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This book is dedicated to the children of Fukushima, Miyagi, and Iwate Prefectures.

May they grow up to be healthy and strong.

and

The Japanese youth.

You have the greatest opportunity with your advanced technology to lead the world with new, clean alternative energy.

## World catastrophe waiting to happen

In July 2012, TEPCO (Tokyo Electric Power Company) announced that the Fukushima Daiichi nuclear power plant was still emitting 10,000,000 becquerels (Bq) of radiation per hour. The Number Four reactor building is leaning precariously to one side and could collapse if there is another earthquake with a magnitude of 6.5. If this happens, the spent fuel pool in the Number Four reactor building will run dry and catch fire, releasing around 50 times more radiation than Chernobyl. This will be a world catastrophe and will affect the lives of every person on this planet. The Japanese government, despite knowing these facts and contrary to strong public opposition, had the audacity to restart two nuclear reactors at the Oi plant two months prior to this announcement. Fukushima is not just a Japanese problem but a world problem and should be dealt with by the international community, not by a company and a government that continuously hides the truth from the public. In August 2013, TEPCO announced that 300 tonnes of radioactive water was escaping into the Pacific Ocean every day.

In a time of universal deceit, telling the truth is a revolutionary act.

~ George Orwell

Our lives begin to end the day we become silent about the things that matter.

~Martin Luther King

Earthquakes and tsunamis have the power to damage a nation.

Nuclear energy has the power to destroy a whole country.

~ Vindal Vandakoff

Reality is usually ridiculed and illusion easily accepted.

~ Unknown

On March 11, 2011, at 2:46 p.m. a catastrophic event took place, changing the lives of millions of Japanese.

This set the cogs in motion that would forever change the world.

## A word from the author

I was sitting in my study in Japan on March 11, 2011, at 2:46 p.m. preparing another book campaign for my recent book *Zeron: The Awakening*, which had just reached eighteenth on Amazon's Science Fiction Best Sellers list. I live in Hitachiota, Ibaraki Prefecture, which is located about one hundred kilometers north of Tokyo and about 120 kilometers south of the Fukushima nuclear plant. My wife, her mother, and my twenty-year-old daughter, who was on leave from university, were at home.

"Daddy, earthquake!" shouted my daughter from downstairs.

"What?" I called back.

"An earthquake's going to hit in thirty seconds," she shouted back. She didn't seem to be too concerned, and neither was I, as earthquakes are a common part of life in Japan.

But then the rumble started, and the ground began to shake.

"Sounds like it'll be a big one!" I called back casually.

And then the mountains thundered, and the house shook violently.

"Get outside!" I yelled, bolting from my study and racing down the stairs. I had been in enough earthquakes to know this was going to be a huge one.

The next wave of seismic energy hit like a sledgehammer, and the whole house lifted off its foundations.

My wife and daughter were trying to help my mother-in-law out of the house. I grabbed her and carried her outside. The air boomed and the ground shook as if it was going to tear apart. We clung to the side of the house to stay on our feet. I looked at waves crashing out of the swimming pool. The cedar trees swayed precariously as if they were about to snap in half.

"Get into the yard!" I shouted, carrying my terrified mother-in-law.

Shock wave after shock wave tore through the ground, and we were barely able to stay on our feet. Another wave of energy hit, and we all stumbled backward. I lost my grip on my mother-in-law, and she crashed to ground. The earth jolted again, and we were sent sprawling across the lawn. Then it was gone, and an eerie silence befell us.

The Great Eastern Earthquake registered a magnitude of 9.1, and it was the first of the thousands of earthquakes that would jolt Japan over the next year. We had seventy earthquakes above 4.5 from 2:46 p.m. to midnight, many of them registering magnitudes of 6 to 7.9, and that's not counting the countless smaller ones below 4.5. The next day we had one hundred and seventy—about one every four minutes.

Electricity was out, so I went to my car and turned on the radio. What I heard made the blood drain from my face and an icy chill run up my spine. Tsunami warning after tsunami warning was being broadcasted—twenty meters high for Iwate Prefecture,

time of impact twenty-five minutes; fifteen meters high for Miyagi Prefecture, time of impact twenty minutes; fifteen meters high for Fukushima Prefecture, time of impact thirty minutes; six meters high for Ibaraki, impact thirty-five minutes.

“Jesus Christ!” I exclaimed.

“They’re saying to evacuate from lowland and rivers,” my daughter shouted.

“Minakawa lives next to the river,” I said at once. I took out my mobile phone and punched in the number; amazingly I got through.

“The tsunami is going to come up the river. You need to get out,” I said in Japanese as calmly as I could.

Mrs. Minakawa wasn’t talking coherently, and I could hear her daughter and grandchild’s cries in the background.

“You need to get out,” I repeated. But I only got a confused answer that I could make no sense of.

I jumped in my four-wheel drive and sped down the dirt track and then swung right onto the sealed road. The more I descended the more damage I saw; stone walls around most houses had fallen over, old farmhouses had collapsed, and tiles littered the road. The most severe damage was on the low farmland where the soil was soft. I had to cross a river to get to Minakawa’s house, and I calculated I still had at least twenty minutes. I slowed and checked the way was clear and then sped across the bridge and turned left onto a side street. In front a barn had toppled over onto the road. I managed to squeeze my car around it, but there was house collapsed across the road blocking my way. I reversed back up and swung into a narrow lane, put my car in four-wheel drive, and drove across some farmland and back out onto the road.

Mrs. Minakawa was standing outside her house with some bedding and clothes; most of the stone walls around her house had fallen onto the road, and the barn had collapsed onto her car. “Where’s your daughter?” I asked.

“She’s at the evacuation area,” she replied.

“Get in! I’ll take you there,” I said, throwing her bedding into the back.

We drove through several narrow lanes and came to the evacuation area. Her daughter was in her car, nursing her baby, her face ashen, expressing disbelief.

“Come up to my house and stay tonight,” I offered.

Mrs. Minakawa nodded, switched the bedding to her daughter’s car, and got in.

We headed to the main road, but there was a traffic jam, so we turned around. I told them I was going to get some firewood from my friend and would see them up at my house; they agreed.

Just before I got to the river, my mobile phone rang. “*Hai, moshi moshi*,” I said.

“Daddy! Are you OK?” came the panicked voice of my younger daughter in Australia.

“We’re all fine,” I replied.

“Where are you?” she asked.

“I’m just coming back from Minakawa’s. She needed some help.”

“They’re showing footage of the tsunami on TV now; it looks like the wave out of the book *The Perfect Storm*, and it’s going up the rivers.”

I swallowed hard and sped across the bridge.

“Stay away from the rivers,” she said.

“That’s exactly where I am,” I answered, regretting the words as soon as they left my mouth.

“Get out of there!” she screamed. “It’s going up the rivers and destroying everything.”

“I’ll call you back,” I said and hung up.

I continued to my friends Mr. and Mrs. Fujii’s house. When I arrived I saw that Mr. Fujii’s mother was sitting in the car with a blanket around her. I asked him what she was doing, and he told me she was too scared to go back into the house. His mother spent the next few nights, like so many other people, in the car. The Fujiis made me some coffee, and we sat and talked for a while as the tremors rattled the house every few minutes. He then generously gave me some firewood, and I headed back down the hill. I stopped near the bottom and scanned the farmland for any sign of the approaching tsunami; there was none, and I quickly drove down and then back up into the safety of the hills.

That night we sat around the wood burner while my wife played the guitar; we had no idea what destruction the tsunami had caused, nor that the Fukushima nuclear plant had lost all power and the six reactors were on the brink of meltdown.

The next morning my American friend Mike came around to get some water, as I was not connected to town water but instead piped it down from a creek 500 meters up the hill. That’s when I found out that the reactor in Fukushima had gone critical. I was worried but not alarmed as I knew, or, more to the point, was led to believe, the Japanese nuclear industry had the best safety record in the world.

Later that day I drove down to Tokai village, about twenty minutes away, to check on my office. It had half collapsed, so I salvaged the computer and some important documents and went back home.

I heard nothing about the explosion at the Fukushima plant until the next day; we immediately fled to Tokyo and then to the island of Shikoku about 900 kilometers south. As we headed south the next two reactors blew up, and to my absolute bafflement the Japanese government and TEPCO (Tokyo Electric Power Company) who owned and ran the reactors, kept insisting there was nothing to worry about and that everything was OK. Things are definitely not OK when three nuclear reactors blow up.

I decided to ring an old friend who had been a manager of a nuclear plant in Japan. His response was absolutely bizarre. He told me that everything was fine and that there was nothing to worry about and that he himself was out on his roof replacing some broken tiles. He then went on to lecture me that fleeing such a long distance increased my risk of having a serious accident and that I would be much safer if I had stayed at home in Ibaraki. I hung up the phone and said, “Yeah right.” I have never again talked to him, nor intend to talk to him.

I then rang a friend in America who works in the nuclear industry. His response was quite different; he said to get as far south as I could or leave the country. He told me not to even think of returning home until the radiation level had dropped. Even then I

should only make a quick visit because if one of the reactors ‘burps,’ as he put it, I wouldn’t want to be downwind, as there would be some pretty lethal particles flying around.

Ironically, my first job when I came to Japan twenty-seven years ago was as an English teacher at a nuclear power plant. What is even more ironical is that it was at Japan’s very first nuclear plant in Tokai village (Tokaimura). That reactor has now been decommissioned, but the Number Two reactor is still operating. The Number Two reactor only just survived the same fate as the reactors in Fukushima: three of the four emergency generators were flooded by the tsunami—the remaining one just enough to save the day by keeping the reactor cool. They had just recently raised the height of part of the tsunami wall and were in the process of relocating the backup generators to high ground.

When I said Tokai village, some of you may have thought you’ve heard that name. Yes, you’re right. It was home to the JCO (Japan Nuclear Fuel Conversion Company) nuclear accident in 1999. In 1999, workers at a uranium reprocessing plant operated by JCO were filling a precipitation tank with uranium enriched to 18 percent with a radioisotope known as U-235. The workers who lacked proper training accidentally added sixteen kilograms instead of the permitted 2.4 kilograms, and this initiated a criticality. It continued for twenty hours before it could be stopped. Two workers died shortly after being exposed to massive amounts of radiation.

I remember the day well. I was about to go to my office in Tokaimura at about three in the afternoon when my wife called out that there was a leak.

“I thought the plumber had fixed it,” I said, thinking she was talking about the upstairs shower.

“No, not the shower. Some nuclear facility in Tokai,” she replied.

I switched the TV on and watched reporters with Geiger counters measuring the radiation. “Ring the village office and find out what is happening,” I told my wife.

She rang and they said everything was OK—nothing to worry about. They even said it was safe for children to play outside.

I immediately assumed they were lying, as TV news reporters in Tokai were registering high levels of radiation on their Geiger counters. I rang my office and told the staff to go home. I told them to take a route in the opposite direction the wind was blowing. I then evacuated my family to an area fifty kilometers to the west. That night the government established a ten-kilometer, *no-go zone*.

The next day I decided to go north to a friend’s house—and this is where it gets really bizarre. We went north to Fukushima Prefecture to a town called Tomioka. Take a wild guess what lies a few kilometers down the road on the coast? That’s correct, the Fukushima Daiichi and Daini nuclear power plants. Actually, my friend Mr. Yamada, who I believe now lives in the southern island of Kyushu, made a joke the first night. He said, laughing, that we had evacuated to his town, but imagine if the power station nearby blew up while we were there. We had a good laugh at the time.

So, I have been caught up in two nuclear accidents, and what do I find so similar about the two? The cover-ups, the lies, and the irresponsible handling of the accidents by both the government and the companies involved. According to independent and private

sources, this blatant mismanagement has led to millions of people unnecessarily exposed to dangerous levels of radiation.

It seems the Japanese government, NISA (Nuclear and Industrial Safety Agency), and TEPCO can act entirely by themselves—above the law.

Conservative estimates predict about one million people will die in the next twenty to thirty years owing to radiation exposure from Fukushima.

What I find interesting is that no one has been arrested for negligence. Actually, the blame has not been pinned on any individuals. I wouldn't point the finger of blame at the plant workers but at the TEPCO officials who knew that this type of accident could occur and did nothing to prepare for it.

On the contrary, I would glorify the men known as the Fukushima Fifty for preventing a much larger crisis from occurring—a crisis that would have affected the whole world with much more dire consequences.

Although I have written this book as a fiction title, what went on in Japan during the day of the earthquake and days after is based on facts and interviews with the survivors. My wife and I took supplies to the town of Otsuchi four weeks after the tsunami, and what we witnessed is beyond words. We have been back several times since and truly admire the strength of the Japanese peoples' spirit. The book unveils what the Japanese people went through and are still going through as well as what happened at the Fukushima Daiichi nuclear plant. I point out that the nuclear industry worldwide is driven by profit and has deliberately covered up safety issues.

A recently released independent report, which condemns the gross mishandling of the nuclear accident, cites TEPCO's refusal to allow any of its workers to be interviewed. I wonder why?

And tell me why the supermarkets are stocked with imported vegetables, meat, and seafood and people are buying bottled mineral water by the box? *Everything is OK; there is nothing to worry about.* Seems the public do not believe as the government would like them to.

Please enjoy!

Vindal Vandakoff



# Japanese Beyond Tragedy

## Prologue

They flew low across the city, and Captain Mackeller stared down at the chaos below.

“What’s happening?” asked his copilot, his voice full of anxiety.

“They are trying to escape,” the Captain said, staring down at the mass panic. The streets were gridlocked, the sidewalks jammed with people carrying what few belongings they could hold.

“Where are they going?”

The Captain adjusted his microphone. “To the coast. There are ships waiting to take them to China, Taiwan, South Korea, and Russia.”

“Why?” the copilot asked.

The Captain didn’t answer but instead banked the helicopter left and flew north along the coast. The copilot watched the mass exodus all along the coast. Drove of people headed toward the sea. He looked out over the ocean at the armada of fishing boats, freighters, tankers, and yachts sailing away from the coast. Although the masses were heading to the coast, there were no ships bound to land, and he knew the people were being abandoned.

Moments later the Captain slowed the helicopter as they flew over Yokohama. The scene below was horrifying. The streets were jammed with abandoned cars, and the hordes of people moved like a wave toward the harbor. The docks were crammed, and the boats overflowed with the fleeing. He watched one ship, a mound of bodies and limbs, heel to the side and turn over, throwing the people into the water. “What’s happening?” the copilot insisted, his eyes remaining pinned on the horror.

The Captain turned to the copilot. “It has happened,” he said acidly. “They were warned and did nothing to prevent it. The international community knew but did nothing. People protested, but the Japanese government hid it with a media blackout. Money and greed took priority over the well-being of the people. The leadership has failed the people.”

“What has happened?”

The Captain didn’t answer him and they continued across the bay to Tokyo. What they saw in Tokyo sent an icy chill up both their spines. Millions of people were swarming like ants to the harbor side, but the ships had left and were heading out to sea; the people were trapped and there was no escape. The copilot noticed some movement in the water and narrowed his eyes. At first, he didn’t believe it, but then the raw reality hit him; people were swimming out to sea—thousands upon thousands of people trying to swim away from the looming peril.

“What are they fleeing from?” the copilot asked.

The Captain ignored her question and pushed down on the controls. As they flew north along the coast, the scene deteriorated quickly. At Oarai harbor, mayhem had

broken out, and thousands of people were fighting to board the few remaining boats. They watched as the crowd surged forward, pushing the people at the front into the water. Some people were trying to clamber up the sides of the boats. They watched a man slip and get crushed between the dock and a boat. A mother holding her two daughters was hurled over the side as the crowd surged forward again. The crew of one ship clubbed people who were climbing over the side with iron bars, sending them plunging into the sea.

“What is happening? Why is everyone trying to escape?”

The Captain was silent. He just pointed a finger to the north.

As they flew over Hitachi city, they noticed people staggering along the roads as if they were drunk. They watched as one lady collapsed to her knees, her hands clasped tightly around her head. The lady began to cough, and blood sprayed the sidewalk, and then she crumpled onto her side. The copilot stared out the window paralyzed by what he had witnessed.

“We will reach the destination in a few minutes,” the Captain said flatly.

Where? The copilot was about to ask, but now he knew where they were headed. He looked down as they flew over Iwaki city. The streets were littered with the dead; no one had survived. Tears came to his eyes, but he fought them back, replacing them with thoughts of anger. *They have killed them. Those few men at the top. Those irresponsible money junkies.*

The craft slowed and hovered. “There!” said the Captain, pointing to the Daiichi nuclear power plant.

What the copilot saw made his blood run cold. The Number Four reactor building had collapsed into a pile of rubble, and black smoke billowed from the debris. “The fuel pool with the spent fuel rods,” he said.

The Captain nodded. “There was a 6.5 quake early this morning and the structure collapsed.”

“Didn’t they know it could collapse?”

“Of course they did,” he replied.

“So why didn’t they do anything about it?”

“Greed,” the Captain said simply. “They knew if they told the public the real story they wouldn’t be able to get the first two reactors restarted in Oi. They needed to get them started as quickly as possible.”

“Why did they need to restart them so quickly?”

“A gateway,” he said.

“What do you mean?”

“All fifty-four reactors were shut down after the nuclear accident. So if they could restart the reactors, it would lead to more reactors being restarted. It would save the nuclear industry.”

The copilot stared at the billowing smoke as anger welled within him. “I can’t believe they let this happen. Japan has been destroyed.”

“Not just Japan,” the Captain said, staring down at the crippled plant. “The other five reactors have rods in the spent fuel pools, but now the radiation level is so high that

no one can survive in the plant for more than a few minutes.” He paused letting his words hang in the air for a moment. “The cooling systems for these pools will soon fail, and the pools will boil dry, and then the rods will catch on fire.”

The copilot’s eyes went wide. “How far will it spread?”

“It will contaminate most of the Northern Hemisphere, making many countries uninhabitable.”

The copilot sat there speechless.

Captain Mackeller’s eyes flickered open and it took him a few moments to realize his surroundings. He sat up on his bunk and shook his head. He was on the USS Ronald Reagan, a US aircraft carrier stationed in Tokyo, Japan. “Damn,” he cursed to himself. “That’s the third time I’ve had that dream.”

“Are you OK?” asked his copilot from the bunk below.

“Yeah, I’m fine. Just another bad dream.”

“Same one about the nuclear accident?”

“Yeah, same one,” he said, jumping off the bunk.

“You think it will happen?” asked the copilot sitting up.

Mackeller shrugged his shoulders. “I don’t know, but I hope not.”

“Well...you were right about terrorist attack on the World Trade Centre in 2001 and the death of your copilot in Iraq two years ago.”

Mackeller ignored the comment and went to the washbasin. He looked at himself in the mirror; dark blue eyes, eyes that were void of emotion—emotion that had been drain from him like the blood that had been drained from the hundreds or even thousands, he wasn’t sure any more, of Iraqi and Afghanistan civilians he had killed with his rockets. His square hard face was scarred on the right side by shrapnel—the same shrapnel that had killed his copilot in Afghanistan.

“Do I survive in this dream?” asked the copilot.

Mackeller nodded.

# Chapter One

March 11, 2011

Her eyes snapped open in the darkness; she could hear the deep distant rumble and knew exactly what it was. She flung her futon cover off and jumped up and made for the next room. It hit like thunder, her house shaking violently, books and ornaments tossed from the shelves. She clung to a wooden beam as a wave of energy jolted the house, threatening to tear it from its foundations. The Buddhist altar crashed to the floor. The thunderous noise grew, and another wave tore through the house, sending her sprawling across the floor. The wall clock smashed to the floor. The structure trembled and she could hear the roof tiles shattering on the road outside. And then it was gone, and an eerie silence fell over the town. She read the time on her watch: 1:55 a.m. She slid open the door to the next room and saw her bedridden husband staring out of the darkness. "It's all right. I won't leave you," she said softly. She moved next to him and held his trembling hand and began to stroke his hair.

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"I'm so cold! Help me! Mommy...Momm...y—please Mommy!" She lay trembling, her freezing hands barely able to cling to pile of wooden wreckage. The first snowflakes melted on her wet skin, but her body was too numb to feel their icy touch. Night shrouded the last of the daylight and darkness swiftly cloaked her.

"Mommy!" she managed to scream one last time before she disappeared into the bitter darkness.

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It was just getting light when Sachie slipped out of the futon and dressed quietly.

"*Mo iku no?* Are you going so soon?" Her boyfriend asked, stirring under the quilt.

She knelt down next to him and stroked his black hair. "The tournament is next month. I have to practice."

He sighed. "You always put practice before me."

She smiled and looked into his brown eyes and then put her hand on his cheek. "I must win this tournament."

He brushed her hand away and sat up; a dim light seeped through the window revealing his muscular body and sharp facial features. "Have you told your parents yet? Or at least your mother and grandfather?"

Sachie giggled. "You mean that you asked me to marry you?"

"Well—" He paused. The splay of twilight accentuated her soft face and long dark hair—she was so beautiful. "Yes. You did agree to marry me, didn't you?"

Sachie didn't answer; just let the question hang in the air like a taut string about

to snap.

“You said *yes*...remember?” His voice was tinged with concern.

At last she laughed. “Of course I will marry you.”

He let out a shallow sigh of relief. “Stop teasing me.”

“I wasn’t,” she said with a smirk.

He took her hand and lay back, gently luring her onto him. “You were,” he said. “You know I’m a sucker for you.”

She grinned and then kissed him softly on the lips.

He felt her warmth flow through him and pulled her tighter, kissing her more deeply—she didn’t resist and he rolled her onto her back. “I love you,” he whispered.

“*Watashi mo*. Me too,” she said softly.

He could feel her hard breasts on his bare chest; feel himself growing. He kissed her again and she kissed back. He unbuckled her jeans and slipped them down.

A few minutes later, she lay panting in his arms. He gently kissed her on the forehead and then closed his eyes and let sleep take him.

Sachie slid from the futon, took a shower and dressed. She looked down at him and smiled. “Tomo,” she said, whispering his name. “I can’t—” He let out a soft laugh. The thought of him coming to her house and traditionally asking for her hand in marriage made her almost burst out with laughter. He would have to don a black suit and tie—neither he owned, nor had probably ever worn in his life. As tradition required, he had to kneel before his parents, head to the floor and ask his father for the right to marry her. Suddenly, the memory of the night of her father’s accident surfaced and a tear ran down her cheek. “I’m sorry father.” She turned and left his apartment.

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“Heave!” shouted the old fisherman to his grandson. “Heave or they’ll get away.”

His grandson pulled on the net, heaving the fish closer to the boat.

“That’s it! Just a little closer,” the old man encouraged, moving to the starboard side. He hauled the net and up and over the gunwales and fish spilled onto the deck.

“Well done!” the old man said, slapping his grandson on the back.

The young man stood on the deck, fish flapping around his rubber rain boots. “Thanks for the lesson,” he replied.

“You’ll make a great fisherman.” A broad smile creased his dark, leathery face, revealing a mouth with a few remaining tobacco-stained teeth—the daily bottle of sake aiding the decay.

His grandson was about to say he didn’t want to become a fisherman. He didn’t want to learn the trade, didn’t want go home stinking of fish every day, but he held back knowing it would break the old man’s heart. He didn’t know when he would tell him that he had been accepted into Tokyo University’s Department of Law. His goal—young and ignorant as he was—was to become a rich lawyer and siphon as much money as he could out of the hapless public. His parents had kept his acceptance into university under the rug. Instead he asked, “Do you always get such a good catch?”

“Only when I have such a good hand to help me.” He grinned, lifting the net so the fish slid into a plastic box.

“Is that so?” his grandson replied, scooping up the remaining fish in a bucket. “I think you’re having me on.”

“Look!” said the grandfather, pointing toward the land.

The grandson gazed in the direction he was pointing. The sky was awash with streaks of red, orange, and pink. The morning sun was just peeping over the crests of the snow-capped mountains, splaying a golden light across the silver sea.

“It’s so beautiful,” said the grandson. But he knew he couldn’t stay in this town. He knew his destiny lay in the big city. Like the young all over Japan, he too wanted to flee the countryside for the money and excitement of the big cities of Tokyo, Osaka, and Yokohama. He would join the ranks of deserters and leave the aging population to make its last stand throughout the rural areas of Japan.

“Yes, so beautiful,” his grandfather said. “Let’s get these fish packed up and go home and have a sake to warm us.”

His grandson nodded his agreement.

The grandfather went into the wheelhouse and turned the ignition. There was a loud crack followed by smoke.

“What happened? Are you OK?” yelled the grandson.

“Damn electric system blew,” coughed the grandfather, stumbling from the wheelhouse.

“Can you fix it?” asked the grandson anxiously.

“No and the radio is down as well. We’ll have to drift until someone sees us. They’ll eventually work out something is wrong and come looking for us.”

“I can ring the harbor on my mobile phone.” He took out his phone and pressed the start button. “Damn!” he cursed.

“What’s wrong?”

“I forgot to charge it last night—no power.”

“That’s OK,” said his grandfather matter-of-factly. “I’ll put up the aft sail so when the wind comes up we can steer towards shore. (Many Japanese fishing boats hoist a small aft sail to save on fuel when they have a tailwind.)

“Do you think a wind will come up today?”

“At about ten o’clock,” he replied.

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“Tono, the village of Folk Law,” Yukino called excitedly from the backseat.

“That’s right. Everything strange and weird comes from here,” Yuta said, grinning and putting his foot down on the accelerator and running another red light.

“What do you mean ‘weird’?” she asked.

“UFOs,” he replied.

“You’re the one who’s weird,” she said.

He took it as a compliment and said, “Not just me; many people have seen

strange lights in the sky over the last couple of weeks.”

She ignored him and looked out the window as the sun crested the mountains and night faded away to morning.

“I love *Kapa*. He’s my favorite folk character,” Yukino said, sliding the van’s window open to let the fragrances of Tono blow against her face.

“Well, I guess you can see him since you’re still a child.” Yuta grinned through the rearview mirror.

Japanese folk law says that only children can see the mystical characters called *Kapas*. The creatures are believed to live in rivers and ponds. They are about the size of a child. Their scaly, reptilian skin ranges in color from green to yellow or blue, with webbed feet and hands. They are naughty creatures that like to play pranks, such as loudly passing gas or looking up women’s skirts or kimonos or, to the more malevolent, drowning people and animals, kidnapping children, and raping women. On top of their head they have a lily pad-like bowl, which is believed to be their power source, and it must be kept full of water or their power will drain away, leaving them rendered helpless.

Yukino glared back at his reflection. “Well, that’s one advantage we have over you adults.”

His grin stretched further across his face, and she regretted what she had said, playing straight into his hands. She had announced, as if on a loud speaker, that she was not old enough for him—not that he was that much older. But, when you are sixteen, four years’ difference seems like an eternity apart.

He looked at her through the mirror again. “Do you know how to escape from a *Kapa* if you encounter one?”

She turned her head and stared out the window, ignoring his question.

“They are really obsessed with being polite.” He paused and looked at her reflection staring out the window. “There is only one way to escape. I know because I encountered one when I was your age.”

She quickly turned and stared back at him through the mirror. “Where?” she asked.

“At the *Kapa* temple just over there,” he said, pointing out the window.

“How did you escape?”

“I knew that they are obsessed with politeness, so I bowed deeply and the *Kapa* returned the bow. The water spilled out of the bowl on his head, rendering him powerless until the bowl was refilled.” He looked back and saw her eyes wide with astonishment.

“Did you refill the bowl?” she asked, her voice full of curiosity.

“Uh...”

“If you refill his bowl, he must serve you for the rest of your life and—”

“Well I di—”

“You can show him to me, can’t you? He has to do whatever you say?”

Yuta knew he had gone too far. “Look! I didn’t refill his bowl. I ran for my life.”

“What! You didn’t put water back into the bowl,” she said disappointedly.

“I just wanted to get as far away as possible—as quickly as possible,” he replied. He evaded her eyes in the mirror.

“You’re a fool,” she said, looking back out of the window.

“I am not,” he said defensively.

“Coward,” she murmured, paying no attention to him.

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Mr. Suzuki drove his Toyota hybrid through the rice fields of Futaba town in the direction of Fukushima Daiichi nuclear power plant. He thought driving a hybrid car was a little contradictory considering he was the manager of a nuclear power station. His company TEPCO didn’t want people to reduce their energy usage—on the contrary, they wanted them to use as much as they could. TEPCO and the other Japanese power companies wanted everyone to use electric cars so they could build more and more nuclear power stations all over Japan. Forget about solar and renewable energy; nuclear was clearly the future.

He turned left and in the distance, set against the backdrop of a clear spring sky, towered the six reactor buildings of Fukushima Daiichi nuclear power plant. Unfortunately, his mood didn’t reciprocate the lovely spring morning. Last night he had come home a little too late from a hostess bar and a little too drunk with lipstick lips on his cheek. His wife was unimpressed by his incoherent excuses, and he had an uncomfortable sleep on the bare *tatami* floor. (Tatami floor is a straw mat forming a traditional Japanese floor covering.) When he had woken in the morning, he had found a note on the table saying she had gone to stay with their daughter. “Damn Risa!” he cursed out loud, remembering the cute young girl who had sat and poured him drinks the night before and kept him company listening and talking to him. She’d even sounded interested when he’d voiced his opposition to the construction of a new tsunami wall that had suddenly come under consideration to ward off a *killer-tsunami*. He let out a long sigh at the absurd idea. This so-called *killer-tsunami* was the concoction of a group of seismologists and was scaring the crap out of some Tokyo politicians. A report had been submitted two days previously that predicted a tsunami of more than ten meters could hit the Fukushima plant. He put these types of seismologists in the same category as the sensationalist news reporters—idiots who had no inkling of how much trouble and damage they did to world economies and the everyday person by spreading information devoid of facts and, in some cases, spreading downright lies. He shook his head in disgust and imagined the next pandemic would probably be dog or cat flu, and everyone would have to kill their precious pets—sure, it would make great news.

“Bastards!” he yelled out the window. He had only two years to go before retirement, but if the construction of the new tsunami wall was given the go-ahead, his retirement would be put on hold for another few years. His plan to retire to Hawaii would come to nothing.

“Bastards!” he yelled out the window again. He let his thoughts wander back to the night before, and Risa’s sweet face floated into his mind. She was new at the bar, and she’d genuinely seemed impressed that he was the boss of the plant. He guessed the *Mama-san* had sent her to his table because all the other girls were bored of hearing the



same old stories about his work. He let out another long sigh. He had worked for TEPCO for thirty-five years, and, except for the occasional company golf game, he had no other interest outside of his job. His daughter was married to a *salary man* in Osaka and only came home once a year at New Year; although last year she had made up some excuse why she couldn't return. His son, the one they had placed so much hope in, had dropped out of university in the first year. He had taken up surfing and now lived in Okinawa, working part-time in convenience stores and pubs. He hadn't seen him for three years, except for the rare telephone call when he needed money to support his fruitless lifestyle. He was a damn beggar he had told his wife on more than one occasion, and she had nodded her agreement, and then, without telling him, she would transfer money into his bank account the next day.

He looked in the rearview mirror, his head shaved bald—the modern man's answer to rejuvenation once the receding hairline turned to a shiny patch. He had more wrinkles than the last time he had looked. He wasn't aged by any means; he still looked way below his age. And if he compared himself to his American counterparts in GE (General Electric), who visited the Daiichi plant on occasions, he looked half their age. He smiled and touched his cheek, remembering Risa's soft kiss, the kiss that had stained his skin and made his wife over the moon to see him—so over the moon that he had spent the night on a bare tatami floor. Then he remembered she had whispered into his ear. He pulled over to the side of the road and searched his coat pocket. He took out the paper chopstick cover and read what she had written. He looked out the window, his thoughts swaying back to his wife, and he touched his wedding band. "Yes, I still love you," he said out loud. How many times had he repeated this sentence; it seemed almost a daily ritual recently, as if he was trying to convince himself. His wife hadn't kept herself in shape and was twice the weight she should have been. Of course, she was a loyal, dutiful Japanese wife who always greeted him whatever time he came home. Always, she would pour him a cold beer and listen attentively to what had happened at the power plant that day, and then she would serve him dinner and prepare his bath. While he soaked in the bath, she would wash the dishes and then leave the evening newspaper on the table with a cup of sake and go to bed. He couldn't remember the last time they had made love.

He looked down at the paper chopstick holder.

*Meet me tomorrow for lunch?*

*Two o'clock at the Mellow Yellow Café in Tomioka.*

*09023476383*

*Risa*

There were lipstick lips on the chopstick holder.

He brought the paper to his nose and inhaled her scent. He pulled back onto the road and drove flat-out toward the Daiichi plant, a big grin plastered across his face; he felt young again, and he began to sing a hit from his university days.

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Mr. Saito watched the car pull back onto the road and speed off toward the Daiichi plant.

One of the plant's workers rushing to work, he thought. He slid the door closed behind him and gazed out over the farmland. Saito's family had farmed rice on this land for centuries, going back 500 years, and now he and his son-in-law farmed it. They loved the land and took great pride in the high-quality rice they grew. It was said that the pure river water made the Fukushima rice especially tasty, but he knew it was generations of cultivating a good seed that made their rice superior to others, although he did have to concede that the water probably played a part as well.

He went over to a small shrine next to the house, lit a stick of incense, and placed it at the foot of the 500-year-old altar and then clapped his hands twice and bowed silently in prayer. He then went over to the barn, climbed onto his tractor, started it, and let it idle while the engine warmed. He was seventy-eight, fit, and well-tanned from working outdoors. He had a pleasant round face with a small nose and a crop of grey hair—a quiet and simple man that needed no more than the love of his family, a good hot meal once a day, and the occasional cup of sake. He wore a navy blue jacket, matching colored baggy trousers, and black rain boots. His thoughts drifted to his wife and his daughter's family. A few weeks ago, his son-in-law had asked his permission to take his two grandchildren, a four-year-old boy and a six-year-old girl, on a trip to Okinawa before the rice planting started. He had thought it a good idea and gladly agreed, and, even though he loved his family deeply, he didn't mind having a little peace and quiet for a few days. He pushed down on the accelerator, and the tractor lumbered slowly forward toward the rice fields.

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Sachie's chest heaved and her heart pounded in her ears as she climbed the last few meters to the mountain peak. She pulled the sword from her waist-strap, the blade shimmering in the dawn light. She faced the bay of Otsuchi, raised her sword high, and brought the blade down, cleaving the air with no sound. Behind her the sky was a kaleidoscope of colors. Again she repeated the attack drill, but this time she shouted, "*Men!*" as the blade met the imaginary enemy's skull. Over and over she performed the drill with the skill of an expert Kendo fighter. She was training for a tournament in Tokyo at the Budokan, the national martial arts stadium in a suburb of Kudan. She had been there twice, once when she was a young girl with her grandparents. They had gone on August 15 to the ceremony the emperor headed every year to commemorate the Japanese people lost in the Second World War. She remembered it well—the buildings, the people, and the fashion so strangely different from that of her hometown. But what she really remembered was the heat—the midsummer heat of forty degrees Celsius with humidity in the eighties. The second time was last year when she had participated in the national Kendo selection tournament; she had lost miserably in the first round. This year she needed to win, or, more to the point, she was going to win. It was her chance to get on the national team and go abroad and take part in the World Championships in Brazil. She clasped the sword tightly; she preferred to practice with a real sword rather than a bamboo one, as she was convinced the metal's weight increased not just her strength but also her spirit and raw instincts. She believed she could sense her opponent's moves before they

made them, and she'd demonstrated this by winning the Northern Honshu Championships last month. She raised the sword high but froze, her eyes glinting through her protective headgear: she dropped her sword and tore off her headgear to stare out at what seemed to be smoke coming from a fishing boat. She squinted trying to make out the name of the boat, but it was too distant.

She undid the straps of her body armour and placed it on the ground. She stood and let the morning breeze cool her body, her dark blue *hakama* fluttering. *Are they ok?* She thought as she undid the scarf that was used to keep her hair neatly tied in a bun under the protective headgear. "Probably nothing," she said out loud, as if trying to convince herself. She ran her fingers through her long black hair, tousling it so the air could seep in and cool her scalp.

*I'd better report it to the harbor master when I get back?* she thought, staring out to sea. Otsuchi was a fishing town and through Tomo, her boyfriend who bought and sold fish, she knew most of the fishermen.

"Tomo," she whispered. Her first and only love. They had grown up together; gone through the same schools. She remembered their first date in Junior High school. They had gone to the movies in Kamaishi City. He had selected the movie; a violent samurai movie, which she guessed, he had chosen because of her interest in Kendo. After the movie, they had walked along the harbor front until they came to a deserted warehouse. He had said let's check it out and she followed him in. There he kissed her for the first time, told her he loved her and that some day he would marry her. They kissed for almost two hours non-stop, cradled in each other's arms on an old wooden table.

She smiled to herself and then put her armor back on, picked up her sword. There was a dull rumble and then the ground began to shake. Sachie crouched down and waited. The shaking increased and then suddenly stopped; the mountain was silent not even a bird chirped. She got to her feet and headed back down the mountain. Half an hour later she came to the steepest, most dangerous part of the climb; the narrow ledge that she had to cross to get to the other side of the mountain.

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"There it is," said Yuta, pointing to the east.

Yukino bent forward, her head between the driver and the passenger seat, eyes wide with excitement. Beyond the massive concrete tsunami breakwater wall laid the ocean. "Can I swim or is it still too cold?"

Yuta laughed. "Only if you want to die; anyone without a five-millimeter wetsuit would be dead in ten minutes."

"You're kidding!" she said, not sure if he was teasing.

"I'm a surfer. I should know."

She knew he was a surfer and his goal was to become a professional surfer. "Are you sure?"

"If you don't believe me, ask the fishermen," he said, turning left and driving parallel to the sea.

She slid open the side window and stuck her head out, enjoying the salt air on her face. It was fifteen minutes past seven, and the wind was just starting to awaken from a night of long slumber; its early yawns stirred the sea's surface into shimmering patterns.

"Tunnel!" called Yuta.

Yukino pulled her head in just as they entered the tunnel.

"We'll go to Auntie's shop first," he said.

They exited the tunnel and stopped at a red light. On the right, was the newly built Mast shopping mall. Beyond, on the seaward side, stretched a dense residential area protected by another massive tsunami breakwater wall and floodgates. Across the river, set at the foot of the hills, lay the center of town, a tangle of houses and low-rise buildings—some traditional style, some concrete boxes, and others the modern houses made of high-tech plastic that flexes in earthquakes. The skyline was scythed by a web of crisscrossing electric cables. The traffic light turned green, and the red Joy Pop crossed the river and then turned left into a labyrinth of narrow lanes.

"How's Uncle?" Yukino asked. Her uncle had had an accident two years earlier and had been bedridden ever since. Her aunt had refused to put him in a hospital and instead looked after him herself.

"He's not there at the moment. Your auntie and I took him to the hospital at three o'clock this morning after the earthquake. He was a bit shaken and his pulse was racing. She was frightened he might have a heart attack."

"Is he all right?"

"Yes, he's fine. He'll be back about two—after they do a few tests."

"Is his condition getting any better?"

"He's a little better. Aunt can get him in a wheelchair now, and we sometimes carry him down from upstairs and take him outside. I told her she should move from the shop to the house next door so she can live on the bottom floor and we can take him out daily."

"Why doesn't she do that?" asked Yukino.

"I don't know—just set in her ways, I guess. The house next door has been empty ever since her cousin moved to Morioka ten years ago."

"I'll suggest it to her."

"There's Auntie's shop." Yuta pointed ahead.

"Can you stop just before the shop so I can surprise her?" asked Yukino.

"Sure," he said, slowing the van and coming to a stop ten meters before the shop.

Yukino slid the door open and jumped out. She brushed her hands through her shoulder-length black hair and held it with one hand while she took out a hair band from her green shorts and tied it into a ponytail, fleetingly revealing a tattoo on her neck; she then brushed the creases out of her white jacket as much as she could.

Yuta came around the van and stopped and gawked at her.

"What's wrong?" she asked.

"Nothing." He grabbed her bag out of the backseat.

"Thanks," she said a little surprised.

"You're very welcome," he said, smiling at her. "Come on! Let's surprise Aunt."

He turned quickly, hoping she hadn't read his eyes and headed for the shop.

She followed him, smiling to herself.

*She's changed*, he thought. *She has grown up and is beautiful.*

He was taller than most Japanese, broad-shouldered from surfing since he was ten, a square face with narrow eyes and short black hair. He wore blue denim jeans and one of those crazy Japanese T-shirts that had meaningless English scribbled all over it; this one with the backdrop of an overgrown abandoned petrol station in the desert read *Process. In the deserted town the solar sunlight arrives. Do not abandon hope.* The T-shirt company had probably just pressed the Google translation button.

He stopped at the side of the shop and peeped through the corner of the glass door. "She's there and there're no customers," he whispered.

