

FIRE STAR

Ravi Chandra was going to be a rich man.

It made his head spin to think about it. In the next few hours he would earn more than he had managed in the last twenty years: a fantastic sum, paid in cash, right into his hands. It was the start of a new life. He would be able to buy his wife the clothes she wanted, a car, a proper diamond ring to replace the flimsy band of gold she had worn since they were married. He would take his two young boys to Disneyland in Florida. And he would travel to London and see the Indian cricket team play at Lord's, something he had dreamt about all his life but had never thought possible.

Until now.

He sat hunched up beside the window of the bus that was taking him to work, as he had done every day for as long as he could remember. It was devilishly hot. The fans had broken down once again and of course the company was in no hurry to replace them. Worse still, this was the end

of June, the time of year known in South India as *Agni Nakshatram* – or Fire Star. The sun was unforgiving. It was almost impossible to breathe. The damp heat clung to you from morning till night and the whole city stank.

When he had money, he would move. He would leave the cramped, two-room flat in Perambur, the busiest, most crowded part of the city, and go and live somewhere quieter and cooler with a little more space to stretch out. He would have a fridge full of beer and a big plasma TV. Really, it wasn't so much to ask.

The bus was slowing down. Ravi had done this journey so many times that he would have known where they were with his eyes closed. They had left the city behind them. In the distance, there were hills – steep and covered, every inch of them, with thick green vegetation. But the area he was in now was more like a wasteland, with just a few palm trees sprouting among the rubble, and electricity pylons closing in on all sides. His place of work was just ahead. In a moment, they would stop at the first security gate.

Ravi was an engineer. His identity badge with his photograph and full name – Ravindra Manpreet Chandra – described him as a plant operator. He worked at the Jowada nuclear power station just three miles north of Chennai, the fourth largest city in India, formerly known as Madras.

He glanced up and there was the power station

in front of him, a series of huge, multicoloured blocks securely locked inside miles and miles of wire. It sometimes occurred to him that wire defined Jowada. There was razor wire and barbed wire, wire fences and telephone lines. And the electricity that they manufactured was carried all over India by thousands more miles of wire. How strange to think that when someone turned on their TV in Pondicherry or their bedside light in Nellore, it had all begun here.

The bus stopped at the security point with its CCTV cameras and armed guards. Following the 9/11 attacks on New York and Washington, nuclear power plants all over the world had become recognized as potential terrorist targets. New barriers had been added; security forces had been enlarged. For a long time it had all been a damned nuisance, with people ready to jump on you if you so much as sneezed. But people had got lazy. Take old Suresh, for example, the guard at this outer checkpoint. He recognized everyone on the bus. He saw them at the same time every day: in at half past seven, out at half past five. Occasionally he'd bump into them, strolling past the shops on Ranganatha Street. He even knew their wives and girlfriends. It wouldn't have occurred to him to ask for ID or to check what they were carrying into Jowada. He waved the bus through.

Two minutes later, Ravi got out. He was a short, skinny man with bad skin and a moustache that

sat uncomfortably on his upper lip. He was already wearing overalls and protective steel-capped shoes. He was carrying a heavy toolbox. Nobody asked him why he had taken it home. It was quite possible that he'd had to fix something in the flat where he lived. Maybe he'd been moonlighting, doing some jobs for the neighbours for a few extra rupees. Ravi was always carrying a toolkit. It was as much a part of him as an arm or a leg.

The bus had come to a final halt beside a brick wall with a door which, like every door at Jowada, was made of solid steel, designed to hold back smoke, fire or even a direct missile strike. Another guard and more television cameras watched as the passengers got out and went through. On the other side of the door, a blank, whitewashed corridor led to a locker room, one of the few places in the complex that wasn't air-conditioned. Ravi opened his locker (there was a pin-up of the Bollywood star Shilpa Shetty stuck inside the door) and took out a safety helmet, goggles, earplugs and a fluorescent jacket. He also removed a bunch of keys. Like most nuclear power stations, there were very few swipe cards or electronic locks on the doors at Jowada. This was another safety measure. Manual locks and keys would still operate in the event of a power failure.

