-bearing capacity and the foundations of Bailly N-1 would be affected by "altered water tables."

^{*}/

"Supplemental Petition of the State of Illinois," Contention 3.E., p. 11 (Feb. 26, 1980).

^{**}/

Northern Indiana Public Service Co. (Bailly Generating Station, Nuclear-1), LBP-74-19, 7 AEC 557, 589 (1974).

- (e) (1) Are you contending that the load-bearing capacity and foundations of Bailly are deficient under the Commission's regulations in a "situation of altered water tables?"
If yes,
 - (2) Please provide the bases for your contention.
 - (3) Please identify those systems, structures, or components of Bailly N-1 which are deficient.
 - (4) Please provide the calculations upon which your answer to Interrogatory 24(e)(3) was derived.
 - (f) Please describe how the effects of a core melt will be affected by "altered water tables."
 - (g) (1) Are you contending that there would be significant differences between the environmental impacts of a core melt at Bailly in the presence of "altered water tables" and environmental impacts of a core melt at Bailly in the absence of "altered water tables"?
 - (2) If yes, please provide the bases for your contention.
25. (a) Please identify the tasks associated with construction of Bailly which you contend were performed in an incompetent manner by NIPSCO, its contractors, or its subcontractors, and which thereby resulted in a delay of construction of Bailly.

- (b) For each task identified in your answer to Interrogatory 25(a),
- (1) Specify the period of delay associated with the task.
 - (2) Identify the companies which are responsible for the delay associated with the task.
 - (3) Identify the individuals within the companies identified in your answer to Interrogatory 25(b)(2) who are responsible for delay associated with the task.
 - (4) Specify which actions associated with the tasks were performed in an incompetent manner.
 - (5) Specify those actions which a competent person would have performed but which were not performed in connection with the task.
 - (6) Specify those actions which a competent person would not have performed but which were performed in connection with the task.
- (c) For each individual identified in your answer to Interrogatory 25(b)(3),
- (1) Specify the information which he did not know but should have known in order to perform the task competently.
 - (2) Specify the training which he did not receive but should have received in order to perform the task competently.

- (3) Specify the ability which he did not possess but should have possessed in order to perform the task competently.
 - (d) For each task identified in your answer to Interrogatory 25(a),
 - (1) Specify whether or not the delay is attributable to the need to repeat actions which were initially performed in an incompetent manner.
 - (2) Specify whether or not the delay is attributable to the failure to perform actions as quickly as a competent person would have performed the actions.
26. With regard to each Illinois contention admitted in this proceeding:
 - (a) Identify each person whom Illinois expects to call as an expert witness in respect to each contention.
 - (b) State the subject matter on which the expert witness is expected to testify.
 - (c) State the substance of the facts and opinions to which the expert witness is expected to testify and summarize the ground for each opinion.
 - (d) Identify all documents relied upon or examined by the expert witness in answering subparagraph 26(c) above.

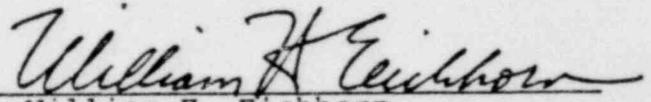
- (e) Identify all documents not identified in answering subparagraph 26(d) above which the expert witness expects to put into evidence or to rely upon in support of his or her testimony in this proceeding.
27. With respect to each Illinois contention admitted in this proceeding:
- (a) Identify any person having knowledge of the facts relating to each Illinois contention (other than the expert witnesses identified in response to Interrogatory 26(a)). This question is limited to those persons whom Illinois expects to call as witnesses other than expert witnesses in this proceeding, or with whom Illinois has consulted or expects to consult in connection with this proceeding.
 - (b) For each person who has been consulted, state when he or she was consulted and by which representative of Illinois and summarize the substance of any facts or opinions communicated by such person to the representative of Illinois relating to the subject matter of each Illinois contention.
 - (c) If Illinois expects to call any person identified in response to Interrogatory 27(a) above to testify, state the substance of his or her testimony, summarize the basis for any opinions contained in such testimony, and identify all documents which

will be introduced as evidence or relied upon
by such person in support of such testimony.

28. Please identify all documents which Illinois expects to introduce in evidence or use for impeachment or other cross-examination purposes in this proceeding, other than those identified in the responses to the previous Interrogatories.
29. Please identify the documents upon which Illinois relies which relate to each Illinois contention admitted in this proceeding other than those documents identified in responses to previous Interrogatories.

Respectfully submitted,

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