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## UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

In the Matter of PORTLAND GENERAL ELECTRIC COMPANY, et al. (Trojan Nuclear Plant)

Docket No. 50-344

(Control Building)

## ORDER ESTABLISHING REVISED SCHEDULE (July 26, 1979)

The following schedule is hereby adopted by the Licensing Board to govern the course of Phase II of this proceeding:

September 7, 1979 - SER issued by Staff.

September 21, 1979

Written testimony filed.

Last date for filing discovery requests on Staff's SER.

October 10, 1979

Evidentiary hearing commences.

It is so ordered.

FOR THE ATOMIC SAFETY AND LICENSING EXOARD

Dated at Bethesda, Maryland

this 26th day of July 1979.

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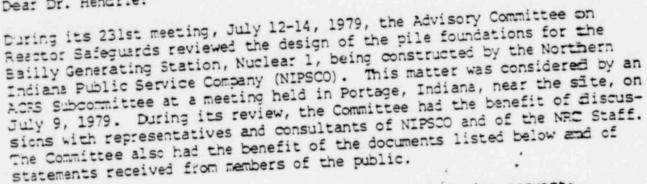
## UNITED STATES NUCLEAR REGULATORY COMMISSION ADVISORY COMMITTEE ON REACTOR SAFEGUARDS WASHINGTON, D. C. 20555

July 16, 1979

Honorable Joseph M. Hendrie Chairman U. S. Nuclear Regulatory Commission Washington, № 20555

SUBJECT: BAILLY GENERATING STATION, NUCLEAR 1

Dear Dr. Hendrie:



In your letter dated June 8, 1979, you made the following request:

"The Commission requests the Committee to identify and address the significance (if any) of the engineering and safety issues arising from use of the shorter pilings as opposed to the longer pilings. In particular: (1) is the use of shorter pilings a significant design change from the standpoint of engineering, and would it require significant alteration of other aspects of the design of the facility; (2) what differences, if any, would there be in the safety of the facility depending on whether onger or shorter pilings are used?"

The translates heard reports on the experience to date relating to the driving of piles at the site, including the exploratory driving of the longer piles to the till or rock, the extensive exploratory driving of the shorter piles into the interpedded sand and clay layer, and the various borings and pile load tests that have been made over the past few years. The Committee also heard reports on analyses retiing to the factors of safety to be provided against various loading combinations and to the expected settlements of the structures supported on piles.

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The Committee has identified only two potential safety issues arising from the use of the shorter piles as opposed to the longer piles, and has concluded that neither of these will have any effect on the scafety of the facility if the procedures proposed by NIPSCO or required the NRC Staff are followed.

The first of these results from the fact that some of the exploratory longer piles were installed with the aid of high pressure water jeets which resulted in disturbance of the soil (chiefly the sand) in the interrbedded layer. This disturbance is limited to only a small portion of the fournization area at four locations. Unless remedial measures are taken, the shorter piles driven in these areas might be deficient in load-bearing capacity.

NIPSCO has proposed the use of "compaction piles" in the arreas of disturbed soil to densify the disturbed soil so that it will be able to provide support equivalent to that in the other areas. The NRC Straff believes that this procedure is acceptable, and the Committee agrees, subject to compliance with the following procedures:

- Exploration by borings or by penetration devices too determine the vertical and horizontal extent of thee disturbed areas.
- Compaction of the disturbed material by driving compaction piles.
- Verification by borings or by penetration devices that all of the disturbed soil has been compacted.
- 4. Performing a compression load test on at least one production pile in each disturbed area to verify itts load-carrying capacity and load-deformation characteristics.

MIPSCO has agreed to these procedures.

The second issue resulting from the use of the shorter pikes is the potential settlement of the supported structures. The settlement affiter construction would have been expected to be essentially zero for the loonger pile foundation. For the shorter piles, the settlement has been estimated by NIPSCO to be on the order of two inches. Settlement of this magnitude is not unusual for a nuclear plant and would have no significance to safety. The Committee has recommended to the 1RC Staff, however, that the method of calculating the settlement be reviewed to assure that it has been done conservatively.

In addition, NIPSCO has proposed a program to measure settlement at numerous locations on the structures during operation of the plant, and the NRC Staff has stated that such measurements will be required by the Technical Specifications and that suitably conservative limits on permissible settlements will be established. In view of these commitments, the Committee believes that potential settlements, even if greater than those now predicted, would not represent a hazard to the public.

The NRC Staff is continuing its review of the foundation design, and the Committee believes that the remaining foundation-related issues, not related to the use of shorter piles, can be resolved by the Staff.

In direct response to the questions raised by your request, the ACRS believes that:

- The use of shorter piling is not a significant design change from the standpoint of engineering.
- The use of shorter piling would not require significant alteration of other aspects of the design of the facility.
- There will be no difference in the safety of the facility depending on whether longer or shorter pilings are used if the matters referred to above are treated as now proposed.

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Max W. Carbon Chairman

### References:

- 1. Preliminary Safety Analysis Report on Bailly Generating Station, Nuclear 1.
- Design Analysis and Installation of Driven H-Piles Foundation, Report SL-3629, submitted on March 8, 1978.
- 3. NIPSCO's Responses to NRC Staff Questions, submitted on July 14, 1978.
- 4. Indicator Pile Program, submitted by NIPSCO to NRC on September 26, 1978.
- Supplementary Information on Driven H-Pile Foundation, NIPSCO, December 4, 1978.
- 6. Letter, D. B. Vassallo, NRC, to H. P. Lyle, NIPSCO, June 28, 1979.
- 7. Sailly Generating Station, Nuclear 1 Construction Permit, May 1, 1974.
- 9. Request by the Porter County Chapter of the Izaak Walton League of America, Inc., February 27, 1979.
- 9. Letter, E. M. Shorb, MIPSCO, to D. B. Vassallo, MRC, June 29, 1979.