

Indonesia's refinery fires: Will lessons ever be learned?

By Raymond Hendriawan



Dumai refinery fire, 2025 (Source: Batam News Asia)

Another fire, another apology. On October 1, 2025, a blaze broke out at Pertamina's Dumai refinery in Riau province, prompting residents to evacuate amid loud explosions. Officials confirmed the fire occurred around 9 p.m. and was later contained by emergency teams. The cause remains under investigation.

The Dumai fire adds to a troubling pattern that has plagued Indonesia's refinery system for decades — a system that has yet to internalize its own hard lessons.

A worsening trend

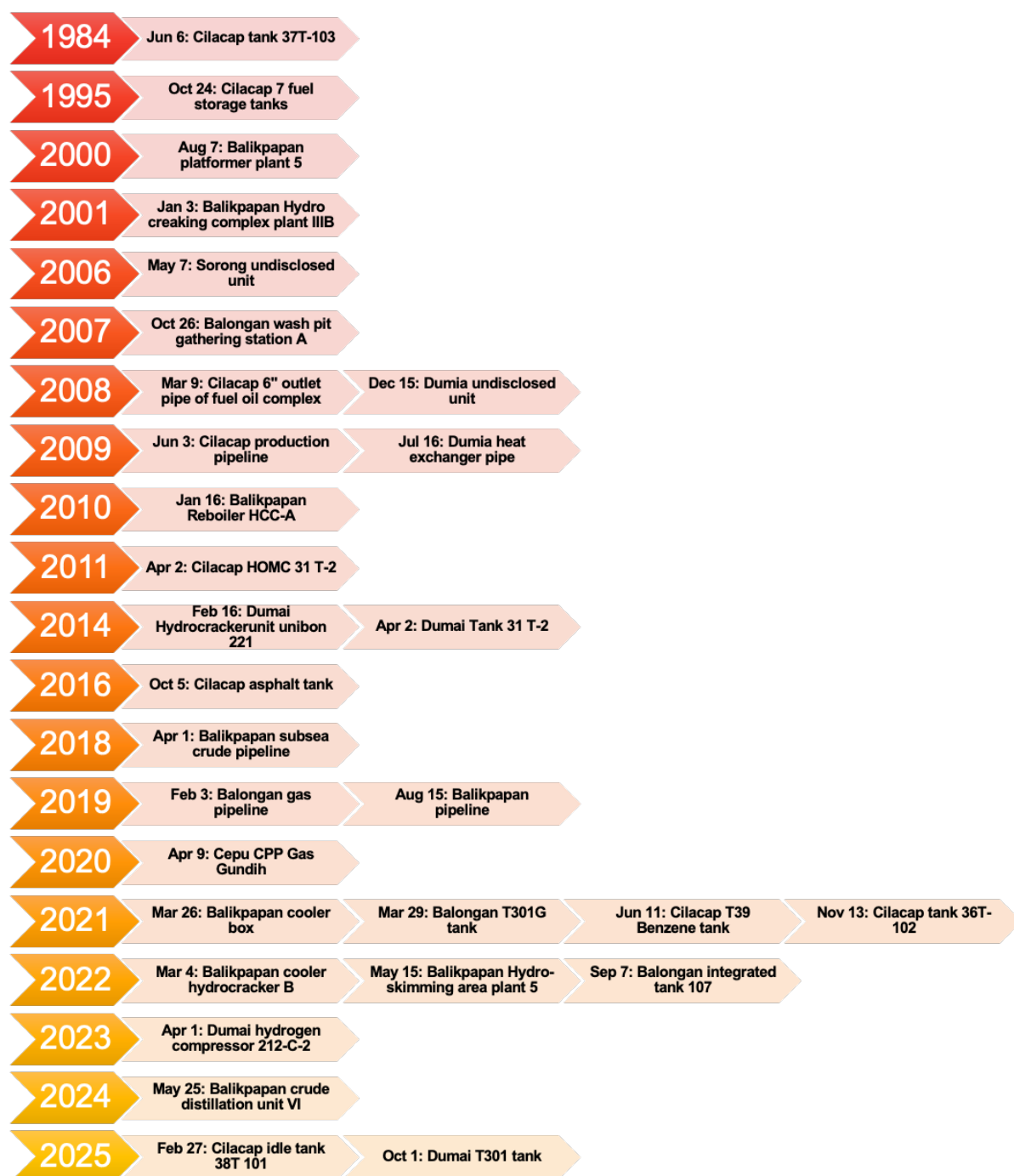
Indonesia's refinery fire timeline shows a clear worsening trend, with more incidents recorded in the past 15 years than in the previous 15.

In the 1990s and early 2000s, incidents were fewer but already exposed systemic vulnerabilities: lightning-susceptible floating-roof tanks, poor energy isolation during maintenance, and occasional shutdowns. The 1984 Cilacap blaze, which killed three workers, was one of the earliest warning signs.

Between 2000 and 2010, incident frequency and impact increased. Balikpapan's 2000 fire forced Indonesia to import additional fuel, Sorong's 2006 incident diverted national supply, and a 2008 maintenance fire at Cilacap claimed two lives.

