



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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4-7-79

JUN 28 1979

Docket No.: 50-367

Mr. H. P. Lyle, Vice President
Electric Production & Engineering
Northern Indiana Public Service Company
5265 Hohman Avenue
Hammond, Indiana 46325

Dear Mr. Lyle:

SUBJECT: REVIEW OF THE SHORTER PILE PROPOSAL FOR THE BAILLY SAFETY-RELATED STRUCTURES

In reviewing your proposal for implementing the design criteria for the Bailly foundation piles, submitted on March 8, 1978, and subsequently supplemented in September and December of 1978, we find that your March 1978 proposal for shorter piles has considerable merit but that you have not submitted sufficient information to permit us to conclude our review. To date, we have identified a need for information related to three fundamental concerns: (1) an acceptable proposal for correcting the "soft spots" in the foundation (i.e., those portions of the site degraded by the jetting of test piles); (2) the piles chosen for load testing should be representative of the production piles; and (3) a sheeting and bracing plan to minimize pile disturbance adjacent to the deeper excavation planned for the reactor building.

With respect to your proposed fix of the "soft spots," gravity grouting appears to be unacceptable. We suggest, instead, that redensification may be accomplished by use of compaction piles driven to the depth of native soil disturbed by your previous jetting procedures. Additionally, the compaction piles might be installed so that: (1) the production piles in the region of the soft spots attain a high level of driving resistance well before reaching either the underlying glacial till or bedrock; (2) the compaction piles do not interfere in any way with the driving of the production piles; and (3) the compaction pile, are cut off well below the bottom of the foundation mat.

With respect to the piles which have been load tested, we note that only those piles you designate as "Type A" (i.e., those piles which did not break through a "bearing" sand layer) were load tested. Accordingly, we believe that your pile load tests establish the upper bounds of the load-bearing capacity of piles at this site rather than typical capacities of production piles. We suggest that pile load tests should be performed on "Type B" piles (i.e., those piles whose driving records indicate a potentially low load-bearing capability) and thereby establish a conservative bound for pile load capacities.

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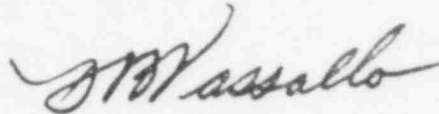
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JUN 28 1979

Finally, we note that none of your submissions to date addresses the adverse consequences to the piles which will be adjacent to the reactor building when the soil under this particular building is excavated an additional ten feet after first having driven the adjacent piles. We suggest that a sheeting and bracing plan which minimizes the effect of disturbances on the adjacent piles, should be developed and submitted.

For your guidance on these three issues, we suggest that you give careful consideration to our thoughts expressed above in implementing the basic requirement that the Bailey safety-related piles be designed, tested and installed in accordance with high construction industry standards. In particular, all aspects of your three reports on the shorter pile proposal should be reviewed and modified to ensure that they are well documented and thoroughly justified. If you have any questions on these matters, please contact us.

Sincerely,



D. B. Vassallo, Acting Director
Division of Project Management
Office of Nuclear Reactor Regulation

cc: See next page

Northern Indiana Public Service Company

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