Still clutching his toolbox, Ravi set off down another corridor. When he had first come to work here, he had been amazed how clean everything was – especially when he compared it with the

street where he lived, which was full of rubbish, and potholes with muddy water, and droppings from the oxen which lumbered along pulling wooden carts between the cars and the motorized rickshaws. He turned a corner and there was the next checkpoint, the final barrier he would have to pass through before he was actually in.

For the first time, he was nervous. He knew what he was carrying. He remembered what he was about to do. What would happen if he were stopped? He would go to jail, perhaps for the rest of his life. He had heard stories about Chennai Central Prison, about inmates buried in tiny cells far underground and food so disgusting that some preferred to starve to death. But it was too late to back out now. If he hesitated or did anything suspicious, that was one sure way to get stopped.

He came to a massive turnstile with bars as thick as baseball bats. It only allowed one person in at a time and then you had to shuffle through as if you were being processed like some sort of factory machine. There were also an X-ray scanner, a metal detector and yet more guards.

“Hey – Ravi!”

“Ramesh, my friend. You see the cricket last night?”

“I saw it. What a match!”

“Two wickets down and we still came back. I thought we were finished!”

Cricket, football, tennis ... whatever. Sport was

their currency. Every day, the plant operators passed it between them and Ravi had deliberately watched the match the night before so that he could join in the conversation. Even in the cool of the corridor he was sweating. He could feel the perspiration beading on his forehead and he wiped it away with the back of his hand. Surely someone would stop him and ask him why he was still holding on to his toolbox. Everyone knew the correct procedure. It should be opened and searched, all the contents taken out.

But it didn't happen. A moment later, he was through. Nobody had so much as questioned him. It had gone just as he'd hoped it would. Nobody had lifted off the top tray of the toolbox and discovered the ten kilos of C4 plastic explosive concealed underneath.

Ravi walked away from the barrier and stopped in front of a row of shelves. He pulled out a small plastic device that looked like a pager. This was his EPD – or electronic personal dosimeter – which recorded his own radiation level and warned him if he came into contact with any radio-active material. It was set with his personal ID and security clearance. There were four levels of security at Jowada, each one allowing access to areas with different risks of contamination. Just for once, Ravi's EPD had been set to the highest level. Today he was going to enter the heart of the power station, the reactor chamber itself.

This was where the deadly flame of Jowada burned. Sixty thousand uranium fuel rods, each one 3.85 metres long, bound together inside the pressure vessel that was the reactor itself. Every minute of the day and night, twenty thousand tonnes of fresh water were sent rushing through pipes. The resulting steam – two tonnes of it every second – powered the turbines. The turbines produced electricity. That was how it worked. In many ways it was very simple.

A nuclear reactor is at once the safest and the most dangerous place on the planet. An accident might have such nightmarish consequences that there can be no accident. The reactor chamber at Jowada was made out of steel-reinforced concrete. The walls were one and a half metres thick. The great dome, stretching out over the whole expanse, was the height and breadth of a major cathedral. In the event of a malfunction the reactor could be turned off in seconds. And whatever happened in this chamber would be contained. Nothing could be allowed to leak through to the outside world.

A thousand safeguards had been built into the construction and the running of Jowada. One man with a dream of watching cricket in London was about to blow them apart.

The approach had come six weeks before at the street corner closest to his flat: two men, one a European, the other from Delhi. It turned out that the second man was a friend of Ravi's cousin

Jagdish, who worked in the kitchen of a five-star hotel. Once they had recognized each other, it seemed only natural to go for tea and samosas – particularly as the European was paying.

“How much do they pay you at Jowada? Only fifteen thousand rupees a month? A child couldn’t live on that amount, and you have a wife and family. These people! They cheat the honest worker. Maybe it’s time they were taught a lesson...”

Very quickly the conversation was steered the way the two men wanted it to go; and that first time, they left him with a gift, a fake Rolex watch. And why not? Jagdish had done them favours in the past, giving them free food which he stole from the kitchen. Now it was their turn to look after Ravi. The next time they met, a week later, it was an iPhone – the real thing. But the gifts were only a glimpse of all the riches that could be his if he would just agree to undertake a piece of business on their behalf. It was dangerous. A few people might be hurt. “But for you, my friend, it will mean a new life. Everything you ever wanted can be yours...”