"Perfect," she said, sliding the door quietly open. The shop had a cement floor; in the center were two rows of shelves stacked with instant noodles, rice cookies, bottles of soya sauce, and anything else that a house might run out of and need to be quickly purchased at her shop rather than driving all the way to the Mast shopping mall. On the left side, were boxes full of local produce—cabbages, potatoes, and radishes. On the right stood a large freezer stocked with beer, Japanese vodka, and a whole range of canned coffee. Beside the freezer were shelves crammed with bottles of sake and whisky. At the far end, bags of rice were stacked next to a desk where her aunt sat doing some accounting with an abacus.

"*Tadaima.* I'm home," Yukino called, bowing deeply.

Her aunt looked up from the desk. "*Okaeri.* Welcome home," she said, standing and returning the bow.

They both looked at each other and then broke into laughter.

Suddenly, Yukino's mobile phone started vibrating, and she pulled it out and flicked it open: EARTH QUAKE, the message on the screen read.

"Earthquake!" said Yukino.

"Quick, get outside," said her aunt already pushing Yukino toward the door.

There was a deep rumbling in the distance and then it hit; the ground heaved up and then crashed down, bottles smashed onto the floor and the walls trembled, threatening to rip apart.

"Outside!" shouted her aunt.

Yukino grabbed the door. "It's stuck!" she cried in panic.

Her aunt grabbed the door and pulled, more bottles and food crashed to the floor. The shop lurched to the right as another wave of destructive energy tore through the ground, throwing them to the floor.

"The back door!" shouted the aunt as the freezer doors flung open and cans of coffee flew into the air.

They both staggered to their feet just as the glass window shattered into pieces. Yuta rushed in and grabbed them both by the arms and dragged them outside. Another wave surged under them, knocking them to the ground, and then it was quiet—gone as suddenly as it had come.

"That was a big one," said Yuta getting up and offering his hands to Yukino and

her aunt. They both took a hand each, and Yuta hauled them to their feet.

“Your shop! Look at your shop!” exclaimed Yukino.

“Don’t worry about a few broken bottles. I am just glad you are safe. Anyway, it’ll give your grandfather something to do.” She turned to Yuta, who was staring in the direction of the ocean.

“Thank you, Yuta,” she said, bowing.

Yuta turned, his face serious, his eyes searching, his head moving left and right, his ears awaiting the dreaded sound of water. “No problem! But I think we should go to higher gro—”

The blaring of the tsunami siren echoed through the town.

“Run!” shouted Yuta.

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Mr. Suzuki entered his office and immediately stopped; his eyes locked on the familiar file that had been placed, yet again, on his desk.

“Damn him,” he cursed.

He put his briefcase down next to his grey metal desk and then sat down and stared at the file: *Japan Headquarters for Earthquake Research Promotion*. Scribbled over the title in thick red pen was ‘KILLER TSUNAMI 15 METERS’.

“Damn Kenichi!” he shouted under his breath and then got up and made his way into the control room.

Kenichi was sitting in front of an array of monitors.

“Kenichi-san” Suzuki said in a polite tone, “would you join me in my office?”

Kenichi stood up and followed his boss into his office.

It was odd for a boss to call a worker by his first name, but his boss seemed to think it suited him. Kenichi was a big burly man of fifty-three, round face, large nose, and big eyes. He didn’t wear glasses—a very unusual feature for someone in his line of work. He was a little overweight, but that seemed to fit his large frame. His full head of hair was envied by his coworkers, especially Mr. Suzuki. He was married and his wife and two children lived in the hills around twenty kilometers to the west of the plant.

Kenichi bowed as he entered his boss’s office.

“Why do you repeatedly leave this file on my desk?” asked Suzuki, pointing to the file.

“It’s the report on the possibility that a tsunami fifteen meters high could hit this power plant. The report you and the heads of TEPCO have ignored for the past three years. The report that advises we—”

“I know what it says. You have left it on my desk every day for the last year.”

“Excuse me, sir, but don’t you think this report should be discussed by the board of directors? In the 2008 assessment, it predicted that a tsunami, caused by the upward lift of the Okhotsk plate, could reach a height of more than fifteen meters and hit this power plant. It also—”

“I know what it says.” He sighed and picked up the report. “I know what the

assessment team has predicted and it looks very likely they are going to build a bigger tsunami wall to defend the power station against a ten-meter-high wave.”

“Its simulation predicts the tsunami could reach a height of fifteen meters or higher.”

“Costs,” Suzuki said, putting the file down. “It needs to fit in the budget. We can’t just go building higher walls around every nuclear power station based on computer simulations; we’ve got to be realistic. The biggest recently recorded tsunami was only five meters.”

Kenichi looked him straight in the eyes. “In 1993 the island of Okushiri off Hokkaido recorded a thirty-meter tsunami. In the Sanriku area, in 1933, they recorded a tsunami twenty-three meters high, and in 1771, the island of Ishigaki lost 48 percent of its population when an 85 meter-high tsunami struck.” He paused, his eyes locked on Suzuki. “It’s not just the height of the walls that concern me. These reactors were designed by the American company GE—designed to be built next to rivers, not on the coastline of a country that is frequented by tsunamis.” He paused and stared intently at his boss. “During construction, several of the engineers voiced concern about the location of the emergency generator rooms, which are located in the basements under the turbine buildings. They recommended that the generators be relocated to higher ground because of the serious risk of flooding due to a tsunami. This was shown in October 1991, when water leaked from a pipe and entered the basement of the Number One reactor turbine building, leading to the failure of one of the two emergency generators. They also recommended the intake valves and pumps for the generators’ cooling system be better protected; they are set near sea level, unprotected, and could sustain serious damage from a tsunami, thus rendering the generators useless. The head engineer also personally voiced objection to cutting away twenty-five meters from the thirty-five-meter-high bluff so that the reactor could be built closer to sea level to save operating costs.” He paused and then pointed to the file. “Ignored! Just like that report—ignored.”

Suzuki picked up the report. “All right, you have made your point. I am going to speak with one of TEPCO’s directors a little later this morning and will recommend that the report be forwarded to the board of directors.”

Kenichi bowed. “Thank you. *Yoroshiku onegai shimasu, please take care of it.*”

Suzuki returned the bow. “*Yoroshiku onegai shimasu, I’ll take care of it.*” He turned to leave just as a tremor hit, rattling the building; he stood there calmly watching his men in the other room move into action, checking screens and monitors. A few moments later, the shaking stopped. He turned to his boss and raised his eyebrows. “Third one since midnight.”

“Yes,” Suzuki replied simply.

A heavy silence hung in the air between them.

“*Yoroshiku onegai shimasu,*” Kenichi said again and then left.

Suzuki picked up the phone and dialed one of TEPCO’s directors.

“Hello, Yamada speaking.”

“Good morning, sir. This is Suzuki.”

“Good morning. What’s up?” Yamada said, exhaling smoke and then dragging

on his cigarette again. He and Suzuki were old friends who had graduated from Meiji University together; they had played in the same rugby team and had won the premiership against Keio University. He had divorced his wife a year after he married. He had told Suzuki that the constraints of married life were too much for him. He had had several relationships throughout his life, none really serious, just fleeting flings with women from the '*Mizu shobai*', which, literally means 'Water trade', a traditional term for hostess clubs, bars, and cabarets.

"Uh..." he paused, "I...met...this girl last night." The words stumbled out.

"I bet at the Halabu bar," he said, exhaling again.

"Yes, our old haunt," he replied.

"What's she like?" asked Yamada, taking another drag on his cigarette.

"Well she—"

"She's cute and young." He laughed into his mobile phone.

"Yes, she's really pretty...and interesting."

"So you're asking me if you should sleep with her?"

"Well...yes. She asked me to go to lunch today." He could hear his friend taking a long drag on his cigarette.

"You know if she says, '*Dokoka iko*', she means, 'Let's go to a love hotel.' And if I were you, I wouldn't let the chance go by."

The history of love hotels can be traced back to the early Edo period (1603 to 1868) when establishments appearing to be inns or teahouses with particular procedures for a discreet entry or even secret tunnels for a discreet exit were built in Edo and Kyoto. But the modern love hotel became popular owing to stringent Japanese culture and society. Many houses still incorporate traditional designs with paper walls that do not allow one's complete privacy, and it is not the socially accepted practice to bring one's girl or boyfriend home to stay the night. Another reason is the huge prostitution business in Japan. Love hotels are primarily used for having sex, but some people use them when traveling, as they are cheaper to stay at than normal hotels. They vary in range from a simple hotel room to the more extravagant and wild; for example, the Jungle Room where the couple can dress like Tarzan and Jane and swing on vines; the Space Room where couples can have sex in a spinning spaceship; the Hospital Room equipped with operating table; the Dungeon or Torture Chamber, which includes a rack, chains, whips, and other torture devices; and the *Imoto Room*, or Younger Sister's Room, decorated like a junior high school girl's bedroom complete with posters of pretty young female singers, dolls, love heart-patterned curtains and a junior high school girl's sailor uniform ready for the woman to slip into. The proprietors of the hotels go to their utmost to ensure privacy; covered parking is standard, and two customers may not enter the reception area at the same time. The reception is unattended, and the guests simply press a button to select their room from a screen displaying the vacant rooms. A light, much the same as the emergency lights on the floor of an airplane, begin to blink, guiding the guests to their rooms. In some cases there are two or more elevators to ensure no one meets going up or down. The guests may order room service, the food put into a dumbwaiter so the staff and guests never meet. Call girls may be ordered. Most rooms have a spa bath, karaoke, and a



vending machine that sells a wide selection of sex toys. Payment is made at the end by swiping a credit card or inserting cash into a machine.

Sukuzki thought for a moment. "What if my wife finds out?"

Yamada chuckled. "Were you planning on telling her?"

"Uh...no," he said, feeling like an idiot.

Yamada took another drag. "How's she going to find out? And if she does, she's not going to divorce you at her age; she needs your superannuation—nor does she want to see out her old age alone. She'll nag you a bit, probably make you sleep on the bare *tatami* for a while; she may even refuse to cook and clean, but in the end she will forgive you. It's the old Samurai code: men first, women last."

Suzuki thought for a minute. *He's probably right. She'll never know.* "I think your right," he said.

"Of course I am. You go and have a nice lunch. Take the afternoon off. Leave what's-his-name in charge...the guy who keeps pestering everyone about the killer tsunami."

"You mean Kenichi?"

"Yes, that's him."

Suzuki thought about mentioning the report but decided against it. He knew Yamada would dismiss it as scientific hype—the same as he had done with a new report submitted two days ago. "Thanks, I will. Just one other thing?"

"Yes?"

"Has a decision been made on whether the construction of the new tsunami wall will go ahead?"

Yamada exhaled into the phone. "There was a meeting yesterday after that new report about the tsunami was submitted. It doesn't look like it has garnered enough support, so for the time being, no."

Suzuki smiled and leaned back in his chair. "Good! By the way, where are you at the moment?"

"I am still in this godforsaken village of Matsumura in Kansai."

"Have you been able to secure the land for the new power station?" Suzuki asked.

"Yes, the mayor and the village have agreed to the acquisition of the land. You should have been at the private meeting I had with the mayor two days ago." He paused, chuckling into the phone. "I showed him the calculations of how much tax money the village would receive and his eyes had yen signs in them—plus a little pocket money compliments of TEPCO. He signed straight away."

Suzuki chuckled.

Yamada had a reputation for getting the job done—whatever it took. He remembered Yamada telling him they weren't bribing; they were merely donating to the wealth and health of the communities.

Yamada exhaled into the phone. "He asked me if we intend building more than two reactors. Can you believe how ignorant these village people are? We've bought enough land to build a total of six reactors."

“I remember it was the same here in Fukushima. Except the fishermen got a whiff of the money and blocked the construction of the last two reactors,” said Suzuki.

“That’s right. I had forgotten about that. How much did we have to pay the fishermen?”

“Three hundred thousand dollars each,” replied Suzuki.

“Well, the fishermen here aren’t as smart as those.” He chortled.

“Let’s hope not,” said Suzuki.

“Hey, I’ve got to go. Give me a call and let me know what happens.”

“Sure.”

Yamada hung up.

Suzuki leaned back and the image of Risa’s face floated into his mind. He let his eyelids fall shut, and fantasies sprang to life.

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They ran through the narrow laneways; people dashed from houses, some clasping a few precious belongings, others nothing but fear—all joining the queue to survival. No one screamed; only the wailing of sirens and rushing footfalls could be heard echoing through the laneway.

Yukino’s aunt Kumiko stopped. “She’s too old to walk!” she shouted, unlatching the gate of Mrs. Yagi’s house.

Yuta let go of Yukino’s hand. “Get to the top of the hill,” he said, pointing to the hill that lay 200 meters beyond.

She nodded and said, “Be careful.”

He rushed over to where Kumiko was already sliding open the front door of the old wooden house.

“I’ll get her out. You get to the hill,” Yuta said in a commanding tone.

Kumiko threw him a glance that told him in no uncertain terms to shut up and follow her. She ran down the hallway and into the living room where the old lady sat under the *kotatsu* (a low, wooden table frame covered by a quilt on which a tabletop sits. A small heat light is fixed to the underside of the table), surrounded by fallen books and broken plates. She was sipping green tea and chewing on a rice cracker as if nothing had happened.

“*Obachan*. Grandmother,” she said, using the formal title to address the old lady. “We must go. There is a tsunami warning.”

Mrs. Yagi looked up and a smile appeared on her face. “Are we going to Disneyland? I’d love to go to Disneyland.”

Kumiko had been keeping a close eye on Mrs. Yagi since her husband had died three years ago, bringing her fresh vegetables from her shop once a week and cooking for her when she had time. But Mrs. Yagi’s mental and physical health had deteriorated rapidly over the past year. She had dementia and the earthquake had probably gone from her memory by now.

“Yes, Disneyland,” said Kumiko. “The bus is about to depart; we must hurry.”

The old lady swung her legs from under the kotatsu and, to both Kumiko and Yuta's astonishment, got to her feet without any help.

"Let's go," said Kumiko.

"Yes, I really want to get a photo with Mickey Mouse."

"Of course," replied Kumiko. "You can even have one taken with Donald Duck."

The old lady grinned and shuffled to the door, slipped her sandals on, and stepped out the door. "Are all these people going to Disneyland?" she asked, pointing at the people running down the lane.

"Yes!" said Yuta, picking her up in both arms and charging down the lane. "We don't want to miss the bus!"

The old lady let out an elated scream as they dashed toward the hill and then up to the top.

The hilltop was thick with people: salary men, fishermen, mechanics, nurses, teachers, children, and the elderly. Most were dressed ready to go to work or school, while others were still in their pajamas. All stood staring toward the ocean. The atmosphere was tense. The threat of a tsunami was real for the people of Otsuchi, the town having been destroyed three times over the past 400 years by tsunamis.

"Yuta!" came a voice from the crowd.

Yuta turned to see Yukino standing there, tears welling in her eyes.

"Are you OK?" he asked.

"Yes," she replied, wiping the tears back. "I was worried about you and Kumiko."

Kumiko took out some tissues and handed them to her. "We are OK and Mrs. Yagi is fine too. We're all going to Disneyland," she said, smiling at Yukino.

"I am going to get my photo taken with Mickey Mouse," blurted Mrs. Yagi.

Yukino stared at them, not sure what to say.

"Here it comes!" shouted a man.

Everyone's gaze hardened on the harbor.

"Where?" another person shouted.

"Out there!" the man yelled back. His arm was pointed to a dark shape on the ocean.

"That's a shadow from a cloud," a fisherman laughed.

Just then the sirens wound down and stopped, and a voice came over the loud speakers announcing the tsunami warning had been lifted.

This broadcasting system, called *Bousaimusen*, is set in every village, town, and city across Japan and is operated by separate power sources that can broadcast information to people during earthquakes, typhoons, and other natural disasters.

"Looks like it's safe," said Yuta.

"Yes and we'd better get Mrs. Yagi back home before she catches a cold."

They followed the line of people down the slope and dropped off Mrs. Yagi, who had forgotten about Disneyland and seemed to think she had just won her high school volleyball tournament.

A few minutes later, they were back at the shop, and Yukino's grandfather was already cleaning up the mess.

"*Ojisan*. Grandfather!" called Yukino, running toward him.

He raised his hand and she stopped dead in her tracks. “Be careful.” He pointed to the ground where shards of broken glass littered the floor. “Go around that way,” he said, smiling.

She circled the broken glass and ran into his arms. “You’re OK?” she asked.

“Of course I am. But are you all right?” he asked, breaking from her and looking into her eyes.

“Yes...yes.” The words tumbled out.

“Good. Let’s have some tea and cake,” he said, a broad smile beaming across his face.

“Yes,” she nodded.

They went into the kitchen behind the counter; it was a small room consisting of two gas burners, a large sink set in a long bench, a two-door fridge, and a wooden table with four stools.

“What type of tea would you like?” asked her aunt, sliding the window open above the sink.

“*Macha*,” replied Yukino, seating herself on one of the stools.

Her auntie raised her eyebrows. “You have expensive taste. The man who dates you better have plenty of money.”

Her grandfather chuckled. “Of course. Would you expect anything else from your niece?”

Her grandfather was tall, broad-shouldered, with a square, handsome face that was cropped with short grey hair. He was deeply tanned from his work as a diver. The divers used wooden boxes with glass bottoms to float over the reefs and spot abalone and sea urchins—both expensive Japanese delicacies. They carried long poles, originally made of bamboo, but more recently replaced by a durable PVC pipe. A hook was attached to the end, allowing them to snag the abalone and sea urchins.

He reached over and took a tray that was neatly packed with an assortment of rice crackers and sweet bean cakes.

“*Arigatou*. Thank you,” she said, smiling and taking a sweet bean cake.

“*Douitashi mashite*. You’re welcome,” he said, placing the tray on the table.

“That was a big quake,” said Yukino.

“Yes it was, and it was the third one today,” he said, glancing over at the clock, which still clung to wall. “Do you remember what time it hit?”

“No, I didn’t look at my watch. But I guess about seven forty,” replied Kumiko.

“Wait a minute,” said Yukino, pulling out her mobile phone and flicking it open. The word *Earthquake* was printed across the screen. She pressed the OK button and the time and magnitude came up. “Seven forty four, magnitude 5.2,” she said, facing the phone toward her grandfather.

“Wow! That’s a smart machine,” said her grandfather, squinting to read it.

Most mobile phones in Japan come equipped with an earthquake warning system. It gives the person roughly a thirty-second warning by vibrating and buzzing rapidly.

“What will they think of next?” her aunt said, lighting the gas burner and placing the teapot on. At fifty, she didn’t look a day over thirty; fair skin masked a round face with

soft features and a perpetual glowing smile. She had short jet-black hair. Her four weekly hula dance classes kept her slim and fit. She had two daughters; the older lived in Koriyama city in Fukushima Prefecture, and the younger still lived with her. She was active for her age; she woke at four thirty every morning—except Sundays, when she guiltily slept in until six thirty. Her day began in the kitchen preparing eighty lunch boxes for a nearby kindergarten. After finishing the lunch boxes, she would eat a simple breakfast of rice, fish, steamed vegetables, and miso soup with the other two women who worked for her. She would then go upstairs and feed and dress her husband and then go and deliver the lunch boxes. She would return to the shop around eight and spend the next few hours doing paperwork, ordering stock and checking accounts. At ten, the shop shutters came up and business began. She employed the local housewives to work in the shop, while she split her time running errands and looking after her husband. And although her life was tough, her glowing smile never left her face. How she managed to fit in the four weekly hula classes amazed everyone.

*“Tadaima. I’m home”* came a voice from the shop.

*“Okaeri. Welcome home,”* replied Kumiko.

Sachie poked her muddy face through the kitchen door and grinned.

Her grandfather gasped. “What happened to you? Are you all right?”

She slipped out of her muddy shoes and stepped into the kitchen, resting her sword against the wall. She was covered in mud from head to toe. “I almost died,” she said in a matter-of-fact tone.

Her mother let out a shriek and rushed over with a wet cloth.

“I’m fine,” she said, taking the cloth and wiping her face.

“What happened?” asked her mother, filling a glass with water and handing it to her.

Sachie gulped the water down and was about to explain when she noticed Yukino gawking at her. “Yukino-chan!” she said, as if nothing had happened. “How are you?”

“I’m...fine,” she stuttered. “Are...you...OK?”

“I’m fine,” she replied. A smile cracked her mud-caked face.

Her grandfather moved around and untied her armor and put it on the floor. “I’m glad you’re safe, but what on earth happened?”

“I went to practice for the tournament on the mountain. After the first earthquake, I decided to climb down, but the second quake hit when I was halfway down at the steepest, most dangerous part of the descent—the part where you have to cross from one side of the mountain to the other, across the narrow ledge.”

Her grandfather nodded. He had taken her there and suggested that it would be a good solitary place to practice—much to Sachie’s mother’s objection.

“I was about halfway across when the quake hit. The ground began to shake and I clung on; dirt and rocks showered down on me, and then there was this terrible roar and the whole mountainside gave way. I fell, tumbling head-over-heels amongst the trees and rocks. I couldn’t breathe.” She paused. “After that everything went dark. I don’t remember anything until I woke, lying at the edge of the landslide.”

The three of them stared at her open-mouthed.

“You’re very lucky,” her grandfather said, breaking the silence. “The surge must have

pushed you to the surface.”

“I don’t want you going there anymore,” said her mother, throwing an angry glance at her father.

He glared back. “Well—”

Sachie’s phone rang and she took it out, wiped it on her sleeve, and opened it. “Just a moment,” she said, slipping back into her muddy shoes and disappearing out of the room.

“I told you she shouldn’t go up there alone,” Kumiko said, aiming her anger at her father.

“You’re right,” he said.

“Who’s she talking to?” asked Yukino, poking her head out the door. Her eyes locked with Sachie’s glare, and she pulled her head back into the kitchen.

“Probably the boy from Kamaishi she’s been dating,” replied Kumiko.

“Is he handsome?”

“Yes, very,” replied her aunt eyeing her mischievously.

“What’s his name?”

“Tomo, they went through school together.” her aunt said. “Haven’t you ever met him?”

“No...I don’t think so.”

“He’s a really nice young man,” said her aunt, looking at her father for support.

“Oh...yes. A very nice young man. He buys fish and sends it to Tokyo; quite a businessman,” said her grandfather.

“Yes, I wouldn’t be surprised if they get married someday,” her aunt added, turning to take the teapot off the burner.

Sachie came back in. “I’m going to take a shower,” she said, giving Yukino the evil eye. She picked up her armor and went upstairs.

“Tea’s ready,” called her aunt.

“Thank you,” said Yukino, sitting back down at the table.

Her aunt placed the cup of tea on the table and said, “I haven’t delivered the lunch boxes yet. I’ll be back in about an hour.” She then abruptly vanished out the door.

“And I’d better get back to cleaning up the mess in the shop.” Her grandfather gave her a smile and left the kitchen.

Yukino sat sipping her tea trying to remember if she’d ever met Tomo.

Upstairs Sachie slid open the door to the living room and noticed the *Butsudan*, the family Buddhist altar, was laying facedown on the floor. She knelt down and restored the altar to its original position. Her thoughts wandered back to the conversation she’d had with her boyfriend on the phone. He had been worried sick about her and was upset she hadn’t called him to let him know she was all right. She’d explained her phone was out of range on the mountain. He had told her he would be lost if anything happened to her. She smiled to herself feeling the love he had for her.

She moved into the next room and looked at the empty bed her father usually slept in. Grief surged up in her. “Sorry,” she said, tears brimming in her eyes. “I didn’t mean to.” She knelt down next to the bed, buried her head in her hands, and sobbed.

Yukino stood staring down at Sachie’s phone. *I shouldn’t*, she thought. But

curiosity got the better of her and she bent down and picked it up. “I shouldn’t,” she murmured to herself guiltily. She flicked open the phone, pressed photos and scrolled through until she came to a photo of Sachie and a young man holding hands at sunset on the beach.

“Tomo,” she whispered. “I know you.” She thought back to last summer when she had gone to stay at her friend’s house near the harbor. They decided to have a BBQ and invited some friends—

The phone started ringing in Yukino’s hand. She stared at it, Tomo flashed on the screen. She heard Sachie running down the stairs and quickly replaced the phone and sat down.

Sachie dashed in and picked up the phone.

“Hi!”

There was a pause.

“That’s so sweet of you.”

Pause.

“Sure. What time?”

Pause.

“See you then.”

She snapped the phone shut and placed it on the table. “Aren’t we supposed to do some practice,” she said, looking at Yukino.

“Yes...that’s why I came here,” she said. The words tumbled out nervously.

“Are you all right?” asked Sachie. “You look like you’ve seen a ghost.”

“I’m fine. I think I’m still a little shaken from the earthquake.”

Sachie knelt down and put her arm around her. “It’s OK now. It’s finished. I’ll go and get some clean gear and we’ll practice a little. You’ll feel better after we practice.”

Yukino nodded.

Sachie stood and went back upstairs.

Yukino got to her feet and went into the kitchen; the phone lay on the table. She snatched it up, flicked it open, pressed photos and scrolled through more photos. It was him, there was no doubt.

## Chapter Two

200 kilometers of the coast and 9,000 meters below the Pacific Ocean's surface the Okhotsk Plate and Pacific Plate met at the bottom of the Japan Trench—a relative of the Ring of Fire, which stretches in a horseshoe 40,000 kilometers from New Zealand, north to Papua New Guinea, the Philippines, Japan, Russia, and then east across the Aleutian Islands to the coast of Alaska and then south down the coast of Canada and North and South America to end near the bottom of Chile. It is littered with 452 active and dormant volcanoes and is home to 90 percent of the world's earthquakes.

If one were to use a submersible, one would see a labyrinth of jagged gullies torn into the stone cliffs by millions of years of tectonic pressure. At the bottom, the Okhotsk Plate would be bent like a fist against the Pacific Plate readying itself to snap open and dislodge billions of tonnes of water upwards.

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Captain Mackeller was eating breakfast in the ship's galley when his face suddenly drained of color.

"Are you OK?" asked his copilot.

"Look at the TV," he replied, pointing.

The copilot turned and looked at the screen mounted on the wall. The newscaster was pointing to a map of Japan where an earthquake had just hit. "So what? This country is plagued with earthquakes."

"I saw this in my dream. We were sitting here having breakfast just like this."

The copilot's eyebrows rose. "Then what happened?"

Mackeller looked at him a long while. A medium built man, blue eyes with a hawk like nose that jutted from a weathered face. He had been his copilot for over two years and was his closest friend. "It happens today."

"What happens?" he asked incredulously.

Mackeller looked him straight in the eyes as if he had no doubt. "The earthquake and tsunami that cause the nuclear disaster."

The copilot ran his hands over his short-cropped hair. "Are you sure?"

Mackeller nodded.



## Chapter Three

Mr. Suzuki sat trying to read some reports, but his thoughts kept wandering back to Risa. He took out the chopstick holder and breathed in her scent again, savoring it as long as possible. He looked at his watch and cursed how slow the time was moving—still ten past nine. He calculated the time until their meeting and sighed, running his hands over his bald head.

“*Sumimasen*. Excuse me,” came a voice from the door.

Suzuki looked up to see Kenichi standing in the doorway clutching a file.

“*Dozo*. Please come in,” he said irritably.

Kenichi bowed and entered.

“What is it this time?”

Kenichi bowed and then, holding the file with both hands, placed it on his desk.

“What is this?” asked Suzuki.

“It’s a report I have put together incorporating information I have gathered from America,” he replied.

“About what?” asked Mr. Suzuki, opening the file.

Kenichi stood there, silent for a moment, staring at his boss.

Suzuki glared back. “About what?” he insisted, his patience running thin.

“About the dangers of operating this reactor.”

“You already gave me a report about that earlier.”

“No, that was about the risk of a tsunami,” he replied.

“So, what’s this about?” Suzuki asked.

Kenichi bowed and asked, “May I explain?”

Suzuki let out an exasperated sigh. “Please.”

Kenichi bowed slightly. “The Mark 1 BWR (The Mark 1 Boiling Water Reactor) was designed with significant design and engineering flaws—”

“What are you talking about? Are you insane?” cut in Suzuki.

Kenichi ignored him and continued. “It has two major flaws that have had Band-Aid fixes. Firstly, the containment vessel’s design is too small. In the 1970s, a report showed that if there were an accident, the upward lift on the *torus* (the donut-shaped cylindrical tube that is attached to the bottom of the containment vessel to catch molten nuclear fuel in case of a meltdown) would destroy the vessel. This was rectified by attaching large straps to the taurus to hold it down against these uplift forces—the first Band-Aid fix. In the 1990s, the likelihood of a hydrogen explosion led to the installation of vents to prevent the containment from overpressurization; this was the second Band-Aid fix to a design that was problematic from its inception. I find the whole vent design absurd since the idea of containment is to contain; the vents are designed to release radiation into the atmosphere. It’s ridiculous.” He paused and looked at his boss, who was leafing through the report.

Suzuki looked up. He was startled but not surprised. He had heard similar reports over the years, but they were usually ignored as hype. He had been assured many

times there was nothing to worry about. “The problems have been dealt with sufficiently,” Suzuki said. But there was doubt in his words.

“May I continue?” asked Kenichi.

“Yes,” said Suzuki.

“My next concern is that the control rods are entered from the bottom of the reactor vessel. This presents a myriad of opportunity for multi-core materials to leak out onto the containment floor. The Mark 1 BWR is built in a containment inadequate to handle normal reactor forces. It is prone to *melt throughs*, and this has been outlined in a report from Oakridge National Laboratory in America titled, ‘Fail Mode of BWR Reactor Vessels Bottom Head’. How the IAEA (International Atomic Energy Agency) the NISA (the Japanese nuclear regulator) and the JAEA (Japan Atomic Energy Agency) continue to allow the use of such reactors is beyond me.” He stood staring down at Mr. Suzuki.

Mr. Suzuki closed the file and looked up at Kenichi. “What would you like me to do?”

“Read it in detail and then give it to someone who will do something about it.”

Suzuki sighed. “They won’t do anything about it. I know and you know that. Do you expect them to shut down the reactor?”

“Then I will go public with both reports,” he said, staring hard at Suzuki.

“You’ll lose your job and superannuation—everything.”

“I don’t care. Something must be done.”

“OK, I’ll read it and send it off with my stamp of approval.”

“Thank you,” he said. He bowed and then left.

Suzuki looked at the report. There had been countless cover-ups by Japanese energy companies throughout the history of the nuclear industry in Japan. One of the most recent was at the Kashiwazaki-Kariwa power plant in Niigata Prefecture, the world’s largest nuclear power generation complex. On July 16, 2007, a 6.8 magnitude earthquake hit nine kilometers northeast and seventeen kilometers below the Sea of Japan. The tremors were more than double the quake-design benchmark for the plant. A later study by the Meteorological Agency analyzed the aftershocks and ascertained the possibility that the fault ran directly beneath the nuclear plant at a depth of twenty kilometers. TEPCO may have underestimated the size of the fault whose existence was confirmed by the power company around 1980.

The earthquake resulted in a series of malfunctions and mistakes. Oil leaked from several electric transformers; one caught fire. Planks fell into a pool of spent nuclear fuel rods, barrels of nuclear waste were knocked over, water sloshed out of the spent fuel pool and was flushed into the sea, and radioactive steam was vented continuously for two days into the atmosphere.

This led to an investigation by the nuclear safety agency. However, local governments opposed this probe, saying if it became clear to the public that the earthquake was the cause of the nuclear accident it would lead to too much apprehension. The investigation was then dropped and the agency concluded “*There is virtually no possibility that natural disaster could cause a nuclear accident.*”

Suzuki thought about what Kenichi had said; he knew Japan had seventeen

BWR Mark 1 reactors in service, but he had been assured they were safe. He put the report in his drawer and forgot about it—as he had done so many times before.

He looked at his watch and then let fantasies of Risa take over his mind. They were in a love hotel, the Cleopatra room; she was lying on the Sphinx bed half-naked, and he knelt down, pushed back her Egyptian silks, and kissed her breast. Her body quivered and she moaned.

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The fisherman and grandson were drifting south.

“It’s strange there aren’t any boats out this morning,” said the grandfather, scanning the horizon.

“Why is that?” asked the grandson, searching the empty sea.

“I don’t know,” he replied, looking back at his grandson. But nervousness twisted in his stomach—something wasn’t right.

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Sachie came back into the kitchen carrying two sets of armor, protective masks, and bamboo swords. “Ready?” she asked Yukino.

“*Hai*. Yes,” said Yukino.

They walked through the kitchen and out to the backyard. It was enclosed by stone walls except for the car entrance. On the right was an old wooden barn, the roof heavily tiled, beneath which sat a white mini pick-up truck stacked with woven bamboo baskets; the yard was dirt. Both girls readied themselves and then walked into the center of the yard and bowed. They both took attack stances, arms outstretched, swords held firmly. Sachie raised her sword, took a step forward, and brought the bamboo sword down at Yukino’s head, shouting *men*; Yukino blocked perfectly. Again Sachie raised her sword above her head, but this time called *kote* as she swung the sword down at her arms. Again Yukino deflected the blow effortlessly. Over and over they practiced these basic kendo moves, taking it in turns to attack.

“I’m bored,” said Sachie, taking off her protective headgear. “Do you want to use real blades?”

“Sure,” replied Yukino, pulling her headgear off, letting the breeze ruffle her hair. “There’s no one here is there?”

“No, everyone—” She froze when she saw the tiny tattoo behind Yukino’s right ear.

“What is it?” asked Yukino.

“The tattoo! Are you an idiot?”

Yukino put her hand below her ear defensively. “It’s not the secret signature.”

Sachie took a step forward and brushed Yukino’s hair aside. “It’s very similar,”

she said, looking at the intertwining snake and dragon tattoo.

“It’s not the same,” she said in defense.

“Fool,” she cursed, and then added, “Keep it well hidden.

“Sorry,” she replied, bowing deeply.

Sachie moved to the barn and took an old rusty key from the rafter above the door. The lock was a trick lock that required the person entering to know the combination of different movements; it was designed in the sixteenth century to stop thieves from stealing rice, the main commodity for barter in those times. Sachie inserted the key and moved the lock in the correct combination and then slid open the door. She reappeared with a long box wrapped in a purple cloth. She placed it on the ground and knelt down and untied the cloth. The rectangular box was painted with checks, crafted in the mountain hot spring resort town of Hakone, just south of Mount Fuji. It was a *Himitsu-bako*, or Secret Box. The boxes were often used to hide jewelry or important documents. Sachie put her hand on the right end of the box and slid a slat open. She then performed several more complex movements, eventually opening the secret compartment that held two swords. Their blades were engraved with an intertwining dragon and snake—very similar to Yukino’s tattoo, except hers was missing the sword that ran between the snake and dragon.

Sachie bowed toward the box and then with two hands reverently took a sword, bowed to Yukino who returned the bow, and placed the sword in her hands. She then took the other sword for herself and placed the box in the corner of the barn.

“Are you ready?” asked Sachie.

“Yes,” replied Yukino, gripping the sword tightly and cleaving the air with the blade, allowing her arms to adjust to the blade’s weight. This was why she had come to see Sachie. She had come to practice the secret and forbidden sword fighting known as *Kindan-no-Katana*. It had originated in the fourteenth century, introduced by a Samurai named Tesshu Yamazaki from Shikoku. The art itself followed the rules of *Bushido*, the Way of the Sword, except that the opponent had to be killed, and if by some unfortunate chance the opponent escaped, one was expected to take one’s own life by *Seppuku*, a Japanese ritual suicide by disembowelment, plunging a short blade into one’s abdomen and slicing from left to right. *Kindan-no-Katana* was originally performed as entertainment between different Samurai warlords; the best fighters from each Samurai Lord were pitted against each other. It had been outlawed in the early twentieth century, and the sect had gone underground. Once a year, a grand tournament is held in a secret location deep in the mountains on the island of Shikoku. Sword fighters from different *Dojos* (a hall or room where martial arts are performed) come to fight, live, or die. The tournament continues for four nights, the number four representing *Shi*, death, in the Japanese counting system. At the end of the tournament, a Shinto ceremony is held, and the dead are cremated and their ashes spread through the forest. It was the girls’ grandfather who had introduced them to the secret sect; he thought the training would give them an edge over their kendo opponents, but he never for one minute expected them to fight to the death.

Sachie felt the weight of the sword and then bowed to Yukino and said, “*Onegai*

*shimasu*. It would be my honor.”

Yukino returned her bow. “*Onegai shimasu*. I accept your invitation with honor.”

Sachie lunged forward and swords clashed—Sachie swung and Yukino blocked. Sachie attacked again and Yukino deflected the blow and spun 360 degrees, her blade slicing the air and missing Sachie’s chest armor by a hair and sending Yukino off balance. Sachie saw the chance and her blade cut down, but Yukino managed to block it at the last second. The two cousins stood, swords locked in a cross, glaring at each other, sweat dripping down their faces. Sachie pushed Yukino back and screamed, “*Hai!*” Her blade clashed with Yukino’s, sparks exploding off the metal. Sachie raised her sword and attacked again. Yukino blocked. Sachie pushed forward, slicing at Yukino, but Yukino managed to parry the strikes. Blow after blow, Sachie forced Yukino back toward the barn.

“Enough!” called Yukino.

But Sachie’s sword came down with such force it almost knocked Yukino over.

“Enough,” shouted Yukino.

Sachie’s blade sliced at Yukino’s neck, missing by a fraction, sending her stumbling back.

“Sachie!” Yukino screamed. “Stop!”

Sachie came at her sword raised; she swung and Yukino just managed to deflect the blow, but it drew blood on her arm.

Yukino knew it was no longer practice. This fight was for real. She lunged at Sachie their blades meeting with a deafening clang. Yukino raised her sword and attacked again, but Sachie easily parried the blow and then countered the attack. Yukino ducked just in time as the blade sliced over her head. Before Sachie knew what was happening, Yukino somersaulted across the ground toward the white mini truck and grabbed a basket from the back and hurled it at Sachie who sidestepped it and then charged at Yukino. Yukino then jumped into the back of the truck. On the floor was one of her grandfather’s PVC pipe with a hook attached. She picked it up and swung it at Sachie, stopping her in her tracks. A smile spread across Sachie’s face, and she raised her sword and, with ferocious strength, sliced the pole in two. Yukino dived from the truck and rolled out into the yard. Sachie’s blade sent dust into her eyes as it sliced the ground next to her. She rolled left just evading another blow, but she was half-blinded by the dirt in her eyes. She faintly saw the glitter of the blade in the sunlight as Sachie lifted her sword for the kill; the blade hissed through air but halted on Yukino’s neck. Yukino lay there panting; all she could hear was her heart bashing her chest and feel the hot metal of Sachie’s blade against her neck.

“*Ma ma*. So so,” she said, moving the blade away from her neck. “You need a little more training.”

Yukino lay quietly, trying to catch her breath. “I thought it was the real thing. I thought we were fighting to the death.”

Sachie offered her arm and pulled Yukino to her feet. They both bowed, acknowledging the end of the fight. “Lucky I was the one who won!”

Yukino smiled guiltily. “Yes.”

Sachie bent close and inspected Yukino's arm. "It's just a scratch, but you should wash it."

"Yes," panted Yukino.

"You missed one good opportunity to defeat me," Sachie said. "You should have kicked my feet from under me when I stood over you. We'll need to do a lot more training before the summer tournament in Tokyo."

Yukino bowed deeply and said, "*Onegai shimasu*. It would be an honor if you could train me."

Sachie didn't reply. She began removing her armor.

"I'll get some water," said Yukino, walking to the door.

"Thank you, but remember to take a chance when you have one," said Sachie. "Kick the feet from under them."

"But that's not allowed in kendo," said Yukino.

Sachie sighed. "I didn't mean it literally."

"I see," said Yukino, but her response lacked confidence.

Sachie sighed as she watched Yukino rush off to get some water.

Yukino took a plastic jug of cold water from the fridge and two glasses out of the cupboard. She rinsed the blood off her arm and dried it with a tissue. Sachie's phone rang and she moved to the door to listen.

"*Moshi moshi*. Hello."

Pause.

Sachie laughed. "Sure, any time."

Pause.

"When?"

Pause.

"I'm supposed to—"

Pause.

"Sure, I'll be there."

Pause.

"*Nochihodo*. See you soon." She hung up.

Yukino stepped from the door and walked over to Sachie. "When can we train again?"

"Tomorrow," she said, taking the glass of water Yukino offered her.

"Not this afternoon?" asked Yukino, trying to find out where she was going.

"No, I have something else to do."

"What?" asked Yukino quickly, hoping Sachie would spill the information.

Sachie stared at Yukino and then smiled. "I'm not going to tell you."

Yukino blushed. "Sorry."

Sachie went to the corner of the barn and brought the *Himitsu-bako* back and placed the swords inside. She then slid all the panels back into place, locking the box and wrapping it in the purple cloth, and then disappeared into the barn.

Yukino looked at Sachie's phone resting in her protective headgear. She quickly snatched it up, flicked it open and memorized Tomo's number.