The 2010–2025 period looks worse still. Time between incidents (TBI) has shortened, particularly at legacy refineries. The 2010 Balikpapan fire disrupted aviation and diesel supply. In 2018, a Balikpapan pipeline explosion killed five and affected nearby communities. The 2021 Balongan tank farm fire — also caused by lightning — proved that some 20th-century hazards remain unresolved.

Now, with the 2025 Dumai fire, that trend continues unbroken.



Fire incidents timeline in Indonesia's refineries

The oldest and busiest, burning the most

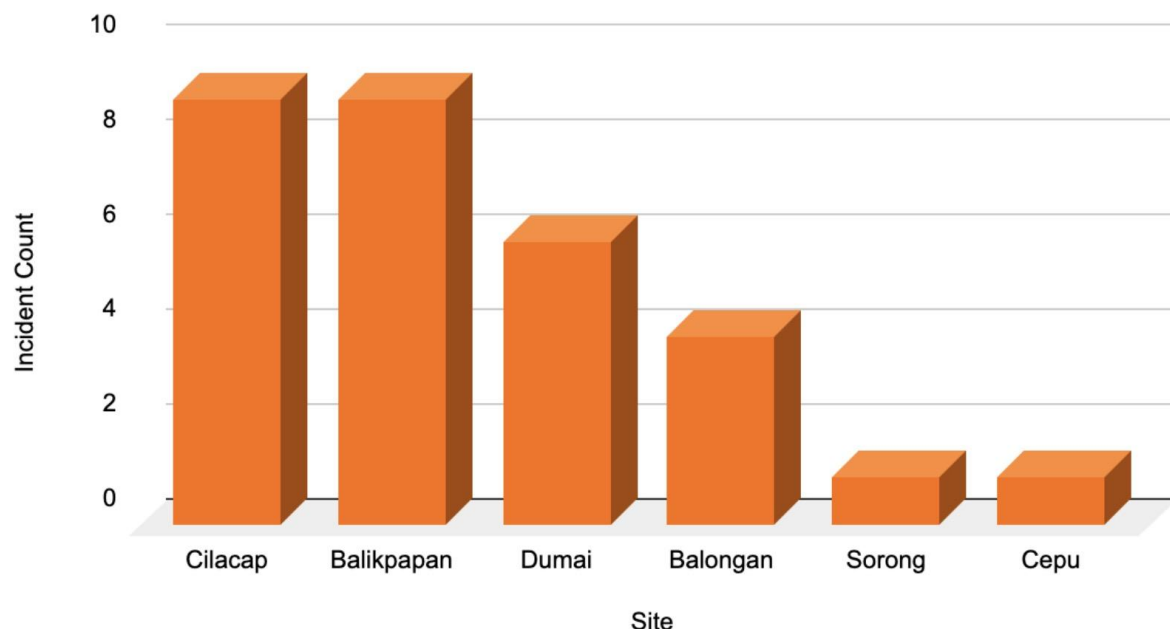
Data show that Cilacap (nine incidents), Balikpapan (nine), and Dumai (six) account for most of the country's refinery fires. That is no coincidence — these facilities are the busiest and the oldest.

- Cilacap RU IV (est. 1976) processes about 348,000 barrels per day, the country's largest.
- Balikpapan RU V (est. 1922) is being expanded from 260,000 to 360,000 barrels per day under the Refinery Development Master Plan (RDMP).
- Dumai RU II (est. 1971) handles about 170,000 barrels per day.

High throughput means more tank movements, transfer operations, and process exposure hours, while aging infrastructure complicates maintenance. Together, these factors multiply the risk of accidents — unless offset by robust safety upgrades and disciplined maintenance.

Former Pertamina CEO Nicke Widyawati once acknowledged this reality: “We all know that our refinery with old technology can only process low-sulfur crude. Our RDMP program aims to modernize these refineries so they can process higher sulfur at lower cost.”

That statement highlights a structural risk pattern: Indonesia's oldest, busiest refineries dominate both production and the fire count — and will continue to do so until modernization, safety, and maintenance execution catch up with the operational scale.



