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Al Kaplan

VICE PRESIDENT
NUCLEAR GROUP

January 18, 1988
PY-CEI/NRR-0769 L

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Perry Nuclear Power Plant
Docket Nos. 50-440; 50-441
Fourth Quarterly
Seismic Monitoring Report

Gentlemen:

Enclosed for your information is the Fourth Quarterly Seismic Monitoring Report for the CEI operated Micro-net, which is monitoring an area around two waste injection wells located about 3 miles south of the PNPP site. This report provides data and event analysis for the time period between July 16 and October 15, 1987. The delay in submittal of this report (approximately one month beyond the normal submittal date) has been discussed with the Staff reviewer.

As noted in our Third Quarterly Report, the digital network experienced some start-up difficulties early on associated with data transmission. All of those technical problems have been corrected. As planned, the "backup" portable field equipment which CEI had operated since February 1986 was removed. Monitoring of the corridor (the area between the 1986 epicenter and the plant site including the injection well area) is being solely conducted via the CEI digital network. CEI personnel are operating the equipment and are maintaining weekly contact with our seismological consultant, Weston Geophysical. Recorded events are initially reviewed by a CEI specialist and then forwarded to Weston for confirming analysis. Detailed analysis and the contents of the report are prepared by Weston.

For this quarter there was very little seismic activity recorded in the vicinity of the injection wells. Only three micro-seismic events were detected as shown on Figure 2 of the report, bringing the total to 19 since recording started in this area. These events were extremely small being under $M_c=0.0$.

No definite conclusion has been reached on the origin or causal mechanism for these micro events. To aid in that determination, CEI has been collecting (with excellent co-operation from the well operator CALHIO chemical) well operating data as shown in the Report Appendix. A tabulation is provided of

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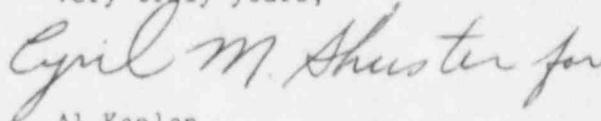
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daily operating volumes since March 1986, plotted with seismicity occurrences. No direct correlation between seismic events occurrence and well operation is apparent. Other influencing factors have not been eliminated. The heavy concentration of oil/gas wells in the area cannot be ignored and seasonal variations must be examined.

Beyond the reporting window of this report three other small events, outside the network, were recorded and will be discussed in the next report. Two in the vicinity of the July 13 Asthabula event, about 20 miles away, were recorded on December 19 (Mc=2.0) and December 25 (Mc=2.2). The third event, near Painesville and in the locale of an earlier reported microseism, was recorded on December 29 (Mc=1.3). Information related to the occurrence of these events was verbally provided to the staff reviewer to maintain the staff in an informed position.

This report will continue to be submitted on a quarterly basis. The next report will cover the period between October 16, 1987 and January 16, 1988.

Very truly yours,



Al Kaplan
Vice President
Nuclear Group

AK:cab

cc: T. Colburn
K. Connaughton
Leon Reiter