Ravi Chandra entered the reactor chamber of the Jowada nuclear power station at exactly eight o’clock.

Five other engineers went in with him. They had to go in one at a time through an airlock – a white circular corridor with an automatic sliding door at each end. In many ways it looked like

something out of a spaceship and its purpose was much the same. The exit wouldn't open until the entrance had closed. It was all part of the need for total containment. The five men were dressed identically, with safety helmets and goggles. All of them were carrying toolboxes. For the rest of the day they would carry out a series of tasks, some of them as ordinary as oiling a valve or changing a light bulb. Even the most advanced technology needs occasional maintenance.

As they emerged from the airlock into the reactor chamber they seemed almost to vanish, so tiny were they in these vast surroundings, dwarfed by the bright yellow gantries and walkways overhead, by electric hoists and cables, soaring banks of machinery, fuel rod transportation canisters and generators. Arc lamps shone down from the edges of the dome, and in the middle of it all, surrounded by ladders and platforms, what looked like an empty swimming pool plunged twelve metres down, with stainless steel plates on all four sides. This was the reactor. Underneath a one hundred and fifty tonne steel cap, millions of uranium atoms were splitting again and again, producing unimaginable heat. Four metal towers stood guard in the chamber. If they were shaped a little like rockets, they were rockets that would never fly. Each one was locked in its own steel cage and connected to the rest of the machinery by a network of massive pipes. These were the reactor coolant pumps, keeping the

water rushing round on its vital journey. Inside each metal casing a fifty-tonne motor was spinning at the rate of fifteen hundred revs per minute.

The pumps were labelled north, south, east and west. The south pump was going to be Ravi's primary target.

But first of all he crossed to the other side of the reactor chamber to a door marked EMERGENCY EXIT ONLY. The two men had explained everything very carefully to him. There was no point attacking the reactor cap. Nothing could penetrate it. Nor was there any point in sabotaging the reactor chamber, not while it was locked down. Any blast, any radiation leak, would be contained. To achieve their aims an exit had to be found. The power of the nuclear reactor had to be set free.

And there it was on the blueprint they had shown him. The emergency airlock was the Achilles heel in the fortification of Jowada. It should never have been built. There was no need for it and it had never been used. The reason for a passageway between the reactor chamber and the back of the turbine hall, where it opened onto a patch of wasteland close to the perimeter fence, was to reassure the workers that there was a fast way out if it should ever be needed. But what it also provided was a single pathway from the reactor to the outside world. In one sense it was the barrel of a gun. All it needed was to be unblocked.

Nobody noticed Ravi as he strolled over to the

emergency door; and even if they had, they wouldn't have remarked on it. Everyone had their own worksheet. They would assume he was just following his. He opened the inner door – a solid metal plate – and let himself into the corridor. About halfway along, there was a control panel fixed high up in the wall. Standing on tiptoe, Ravi unscrewed it, using one of the few real tools he had brought with him. Inside, there was a complicated mass of circuitry but he knew exactly what to do. He cut two separate wires, then spliced them together. It was quite easy, really. The exit door slid open in front of him, revealing a patch of blue sky beyond a wire fence. He felt the sluggish air roll in. Somewhere, perhaps in the control room, someone would notice what had happened. Even now a light might be blinking on one of the consoles. But it would be a while before anyone came to investigate, and by then it would be too late.

Ravi went back into the reactor chamber and over to the nearest of the four reactor coolant pumps. This was the only way that wide-scale sabotage was possible. What he was aiming for was known in the nuclear industry as a LOCA – a loss of coolant accident. It was a LOCA that had caused the catastrophe at Chernobyl and had almost done the same at Three Mile Island in Pennsylvania, America. The pump was locked in its cage, but Ravi had the key. That was one of the reasons he had been chosen for this job. The right man in the right place.

He stopped in front of the cylindrical wall that rose more than twenty metres into the air. He could hear the machinery inside. The noise was constant and deafening. His mouth was dry now as he thought about what he was going to do. Was he mad? Suppose they traced this back to him. But at the same time, there was cricket, Ajala – his wife – Disneyland, a new life. His family were not in Chennai today. He had sent them to friends in Bangalore. They would be safe. He was doing this for them. He *had* to do this for them.