Indonesia's refinery fire incidents count since 1984

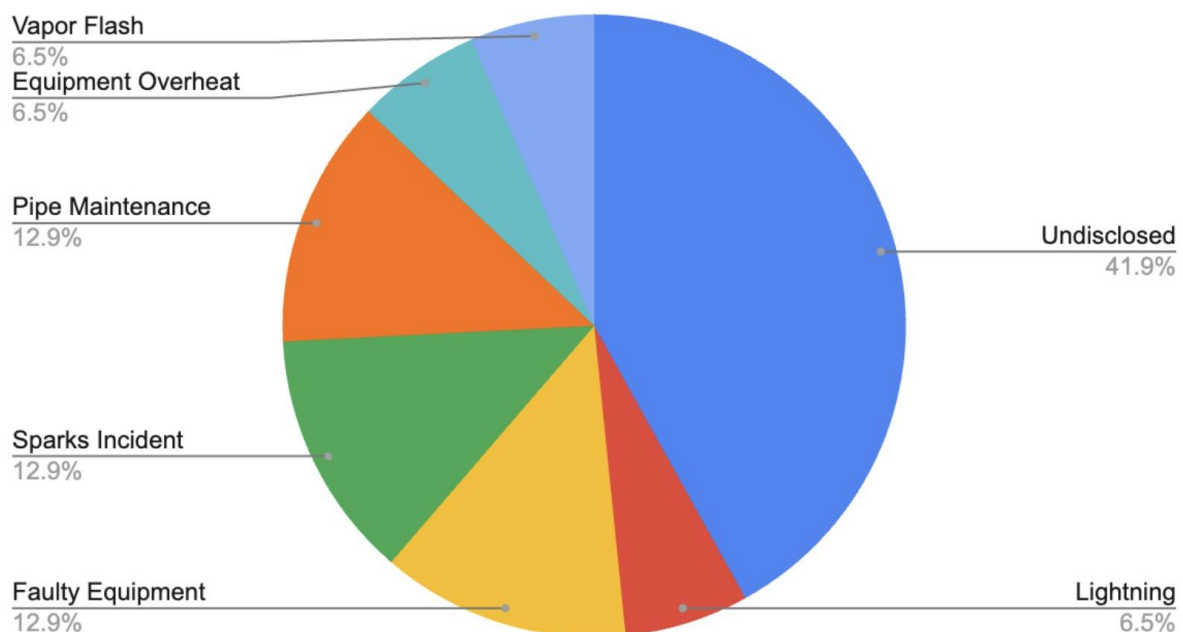
Root causes: what's said, and what's not

Nearly 42 percent of refinery fires in Indonesia end without any publicly disclosed cause. Instead, the public hears the same post-incident script: “fire contained,” “damage control underway,” “supply not disrupted.”

That silence matters. Without transparent root-cause disclosure, the same hazards keep recurring.

Of the cases with identified causes, 39 percent stem from maintenance failures — classic scenarios like stray sparks during hot work, leaking pipes, or faulty equipment missed during inspections. These point to execution gaps in work permits, gas-freeing, isolation, and post-repair checks — not a lack of manuals, but a lack of compliance.

Another 19 percent involve preventable engineering failures: lightning strikes on ungrounded tanks, overheating equipment triggering delayed alarms, or vapor flash fires that proper gas detection could have prevented. These are not “acts of God” — they are acts of omission.

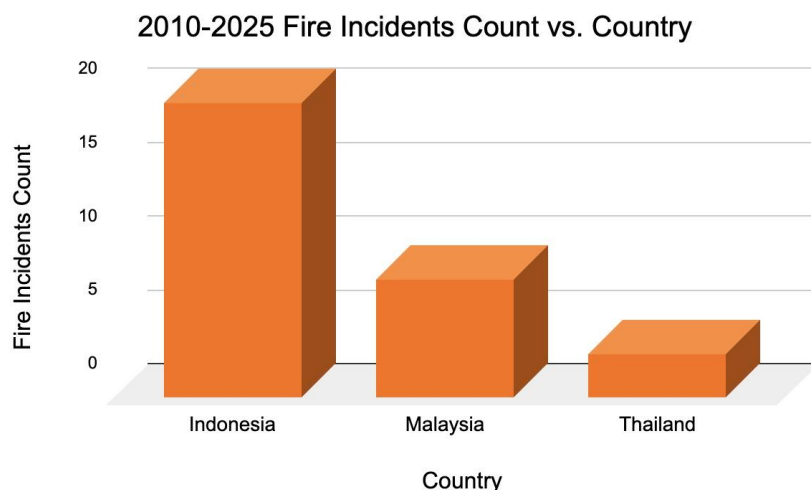


Refinery fire incident causes compiled from various public sources

Indonesia burns more than its peers

A comparison with neighboring countries is revealing. Benchmarking refinery fires from 2010–2025 against Malaysia and Thailand — both with comparable refining capacities — shows Indonesia scoring 1.67 incidents per 100,000 barrels per day, roughly twice Malaysia’s rate (0.80) and seven times Thailand’s (0.24).

Even if Thailand’s data are underreported threefold, its adjusted rate (0.72–0.96) still beats Indonesia’s. The conclusion is unavoidable: Indonesia experiences far more refinery fires than a system of this size should.



Country	Refinery Capacity (kb/day)	2010-2025 Fire Incidents Count	Incident per 100 kb/day capacity
Indonesia	1200	20	1.67
Malaysia	997	8	0.80
Thailand	1243	3	0.24

Accountability and culture

Indonesia’s refinery network is not fragmented — it’s state-run, under a single operator. That means accountability for operational discipline, maintenance reliability, and safety culture rests squarely with Pertamina’s management.

If lessons were truly learned, incident numbers would decline. Instead, they've risen. Public trust has eroded as repeated assurances — “supply is safe,” “situation under control” — collide with recurring fires and limited transparency.

The latest Dumai incident should be a turning point. Whether it becomes another footnote or a genuine wake-up call will depend on whether Indonesia's refinery operator finally learns not just to extinguish fires — but to prevent them.