“I’m going upstairs to get changed,” called Yukino.

“Be quick. I want to use the bathroom,” replied Sachie.

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Tomo was standing on Kamaishi City harbor front, about twenty kilometers south of Otsuchi. He was there to meet an American businessman who was interested in importing fish. If the deal went through, he and the fishermen were set to make a lot of money. Money Otsuchi and Kamaishi desperately needed. The ship, *Asian Symphony* was scheduled to arrive any minute. He looked up at the giant *Kannon*, a Buddhist statue of a female god; it stood on a hill in the middle of the harbor watching over the fishermen as they went out to sea. His gaze moved out over the glassy water that was scythed by lines of whitewater left by the fishing boats’ wakes. In the distance a massive breakwater wall stretched out from both sides of the harbor. The tsunami defense wall had taken three decades to complete. It was 1,950 meters long, 63 meters deep, and jugged 6 meters above the sea. It had cost \$1.5 billion and was the world’s biggest breakwater wall. It had recently made it into the Guinness Book of World Records with the hope that it would revive the rusting former steel-producing capital of Japan. Even a song called *‘Protecting us for a hundred years’* was produced. However, during the design phase, there had been concern that wave deflection from the breakwater wall could increase the wave size, inundating two fishing villages, Ryoshi and Kariyado, that lay just north in two small coves. Reports by coastal engineers from Tohoku University, released between 1974 and 1976, concluded this, leading to the construction of a 9.1-meter seawall along the two villages’ coasts. His eyes focused on a ship sailing through the narrow entrance of the breakwater wall; he could just make out the name, *Asian Symphony*.

His phone rang. He answered and a girl’s voice said. “Do remember me?”

No words came to his lips.

“It’s me,” said Yukino.

“I know,” replied Tomo. “Does she know?”

“Not yet,” she replied acidly.

## Chapter Four

Sachie cursed when she heard her mother pull into the driveway in front of the shop; she took one last drag on her cigarette, extinguished it in a potted plant, and then popped a breath freshener in her mouth.

“I can smell it,” said Yukino when Sachie entered the kitchen.

Sachie rolled her eyes and then grabbed the air freshener off the shelf and sprayed a little in the air as well as a touch on her clothes.

“No more smell now,” said Yukino, smiling.

Sachie sat down and poured herself some tea. She could hear her grandfather cleaning the mess in the shop. “What are you doing this afternoon?”

“Uh...nothing much...just going on...a date,” she replied, letting the words slip out slowly.

“Who with?” Sachie asked. Her tone was more a demand than a question.

“I’m not telling you,” she said, smiling mischievously.

“Whatever,” she said, taking a rice cracker from the tray and opening it.

Yukino felt a little taken aback that her cousin wasn’t interested in whom she was going on a date with. “He’s taking me shopping in Kamaishi and then dinner,” she said, with a mixture of pride and fuck you, cousin Sachie.

“How are you going to Kamaishi?”

“By car. He’s got a Fairlady-Z,” she replied quickly but knew straight away she had let the cat out of the bag.

“Fairlady-Z,” said Sachie, grinning. “Mmm...who’s got that type of car? I only know one idiot, Yuta, whose uncle has a Fairlady-Z.”

Yukino blushed.

“It’s him, isn’t it?”

“Someone else,” she replied, but the blush gave away the lie.

“Someone with brains would be better!”

Anger surged up in Yukino, *I’ll tell her about Tomo*, she thought. *That’ll shut her smart mouth.*

“*Tadaima*. I’m back,” came a voice from the shop.

The interruption stopped Yukino’s anger from exploding.

“*Okaeri*. Welcome back,” both girls said together.

Kumiko pushed back the *noren* (a short door curtain that gave privacy to an adjoining room.) “Something smells nice,” she said, taking off her shoes and putting the shopping bags on the table. “It’s so nice to see you two together.”

Both girls smiled and nodded innocently.

“Could you give your grandpa a hand? We have to open the shop soon,” she said, taking rice and vegetables from the bags.

“But the window is broken,” said Yukino.

“That’s OK. We will leave that shutter down today. Mr. Fuji is coming to fix it tomorrow.”



“OK,” said Yukino.

“I’ll be upstairs getting things ready for your father’s return,” she said to Sachie.

Yukino glared at Sachie, but her cousin met her glare mouthing the silent words, “No brains.”

Yukino face turned scarlet with rage, but she controlled it. She wasn’t ready to let her cousin know the secret – the dark secret about Tomo. Instead she forced a smile and entered the store.

Sachie a little disappointed Yukino hadn’t erupted with rage followed.

“Grandpa, what can we help you with?” asked Yukino.

“I’ve just about finished. Just need to stack those things on the shelves,” he said, pointing to the packets of instant noodles on the floor.

Sachie stopped and stared out the door. She could hear her mother in the room above the shop. Her thoughts went back to the day of her father’s accident. It was two years ago, January 1st, the Japanese New Year and national holiday. Everything had started out as usual; her parents and older sister had eaten a traditional New Year’s breakfast together: rice cakes grilled and wrapped in dried seaweed or mixed in soup. They had even had a cup of sake—this custom traditionally from China. On the night of December 31, they soaked ten powdered Chinese medicines in sake and *mirin* (rice wine used as flavoring in cookery). This was drunk after prayers the next morning and represented a long life and the expulsion of bad spirits from the body. The powders were also good for preventing hangovers that were certain to follow the binge drinking and eating that would continue for the next three days. In fact, the Japanese consume more alcohol in those three days than any other festival in the world, including the German beer festival. After breakfast, Sachie and her sister helped their mother prepare *Osechi Mono*, a square lacquered tray, decorated with various traditional foods, such as boiled seaweed, fish cakes, mashed sweet potato with chestnuts, simmered burdock root, sweetened black soybeans, sashimi, and others delicacies. They had then prepared *Otoshidama*, a custom of giving ones relatives’ children money in decorated envelopes. Soon after, her cousins, uncles, and aunts had arrived, and the drinking, eating, stories, jokes, and gossip had started. Yukino arrived around three in the afternoon with her parents, and that’s when things began to go wrong. *Damn*, she thought, *I wish it had never happened*. A tear spilt from her eye and slid down her cheek.

“Aren’t you going to give Yukino a hand?” called her grandfather.

“Of course,” she replied. She wiped the tear from her cheek and walked over to Yukino and began helping her stack the noodles on the shelf.

Yukino noticed her watery eyes but said nothing.

Their grandfather opened the shop door and placed a few boxes of locally grown vegetables outside.

“*Ohayo*. Morning,” came a voice.

He looked up to see Hiro, a teacher at Nakamaru School buying a can of iced coffee from the vending machine. “*Ohayo*, I thought the school was cancelled because of the earthquake.”

Hiro was in his early twenties, good-looking and polite, fresh out of college. He

had moved to Otsuchi from Sapporo a year ago and often shopped at their store, but their grandfather was suspicious about his motives, as Hiro always seemed to turn up when Sachie was working the cash register—not that she paid him any attention. “Just rumors. It has to be something extremely terrible for school—”

Just then the chime of the town speakers echoed through the streets followed by some announcements, one of which confirmed school was not cancelled.

“It’s better for the children. It will take their minds off the quakes we’ve been having,” said the teacher, opening the coffee and knocking it down in two gulps. He threw the empty can in the trashcan and then bowed and got on his motorbike and disappeared down the lane.

Mr. Yahata went back in the shop. “Yukino, could you work the cash register until Mrs. Watanabe comes? She said she will be a few hours late because of the earthquake.”

“Yes, but I don’t know how to work it.”

Turning to Sachie, their grandfather said, “Would you mind showing Yukino?”

Sachie looked at her watch impatiently. “No,” she grunted. “But you’d better be a quick learner.”

Their grandfather chuckled. “Going to meet someone, are you?”

Sachie didn’t reply, just went over to the cash register and pressed a button and the drawer rang open.

Their grandfather raised the shutter of the unbroken window and said, “All right, let’s open shall we!”

“OK,” both girls replied together.

There was a clang, clang, clang, and an old red fire engine that looked like it was out of the sixties, polished and in immaculate condition, pulled up in front of the store.

A young man swung from the driver’s cabin. “Morning.”

“Morning,” replied Mr. Yahata. “How old is that fire engine?”

“It was manufactured in 1968,” he replied proudly.

“It looks brand new,” said Mr. Yahata, walking over and running his hand along the side.

“As good as the day it was made.”

The Japanese fire department still kept a lot of their vintage vehicles—more for show than firefighting. Their real fire trucks were the most up-to-date in the world.

“That was quite a big earthquake, wasn’t it?”

“Yes, and I see your shop has been damaged,” he said, eyeing the heap of broken glass and bottles stacked up against the closed shutter.

“Well, at least no one was hurt.”

“That’s right,” the young firefighter said. His name was Tatsuya, a local lad who had grown up in the town. Taller than usual for Japanese and married with two young daughters, he had recently been promoted to second in command of the Otsuchi fire station.

“Did the tsunami gates close properly?”

“Yes, they automatically closed,” replied Tatsuya.

“How about the manual ones?”

"No problems. All the volunteers closed them in time," said Tatsuya.

"That's good."

"Yes, but I wouldn't like to have to manually close the automatic gates if there was a power outage; they are incredibly big and heavy.

"I hope that day never comes."

"Me too."

After World War II, the Japanese built cement breakwater walls along one-third of their coast. The Japanese coastal defense is longer than the Great Wall of China and was constructed because of the huge shift of population from the inner farmlands to urban coastal areas after the war. Of the 125 million Japanese, nearly 80 percent, or 100 million, live in or near coastal urban areas. Almost 45 percent of Japan's land area, mostly in the interior, is now considered 'depopulated' and is eligible for special funding.

"The store is open," Mr. Yahata said, gesturing to the door.

"Yes, but I have come to ask you something."

"Yes, what is it?"

"You are a friend of Nemoto-san, aren't you?"

"Yes. Why?"

"He hasn't returned to port."

Mr. Yahata eyed the firefighter seriously. "When was he due to return?"

"This morning."

"Did he tell you where he was planning to go?"

Mr. Yahata thought for a moment and then looked at his watch, twenty past ten. "Yes, he said that his grandson had agreed to go fishing with him. He was very excited because the boy usually refused. The old bugger has some foolish notion that the boy wants to become a fisherman like him." He paused and thought for a moment. "He said they would trawl just off the coast. I wouldn't worry about him too much; he probably headed out to sea after the quake to escape the possibility of a tsunami. He'll be back soon."

"I guess you're right,"

"Of course I am. He's going to keep his grandson out at sea as long as he can."

Tatsuya took off his cap and bowed deeply. "Thank you very much."

Mr. Yahata returned the bow but not as deep to confirm his authority as the elder. "You're welcome."

Tatsuya climbed back into the driver's cabin and closed the door and drove off.

"Morning, Grandpa," called a boy from behind him.

The Mr. Yahata turned to face the boy. "Good morning Ryo-kun," he said, smiling.

Ryo wasn't his grandson but a neighborhood boy who often stopped by the store and had become friends with Mr. Yahata. Japanese often call people who they are close to by family titles, such as older and younger brother or sister, father or mother, or grandfather or grandmother. The suffix '*san*' is added at the end of a person's name to add respect, but if the people are close, then it is replaced with the suffix '*chan*', usually for woman, but can be used for men instead of the more masculine term '*kun*', as in Ryo-kun.

"That was a big earthquake earlier," said Ryo.

"Yes, it was," replied Mr. Yahata.

Lined up behind Ryo were six other children, three boys and three girls, all younger than him. Japanese elementary children don't use school buses but instead walk to school in groups—except in rare circumstances when the distance is too far. They meet at a designated place—a shop, corner, or bus stop. One of the elder children, usually a sixth grader, is appointed leader and is responsible for the group.

Ryo was leader of his group and was proud of the discipline he had instilled. He turned and eyed his troops, who stood at attention in a straight line. “Who needs to buy a notebook?” he asked.

A small hand rose from the middle of the line. “*Watashi*. Me,” said Erica, a cute third grade girl.

“To the front now,” ordered Ryo.

Erica quickly shuffled to the front and stood at attention. She was wearing a yellow hat, a pink jacket with Mickey Mouse embossed on the right chest, denim shorts, long pink and white polka dot socks, and white running shoes. On her back she carried a red leather rucksack. Most Japanese public elementary schools don't have uniforms except for a yellow hat and leather rucksacks, usually red for girls and black for boys.

Ryo spoke with authority. “You know we are not supposed to enter any shops on the way to school.”

“I'm sorry,” Erica said. Her head bowed toward the ground.

“You know I could lose my position if anyone finds out.”

“I'm sorry,” she muttered.

The other children stood in silence, eyes cast down, listening to the unfolding drama.

“What do you think I should do?” His voice was stern.

“What?” she asked uncertainly.

“Ryo-kun,” interrupted Mr. Yahata, “speak kindly; you're scaring her.”

Embarrassed, Ryo bowed deeply and then it was his turn to say, “I'm sorry.”

Mr. Yahata smiled and said, “It's OK.”

Ryo bowed again. “Excuse me.”

“Erica, go and get your notebook. I'll keep it secret that you came to the shop,” said Mr. Yahata, gesturing to the door.

She bowed and then entered the shop.

Mr. Yahata looked at the other children, who were now watching, with wide eyes, the sudden change in authority. “Everyone go and get a drink; they're on me!” he said cheerfully.

“Great!” The children yelled in unison and rushed past him into the shop.

“You too!” he said to Ryo.

“Thank you,” he said, bowing and then racing into the shop. The children were pushing and shoving at the cooler. “Line up!” Ryo ordered, taking charge again.

The children quickly formed a line.

“When you've got a drink, take it to the counter.”

Yukino and Sachie watched with amusement from the counter.

The first boy came to the counter holding a can of soda. Sachie took the can and punched in the price and handed it back to him. He was seven years old and as skinny as

a stick. He wore a blue jacket, brown trousers, and red sneakers; his big brown eyes stared out from black-framed glasses.

“What do you want to be when you grow up?” asked Yukino.

The boy looked up and said without hesitation, “A policeman.”

“That would be nice,” said Yukino.

The boy didn’t answer, just stared back as if he was more superior than the girls, and then walked out of the shop. The idea that women are inferior to men is ingrained into the Japanese male from a very young age. However, the mothers and grandmothers do most of the instilling, and one must step back and put the picture into perspective. Japanese women may play the role of the inferior, but the facts must be considered; Japanese women control the household and the money, thus controlling the men. There are two types of Japanese men: one who finds it convenient and appreciates his wife looking after the household and finances and the other who is completely ignorant to this fact and thinks he is in control.

The two other boys came to the counter and Yukino and Sachie had trouble not laughing. The boys were perhaps ten and eleven. The older one was fat, wearing a white PlayStation long-sleeved shirt, complete with breakfast stains, baggy black shorts that hung too low because of his protruding tummy, and bright green Crocs. His brother, also overweight, wore a purple long-sleeved shirt with a picture of a tyrannosaurus, white grubby shorts, and purple Crocs.

Sachie took the two cans of Diet Coke and smiled. She showed Yukino how to use the cash register and then handed the drinks back to the boys.

“What do you want to be when you grow up?” Yukino asked.

Sachie sighed. “Are you going to ask them all the same question?”

Yukino ignored her cousin. “What do you want to be when you grow up?”

They looked at her as if she was an alien, speaking an unknown language.

She repeated the question again and the two brothers stared at her as if she was some sort of freak. They then looked at each other, as if trying to make some sense of her idiocy, gave up such a burdensome task immediately, shrugged their shoulders, and left the shop.

“Bit too much for the intellectual males,” said Sachie, grinning.

Yukino nodded reluctantly and watched the two fat brothers scarf down the drinks outside the shop.

Next came two girls aged around nine. One had short straight hair and was wearing a white jacket, a Mickey Mouse T-shirt, a flower-patterned skirt, short pink socks, and white running shoes. The other wore a yellow jacket, an identical Mickey Mouse T-shirt, brown shorts, white socks, and black shoes. Her hair was plaited, and she was twirling one with her finger.

“Welcome,” said Yukino.

“We will take these,” the girls said in unison, putting the cans of orange juice on the counter.

Sachie took the cans and punched the prices in.

Yukino put the same question to the girls.

“Not again,” said Sachie scowling.  
The one twirling the plait said, “I want to be a vet.”  
“Do you have any pets?” asked Yukino.  
“Yes, I have a dog.”  
“What’s his name?”  
“Chibi.”  
“How about you? What do you want to be?” she asked, turning her attention to the other girl.  
“I want to own my own flower shop,” she replied.  
“That’s what I wanted to do when I was your age.”  
The girl stared up at her as if to say, *so now what do you want to be?*  
Sachie, picking up on the girl’s expression, handed the drinks back and whispered, “She’s working here to save money to start her own flower shop.”  
The girls smiled and said, “*One-chan ganbatte ne*. Try your best, older sister.”  
The girls took their drinks and left the shop.  
“Thank you,” said Yukino.  
Sachie rolled her eyes back in an exasperated look. “You’re welcome.”  
The last girl, a notebook clutched in one hand and a can of Sprite in the other, came to the counter.  
The troublemaker,” whispered Sachie.  
“Be quiet,” Yukino whispered back.  
“You do the till this time,” said Sachie.  
The girl handed her the book and drink.  
“What’s your name?” asked Yukino.  
“Erica,” replied the girl shyly.  
“Don’t forget to charge her for the notebook,” said Sachie.  
“I’ll pay for it,” said Yukino.  
Erica took out some coins and put them on the counter.  
Yukino shook her head. “It’s all right,” she said, pushing the coins back.  
Erica took a chocolate bar from the box on the counter and pushed the coins back.  
Sachie broke out laughing and then asked, “What do you want to be when you grow up?”  
Erica smiled innocently. “I want to be a rich woman.”  
Sachie laughed again. “I think you will be.”  
Yukino grinned awkwardly and handed the notebook and the drink back to her.  
Their grandfather entered the shop. “What lovely children,” he said, smiling gleefully.  
“Very cute,” said Sachie with a note of sarcasm in her voice.  
Their grandfather looked at the cash register. “That’s a big bill for six juices.”  
Sachie looked at Yukino. “*Baka*. Idiot,” she said. “You pushed the wrong button.”  
“Show her again,” said their grandfather. I have to go to the post office.  
I will be back shortly.  
Sachie scowled at Yukino. “It’s probably better that you date a no-brainer.”

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Captain Mackeller and his copilot left the morning briefing. They were to fly a routine training mission to Sendai airbase in Miyagi prefecture; about one hundred kilometers north of Fukushima nuclear power station.

“Strange that we’ve been ordered north today, don’t you think?” said his copilot.

“Very,” Mackeller replied.

Minutes later, the blades of the chopper were thumping overhead. Mackeller eased the joystick back and the chopper lifted from the deck. He banked the craft left and flew north towards Sendai.

Forty minutes later, Mackeller pointed down. “That’s the Daiichi power plant.”

His copilot looked down. There were four reactors building in the northern end of the plant and two in the southern part. “What’s Daichi mean?”

“Number One plant.”

“What’s that one?” he asked, pointing to the two reactor buildings in the southern part of the plant.

“That the Daini, Number Two plant.”

“Six reactors,” he said.

“Yeah, I know. They have a total of fifty-four reactors in Japan.”

“Doesn’t sound like such a good idea considering the countless earthquakes Japan has every year.”

Mackeller nodded. “And they’re all built on the coastline; very prone to tsunamis.”

“Which plant gets damaged in your dream?”

“The Daiichi plant,” said Mackeller, banking the chopper out to sea.

“Did you know during World War II, the New Zealand military initiated a project named *Project Seal*. The purpose was to create a tsunami using explosives—its primary target was Japan. They called it the Tsunami Bomb and between 1944 and 1945, they did 4,000 tests, but it was closed down because they failed to generate sufficient force to create a tsunami.”

“Interesting,” said the copilot.

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Sachie pushed the buttons one more time and the cash drawer sprang open. “Do you understand?” she asked irritably.

“Yes, I’ve got it,” Yukino replied.

“Are you sure?”

“Yes.”

Sachie’s phone rang.

“Him,” Yukino said mockingly.

Sachie gave her a wicked look and flipped open her phone and went outside.

Yukino went over near the door and pretended to arrange some goods on the

shelf.

“I’m fine. What’s up?”

Pause.

“Really?”

“It’s OK,” she replied. But she couldn’t hide the disappointment in her voice.

Pause.

“What time?”

Pause.

“I’ll be waiting.”

Pause.

“Me too,” she said softly and hung up. She turned and glared at Yukino.

Yukino flinched at the hostile glare.

Sachie stomped back into the shop. “Idiot,” she blurted. “If I hadn’t had to teach you how to use this dumb cash register, he wouldn’t have postponed our date.”

“Who?” asked Yukino.

Sachie’s eyes narrowed and Yukino took a step back.

“Good day,” came a voice from the door.

Mrs. Sasaki stood in the doorway. She was at least eighty, perhaps ninety; no one really knew her age—probably not even her. She was a widow and lived by herself on a farm a few kilometers inland. Her face was tanned and weathered, but a beauty still shone in her brown eyes. She was dressed in a dark blue, long sleeve top, baggy pants, and black rain boots. Her head was covered by a *tenugui*, a piece of cloth wrapped around her head. On her back she carried an empty bamboo woven basket. She was hunched over, her body locked at a forty-five degree angle from the years of bending in the rice fields. This was common among Japanese women farmers; the men drove the rice planting tractors while the women followed and planted the spots they missed. And eighty was not thought of as over-the-hill for a Japanese farmer, considering that the average age was around sixty-seven. Although Japan was a farming culture and the older generation had a real passion for the land, the number of farmers was decreasing rapidly. The Japanese government was trying to sway the younger generation into farming by offering incentives. But they still preferred the pushy white-collar jobs in the big cities.

“Good day,” the girls replied in unison.

“Do you have any *obento*?” Mrs. Sasaki asked.

“Yes, what type are you after?” asked Sachie, putting her phone on the counter and going over to the *obento* rack. *Obento* is the name for lunch box and is widely eaten by all ages. It varied from fish, vegetables and rice, or fried chicken and rice or even curry and rice.

“Tasty ones, please,” she said with a grin, revealing her gold-capped dentures.

Sachie suggested the ones with grilled fish, vegetables, fried tofu, and rice.

“They do look very tasty,” she said.

Yukino worked the cash register while Sachie put the lunch boxes in Mrs. Sasaki’s bamboo basket.”

“Thank you,” she said, bowing her head slightly, her body unable to bend any



further.

Sachie accompanied her to the door and bowed. "Take care," she said. She turned and walked into the kitchen and upstairs without looking at Yukino. Yukino looked down at the phone.

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Mr. Suzuki looked at his watch, "Ten past twelve," he cursed under his breath.

His phone rang and he picked it up. "Suzuki speaking."

"Hi, this is Risa," came a husky voice from the other end.

Suzuki's heart rate quickened. "Good afternoon," he stammered.

"I'm sorry to bother you when you must be so busy, but I wanted to confirm that you will meet me for lunch. I'm really looking forward to seeing you."

Suzuki's throat went dry, and a bead of sweat ran down his forehead. "Yes...of course," he said, clearing his throat.

"Great!" she replied. "Perhaps we could go somewhere after lunch."

Mr. Suzuki's heart stopped. "Uh...yes...we could." His words stumbled out.

"Fantastic, I can't wait."

"Me either."

She took on a deeper, huskier tone. "Say my name. I want you to say my name."

"Pardon."

"Say my name," she repeated.

Suzuki hesitated and looked out his office door to see if anyone was within hearing. "Risa," he whispered.

"Say it again," she said.

"Risa," he repeated.

"Say it again," she insisted.

"Risa," he said once more.

The phone went dead.

Suzuki put the phone down and wiped the sweat off his forehead.

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Yukino picked up Sachie's phone and tapped text messages.

"Good afternoon."

She dropped the phone and turned to see Kubo-san standing in the doorway. "Good after...noon," she replied, stuttering.

"Are you OK?" You look a little pale," he said, entering the shop.

"I'm...fine," she said, wondering how long he had been there. "I didn't see you; you gave me a bit of a scare."

"Sorry, I didn't mean to," he said, bowing his apology.

"That's all right," she said, forcing a smile. She guessed he hadn't seen anything unusual.

Kubo-san had his own roof tiling company; he was a short man in his mid-thirties and a widower with three daughters—a quiet sort of a man. Although he had a radical flip side to his passive personality, he played the electric guitar in a local heavy metal rock group called the Evil Ninjas.

“What can I get you?” asked Yukino.

“Just some rice balls,” he said. (A rice ball is a small ball of rice wrapped in seaweed with a filling in the center.)

“We’ve got sour plum, tuna, salmon, and minced beef,” she said, pointing to the shelf.

Kubo-san selected two tuna rice balls and a can of iced coffee.

“Anything else?” Yukino asked.

“That’s all,” he said, unfolding his shopping bag.

She put the goods in his bag.

“You’re here early this year,” he said.

“I have an important kendo tournament in the summer and have come to train with Sachie.”

“That’s good; she’s the most skillful person in these parts.”

“How’s your business?” asked Yukino.

“It was a little quiet until the earthquakes,” he said and sighed.

“What’s wrong?”

He sighed again. “One lady is accusing my company of shoddy work. She says I should fix her roof for free.”

“How old is the house?”

“I guess over sixty years old.”

“You weren’t even born then,” said Yukino, shaking her head in disgust.

“I know, but I took over this business from my father, and she says it’s my responsibility to do the repairs for free.”

“That’s nonsense,” said Yukino.

He let out a long sigh. “I know.”

“What are you going to do?”

“I don’t know. Anyway, I have to go.”

“Take care,” she said.

“Thanks.” He bowed and left the shop.

“Lunch is ready,” called her aunt from the kitchen.

“OK,” she called back.

## Chapter Five

Yukino went into the adjacent kitchen where her auntie was putting food on the table: steamed rice, miso soup, grilled fish, boiled vegetables, salad, and fresh tuna sashimi.

“Would you call Sachie?” asked her aunt.

Yukino went out the back door, up the outside stairs, and opened the door. “Lunch is ready!” she shouted through the doorway.

“OK,” replied Sachie.

Sachie came down a few minutes later and the three of them began eating.

“Where’s Grandpa?” asked Yukino.

“He’s gone to pick up your uncle from the hospital,” she said, looking at the clock on the wall. “Should be back in thirty minutes around two o’clock.”

“*Konichiwa*. Good afternoon,” someone called from the shop.

“*Konichiwa*,” replied Kumiko, getting up and going into the shop.

“I’m sorry to bother you,” said the man, standing in front of the counter.

“Mr. Mayor, it’s been a long time,” said Kumiko, bowing.

“Yes, it has been,” replied the mayor.

“What can I do for you?”

“Is your father here?” he asked. His middle-aged face was serious and he ran a nervous hand through his receding hairline.

“No, he’s gone to pick up my husband from the hospital; he’ll be back around two.”

“I see,” said the mayor.

“Is there anything I can do for you?”

Sachie stepped into the shop. “Good afternoon,” she said, bowing. She went to the fridge and took out two cans of peach juice.

“Good afternoon,” replied the mayor and then returned his attention to Kumiko. “We are worried about Mr. Nemoto and his grandson; they haven’t returned from fishing.”

“He’s a very experienced fisherman. I wouldn’t worry about him too much.”

“Yes, I know, but another fisherman reported seeing some smoke rising from the ocean in the vicinity of where he was supposed to have been trawling.”

Sachie stopped dead in her tracks and looked at the mayor.

“Something wrong?” asked her mother.

“I forgot to report it,” she said, putting her hand to her mouth.

“Forgot to report what?” her mother asked.

“I saw smoke coming from one of the fishing boats when I was on the mountain.”

“This morning?” asked the mayor.

“Yes,” replied Sachie nodding. “I was going to report it to the harbor master, but the earthquake and...I forgot. I’m so sorry.”

“It’s OK,” said the Mayor. “But where did you see the boat?”

“It was a few kilometers to the south,” she replied. “It looked as if it was drifting.”

“Thank you,” said the Mayor. “I have to get back to the city office and report what Sachie said.”

“I see,” said Kumiko, bowing.

He returned her bow and turned to leave just as Yuta entered the shop. “How are you Yuta?”

“I’m fine,” he replied.

The mayor left.

Sachie went back into the kitchen and sat down; she was in deep thought.

“Sa-chan,” said Yukino, using the more casual title. “What was all that about?”

“Nothing,” replied Sachie. “No-brainer’s in the shop.”

“What?”

“Yuta—he just came in.”

Yukino’s eyes narrowed.

“I’m not lying, you idiot.”

Yukino went to the door and stopped. “I need to speak to you about something.”

“About what?” snapped Sachie.

“Your boyfriend.”

Sachie’s jaw dropped open and then her eyes blazed into her like red-hot spears—she almost laughed with rage. “Don’t push me!” she warned acidly.

Yukino didn’t drop her gaze and her words were as calm as her eyes. “We need to talk.”

Sachie could feel her blood boiling and steaming beneath her skin. “Mind your own business!” she rasped hoarsely.

“Let’s talk later.” Yukino stepped into the shop. “Hi!”

“Hi,” replied Yuta. A shy grin brushed his lips.

Kumiko, knowing the two lovebirds needed some privacy, exited the room.

“I was wondering if three o’clock would be OK to come and pick you up?”

Yukino blushed, not because of her shyness, but because her pounding heart was sending blood rushing to her face. “That’ll...be...fine,” she stammered.

“Good,” he replied.

They stood there in awkward silence, neither knowing what to say next.

Sachie came into the shop and took out an iced tea from the fridge and looked at them. “Interesting conversation you two are having. Has the cat got both your stupid tongues?”

Yukino glared at her.

“Well, see you at three,” said Yuta, taking the cue to escape.

“Can I come too?” asked Sachie mockingly.

Yukino threw her a glance, which meant a lot more than *‘Fuck you cousin Sa-chan.’*

\*\*

“We seem to be drifting further out to sea?” said the grandson.

“Your right,” said the grandfather. His nerves twisted like worms in his stomach

and he looked frayed as if ready to snap.

“Are you all right?”

“I’m fine,” he replied, trying to keep his words calm, but he could feel doom contracting around him—something was in the air—he could smell it, and it reeked of death, almost making him puke.

## Chapter Six

Friday, March 11, 2011, 1:50 p.m.

Kumiko, Sachie, and Yukino sat silently eating lunch.

“Did I miss something?” asked Kumiko, glancing from one girl to the other.

Both girls glared at each other and shook their heads.

“Life is too short to hold grudges,” she said, staring at both girls.

“She’s always calling me an idiot. She even called Yuta an idiot,” blurted Yukino.

Kumiko’s eyes bore into Sachie. “Yuta-kun is a good young man. He helped me get Mrs. Yagi to the evacuation area during the tsunami warning.”

Sachie met her mother’s stare. “He’s a no-brain—”

“Hello,” someone called from the shop.

“Just a moment!” Kumiko called back.

Sachie glared at Yukino.

“You two make up before I get back,” she said, getting up and going into the shop.

A boy stood at the counter holding a rice ball and a can of coffee, his eyes cast down as if he was trying to avoid her eyes. Ryota was fifteen years old and in third grade of junior high school—*Jukensei*, student of the final examination. The third year junior high school examination was probably the most important exam a Japanese person would take in his or her life. This exam, at the age of fifteen, would establish their future. The examination determined into what high school one would attend, and this in turn would determine what university one would be accepted into. High schools were ranked according to their academic levels. In a nutshell, the academic achievers were put in education’s upper-class society, while the underachievers were thrown into education’s lower-class society. There was a social stigma attached to this, and parents, especially Japanese mothers, were obsessed with making sure their children got into a respectable high school to avoid such social stigma. Children from as early as preschool were sent to cram-schools (schools for extra studies after normal school hours). This was in a bid to gain the upper hand against their classmates. It is quite common for Japanese junior high school students, who generally return home around six thirty, to then go to a cram-school and study until ten o’clock.

Ryota was one of the increasing numbers of young Japanese who, under the extreme pressure exerted by society and his parents, had cracked and now rarely attended school. His grades had begun to fall in the latter half of his first year at junior high. His classmates started calling him an idiot, loser, and even a turd. The bullying increased in the second year. At baseball practice, balls were regularly thrown into his back; he was kicked and punched as runners passed his base. He hid the bruises and mental abuse from his parents and slowly became introverted, but in the end, the violence became too much, and eventually he refused to go to school. His parents retaliated by confiscating his mobile phone, computer, and PlayStation, but this hadn’t solved anything.

“How are you?” asked Kumiko.

“Fine,” muttered Ryota without looking up from the counter. He was lean and good-looking, his hair cut fashionably with a long fringe nearly covering his eyes. He wore a denim jacket, a white T-shirt, and black jeans.

“Where are you off to?” she asked, trying to make small talk. She knew his situation and felt sympathy for him.

“Fishing,” he muttered again, eyes still downcast.

“That sounds like a good idea,” she replied. “Where are you going?”

“To the end of the harbor breakwater wall,” he said, putting a thousand yen note on the counter.

Kumiko walked around the counter and took a packet of beef jerky and a bottle of Coke from the shelves and put them on the counter next to the rice ball and coffee. “Your money’s no good here,” she said, handing the note back to him.

Ryota took the money hesitantly and without raising his head muttered, “Thank you...I’m sorry.”

“Nothing to be sorry about. Have a nice day fishing,” said Kumiko, smiling at him.

Ryota gathered up the goods without saying anything and got on his bicycle and rode off.

Kumiko returned to the kitchen where Yukino sat eating by herself.

“Where’s Sachie?” asked Kumiko.

“She has gone upstairs to fix her father’s bed,” she said, resting her chopsticks on her rice bowl.

Kumiko looked at the time—five until two.

“He’ll be here soon,” said Kumiko. We’d better clear the lunch things away.

“I’ll do that,” said Yukino.

A car pulled up outside.

“Must be him,” Yukino said.

Kumiko went out the back door. Her husband sat in the front seat next to her father. Her husband smiled and gave her a salute; she waved back and then called, “Sachie, father’s back!”

Sachie was readying her father’s bed when she heard the call. Her heart skipped a beat and her thoughts swept back to the day of her father’s accident. Yukino had gone into the barn without asking and knocked over a cupboard, trapping herself under it. Hearing Yukino’s screams everyone rushed from the house; the men lifted the cupboard off her, while the women dragged her from under. Her leg was broken and she had a gash in her back that required stitching. The New Year festivities were instantly replaced by an ambulance ride and a five-hour wait in Kamaishi General Hospital’s waiting room. Her father was furious and blamed Sachie for not taking care of her younger cousin.

“Sachie, we need your help.” Her mother’s voice brought her back to reality.

Sachie wiped back the tears that were brimming in her eyes and went downstairs.

“Welcome home, father,” said Sachie.

He smiled and saluted; she jumped to attention and saluted back. He was tall in

his mid-fifties, still handsome, but rather thin because of the long periods he stayed in bed. He had been in the Japanese Defense Force in his earlier years, and after the accident he seemed to think he was back in it. His speech had all but disappeared, except for a grunting laugh or deep growl; and the right side of his body was partially paralyzed.

"You take his things. Your mother and I will help him up the stairs," said her grandfather. He handed the bag to her.

They carried him up the stairs and put him to bed.

"Would you like some water?" asked Sachie.

He saluted, which she knew meant yes, and she went over to the sink. It was difficult for her to hold back the tears knowing she was the one responsible for his accident. She wiped a tear from her cheek. *If only I could turn the clock back*, she thought. *If only I had stayed at university and not come back for the New Year.*

Yukino heard someone enter and went into the shop.

"Yukino-chan!" exclaimed the young girl.

"Seko-chan!" Yukino returned.

They gave each other a warm hug.

"Long time no see. How have you been?" asked Seko.

"Fine," replied Yukino. "Like your fashion."

Seko was twenty-two, cute, with soft round features and shoulder-length hair tied in a ponytail. She was wearing a long pink sweater that hung down to just above her knees with cream-colored leggings and brown *Ugg boots*.

Seko laughed and put one hand on her hip and the other behind her head in the classic model pose. "Boys like it too!"

Yukino laughed and asked, "What have you been up to?"

"I was doing some office work at the elementary school, but I quit last month."

"Why did you quit?"

Seko sighed. "I'm bored here. I want to move to Tokyo. I want a more exciting life. It's dreary here."

"You can come and stay with us," she said excitedly. Seko was a distant relative of the family and Yukino had spent many days swimming and sunbathing with her—not to mention the innumerable sleepovers at her house, which had a beautiful view of the harbor.

"I was going to ring and ask you if that would be OK—just until I find a place of my own."

"I'm sure my parents would love to have you."

"*Yata!* Great!" said Seko, throwing her arms around Yukino.

"When are you planning to move?"

Seko's face took on a sullen look. "I wanted to come this summer, but my grandmother isn't very well. She's in the hospital and I should stay and help my parents until she is better."

"What's wrong with her?"

"Just old age; she'll be ninety-three next month."

"Really? Is she that old?"



“Yes.”

“What hospital is she staying in?”

“The one by the fishing harbor.”

“I know,” said Yukino. “I’ll drop by and see her when I am down there.”

“How long are you here for?” asked Seko.

“Just until Monday. I’ve got end-of-term exams the week after next.”

“Well, we’d better get together soon. What are you doing tonight?”

A playful grin brushed Yukino’s lips. “I’ve got a date.”

Seko’s eyes lit up. “Who with?”

“Yuta-kun.”

“Really? He’s so cool. He’s a surfer, you know?”

Yukino blushed with excitement. “I know, I know! How about you? Do you have a boyfriend?”

“Broke up a month ago.”

“Sorry to hear that.”

“How about tomorrow?” she said, changing the subject, not wanting to probe back into the romantic disaster.

“That’d be fine.” She paused. “As long as you know who isn’t coming.”

Seko scanned the room and then said. “Does she know?”

“Not yet.”

“Better she doesn’t,” whispered Seko.

“Just you and me tomorrow?” asked Yukino.

“Yes.”

“What time?”

“Good. I’ll pick you up around four.”

“OK,” said Yukino.

“I have to go now. I borrowed this car from my friend and have to return it by two thirty.”

“Where’s your car?”

“It broke down. I just came back from Kamaishi where I was looking for a new one.”

Yukino followed Seko out the door to the car.

“Cool car,” said Yukino, looking at the pink boxcar. The dashboard and rear window were cluttered with Disney dolls, and it looked like a toy store on wheels, as do many young girls’ cars in Japan.

“I’m getting the same model,” she said, getting into the car and starting the engine. “See you tomorrow.”

Yukino waved good-bye as Seko drove off down the lane.

“Yukino,” called her aunt.

Yukino turned to see her aunt at the shop door holding some money in her hand.

“Yes, Aunt?”

“Would you mind going to the fishing harbor and buying some tuna for sashimi? It’s your uncle’s favorite.”

“Sure,” replied Yukino. “I want to visit Seko’s grandmother at the hospital anyway.”

“You can use that bicycle,” said her aunt, pointing to the bike leaning against the vending machine.

“Thank you.”

“Don’t be long,” she said, handing Yukino the money. “Get 800 grams.”

Yukino took the money and headed off toward the harbor.

\*\*

Mr. Suzuki parked his car at Futaba train station. He had left Kenichi in charge of the plant and had told him he had some urgent business with the mayor. His hands were sweating and his heart pounded as he opened the door. He knew he wanted Risa and was sure he would betray his wife’s loyalty. Did he care? No, he didn’t. He was sick to death of the mundane life he lived; he wanted to live again, feel young again. He took off his wedding ring and slipped it into his pocket and any remaining guilt vanished.

“*Konichiwa*. Good afternoon,” came a husky voice from behind him.

Suzuki turned slowly around, a smile stretching from one cheek to the other. “*Konichiwa*,” he said, bowing slightly.

Risa returned his bow. She was perhaps twenty-two, maybe older. She had a petite body with long, black, silky hair and a face straight out of a fashion magazine. She was gorgeous and a real treat compared to his wife. Who could blame the poor man for the momentary lapse of loyalty? “Suzuki-san, I’m so glad to see you,” she said, smiling at him.

“Me too,” replied Suzuki, smirking like an adolescent boy.

There was an interlude of awkward silence and then Suzuki asked, “Shall we have lunch?”

“Yes,” she said. But then she stepped forward and whispered into his ear.

Suzuki blushed and nodded. He then opened the door for her and they drove off.

\*\*

Yukino rode along the side of the river, the cement floodwalls just above her. She went up a small ramp across the bridge and down the other side, passing Kozuchi shrine on her left. She continued a few more minutes down the main road that led into central Otsuchi. The road was lined by the usual stores that one would find in any Japanese town: hair salons, restaurants; and hardware, book, and clothes stores. She rode past the junior high school into the town center. The center was made up of several taller concrete structures, a few apartment blocks and office buildings, the town office, and the main hospital.

Yukino looked at the hospital and then stopped and ran over to the entrance. “Grandmother,” she called up to the second floor.