For a few brief seconds greed and fear hung in the balance, but then the scale tipped. He knelt down and placed the toolbox against the metal casing, opened it and removed the top shelf. The inside was almost filled with the bulk of the plastic explosive but there was just room for the timer: a digital display showing ten minutes, a tangle of wires and a switch.

Ten minutes. That would be more than enough time to leave the chamber before the bomb went off. He would exit the same way he had come in, and once he was on the other side of the airlock, he would be safe. If anyone questioned him, he would say he needed the toilet. After the blast, there would be panic, alarms, a well-rehearsed evacuation, radiation suits for everyone. He would simply join the crowds and make his way out. They would never be able to trace the bomb to him. There wouldn't be any evidence at all.

People might die. People he knew. Could he really do this?

The switch was right there in front of him. So small. All he had to do was flick it and the count-down would begin.

Ravi Chandra took a deep breath. He reached out with a single finger. He pressed the switch.

It was the last thing he did in his life. The men from the street corner had lied to him. There was no ten-minute delay. When he activated the bomb, it went off immediately, almost vaporizing him. Ravi was dead so quickly that he never even knew that he had been betrayed, that his wife was now a widow and that his children would never meet Mickey Mouse. Nor did he see the effect of what he had done.

Exactly as planned, the bomb had torn a hole in the side of the coolant pump, smashing the rotors. There was a hideous metallic grinding as the entire thing tore itself apart. One of the other plant operators – the same man who had been chatting about cricket just a few minutes ago – was killed instantly, thrown off his feet and into the reactor pit. The other engineers in the chamber froze, their eyes filled with horror as they saw what was happening, then scattered, diving for cover. They were too late. There was another explosion and suddenly the air was filled with shrapnel, spinning fragments of metal and machinery that had been turned into vicious missiles. The two closest men were cut to

pieces. The others turned to run for the airlock.

None of them made it. Sirens were already sounding, lights flashing, as the machinery disintegrated. Everything in the chamber turned into a black and red hell. A cable whipped down, trailing sparks. There were three more explosions, pipes wrenching themselves free, fireballs spinning outwards, and then a roar as burning steam came rushing out like an express train. The worst had happened. Jagged knives of broken metal had smashed open the pipes, and although the reactor was already closing down, there were several tonnes of radioactive steam with nowhere to go. One man was caught in the full blast and disappeared with a single, hideous scream.

The steam thundered out, filling the entire chamber. Normally the walls and the dome would have contained it. But Ravi Chandra, in almost the last act of his life, had opened the emergency airlock. Like some alien stampede, the steam found it and burst through, out into the open air. All over the Jowada power station, systems were being shut down, corridors emptied, emergency safety measures put into place. But it was already too late.

The people of Chennai saw a huge plume of white smoke rise up into the air. They heard the alarms. Workers at Jowada were calling their relatives in the city, warning them to get out. The panic began at once. More than a million men, women and children dropped what they were doing and tried

to find a way through traffic that had come to a complete standstill. Fights broke out. There were collisions and smash-ups at a dozen different junctions and traffic lights. But it had all happened too quickly and not a single person made it out of the city before the radioactive cloud, blown by a northerly wind, fell onto them.

The story appeared that night on television news all around the world.

It was estimated that at least a hundred people had died in the hour following the explosion. There had been casualties within the Jowada power station itself, but curiously far more were killed in the mad crush to get out of Chennai. By the following morning the newspaper headlines were calling it A NUCLEAR NIGHTMARE – in capital letters, of course. The Indian authorities were adamant that the steam cloud would have contained only low-level radiation and that there was no need for panic, but there were just as many experts who disagreed.

Twenty-four hours later, an appeal was made to help the people of Chennai. Further casualties were being reported. Homes and shops had been looted. There were still riots in the streets and the army had been called in to restore order. The hospitals were full of desperate people. One British charity – it called itself First Aid – came forward with a comprehensive plan to distribute food, blankets and, most important of all, potassium iodate tablets

for every one of the eight million people of Chennai to counter possible radiation sickness.

As always, the British people were unfailing in their generosity, and by the end of the week they had raised one and a quarter million pounds.

Of course, if the disaster had been any greater, they would have raised much, much more.