

FEB 28 1973

William P. Gammill, Chief, Site Analysis Branch, L

INDIAN POINT 3, DOCKET NO. 50-286 - FOUNDATION ENGINEERING CONCERNS

Based on the data presented in the PSAR, FSAR, and in response to questions 2.6.1 through 2.6.10, it is not possible to evaluate the foundation engineering aspects of the subject site. The following reasons for uncertainty are cited:

1. The applicant's geological consultant, Sidney Paige, in his report suggested that the fractured condition of the rock will call for a grouting program. In the response to Q2.6.10, the applicant stated that techniques to improve foundation conditions such as grouting, dental work, or rock bolting were not required, however, no basis for this conclusion was provided.
2. Boring logs indicate relatively poor recoveries of rock core. This could be indicative of either:
 - a. poor drilling techniques,
 - b. highly fractured or close jointed rock,
 - c. the presence of cavities that are void or are filled with uncorable material,
 - d. the presence of zones of soft, friable, uncorable material, or
 - e. the combination of any of the above.
3. No seismic refraction surveys or other geophysical studies were conducted at the site by which, along with boring and laboratory data, foundation conditions are defined and dynamic rock properties are determined.
4. A range of compressive strength values were given without substantiation.

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FEB 28 1973

- 5. A comparison of the boring logs and elevations of foundations for Category 1 structures indicate that the surface of bedrock occurs well below portions at these structures (example - SE part of the containment).

In order to clear up these uncertainties so that we can independently evaluate the adequacy of Category 1 foundations the following items are needed:

- 1. The basis for the applicant's conclusion that foundation treatment such as grouting, dental work and/or overexcavation were not required;
- 2. Geological maps (logs) or good quality photographs of the walls and floors of excavations for Category 1 structures;
- 3. Representative compressive strength laboratory test records (include an appropriate representation of tests performed on poor quality rock as well as those run on solid rock samples). Identify the samples tested as to boring number and depth;
- 4. Performance records of the foundations for Units 1, 2, and 3 such as: settlement records, descriptions and evaluations of cracks in the foundations or walls that could be attributed to differential settlement (or uplift), and any repairs that have been accomplished or proposed;
- 5. A discussion of the reasons for the poor core recoveries shown on the boring logs with appropriate substantiation.

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