The old lady standing on the balcony looked down and immediately recognized her. “Yukino-chan,” she called.

“How are you, Grandmother?”

“Fine,” she said, grinning down at Yukino.

“Can I come up and see you?”

“Not now. The doctor is doing his rounds. Come back after three.”

“All right, I’m going to the fishing harbor. I’ll call in on my way back.”

“I’ll be waiting.” She waved good-bye.

Yukino waved good-bye, got on her bike, and continued riding. She rode past the city hall, where she noticed the mayor, on the third floor, peering out the window across the harbor, looking as if he was searching for something. She rode across the river; to her left residential houses stretched back about two kilometers to the hills, and on the right a narrow line of shops stood between the road and the tsunami breakwater wall. She parked her bicycle next to the tsunami wall and climbed the stairs to the top. The breakwater wall was huge—five meters high—running along the water’s edge from one side of the harbor to the other, about two kilometers long in length; at the southern end were huge floodgates set in the mouth of the river to stop a tsunami from going upriver. The view was fantastic from the top; she could see the red gate of Kozuchi Shrine on Hyokkori Hyoutan Island in the center of the bay. A few fishing boats were heading back in. A sudden gust of wind blew a chill through her and she wished she had brought her sweater. She looked up and noticed the clouds moving in from the mountains—*snow*, she thought. She continued along the wall until she came to the fishing harbor. The entrance to the harbor was protected by two tsunami breakwater walls; they overlapped in the center to defend the harbor from tsunamis but allowed the boats to enter and exit by running between the two walls and then out to sea. Inside the harbor, fishing boats sat moored to a line of cement jetties. On the jetty nearest her, fishing nets lay unfolded; young fishermen sat repairing them while the older ones sat cross-legged around a bottle of sake drinking, smoking, and chatting.

Yukino climbed down the stairs and headed for the group of old men.

“*Konichiwa*. Good afternoon,” said one of the young fishermen.

Yukino blushed. “*Konichiwa*. Good afternoon,” she replied.

Yukino-chan,” called one of the old men, getting to his feet.

Yukino hurried over to the men. “Long time no see, Kamata-san,” said Yukino. He was one of her grandfather’s friends and often visited the shop to drink sake. He was thin, but muscular, and in his late seventies; his face was tanned and well-weathered from years at sea.

“It’s been almost a year,” he said.

“Yes, it has been.”

“Come and sit with us,” he said, gesturing.

Yukino sat on the ground.

“Sake?” said one of the men, holding up an empty sake cup.

“She’s still in high school,” said Kamata. “She’s too young.”

Yukino ignored Kamata’s remarks and took the cup. Yes, please,” she said, holding the cup out in both hands.

The man filled the cup and then Yukino held the cup up in front of her head and

said, "*Kampai*. Cheers." She knocked it back in one gulp and put the cup on the ground.

The fishermen clapped their hands and Yukino bowed her head solemnly. Kamata and Yukino sat talking while the other fishermen chatted amongst themselves.

"Would you like to live in Otsuchi?" asked Kamata.

"In spring and summer," replied Yukino.

A smile creased Kamata's leathery face. "Those are the best times, you know."

Yukino laughed. "I'd like to live in Tokyo and Otsuchi if I could."

"That's a good idea. How are you going to do that?"

"I'm going to become rich!" she said, eyeing Kamata hard.

The old man laughed. "I hope your dream comes true."

"You can achieve anything if you really want to," Yukino said, her voice full of confidence.

"I agree," replied Kamata. "My father often used to say: '*Don't look for the opportunity; the one you have in hand is the opportunity.*'"

"That's a great saying," said Yukino. "My father always says, '*If you never try, you'll never know.*'"

Kamata chuckled. "My mother used to say, '*If you have time to complain about something, then you have time to do something about it.*'"

"And my mother says, '*Don't seek praise, seek criticism.*'"

They both laughed.

Kamata looked at his watch. "It's two twenty-five. I have to get going."

"My auntie asked me to buy some tuna for sashimi," said Yukino, getting to her feet.

"Come with me," said Kamata. They walked over to the warehouse where some ladies were putting the last of the day's fish on ice.

\*\*

Sachie ran up the steps to the top of the hill. She had received a call from her boyfriend to meet him in five minutes.

Most coastal towns on the northeast coast were built on a narrow strip of land between the hills and the sea and had an elaborate network of emergency staircases built into hills for quick evacuation in the case of tsunamis.

She saw him standing by a tree. He was dressed in denim jeans and a grey trainer. "Hi!" she called.

"Hi!" he called back.

"What's up?" she asked, stopping in front of him.

"Nothing. Just had to see you."

A warm smile came to her lips and she took a step forward and nuzzled her face into his chest.

He put his arms around her and hugged her tight. "I love you, Sachie," he whispered.

She lifted her head to meet his eyes. "Me too," she whispered.

Their lips met and she felt his warmth run through her. She hugged him tighter, enjoying the touch of his muscular body, feeling his beating heart against her breast.

“Sa-chan,” he said, holding her shoulders and gently pushing her back. “Has your cousin said anything about me?”

Sachie looked at him in surprise. “Yes—well not exactly. She just said she wanted to talk to me about my boyfriend. How do you two know each other?”

He avoided her gaze and looked out over the harbor. “We met at Seko’s house last summer.”

There was a long pause.

“And what happened?” she asked, stepping in front of him to block the view of the harbor.

“Nothing, but—”

Sachie’s phone rang and she answered it. “Hello”

Pause.

“Yes, I’ll be right there.”

She flipped the phone shut and put it in her pocket. “I have to go. My mother needs me to help her give my father a bath.” She looked him in the eyes. “Nothing happened?”

“Nothing,” replied Tomo, but she could sense something in his tone.

“We’ll talk later. I’ll give you a this evening.”

“I have to go back to Kamaishi,” said Tomo. “I won’t be back until late tonight.”

“Give me a call when you’re finished,” she said, kissing him on the cheek. “Maybe I’ll visit you.”

\*\*

Risa lay on a bed of artificial green vines. She was barely clothed in a skimpy leopard skin rag and surrounded by a thick jungle in the Tarzan Room at the Happy Castle Love Hotel. It had been Suzuki’s choice of rooms and she guessed he was hoping that it would bring out his primeval instincts so he could show her how macho he was.

“Ri-chan, I’m coming,” shouted Suzuki from somewhere inside the artificial jungle.

“Hurry,” she said giggling.

Suzuki hollered something ridiculous from beyond the jungle.

Risa exhaled in anticipation.

Suzuki swung out of the jungle on a vine and let go, landing, legs splayed apart, atop of her. He beat his fists against his chest and hollered something even more stupid.

“Come to me,” she whispered.

He dropped to his knees.

She grabbed his neck and forced his lips to hers. He tore off her leopard skin and kissed her firm nipples—her body shuddered with pleasure.

\*\*

The mayor sat at his desk stamping some papers his secretary had put in front of him. But he was anxious and his stomach had knotted. Something didn't feel quite right. He got up and walked over to the window and stared out over the harbor. "Something's wrong," he muttered to himself.

And he was right, but little did he know he had just over thirty minutes before he would be dead.

He looked at clock on the wall that read two thirty-five.

\*\*

Kumiko set the tray down next her husband's bed, picked up the remote control, and switched the TV on to CD. The theme song for the cartoon *Doraemon* played, and her husband let out a grunting laugh and saluted the TV. Kumiko poured some green tea into two cups, opened a packet of rice crackers, and settled back to watch the same episode, her husband's favorite, for the umpteenth time. She took a sip of tea and looked at her husband; he had been a great husband and father, had never gotten angry, and had always worn a smile on his face. She put the cup down and ran her fingers through his hair; he looked up at her, smiled, and then went back to watching the cartoon. She wiped the tears from her eyes and forced a smile.

\*\*

Kenichi sat facing an array of monitors in the control room of the Fukushima Number One power plant. He finished checking the status of the reactors and turned his attention to the laptop next to him. He shook his head in disbelief as he finished reading the report on an American website. *How can the atomic energy agency be so irresponsible*, he thought. Not only did the atomic energy agency downplay the possibility of a nuclear accident, but they were licensing more defective power stations, extending old stations beyond their life expectancy, and now giving the go-ahead to construct a new reactor, the AP 1000, which had at least three design flaws. They had even given the go-ahead to resume construction of a power plant that was half-constructed and then abandoned twenty years earlier.

He pulled up an empty Word document and began typing a new report—not to Suzuki but to the *Asahi* newspaper. It was time the public was made aware of the atomic energy agency's cover-ups.

\*\*

Yukino's grandfather sat behind the counter in the shop reading the newspaper. He was rereading the article about the beached whales in Kashima, Ibaraki Prefecture. A scientist had portended that whale beachings around the globe were connected to major earthquakes.

He put the paper down. It made perfect sense to him, since he was a man of the sea. If the plates shifted only slightly, it would alter the electromagnetic field that whales used to navigate. Whales had been found beached before the Sumatra, Chile, and New Zealand earthquakes after all.

He took out his mobile phone, brought up Yukino's number, and pressed the call button. A ring tone sounded from the kitchen, she hadn't taken her phone.

\*\*

Nakamaru Elementary School. March 11, 2011, 2:38 p.m.

Hiro pointed to the animal chart on the board and said. "Dog."

The children repeated. "Dog."

Hiro said. "Duck."

The class repeated. "Duck."

Hiro pointed to the chart and said in English. "What's this?"

Hands shot up.

"Ryo," Hiro said.

"Yes!" Ryo said and jumped to his feet. "Cat!"

"And this one?" Hiro asked in English.

"Hen," replied Ryo.

"Very good. Please sit down."

Ryo sat down, very happy with himself. He thought he would use the new English words to teach the younger children in his group when they walked home this afternoon.

Hiro took down the chart and wrote '*We are*' on the board and explained the meaning. He then asked what was the word for '*ureshii*' in English.

Ryo's hand shot up.

"Yes, Ryo," said Hiro.

Ryo jumped to his feet. "Happy," he answered.

"That's right." Hiro turned and wrote: '*We are happy.*' He pointed to the board and said. "Repeat after me. We are happy."

The class repeated. "We are happy."

Louder! I can't hear you!" he said, cupping his hand next to his ear.

"We are happy!" repeated the class loudly.

"I can't hear you!" shouted Hiro.

"We are happy!" the children screamed at the top of their voices.

Hiro put his hand up for the children to stop and a broad smile stretched across his face as he looked at his students' smiling faces. "I want you to remember this sentence and repeat it to yourself when you feel down or angry. It's the most important sentence for your life."

Ryo put his hand up. "Why is it the most important sentence?"

Hiro smiled at his sweet innocence.

\*\*

Mackeller and his copilot were in the Matsushima Air Base's mess hall having lunch while their chopper was being refueled.

"What time did the quake hit in your dream?" asked the copilot.

Mackeller put down his coffee. "Mid-afternoon."

The copilot looked at the clock on the wall that read 2.35. "Around now," he said.

Mackeller looked at the clock. "Yeah, I guess sometime soon."

"How sure are you it will hit?"

Mackeller scratched the scar on his cheek irritably. "I'm not sure. It was just a dream."

"But you've been right before. You even tried to stop your copilot from flying with you the day you got hit."

Mackeller thought back to the day in Afghanistan. He had told his copilot about the dream, but his copilot had just laughed and shrugged it off as superstitious nonsense. He had pleaded with him to pretend he was sick and couldn't fly, but the hardheaded copilot had refused. "I've been wrong before, too." He replied, taking a bite of his steak.

\*\*

Erica sat staring at the jumble of numbers in her mathematical workbook. She hated mathematics and could never understand why they needed to count to one thousand. She had one bicycle, two balls, seven dolls, six pairs of shoes and a lot of toys; she didn't need to count over twenty.

She sighed and scribbled some circles around the number fours; she turned the page and scribbled more circles around all the number fours. Page after page she continued until she had scribbled circles around all the number fours in her book.

"What are you doing?" said her teacher.

Erica looked up innocently into the pretty face of her teacher Keiko. "Uh—"

"That number represents death," she said crossly. "What are you doing?"

The two other girls wearing the Mickey Mouse T-shirts stared at each other. The girl with plaits whispered, "She's got the devil in her."

The other girl closed her eyes and shook her head. "No, she hasn't."

Their teacher walked to the blackboard. "Close your mathematics books and open your notebooks. Now, I want everyone to write what you want to be when you grow up. And then you are going to read them out to the class."

The girl with plaited hair opened her notebook and wrote that she wanted to own her own flower shop. The other girl sat there thinking a moment and then wrote that she wanted to be a veterinarian.

Erica kept scribbling the number four.

\*\*



The two fat brothers sat against the wall of the gym eating while the other boys played basketball.

A whistle sounded and the male teacher called, "Halftime. Take a five minute break."

The skinny boy with the thick, black-framed glasses, who walked in the same group as the fat brothers, walked over and picked up his water bottle that lay next to them.

"It's empty," he said, his frog-like eyes glaring at the two brothers from behind his glasses.

The brothers shrugged their shoulders in unison.

The skinny boy stared back in disgust at the boys stuffing their faces with chocolate cookies. "You couldn't run to save your own lives!" he spat.

The boys ignored him and continued stuffing their faces.

The skinny boy's face went bright red. "Pigs!" he shouted and stomped away.

\*\*

Mrs. Sasaki bent over and dug a radish from her field. She placed it in her basket and, still bent over, walked to the other side of the field and dug up some long onions. She was going to cook a vegetable stew for dinner. She looked over at her house and saw her husband slide the door close. He walked over to the barn and climbed onto his tractor; she waved and he waved back. She then sunk to her knees, her eyes brimming with tears. Her husband was dead. He'd died two years ago. "Why did you leave me?" She sobbed quietly.

\*\*

Mr. Kubo stood on the roof counting the broken tiles.

"How many," shouted the lady from below.

"About thirty," Kubo called down.

"Bad workmanship," shouted the lady. "You'll have to fix it for free. I'm not paying a single yen."

Kubo looked down at the lady. She was in her mid-sixties, overweight, and wearing brown slacks, a cream blouse, and a purple cardigan; her face was caked with makeup. She was a member of the elite *obatarian* club—Japanese old ladies with no manners.

"When was this house built?" asked Kubo.

"It's not about when it was built, it's about good workmanship," she shouted.

Kubo sighed. He knew the house had to be at least sixty years old.

"When can you fix it? If it rains my belongings will get damaged and I will have to charge you for replacing them," she shouted.

Kubo stared down at the lady and wondered how she could be so heartless and greedy. Other people had had their roofs damaged, but none of them had asked him to

repair them for free. “Next week—maybe on Thursday,” he called down.

“Thursday! Are you kidding?” she shouted angrily. “That’s almost a week away!”

\*\*

Tatsuya gave the windscreen one last wipe and then stepped back and looked at the gleaming fire engine. He noticed a speck of dirt on the door panel and took a step forward and wiped it off.

“Let’s go,” he called to his men, who were sitting nearby. They climbed into the cab and closed the doors. “We’ll check tsunami gate number one first.” He put the truck in gear and drove out of the fire station and down the road.

“Are your daughters going on the school’s spring ski camp?” one of the men from behind him asked.

“Yes,” said Tatsuya. “They’re really looking forward to it. How about your son?”

“Yes, I’ve been taking him up to the ski slopes on the weekends and teaching him how to race. He wants to win the school ski race.”

“He’ll have to beat my girls first,” Tatsuya chortled.

“That shouldn’t be a problem,” said the man.

“We’ll see!” said Tatsuya. He looked up and smiled at the man through the rearview mirror.

\*\*

Seko had returned her friend’s car and now sat watching the Japanese version of *Days of Our Lives* under a *kotatsu*. She poured herself a glass of apple juice and pulled the quilt up to her shoulders, snuggling under the table. She was envious that Yukino was going on a date with Yuta. She had been trying to get him to ask her out for over a year now, but he never showed any interest in her. She let out a long sigh and laid back and pulled the quilt over her head as if trying to block out the thought.

\*\*

Ryota squatted on a rock as he fed some more bait onto a hook. He had left his bike at the end of the breakwater wall and continued around the point on foot. He stood up and held his fishing rod with both hands and then cast his line out; the hook and sinker splashed into the sea about twenty meters out. *Not a bad cast*, he thought.

He took a deep breath of the salty fragrance and let it slowly out. This is where he found his peace of mind—away from his school and the bullies, away from his parents who were ashamed of him, away from the restrictions of society. Here he could relax with nature.

\*\*

Yuta paddled over another wave, his face red from the cold wind and icy water; without his five-millimeter wetsuit, boots, and gloves, he wouldn't last more than ten minutes in the freezing water. But he didn't feel the cold. His mind was on Yukino. He couldn't get her face or voice out of his mind. A wave peaked up and he turned and paddled for it.

## Chapter Seven

2.46 pm.

9,000 meters below the surface of the ocean the Okhotsk plate snapped open, displacing billions of tonnes of water, surging upward and sending seismic shock waves towards Japan.

\*\*

Yukino stopped dead in her tracks on the breakwater wall. She could hear the rumble in the distance; within seconds it turned to a roar like jet engines and the ground began to shake. Yukino ran for the steps, but the first surge of energy sent her tumbling to the ground. She got to her feet and ran just as another wave of energy hit; the wall tilted to the left and then swung back to the right, throwing Yukino down. She stumbled to her feet and the wall shook violently, and then a deafening roar rent the air with a thunderous crack. The house on the right collapsed into a pile of timber. The ground lifted and Yukino fell to her knees. All around her, buildings shook and windows exploded, spraying glass into the air. Roof tiles smashed to the ground as she crawled forward.

\*\*

Yukino's grandfather pushed his back against the ceiling-high freezer door to keep it shut; the shop shook and goods fell from the shelves. The lights went out and an enormous thud hit under the shop, threatening to tear the floor apart. Another jolt and the shop lifted off its foundations and then crashed back down. The remaining shop window cracked and shards of glass shattered to the floor. Outside the stone wall surrounding the house opposite crumbled into a pile of rubble. Another wave of energy heaved the shop to one side, and the bolts that held the freezer to the wall ripped free. The freezer lurched forward, and the grandfather pushed hard to keep it back against the wall. The shop shuddered and fallen goods bounced along the shaking floor. The booming noise was deafening. Wave after wave of energy hit the shop, shaking and rattling it, causing it to sway precariously from side to side. Suddenly the freezer pitched forward, and the grandfather's feet slipped under the enormous weight.

\*\*

Yuta clung to a branch on the side of the cliff above the beach; the ground trembled fiercely and he dug his toes into the clay and pulled himself onto a ledge—rock and dirt pelting him from above. He lay on his stomach and inched across; not far in front was the car park. The earth screamed with fury and the cliff rocked from left to right, and more debris rained down on him, blinding him. A rock slammed down in front of him, and he

covered his head with his hands as more sand and rock followed. The hillside moaned in defiance and then screamed out in agony when a wave of energy thudded into it, ripping away its side. Yuta heard the roaring of the landslide and the thundering of the earthquake and felt the ground shaking beneath him. He closed his eyes and hung on for his life as the tonnes of mud and rock slid towards him.

\*\*

Kenichi braced as he felt the first rumble, but then it kicked and the whole control room shuddered. Everything flew off his desks; his coffee cup shattered, scalding his ankle. Emergency lights flashed on the monitors in front of him; the building was jerked sideways by an enormous slap of energy, and he grabbed hold of the console to steady himself.

“I don’t think the reactor can withstand this; it’s too big,” shouted an operator near him.

\*\*

Kumiko screamed as books and ornaments fell around her. She held her terrified husband tight, trying to give him the calm his eyes begged, but her calmness had been replaced with sheer terror. The room rocked viciously and the cupboard crashed down next to her. She screamed again and her husband twisted from her, burying his face in the pillow. She cuddled him, giving what soothing she could muster, but she was petrified. The house reeled to one side and Kumiko was flung across the room.

\*\*

Mr. Suzuki’s eyes snapped open in the pitch darkness—Risa screamed hysterically. The waterbed wobbled and the walls rattled. Suzuki pulled the plastic vines off his chest and sat up, trying to get his bearings. To the left he saw a sheet of light coming from under the door. He rolled off the bed and stumbled toward it.

\*\*

Sachie was thrown to ground by a shock of energy, roof tiles smashed on the road around her. She tried helplessly to crawl to the center of the road, away from the shattering tiles. Another jolt of energy sent more tiles sliding from the roof – one hit her head and she went limp.

\*\*

Tomo was in a small speedboat heading to the Asian Symphony to have a second round of talks with the American businessman when he heard the rumble. He stared at the city

and saw the buildings swaying and tiles slipping from roofs. “Earthquake,” he yelled to the driver.

The driver slowed the boat. “Look!” he shouted, pointing.

Tomo swung around in the direction the driver was pointing, just as an apartment block collapsed into a pile of rubble and dust. “Tsunami!” he shouted.

The driver, a retired fisherman, didn’t question the word—he knew all too well what was on its way. “We should try and get some of the crew off the ship.”

Tomo looked at his watch, 2.47. The rule of the thumb was thirty minutes before a tsunami hit, but this really depended where one was in location to the epicenter. Tomo nodded and the driver pushed the throttle down full, speeding towards the Asian Symphony.

\*\*

Mackeller and his copilot were walking from the mess hall when the ground beneath them jolted up and then slammed down, sending them stumbling back. Another thud of energy rocked the runway and they tried to steady themselves.

“Your dream!” yelled the copilot.

The air exploded with thunder and another shock ran through the runway making it look like a ripple on a pond.

“Get to the chopper!” shouted Mackeller. “We need to get airborne.”

They sprinted as shockwaves ran through the tarmac. There was a mighty cracking sound and the runway in front of them tore open.

“That way!” yelled Mackeller, pointing around the fissure.

They reached the chopper and scrambled in.

“No time to check systems! Let’s get her up,” said Mackeller, trying to sound calm over the calamity.

“Roger,” replied his copilot, fumbling to put his helmet on. “Let’s get the fuck out of here!”

The chopper shook violently as the rotors began to spin. A wave of energy hit and the chopper lurched to the side, the rotors barely missing the runway.

“Come on! Come on!” shouted the copilot impatiently, sweat dripping off his chin.

Suddenly, the chopper lifted and the runway fell away.

“That was a close one!” said the copilot, wiping the perspiration off his chin.

\*\*

The destructive waves of energy spread across Japan, heading north, south, and west, hitting towns and cities with thunderous blows, toppling and collapsing many older buildings. Bridges were lifted meters into the air, severing roads. Manholes were pushed up through the roads. Streets disappeared below the ground, and telegraph poles snapped

like matchsticks. Thousands upon thousands of houses lost their roofs. Riverbanks twisted and broke. Water and gas pipes ruptured from Omori in northern Japan to Chiba Prefecture in the south, an area stretching 800 kilometers. Tokyo Tower swayed so much its antenna bent. Land in Urayasu near Tokyo Disneyland liquefied.

Two construction workers painting a chimneystack plummeted to their deaths in Tokai, Ibaraki.

Thousands of people were trapped in elevators.

A truck driver on the Tohoku Expressway lost control as the road buckled, crashing into a car and killing a mother and her three children.

A roof tiler in Chiba Prefecture was thrown from the roof and snapped his spine.

Trains and subways shut down, trapping thousands upon thousands of people.

A section of Route 245 in Omika, Ibaraki, collapsed four meters, causing a massive car pileup.

A grandmother, daughter, and baby were trapped after their garage collapsed on their car.

A junior high school boy tried to get his grandmother out of an old house, but the ceiling caved in, trapping them.

Over five million people were stranded without public transport in Tokyo and millions more in other cities.

All major expressways in and out of Tokyo were cut off.

The earthquake was being felt as far away as China, Korea, and Russia.

\*\*

Hiro screamed at his students to get outside, but the school shook so violently that none of them could stay on their feet. “Crawl!” he screamed. “Crawl!” Ryo led the way crawling on all fours after Hiro out into the playground.

Erica and her classmates huddled under their desks. Chairs and desks crashed all around them—their cries of panic muted by the thunderous quake. The two girls in the Mickey Mouse T-shirts screamed hysterically. Erica’s stare caught the girl with plaits; the girl stopped screaming and stared back into Erica’s cold black eyes.

The skinny boy and two fat boys sat on the gym floor paralyzed with fear. The ceiling above the basketball court had collapsed, burying four boys and the teacher. The gym jolted and more of the ceiling crashed to the floor.

“We have to get outside,” yelled the skinny boy.

The two fat boys nodded and tried to get to their feet but fell back as another shockwave hit the gym.

“Get up!” yelled the skinny boy, standing in front of them.

The two fat boys tried to get up but froze on all fours.

“Take my hands,” shouted the skinny boy, extending his arms.

The fat boys grabbed his hands and he yanked them to their feet. “Come on,” he shouted, dragging them to the door.

They reached the door just as there was a mighty crash. They looked back to see

the last of the ceiling collapse where they had been sitting.

\*\*

A fire engine screeched to a halt and Tatsuya and his men jumped out to clear the collapsed stone wall blocking their way to the harbor. The shaking was so intense that Tatsuya could barely stay on his feet and signaled to his men to crouch down.

“We won’t be able to clear it in time!” shouted one of his men.

Tatsuya nodded. “We’ll have to go back around!”

\*\*

Ryota, thrown from the rock he was fishing on when the first wave hit, swam frantically trying to climb back up, but he was continuously flung back into the sea by the tremors. He took a deep breath and surged out of the water and grabbed hold of a rock and hauled himself up.

\*\*\*

Mrs. Sasaki crawled to her feet in her vegetable field just as the ground beneath her heaved up, and she watched in horror as her house crumbled into a pile of splintered timber. She sunk back onto her knees and just stared.

\*\*

The remaining tiles fell from the roof, and Mr. Kubo clung onto a beam for his life. The lady was huddled on the ground screaming frantically.

“It’ll be OK!” shouted Kubo.

The lady looked up, her eyes wide with terror.

\*\*

A slap of energy hit the house, and it began to slide forward. Seko kicked off the quilt and ran for the door. She tugged at the door, but it was stuck. She ran to the kitchen and dragged one of the chairs into the living room and hurled it at the glass door; the door shattered and Seko leapt through.

\*\*\*

Mr. Kamata looked back and saw a cloud of dust rising from the town. He pushed the throttle to full speed and the boat cut through the water toward the entrance of the bay.

\*\*\*



The rumbling, shaking, shattering tremors sent people fleeing into the streets.

A factory worker in Iwate Prefecture was crushed to death by a machine that broke free.

Two high school girls were killed when a school wall fell on them.

One teenage boy on a motor scooter lost control and slammed into a lamppost, killing him instantly.

\*\*

Yukino ran for the steps, but a tremor ripped through the ground, splitting the wall in two. The deafening boom of the quake intensified, and she could barely stay on her feet. To her right, three women ran screaming from a beauty salon, curlers still in their hair. She looked down, but it was too far to jump. Another lady appeared at the door of the salon, shouting to the people inside to flee. A tremor sent Yukino crashing face first onto the concrete; the lady at the door rushed back inside. The three-story beauty salon swayed precariously. Seconds later a mega tremor whacked the town, and the beauty salon collapsed. Yukino lay on the ground staring at the pile of rubble and dust. "No!" she cried out loud and then gritted her teeth and pushed herself up. Everything shook uncontrollably; the buildings, the ground, and even the air seemed to shudder, making it difficult for her to breathe. Gasping, she shouted, "Stop! Stop it!" Tears streamed down her face. But the quake had little mercy and threw her to the ground. Yukino, bruised and grazed, climbed back onto her feet; she knew she had only one option and that was to leap the break in the wall. She ran, the wall shaking and buildings falling around her. Her eyes focused on the gap; she sprinted and leaped into the air and then landed and took three giant steps. She lost her footing and somersaulted along the wall. Gasping, she tried to catch her breath, tried to get to her feet, but she was knocked down. Again she tried and again she was thrown down. The quake was at its climax, tremors so brutal it was impossible to stand upright. Yukino crawled to the stairs and swung her legs over and slid down one step at a time; she was halfway down when the stairs fractured and she fell.

\*\*

The freezer pitched further forward, and Yukino's grandfather's feet slid more under the enormous weight. He braced his back against the door, just managing to stop it from toppling over. He fixed his feet firmly on the floor and gave it a mighty shove, ramming it back against the wall. He stood, leaning against the freezer, fighting to catch his breath; smashed bottles and food scattered the floor. The cash register lay broken next to the overturned counter.

"Damn!" he cursed.

Another deafening noise erupted. Outside he could see, but not hear, tiles smash to the ground. The shaking intensified and the shop swayed back and forth. He hung on, his back firmly against the freezer. And then the shop jolted, pitching the freezer forward.

His feet slipped and the shop reeled to the side and he lost his footing. He dived forward, but the freezer slammed down on his back, knocking him unconscious and pinning him to the ground.

\*\*

The roar of the landslide silenced the thunderous din of the quake. Yuta dug his fingers and toes hard into the ground. It hit and swept him instantly from the ledge. *I'm done*, he thought as he plummeted to the rocky shoreline below.

\*\*

Kenichi grabbed hold of the console as another tremor rocked the Daiichi plant. His eyes scanned the monitors and then stopped. There was something wrong with the cooling system for Reactor One.

\*\*

The tremors shook Sachie's lifeless body.

\*\*

Kumiko crawled to her feet, holding her injured arm, and staggered over to the bed.

Her husband stared up at her, terror etched in his eyes.

"It'll be OK," Kumiko said, but her voice betrayed the truth.

The room shook wildly and the ceiling light crashed to the floor. Her husband let out a hysterical howl and began thrashing uncontrollably in the bed. Kumiko stroked his head, but he howled again, arms and legs thrashing like a trapped animal.

"It's all right," she cried with tears streaming down her cheeks.

There was an almighty bang and the house rolled to the side. The ceiling cracked and collapsed onto Kumiko and her husband.

\*\*

Mr. Suzuki pulled on the door, but it wouldn't budge; the structure had twisted and the door was jammed. He tugged frantically, panic taking over. Risa screamed hysterically. He pulled again and this time it gave way, and he burst out of the Happy Castle Love Hotel just as the rumbling died away.

\*\*

The grandfather and grandson sat in awe as they watched part of a cliff plunge into the

sea, disappearing under a massive shower of water.

“What’s happening?” asked his grandson confused.

Dread masked the grandfather’s face. “Earthquake.” He knew what was coming. He knew they were caught between the cliffs and outer reef.

“At least we’re safe out here,” said the grandson encouragingly. But then he saw the dread in his grandfather’s eyes. “What’s wrong?”

The grandfather swung around and his eyes locked on the horizon. “Tsunami. A tsunami is on its way.”

“How do you know?”

The grandfather’s eyes stayed pinned on the horizon. “I know,” he replied simply.

“We should be OK this far out, shouldn’t we?”

He turned and faced him squarely. “Yes, we are safe out here,” he lied blatantly.

\*\*

Kamata’s boat sped out the entrance of the bay. His heart pounded and his eyes searched the horizon for the wave that he was certain was on its way.

## Chapter Eight

Yukino stood up, rubbing her head. The steps had fallen away from under her, but she had luckily landed on a pile of old fishing nets. She looked at the pile of rubble that seconds before had been the beauty salon. She walked closer. "Hello, can anyone hear me?"

There was no reply. "Hello, can anyone hear me?" she called again. She listened, but there was only silence.

Yukino turned and was about to head to the hospital to check on Seko's grandmother when she heard a faint voice. She ran closer and shouted, "Can you hear me?"

"*Hai, koko desu!* Yes, here!" The voice was clearer and to her left, where she guessed the door had been.

Yukino climbed the pile of rubble. "Where are you?"

"Here," came the woman's voice.

She searched the rubble.

"Here," called the lady frantically.

Yukino saw the waving hand protruding from the rubble. She scrambled over and peered into the small hole from where the hand stretched out. A narrow shaft of light lit the terrified face of the woman she had seen standing in the doorway.

"Are you hurt?" asked Kumiko.

"No, I'm OK. Please help me."

"Are there others?"

"They're dead. Please help me. Please hurry," the woman pleaded.

Yukino tried to lift a stone off, but it wouldn't budge. She tried another way, but her attempts were fruitless. "I need to get help," she shouted.

"Please don't leave me...please!" The woman's voice was on the verge of hysteria.

"I need to get help. I won't be long," Yukino replied.

Just then the wail of tsunami sirens echoed through the streets.

"Don't leave me!" screamed the woman hysterically.

Yukino was about to reply when the announcement came over the town speakers. "Evacuate to higher ground, evacuate to higher ground," the announcement repeated.

Yukino looked down at the petrified eyes staring back at her. "I'll be right back with help," she said, but her voice couldn't hide the uncertainty.

The woman's hand grabbed Yukino's wrist. "Don't leave me! Help me!" she pleaded desperately.

Yukino clasped her fingers around the woman's hand and then said as calmly as she could, "I'll be back with help. I promise."

"Promise?" said the woman.

"Yes, I promise," replied Yukino.

Yukino scrambled down the side and ran off in the direction of the hospital. The wailing of the sirens echoed through the streets.

\*\*

Light streamed through the broken window into the darkness. Kumiko was pinned on top of her husband, her face just centimeters from his.

“It’s OK,” she whispered, managing to lift her hand and stroke his hair. “It’s finished.” She kissed his forehead softly.

His breathing was erratic.

“It’s OK,” she whispered again.

“Uhhh...” he moaned almost choking on the sound.

She ran her fingers through his hair and began to sing the melody of “*Aka Tombo*, Red Dragonfly.” Slowly her husband’s breathing returned to normal.

She struggled to position her hands on either side of him. She braced herself and then pushed up against the weight on her back; pieces of plasterboard slid off onto the floor. She stared through the dusty stream of light at the broken sheets of plasterboard littering the floor and other shards dangling from the ceiling.

Suddenly the siren opposite her house began to wail and her husband’s eyes went wide; terrified, his eyes shot in all directions in search for the source.

“It’s all right,” she said, climbing off the bed.

“Uhhh...” groaned her husband. His breathing quickened.

Kumiko searched through the wreckage and quickly found what she was looking for—a battery-operated portable CD player; she pressed the play button and “Red Dragonfly” began to play.

She moved beside him and stroked his hair; his breathing slowed and he smiled up at her.

“I’ll get you some ice cream,” she said softly.

A smile came to his lips.

She patted him on the head, got up, and made her way through the wreckage to the living room, where the ceiling was still intact. She could hear the announcement blaring. “Evacuate to higher ground, evacuate to higher ground.” She dashed down the stairs into the kitchen.

The kitchen was a mess; food littered the floor, and the table and chairs were overturned. She entered the shop and stood there in dismay. All the shelves had toppled over, and goods and broken bottles were scattered across the floor. The freezer at the back of the shop had broken free from the wall and lay facedown.

“Father!” she called.

There was no response.

“Father!” she called again.

Only the wailing of the sirens and the call to evacuate to higher ground penetrated the eerie silence.

Kumiko looked at her watch: 2:55. She estimated the quake had hit at around two

forty-five and knew, as it was common knowledge in Japan, that she had around twenty to thirty minutes before the tsunami would hit. She dashed out of the shop and up the stairs.

Her father groaned and his eyes flickered open. He tried to move and pain shot through his body; the freezer had landed on his legs, pinning him solidly to the floor.

He heard the siren and tried to move again, but it was in vain. “Help!” he called out. But then he heard it—the distant rumble and then the thunderous roar. It hit shaking the shop so violently that parts of the ceiling smashed to the ground. The freezer slapped up and down on his legs and he screamed in agony.

Kumiko shielded her husband’s face from falling debris with her body.

\*\*

Yukino stopped and crouched on the road; the earth heaved up and she fell onto her side. “Stop it!” she screamed.

Then it was gone; the 6.4 aftershock roared away to batter other towns and cities.

She got to her feet and looked at her watch, 3:00, almost fifteen minutes since the first quake. She knew she didn’t have much time; she needed to find help quickly.

People ran from houses, clutching whatever belongings they could carry, quietly, orderly, and following the evacuation plans that they had practiced over and over throughout the years. It was ingrained into the subconscious of coastal Japanese dwellers. The rule was don’t wait or go looking for others; evacuate immediately to your designated evacuation zone on foot, not by car, as this would reduce the chance of people being caught in traffic jams. Everyone was headed for the emergency stairs that had been built into the nearby hills.

Three young men ran past Yukino. “Hey!” she shouted.

The men stopped. “What do you want?” they asked.

“There’s a woman trapped in a collapsed building!”

The tallest of the three shook his head. “There’s no time. You’ll never save her. Get to higher ground.”

“Please, I need your help!”

“The tsunami is going to hit any minute now!” he insisted. His tone was urgent. “Follow us!”

She swallowed hard and looked him straight in the eyes. “No, I must help her. I promised!”

“Hurry! Let’s go!” cut in one of the other men.

Yukino shook her head defiantly.

The men turned and ran toward the hill.

Yukino stood there alone; her mind was desperate, but her eyes blazed with determination. She ran toward the hospital. *Someone there will help me*, she thought.

\*\*

Seko looked at her house; it sat tilted at a forty-degree angle in the field after slipping off its foundations. She ran to one of her neighbors who was heading up the road to the evacuation zone. "Saito-san!" she called out.

The middle-aged woman stopped. "Seko-san, you must get to the evacuation zone."

"I need to borrow your car. My grandmother is in the hospital." She tried to keep calm, but panic was in her voice.

"Where are your parents? Can't they pick her up?"

Another tremor shook the ground and both women crouched on the road; it lasted but a few seconds and they both stood up.

"My parents are in Kamaishi!" Her voice was now urgent.

The woman took out the keys from her pocket and handed them to Seko. "Be careful."

"Thank you," Seko said, taking the keys.

"Be careful," the woman repeated. "You don't have much time!"

Seko nodded and ran over to the silver Pajero Mini parked in her neighbor's driveway, got in, and raced down the hill. At the bottom she turned left and sped along the side of the harbor, the breakwater wall towering beside her.

\*\*

"Damage report," asked Kenichi calmly.

"Water cooling pipe to Reactor One is broken," said one of his men.

"Are the reactors shut down?" asked Kenichi.

"All reactors have gone into SRUM, automatic shutdown."

"Good," said Kenichi. He was trained for emergencies like this. He could deal with it.

"Tsunami warning just came in, sir," shouted another man. "Fourteen meters high, approximate time to impact fifteen minutes."

The control room went silent.

Kenichi stared at the data on the screen in front of him in disbelief. He picked up the phone and rang Mr. Suzuki, but there was no answer.

"Send some men down to make sure the emergency generator doors are secure," he ordered, taking control of the situation.

\*\*

Yuta's body protruded horizontally from the wall of mud and rock about ten meters above the beach. The initial wave of the landslide had gone over him, but the tail had caught him and taken him down. He was set into the wall waist-deep, facing down on what was left of the beach.

He struggled, trying to free himself, clawing away as much mud as possible and then trying to wriggle his body out. Slowly, centimeter by centimeter, he dug himself free.

“*Chikusho!* Damn!” he screamed out loud. Exhausted, he let his body flop onto the side of the wall, eyes cast down. That’s when he noticed the water receding quickly, leaving the beach bare. He knew what it meant: a tsunami was on its way. He began digging frantically.

\*\*

A man shook Sachie, but she lay there unconscious. He picked her up in his arms and made for the emergency stairs.

\*\*

Mr. Suzuki took out his mobile phone and dialed Kenichi, but the line was busy. He tried the plant’s switchboard, but it was also busy. He got in his car and drove at full speed in the direction of the plant.

\*\*

Mackeller had been ordered to fly out to sea and film the tsunami. He was about fifty kilometers off the coast when he saw it. Staring down, it looked as if someone had thrown a rock into a pond and the rings were spreading outward. But these were not ripples. These were gigantic tsunamis heading for the Japanese coast.

“Oh my god!” exclaimed the copilot. “Your dream was true.”

Mackeller ignored the comment. “Start filming,” he ordered bluntly.

The copilot fixed the camera on the spreading rings.

“I’ll take us closer to the coast so you get a better shot,” said Mackeller, banking the chopper to the west.

“Roger,” said the copilot, watching the walls of water race toward the coast at a speed of 800 kilometers per hour. He swallowed deeply, knowing the waves would deal total and absolute destruction.

\*\*

All the children were assembled in the schoolyard; some were crying while others were silent. Erica was squatted scratching the number four in the dirt with her finger. The two girls wearing Mickey Mouse shirts stared at her.

The principal was away on business, and the deputy principal and some of the teachers were debating where to evacuate. The designated evacuation zone was situated 800 meters north across the river, but some of the teachers wanted to go up the hill, which lay immediately next to the school.

“It’s too steep,” said the deputy principal again. “We must follow the rules and go to the designated evacuation zone.”

Hiro looked at his watch. Twenty-three minutes had passed since the quake. He



calculated it would take at least seven minutes, if not more, to get the children the 800 meters to the evacuation zone but only a minute or so to the hill on the south side.

“We don’t have enough time,” challenged Hiro.

“We have plenty of time,” countered the deputy principal, “and we are six kilometers inland.”

