



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON, D.C. 20242

November 11, 1966

Mr. Edson G. Case, Deputy Director
Division of Reactor Licensing
U. S. Atomic Energy Commission
4915 St. Elmo Avenue
Bethesda, Maryland 20545

Dear Mr. Case:

Transmitted herewith are draft statements on the geology of the Quad-Cities Station site and the Palisades Plant site in Illinois and Michigan.

If you have any comments or need additional information on which to base your evaluations of site suitability, please let us know.

Sincerely yours,

Dwight M. Lemmon

Dwight M. Lemmon
Assistant Chief Geologist
for Engineering Geology

Enclosures

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Quad-Cities Station
Rock Island County, Illinois

Geology

Based on a review of the applicant's report (A.E.C. Docket 50-254) and available literature, it appears that their regional geologic analysis is logically derived and presents an adequate appraisal of most of those aspects of the geology which would be pertinent to an engineering evaluation of the site.

Although it may be anticipated that earthquakes within the general region will continue to occur with approximately the same frequency and with approximately the same intensity with which they have been recorded during the past 100 years, there are no identifiable faults or other geologic structures which could be expected to localize earthquakes in the immediate vicinity of the site.

Projection of available subsurface data from Logs of Borings (fig. 16) and the Bedrock Surface Contour Map (fig. 17) to the centerline of the reactor building as shown on the Plot Plan (fig. 23), suggests that the bedrock surface there lies at an elevation of approximately 475 feet. The footing elevation of the reactor building, as shown on Figure 29, is approximately 540 feet. Presumably either relocation of the reactor building or redesign of the footings will be required to ensure placement of the footings on sound bedrock.

Henry W. Coulter
November 7, 1966



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Palisades Plant
Van Buren County, Michigan

Geology

Based on a review of the applicant's report (A.E.C. Docket 50-255) and available literature, it appears that their regional geologic analysis is logically derived and presents an adequate appraisal of most of those aspects of the geology which would be pertinent to an engineering evaluation of the site.

Although it may be anticipated that earthquakes within the general region will continue to occur with approximately the same frequency and with approximately the same intensity with which they have been recorded during the past 100 years, there are no identifiable faults or other geologic structures which could be expected to localize earthquakes in the immediate vicinity of the site. It would appear that the general level of seismic activity at the site would be comparable to that characteristic of other localities in the Circum-Canadian Shield belt. The fact that the footings of the plant are to rest on saturated unconsolidated deposits rather than on bedrock suggests the possibility of some degree of seismic amplification.

As pointed out in Appendix D--Foundation Investigations, additional borings immediately beneath the proposed location of the structure will be required in order to delineate the type and distribution of materials there. This information will be required as a basis for computing bearing pressures and settlement parameters to be used in final foundation design.

Henry W. Coulter
November 7, 1966