Regulators fear attempts to burn off leaking gas near Porter Ranch could lead to explosion

Paige St. John and Tony Barboza, Los Angeles Times, 1-16-15

California utility regulators have asked Southern California Gas Co. to show that the ground around its leaking well is stable and that attempts to burn off escaping natural gas won't lead to an explosion.

The state Public Utility Commission's line of questioning offers new evidence the agency is concerned that the compromised well site in Aliso Canyon is vulnerable to either a blowout, which would allow even greater release of environmentally damaging gases, an explosion, or both.

The PUC has given the gas company until Tuesday to address concerns about plans to capture the escaping high-pressure gas with a three-foot wide pipe and burn off those emissions. The agency said the system "is NOT fully designed and needs further work and analysis."

The three-page letter from the PUC includes a warning that damage to the well system, which was subjected to two months of aggressive high-pressure pumping to try to plug the leak, might now permit air to mix with methane in a way that "could be catastrophic."

Utility officials tried Thursday night to convince local residents that the company is managing that risk.

"Everything with exception of capture area is straightforward," senior vice president of operations Jimmie Cho said at a community advisory council meeting.

Cho described a large pipe that would catch the flow of gas coming from a crater surrounding the well and route that gas some distance away to enclosed, oven-like devices that would incinerate it. What methane doesn't flow on its own into the pipe will filter through 8-inch thick screens to reduce the rotten-egg smell of mercaptan in the gas.

The modular equipment can be quickly deployed, Cho said, "like a Lego set."

However, in a letter dated Thursday, the PUC and two other state agencies raised concern about the gas capture system and the integrity of the ground around the well.

The regulatory agencies asked the gas company to show that the scoured ground surrounding the well remains stable enough "to minimize additional strain on the surface casing," a reference to the outer 11 3/4-inch pipe supporting the leaking well.

The letter questions whether the methane capture system is "electrically and intrinsically safe," noting that electric motors in the blowers to be used as part of the system are not explosion-proof and could provide a catastrophic spark with methane and oxygen mixed in highly flammable proportions.

The agencies have asked for additional guarantees of protection against a blowout of the well, including a copy of a risk assessment done by the utility's private contractor, Boots & Coots.

After gas was discovered leaking from small cracks in the ground Oct. 23, the utility began a series of increasingly aggressive attempts to plug the well with heavy mud. The Times reported on Friday that those efforts instead scoured a 25-foot-deep crater around the well, blew out a large vent from which gas could escape more freely, and threatened the stability of the wellhead itself.

The jeopardized well is now held in place with tension cables. Efforts to stem the leak have switched to drawing down pressure in the two-mile underground gas storage field beneath Aliso Canyon while operators drill a second well. They will use that relief well to try to plug the leak from below. The relief well is not expected to be in position until late February at earliest.

In the meantime, noxious odors from the leaking well have forced thousands of residents to leave their homes in Porter Ranch and other communities downwind of the storage field. On Friday, the first study of the health risks posed by benzene in the emissions reported that the cancer risk is at about the same level normally found throughout the Los Angeles basin.

The preliminary assessment, released by the South Coast Air Quality Management District, estimates that 6 months of exposure to small amounts of benzene within the leaked gas poses an increased cancer risk of up to two cases per 1 million residents. Air quality officials said that risk is so slight it is difficult to distinguish from preexisting air pollution health risks.

"There is benzene in the air all over Southern California and the levels we're seeing in this community are very similar to those levels," said Philip Fine, deputy executive officer for the air district.

The results were based on samples collected by the air district throughout the San Fernando Valley neighborhood and one sample taken very close to the wellhead.

The gas company has separately collected more than 1,000 air samples at 10 locations in Porter Ranch since late October. State standards say benzene at levels below 1 part per billion are safe for long-term exposure and below 8 ppb for short-term exposure.

The highest level of benzene found at Porter Ranch was 5.55 ppb, detected Nov. 10. Another sample collected the same day was 3.68 ppb. A third sample on Nov. 18 tested at 2.77 ppb.

The gas company acknowledged it had understated the number of times it has detected elevated levels of benzene in Porter Ranch. A summary of the utility's air monitoring data on its website had cited only two samples that were "slightly higher" than 2 parts per billion.

"It was an oversight," said Kristine Lloyd, a spokeswoman for the gas company said Thursday.

Air district officials said they calculate Porter Ranch residents already have a cancer risk from all toxic air pollutants of between 400 and 500 cases over the life span of one million residents.

That's about half of what is found in polluted communities near the ports of Los Angeles and Long Beach, according to a 2014 agency study.

The natural gas coming out of the failed well is mostly methane, a compound that does not pose health risks on its own.

Also Friday, the California Department of Conservation's oil and gas division proposed emergency regulations to increase testing and reduce operating pressures of underground natural gas storage facilities statewide in response to the Aliso Canyon leak.

The rules, ordered by Gov. Jerry Brown on Jan. 6., would apply to 12 natural gas storage fields in California, some near residential areas.

The Department of Conservation says those facilities present "a direct and ongoing threat to public health, safety, and the environment" that require regulations to "prevent uncontrolled releases, blowouts, and other infrastructure-related accidents." The proposed regulations also require risk plans assessing the hazard of corroded pipes and equipment.