“The tsunami could come up the river,” said Hiro urgently, pointing to the river they would have to cross to get to the evacuation zone.

“Nonsense. We are well out of reach of the tsunami.”

Hiro fought back his temper. “Are you willing to risk the lives of these children because your rulebook says you must go—”

The tremor came from nowhere, and panic swept over the children. They screamed as they were thrown to the ground.

“Stay together!” Hiro shouted over the roar.

The rumbling quickly died away into the distance, and the children stopped screaming.

“That was at least a magnitude 7,” said Hiro. “There could be more than one tsunami.”

The deputy principal looked shaken, his face pale. “Follow...me,” he stuttered nervously and led the way north to the evacuation zone.

Hiro cursed as the children and other teachers followed the deputy principal; he was like the Pied Piper leading the rats to their death.

Hiro unwillingly stepped into the procession at the rear.

\*\*

The mayor sat at the head of the conference table on the third floor of the town office. He had called an emergency meeting with his staff.

“Don’t you think we should evacuate to higher ground?” asked a young man.

The mayor glanced out the window in the direction of the harbor. He was stone-faced, but his eyes couldn’t hide the fear. “No, we are on the third level and must stay at the command post.”

A lady in her late twenties interrupted. “Mr. Mayor, my daughter is at school. May I be excused to pick her up?”

“Of course,” he replied. “Anyone else who has children, please leave and report back after they are safe.”

Three other women got up, bowed, and left.

The young man watched with envy.

\*\*

Hunched over, Mrs. Sasaki rummaged through the remains of her house and pulled out a framed photo of her wedding day. She looked at her husband and tears came to her eyes. She knelt down and held the picture to her chest and began sobbing. “Why did you leave

me?”

\*\*

Mr. Kubo sat straddling a roof beam. Almost all the tiles had fallen from the roof, and the lady had resumed her previous self, shouting abuse at him about his poor workmanship.

\*\*

Ryota lay shivering on the rocks. He had been in the icy water for more than five minutes and was on the verge of hypothermia. He forced himself to his feet and started walking. He walked in a straight line across the sand where the water had been minutes ago.

\*\*

“Push!” shouted Tatsuya.

Tatsuya and the other three firemen pushed the huge iron tsunami gate, which separated the harbor and fish processing factory from the town.

“Wait!” came a woman’s voice.

The men stopped, leaving a narrow gap.

“Thank you,” the old lady said, squeezing through, a few belongings stuffed under her arms.

“Anyone else left in there?” asked Tatsuya.

“No, I’m the last.”

“You’d better get to high ground,” said Tatsuya, pointing to the nearby hill.

“Thank you,” she said, bowing and then added. “You take care.”

“Push!” shouted Tatsuya. The iron gate rolled forward and slammed shut.

Tatsuya locked it and said, “One more to go.”

They all jumped back in the fire engine and headed south in the direction of the floodgates.

\*\*

Kamata’s boat crashed over the huge swell. He estimated it to be at least ten meters.

A few minutes later his eyes opened wide and his stomach knotted. On the horizon was a massive wall of water. It began to feather and he pushed the throttle down as far as it would go, his boat cutting straight for it.

\*\*

Yukino sprinted down the street. Destruction was everywhere, the wailing of the sirens deafening, but determination was chiseled across her face and the eyes of the trapped lady

were etched into her mind. Up ahead she saw the hospital; it seemed deserted, aside from the silver Pajero parked outside. A young woman and an old lady scurried out of the entrance.

It was Seko and her grandmother. She jumped and waved. “Seko-san! Seko-san!” she shouted.

Seko helped her grandmother into the car and then ran around to the driver’s side.

“Seko!” she shouted again.

S e k o   s t o p p e d   a n d   l o o k e d   f r o m   s i d e   t o   s i d e .

“Seko, it’s me Yukino,” she screamed at the top of her voice.

But the sound of the sirens drowned out her screams, and Seko got in the car and sped off.

“Wait...I need your help.” Yukino stopped, devastated. She knew she couldn’t help the trapped woman by herself; she needed to find someone to help her. She turned and ran back toward the trapped woman.

\*\*

Yuta struggled frantically to free himself from the wall; the rocky beach below had been sucked dry by the unquenchable thirst of the oncoming tsunami. He looked out at the horizon and his heart stopped. Rushing toward him was an enormous wall of grey water.

\*\*

The grandfather’s face drained of color as the dark shadow appeared on the horizon. His grandson sat looking towards land. “I’m a little cold. Would you mind making me a cup of coffee, there is hot water in the thermos below,” he said. His voice amazingly void of panic.

“Yes, of course,” the grandson replied, climbing down into cabin.

\*\*

“Help!” screamed Yukino’s grandfather at the top of his lungs. “Help me!” But the siren deafened his cries. He tried in vain to wriggle himself free from the freezer.

\*\*

Kenichi’s eyes were locked on the screen displaying the information from PTWC, The Pacific Tsunami Warning Center. The center was established in 1949, following the Aleutian Island earthquake that triggered a tsunami ranging in height from fourteen to forty-six meters. A string of buoys were positioned around the Pacific ‘Rim of Fire.’

These buoys transmit detailed information about tsunamis while they are still far offshore. Each buoy consists of a seabed bottom pressure recorder at a depth of 1,000 to 6,000 meters, which detects the passage of a tsunami and transmits the data to a surface buoy via acoustic modem. The surface buoy then radios the information to the PTWC via the GOES, Geostationary Operational Environmental Satellite system, which is then sent to countries at risk from the tsunami. There are never false alarms. If the PTWC issues a tsunami warning for a particular area, the tsunami is already on its way and *will* hit.

“Fourteen meters,” Kenichi said to himself. He looked at his watch and a knot formed in his neck. Impact was imminent. “Why hadn’t anyone listen to me?” Why hadn’t anyone taken the reports seriously?” he cursed under his breath. *Suzuki had been the plant operator when the 2008 report was submitted and he had done nothing.*

\*\*

Suzuki’s car screeched to a halt. “*Chikusho!* Damn!” cursed Suzuki. He got out of his car and observed the hundred-meter section of road that had disappeared. He walked over and stared into the gaping trench. He had tried other roads, but they were either blocked by fallen debris or had suffered a similar fate as the road in front of him. He looked toward the Daiichi plant around one kilometer away; he’d have to go on foot.

\*\*

The grandfather watched the shadow rise out of the ocean like death’s claw. It hit the outer reef and the crest broke, millions of tonnes of whitewater crashed down and then exploded towards them.

“What’s happening?” called his grandson innocently.

“Nothing, it just the wind picking up,” replied the grandfather. He couldn’t believe the calmness of his words.

The mighty wall of white water charged at them.

“I have mine with two sugars,” he called to his grandson.

“OK,” came a reply.

The wall of whitewater hit, turning the boat over and over and then smashed it to splinters against the cliff.

\*\*

Tomo’s boat skimmed quickly over the water towards the waterfront. He had managed to get the American businessman and three others off the ship. The captain and crew had stubbornly refused to abandon ship.

“Look!” shouted the driver. “The water is receding! We won’t make it to the docks!”

Tomo looked in horror. “We’ll have to run for it!” he yelled.

“Too late for that!” The driver pointed behind.

Fear and panic welled up in Tomo as he saw the water surge over the harbor's outer breakwater wall. "Turn us around!" he shouted. "We'll have to hit it head on—it's our only chance."

The driver swung the boat around and headed for the wall of whitewater.

Sachie's face surfaced in his mind. "I'll make it," he muttered to himself.

\*\*

Yukino ran down the deserted road. She could make out the remains of the hair salon about 200 meters ahead. The ground shook and she stopped, waited for the tremor to pass, and then ran again only to stop a little farther. Her eyes grew wide; about 300 meters past the hair salon, water splashed over the tsunami breakwater wall. She swallowed hard, her stomach tightening with fear, her heart banging against her chest. And then her worst nightmare came true. Water spilled over into the street. She could see the woman's petrified eyes in her mind and could almost hear the woman's pleading. She ran toward the salon and was only fifty meters from it when the water poured over the wall as if the floodgates of a dam had been opened. She froze and stared at the wall of water that was rushing toward her. The water hit the fish processing plant and tore it from its foundations and then slammed it into the adjacent building, splitting it in two. The right side was ripped away and then swept down the street.

Yukino knew she couldn't help the trapped woman. Her fate had been sealed. She managed one last glance at the ruined salon and caught sight of a hand waving frantically from the rubble before she turned and ran toward the hills. The wall of water gushed down the street, smashing into houses and shops, ripping them to pieces and dragging the shattered remains behind. The sea rose above the breakwater wall and poured over, forming a black wave of wreckage: broken houses, shards of glass and metal, wood, cars, bicycles, trees, and mud. Whatever stood in its way was swept before the churning wave of filthy water.

Yukino ran for her life. She could hear the lampposts snapping behind her. Ahead was an apartment building. She sprinted for it and pulled open the glass door; water rushed under her feet, and the door was ripped from her hands and slammed shut. She turned to see the wall of twisted wreckage just meters away. Water rose to her knees, threatening to sweep her away. She grabbed hold of a railing and let the water sweep her along the side, and when she reached the end of the building, she swung her body around the corner to where the water was still only ankle-deep and ran for the door; she yanked it open and hurried inside. The stairwell was on the other side of the foyer, but the glass door she had first tried to open had fractured, and black water and debris poured in. She had no choice; there was nowhere else to go. She ran forward. The torrent of water hit her and slammed her into the wall, pinning her there. She couldn't breathe, couldn't move. Suddenly something hit her in the side and knocked her out of the torrent. She stood; the churning water was now up to her waist and filling the foyer quickly. By the time she reached the stairwell, the water was up to her chest; she clambered onto the stairs and then climbed to the second floor where she stopped to catch her breath. She watched the water

flood in and rise up the stairs, forcing her up to the third floor. One of the apartment doors was open and she went out onto the balcony. The scene was horrifying; black water was surging through the town, leaving only the tops of a few concrete buildings that had more than two floors visible. Everything else was either destroyed or underwater. She looked in the direction of where the hair salon had been. "I'm sorry," she said, bowing deeply.

\*\*

"Push!" shouted Tatsuya. "It's coming." The tsunami gate slammed shut and Tatsuya locked it. "Quick, into the truck," he ordered. He heard the wave crash up against the gate.

The three men jumped into the fire engine's cab and Tatsuya swung up into the driver's seat and put it in gear; water began to spill over the wall.

"Hurry! Go!" shouted one of the men.

Tatsuya put his foot down and the fire engine moved forward; the only exit was the road that ran for 400 meters along the side of the tsunami breakwater wall.

"Hurry!" shouted another.

The fire engine ploughed through the water. In front, water poured over the length of the wall and rushed across the road into an adjacent residential area. Tatsuya could feel the surge pushing the fire engine to the right and had no choice but to shift down to keep control.

"Watch out!" screamed one of his men.

He slammed on the brakes just as a fishing trawler was washed over the wall and became wedged between the wall and a building, cutting off their escape.

Water was now halfway up the truck. "Open the windows," Tatsuya shouted.

The engine spluttered and died.

"Evacuate!" ordered Tatsuya.

The man, who had just talked about his son, jumped into the churning water and was swept away into the maze of buildings. Tatsuya and the other two men climbed onto the roof of the fire engine; it was as if they were standing on a rock in the middle of a rapid. On both sides, water roared past, a roiling, seething blackness. Tatsuya stared at the residential area and watched the houses crumple like cards, their shattered remains washed into the next, repeating the destruction. The water was almost to the truck roof, and Tatsuya looked at the water pouring over the tsunami breakwater wall.

"You'll only have about ten minutes in the water without wetsuits," shouted Tatsuya over the roar of the water. "Get to dry land as quickly as possible!" Snow started to fall. "See that building over there?" Tatsuya yelled, pointing at the apartment building. "The surge will take you close to it; try to swim to it and climb up." The fire engine started to shake. "Tremor," yelled Tatsuya, holding both men. The front of the fire engine swung around and started to be swept forward. "Keep your legs up so you don't get snagged on something and dragged under!" he said. Both of his men's eyes were filled with fear. The fire engine slid farther forward and then lurched to one side, throwing all three men into the water.

Immediately, they were torn away from each other. Tatsuya was washed over

what minutes ago was the residential area. The water was freezing and he tried to float on his back, but the rapid sucked him under. He broke the surface coughing. His eyes searched for the other two men, but they were nowhere to be seen. The water dragged him through the town at an incredible rate of knots. He was washed not in the direction of the apartment building but toward the river. Fear and panic swarmed within him: if he was swept over the river's flood banks, he would be caught beneath the overflow surge and drowned. He saw the top of a lamppost in front to his left and swam hard toward it. It came at him so fast that he barely had time reach out and grab it. He hung on for a second or two but was ripped from it and sucked toward the river. He knew it was the end and that he would never again see his three daughters or his wife. Calm grew over him now that he had accepted his fate. He floated on his back and let the black water take him, his mind filled with the smiling faces of his daughters. Seconds later he disappeared over the riverbank.

\*\*

Seko sped along in the shadow of the tsunami breakwater wall. Up ahead she saw the water breach the wall and cascade over. Within seconds the ocean rose above the wall and an avalanche of filthy, dark water plunged over onto the road. She shifted down and the car accelerated.

“We’re going to die,” cried her grandmother.

“Not yet,” replied Seko, her voice calm and her eyes focused.

She shifted up, pedal to the metal, and raced directly at the wall of water.

“We’re going to die!” screamed her grandmother.

She shifted down and yanked on the handbrake; the car slid around into a side street and Seko floored it. The engine screamed as she rammed through the gears. The water was just twenty meters behind. The car raced up the hill past her house. She glanced in the rearview mirror to see her house washed away.

She screeched to a halt at the top and looked at her grandmother. “Are you OK, Grandmother?”

Her eyes were wide and her hands were shaking. “I’m...fine,” she stuttered.

\*\*

Yuta watched the wave hit the base of the cliff and begin to rise up; there was nowhere for the water to drain from the cove. He dug like a madman at the mud that still encased most of his lower body. *Is this really happening?* he thought. *I’m supposed to be going on a date with Yukino.* The water rose quickly to only a few meters below him. He struggled frantically, his fingers clawing at the mud. He didn’t give up and wriggled his body from side to side and could feel himself freeing loose. The water rose to his body, and he arched his back to keep his head above the water. “Yukino, I love you!” he yelled and disappeared under the surging water.

\*\*

Kumiko stood on her balcony and watched the water slowly stop surging through the town. She let out a sigh of relief and went back to sit next to her husband. "It's OK. The water won't reach this far," she said, stroking his hair. He looked up and saluted her and she saluted him back.

Downstairs in the shop, her father had given up trying to scream over wail of the sirens and instead focused his energy on escape; centimeter by centimeter, he wriggled himself closer to freedom.

\*\*

Sachie had just regained consciousness and stood unsteadily with her neighbors on a hill overlooking the town. The surge of the tsunami had stopped about 500 meters into the town and was now beginning to recede. She stared down at the destruction and shook her head; she had missed the entire event. She looked at her watch, which read 3:20 p.m. Only twenty-four minutes since the earthquake and her whole world had been changed forever.

\*\*

Ryota sat on a ledge of the cliff. He had been lucky. The water, littered with broken houses, cars, fishing boats, jerry cans, clothes, trees, and everything else, had stopped one meter below the ledge. He watched as the water slowly began to flow back out.

\*\*

The mayor and the young man stared out over the harbor. The water had come to within 200 meters of the town office.

"Make an announcement for everyone to stay on high ground in case there is another tsunami," he told the young man.

"Yes," said the young man and he strode off.

The mayor's eyes wandered back to the destruction near the harbor. He felt uneasy; his instincts told him something worse was to come.

\*\*

Yukino watched the water recede, slowly at first and then quickly, turning into a raging rapid. Cars, wreckage of houses, piles of timber, refrigerators, and anything that had been on land was now being sucked back out to the sea. She saw a house almost completely intact sweep past below and then crash into a concrete building farther down the street. The gas propane tank exploded and the house caught fire and continued out to sea. She heard someone calling for help and looked to her left and spotted a man being swept



toward the apartment.

She bolted down to the second story and saw all the doors had been torn from their hinges. She ran into the apartment that she thought the man would come closest to. Furniture was overturned and the whole place was caked in mud. She hurried out onto the balcony and waved at the man. He was still about a hundred meters from the apartment, but he saw her and started swimming toward her. The water was about a meter below the balcony and she thought if she could throw something to him he might be able to pull himself up. She looked around and spotted a fishing net that had been washed onto the balcony. She quickly untangled it and got ready to throw it to him.

“Over here!” shouted Yukino, waving her hand.

The man stroked hard, moving sideways against the churning water.

He was fifty meters up and ten meters out.

Yukino held the net over the railing just above the water; it was wet and heavy and she had to brace herself against the railing so she wouldn't drop it.

The man gave it all he had; he was now twenty meters up and about three meters out.

Her heart pounded. “Here!” she shouted, beckoning him. She could see his face and the fear in his eyes.

All of a sudden he stopped moving and water surged over him, dragging him under. Seconds later he broke the surface and fought to stay on top, but the surge was too strong and he went under again. Yukino watched for a few minutes, but he never came up.

She slumped down in the mud and cried.

\*\*

Kamata's boat steamed up the face of the gigantic wave and punched through the foaming whitewater at the crest. His boat fell into the trough for what seemed eternity. He prayed for survival and the bow of his boat surfaced out of the grey sea. He looked behind and heard the booming of the breaking wave. He bowed his head and prayed for the people of his town.

## Chapter Nine

Head buried in her knees and arms wrapped around her legs, Yukino sat in the mud shaking uncontrollably. Her mind reeled with the images of the man who had drowned and the lady who had been trapped. She lifted her dirty face, and tears streamed down her cheeks. “*Gomenasai*. I’m sorry,” she cried. “I wanted to help you.” Her throat stung with the taste of guilt. Her face sank back to her knees and she sobbed.

“STAY ON HIGH GROUND. THE TSUNAMI WARNING HAS NOT BEEN LIFTED,” blared the speakers over the wailing of the sirens.

Yukino lifted her head and wiped the tears away. She stood up shaking and stumbled through the room and then up the stairs to the apartment on the third floor. She slid open the closet, took out some clothes, and dressed into a T-shirt and shorts and then pulled a grey trainer and pants over them. She took the quilt off the bed and wrapped it around her and walked out onto the balcony.

Yukino stood there in utter shock. Below, piles of broken timber, mangled cars, tables, chairs, drum cans, fishing nets, buoys, and tonnes of garbage littered the mud-strewn street. The only things left standing were a few concrete builds, their first and second floors gutted. Flurries of snow began to fall, the white flakes melting on the black sludge. Her eyes wandered to where the hair salon had stood, but it was entombed under a pile of twisted metal and wood. She then looked to where she had last seen the man swimming. Her eyes searched the mud, and then she spotted an arm sticking upright, as if signaling for help; he was wearing a fireman’s uniform. She looked closer and saw the fishing net tangled around his leg, the net that had snagged him and pulled him under. She bowed deeply in silence, once in the direction of the firefighter and then toward the trapped lady.

Yukino stood there for a few more moments, her mind empty of all thoughts. She bowed one last time and then walked back through the living room into the kitchen. From there she had a view of the bay, and her eyes locked on the exposed seabed that now stretched almost 500 meters out to Hyokkori Hyoutan Island. She didn’t need to be told what was coming.

She heard some voices and rushed back out onto the balcony to see two elderly men enter the remains of a building a few hundred meters down the road. And then three women appeared briefly before disappearing into another gutted building.

“STAY ON HIGH GROUND. STAY ON HIGH GROUND,” blared the speakers over the wailing of the sirens.

She heard movement in the stairwell and went to the door and saw a woman in her early thirties; her jeans and jacket were caked in mud, and she was rummaging through a drawer in the apartment opposite. The woman looked up and saw Yukino. “Are you all right?” the woman asked, noticing her bloodshot eyes.

“Yes,” replied Yukino, holding back her tears.

“You should get to higher ground,” the woman said.

“The announcement said to stay on high ground. Why did you come back?”

asked Yukino.

“I need a few things.”

“What things?”

The woman looked at Yukino a little surprised. “My bank books, credit cards, driver’s license—official things,” she replied, stuffing some papers in her handbag.

“Don’t you think you should stay here?” said Yukino. “The water has receded past the Horai shrine on Hyokkori Hyoutan Island.”

The woman’s eyes went wide. “What?” she said and went over to the window. “You must be kidding!” she gasped, staring at the bare seabed. “Quick, come with me!”

Yukino shook her head. “No, I’m going to stay here,” she said defiantly.

“You should come with me. It isn’t safe here. There are some emergency stairs to an evacuation area not far from here.”

“The announcement says to stay on high ground,” Yukino insisted.

“Take care then,” the woman said, hurrying out the door and down the stairs.

Yukino went back to the window and froze; a mountain of white water was charging toward the town.

\*\*

Mackeller looked down from his chopper, which hovered just off the coast of Sendai City. The lines of whitewater raced toward the coast. The tsunamis had broken in the shallows offshore. Mackeller turned and looked at the land; the first surge had flooded large swathes of coastal area, which would make it easier for the next waves to move farther inland.

He watched the first whitewater hit the coast and surge over the land, flattening forests and smashing houses to pieces. He saw the water turn black as it mixed with the soil and then move like thick black oil, causing the complete and utter destruction of everything in its path.

“Jesus Christ!” he cursed.

“Sir! Look over there!” said his copilot.

Both men stared down in silence. The blackness moved across farmland, devouring homesteads and crops. It then washed into a housing estate, tearing the first houses from their foundations and sending them careening into the next, shattering them into splintered piles of timber. Gas bottles exploded and fires broke out.

“Look!” said his copilot, pointing to a road that ran parallel to the coast behind the housing estate.

Mackeller stared down at the cars trying to escape. The last row of houses fell, and the black water erased the cars from the scene.

“Let’s go north,” said Mackeller. “Take the controls.”

“Roger, sir.”

Mackeller looked back as they flew north. The blackness was still moving inland; fires dotted the moving sea, and smoke billowed from the piles of timber that were once houses.

Mackeller ordered his copilot to slow as they passed over Kamaishi city. Mackeller stared down at the female Buddhist statue that stood in the center of the harbor. *The protector of the city is just about to be tested*, he thought.

“Hover,” he ordered.

The chopper slowed and then hovered.

He watched the wave rush at the breakwater wall that protected the harbor; the wall that had cost \$1.6 billion and took three decades to construct crumpled, leaving the city defenseless. The wave roared through the harbor, devouring a small speedboat and then crashed into the city, water exploding up the streets. Mackeller watched as the tanker, the *Asia Symphony*, was torn from its mooring and washed into the city. The sea kept pushing in, filling Kamaishi. The hills surrounding it acted like a sink, trapping the water and flooding the buildings to the sixth floor.

Mackeller looked back to where the submerged breakwater wall was, and his eyes caught something strange; another wave was moving in the opposite direction to the tsunami. It was racing towards the fishing village of Ryoshi on the opposite side.

His copilot banked the chopper in the direction of the wave. “That wave was made when the tsunami hit the breakwater wall, and the energy was deflected in the opposite direction,” he said.

“It has also amplified in size.” Mackeller paused, studying the wave. “Probably around thirty meters.”

They watched as the village of Ryoshi disappeared underwater in a matter of seconds.

“To Otsuchi,” he ordered.

\*\*

A tremor shook the apartment violently, and Yukino held onto the kitchen counter. She peered out through the falling snow at the wall of water rushing at her. She ran back through the living room and out onto the balcony; below she could see the lady she had just met tramping through the muddy street.

“It’s coming!” she screamed, “It’s coming!”

The woman could only hear the wailing of the siren and the repeated warnings. “STAY ON HIGH GROUND. STAY ON HIGH GROUND.”

\*\*

Mackeller and his copilot watched the wave crash into the tsunami breakwater wall on the south side of the Otsuchi harbor. The sea rose rapidly to double the height of the wall; the ocean poured over, and a few moments later, the wall collapsed and the sea surged in and obliterated everything.

\*\*

The wave came over the tsunami wall and crashed through the town.

“Run!” screamed Yukino to the people on the street.

The women and the men heard the roaring of the water and the snapping of timber and ran for the emergency stairs at the bottom of a hill. The wave tore through the street. The old men were slow, and the wave got them before they had gone barely fifty meters. The building trembled, and at first, Yukino thought it was the wave but then quickly realized it was another earthquake; she held onto the railing and watched the woman in the jeans and jacket fall to the ground. The woman tried to get up but slipped in the mud; the wave caught her and she was gone.

Yukino stood there breathing heavily, steam coming from her mouth. Below the water had risen to the second floor; she rushed back into the kitchen and stared out in awe rather than shock. The level of the ocean was at least three times the height of the wall; the whole ocean was pouring into the town. She rushed to the door and looked down the stairs; the water was almost to the top. She bolted up the stairs and burst out onto the roof. The street was a roaring rapid of black churning water, carrying with it half-submerged cars, fishing boats, pieces of houses, jerry cans, and piles of broken wood and all sorts of garbage.

She could see the hospital in the distance; doctors and nurses worked frantically to get the elderly patients to the roof of the eight-story building. She let out a gasp when she saw an old lady, still in her bed, swept out the window of the third floor.

Water was now only three meters below the roof of her building.

\*\*

The mayor and his six aides watched the water seep out of the stairwell onto the floor.

“We will have to swim for it,” said the mayor, trying to keep his cool. But his eyes betrayed his words. He looked at the young man’s petrified face next to him. “It’ll be OK. We can make it.”

The man stared at him incoherently.

The water rose up to window level.

“Get ready!” shouted the mayor.

The black water rose quickly over the building, stranding them in pitch-blackness with only the sound of gushing water around them. The glass cracked, and then an avalanche of water exploded in, sweeping the young man across the room and pinning him against the window. He felt the glass break and a sharp slice to his neck as he was sucked from the room; he began to choke on his own blood and the dark ocean.

The mayor broke the surface but only for a second before he was sucked under again.

\*\*

Sachie and a group of people watched the destruction from the hill. The wall of blackness crashed through the town. A dark dust like smoke spewed off the top of the wave as if it

was fuming. House after house fell and was washed into the next. The sound of cracking timber, twisting metal, and exploding gas bottles reverberated in the air. The northern part of the town was underwater, except for a few high buildings. Looking at the hospital, Sachie could just make out, through the falling snow, nurses and doctors attending a group of elderly people on the roof. She brushed the snow off her jacket, and her attention turned to five people stranded on the roof of a building adjacent to the hospital. The water was only a meter from the top, and the group of three men and two women huddled together in the frigid conditions. Suddenly, the building rose up, and the water level dropped to the second floor. The people stood up obviously confused but relieved they had not been swept away to their deaths. One of the men rushed to the side and peered over. He then turned back to the others and shrugged his bewilderment. Seconds later the building lurched to the side, throwing the elderly man over the side. He disappeared beneath the churning water. The others crouched down and clung onto each other as tonnes of water pushed against the side of the building, forcing it to lean precariously to the side, its foundations now close to breaking point. And then, as if in slow motion, the building snapped off its foundations and toppled over, throwing the people into the icy water. She saw them bob up amongst the waves a few times, and then they were gone.

“What happened?” Sachie gasped.

“I read about it,” said a man standing next to her.

“Read about what?”

The man pointed to the toppled building. “When the water level rises quickly, air gets trapped in the lower floors, causing the building to float up, pulling its pylon foundations out of the ground.”

Sachie didn't say anything and just stared out at where the submerged building had been.

The black wall of water, dust pouring off it, moved deeper into the town, flooding the river and surging over the bridge, sweeping away two cars with the people still inside. The water gushed further up the river and began to spill over the levee, engulfing more of the town.

Sachie looked down at the neighborhood where her house was. Water was pouring over the riverbanks and filling the streets. She searched for her house and lost a heartbeat when she saw her mother standing on the balcony of the second floor.

\*\*

In Ohari, Ibaraki Prefecture, an old lady trapped in her house after the earthquake was drowned.

A car with a mother and her two children was swept off a bridge while they were trying to flee the tsunami in Sendai.

Two high school sisters in Iwate Prefecture went back to their house after the first tsunami to see if their grandparents were all right; they were caught by the second tsunami and drowned.

In Fukushima, a salesman stopped his car three kilometers inland, thinking he

was safe; minutes later he was drowned.

Several elderly patients, still in their beds, were swept from the third floor of a hospital and never seen again.

A father in Amori Prefecture racing to pick up his children from elementary school was caught and drowned in his car.

Two hundred and fifty-four volunteer firefighters were drowned along the coast; at least seventy-two were in charge of closing tsunami gates.

\*\*

Water streamed into the shop just as Kumiko's father pulled his feet free from under the freezer. He struggled to his feet; both ankles were sprained, and he had a deep gash on his right thigh. He hobbled through the kitchen with water now up to his ankles. He pushed the door that led to the outside, but it was locked solid against the surge. The water rose quickly to his waist. He pushed again and the door opened enough for him to jam his leg in and then squeeze his body through. Outside the current was raging, and he grabbed hold of the pole at the bottom of the stairs.

"Father!"

He looked up and saw Kumiko's horrified eyes staring down at him.

He struggled to maintain his grip while the water rose to his chest. Kumiko ran down a few steps and stretched her hand to him. He grabbed it and she tugged him toward the steps. He let go of the pole and grabbed hold of the railing and heaved himself onto the safety of the stairs. He sat there catching his breath. "Thank you," he said.

"You're injured," she replied, helping him to his feet. They moved to the top of the stairs and watched the water rise.

\*\*

The 120 children were spread out in a single line across the field, the deputy principal leading and Hiro following up the rear. Hiro shook the snow out of his hair and looked at his watch; it had been almost thirty-five minutes since the earthquake. A tremor ran through the ground, and the children screamed.

"Squat down!" yelled Hiro over the rumble.

The tremor was gone in seconds.

"Stand up and keep walking," yelled Hiro.

They stood and continued across the field.

Hiro stopped and listened. He could hear a snapping sound in the distance; his heart stopped. Dust was swirling from the forest beyond the field, and a few seconds later, water exploded out of the forest. His eyes darted to the riverbank, where water was pouring over and gushing straight at them.

"Follow me!" shouted Hiro.

"No! Follow me!" shouted the deputy principal.

Hiro stood momentarily shocked. There was no way they could make it across

the bridge and then up the slope to safety. "There's no time," he shouted, pointing at the black wall rushing toward them.

The deputy principal and the other teachers began running for the bridge. The children stood confused. One of the teachers shouted to them to follow the deputy principal, and a few at the head of the line started to run after him, and then more and more followed.

"You'll never make it!" shouted Hiro. The wall was only 500 meters from them. "Follow me!"

Erica looked at the approaching wave and then at Hiro; she didn't need to be good at mathematics to solve this problem. She turned and ran in the direction Hiro was pointing. The line split as other children followed Erica; the two girls in the Mickey Mouse T-shirts stood undecided.

"She writes the number of death," the girl with the plaits yelled in a panicked voice. The other nodded and they ran after the deputy principal.

Hiro reached the bottom of the slope first.

"Ryo!" he shouted. "You lead them up."

Ryo scrambled up the steep slope, setting a path through the trees. Erica was next, followed by the other children.

The water was only 300 meters from the children in the field. Hiro knew they stood no chance, but he blocked it from his mind and focused on saving the kids who had followed him.

"Hurry!" yelled Hiro.

The two fat boys were lagging behind.

The water was only 200 meters away.

"Hurry!" Hiro shouted again.

The skinny boy reached the slope and turned around. It was obvious the two fat boys weren't going to make it. He darted back toward them.

"No!" screamed Hiro.

The skinny boy reached the two boys and grabbed them by the arms and sprinted back toward the slope.

"Faster!" yelled Hiro.

They reached the slope with the wall of water just fifty meters away.

"Up!" yelled Hiro, taking hold of the two fat boys by the arms and dragging them up.

Water erupted through the lower trees, snapping them like matchsticks.

They stopped and looked across the field; they couldn't hear the screams of their classmates over the roar of water, but they watched them all disappear beneath the blackness.

\*\*

Water exploded through the forest and raced across the open field. Mrs. Sasaki, still on her knees next to her collapsed house, looked up. She pressed the framed photo of her



husband to her heart. "I'll be with you soon."

\*\*

The water kept rising, and Ryota, trapped on the ledge of the cliff, had nowhere to go. He had no choice; he would have to try to swim for it. At first, he couldn't make out what it was, but when it floated closer, he saw the words painted in red, *Jomu Oil Co.* The tank, washed from one of the harbor's oil storage facilities, was floating a meter or so above the surface. Ryota leapt off the ledge, and his feet hit with a dull thud on the metal surface.

\*\*

The surge had come so quickly and unexpectedly that the lady had barely enough time to seek shelter inside her house, but that was her fatal mistake.

"Help!" she screamed. "Someone help me!"

Mr. Kubo swung off the rafter and kicked the ceiling in. He poked his head through the hole and saw the woman clinging to the bed that floated on the other side of the room. "Hold on!" he shouted. He pulled his head up and climbed over the rafters to where he guessed she was and again kicked the ceiling in. He poked his head down but all he saw was swirling water.

\*\*

Yukino stood shaking in the howling wind, her tattered hair flecked with snow. Water seeped over the roof and rushed between her numb feet. She stood there alone, paralyzed by fear. All around her was the churning black ocean. The only thing visible through the thickening snowfall was the top of the hospital; everything else was submerged beneath the blackness.

The dark water reached her knees. The surge pushed her back a few steps. She knew she would not survive in the water long; Yuta had said maximum of ten minutes. She needed something to float on. She braced herself as the water rose to her waist. Her eyes searched ahead as something rushed toward her—a mound of broken wood. She waited until it was ten meters away and then dived in and swam for it, but the current was stronger than she had anticipated, and the mound of wood sailed past her. She swam after it, but the attempt was in vain. She was swept along in the seething and foaming rapids. Wild waves crashed around her; time after time she was sucked down into the frenzied, freezing blackness, but each time she fought her way back to the surface. Her body temperature was plummeting, her breathing becoming shallow. She knew her life was being drained by the icy blackness. She broke over the crest of a wave and caught a glimpse of swirling water. Seconds later she was dragged into the whirlpool and then sucked under, flung head over heels, lungs burning, ears bursting. She struggled for the surface, but the blackness wouldn't release her. She unwillingly opened her mouth and choked on the filthy darkness—her last thought before death was the eyes of the trapped

woman at the beauty salon.

\*\*

Kumiko sat holding her husband's trembling hand; the water was just centimeters from the top floor of the shop.

"It's starting to recede," called her father from the top of the stairs.

"We're safe," Kumiko whispered to her husband.

\*\*

Seko sat with a group of neighbors in the forest overlooking where their houses had been minutes before. She watched the black water draining from the town, carrying with it an ocean of debris: smashed cars, burning houses, half-sunken fishing boats, oil tanks, shipping containers, and piles and piles of splintered wood and twisted metal.

"There's someone out there!" shouted one of her neighbors.

Seko looked in the direction the neighbor was pointing and could see a boy waving both hands from the top of an oil tank. She watched him slowly disappear out to sea.

## Chapter Ten

Gasping for breath, Mr. Suzuki reached the gates of the power station.

He ordered the security guard to get him some transportation and evacuate to higher ground. A few minutes later, he got off a motorbike in front of the control room.

Kenichi stood scanning the ocean with a pair of binoculars when he received the call that Suzuki had arrived back.

Suzuki was in the control room going through an emergency checklist when Kenichi entered.

Suzuki looked up, his face ashen, his eyes deep wells of fear. “Have you sent anyone to secure the emergency generator doors?” he asked.

“Two men are down there now,” replied Kenichi. “Do you know what is coming at us?”

Their eyes locked; there was no need for words. The unspoken truth hung in the air. So many reports and surveys had been ignored; warnings disregarded, and now they were going to pay the price.

“How long?” asked Suzuki.

Kenichi looked at his watch. “Five minutes.”

“Get everyone up to the higher levels,” he said.

\*\*

Fukushima Daiich nuclear power plant is located about 220 kilometers north of Tokyo, in the towns Okuma and Futaba in Fukushima Prefecture on the northeast coast of Honshu. It is built on a three-and-a-half square kilometer site. The site is divided into two reactor groups, the southern part containing Reactors One, Two Three, and Four. The northern area contains Reactors Five and Six. The reactors have a combined power of 4.7 gigawatts (GWe), making the power plant one of the world’s fifteen largest power stations. Two seawalls protrude into the ocean from the north and south in a triangular shape, forming the outer harbor—the first line of defense against a tsunami. An inner seawall is built in front of Reactors One, Two, Three, and Four to protect the intake pumps for all six of the reactor turbines and emergency cooling pumps. The plant was designed to withstand a maximum tsunami height of 5.7 meters. The Japan Trench, a major fault line, is located around 130 kilometers directly off the coast, making it one of the most dangerously positioned nuclear power plants in the world.

One would think that after the bombing of Hiroshima and Nagasaki Japan would have been the most anti-nuclear country on the planet. However, with fifty-four nuclear power stations, producing nearly 30 percent of the country’s electricity, Japan is the third biggest user of nuclear power behind America and France. Yasuhiro Nakasone, who was prime minister from 1982 to 1987, was probably the biggest backer of nuclear power. In 1954, Nakasone submitted a bill to parliament to finance nuclear research. Lawmakers

gave a budget of 235 million yen, and subsequently, the US-Japan Atomic Energy Agreement was established, allowing Japan to purchase nuclear fuel and technology from the US the following year. This was to America's advantage, politically and economically, making its ally dependent on its corporate giants.

Still, the public needed convincing, and the CIA took on some Japanese allies in their propaganda effort. One notable name, according to *Bulletin of the Atomic Scientists*, is Matsutaro Shoriki, owner of the *Yomiuri* newspaper, Japan's biggest newspaper, and Nippon Television, Japan's first commercial TV station. From 1954 the *Yomiuri* newspaper published a string of pro-nuclear articles that were seen as very successful in garnering support for the nuclear industry. Walt Disney Company also came on board. In 1957 they produced a cartoon, "Our Friend, The Atom," which depicted the positive benefits of atomic energy. This was also screened on Shoriki's TV station.

In 1956, Shoriki, who was then head of Japan's Atomic Energy Commission, announced a long-term plan for nuclear energy. The Tokai Mura power station in Ibaraki Prefecture was the country's first and began generating electricity in 1966.

In 1961, Kazutaka Kikawada stepped into the government-backed nuclear environment. The company, TEPCO, had already begun research into atomic energy and was searching for potential sites. Soon after, Kikawada, ironically born and bred in Fukushima, became the president of TEPCO, and the towns of Okuma and Futaba, in Fukushima, agreed to the construction of the Fukushima Daiichi plant.

During the 1970s, Japan saw rapid depopulation of rural areas, as much of the population moved to the bigger cities for better paying jobs. The nuclear industry offered many small towns and villages a chance of survival, bringing new jobs, wealth, and a higher standard of living—a very attractive carrot for many rural towns that balanced precariously on the edge of extinction.

TEPCO's reputation for safety, honesty, and transparency has been severely blemished over the past years. In 2007, TEPCO admitted to covering up at least six emergency stoppages at the Fukushima Daiichi plant as well as a critical reaction at the plant's Number Three unit.

Other electric companies, such as Kansai Electric, Chubu Electric Power Company, Tohoku Electric Power Company, and Hokuriku Electric Power Company, have also admitted to cover-ups and fake reports.

One could compare the Japanese energy companies to the prewar Japanese Imperial Army, which listened to no one and answered to no one—and did what it wanted.

\*\*

A wall of whitewater hurtled toward the Daiichi plant. It hit the harbor seawall and went straight over the top and then smashed through the second inner seawall. Water exploded thirty meters into the air and then gushed over the dock, destroying all the reactor intake valves and pumps. Water flooded the plant, and the level quickly rose ten meters up the side of the turbine buildings, leaving only the roofs visible in the churning ocean. Sea

water poured into the emergency generator buildings, submerging the generators instantly.

\*\*

The control room shuddered, and everyone stood silent, waiting, praying the generators would keep going. All knew the consequences of a complete power loss.

“Generators in unit one down,” shouted a man.

Suzuki looked at Kenichi; dread etched into his face.

“Unit Three generator lost,” called another man.

Kenichi studied the array of flashing lights. He knew the situation was bad, but if the other units’ generators stayed operational, they had a chance.

“Two and four gone,” shouted another man.

Kenichi’s hopes faded, and he started to mentally go over the emergency procedures for complete loss of power.

“Generators in unit five and six have stopped,” called another.

Suddenly, the room went dark and Kenichi’s throat went dry. “Switch to emergency batteries,” he ordered.

Moments later the lights came back on, and Kenichi could see Suzuki standing paralyzed, staring at the monitors.

“Status on cooling systems,” Kenichi demanded.

“All are operational,” replied a man.

“I’m going out to check the damage,” he said to Suzuki, but Suzuki just kept staring at the monitors.

