



U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON SCIENCE CENTER
ROCKVILLE, MD. 20852

418

OFFICE OF THE DIRECTOR

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION

IN REPLY REFER TO: 68

September 17, 1965

Mr. Harold L. Price
Director of Regulations
U. S. Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Price:

In accordance with your request, we are forwarding 10 copies of a report on the seismicity of the Grundy County, Illinois area. The Survey has reviewed and evaluated the seismicity information presented by the Commonwealth Edison Company of Chicago, in their application for a construction permit and operating license for Dresden Unit.2.

If we may be of further assistance to you please do not hesitate to contact us.

Sincerely yours,

James C. Tison, Jr.
James C. Tison, Jr.
Rear Admiral, USESSA
Director

Enclosure

U. S. ATOMIC ENERGY COM.
REGULATORY
MAIL SECTION

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Rec'd Off. Dir. of Reg.
Date 9/21/65
Time 4:00
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REPORT ON THE SEISMICITY OF THE
GRUNDY COUNTY, MORRIS, ILLINOIS AREA

At the request of the Division of Reactor Licensing of the Atomic Energy Commission, the Seismology Division of the Coast and Geodetic Survey has evaluated the seismicity of the area around Grundy County, Morris, Illinois (Dresden Site). We find the report on seismology given by the applicant in the Plant Design and Analysis Report, Volume III, Section IV, is substantially correct although we consider the applicant's estimate of the maximum Modified Mercalli intensity to be expected at the site (VII to VIII), given on page III-1-5, to be slightly high.

The seismic history of the region since 1800 indicates that ten earthquakes have been perceptible in this area. The closest and most effective of these occurred on January 2, 1912 in the immediate area, probably less than 30 miles away, and is rated at intensity VI for a maximum acceleration of .07g in the period range from 0.3 to 0.6 seconds.

The shock of July 18, 1909 occurred at a distance of 75 miles and approached the previously cited earthquake in intensity at the site. Other earthquakes of note are the New

Madrid, Missouri series of 1811 and 1812 and the Charleston, South Carolina shock of 1886, all of which were quite distant and would have produced only minor intensities (III or less) at the site.

In view of the above, the Survey believes that the ground accelerations of more than $0.1g$ in the period range of 0.3 to 0.6 seconds will not be encountered at the Dresden site during the lifetime of the proposed facility.

EARTHQUAKE HISTORY OF GRUNDY COUNTY, ILLINOIS AREA
(DRESDEN SITE)

<u>Date</u>	<u>Location</u>	<u>Miles</u>	<u>Maximum Intensity</u> <u>MM</u>	<u>Intensity Site</u> <u>MM</u>	<u>Felt Area</u> <u>Sq. Miles</u>
1804 Aug. 20	Fort Dearborn, Ill., Chicago	50			30,000
1811 Dec. 16					
1812 Jan. 23	New Madrid, Mo.	325	XII	IV**	2,000,000
1812 Feb. 07					
1886 Aug. 31	Charleston, S.C.	400	X	III**	2,000,000
1895 Oct. 31	Charleston, S.C.	310	VIII	III**	1,000,000
1909 May 26	Northern Illinois	75±	VII	VI*	500,000
1909 July 18	Central Illinois	125±	VII	III**	40,000
1912 Jan. 02	Between Morris and Aurora, Ill.	30-	VI	VI*	40,000
1925 Feb. 28	Quebec, Canada	1000	VIII	III*	2,000,000

*Estimated from intensity reports in the vicinity

**Estimate based on the maximum intensity-distance relationship

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