

June 18, 1974

Note to L. Manning Muntzing

This responds to your note to Howard Shapar questioning whether the attached poses an ex parte communications problem.

The Indian Point 3 proceeding is currently pending before an ASLB. It is a contested proceeding on environmental matters only. The matter of the Ramapo fault zone is not a contested issue in that proceeding. Tony Roisman, who is not representing a party in the Indian Point 3 hearing, has, as you know, requested the staff to look into the safety significance of that fault zone with respect to Indian Point 1, 2, and 3. This request, however, does not bring into play the ex parte provisions of 10 CFR § 2.780. Thus at this juncture in the Indian Point 3 hearing the existence and implications of the Ramapo fault zone is not a substantive matter at issue.

The ex parte communications prohibition in 10 CFR § 2.780 provides, among other things, that no member of the Commission's immediate staff may entertain off the record any explanation or analysis, whether written or oral, regarding any substantive matter at issue in a proceeding on the record then pending before the AEC for the issuance of a construction permit.

Since the matter of the Ramapo fault zone is not a substantive matter at issue in the Indian Point 3 proceeding, the transmission of the attached would not be a violation of 10 CFR § 2.780 in a very technical sense.

However, since the hearing has not yet begun and will not begin until late this summer, the issue of the Ramapo fault zone could still be raised by the intervenor in Indian Point 3. This point should be taken into account in determining the advisability of transmitting the attached.


Thomas F. Engelhardt

cc: H. K. Shapar

8111140532 740429
PDR ADOCK 05000286
P PDR

Will not be sent per LMM 7/11/74 50-247

Roger Mattson, Technical Assistant to Commissioner Doub

NEW YORK STATE ATOMIC ENERGY COUNCIL CRITICISMS

The New York State Atomic Energy Council (NYSAEC) criticisms described in item #6 of the March 27, 1974, memorandum for the record, titled "Meeting with Representatives of the Association of American State Geologists, 11:00 A.M., March 27, 1974, 1717 H Street" are directed at an apparent lack of consideration given the Ramapo fault zone of New York and New Jersey in the Final Safety Analysis Report for Indian Point Nuclear Generating Station, Unit 3. This fault zone passes within 3,000 feet of the Indian Point site.

Unit 3 is the third nuclear unit constructed at the Indian Point site near Peekskill, N.Y. The applications for licensing the three units were tendered by Consolidated Edison as follows: Unit 1 - March 1955; Unit 2 - December 1965 (CP)* and October 1968 (OL); and Unit 3 - April 1967 (CP) and August 1969 (OL). The geological and seismological reviews for the Unit 2 CP and OL as well as the Unit 3 CP were conducted by our advisors, the United States Geological Survey (USGS) and the United States Coast and Geodetic Survey (USC&GS). Their reviews concluded that:

1. The faults in the area are old and inactive; and
2. A Safe Shutdown Earthquake (SSE) of 0.15g is an adequate representation of the earthquake hazard at the site.

The staff review of the Unit 3 OL assumed that the earlier conclusions remained valid and that the reviews which led to those conclusions were based on information independent of that which the applicant provided. Therefore, it was not considered necessary to require the applicant to correct and complete their submittals at that time.

The staff met with representatives of the NYSAEC and the New York State Geological Survey (NYSGS) on April 22. At that meeting, they expressed concern about the adequacy of the seismic design of the Indian Point plants with respect to potential earthquakes on the Ramapo fault.

The fault is a well known, major structural feature of the region that is postulated on geologic evidence to have been recurrently active throughout the recognizable tectonic development of the area during

*CP and OL indicate Construction Permit and Operating License respectively.

the last 700 to 800 million years. Two published reports propose that historical earthquake activity (both early macroquakes and recent instrumentally recorded microquakes) may be associated with this fault zone. Another report discusses a swarm of micro-earthquakes which were centered about twelve miles north of the Ramapo fault and were found to result in a focal mechanism consistent with a northeast trending fault parallel to the trend of the Ramapo fault. One recent study has shown many offsets of glacial striations up to one inch in magnitude along the Hudson River. None of these displacements are associated with the Ramapo fault.

This information was cited by the NYSGS staff as a basis for asserting that the Ramapo fault is a "capable" fault within the definition of 10 CFR Part 100 Appendix A and could cause an earthquake to be localized in the vicinity of the Indian Point site resulting in an acceleration higher than the SSE g values for which the Indian Point units are designed. On the latter point, they cited certain recordings of very high accelerations in the source areas of several recent earthquakes in California.

The staff reviewed the information which the State of New York brought to our attention. With respect to the central issue, we did not consider the studies cited above to show that the Ramapo fault is "capable." We viewed the significance of the offsets of glacial striations as being unclear. They could be associated with tectonic stresses, but can be equally well explained by glacial unloading, thermal or chemical processes or frost heaving of the rocks. Moreover, we did not view the quakes in question as being sufficiently well located to show that the Ramapo fault is "capable." The staff, however, believed that the question raised by the publications cited by New York State could be resolved conclusively with additional high-quality seismic data and geologic mapping in the region.

We and our USGS advisor met with the applicant on April 26. We described the NYSGS concerns and our view that the initial conclusion concerning activity of the Ramapo fault could be confirmed by additional seismic and geologic investigations. The licensee agreed and stated that their consultant, the NYSGS, and the staff should meet to discuss such an investigatory program in detail.

The proposed meeting took place at Palisades, NY, on May 2. Our meeting notes are attached. In consequence of that meeting, the applicant plans to implement both a micro-earthquake network and

Roger Mattson

- 3 -

a program of geologic mapping in order to confirm that the fault is not "capable." The network will be operated for about a year, after which the staff will review the information developed by the applicant's investigations.

Members of the staff visited the fault area, on May 21, and found that there is indeed a lack of definitive geologic mapping. We also found that beginning in 1962 several pipe breaks occurred near the fault, in the vicinity of Mahwah, N.J., coincident with an increase in the rate of subsidence along the Atlantic seacoast. The sense of the subsidence is consistent with movement on the Ramapo fault. However, the subsiding area is of much greater extent than the Ramapo fault. Thus, the subsidence cannot be reasonably associated with that fault. The meaning of the pipe breaks is unclear. Although they could be indicative of movement in the fault zone, the lack of significant concurrent earthquake activity suggests that an alternate explanation such as landsliding is more likely.

There appears to be no clear evidence of activity on the Ramapo fault. Each single observation, presented as evidence, is both tenuous and equally well or better explained by other causes. The prevailing view among geologists is that there are no active surface faults east of the Appalachian Mountains. Accordingly, we believe that inactivity of the fault can be conclusively demonstrated and the question raised by New York State resolved with additional high quality seismic and geologic data in the region.

DISTRIBUTION:

L-Docket
File
L-Rdg
L-SAB
L-AD/SS

L. Manning Muntzing
Director of Regulation

Enclosure:
Meeting Notes

bcc: LMMuntzing
EVGössick
JFO'Leary
JMHendrie
HRDenton
WPGammill
DRBudge
JCStepp
SCoplan
Gertter DR-7102
MGroff