Kenichi stood on the observation deck. The water had receded enough to allow him to assess the damage. The whole plant was a wasteland; twisted pipes and broken concrete were strewn along the harbor, and water gushed from the turbine buildings, under which were the emergency generators. Further back he could make out the smashed remains of the generator’s fuel tanks. Office and administration buildings lay in ruins, their windows and doors gone, the insides gutted. He looked at the watermarks on the wall and estimated the tsunami must have been around fifteen meters.

*Eight hours, he thought, and then the batteries will fail.* He knew, even if the generators had survived, their cooling pumps and intake valves must have been destroyed, and there wouldn’t be any way to cool the emergency generators. He needed to get power from the grid restored as quickly as possible.

Suzuki could hear Risa’s voice in his head. She had begged him not to leave her, but he had left her stranded outside the love hotel.

\*\*

Mr. Saito stood on the roof of his house, staring down at the broken pine trees that littered his fields. As soon as he had heard the tsunami warning, he had climbed on his roof. He thought he would stand a better chance up there than trying to escape along the flat road that ran parallel to the coast. And he had been right; he had heard the roar of the wave and

seen it explode through the pine trees, snapping them like matchsticks. It had thundered toward him, threatening to sweep away his house, but had luckily run out of power and stopped fifty meters short. He looked down at the barn that lay in a splintered heap, a victim of the earthquake. *How much of the town had been wiped out?* he thought. He knew this could be disastrous for his town that was already struggling with a dropping population. *Will people rebuild if their houses have been destroyed?* His gaze turned north to the six concrete structures that towered above the horizon. He wondered if the plant had been damaged and if there was a risk of a radiation leak. TEPCO didn't have a reputation for transparency since several cover-ups had recently been made public. He thought he'd better go and have a look himself.

Thirty minutes later, he climbed onto the knoll of a hill just south of the plant. What he saw made his heart stop; chunks of concrete, broken pipes, smashed cars, splintered wood, and trees were scattered throughout the plant. It looked like a war zone. His eyes moved to the harbor, and he saw the intake pumps had been totally destroyed. Ever since the construction of the power plant, which he had fiercely opposed, he had studied in detail how the plant operated and what would cause a serious accident. He was now staring at the worst-case scenario. He turned and headed back down the hill. He thought about going to check the Daini plant but guessed it had suffered the same fate. He had to get back to the town and warn the people.

## Chapter Eleven

When the sun set over Japan on March 11, 2011, around 120,000 buildings and houses had been destroyed and another two 220,000 severely damaged, most of them beyond repair. Most train lines were at a standstill. Major roads linking northern and southern Japan to Tokyo were out. Hundreds of bridges were down. Thousands of people were stranded in elevators. In Tokyo five million people were on foot trying to get home as were millions more in other parts of the country. Mobile phone services were out. From Aomori in the northeast to Chiba Prefecture in the south, 800 kilometers of coastline lay in ruins. Smoke billowed from the Chiba oil refinery. Sendai Airport was littered with smashed planes, helicopters, and cars. Industry had been wiped out. Six gas and coal power stations were damaged and inoperable. Over thirty million people were without water, gas, or electricity. Fires burned in towns and mountains along the coast. Hundreds of thousands of people were homeless and 28,000 dead or missing. Families had been torn apart with parents dead and children missing. Hospitals were overflowing with the injured.

Although death and destruction had befallen the country, the Japanese people acted calmly, orderly, and politely. There was no looting or rioting, no honking of horns in traffic jams, no panic or screaming. Department stores in Tokyo opened their doors so people could sleep and rest. Some even served them instant noodles, and reports later said that nothing had been stolen. People opened their hearts to the needy. Their culture and ideals shone like a beacon of hope through the darkness. For anyone who watched, it brought tears to their eyes.

\*\*

Mr. Saito reached the remains of the town just at dusk. He had traveled by bicycle, knowing most of the roads would be damaged. He had passed large areas that had been laid waste by the tsunami. The harbor, the train station, and all the houses one kilometer inland had been completely destroyed. He had come across a dead woman near a love hotel and taken her drivers license, her name Risa Kato.

He made his way to the emergency shelter that was set up in the community center. The droning sound of a diesel generator filled the air, and people were rushing in and out of the entrance. The mayor was an old childhood friend, having gone to school together and spent summers hiking, swimming, and fishing. They had even dated twin sisters together when they were in high school. Inside, the emergency center was bustling with action. People were running from room to room carrying documents and manuals. Others were either talking or trying to talk on mobile phones, while some were in heated debates. Injured people lay in the corridors awaiting transportation to hospitals. He asked a young woman, who was rushing down the hallway, where he could find the mayor, and she pointed to a room two doors down.

The mayor sat surrounded by a group of men who were examining a map that

lay sprawled across a grey metal desk.

Saito cleared his throat. "Excuse me, Mr. Mayor!" he said in a loud voice.

Everyone turned and stared at Saito.

"May I have a word with you in private? It's concerning the Daiichi plant."

A murmur of protest broke out amongst the men and one said, "We should be present at all meetings concerning the power plant."

The mayor, a chubby, round-faced man with a receding hairline and thick black-framed glasses, looked at Saito. "What do you know? We have received reports that everything is fine and that the reactors went into cold shutdown after the earthquake."

Saito's expression hardened. "I've been there and seen the damage."

There was an interlude of silence.

"How bad is the damage?" asked the man who had protested earlier.

Saito explained what he had seen, and raucous accusations about TEPCO erupted.

"I knew we couldn't trust them!" one man said.

"Pack of liars!" shouted another.

"More of their cover-ups!" spat another.

"Quiet!" roared the mayor and turned his attention to Saito. "What else?"

"I'd like to talk to you in private," he said, staring hard at the man who had protested.

"Everyone wait outside," ordered the mayor, motioning to the door.

"But—" the man tried to protest.

"Outside! Now!" barked the Mayor, getting out of his chair.

The men quickly scurried outside.

The mayor closed the door and gestured for Saito to sit. "Good to see you. Hope your family is safe?"

"They're fine. They're on a holiday in Okinawa," he replied.

The mayor's eyebrows arched. "Lucky for them!"

"Yes, they are very lucky to be away from all this." His look hardened. "Half the town has been destroyed. How many people are dead or missing?"

The mayor sighed. "We don't know yet, but it'll probably be in the hundreds."

"Have you started distributing the iodine pills to the people?"

"No, I've had no such orders from the central government," he replied, a little taken aback by his friend's abruptness.

"I suggest you get their authorization," said Saito.

The mayor looked at his friend with a puzzled expression. "But why? The reactors have gone into shutdown. There hasn't been any leak."

"That's what they say. All the intake valves and pumps have been destroyed. I saw them. They have no way to get water to cool the emergency generators or for parts of the reactor's cooling system, and they have lost power to the grid. If they don't get hooked back up to the grid in the next few hours, they won't be able to cool the nuclear fuel, and it will go into meltdown."

The mayor leaned back in his chair. "TEPCO has said everything is fine—



nothing to worry about.”

“How many times have they lied in the past?” questioned Saito.

The mayor took off his glasses and rubbed his eyes with the back of his hands. “Several,” the mayor conceded.

“The people need to take the iodine pills as soon as possible, preferably twenty-four hours before exposure. You remember the paramedic explained it at the evacuation drill last year.”

The mayor nodded. “Do you really think there might be a leak?”

“I don’t know, but you should start preparing for an evacuation.”

The mayor sighed and took out his emergency satellite phone and dialed Tokyo. “Do you mind?” he said, his eyes darting to the door.

Saito got up and left the room. He found a young girl serving tea from a thermos, and she poured him a cup. He then returned to the mayor’s room, knocked, and entered. “What did they say?”

“They said there was no reason to give them out. The reactors have safely shut down and there is no risk of a radiation leak.” He paused and leaned back in his chair. “They said that it would cause unnecessary anxiety and could lead to mass panic.”

“Do you believe them?” asked Saito in a low voice.

The mayor took off his glasses and looked Saito straight in the eye. “No. It sounded all a little too rosy. They said the tsunami defense had protected the plant and there was hardly any damage—that there’s nothing to worry about.”

“See! They’re lying through their teeth. I told you what I saw.”

The mayor got up, opened the door, and signaled for the men to come back into his office.

The men filed into his office and sat down.

The mayor cleared his throat. “We’re going to start distributing the iodine pills as a precaution.”

There was a stunned silence, and then the man who had protested earlier asked, “Has there been a leak?”

“No, but I just got off the phone with Tokyo.” He explained the conversation he just had with central government.

The men sat there bewildered by what the mayor told them.

“Any questions?” asked the mayor.

They shook their heads.

“Start the distribution immediately.”

The men got up, bowed, and left the room.

The mayor looked at Saito. “We need all the help we can get.”

Saito bowed. “What can I do?”

At 9:23 p.m. the central government ordered the evacuation of all residents in a three-kilometer radius and for residents between four and ten kilometers to stay indoors.

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“Status report,” asked Kenichi, entering the control room.

“We are detecting high levels of radiation from unit one,” said one of the operators.

Kenichi moved to the console and checked the cooling system of unit one. “It’s been shut down,” he said. “Who shut it down?”

There was silence.

Kenichi cursed and guessed that during all the panic someone must have accidentally shut it down. But he also knew that if there was radiation leaking, two things must have happened. Firstly, the water level inside the reactor must have dropped, exposing the fuel rods and causing a partial meltdown. Secondly, the containment vessel must have been damaged by the earthquake; most likely it was cracked. He switched the cooling system back on.

“Do we have an update about getting power restored?”

“Negative. Power lines to all outside grids were destroyed by the tsunami.”

“Where’s Suzuki?” he asked.

One of the operators pointed to his office.

Kenichi strode into Suzuki’s office. “Sir, the situation is now critical. We have a radiation leak in unit one, and power from the grid has not yet been restored. If we don’t get power restored by the time the batteries run out, we will be seriously at risk of having meltdowns in all reactors. I recommend an evacuation zone of thirty kilometers.”

Suzuki looked up. His eyes said it all. He picked up his phone and dialed.

“Yamada,” came the voice on the other end.

“This is Suzuki. We have a critical situation.”

“What’s the problem?” asked Yamada.

Suzuki pressed the speakerphone button and signaled for Kenichi to explain.

There was silence at the other end when Kenichi had finished.

“How long before the batteries run out?” asked Yamada.

“Five to six hours,” replied Kenichi.

“You can use RCIC (Reactor Core Isolation Cooling system) to keep them cool,” said Yamada.

“That cannot run indefinitely and only while there is sufficient pressure and steam in the reactors to drive the turbines. Once reactor pressure drops below a certain level, RCIC shuts down automatically,” said Kenichi. “We should establish an evacuation zone of thirty kilometers.”

“No, that would cause panic,” said Yamada.

“Sir, there are women and children living within a few kilometers of the plant. We should at least start evacuating those people.”

“No. If the media gets hold of this, it will cause unnecessary panic.”

“Unnecessary panic,” blurted Kenichi. “You are talking about peoples’ lives.”

“I will talk to the prime minister. I have a helicopter on standby at Nagoya

Airport and will be in Tokyo soon.”

A tremor ran through the building, and Kenichi grabbed hold of the desk to steady himself. “Sir, I think we should—”

“Continue what you are doing, and I will get back to you as soon as I have talked to the prime minister.”

“Sir, I think—”

“Make sure the reactors are cooled; we don’t want any unnecessary damage,” he said and hung up.

Kenichi looked at Suzuki, but Suzuki just shrugged his shoulders.

Kenichi stormed out of the office.

\*\*

Mackeller circled the airbase looking for somewhere to land. Below, the runway was littered with smashed cars, piles of wood and twisted metal. Most of the planes and choppers had gotten airborne before the tsunami hit, but a few planes lay crumpled among the wreckage.

“Down there,” said his copilot, pointing to a clearing amongst the debris.

Mackeller circled the area and then made the descent.

“Well, looks like your dream came true,” said his copilot, taking off his helmet.

“Seems so,” grunted Mackeller, flicking off some switches. “Let’s find out what’s going on.” He opened the door and jumped down.

“Over there,” said the copilot.

Mackeller look through the fading light and saw some soldiers loading boxes into a truck. “Let’s go,” he said, making towards them.

“Captain Mackeller,” he called and saluted as he approached.

“Colonel Black,” replied one of the men, saluting back. “We need all the help we can get.”

“Yes, sir,” replied Mackeller.

We’ve been ordered to take as many supplies as possible to the tsunami victims. How’s your chopper?”

“It’s fine. We just need some fuel,” replied Mackeller.

“We can manage that,” the Colonel said. “We’ll fuel you and load you with supplies.”

“What’s the destination,” asked Mackeller.

Colonel Black scratched his chin. “Fukushima.”

An icy chill ran down Mackeller’s back. “Where in Fukushima.”

“Anywhere where the tsunami has destroyed a village, town or city.” He paused. “Anywhere you can land.”

“Yes, sir,” said Mackeller, saluting.

Thirty minutes later, the rotors thumped overhead and the chopper lifted off.

\*\*

almost dark as Sachie waded through the water to the stairs at the bottom of her house. Although the tsunami had receded, it had left her neighborhood flooded in waist-deep water. Her body shook in the freezing conditions, and she could barely make it up the stairs. She opened the door and staggered in.

“Sachie!” cried her mother, running over and putting a blanket over her.

“Thank you.”

“Are you OK?”

“I’m OK.”

“No, you’re not,” said her grandfather. He poured her some tea from a thermos that still had hot water.

“Thank you,” she said.

“Here, change into these,” her mother said, handing her some clothes. “Your head! What happened to your head?”

Sachie put her hand to the side of her head. “A roof tile hit me.”

“I’ll bandage it when you’ve changed.”

She put down the tea and went into the bathroom and changed.

“Where’s Yukino?” Sachie asked, emerging back from the bathroom.

There was no need for words; their faces told the story.

“Haven’t you gone looking for her?” she asked, her eyes brimming with tears.

“It’s too dangerous. There will be more tsunamis,” her mother said.

They all heard it; the distant rumble. The tremor hit and the house shook and rattled, and her mother raced into the other room to her husband. Then the rumbling died away.

Her grandfather limped over to her and whispered, “She went to the fishing harbor.”

Sachie nodded and turned for the door.

“Wait!” he said, gesturing with his hand. He opened the wardrobe and took out his angler pants and handed them to her.

“Be careful,” he said.

“I will,” she replied and slipped out the door.

A few minutes passed, and Kumiko came back into the room. “Where’s Sachie?”

“She’s gone to search for Yukino,” her father replied.

“What?” she said, heading for the door.

Her father caught her by the arm. “Let her go. Someone needs to find Yukino.”

Kumiko looked into her father’s eyes and nodded reluctantly.

“She’ll be fine,” he assured her.

“Mrs. Yagi!” she blurted. “I forgot about Mrs. Yagi.”

“Go. I’ll look after your husband.”

Kumiko rushed to the door and put on some rain boots.

The door had been torn from the Mrs. Yagi’s house. “Hello, anyone there?” she shouted.

There was no answer.

“Hello, anyone there?” she repeated.

No answer.

Kumiko stepped into the house. It was twilight and difficult to see inside. “Yagi-san,” she called.

“Yes,” came a faint voice.

Kumiko’s boots squelched through the thick layer of mud that coated the floor. “Yagi-san,” she called again.

“Yes,” Mrs. Yagi called from the top of the stairs.

Kumiko looked up and saw Mrs. Yagi huddled at the top of the stairs. “It’s me, Kumiko.”

“Is it time to go to Disneyland?” she called back.

Kumiko couldn’t help but grin. “Yes, we are leaving soon. I’ve come to get you.”

“I’m ready.”

Kumiko climbed the stairs and found Mrs. Yagi sitting on the floor. She was soaked, covered in mud, and shaking uncontrollably. “Come let me help you down the steps.”

She led her down the stairs and through the bottom floor, which had been gutted. Only an overturned table remained; everything else had been swept out of the house.

“We have to wade through the water. It’s very cold,” Kumiko said.

“Oh...we are already at Disneyland. I must have fallen asleep on the bus. I know this ride. Isn’t it the Haunted Mansion?”

“Yes, that’s right,” Kumiko said, smiling. *Out of all this destruction, at least one person believed they were having a good time*, she thought.

They waded down the lane toward Kumiko’s house; the sky in front of them was now lit red by the blazing fires.

“The effects are very real these days,” Mrs. Yagi said.

\*\*

“Quick, this way,” said Seko, helping the old lady up. “The fire is coming this way.”

An oil slick from the destroyed tanks had formed on the ocean and was now burning, sending acrid smoke billowing into the sky. It had caught fire when one of the surges had pushed farther inland making contact with some burning houses. It was now spreading out of control, igniting buildings and setting the hills on fire.

Seko and her neighbors climbed the steep hill.

“We’ll be safe on the other side,” said Seko.

Black dots stained her white jacket. She put her hand out and watched the black snow dissolve on her skin. She looked down toward the harbor as another surge pushed the blazing ocean back into the remains of the town.

\*\*

Hiro and the children reached the top of the hill. It was dark now, and a light snow was falling.

“Line up,” said Hiro. He did a quick head count; eighteen from 120 had survived. They were silent; all wore solemn expressions, the shock of seeing their classmates killed etched deeply in their eyes.

“Look!” said Ryo, pointing down into the valley.

Hiro looked down and saw the light coming from a farmer’s house. “Let’s go down there.”

The line of children followed Hiro without a sound.

They came out of the woods fifty meters from the farmhouse where some people were standing around a fire.

“Good evening,” called Hiro.

The group turned to Hiro. “Good evening. Come over here, it’s warm,” a woman called.

“They’re children,” shouted a man.

The people rushed over to the children and guided them to the fire.

An elderly man, who seemed to be the group’s leader, introduced himself. “I’m Daisuke.”

“I’m Hiro.”

“Where did you come from?” asked the man.

“From Nakamaru Elementary School,” said Hiro.

The man saw the look in Hiro’s eyes and didn’t need to ask anything further.

The women were busy opening packets of noodles and dumping them into a large pot of soup that was simmering on the fire, while the men began wrapping the children in blankets.

“You’re welcome to stay here the night,” said the man.

“Thank you, but I must get the children to their evacuation zone. Their parents will be looking for them.”

Without warning the ground jolted and then began shaking.

“On the ground!” shouted Hiro.

The children crouched.

The rumbling grew and a tremor went through the ground; roof tiles smashed to the ground, and the children screamed—then silence.

“That’s why we are standing out here,” said the leader. “We’ve had at least fifty aftershocks.”

“I understand,” replied Hiro.

The children got silently to their feet, and the women started to serve them hot noodles.

“Please eat,” the leader said, handing Hiro a bowl of noodles.

“Thank you,” he said, accepting the bowl.

“Are you sure you won’t stay?”

“I appreciate your hospitality, but I think I should get the children to their parents.”

“I understand,” the man said. “You’d best follow the road, although I’m not sure if the bridge is out.”

“I’ll deal with that problem when it arises.”

“I’ll get you some flashlights,” he said and went into the house.

Hiro walked over to Ryo. “We will be leaving after everyone has eaten. I want you to follow up the rear and make sure we don’t lose anyone.”

“OK,” replied Ryo.

Hiro looked around. The children were huddled around the fire eating their noodles in silence, except for the skinny boy and the two fat boys who sat a little away talking, and Erica who was crouched by herself. Hiro walked over to her. “Are you all right?” he asked.

Erica stopped drawing in the dirt and looked up. “I’m fine.”

“What are you drawing?”

Erica stood up, revealing a string of number fours scratched into the dirt.

Hiro looked at the numbers in surprise. “Why are you writing the number four?”

“I don’t know. I just keep seeing them in my mind.”

“Here are some flashlights,” interrupted the leader.

Hiro took the flashlights and thanked him. He then organized the children into a line facing the group of old people.

“Thank you very much,” Hiro said, bowing deeply.

“Thank you very much,” the children repeated and bowed deeply.

“Take care,” the people said, bowing and then waving good-bye.

Hiro led them to the road.

\*\*

“Help me,” came a woman’s voice from the darkness.

“Where are you?” called Kubo. He had climbed off the house after the water had receded and was now making his way home.

“Up here!” the voice whimpered.

Kubo looked up and could make out the silhouette of a woman clinging to a tree. “Hang on,” he called. He went to the base of the tree and took a firm grip of the trunk and pulled himself up. “Take my hand,” he said, stretching out to her.

“Don’t let me fall,” the woman said.

“I’m a roof tiler. I am used to heights,” he called, hoping this would reassure the woman.

A hand stretched out, and he took hold of it; it felt like ice. “I’ve got you. Now slide slowly across.”

The woman slid slowly across, and Kubo grabbed hold of her and then lowered her to the ground.

“That wasn’t so hard, was it?”

“No...it...wasn’t,” stammered the woman. She was soaked and shaking.

“Put this on,” he said, taking his jacket off.

“Thank you,” she said, pulling the jacket over her shoulders.

“My name is Kubo.”

“My name is Natsumi. Thank you for rescuing me.”

“You’re very welcome,” he said beaming. Although it was dark, he could see the woman was in her late twenties, pretty with short hair, her office suit torn and dirty. “I’m heading to my house. It’s up on the hill. Where’s your house?”

“I live in Kamaishi,” she replied.

“You’ll never get there tonight. You’re welcome to stay with me and my three daughters.”

“Would that be OK?”

“It’s fine. Anyway, you look like you need fresh clothes. You can borrow some of my daughter’s.”

“Thank you so much,” she said.

“Come on. It’s not so far.”

\*\*

The oil tank that Ryota had jumped onto had merged with other wreckage; one was the second floor of a house, and he had managed to salvage some dry clothes. He sat on the roof and watched the fires burning as he drifted farther out to sea. A gust of wind showered him with sea spray, and he moved nearer the house to shelter from the wind.

\*\*

Kamata let his boat drift off the coast. The weather had deteriorated at dusk; the wind was now gusting, churning up the grey ocean, and flurries of snow cut into his face. He felt another surge go under his boat heading for the coast. He would wait for daybreak before attempting to return to port.

\*\*

Yukino’s eyes fluttered open, and she stared into the darkness. The last thing she remembered was diving off the apartment building and swimming toward the pile of wood.

She was cold, her body numb. She felt the ground around her and let out a short gasp as a splinter of wood found her hand. She pushed herself onto her knees and looked around. Not far away a light glowed. Her body shook but she forced her limbs to work and climbed off the pile of broken timber and staggered through the woods.

She came out into a clearing where a fire burnt a ring of warmth. She went over and knelt down at the edge and let her body soak up the heat; her fingers stung as the heat melted away the cold, but it was a good pain, a pain she could endure.

“Hello,” she called out.

Silence—only the sound of crackling fire.



She turned around and sat with her back to the fire. "Hello," she called again.  
There was a rustling in the bushes.  
"Who's there?" she called nervously.  
A figure appeared out of the bushes.  
Yukino got to her feet.  
"It's only me," the figure croaked.  
"Who are you?"  
The figure moved closer.  
"Taka," said the old man, stepping into the glow of the fire.  
Yukino let out a long sigh. "Taka-san. What are you doing here?"  
Taka gave her a warm smile. He was one of her uncle's friends and she had met him many times at the store. "I should ask you the same question."  
Yukino looked around; except for the glow of the fire there was only darkness.  
"I...was swept off a building by the tsunami...I don't remember anything else."  
"You're very lucky to be alive," he said, warming his hands over the fire.  
Yukino nodded and squatted down to warm her back. "Where are we?"  
"We are about three kilometers from the harbor on the north side of the river. I came because I thought it would be safe here."  
A look of confusion swept over Yukino. "How did—"  
"You must have been swept up the river on some debris." He paused and looked at her. "You're lucky you didn't die of the cold."  
"I don't remember anything after I was swept off the—" Suddenly the image of the woman emerged in her mind and she put her face in her hands and began sobbing.  
Taka knelt down and put his arm around her. "It's all right," he said, trying to comfort her.  
"I let a woman die! And there was a man!" Yukino blurted. "I tried to help them, but I couldn't!"  
Taka held her tighter, held her terror close to him. "It'll be OK," he said softly.

\*\*

Kenichi sat opposite Suzuki; the phone rang and Suzuki hit the speakerphone switch and Yamada's voice came on. "I have talked to the prime minister, and he has set up an emergency headquarters to deal with the nuclear disaster."  
"Where are you?" asked Suzuki.  
"I'm still in Nagoya."  
"I thought you were going to fly back in the company helicopter?" said Kenichi.  
"I found out that private aircraft are not permitted to take off from Nagoya after seven p.m.," replied Yamada.  
"Are they insane? This is a nuclear emergency," said Kenichi.  
"I know. Damn red tape," he said irritably. "I have organized a Self Defense Force plane to fly me. Should be there within one or two hours. How are you handling things?"

There was a short interlude of silence; Suzuki just stared at Kenichi with a blank expression. "Emergency cooling systems are still operational for all six reactors, but the pressure in Reactor One is rising. I suspect the fuel rods have been exposed," said Kenichi.

"Impossible," said Yamada.

Kenichi ignored Yamada's comment. "We have detected high levels of radiation outside Unit One, and if the pressure keeps rising, we will be forced to vent radioactive steam from the reactor. We should evacuate people from the surrounding area immediately."

"No, we can't vent into the atmosphere," said Yamada.

"As I have said, the fuel rods are mostly likely exposed and are causing a chemical reaction that produces hydrogen, which is somehow leaking into the reactor building. If the amount of hydrogen exceeds more than 4 percent to oxygen, an explosion is unpreventable."

"You are saying we should vent directly into the atmosphere?" Yamada replied incredulously.

"That's right. If steam continues to leak into the containment building, it will raise the risk of an explosion. At the moment, the wind is blowing out to sea and is forecast to continue that way until tomorrow morning. The hydrogen and the radioactive materials will disperse quickly with no danger of an explosion."

"Do you realize the panic it will cause, not to mention the damage to TEPCO's reputation?" Yamada fumed.

"If you don't vent both the reactor and the containment building, you run a very high risk of blowing apart the building and damaging the reactor, and then you will have a real catastrophe on your hands," Kenichi countered.

Yamada thought for a moment; he knew what Kenichi was saying was correct, but the damage it would inflict on the nuclear industry would be untold. The chances of securing villages and towns for future projects would become much more difficult, if not impossible. "I will pass the information onto the prime minister," he said flatly.

"I need to know as soon as possible," insisted Kenichi.

"I will call you when I get to Tokyo," he said and hung up.

Kenichi looked at Suzuki, who sat staring aimlessly at his desk; he didn't bother to say anything to Suzuki and returned to the control room.

\*\*

Mackeller flew his chopper low over the coast, its search light scanning for any remains of life, but the smoke made it almost impossible to see anything.

For a moment, the veil of smoke parted and his copilot caught sight of people waving flaming branches. "Down there at five-o'clock," he said.

"I see them," Mackeller replied, banking the chopper to the left. He circled twice confirming a safe area to land. "Do you see any overhead power lines," he asked.

His copilot scanned below. Overhead power lines were barely visible from

above, and were a chopper pilot's nightmare—lethal if the rotors made contact. “No, all clear to land.”

Mackeller put the chopper down gently and jumped from the cockpit. Blades still thumping, he ran crouched over to the group of people. “Hello, I'm captain Mackeller from the United States Navy.”

“Hello, hello!” shouted an old lady, rushing forward and shaking his hand furiously. “Thank you, thank you.”

“You're welcome,” shouted Mackeller over the thump of the chopper's blades.

Mackeller turned and signaled his copilot to cut the engine. “We have supplies. Can you help us unload them?”

The group of about thirty old people, all wrapped in blankets, stared at him unmoving.

“Help us unload—” He stopped in mid-sentence, sensing they had no idea what he was saying. He thought for a moment. *What are the words 'help me' in Japanese?* He hadn't learnt much Japanese since he had been stationed in Japan. Only a few expressions from the Military radio, *The Far East Network*.

His copilot came up next to him and said in perfect Japanese. “We have food, water and blankets. Could you help us unload them?”

“*Hai, hai*. Yes, yes,” said the people and hurried towards the chopper.

“Where did you learn to speak Japanese?” Mackeller asked surprised.

“My Japanese girlfriend. It's the best way to learn. You should try it sometime.”

“Maybe I will when this is all over,” he said, pushing past him and shouting. “Stop! Stop! We will pass the supplies out to you. Make a line and pass the supplies down the line.”

The people stared at him wide-eyed.

“Need some help?” asked his copilot.

“Please,” he said, letting out a long sigh.

Fifteen minutes later the job was done.

“We go up,” said Mackeller, pointing skyward and feeling like an idiot the way he spoke.

His copilot translated; or rather explained that they had to get supplies to other survivors. The people rushed forward shaking their hands and bowing profusely.

Mackeller and his copilot waved as the chopper lifted off.

\*\*

Sachie put her hand up to shield her face from the fire. The remains of Otsuchi blazed before her; the road was strewn with smashed cars, twisted metal, wood, and broken houses—a mangled mess that blocked her from getting to the fishing harbor.

“Yukino!” she yelled. She climbed onto a crushed car. “Yukino!” she shouted again.

Black snowflakes began to fall around her.

“Help us!” a woman called.

Sachie looked to the left and saw a man and woman standing on the wreckage of a house. She climbed down and made her way over, trying to avoid cutting her herself on the jagged metal.

“My mother is trapped!” cried the lady. Her face and clothes were covered in mud, and her eyes stared out pleadingly at Sachie.

“Can you hear her?” asked Sachie.

“Yes,” replied the woman.

“Mother, we have help!” shouted the man. He stood, staring down at the wreckage, his hair in tatters and his clothes muddied and torn.

“Hurry!” came a panicked voice from under the pile of wood.

“Here, help me with this one,” the man said.

Sachie and the woman put their hands under the beam.

“On the count of three,” said the man. “One, two, three.”

They all lifted and the beam came free, and they pushed it to the side. The man shone his flashlight down into the darkness, spotlighting the old lady.

“Can you move?” he asked.

“Yes,” she said, reaching up.

The three of them grabbed her by the arms and hauled her out.

“Thank you,” she said, gasping her words.

“You’re welcome,” replied Sachie. She helped the old woman off the pile of wood and then walked back in the direction of her home.

\*\*

Black snow fell on the gravestones, and Hiro felt an eerie chill run up his spine. The path to the evacuation center wound up the hill through the cemetery.

“There’s nothing to be scared of,” he said to the children. But his tone betrayed his own fear.

“I’m scared,” said one of the girls.

“It’ll be all right. See the light up there,” he said, pointing up. “Your parents will be waiting for you there.”

Nervously, the children followed in silence.

He stopped near the top and looked down at the burning town.

“Up here,” called someone.

Hiro looked up and saw someone holding a flashlight about twenty meters above. He signaled the children to follow. They reached the top where they found groups of people huddled around fires outside a gymnasium.

“We’re from Nakamaru Elementary School,” Hiro announced. The children stood silently alongside him.

The word spread quickly and parents came running from the gymnasium shouting their children’s names. At first, confusion and then shock whirled amid the parents when they realized only a small number of children had survived.

“Where are the others?” shouted a mother.

Hiro bowed deeply. "*Gomenasai*. I'm sorry."

Panic raced through the parents. Desperately, they searched for the faces of their children.

One girl ran into her mother's arms, sobbing.

Another mother fell to her knees, weeping with the realization of her son's death.

Ryo saw his parents and ran over to them and bowed; his mother took a step forward and gave him a hug.

A father looked down the hill and yelled his son's name and then disappeared over the side in search of him.

Another mother ran to Hiro and shook him by the shoulders, screaming hysterically for her daughter.

"I'm sorry," he said, bowing.

A father hugged his two daughters, while a mother collapsed next to him.

The night was broken by wails of grief and the hushed sobs of joy. Reunited families stood cuddling, while the unfortunate knelt weeping. Others gathered to comfort the ones who had lost their treasures. Hiro stood locked in a deep bow repeating he was sorry.

An old man went up to Hiro and put a blanket around him. "It's OK. You saved as many as you could."

"I could have saved them all," he said, and for the first time since the tsunami, tears spilled from his eyes. "They wouldn't listen to me," he sobbed.

"It's OK. You did your best," said the old man, rubbing Hiro's shoulders.

Ryo's father walked over and bowed. "Thank you so much. I know you have been through so much. Thank you." He bowed deeply and walked away.

Suddenly, a girl's voice broke above the hysterical wailing of grief. "*Okasan!* Mother!" she screamed over and over again, tears streaming down her face.

Hiro looked over at the sole remaining student. Erica stood screaming for her mother. Hiro rushed over and put the blanket around her and held her tight. "We'll find her. Don't worry," he said.

She put her arms around him and wept uncontrollably.

\*\*

Kumiko put another blanket over Mrs. Yagi, who was shaking uncontrollably. Her face was as pale as a corpse.

"She's got hypothermia," said her father, pushing the kerosene heater close to her.

Kumiko went to the fridge and took out a bottle of mineral water and poured it into a saucepan and then placed it on the kerosene heater. When it was hot, she poured it into a plastic bag, wrapped it in a towel, and rested it on Mrs. Yagi's forehead.

"She needs more heat," said her father. He pulled back the blankets and slid in next to her, using his body heat to warm her.

Her breathing was shallow and she began to gag.

Her father rubbed her back, but her breathing struggled. Her body trembled and

then she expelled her last breath.

“She’s gone,” said her father.

Kumiko let out a deep sigh. “She was such a nice old lady.”

Her father bowed his head and said a prayer.

\*\*

Kenichi looked at his watch, which read eight p.m., and then refocused his attention on the data he was receiving. Although the emergency cooling systems were working for all reactors, there was something definitely wrong with Unit One. It had been damaged during the earthquake, and the pressure in Reactor One had risen to more than nine times the set limit. He would have no choice but to vent the radioactive steam from the reactor if it kept increasing.

He went into Suzuki’s office. “Sir, we will need to vent or risk serious damage to the reactor. The prime minister needs to authorize the venting and the evacuation of people in a thirty-kilometer radius. We should also release the data from SPEEDI so the municipalities know where the radiation is spreading. If we don’t, people could evacuate to areas where the radiation may blow when the wind direction changes.”

The SPEEDI network is a Safety Division of the Ministry of Education, Culture, Sports, Science, and Technology that streams information from a national network of radiation detectors, called the System for Prediction of Environment Emergency Dose Information, or SPEEDI. A series of monitors, set up in 1993 in case of domestic nuclear accidents, would stream information to the Internet.

“How long do we have before we have to vent?”

Kenichi looked at Suzuki surprised. He had not expected such a logical question, considering his lack of leadership over the past few hours. “I can hold off until four, perhaps five tomorrow morning. If the batteries fail, we can open the valves manually.”

Suzuki pressed the auto dial on the phone.

Yamada’s voice came over the speakerphone. “Yes?”

“Sir, have you talked to the prime minister yet? We have been waiting for your reply,” Suzuki asked. His voice was hard and direct.

“Yes,” responded Yamada. “I’m still waiting for his decision.”

“We need it as quick as possible,” he snapped.

“I know. I will call you as soon as I get his response,” he said. His voice sounded more irritable than previously.

“We will need to vent before five a.m.,” Put in Kenichi.

Yamada glanced at his watch—8:15 p.m. If they are going to give the evacuation order, they needed to do it soon. “Damn!” he cursed to himself. He had told the media that everything was under control. When the prime minister announces the evacuation order, all hell will break loose. “I’ll call the prime minister now.”

“What about connecting power from the grid?” asked Kenichi.

“They are working on it, but all the lines were swept away by the tsunami. They have to lay new lines.”

“How long will that take?” asked Suzuki.

“They haven’t gotten back to me yet.”

“If the batteries fail before we get hooked up to the grid, we will have meltdowns in all the reactors.”

“I am well aware of that!” snapped Yamada. “Keep me updated.”

“I will,” said Kenichi.

The line went dead.

Suzuki shook his head. “What happened?”

\*\*

“Sir, Unit One is in a critical situation,” said Yamada. “We will have no option but to vent the steam.

The prime minister sat with his chief cabinet officer. “Are there any other options?” he asked.

“No,” said Yamada.

“We have no choice then. I will issue an evacuation order for people living in the area. Hold out on the venting. Once the people have been evacuated, we can vent into the atmosphere.”

“If we don’t vent soon, the reactor building could explode,” said Yamada. His tone had warning in it.

“Those are my orders,” replied the prime minister. “I’ll be at the plant first thing in the morning to check the situation myself.”

“Yes, sir,” replied Yamada and hung up.

\*\*

Tomo staggered into the evacuation center and collapsed on the floor.

“Quick! Someone get some blankets!” shouted a man rushing over to him.

Tomo lay shaking on the floor barely conscious.

A woman covered him with a blanket.

“They’re... dead,” murmured Tomo incoherently. “They all... drowned.”

“We need to get him out of his wet clothes,” said the woman.

\*\*

Seko and her neighbors reached the top of the steep hill. They had crossed over from the adjacent hill and were now out of danger from the fire. She looked up into the sky; the clouds had cleared and the stars shone beautifully.

“Shall we stay here the night?” asked one of the elderly women.

Seko looked at her and nodded. “Yes, I think we are safe from the fires here.”

The elderly lady nodded and laid her blanket on the damp ground and sat down.

\*\*

“We’ll stay here tonight,” said Taka, throwing another piece of wood on the fire.

“I need to let my aunty and grandfather know that I’m OK,” said Yukino.

“It too dangerous to go back—”

The dull rumble came from the darkness and the ground began to shake.

“Get away from the fire!” shouted Taka, pulling Yukino aside.

A jolt ran through the ground and the fire collapsed spewing hot coals over where Yukino had been sitting – and then it stopped.

“Thank you,” she said, catching her breath.

“You’re very welcome,” replied Taka. He went over and kicked the hot coals back into the fire. “We’ll stay here tonight, if that’s all right with you.”

“*Hai*. Yes,” replied Yukino.

\*\*

The residents within a ten-kilometer radius from the Daiichi plant and a three-kilometer radius from the Daini plant were ordered to evacuate at nine o’clock. People grabbed what few belongings they could and fled into the night. An elderly lady sat in her house listening to the evacuation orders blaring from the police cars. She had no family, nowhere to go, and no means of fleeing. She laid down in her futon and pulled the cover over herself as a bitter chill crept into her bones.

\*\*

Suzuki strode irately into the control room. “The evacuation order has been given,” he told Kenichi.

“What is the radius?” Kenichi asked.

“Residents within a ten-kilometer radius from the Daiichi plant and a three-kilometer radius from the Daini plant have been ordered to evacuate.”

Kenichi stood there in shock. “That’s too small an area; it should be expanded to at least thirty kilometers for the Daiichi plant and twenty kilometers for the Daini plant.”

“The prime minister authorized it,” replied Suzuki.

“They will be too close if we vent into the air.”

“We have been ordered not to vent into the air.

“Has anyone explained to the prime minister what will happen if there is a buildup of hydrogen?” challenged Kenichi.

“Yes, and the prime minister will be here early tomorrow morning.”

“This is ridiculous,” spat Kenichi. “How about people outside the evacuation zone?”

Suzuki met his gaze. “They have been told to stay in their homes and carry on with normal activities until otherwise told.”

Blood rushed to Kenichi’s face, but he managed to suppress the anger. “Have we



got any word about restoring power from the grid?"

"They are working on it as fast as they can."

"I think you should see this," said Kenichi, pointing to the console.

Suzuki looked at the gauge, and the blood drained from his face. The pressure was nine times the set limit and rising. "Why isn't the emergency cooling system working?"

"We don't know, but the water level has fallen below the fuel rods."

"What? Are you sure the gauges aren't malfunctioning?"

"I think the cooling pipes were damaged during the earthquake and the coolant is leaking. We're detecting increasing amounts of radiation near unit one."

Suzuki's face was grim. "Are you sure?"

"Positive," replied Kenichi. "And the pressure in Reactor Two is also increasing."

"How about Reactors Three and Four?"

"Stable at the moment?"

"Five and Six?"

"Stable, but we need to get power restored as soon as possible."

\*\*

Yamada hung up the phone after listening to Suzuki. The situation was worsening by the minute. He desperately needed to get back to the TEPCO headquarters in Tokyo. He looked out the window at the lights of Nagoya city; the Self Defense Force plane had taken off fifteen minutes ago, at 11:30 from Komaki Air Base. He estimated he would arrive in about forty minutes.

The plane began to bank to the left and head back the way it had come.

One of the crew rushed down to his seat. "We've been ordered back to base. All planes are to fly relief supplies to the Tohoku region, the area hit hardest by the tsunami."

Yamada shook his head in disbelief. "Who gave the order?"

"The chief cabinet officer," the crewman replied.

"Damn," Yamada cursed. Now it would be impossible for him to get back to Tokyo until the morning.

He picked up his phone and rang Suzuki.

\*\*

Mackeller and his copilot had returned to Matsushima Air Base, refueled and were now on their second mission of the night.

"When exactly did the nuclear accident happen in your dream?" asked his copilot.

Mackeller swallowed dryly. "The leak starts tonight, but the first explosion doesn't happen until tomorrow afternoon."

