

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

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MURRAY R. EDELMAN VICE PRESIDENT NUCLEAR

June 17, 1986 PY-CEI/NRR-0478 L

Dr. W. R. Butler, Director BWR Project Directorate No. 4 Division of BWR Licensing U.S. Nuclear Regulatory Commission Washington, D.C. 20555

> Perry Nuclear Power Plant Docket Nos. 50-440; 50-441 Possible Impact of Injection Wells, Injection Well Monitoring Network

Dear Dr. Butler:

As discussed with your staff during the progress meeting of April 31, 1986 and June 11, 1986, CEI has been extensively studying the local injection wells pursuant to SSER No. 9 Confirmatory Activity, "Possible Impact of Injection Wells." CEI engaged a consultant from the University of South Carolina specializing in induced seismicity to assist our primary geological/ seismological consultant Weston Geophysical. Our work related to this study is now complete and will be described in this transmittal.

Attachment No. 1 is a comprehensive study by our specialist of the injection wells and their relationship to the Janaury 31, 1986 earthquake. This report examines documented historical induced seismicity associated with injection wells and compares those events in detail to the January 31, 1986 earthquake. Also examined are the design and operating parameters associated with the local injection wells and the historical record. This report concludes that the theory promoting that the Leroy earthquake was induced by well injections is not substantiated based upon the characteristics of induced seismicity. Thus, the Leroy earthquake is considered a natural event.

However, based upon limited potential of induced micro-seismicity (unrelated to the January 31, 1986 event), and the recommendations by the ACRS during the March 12-13, 1986 hearings, CEI is developing a seismic monitoring network around the injection wells. Attachment No. 2 represents a preliminary description of the injection well network which has a magnitude detection threshold of 0 on the Richter Scale.

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Important characteristics of the injection well system include the following:

- 5 station telemeter array
- digital data acquisition and transmission
- capability to detect and locate coordinates of micro-seismic events
- broad based recording range up to 100 Hz

We are in the process of locating suitable geophone locations for the injection well system taking into consideraton foundation conditions, power availability and telemetry obstructions. We anticipate that equipment selection, procurement and installation will be completed during the last quarter of 1986. The existing temporary system will be maintained and operated until the injection well system is operational. The injection well system will be operated up to the second refueling outage at which time it's continued operation will be re-evaluated. Records from this monitoring program will be examined continuously and the staff will be notified if any micro-seismic events are recorded.

With the transmittal of this information, the Confirmatory Activity in SSER No. 9 related to injections wells is complete. Please feel free to call if you have any questions.

Very truly yours,

Murray R. Edelman Senior Vice President Nuclear Group

MRE:njc

Attachment

cc: Jay Silberg, Esq. John Stefano (2) J. Grobe -2-