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Small Faults = Big Quakes?

NYC in the Midst Of Seismic Zone

By Jim Fitzgerald The Associated Press

WHITE PLAINS, N.Y. — An analysis of recent earthquake activity around New York City has found that many small faults that were believed to be inactive could contribute to a major, disastrous earthquake.

The study also finds that a line of seismic activity comes within two miles of the Indian Point nuclear power plant, about 25 miles north of New York City. Another fault line near the plant was already known, so the findings suggest Indian Point is at an intersection of faults.

The study's authors, who work at Columbia University's Lamont-Doherty Observatory, acknowledge that the biggest earthquakes — in the 6 or 7 magnitude range — are rare in the New York City region. They say a quake of magnitude 7 probably comes about every 3,400 years.

But they note that no one knows when the last one hit, and because of the population density and the concentration of buildings and financial assets, many lives and hundreds of billions of dollars are at risk.

The metropolitan area does not have a single great fault like the San Andreas Fault in California, said Leonardo Seeber, co-author of the study.

"Instead of having a single major fault or a few major faults, we tend to have a lot of very minor and sort of subtle faults," he said. "It's a family of faults, and that can contribute to the severity of an earthquake."

John Ebel, director of seismology at Boston College's Weston Observatory, said he agreed with the study's finding that small faults can contribute to large earthquakes. "A quake can jump from one fault to another," he said.

The study, published in the Bulletin of the Seismological Society of America, analyzed 383 known earthquakes during the past 330 years in or near New York City. The biggest were three that reached magnitude 5 in 1737, 1783 and 1884.

Data on earthquakes since the early 1970s, when Lamont deployed dozens of new detectors, enabled the authors to see patterns from smaller quakes, including the magnitude 4.1 quake that was centered on Ardsley, in Westchester County, in 1985.

The report inferred from the data that there is a seismic zone, previously undetected, running west from the southwest tip of Connecticut and intersecting with the large, well-known Ramapo fault near Indian Point.

Lynn Sykes, the lead author, said the finding means the danger of a big quake near the nuclear plants is greater than had been thought.

Sykes acknowledged in an interview with The Associated Press that he is opposed to an application from Entergy Nuclear, which owns the nuclear plant, to extend the licenses of the two reactors, but he

said, "I try to keep that as independent from my work as possible."

Columbia spokesman Kevin Krajick said the study had been provided before publication to state Attorney General Andrew Cuomo, who argued unsuccessfully earlier this year that the Nuclear Regulatory Commission should consider the new earthquake data as it decides whether to extend the licenses.

Ebel said the report's suggestion of a fault line was "a purely circumstantial, speculative argument, but while it's speculative it's within the scientific bounds of reason."