It is the last weekend before Christmas of 1982. Like other years, the seaside town of Arrecife is about to descend with holiday travelers.
RISING ABOVE THIS CARIBBEAN TOWN ARE THE TALL STACKS OF THE TACOA POWER PLANT. THE BOILERS THAT PRODUCE THE STEAM THAT DRIVE THE TURBINES THAT GENERATE THE ELECTRICITY FOR THE CITY OF CARACAS ARE RIGHT HERE. AND THE FUEL THAT FIRES THESE BOILERS IS STORED IN TANKS UP THE HILL.

THE SO-CALLED "NO. 6 FUEL OIL" IN THESE TANKS HAS A HIGH POUR POINT, WHICH MEANS THE TANKS HAVE TO BE HEATED TO USE THE FUEL.

ON THIS DAY, TANK-8 WAS AT 82 °C WHEN AN OCEAN VESSEL DELIVERED MORE FUEL OIL TO TOP OFF THE 250,000 BARREL TANKS.

THIS NEW LOAD WAS DIFFERENT.

ALTHOUGH CONFORMING TO NO 6 FUEL SPECIFICATIONS, IT WAS DILUTED WITH HEAVY NAPHTHA TO REDUCE ITS POUR POINT.

WHAT FollowS IS AN ACCOUNT OF THE EVENTS OF THE DAY AS TOLD BY FIVE INDIVIDUALS WHO LIVED THROUGH IT.
We took the Jeep up the hill to the tank farm at 5:45 am. Jose and Louis went up the tank while I stayed down.

Alexis Alzaul, Worker at the Tacoa Power Plant

After tank-8 was filled, the tanker vessel sailed away and we went to take the level readings... all normal stuff we’d done 100 times before.

Y’know, we thought No. 6 fuel oil is all the same. Now we know that flammable vapors were present in the tank ‘cause a No. 6 fuel having a flash point of 65 C was added to a tank heated to 82 C for a high pour point No. 6 fuel oil...

The fuel oil vapors exploded the instant they opened the hatch and air got in.
At that moment, I was focused on just one thing... to run to the control room, activate the fire alarm, and get an ambulance for Jose and Louis.

They didn’t make it.

Later I was interrogated about the ignition source... Did somebody light a match?! Was it static discharge? Something else? I still don’t know. What I do know is that there shouldn’t have been a flammable atmosphere in that fuel oil tank.

I was with the fire engineering team at the national petroleum company, PDVSA. Our team was called to help with the fire response at Tacoa.

Z. Rixio

Rixio Medina, HSSE Executive
My manager and mentor, Ibrahim Alfonso Ferrer called me that morning and described some of the challenges at tacoA. The explosion had knocked down the water ‘n foam ring on the tank. Also, the local fire fighters couldn’t get fire fighting apparatus up the hill.

Ibrahim was in Caracas and got there fast. Since I had to fly in, I was scheduled to arrive a bit later.

Because of the issues with foam supply, the decision was made to focus on preventing fire from spreading to the adjacent tank, and let tank-8 burn itself out.

By 11:30, the fire seemed to have come under control. Reporters from Caracas TV had arrived on the scene broadcasting right by the tanks.
THE PRESENCE OF REPORTERS ATTRACTED EVEN MORE ONLOOKERS. THE HOLIDAY TRAVELERS AND LOCALS FOUND THE COMMOTION EXCITING. THIS GAVE THE FIRE MORE OF A FIESTA ATMOSPHERE THAN THAT OF AN EMERGENCY!

BEFORE DESCRIBING WHAT HAPPENED NEXT, I NEED TO EXPLAIN SOMETHING CALLED, “BOILOVER”....

...A PHENOMENON KNOWN TO OCCUR DURING CRUDE OIL TANK FIRES, BUT NEVER REPORTED FOR NO. 6 FUEL OIL BEFORE.
When a volume of oil burns in a tank, it can form heavy combustion residues that create a hot dense layer within the tank.

When the hot dense layer reaches the bottom, it raises the water layer’s temperature well above 100°C with the hydrostatic pressure keeping the water superheated.

Then suddenly the superheated water vaporizes, expanding 1700 times in volume and causing a violent eruption of the tank contents—a volcano of burning oil. This is called a boil-over!

As the oil continues to burn, this hot dense layer concentrates and sinks down towards the bottom of the tank, where a water or water emulsion layer is present.

That’s what happened at Tacoa an hour after they declared the fire under control.
First came a giant fire ball that rose 1500 feet into the air. Those near the tank were either killed by the burning oil or the radiant heat. My boss Ibrahim, several reporters, and 20 fire fighters standing closest to the tank were among them.

Then came the rain of flaming oil, burning the crowd standing further away.

And finally...
...the torrents of burning oil, mingled with the melted asphalt of the road coming down the hill... as if it were the lava from the volcano that was the boilover!

Many died in the horror scenes that followed. The only reason I wasn't there right then is because my flight was delayed. My goal then became to dedicate my career to keeping the memory of Ibrahim and the rest alive.
Benjamin Frontado, a cafe owner in Arrecife

My neighbor’s 10-year-old daughter used to hang out at my cafe all the time.

She was full of joy and helped get the place festive for the holidays!

When the TV reporters showed up and the crowds gathered, she ran to be part of the excitement.
After the boilover, as everyone was running away or diving in the sea to escape the holocaust, she became paralyzed with fear...

...just standing there as the fires were closing in on her.

Gracias a dios, a security guard ran into the fire and lifted her to safety.
Later that day a friend and I took his boat to rescue some of the folks who had jumped in the water but couldn't swim...

We found the body of the same security guard floating on the water. He had died while trying to save even more people.

Before I could thank the guard, he went back to help others.
...AND I MEAN "HELL" LITERALLY...

I ran under an abandoned fire truck to protect myself from the rain of burning oil and the radiating heat.

The police who were there to rescue others saw me and told me the firetruck I was using for cover had caught fire and I'd better get out of there fast!
I followed this group of local police officers. A couple of them were carrying burned victims whose skin appeared to have melted... like wax dripping from a candle.

It was pitch black from the smoke except for the streams of burning oil showing where not to go!

One of the cops moved way to the front making sure we were following a safe path out...

...when he suddenly got trapped in the flames!

Having just seen how excruciatingly painful death by severe burns can be...

...he decided on a faster, less painful option.
Just then a random explosion occurred and cleared a path to the sea. We were safe.

It wasn’t until the next day that I found out that eight of my colleagues had died.

The victims were brought to our hospital not only in ambulances, but also in a non-stop shuttle of trucks and cars.

Some were in shock, others moaning in pain...
I saw burns like I had never seen before.

The hospital staff worked double shifts to receive them.

It was the worst day I ever expect to live through.
Alexis, Rixio, Benjamin, Freddy, and Iris are just a few of the voices from tacoa. The fire left at least 150 dead, including 53 firefighters. The only larger single-day firefighter loss is Sept. 11, 2001.

The Christmas and New Year’s holiday that year became a time of mourning for all of Venezuela. On this 40th anniversary of the tragedy, let us remember the victims, the acts of heroism, and the lessons learned at great cost.

The end.