"Explosion?"

"Yes, three of the reactor buildings explode."

“You’re kidding me, right?”

“Not if the dream unfolds as I saw it,” replied Mackeller.

“The copilot turned and studied him for a moment.

“What?” asked Mackeller.

“Has there been any word about the condition of the plant?”

“Not unless you heard something I didn’t,” he said flatly.

The copilot could sense the irritation under his flat tone, so didn’t push the subject.

They flew in silence, the searchlight sweeping the ground below for survivors.

“Base to Black Hawk One.”

“Black Hawk One here,” spoke Mackeller into his mic.

“What’s your position from the Daiichi Power plant?”

A chill ran down both their backs and Mackeller had to swallow before he could answer. “Twenty kilometers north of the plant.”

“The Japanese government has ordered an evacuation within a ten kilometer radius around the plant. We suggest you keep well clear of the area. Wind is from the west and will continue in that direction until tomorrow.”

“Roger that,” said Mackeller. “What is the situation at the plant?”

“The Japanese government says it’s just a precautionary action and that there is no leak.” There was a pause. “But we have information that suggests the plant has lost all external power and a meltdown has already begun.”

“Roger that,” relied Mackeller. “We would appreciate any updates you receive.”

“Will do,” replied the base.

“Roger and out,” said Mackeller. He flipped his night vision up and looked at his copilot. “It’s started.”

His copilot stared at him through his night vision. Mackeller’s face was twisted with disbelief and urgency—almost panic—something he had never seen in him before. “What course should I set?” he asked, trying to sound calm.

“Let’s stay to the north of the plant,” he said, flipping down his night vision.

Mackeller started to bank the chopper when he heard bang.

“What was that?” asked the copilot.

Mackeller quickly scanned the instruments and saw the oil pressure was dropping. He looked up at the rotors and saw smoke spewing out. “Shit!” We have a problem.”

The copilot pressed buttons and flipped switches trying to restore the pressure. “I can’t restore the fucking pressure,” he swore. “We’ll have to put down.”

“Black Hawk One to base, we have a problem and request immediate landing clearance at the nearest airport.”

A voice crackled over the radio. “Base to Black Hawk what is the problem?”

“We are losing pressure and have smoke,” Mackeller said as calmly as he could, but he couldn’t hide the tension in his voice.

Fukushima airport is the closest, forty kilometers southwest of your position. I’ll patch you through.”

“Roger that,” said Mackeller.

There was a pause and then the voice said. “And good luck. We’ll send a chopper to retrieve you as soon as you land.”

“Roger that.”

There was a minute or so of silence and then a voice came over the radio. “This is Fukushima airport to Black Hawk One. Do you read me?”

“Roger, this is Black Hawk One. Request landing coordinates.”

The voice read out the approach coordinates.

“Can we make it that far?” asked the copilot.

“If we don’t push her too hard.”

Ten minutes later they saw the landing lights of the airport. “Black Hawk One to Fukushima, we have a visual on you.”

“Fukushima to Black Hawk One, you’re all clear for landing.”

“Roger—” The engine spluttered.

“Pressure dropping,” said the copilot.

“Shit!” cursed Mackeller. “Let’s put this baby down quickly.” His voice was one of command, not panic.

The chopper came over the east part of the runway and spluttered again. Mackeller could feel the power of the rotors slipping away. He scanned the grass next to the runway. “We’ll put down there,” he said firmly.

“Roger that,” replied the copilot nervously.

Under his gloves Mackeller’s knuckles were white as he fought with the control stick. “Steady! Steady!” he said out loud as the chopper hovered over the grass. Smoke billowed from the engine and the control stick shook violently. Without warning the engine cut out and the chopper began to fall under its own rotation. “Prepare for crash landing,” he shouted. The last thing he saw were the flashing lights of the fire engines racing along the runway.

## Chapter Twelve

The lights of the control room slowly dimmed as the backup batteries died.

“Damn,” cursed Kenichi.

Suzuki rushed into the control room. “What’s happening?”

“Emergency backup has failed,” replied Kenichi.

“What’s the status of the reactors?” asked Suzuki.

“Pressure has dropped in the Number One reactor.”

Suzuki’s face went pale. “How could that happen?” But he already knew the answer.

“It’s somehow leaking,” replied Kenichi flatly.

Suzuki’s mind was jolted back to a report that he had read thirty years earlier. The Americans had done a pressure test on a reactor identical to the Fukushima reactors. The test was done at the Brunswick plant in North Carolina. Air was pumped into the reactor vessel to create around seven times the normal pressure for which it was designed. What happened was that the bolts that keep the lid of the vessel on began to stretch, and then the lid lifted and allowed air to escape. The Number One reactor had reached nine times the set limit. It was just another report that had been brushed under the carpet by the Japanese Atomic Energy Agency and the International Atomic Energy Agency. “What’s the status of the other reactors?” asked Suzuki.

“Emergency batteries for Reactor Three have died, and the water level has dropped, exposing the top of the fuel rods. Pressure in Reactor Two is also rising.”

Suzuki looked at the clock on the wall that read 5:25 a.m. “Vent Reactor One as soon as the prime minister has left the plant. He will arrive shortly.”

“Are you sure?” questioned Kenichi.

Suzuki’s face was grim. “Yes.”

Kenichi went over to the console and started the procedure.

\*\*

Lights flashed around him and his face was cold with the night chill—smoke was everywhere. He was moving, lying on something. He shook his head and tried to focus; he could vaguely make out the burning wreck of his chopper. “My...copilot...where is my copilot?” he croaked.

A young woman’s face appeared over him. “He’s badly hurt and has already been taken to hospital,” she said in perfect English.

“Will he be...” He tried to get the words out, but lacked the strength.

“Yes, I think he will be fine,” she said, pulling the blanket up to his chin.

“We’re taking you there to be checked. You were knocked unconscious in the crash.”

Mackeller managed a half nod and then let his head fall to the side. On the

runway he saw a commercial jet with a long line of people boarding. He looked hard, trying to read the jet's logo. Slowly it came into focus, *Air China*. He rolled his head back and the young woman anticipating his question said. "They're fleeing." She paused and looked at the long line of passengers. "The foreigners are evacuating."

"Bloody *flyjins*. Fleeing foreigners," swore the paramedic who was pushing the gurney.

The woman shot the paramedic a glare. "What would you do if your child was studying in China and there was a massive earthquake, tsunami and then the nuclear power plant, just forty kilometers away, gave an evacuation order?" She stopped and let the words hang in the air. The paramedic lowered his head and said nothing. "That's right," she went on. "You would try to get them out as quickly as possible."

The paramedic grunted his agreement.

"The nuclear plant," croaked Mackeller. "Is it..."

The woman looked down at him. "They say it's fine. Just a precautionary measure."

Mackeller shook his head slowly from side to side.

She stared at him questioningly.

Another paramedic opened the doors and they slid the gurney in.

She watched the ambulance disappear into the darkness and wondered what the American knew about the power plant.

\*\*

Saturday, March 12, 2011, 5:40 a.m.

The mayor, Saito, and a few other town officials stood looking at a map of the area. Since the three-kilometer evacuation order had been given the previous night, the mayor had decided to prepare the whole town for evacuation the next day. The atmosphere in the room was calm considering the precarious situation down the road at the Daiichi plant.

"We'll need to get some buses to evacuate the elderly," said the mayor.

"I'll organize that," said one of the men.

"You should tell the hospital to get their patients ready for immediate evacuation," said Saito.

"I'll take care of that," said another man.

The satellite phone rang and everyone's eyes locked on it.

The mayor picked it up. "Yes," he said into the phone.

"What? Are you sure?"

Pause.

"To where?"

Pause.

"Kawauchi? Is that far enough?"

Pause.

"I understand." He hung up.

Saito and the other men had heard only half the conversation but knew exactly what the mayor was about to announce. Their worst nightmare was about to become a stark reality.

The mayor looked around at the men. "That was the central government. We've been ordered to evacuate to Kawauchi, twenty-two kilometers from here."

"I knew they were lying!" bawled one of the men.

"Not now!" said the mayor, raising his hand for the men to be silent.

"What else did they say?" asked Saito.

"They said that we would be safe there, that it's a very small leak, and we'll be able to return home soon; it's just a precautionary measure. There's no imminent danger."

"Do you believe them?" asked one of the men, his voice loaded with contempt.

The mayor's expression hardened. "Yes, I do believe our government," he said definitely. "I don't believe TEPCO, but I do believe our government."

Saito knew the mayor too well and could hear the doubt in his words, but he refrained from saying anything, not wanting to make the situation tenser than it was.

"You all have your jobs," said the mayor flatly. "Let's put the evacuation plan into action."

"Yes," said the men loudly, and then they bowed and rushed out the door.

"How long do you expect the evacuation to take?" asked Saito.

The mayor frowned. "Until late this afternoon."

"That's a long time?"

The mayor's frown deepened. "There are almost 16,000 people living here."

Saito nodded his understanding. "Lucky we distributed the iodine pills."

One of the officials rushed into the room. "All the buses have been hired by the neighboring villages to evacuate their residents."

The mayor rubbed his forehead in frustration. "Not even one?"

"They've already left. It seems we were the last town to be told to evacuate."

"How about minivans?" said Saito. "Many families own minivans and four-wheel drives. We could use them to evacuate the elderly and sick."

"Announce that we need people with minivans or spare room in their cars to help evacuate the elderly and sick," said the mayor.

"Yes," said the official, bowing.

"Saito, would you mind helping him?"

"Of course not." He headed after the man, but stopped at the door and turned to face the mayor. "It has been rumored that the nuclear workers have told their families to evacuate to at least one hundred kilometers from the plant. They began telling families and friends to leave straight after the tsunami hit. I think they know it's going to get a lot worse."

The mayor nodded slowly. "I know. I've heard the same rumors."

\*\*

Seko held out her hand, and the old lady, her hand trembling with cold, clasped it and

managed a smile of thanks. “It’s not much farther,” said Seko, smiling back. She led her slowly down the hillside. The others followed in silence, their faces grave. Seko and her neighbors had spent the night evading forest fires, clambering up and down the steep hills, and now the band of weary survivors were headed back to the ruins of their houses.

The sun was just rising, shedding an eerie glow over the destruction that lay below them. The town was gone. It looked like the aftermath of the Hiroshima and Nagasaki atomic bombs. Fires burnt everywhere across the forbidding landscape, smoke billowing upward, shrouding the town in a grey haze. Broken timber, twisted metal, crushed cars, and few skeletal concrete structures were all that remained. They continued down the slope and came out into a clearing just above where their neighborhood had once stood.

“Look!” said Seko, pointing. “Minakawa-san and Kobuchi-san’s houses are still standing.”

The two houses stood at the end of the road, halfway up the hill where Seko had stopped the car. Below that point, only a few broken roofs and splintered timbers poked out of the mud that had entombed the wreckages of their houses.

“Let’s get into the houses,” said Seko, helping the old lady down the last of the slope.

A few minutes later, they sat in silence, huddled around a kerosene heater in Minakawa’s house. Seko went over to the gas cooker and turned the switch; a flame ignited, warming her face. She went back outside and scooped up some snow in a bucket and then put it into a kettle on the gas cooker. She made coffee for the others and then checked the pantry and fridge for food. There was about a kilo of rice, ten packets of instant noodles, a few vegetables, and three pieces of fish—not much, but something. She then went next door and checked Kobuchi’s kitchen and found much the same. Unfortunately, both Mr. Minakawa and Mr. Kobuchi lived by themselves and didn’t do too much cooking. She cursed her luck and then grinned to herself. “I should be grateful for the little we have,” she muttered.

\*\*

Kenichi closed the toilet door and took out his phone and rang his wife.

“Hello,” his son said at the other end.

“Hello, it’s me. Can I speak to Mommy?”

“When are you coming home?” asked his son.

“Soon, but put Mommy on, please.”

“Kenichi!” Her voice was anxious. “What’s happening? I’ve heard people have been told to evacuate.”

“You need to take the children and leave now. Take the children to Tokyo and then buy tickets to Okinawa; go as far south as you can. I will join you there later.”

There was a short silence at the other end and then a panicked voice. “What’s going on?”

“We’ve lost all external power to the plant, and the reactors are going into

meltdown.”

There was a gasp at the other end. “Is there anything you can do?”

“We’re trying. But I want you and the kids to get as far away as possible—now! Do you have petrol?”

“I have half a tank.”

“That should get you to somewhere where you’ll be able to buy more petrol.”

“I understand. I’ll put some belongings together and leave.”

“No, just leave now. There’s no time.”

“I understand.”

“Call me when you get to Tokyo.”

“Will you be all right?”

“Yes, I’ll be fine. Go now!”

“Take care,” she said and hung up.

Kenichi put the phone in his pocket and let out a deep breath. He had no idea if he would ever see them again.

\*\*

Coughing, Sachie climbed down off another pile of wreckage. After she had helped rescue the old lady, she had spent the rest of the night searching for Yukino, but her efforts had been in vain. She was cold and exhausted and had decided to make her way back home. She followed the tree line at the base of the hill, as it was less cluttered with debris. A bitter wind blew through her wet clothes, and her body shivered involuntarily. *More snow*, she thought and looked up. Staring down at her was a high school girl, slumped over a tree branch. “Are you OK?” Sachie called. But the girl just stared down at her. “Are you OK?” she repeated and then gasped as she realized the girl was dead. Sachie stood staring into the lifeless eyes of the girl. Strangely, images of the girl’s first love, her wedding day, and her daughter’s birth surfaced in Sachie’s mind. She shook her head, trying to clear the images, but more images surfaced: the girl’s two daughters and her husband laughing at the dinner table, her family on the beach in Hawaii, her first daughter dressed in a beautiful kimono at her Coming of Age Day ceremony. Sachie shook her head again, and the images vanished. She stood a few moments, still staring into the girl’s lifeless eyes and then bowed and said, “I hope you find happiness in your next life.” She didn’t know why she said those words; they had simply spilled from her lips.

Sachie left the girl and continued in the direction of her house. She met several groups of people standing around makeshift fires and asked if they had seen Yukino, but no one had seen her. She crossed the bridge, which although the guardrail had been ripped clean off, still stood strong. She turned a corner and stopped dead, standing amongst the wreckage of a house, a young girl, around ten years old, stood screaming for her mother.

“*Okasan! Okasan!* Mother! Mother!” the girl cried.

Sachie walked over to her and put her arm around her, but the girl shrugged her



off.

“*Okasan! Okasan!* Mother! Mother!” she cried again.

“It’s all right!” said Sachie. “She’ll be back soon.”

But the girl kept screaming.

Sachie moved closer, but the girl brushed her off and screamed, tears streaming down her face. “Mother, please come home! Mother, please come home!”

Out of nowhere a woman appeared.

Sachie’s heart filled with relief. “She’s been looking for you,” she said to the woman.

The woman’s eyes were watery. “Her mother is dead; she was drowned in the tsunami.”

It was as if the last remaining glimmer of hope that remained in Sachie’s heart had been snuffed out. She stumbled away without answering. “Tomo,” she murmured. “Are you safe? I know I should look for you, but I must find my cousin – forgive me Tomo.” She fell to her knees, covered her face with her hands and wept.

\*\*

Kenichi wife watched the news on her car’s navigation system. An NHK news helicopter was flying along the coast. Below the destruction was immeasurable. Towns and villages had been completely erased from the coastline, and large parts of cities lay in ruins; fires burned and the sea was black and littered with debris. The helicopter flew over Kamaishi and filmed the crumbled breakwater wall; beached across a road was the ship, the *Asian Symphony*. The chopper continued north over Otsuchi where there was a large cruise ship perched atop a building.

\*\*

Hiro bowed and accepted a bowl of instant noodles from a man handing out food. People lay or sat all over the floor of the gymnasium—old, young, and infants, some sleeping, some talking, and others crying.

Hiro noticed Erica sitting in the far corner with her back to him. He put down the bowl of noodles and went over. On the floor around her, she had scribbled the number four with a marker pen.

He knelt down and took the pen from her. “Your mother and father will be here soon.”

Erica shook her head defiantly.

Hiro sighed. “They will come,” he told her. But his tone betrayed his words.

“Could you tell her to stop writing all over the floor?” said a woman from behind

Hiro.

“Yes, sorry,” replied Hiro.

“Why does she write the number of death? Can’t she see we are surrounded by death?” the lady said irritably.

“I don’t know,” replied Hiro, “but her parents are missing.”

The lady’s tone softened. “I’m sorry. There is an emergency information tent outside. Have you checked there?”

“No, but thank you,” said Hiro.

“We’ve all lost so much. My house was washed away. I’ve lost everything.”

“At least you and your family are safe,” he said.

The lady’s eyes filled with tears. “I can’t find my husband,” she blurted.

Hiro looked at the woman; he wanted to comfort her, but the words were stuck in his throat.

Tears spilled from her eyes. “He worked with the mayor in the town office. It was destroyed by the tsunami.”

“I’m sure he will be all right,” said Hiro, trying to comfort her.

The woman stopped crying. “I think I should go and look for him.”

Hiro said nothing.

The woman got to her feet and wandered off through the labyrinth of people.

Hiro saw the two fat boys and their parents, equally as fat, packing their few belongings into a bag. He went over. “Are you leaving?”

The mother bowed deeply. “I don’t know how to repay you for saving our sons. Thank you ever so much.”

“You’re welcome and you don’t owe me anything,” replied Hiro, returning the bow.

“We are going to Tono,” said the father. “Our house was completely destroyed by the tsunami. There is no reason to stay here.”

“How will you travel?”

“I managed to get my car to high ground on the road to Tono before the tsunami hit. The road is still open. We can stay with my brother.”

“Do you have enough petrol?” asked Hiro.

“Yes, luckily I filled up yesterday morning. Won’t you come with us?”

“Thank you, but no. I have one girl who still hasn’t found her parents. Good luck.” Hiro patted the boys on the head and went outside to the emergency tent. He inquired about Erica’s parents, but there was no news of them. He went back inside and saw the skinny boy sitting with his mother. The two of them sat staring at the floor. He walked over and sat cross-legged next to them. “Your son acted very bravely,” he said.

They didn’t look up.

“Is everything OK?” He realized his choice of words was ridiculous considering the circumstances.

The mother looked up. Her face was pale, her hair bedraggled, and her eyes hollow. “Our daughter...is...missing,” she told him, barely managing to hold back the tears. “She went to high school in Kamaishi. My husband has gone to try to locate her.”

Hiro thought about saying, *She’ll turn up. Don’t worry*, but he decided not to give any more false hope. He had witnessed the death of 80 percent of the students at his school. Instead, he offered encouragement. “I heard that the new road is open and people can get through to Kamaishi.”

The woman nodded and then stared back down at the floor.  
Hiro stood up and made his way back to Erica.

\*\*

Tomo moaned and opened his eyes. Suddenly, the memories of the day before rushed into his mind. They had turned the boat around and were heading straight at the tsunami. The wall of whitewater hit the boat ripping everyone, except Tomo who was crouched in the front, off the boat. The boat was flipped several times and then miraculously came up riding the whitewater towards the city. The buildings rushed towards him and he knew he would be crushed.

“Are you OK?” asked a middle-aged woman, kneeling beside him.

Tomo pushed himself up onto his elbows. “Yes,” he muttered.

“Would you like some soup?”

Tomo nodded.

A few minutes later she came back with a bowl. “Sorry, this is all we have.”

“Thank you,” he said hoarsely.

The lady smiled and handed him the bowl.

“How did I get here?”

“You staggered in last night. We dried you and changed you into new clothes.”

“Thank you,” replied Tomo and then he took a sip of the soup.

You’re welcome,” she said and left.

His thoughts immediately slipped back to yesterday. The boat was flung wildly across the water towards the city. Tomo hung on for dear life, his eyes wide with terror. The left side of the whitewater hit the harbor wall first spraying up and then sending a surge horizontally, hitting the boat and catapulting it into the air, saving the boat from being slammed into the wall. It plowed nose first down behind the whitewater, the surge dragging the boat into the city. He clung on as the boat was sucked down a street, waves hitting it from every direction, slamming it into buildings. The boat was swept around a corner, hit a lamppost almost capsizing and then was sucked into a whirlpool. Round and round the boat spun, Tomo almost throwing up with dizziness. All of a sudden waves ricocheted off a building pushing the boat out off the whirlpool. Tomo soaked and freezing was barely able to hold on as the boat was sucked around one more corner, slammed into another building cracking the side; water poured in and Tomo knew he was done. But then, the building’s huge glass display window shattered and the boat was washed in. Inside waves came from all sides, rocking and spinning it. The surge pushed it in deeper until it crashed against a wall. Tomo saw the stairwell and with his remaining strength leapt from the boat and scrambled up the stairs.

“Sachie,” he gasped. “I need to find her.” He got up and left the evacuation center without anyone noticing.

\*\*

Ryota sat cross-legged on the oil tank. The receding water had dragged him about two kilometers out to sea. He looked at the distant coastline that was dotted with plumes of smoke and sighed. And then he heard a voice and turned to see two girls floating on the wreckage of a roof, about 100 meters away. He waved his hands and they waved back.

“I’ll try and get over to you!” shouted Ryota.

“OK!” called back one of the girls.

Ryota had no idea how he was going to do that. The tank was stuck in the broken remains of several houses. He searched the debris for something he could use and spied a small overturned dinghy on the far edge of the debris. He crawled off the tank and made his way carefully across the piles of broken timber until he reached the dinghy. He turned it over and slid it into the sea. He picked up a broken plank of wood, got in, and began to paddle toward the two girls.

He reached them in a few minutes.

“*Konichiwa*. Hello,” he said cheerfully.

“*Konichiwa*,” they replied.

“I’m Ryota,” he said, bringing the dinghy alongside.

“I m—” the older of the two girls stopped midsentence.

Their eyes locked.

She was one of his classmates—one of the girls who often participated in the bullying.

They stared at each other for a few seconds. “Get in,” said Ryota, breaking the silence.

The two girls moved carefully over to the edge and climbed in.

“Long time no see, Ryota-kun,” said the older of the two.

“Long time no see, Karina-san,” replied Ryota flatly.

The two girls sat silently at the back while Ryota knelt at the front and paddled toward his floating mound of debris. They reached the edge, and Ryota helped the two girls onto the wreckage.

“Thank you so much. And I’m very, very sorr—”

Ryota raised his hand for her to stop. “You don’t need to say anything.”

“But I was awful to you,” Karina said, bowing her head.

“Forget about it. Now we need to survive.”

“I’m really sorry,” Karina said again.

Ryota ignored her apology. “Who is she?”

“She’s my—”

“I’m her younger sister,” the younger girl interrupted.

She was ten years old, a little short for her age, with a round face and sparkling hazel eyes. Her shoulder-length hair was tied in pigtails, and she was wearing blue jeans, white sneakers, and a pink windbreaker—all covered in mud.

“What’s your name?” asked Ryota.

“Yurie,” she replied at once.

“Welcome to my island,” said Ryota, smiling.

The girl smiled back. “What’s the name of your island?”

“Junk Island!” he said, waving his hand over the wreckage.

Yurie laughed. “That’s a good name!”

“Let’s go over there,” said Ryota, motioning to the far side. “I have some food that I salvaged from the remains of the houses.”

He led the way over the broken timbers and then over a roof to the oil tank.

“It’s flat here, easy to cook,” he said, jumping down onto the tank.

Both girls stood gawking down. Ryota had a small tent, complete with three sleeping bags, a portable gas cooker, two saucepans, plates, cups, chopsticks, and boxes of canned food.

“Where did you get all that?” asked Karina.

“The treasures of Junk Island,” replied Ryota, smiling.

“I’m so hungry,” said Yurie.

“Curry or noodles?” asked Ryota.

Yurie thought for a moment. “Could I have curry noodles, please?”

“Yurie!” Karina said crossly.

“Just curry’s fine,” she said, turning up her nose at her sister.

\*\*

Kubo stood on his balcony staring down at the destruction with the young woman he had rescued. It had taken them most of the night to get back to his house.

“I’ll make some tea,” he said.

She looked at him questioningly. “I think the town’s gas lines must have been destroyed during the quake.”

A faint smile touched the corner of his mouth. “My house has propane gas, and I pipe my water down from a spring 300 meters up the hill.”

“In that case, yes, I would love a cup of tea,” she said smiling.

Kubo slid open the door. Inside, his three daughters slept together on a futon. He raised his finger to his lips, and they both tiptoed through the living room and then into the kitchen. In the corner was a pile of broken cups his daughters had swept up. He turned on the gas cooker and placed the kettle on top.

“What do you do in Otsuchi?” asked Kubo.

“I work for the city office,” she replied.

“How long have you been working there?”

“For six years.”

“What section are you in?”

“The social welfare section. I was on my way back from a nursing home when the tsunami hit.”

“I see,” said Kubo.

The conversation ran short, and an awkward silence hung between them.

Kubo took out two plastic cups and put in tea bags and then filled them with hot water.

Natsumi broke the silence. “Where’s your wife?”

“She passed away several years ago,” he replied matter-of-factly.

“I’m sorry.”

“Don’t be. It was a long time ago.”

There was a long silence and then Kubo asked, “Are you married?”

“No, I’m still single,” Natsumi said, blushing.

Kubo held out the cup of tea and she clasped the cup and his hand with both her hands. They stared at each other for a long while, and then Kubo withdrew the cup and put it on the bench. He then took hold of both her hands and drew her close to him.

“Father’s back,” came a girl’s voice from the living room.

Kubo let go of Natsumi just as his three daughters burst into the kitchen and hugged him.

“We thought you were killed by the tsunami,” cried the youngest.

“I knew you would be all right,” said the second eldest.

“Who is she?” inquired the eldest, staring at Natsumi, who had retreated behind the counter.

Kubo pulled his daughters’ limbs from him. “This is Natsumi.”

Natsumi bowed. “Nice to meet you.”

The three girls returned the greeting.

“Your father rescued me. I had to climb a tree to escape the tsunami. But then I was too scared to climb back down.”

The eldest daughter looked at her father and grinned mischievously.

He held up his hands in a sign of innocence and said, “What?”

She looked back at Natsumi. “Come, I’ll give you a change of clothes.”

Everyone froze as a tremor shook the house violently.

\*\*

The elderly woman in Fukushima lay in her futon too cold to get up. Her house was now within the designated no-entry zone and everyone had evacuated. She looked at the framed photo of her daughter and granddaughter on the wall. Tears came to her eyes—how she wished to be with them, to hear her granddaughter’s laugh and see her smiling face. She pulled the quilt closer to her neck and closed her eyes and tried to sleep.

## Chapter Thirteen

The prime minister entered the control room flanked by an entourage of aides. The inside was dim, slats of the ceiling dangled precariously, and the main console was cluttered with car batteries the workers had hooked up so they could read the instruments.

The control room workers stood in a line and bowed.

“Bring me up-to-date with the situation,” he ordered Suzuki.

“Radioactive steam is leaking in to Reactor Building One. We think it is in partial meltdown.”

“What?”

Suzuki went on. “Reactors Five and Six have one remaining backup generator and were shut down for maintenance before the earthquake. They will most likely maintain cold shutdown. Reactor Three has lost emergency battery power, and the top of the fuel rods are exposed and the pressure is rising. Reactor Two’s pressure is also rising, but data is unclear about what is actually happening there. Reactor Four was shut down for maintenance, and there are no fuel rods inside the reactor; however, the spent fuel pool cooling system is out, and the temperature of coolant water is increasing.

“Prime Minister,” broke in Kenichi. “I think Reactor One has almost completely melted down.”

“How are you so certain?” questioned the prime minister.

“We are getting radiation readings 1,000 times above normal levels.”

The prime minister’s face hardened. “How can that be?”

Kenichi looked at Suzuki, and Suzuki nodded for him to continue. “The containment vessels for Reactors One and Three have sustained damage due to the quake. We suspect both have large cracks allowing radiation to escape.”

The prime minister stood speechless for a moment and then asked, “But how is the steam escaping the reactor vessel?”

Suzuki explained about the test done at the Brunswick plant in North Carolina.

“What is the protocol for this situation?”

Kenichi and Suzuki looked at each other.

“What is the protocol?” insisted the prime minister.

Kenichi looked straight into the prime minister’s eyes. “There isn’t one,” he said dryly.

“What do you mean?” The prime minister’s tone was one of disbelief.

“We never anticipated such a situation would occur. We were never prepared to have a total power loss from the grid as well as the backup generators—not all at the same time.”

“There must be something you can do?” he asked disbelievingly.

“If we get power restored from the grid within today, or some alternative power, we stand a chance of keeping the situation under control. We need to cool the reactors to one hundred degrees; at the moment Reactor One’s temperature is around 2,800 degrees. If we don’t cool them, they will melt down, and you could have a China Syndrome on

your hands.”

The prime minister turned to one of his aides. “What’s the update for restoring power to the grid?”

“At least three days.”

“Alternative power source?” the prime minister asked.

“There are mobile power units on the way from Tokyo, but the roads are badly damaged, making transportation slow,” he replied.

The prime minister looked back at Suzuki and Kenichi. “Is there no other option?”

“Prime Minister, there is one other option,” said Kenichi.

Suzuki looked at Kenichi surprised.

“Explain,” said the prime minister.

“If we could get some fire engines, we could pump water into the reactors and control the situation until power is restored.”

The prime minister turned to one of his aides. “Get some big machinery to clear the road, and order all fire engines from the surrounding townships here immediately.” The prime minister looked back at Kenichi. “How many fire engines do you need?”

“At least twenty.”

The prime minister turned back to his aide. “Order the Tokyo Fire Department to send thirty trucks.”

The aide took out his phone and began relaying the orders.

“Prime Minister,” said Kenichi. He knew his next words would not be received with enthusiasm. “There is one other problem.”

“Go on,” said the prime minister.

“Most of the fresh water that we use to cool the reactors was destroyed by the tsunami. It will run out by this afternoon. We will then have no choice but to inject seawater into the reactors.”

The prime minister looked at him befuddled.

Suzuki, seeing the confusion on the prime minister’s face and knowing exactly what Kenichi meant, explained. “Mr. Prime Minister, if we inject seawater into the reactors, the water will render them inoperable in the future. They will have to be decommissioned and the plant shut down permanently.”

The prime minister was silent for a moment while he weighed the consequences; he knew the loss of the power station would cause a shortage of electricity—something Japan didn’t need when its economy was just recovering from the recent world economic crisis. “I will get back to you about that. I’ll need to discuss it with the heads of TEPCO first.”

“Mr. Prime Minister, I recommend that we expand the evacuation zone to at least fifty kilometers. And I also recommend that we vent the excess pressure from the Number One reactor and reactor building into the atmosphere. The risk of a hydrogen explosion is imminent,” said Kenichi soberly.

“The evacuation zone will stay the same. I don’t want to cause any unnecessary panic.”



“Excuse me, Mr. Prime Minister, but you are putting the people in the surrounding areas at unnecessary risk,” said Kenichi.

“I will review the evacuation zone this afternoon after the freshwater injection is done.”

Kenichi couldn't believe his ears. “And the venting?”

“I want to tour the plant before I make a decision. I want to survey the damage,” replied the prime minister.

Kenichi and Suzuki looked at each other in disbelief.

“We need to vent before the pressure increases anymore. The increase in pressure could cause a malfunction of the venting system,” said Kenichi.

The prime minister's eyes bore into Kenichi. “Did I not make myself clear? I want to tour the plant and survey the damage.”

“This way, Mr. Prime Minister,” said Suzuki, leading him out of the control room.

Kenichi watched them leave and cursed the bureaucratic bullshit.

\*\*

Mackeller stared down at his copilot. Bandages covered most of his face.

“He's stable,” said the woman who had translated for him at the airport the previous night.

Mackeller turned and faced her. “What's your name?”

“Riona,” she replied.

“Nice name,” he said, smiling.

She blushed and a slight smile touched her lips.

Mackeller noticed her reaction, noticed her pretty face; her long, black silky hair and the athletic body. “Has my base contacted you yet?”

Her blush immediately disappeared. “Yes, they said that all choppers are on missions, ferrying supplies to the tsunami victims and that they will send the first available chopper.”

“Did they say what time?”

“Yes, after 1800 hours.”

Mackeller looked at his watch, eight-thirty. “Damn!” he cursed under his breath. He wanted to get back in the air and continue the supply runs.

“Are you hungry?” asked Riona.

“Yes,” he said.

A few minutes later, he sat in the kitchen with a bowl of hot noodles in front of him. “What is happening at the nuclear power plant?”

“It's under control. The government said there's nothing to worry about,” she replied matter-of-factly.

Mackeller put down his chopsticks and his gaze met hers. “Do you really believe your government?”

Her eyebrows rose. “Of course. Why wouldn't I?”

Mackeller slurped some noodles into his mouth and then stared her straight in the eyes. “Because I have been in two wars, Afghanistan and Iraq. Both wars were started by my government’s lies. The Afghan war was on the pretext that the Taliban, who my country created to fight the Russians, was harboring the Al-Qaeda. The Iraq war was on the pretext that that country had weapons of mass destruction—both blatant lies.”

She looked at him not knowing what to say.

He shoveled some more noodles into his mouth and then said. “What? You don’t believe me? You think the government never lies?” He put his chopsticks on his bowl and let out a short laugh. “That’s like saying politicians never lie!”

“The Japanese government is different. They wouldn’t lie to us,” she said strongly.

Mackeller could sense the pride in her voice, but disregarded it. “Have they told you the plant is leaking?”

“It’s not leaking. The ten-kilometer evacuation zone is just a precautionary measure. They said there is no immediate risk and there’s nothing to worry about.”

*No immediate risk*, he thought. That’s what his own government had told the ground troops in Iraq. No immediate health risks from the depleted uranium shells—a few years later the soldiers began to get sick. “My command has detected high levels of radiation around the plant. We were told to stay well clear of the plant.”

“That can’t be right,” she said, shaking her head. “They would have informed us.”

Mackeller gulped down some more noodles. He thought about telling her about his dream, but decided against it as she might think the bump on the head had made him loopy. “Can I contact my base? I’ll reconfirm it for you.”

“Sure,” she said, taking out an emergency sat-phone and dialing the number. She handed him the phone.

He pressed the speaker button. “Hello, this is Captain Mackeller, Black Hawk One.”

“Morning sir. Did you receive the message I left?” came the voice at the other end.

“Yes, thank you. Could you give me an update on the situation at the Fukushima nuclear power plant?”

“Sure. Two drones have been sent to within ten kilometers of the plant and have detected unusually high radiation levels, some a hundred times the normal level.”

“What’s the Japanese government’s response to this?”

“They said it’s a minor leak and there is no immediate health risk—nothing to worry about. They say they have the situation under control.”

“Thank you.” He hung up and looked at the expression of disbelief on Riona’s face. “Do you believe me now?”

There was a long silence and then she said. “No! It can’t be true. Your measurements must be wrong. My government says it’s under control. They wouldn’t lie to us.”

He heard urgency in her voice—urgency on the verge of panic.

\*\*

Yukino and Taka sat next to the fire with blankets around them.

“I should try to get back to my aunt’s house,” said Yukino, sipping some tea. “She must be worried.”

“Yes, I suppose you’re right,” replied Taka. He looked up and saw snowflakes drifting down through the branches. “Let’s wait until it stops snowing.”

A rustle went through the trees sending a flurry of snow down. She brushed the snow from her face. “Good idea.” She wasn’t in any hurry to leave the warmth of the fire.

\*\*

Kenichi cursed as he watched the prime minister’s helicopter lift off and head for Tokyo. He had been at the plant for over an hour and the loss of time was cutting it too close. *Why hadn’t he just stayed in Tokyo,* he thought. *He knows nothing about a nuclear power station.* “Open the vents in Reactor One,” he ordered.

“Vents system not responding,” called one of the operators.

“Damn!” cursed Kenichi.

\*\*

Kamata’s boat moved slowly through the entrance of the Otsuchi Bay. Debris floated everywhere. His eyes peered from his leathery face for anything that might tangle in his propeller. He had spent the morning searching for survivors but had only recovered several dead bodies, which lay in the stern.

\*\*

Sachie staggered through the door. Her eyes met her grandfather’s, and there was no need for words. He stood from the chair and gave her a hug.

“I tried. I looked everywhere,” she sobbed.

“It’s all right. I know Yukino will come home sometime soon,” he said, trying to comfort her.

She looked up into his eyes. “Do you really think so?”

“I’m positive,” he replied. His voice gave away no uncertainty.

She smiled and nestled her face in his chest.

Kumiko appeared in the doorway, and her father put his finger to his lips. Kumiko left them there for a few minutes and then brought a blanket and wrapped it around Sachie. “Here, change into these dry clothes.”

Suddenly, the house shook violently. The clock on the wall crashed to the floor and exploded into pieces. Kumiko ran to the other room, but a thunderous force flung her against the wall. She got up and ran to her husband’s bedside, just as a cabinet toppled

over, smashing the ornaments on top to pieces. Sachie clung to her grandfather. Another surge of energy tore through the house, and part of the ceiling fell down next to them—and then silence.

“That was a big one,” said Sachie’s grandfather.

Sachie let go of him. “How long will the aftershocks last?”

“Probably for months.”

Sachie caught sight of the body that was covered in the living room. “Who is that?”

“Mrs. Yagi. Your mother rescued her, but she died of hypothermia.”

Sachie walked over to the Buddhist altar, knelt down, and lit a stick of incense and then prayed for her soul.

\*\*

Kenichi and Suzuki stood in front of the workers at the Daiichi plant.

“The situation is this,” said Suzuki, looking around at his men. “We need to vent some of the steam out of Reactor Building One. Firstly, there is the risk of a hydrogen explosion. Secondly, we need to inject more water into the reactor to cool it, which means we will be forced to vent the reactor once the steam pressure increases inside the reactor.” He stopped and looked at the men. There was silence. “The venting system is inoperable due to loss of power; we need to manually open the vents.” He paused. Silence. He sensed the men already knew his next words. “I need six groups of six volunteers. You’ll be working in ten-minute shifts.”

To his surprise all of the hands rose, even Kenichi’s.

“Before you volunteer, you must consider that you’ll be exposed to massive amounts of radiation.”

The hands stayed in the air.

Suzuki looked at Kenichi and his men who stood with their hands raised. He was taken aback by his men’s bravery. He wondered if TEPCO’s board of directors, who sat snugly in Tokyo, would be so willing to risk their lives.

“May I suggest something?” asked Kenichi.

“Yes,” said Suzuki.

“I suggest we select by age. The older men who have already had children should do the work first.”

“I agree.” Suzuki turned to his men again. “Please form six groups of six, starting from the oldest.”

Kenichi walked to the men and began to organize the groups. A few minutes later six men, in six lines, stood in front of Suzuki.

“I will lead the first group to survey the condition of the vents,” said Kenichi.

Suzuki was about to oppose but stopped short. He knew he needed Kenichi’s expertise to make sure the job was done properly. “Don’t stay over your maximum exposure time.” He bowed deeply and the men returned his bow.

Kenichi led them out of the room.

Suzuki's phone rang and he took it out of his pocket and answered. "The fire engines are here," said the voice at the other end.

"I'll send down some men to show them where to connect their hoses."

\*\*

Tomo staggered through the remains of Kamaishi City. The buildings had been gutted and the streets piled with cars, fishing trawlers, broken houses and piles of twisted metal and broken wood. People moved like ghosts among the wreckage in search of survivors. "I must find Sachie," he muttered. An icy wind tore through him and snow began to fall. He wrapped his arms around his chest and trudged on until he came to a slope where the tsunami hadn't reached. He headed up the road passing groups of people huddled around makeshift fires—many too scared to go indoors because of the continuous aftershocks.

"Come warm yourself," shouted an old man.

"I need to get back to Otsuchi," replied Tomo.

The lower road is out but the new toll road is still open," shouted back the man.

"Thank you," replied Tomo, bowing.

Thirty minutes later, he reached the toll road but it was deserted. He started walking towards the tunnel when a truck came along and stopped. A young man, wearing a black baseball cap and sunglasses leaned out the window. "Going to Otsuchi?"

"Yes," replied Tomo, brushing the snow off him.

"Get in. That's where I'm going."

"Thank you." Tomo went around to the other side and climbed in.

\*\*

Kenichi and his team of five men stopped outside Reactor Building One. He checked his dosimeter; it showed the radiation level was around 1,000 times higher than usual. "We have only five minutes of exposure time left," he said.

His men nodded and stared at him from behind their respirator masks, their eyes wide and their bodies pumping with adrenaline.

"Let's open as many vents as we can and get out," he said.

They entered and climbed the series of catwalks to the top of the building. Below he could see the spent fuel pool; hundreds of spent fuel rods stood in the crystal clear water. Beneath the pool was the reactor's containment vessel and a labyrinth of piping. Condensation started to form on Kenichi's mask. "Damn!" he cursed to himself and then began to search the building. He hadn't been able to see it when they entered; on the far side of the containment vessel steam spurted from a crack.

