Explosions expose poor governance

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The massive series of gas explosions that occurred from late Thursday night to early Friday morning in Greater Kaohsiung, claiming at least 28 lives and injuring 286 people, while at least two people remain missing, exposed fatal flaws that should have been addressed to avoid such a tragedy.

A top concern is underground urban planning, an issue that has hardly been discussed despite explosions from a gas leak in Kaohsiung having occurred in 1997.

Following the most recent explosions, environmental groups have renewed appeals for public disclosure of location data, maps and maintenance records of pipelines that transport gas and hazardous liquids to allow for condition assessment and mitigation planning, but such information might not be available.

Many of today's pipelines in Kaohsiung, one of the nation's centers of petrochemical production, have been in operation since the 1970s or earlier and are in continual need of maintenance, repair or replacement.

According to the Public Work Bureau of the Kaohsiung City Government, its pipeline database system, which was not set up until 2000, does not include aging pipelines which might have issues concerning corrosion, welds and shape deformity, so it might have been unaware of the necessity to regularly inspect the conditions of the older pipelines.

The Ministry of Economic Affairs responded to pipeline safety concerns by saying it is planning to establish a platform of coordination involving labor inspection authorities, environmental protection units, construction agencies and fire departments in both central and local governments. That platform, the ministry said, would inspect all pipelines in Kaohsiung within four months, and require pipeline operators to repair or replace pipelines whenever needed to ensure complete operational integrity of the pipelines, before it moves to other petrochemical production bases in Taoyuan County and Yunlin County.

It was a positive response to the public outcry for information about pipeline conditions, although whether it is just paying lip service to the idea remains to be seen. Meanwhile, it

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highlights the problem that there has been no specialized agency responsible for the oversight of pipeline safety, which allows pipeline owners to exploit the lax regulations and bypass costly projects to improve pipeline integrity.

It appears that the events leading up to the explosions could have been handled more efficiently. Many residents said that the first explosion came about three hours after a strong smell of gas was detected. According to the city government's Environmental Protection Bureau, it detected 13,520ppm (parts per million) of propene, the suspected cause of the explosion, on the scene at 10:19pm, 80 minutes before the first explosion. It said that the density of the substance in the atmosphere was far above the level of 68ppm that can be easily detected by smell.

During post-incident examinations of gas monitoring data, inspectors have found that abnormalities in a pipeline were detected between 8pm and 9pm on Thursday night.

What were the actions taken during this period to reduce leakage, except for having firefighters dispense water? Why could exact locations of gas leakage not be identified? Were the inspectors equipped with sufficiently sophisticated devices? Did the situation warrant an evacuation of the residents?

As a city develops, it faces issues of urban renewal and underground urban planning, especially when it has a labyrinth of pipes beneath it like Greater Kaohsiung does. If the pressing issues about subterranean development remain unaddressed, a gas explosion like this one might as well be called a failure of governance rather than just an accident.

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