

Study Claims Health Risks Near Nuclear Plant; Critics Question Study Methods

George Lauer, California Healthline, 4-7-14

California's last operating nuclear power plant is under attack from opponents armed with a new study contending radiation from the Diablo Canyon facility poses a health risk to the residents of San Luis Obispo County.

State and local health officials -- as well as Pacific Gas & Electric, the plant's owner -- said the study and its findings are flawed.

The study, commissioned by the World Business Academy of Santa Barbara and authored by New Jersey epidemiologist Joseph Mangano, makes several health-related assertions, the most striking of which is "[s]ince the Diablo Canyon nuclear power plant opened in the mid-1980s, San Luis Obispo County has changed from a relatively low-cancer to a high-cancer county."

State and county epidemiologists said the study's author "cherry-picked" statistics and ignored standard scientific procedure to get desired results.

Ann McDowell, epidemiologist for the San Luis Obispo County Public Health Department, said the county is preparing a written response to Mangano's study, which she said is "fundamentally flawed."

"This study used inappropriate measures to make its point," McDowell said. "It was designed in a particular way to get a desired result. We refer to it as cherry picking."

John Morgan, epidemiologist with the California Cancer Registry, agreed.

"The author of this study did not adjust for changes in age distribution and did not take into account other factors, so his conclusions are not supported," Morgan said.

Mangano defended his work and suggested public health officials should have done their own research.

"They are absolutely incorrect," Mangano said. "All my cancer mortality rates are adjusted to the national 2000 standard," Mangano said, referring to the latest national standard for age distribution in cancer statistics.

"I'm not sure what they're referring to but perhaps they didn't read the data correctly," Mangano said.

"This is the first-ever report on health patterns near this nuclear plant since it opened 30 years ago," Mangano said.

"Right there is a red flag. Why hasn't this kind of research been done before? Just because there is no federal law saying it should be done, it is absolutely appropriate and should be done by public health officials. We would like to see more such studies and more frequent studies," Mangano said.

Blair Jones, San Luis Obispo County spokesperson for PG&E, said his company is discounting the study as "junk science."

"Mr. Mangano's methods and his claims have been discounted before. Diablo Canyon power plant is a safe and vital energy resource," Jones said.

Incidence of Several Cancers Increased

The study's findings include:

- Cancer incidence in San Luis Obispo County rose from 0.4% below the state average to 6.9% above average during the time period of 1988-1990 to 2003-2010. The county's current cancer rate is the highest of all 20 counties in southern California;
- After Diablo Canyon began operating, significant, rapid increases occurred for the incidence of thyroid and female breast cancer in San Luis Obispo County, both highly radiosensitive cancers;
- After Diablo Canyon began operating, infant mortality and child/adolescent mortality in San Luis Obispo County rose significantly;
- Melanoma incidence in San Luis Obispo County soared from 3.6% above the state average to 130.2% above average during the period from 1988-1990 to 2003-2010, and is now the highest of all California counties;
- Cancer mortality for people of all ages in San Luis Obispo County rose from 5.1% below the state average to 1.4% above average from 1988-1990 to 2008-2010, making the county the 25th highest in the state (up from 43rd highest); and
- The ratio of babies born at very-low weight (below 3 pounds, 4 ounces) rose 45.0% higher in the 9 San Luis Obispo County ZIP codes closest to Diablo Canyon, versus the other more distant 10 county ZIP codes.

Epidemiologists McDowell and Morgan said Mangano failed to adjust his statistics to account for demographics of the aged, mostly Caucasian population of the area.

San Luis Obispo County has a higher percentage of people over the age of 35 than the rest of the state, meaning that the incidence of cancer will be higher there because the older people get, the more likely they are to have cancer, McDowell said. Median age in San Luis Obispo County is 39.4. The statewide median age is 35.2.

"He used crude rather than adjusted rates," McDowell said. "And for some reason he left out a couple ZIP codes, the inclusion of which could have drastically changed the results."

McDowell said the rate of melanoma in San Luis Obispo County is higher because the county has a higher percentage of Caucasian residents with lighter skin who are more susceptible to melanoma.

Mangano said his cancer mortality rates are age-adjusted. He said the ethnic makeup of the area hasn't changed much over the years and, therefore, his findings that the incidence of melanoma is rising are noteworthy.

Part of Sustained Anti-Nuclear Campaign

The World Business Academy, which commissioned and published Mangano's research, is a 28-year-old organization with a goal of steering businesses toward being "stewards rather than predators" of the world.

Jerry Brown (no relation to the governor), who directs the academy's Safe Energy Project, said "there will be legal action eventually related to PG&E but I can't describe it right now."

Brown said the academy's Safe Energy Project was launched last year after the San Onofre nuclear plant in Southern California began leaking radiation. The damaged San Onofre plant closed 15 months ago.

The project's goal is to close California's remaining nuclear power plant within 10 years, Brown said.

"We've seen that there is a correlation between radiation and health elsewhere," Brown said. "The incidence of cancer around Rancho Seco saw dramatic improvements after that plant shut down. We want the state to move away from nuclear to safe renewable energy," Brown said.

Rancho Seco in Sacramento closed by public referendum in 1989.

Seismic Worries Mentioned

The steady march against nuclear power generation in California will continue, opponents said, with or without validation of this latest study.

If public concern about the nuclear facility rises to the level of changing state policy, it probably will be seismic worries driving the change, according to some stakeholders.

Mangano's study mentions but does not go into detail about the seismic issue:

"A 2013 study by the Union of Concerned Scientists concluded that the discovery of 'a previously unknown earthquake fault line running as close as 2,000 feet from Diablo Canyon's two reactors' ... could cause more ground motion during an earthquake than the plant was designed to withstand. Since this new fault was discovered, the NRC [Nuclear Regulatory Commission] has not demonstrated that the reactors meet agency safety standards."

PG&E spokesperson Jones, said the plant is seismically safe.

"Current analyses continue to confirm that the plant is designed to withstand the greatest level of ground motions or shaking that experts reasonably believe could be generated by faults in the region," Jones said in a written release.