Kenichi checked his dosimeter; it had almost reached maximum level.

"Open as many vents as you can," he ordered his men.

A few minutes later, his dosimeter had maxed out, and he ordered his men out.

Once outside the building, he ordered his men to go back to the control room while he went to check on the fire engines.

A few minutes later, he walked around the corner of the turbine building and saw, to his disbelief, a group of firemen at work without protective clothing.

He strode up to the man who he guessed was the chief fireman. "You need to get your men suited up in protective gear."

The man, who looked around fifty, put down the spanner he was using. "We don't have enough time."

Kenichi pointed to his dosimeter. "You and your men are being exposed to a hundred times the normal level."

The fireman shrugged. "We're almost finished."

Kenichi knew whatever he said wouldn't deter these brave men. They were on a mission to save the Japanese people and would sacrifice themselves gallantly if it would save lives.

"Let me help," said Kenichi.

"Help them connect that hose," he said, pointing to the two men at the rear of the truck.

Kenichi went over to the two young men. There wasn't the slightest sign of fear in their eyes, only determination.

He helped them connect the hose.

"OK, we're all done," said the fire chief.

"You need to get your men out," said Kenichi.

The fire chief looked hard at Kenichi. "Who's going to operate the pumps?"

Kenichi knew he was right. "Is there another fire crew who can relieve you?"

The chief nodded. "Yes, they're on standby outside the plant. But I want to make sure everything is right before we change."

Kenichi nodded his agreement and then took out his phone and dialed.

"Suzuki speaking."

"The fire engines are ready to pump water into Reactor One," said Kenichi.

"Have you vented?"

"Only a little. The radiation level was too high. It's too dangerous to send anyone back in. The radiation level is thousands of times the normal level. There is a crack in the containment vessel and steam is spewing out."

"Are you sure?"

"Positive."

There was silence at the other end. Both men knew it was a Catch-22 situation. If they didn't pump water into the reactor and cool the fuel rods, they risked a full meltdown. On the other hand, if they injected water into the reactor, more radioactive steam and hydrogen would escape into the reactor building, increasing the chances of an explosion. "Begin injecting water," said Suzuki.

"Are you sure?" questioned Kenichi.

"Yes, we'll have to try to restore power to the venting system."

Kenichi thought for a moment. "The venting system doesn't need that much power. If we could get some industrial batteries, we could rig them up and open the vents."

“Where are we supposed to get them?” asked Suzuki.

Kenichi thought again. He was actually surprised how calm he was considering the bizarre circumstances. “The Internet. Put out a worldwide plea for batteries over the net.”

“On it now!” replied Suzuki and hung up.

Kenichi pocketed his phone. “Begin the pumping,” he ordered the fire chief.

The chief hit the switches, and the pumps roared into action.

Thirty minutes later Kenichi was back in the control room. He tried to analyze the precarious situation they were in. *Why don't we have emergency batteries or mobile power units in a TEPCO warehouse in Tokyo ready to fly in by helicopter? Why hasn't TEPCO planned for this scenario?* He ran his fingers through his hair. *The Americans. The thought jumped into his mind. They have bases all over Japan; they surely have mobile power units that they use in war.* He got up and went into Suzuki's office. “Excuse me, sir, but has anyone approached the US military? They must have batteries and mobile power units.”

Suzuki looked up and sighed. “I made that request to the prime minister when he was here. He refused to get the Americans involved.”

“Why?”

“He said he wanted to show the world that Japan could handle the situation alone.”

A look of disbelief washed over Kenichi's face. “We need whatever help we can get. Forget about losing face.”

“I know, but the prime minister has the final say.”

No words came to Kenichi's lips; he just stood staring at Suzuki.

“What's the update on Reactor One?” asked Suzuki, breaking the silence.

“Water is being injected, but the temperature gauges are inoperable, so we can only guess and hope the reactor is cooling.”

“I see,” said Suzuki.

“Have you put out the request for batteries over the Internet?”

“Yes, but there hasn't been any reply.”

Kenichi thought for a moment. All they really needed were car batteries. If they had enough car batteries they could hook them up and open the vents. “Sir, we could use car batteries to open the vents.”

“We've taken all the batteries from the cars that weren't destroyed by the tsunami for the control room,” replied Suzuki.

“Send some men into town to get some more.”

“Organize it,” said Suzuki.

Kenichi returned to the control room and organized three men to go into town.

\*\*

Yukino and Taka bundled up the blankets and put them in the wheelbarrow.

“We'll go to my house first,” said Taka, tying a blue plastic tarp over the

blankets.

“How far is it?” asked Yukino.

“A few kilometers,” he replied. He gripped the handles of the wheelbarrow, lifted and started walking.

“Hope it doesn’t snow,” she said, pulling the blanket tight around her.

“Me too!”

Yukino looked at the old man pushing the wheelbarrow effortlessly through the snow. He was short and wore a black windbreaker; navy-blue work pants and black rain boots. His kind eyes were set in a leathery face that was etched with lines from many years of work outside.”

A few minutes later they exited the woods. Yukino pulled the blanket over her head as an icy wind blew across the field, whipping up snow and twirling it around.

Taka looked up at the leaden sky. “We’d better hurry. I think it’s going to snow.”

Yukino could hear urgency in his tone. “I’m right behind—”

The ground lifted and then slammed back down sending Yukino sprawling backwards. The noise was like thunder and the earth jolted again and then shook violently. Yukino climbed to her knees and saw a wave of energy ripple across the field.

“Stay on the ground!” shouted Taka over the roar.

The air boomed and the ground trembled. “I’m scare—” Yukino’s words caught in her throat and her eyes went wide with terror. A huge wave of energy ran through earth towards them. It hit throwing her back; there was a mighty crack and then all fell silent and still. She stumbled to her feet and dread immediately filled her eyes.

“Taka!” she screamed hysterically. She searched frantically in every direction. “Taka! Where are you?”

“Here! I’m down here!”

Yukino ran instinctively in the direction of his voice and skidded to a halt at the edge of a crevasse. She stared down at the old man wedged between the sides of the crevasse. “Are you hurt?”

“No, I think I’m OK,” he called up, struggling to his feet. “I’ll try to climb out.”

Yukino estimated he was about four meters down. “Stand on the wheelbarrow and try grabbing hold of my hand,” she called down reassuringly.

He positioned the wheelbarrow against the wall, climbed on and stretched his hand up. Yukino lay down and reached for his hand, but their hands were half a meter short. She edged herself over the side, keeping her legs splayed for balance. “I can’t reach you,” she cursed irritably.

Taka, standing on his toes waved his hand frantically, trying to grab hold.

Yukino edged a little further over the side. Taka bent his knees and then jumped up, his hand catching Yukino’s wrist, the wheelbarrow falling to the side.

“Pull!” yelled Taka.

Yukino pulled with all her strength, but he was too heavy—her body jerked forward. “I’m slipping!” she cried.

Their eyes locked and Yukino saw the same look as she had seen in the woman’s eyes at the harbor—terror and panic.



Taka hung there dangling from Yukino's arm. "You need to go get some help," he rasped.

His words stung her and grief welled up. The words *I need to get some help*, and the hysterical pleads of, *Don't leave me*, and then the wailing of the tsunami sirens.

Taka let go of her wrist and fell back into the crevasse.

She looked down and for a moment she thought she saw the woman's face staring back up at her.

"Go get some rope from my house," he said. "I'll be all right," he added, seeing the hesitation in her eyes.

"*Hai*. Yes," she replied, her eyes filling with tears. She slowly got to her feet. "I won't be lon—"

A dull rumble came from the distance and the ground began to tremble. She fell to her knees and looked down at Taka who stared back petrified. The rumbling grew, the earth shook and the side of the crevasse collapsed. She stared down helplessly, no words coming from her lips as the crevasse began to close—and then it stopped—only the pitter-pat sound of soil falling on the wheelbarrow.

Taka wiped the dirt from his eyes and looked up. "Hurry," he said as calmly as he could.

She nodded and rose to her feet and started running across the field. A part of her mind wanted to look back and see a waving hand—but she resisted.

\*\*

Kenichi looked at his watch, which read two fifteen. He picked up his phone and dialed his wife.

"Hello."

"Where are you?" asked Kenichi.

"We're in Koriyama about fifty kilometers from you. I only have a little fuel left, and none of the petrol stations are open."

"You need to get farther away," said Kenichi.

"I know, but all the roads to Tokyo are closed."

"Can you take the Ban-etsu Expressway to Niigata and then make your way south along the coast of the Sea of Japan?"

"No, it's closed."

"You need to get some fuel and get moving."

"I know. How is the situation at the plant?"

"Not good. Radiation levels are rising, so I suspect the fuel in Reactor One has almost, if not entirely, melted down. We are injecting water into the reactor using a fire engine, but the amount is too small, and I doubt it will stop the fuel from melting down."

"Are you all right?" she asked.

"I'm fine."

"I just received a call from Mrs. Honda. She asked me what's the situation at the plant. I asked her where she was, and she said she was still at home about fifteen

kilometers from the plant.”

“What? Haven’t the evacuation orders been given?”

“Yes, they were given, but there seems to be some confusion. People think it’s a voluntarily evacuation, so many people have remained. Also, no information about radiation levels has been made public.”

“OK, get some fuel and start moving south.”

“Take care. I’ll call you when I can.” She hung up.

Kenichi pocketed his phone and went into Suzuki’s office. “Why haven’t the people been evacuated from around the plant?”

“It’s underway now,” replied Suzuki. “There was some confusion about where the people should go.”

“Reactor One’s containment building could explode at any time and expose the people to high doses of radiation,” Kenichi fumed.

Suzuki repeated, “It’s underway now.”

“We should stop the injection of water until the people are evacuated.”

“No, we need to cool the reactor,” said Suzuki.

Kenichi could barely control his anger. “Why hasn’t the information from SPEEDI been released to the public? They should know what the radiation levels are and where it is predicted to spread.”

Suzuki sighed. “The prime minister ordered the information to be withheld to avoid mass panic.”

Blood gushed into Kenichi’s face. “Are they fucking idiots? Do they understand what is happening?”

Suzuki shrugged his shoulders. “They were his orders.”

Kenichi stormed out of the office. He went straight down the stairs and changed into a protective suit and then headed toward the fire trucks.

Fifteen minutes later he arrived. Four firefighters, again not dressed in protective gear, manned the pumps. “Stop the pumps,” ordered Kenichi.

“Why?” asked the chief.

“Just do it,” said Kenichi.

The fireman hit the switches, and the pumps came to a halt.

“Get your men out of here. The radiation level is rising.”

The fireman didn’t need to be told a second time. The chief ordered his men into the car next to the fire engine and sped off.

Kenichi looked up at Reactor Building One. He prayed it wouldn’t explode before they could vent it. He turned and headed back to the control room.

The shockwave hit before the noise of the explosion.

\*\*

The streets were clogged with cars as the mass evacuation of Tomioka town got underway.

“We’ve only moved about one hundred meters in the last hour,” cursed the

mayor.

Saito, who was sitting next to the mayor, stared straight ahead. "I think once we're out of the town it should move quicker."

"Let's hope so!"

At first, they thought it was thunder but then quickly realized what they most feared had just happened. Both men turned around and stared out the back window at the plume of smoke rising from where the Daiichi plant was located.

"One of the reactors has exploded," said the mayor, a look of disbelief and terror etched into his eyes.

Saito didn't answer but just kept staring out the window at the plume of rising smoke.

Panic broke out on the streets of the nearby towns when the evacuating residents heard what they first thought was a thunder clap but then saw the giant plume of smoke billow into the air.

\*\*

Kenichi rolled over onto his back and wiped the dust off his facemask. He stared up in disbelief at the smoke pouring from the wreckage of the reactor building. The whole top of the building and most of the upper sides were gone; only a few twisted metal beams remained.

He staggered to his feet. Faces of children from his own son and daughter's school flashed in his mind, many that he guessed were still in the area. He knew someone needed to enter the reactor building to check if the containment vessel had been further damaged, and he knew it meant that person would be exposed to massive amounts of radiation. He thought about his own children, about the camping trip they had planned for the summer holidays, about the surprise trip he had planned to Osaka's Universal Studios for his son's birthday, and about all the fun things he looked forward to doing with them in the future. He took a deep breath and trudged toward the reactor building; his life would be a small sacrifice for the well-being of thousands of children.

Minutes later he opened the door and entered. Shafts of light pierced through the smoke allowing him some visibility. The floor was littered with chunks of concrete, steel reinforcing, and broken pipes that had fallen back in after the explosion. Fires burned on the remaining walls. He could make out the containment vessel through the smoke; it looked intact except for steam, which he had observed earlier, gushing upward from the other side. He looked up and surveyed the cooling pipes; most seemed to be undamaged. He looked around one last time and then left.

\*\*

Mackeller's eyes snapped open. "It's happened," he said out loud. He jumped off the bed and ran to the nurse's station. "Where is Riona?" he asked, trying to calm the panic in his

voice.

“In the TV room,” said the nurse at the desk.

He rushed into the TV room where Riona sat watching replays of the tsunami. “The power station has exploded!” he blurted. “Is it on TV yet?”

She glared at him. “That’s not funny. Many people have died and are suffering. You shouldn’t—”

“Give me the sat-phone!” he demanded.

She took out the phone and reluctantly gave it to him.

Mackeller dialed the number and punched the speaker button. “Hello, this is captain Mackeller, Black Hawk One.”

“Yes, sir.”

He could detect anxiousness in the voice that hadn’t been there on the previous call. “Give me an update on the situation at the Fukushima nuclear plant.”

“Yes, sir.” There was a long pause. “We are getting a lot of conflicting information. Some news stations say the plant exploded, but Fukushima TV stations aren’t airing anything. Hold on a moment there’s something coming in.”

Mackeller looked at Riona. She stood there with her hand to her mouth, her face as pale as bone.

“Sir, our base has picked up an explosion at the plant.”

“Is there a radiation leak?” he asked, but he already knew the answer.

“Our base is detecting a spike in radiation. It seems to be increasing.”

“Have the authorities made a statement?”

“TEPCO and the Japanese government are saying there is no need to be alarmed, there is no immediate health risk.”

“Send a chopper to evacuate me immediately,” he ordered.

“Yes, sir.”

“We need a med-evacuation for my copilot.”

“Roger that.”

Mackeller hung up and looked at Riona. “Do you believe me now?”

Riona opened her mouth to speak, but the words caught in her throat and she nodded.

“Let’s get my copilot ready for evacuation. I want you to accompany me as well.”

“*Hai.* Yes,” she replied and headed out the door.

\*\*

Kenichi walked into the darkened control room. Panic had taken over. Suzuki stood in the middle shouting at the operators for information. The operators shouted back that the instruments were dead.

“Silence!” yelled Kenichi over chaos.

Everyone stopped what they were doing and looked at Kenichi.

Kenichi surveyed the room. It was on the verge of complete darkness; the only

light came from a few monitors that were rigged up to car batteries. “The reactor containment vessel and most of the cooling system in Reactor One are still intact.”

“How can you be so sure?” challenged Suzuki. His voice was on the edge of hysteria.

“I’ve been inside,” he said, without the slightest trace of concern.

“When?” question Suzuki.

“Straight after the explosion,” Kenichi replied. “I went in and surveyed the damage.”

No one spoke. Everyone in the room knew he had given himself the death sentence.

Suzuki broke the silence, his tone more composed. “Can we inject more water into the reactor?”

“I think so, but we have almost run out of freshwater. We have no choice but to inject seawater.”

Suzuki knew that spelt the end of the reactor. “I’ll have to get clearance from the head office,” replied Suzuki.

“The pressure in the other reactors is also rising. I suspect their cores are in meltdown, so make sure you get clearance to inject seawater into all the reactors.” He looked Suzuki straight in the eyes. “If we start injecting immediately, we have a good chance of controlling the situation.”

“But the pressure in the reactors is too high to inject any more water.”

“We’ll have to vent the reactors into the containment buildings,” replied Kenichi.

“How?”

“We can use the built-up pressure in the reactors to turn the turbines. It will give us enough power to open the valves.”

“Do it,” said Suzuki.

Kenichi nodded.

“I’ll make the call to the head office,” replied Suzuki. His voice now seemed to have a hint of optimism in it.

“Have we heard anything about hooking back up to the main grid?”

“Nothing,” answered Suzuki, shaking his head.

“Find out, please,” said Kenichi.

Suzuki rushed to his office.

Kenichi took out his phone and dialed the chief fireman. He ordered the chief and his men to suit up in protective gear and then move in and set up hoses so they could inject seawater into the three reactors. Next he instructed his men on how to vent the reactors.

The three men he had sent into town entered the control room.

“Did you get any batteries?” he asked anxiously.

“No, all the shops were closed. Nothing was open.”

Kenichi couldn’t believe his ears and blood boiled beneath his skin. “What do you fucking think?” he exploded. “The fucking towns have been evacuated.”

The three men stared at him dumbfounded.

“You fucking imbeciles! Why didn’t you throw a brick through the shop window and take the batteries!”

“That would be looting,” said one of the men.

“Do you fucking think anyone cares a shit if you take some batteries to stop the other reactors from exploding? You’d be god damn hero, if anything!”

The men stood staring at him in silence.

“Get out of here!”

The men bowed and left.

He then sat back and thought over the crisis they were in. Everything was happening too quickly. *It shouldn’t be escalating this fast*, he thought. And then he let out a deep sigh. *Will we be responsible for the destruction of Japan?*

Suzuki punched the speed dial button.

“Yamada speaking.”

Suzuki went straight to the point. “We need to start injecting seawater into the three reactors, or we will lose complete control of the situation.”

There was silence at the other end. Yamada understood what that meant.

“Can you hear me?” asked Suzuki.

“Yes,” replied Yamada.

“Can you get me authorization?”

“I will try,” replied Yamada, but his words lacked enthusiasm.

“I need immediate authorization,” insisted Suzuki.

“I’ll call you back.”

“When will we be hooked back up to the grid?” Suzuki added quickly.

“I’ll find out.” He hung up abruptly.

\*\*

The CEO of TEPCO, Mr. Omori picked up the phone. “Omori speaking.

“This is Yamada.”

“Yes?”

“I just received a call from Suzuki,” he said flatly.

“Go on.”

Yamada explained what Suzuki had told him.

“Absolutely not,” he barked into the phone.

“Sir, I think he’s—”

Mr. Omori hung up.

## Chapter Fourteen

Suzuki answered his mobile phone. "Did you get authorization?"

"No, the CEO refused," answered Yamada.

"Do they have any idea what is happening here?"

"I have explained."

"What about hooking back up to the grid?"

"They have laid a new cable about three quarters of the way, but the prime minister has decided to change the company. He thinks the current company is taking too long."

"Won't that cause further delays?"

"Probably," replied Yamada.

"Try again!" said Suzuki and hung up. He then went into the control room.

Kenichi looked up from the console. "Did we get authorization?"

"No, it was denied."

"Do they understand the severity of—"

Suzuki held up his hand for him to stop. "There is much confusion at the moment. Many orders, such as the evacuation orders, have been mixed up or relayed wrongly." He fixed Kenichi with an unwavering stare for few seconds and then left the control room.

Kenichi sat there pondering Suzuki's words. *Does he want me to disregard the order from the CEO and start injecting seawater?*

Fifteen minutes later he was standing with the fire chief and his men, who again were still not wearing protective gear. "Why aren't your men wearing protective gear?"

"We asked for them but were told there weren't enough to go around."

"I will organize some for you," replied Kenichi.

"Thank you."

"Are the hoses hooked up?"

"Yes, ready to go."

"Start the pumping," Kenichi ordered.

Steam billowed off the molten fuel as seawater poured into the reactor vessels.

\*\*

The truck raced through the tunnel; the driver's foot nearly pedal to the metal.

"Why are you going to Ostuchi?" asked the driver, removing his sunglasses and revealing his bloodshot eyes.

"I need to find my girlfriend," replied Tomo, looking at the speedometer that read 130 kilometers per hour.

"Hope she's all right. Lots dead in Otsuchi," he said matter-of-factly.

Tomo noticed something in the driver's voice. Something he couldn't put his

finger on. "She doesn't live near the harbor. She should be fine."

"Doesn't live near the harbor," chortled the driver. "That tsunami went as far as ten kilometers inland."

A knot formed in Tomo's stomach. "I'm sure she's fine."

"How do you know?" His question was almost a snarl.

Tomo's temper flared and blood gushed into his face. "I don't know. That's why I'm going there! Do you have a problem with that?"

The driver took off his cap, uncovering a mop of grey hair, and pulled out a bottle of sake from his jacket pocket and took a swig. "She's probably dead!" he barked. "Dead like all the others!" He turned and looked at Tomo. "Who the fuck cares?" He took another swig from the bottle and then offered it to Tomo.

Tomo shook his head. "You shouldn't drink and drive."

"Shouldn't drink and drive!" scoffed the driver. "Shouldn't live or die! Fuck you!" He took another swig.

Tomo looked at the speedometer that read 150 kilometers per hour. "Slow down! You're driving too fast!"

The driver pressed the accelerator pedal down and took another gulp.

Tomo had the sudden realization that this man wanted to kill himself. He needed to do something. "I'm sorry," blurted Tomo!

The man's foot eased off the accelerator slightly.

"Sorry for your pain, sorry for your loss." Tomo's tone was sincere.

The driver looked at Tomo and then burst into tears. "She was only ten years old...the school was kilometers inland." He took another gulp of sake.

Tomo took the bottle from the man's hand.

"This won't help," Tomo said, putting the bottle on the floor.

The man stared ahead silently.

"What happened?" asked Tomo.

"The principle was away...the deputy." His eyes narrowed. "The fucking deputy principle was in charge and tried to take the children to the designated evacuation area." He paused and tears streamed down his face. "He...should have taken them up the hill behind the school...almost all of them drowned."

Tomo put his hand on the driver shoulder.

"I want...I want to die," sobbed the driver.

The truck shot out of the tunnel.

"Watch out!" yelled Tomo.

It was too late; the truck hit the fallen tree, swerved wildly to the right, hit the guardrail and bounced across the road; crashed into the other guardrail, jackknifed and flipped over the side, rolling end over end down the hill.

\*\*

Mackeller stood on the runway, his flight jacket zipped up against the icy gusts of wind. Two soldiers leapt from the chopper and ran, crouched over to him and saluted.



Mackeller saluted back and then signaled for Riona and the paramedics to bring his copilot over. The soldiers then transferred him onto a stretcher and loaded him onboard.

“I would like you to accompany me,” Mackeller said to Riona.

“I can’t leave my duties,” she replied. “They need me here.”

He looked at her a long moment and then said. “Once the wind changes the radiation will be here within an hour. You will be exposed.”

She smiled. “You shouldn’t be so worried. The government says it’s only a small leak and there is nothing to worry about.”

He was astounded by the faith the Japanese people had in their government. How could they believe the government when the facts said the opposite? But then he thought his own people believed most of the propaganda that his own government sold them. He had believed it enough to join the army. He sighed and said. “Very well, but if you need to be evacuated later call me on this direct line.” He took out a card and handed it to her.

She took the card and bowed.

They stood there staring at each other. Both wanted to say something, but neither could bring the words to their lips. A tear spilled from Riona’s eye and Mackeller moved closer and wiped it gently away with his thumb. She nestled her face in the palm of his hand.

“I must go,” he said, removing his hand.

“*Hai*. Yes,” she replied.

He turned and jogged to the chopper.

\*\*

It was almost dark by the time Yukino returned to the field. Her footprints had been erased by the snowfall, but she knew exactly where the crevasse lay. She ran across the snow, a coil of rope over her shoulder, towards the place she had left Taka. She stopped and looked around, she was sure this was the place, but there was nothing. A gust of wind blew up a flurry of snow and she shielded her face with her hands. Her eyes darted to the woods Taka and her had left earlier that day. Without hesitation she ran back to the woods. Once standing there she took her bearing and then slowly retraced her footsteps—but there was nothing there. Suddenly, panic and fear wrapped around her; she dropped to her knees and began digging desperately through the snow. Her fingers met earth and she clawed the snow away and then slumped back on her heels, puffs of steam coming from her panting breath. Her eyes stayed pinned on the crack in the earth, the crack that was once a crevasse. “No!” she screamed hysterically. “No! Why did you take him?” Steam gushed from her throat. “You can’t have him! Give him back!” Images of the hand sticking out of the rubble, images of the woman’s face and Taka’s panic filled eyes flashed through her mind like lightning scything the darkness. “Why?” she screamed again and then collapsed onto the patch of dark earth. She dug her finger into the ground and tried to wrench the crack open. “Give him back!” she screamed. “Give him back!”

Overcome with exhaustion she fell face down. "I'm so sorry," she murmured, weeping uncontrollably. "I shouldn't have left you." She rubbed the soil with her hand and then kissed it. "I'm sorry, so sorry." She lay there weeping as the sun slid below the horizon and the cold shadow of death crept over her.

## Chapter Fifteen

Sunday, March 13, 2011

The sun crept above the horizon, its rays bringing desperately needed warmth to the survivors of the tsunami.

Sachie looked out through the smoky haze that hung over the ruins of the town. She could still see smoke rising from several areas. She put on her jacket and was about to step out the door when her mother's phone rang. She picked it up and saw the name Mariko displayed on the screen. "Hello, older sister," said Sachie, excitedly.

"I've been trying to get through to you, but all the lines were jammed. Is everyone OK?"

"Yes, we're all fine," said Sachie. "But our town has been destroyed. Only the houses on higher ground survived. Everything else has been washed away."

"I know, I watched it on my car TV."

"How about you? Are you OK?" asked Sachie.

"Yes, but the earthquake caused a lot of damage to the buildings and roads. Is our house still standing?"

"Water flooded the bottom floor, but the top floor is."

"Can Mother open the shop?"

"No, it's been destroyed. Was your apartment damaged?" asked Sachie.

"Just a few cracks in the walls." She paused. "Do you know the nuclear power station blew up?"

"No, we have no communication. What nuclear power station?"

"The one just north of Iwaki city," her older sister replied anxiously.

"Isn't that close to you?"

"It's about fifty kilometers away."

"Shouldn't you evacuate?"

"No, the government says there is nothing to worry about and that there is no radiation leak," her sister said, but her words lacked certainty.

"Are you sure? Shouldn't you leave just to be on the safe side?"

"The roads are closed and the trains are out. Anyway, I don't have enough petrol."

Just then Kumiko entered the room.

"I'll put Mother on." She turned to her mother. "It's Mariko," Sachie said and handed the phone to her.

"Are you all right?" asked her mother. "We've been trying to contact you."

Sachie left her mother to speak to her sister and went down the outside stairs.

"Where are you going?" asked her grandfather, who was working on his truck's engine.

"I'm going to look for Yukino again," she replied. "Can you fix your truck?"

"I'll have it working by the afternoon," he said, limping over to a fire he had made. "Would you like me to come along?"

Sachie shook her head. “No, I’ll be fine. By the way, Mother is talking to Mariko.”

“Is she all right?” he asked, throwing pieces of wood onto the fire.

“She’s fine, but she said that the nuclear reactor blew up in Fukushima.”

Her grandfather stopped and stood up straight. “What? Are you sure?”

“Yes, but there is no radiation leak,” she said.

A worried look came into his eyes. “I wonder if that’s true? I don’t believe the big companies or the government. I’ll try to get some information from the radio. She should get as far away as possible just in case there is a leak.”

“The roads and trains are out, and she doesn’t have enough petrol.”

“I’ll see what I can find out. Anyway, make yourself warm before you leave.”

He poured some kerosene over the wood and then took out a match, lit it, and threw it on the wood. The fire blazed to life.

“Thank you,” said Sachie. She walked over and let the flames burn warmth into her body.

“Where are you going to look?” asked her grandfather.

“I’ll head for Seko’s house. She might be with her.”

“Can you get across the river?”

“I’m not sure, but I’ll try,” replied Sachie, rubbing her hands together over the fire.

Her grandfather threw another piece of wood on the fire. “Be careful—”

The ground began to tremble.

“Sounds like a big one,” said Sachie, quickly stepping away from the fire.

The earth shook and then a surge of energy ran through the ground and the fire collapsed—and then silence.

“That wasn’t such a big one,” said her grandfather, kicking the burning wood back into the pile.

“That was the two hundred and fiftieth aftershock since the earthquake.”

“How do you know?”

“I’ve been counting. We had seventy on the first day and one hundred and forty on the second day, and that was number forty for today, but I don’t count the small ones.”

Her grandfather’s eyebrows lifted. “Interesting!”

“I’ll be back later. Bye,” she said, zipping up her jacket.

He waved good-bye and watched her trudge through the mud and debris and then disappear around a corner.

Sachie headed toward the south part of the harbor. The going was tough; all the roads were buried beneath a layer of mud with broken wood, twisted metal, and crushed cars. Several times she had to make long detours around fires. Everywhere people were searching the ruins for loved ones and survivors. Sachie looked up and could just make out a patch of blue sky though the smoky haze. A cold breeze blew off the mountains, ruffling her hair; she took out a woolen cap and pulled it over her head.

She continued, for the best part of an hour, until she came to the river. There was no way to cross; the bridge was gone, and in its place were jagged chunks of concrete that

had been swept up from the harbor. Sachie turned west and headed along the river. She stopped and stared at the four-story concrete apartment building that lay on its side, broken pylons protruding from the base. She couldn't even begin to imagine the force that would be needed to uproot such a building, and then she remembered the building that had risen out of the water and toppled over, throwing the people into the churning water. The same thing must have happened to this building. A bitter wind blew through her, and she pulled her cap down over her ears and continued for a few more minutes when she spotted two men dragging the body of an old woman from the river. Over the next two hours, she came across three bodies. The first was a young man in his early twenties. He was still in his suit and tie and had a deep gash to the neck; she thought she recognized him from the town office. The second one was a fireman; the top half of his body protruded from the mud just below the riverbank. The third was a small girl dressed in a red dressing gown; she lay atop the remains of a house, her skin unmarked, her hair tied neatly in a ponytail, and her hand still clasping a teddy bear.

Sachie fell to her knees crying. "Why her?" she screamed out loud. "Why are you so cruel?" Without warning, the ground lifted and then slammed back down. "Take me if you wish!" she yelled. The ground shook violently, the noise thunderous. "You don't have the guts," she yelled out in defiance. The ground lifted again and tore open right next to her. "Come on!" screamed Sachie.

The shaking stopped and the noise rumbled away.

Sachie climbed up the remains of the house and carried the girl down in her arms. She stood, holding the dead girl, wreathed in destruction, tears streaming down her face. "It's not fair!" she screamed out loud. She forced herself along the river for another thirty minutes until she came across a group of men standing around a fire in a drum can. The men fell silent and then one of them took the girl's body from her and covered it with a blanket. They exchanged bows, but no words were uttered. There were no words that could match such a tragedy. The rest of the morning, she walked aimlessly along the riverbank, the girl's face stuck in her mind. She heard some music and turned and followed the sound. She climbed up a pile of wreckage and looked over. A woman, surrounded by a group of people, sat on a milk crate playing the guitar. Sachie climbed down and made her way over to them.

"I'm going to play the national anthem," said the lady. "Please sing along."

She started to strum her guitar and sing.

The song, "Kimigayo," was the national anthem, but she sang it differently; the melody was brighter and livelier. Her voice was angelic; it was the purest sound Sachie had ever heard. Sachie began to sing, and the other people followed; she sang from her heart with all her might.

*"Kimigayo wa chiyoni yachiyo ni sazare ishio..."*

The woman finished playing and everyone clapped. She put down the guitar and walked over to Sachie. "What's your name?"

"Sachie."

"My name is Toshimi. Glad to meet you," she said, bowing.

“Glad to meet you too,” Sachie said, returning the bow. “That was the most beautiful song I’ve ever heard.”

The woman brushed her long black hair from her face, and a faint smile brushed her lips. “Music always cheers people up. I wanted to thank you for singing. That was the first time these people have sung today. Your lead got them started.”

“I didn’t do anything.”

The woman smiled at Sachie’s modesty. “Would you like some tea?”

“Yes, please.”

\*\*

Seko opened the door and stepped into the house. Her neighbors were huddled around a kerosene heater chatting.

“Could you get across to the other side?” asked Mrs. Sasaki.

“No, the bridge has been washed away; it is impassable.”

“She needs to get her medicine,” said Mrs. Sasaki, pointing to the old woman lying on the floor. “She’s diabetic.”

Seko took off her gloves and went over to the heater. “I know. If no one comes, I will have to go over the mountains and try to get some medicine,” she said, warming her hands above the heater.

“Isn’t that too dangerous? The mountains are very steep,” said one of the old men.

“I know the mountains well. I have done it before.”

\*\*

Ryota slid a piece beef jerky onto a hook.

Karina popped her head out of the tent. “What are you doing?”

“Fishing. I’m going to catch us a meal,” replied Ryota.

“Do you really think you’ll catch anything?” Karina asked sarcastically.

“We’ll never know unless we try,” replied Ryota.

Karina crawled out of the tent. “I think you’re wasting good food.”

Ryota ignored the comment. “What’s your favorite fish?”

Karina stared at him as if he was an idiot. “Aren’t you listening to me?” she huffed.

“Shut up, sister!” said Yurie, crawling out of the tent.

“You shut up!” spat Karina.

“Why don’t you help instead of complaining,” said Yurie, turning up her nose.

Ryota smiled to himself.

“Can I help you?” asked Yurie.

“Sure. Could you pass me that knife?”

“You two are wasting your time!” scoffed Karina.

Yurie looked at her older sister. “Well, we’ve got a lot of time to waste.”

Karina huffed and crawled back into the tent.

Ryota grinned at Yurie, and she gave him the same idiotic stare as Karina had just given him; they both giggled.

“OK! Let’s catch some fish,” said Ryota. He stood up and cast his line out.

“Wow! That went a long way,” said Yurie.

“So-so,” replied Ryota. He slowly wound it in and cast again.

“Can I try?” asked Yurie.

“Sure.”

Ryota showed her how to hold the rod and cast the line. After a few poor attempts, she got the hang of it.

“You’ve got it now,” said Ryota.

“This is fun!” said Yurie. She wound it in again and then cast out. Suddenly, the line went taut. “I’ve got something!” she screamed.

“Pull on it,” yelled Ryota excitedly.

Yurie pulled on the line. “I’m not strong—” Her feet slipped and she fell back.

Ryota snatched the rod from her and pulled the line taut; he then released it and reeled in the slackness. He repeated it several more times until the fish was alongside the tank.

“It’s really big!” exclaimed Yurie.

Ryota heaved and a silver fish came flapping onto the tank. “Quick, pass me the knife!”

Yurie passed him the knife, and Ryota quickly silenced the tuna.

“Yes! Yes!” shouted Yurie, clapping her hands and jumping up and down.

Karina stuck her head out of the tent to see what all the commotion was about.

“Look, we got one!” said Yurie.

Karina crawled out of the tent.

Ryota stood, a big grin plastered across his face, holding the fish. “Tuna!”

Karina stood there with an embarrassed look on her face. “It’s...a big one,” she said awkwardly.

“How would you like your tuna?” asked Ryota.

“Grilled,” shouted Yurie.

“And Karina?” asked Ryota. He laid the fish on the tank’s metal surface.

“Uh...grilled. That would be fine.” She felt like a real fool. He wasn’t an idiot like she thought he was at school. He was bright, smart, and very resourceful; she was beginning to like him. “Can I...help?” Her words stumbled out guiltily.

“Yes, you can scale the fish.”

Karina shrugged her shoulders. “How do I do that?”

\*\*

Tomo woke up shaking uncontrollably. His body ached and his head throbbed and there was a bad taste of blood in his mouth.

“Where am I?” he murmured to himself Yukino lay snugly in the futon, a beam

of sunlight streamed through the crack in the curtains warming her face. Her eyes flickered open and she looked around trying to get her bearings. There was an old chest of drawers against the wall to her left and tattered curtains half hid the sliding glass doors on her right. She propped herself up on her elbows to see the paper door in front of her. All of a sudden, the memories of the day before flooded back into her mind and she fell back, covered her eyes and wept. "I'm sorry," she mumbled, tears sliding from beneath her hands.

"Sorry for what?" The paper door slid open.

Yukino's hands fell away and she peered up into the smiling face of Taka. "Taka-san," she yelled with glee. She jumped up and hugged him. "You're alive!" Tears of joy streamed down her face. "I thought...I thought you were dead."

Taka hugged her tight. "I managed to make some foot and hand holes and climb out."

Yukino buried her face into his chest. "You're alive, right? This isn't a dream, is it?"

Taka pushed her back gently so she could see his face. "No, dream. I am for real," he said smiling.

Yukino wiped her tears back and asked. "What happened to the crevasse?"

"I was lucky. Just after I climbed out, there was another aftershock and the crevasse slammed shut."

Guilt flooded her eyes and she turned her face from his.

"I'm safe. There is no one to blame," he said, touching her chin with his finger and guiding her face back to his. "No one to blame," he repeated softly.

"But...I was too late."

"I'm safe," he repeated, grinning.

Yukino nodded and managed half a smile.

Taka's eyebrows rose. "You were the one who almost died."

Yukino suddenly remembered she had no recollection of what had happened after she had collapsed onto the bare patch of earth. "How did—"

Taka put his finger to his lip and then said. "I thought I would pass you on the way back, but you must have taken another path. When I arrived home and found you weren't here I went back looking for you. I found you unconscious on the ground, almost frozen to death. I carried you back and put you to bed."

"*Arigato gozaimasu.*" Thank you so much," Yukino said bowing.

"You're welcome," he said. "Now, would you like some tea and something to eat?"

"Yes, please."

They went into the kitchen. A small room, the bench strewn with plates, cups and bottles. A small table also a mess with sauce bottles, cereal and cookie boxes and a few vegetables.

Yukino sat at the table while Taka started cooking. She thought about what had happened in the last two days. How vulnerable humans were to Mother Nature's forces. How life could be stolen from someone so quickly. How many people had not had the



chance to thank or say goodbye to their loved ones? What was life? She started to sense something. A warm feeling started to kindle inside her. She closed her eyes and let the sensation take her; she saw the oceans, rivers and mountains; could feel the gentle caress of the wind and the smell of mountain air. Her spirit was alive, exhilarated by the elements. She felt strangely content, the horrible wanting for material things gone. Her eyes opened and she looked around at the all the material things that cluttered the house. In that moment, a timeless moment of past, present and future, she realized how terribly wrong the world was. How humans had strayed from their natural spiritual path onto a material, consumer road, which was imprisoning their spirits and raping the planet of its life.

“Are you OK?” asked Taka, noticing the new look on her face.

A glowing smile spread across her face. “I’m perfect,” she said softly.

\*\*

He tilted his head to the side and saw a man; his face caked with blood, lying next to him. He forced himself to sit up and realized he was in the overturned truck sitting on the ceiling. He nudged the man next to him and the man groaned. *At least he’s alive*, he thought.

He struggled in the confined space to get on his knees. He then took hold of the door handle, pushed the door open and pulled himself out of the truck. He lay there panting, the morning sunlight warming him. After a while, he crawled around the truck and pulled the unconscious man out and covered him with a blanket he had found behind the driver’s seat. He then fell back and let the sunlight warm him, his thoughts drifting to Sachie. He had to find her and explain what had happened between Yukino and him. He needed to tell her before Yukino did. He thought back to the BBQ at Seko’s house last summer. It had started just like any other BBQ, the girls had chopped and readied the food and the men were cooking. Beer, Shochu and sake were flowing well, and conversation was loud with cheers and raucous laughter. As the afternoon moved into evening the women dragged their drunken boyfriends away and drove them home.

It was about nine when only Yukino and he remained. And that’s when—”

“Water,” groaned the man.

Tomo crawled over to him. “How are you?”

“Uh...water...where am I?” His voice was rusty as if hadn’t been used in years.

“We crashed. Don’t you remember?”

“Uh...no...water,” he replied.

Tomo guessed he was suffering from bad concussion, mixed with a hangover. “I’ll get some water.” He crawled back to the truck and took a bottle of water he had seen earlier from behind the driver’s seat.

“Eri-chan!” screamed the man. “Eri-chan!”

Tomo scrambled back over to the man. “It’s all right,” he said, putting the bottle to his lips.

The man drunk deeply, almost choking on the water.

“Slowly,” said Tomo.

The man pushed the bottle away and spluttered. “Eri-chan!”

“It’s OK,” said Tomo, trying to calm him. He guessed it was the name of his daughter who had drowned.

“Eri-chan!” screamed the man hysterically. “Eri-chan!”

\*\*

Kubo and Natsumi sat in the kitchen drinking coffee. They had slept together last night, but it had been innocent—just a few hugs and kisses, nothing more.

“You have a lot of spare room,” said Natsumi.

Kubo knew what she meant. “Yes, we should bring some of the people here who have lost their homes.”

Kubo told his daughters to tidy the house and put the spare futons in the living room. Natsumi and he spent the rest of the morning looking for people who had no shelter. By the end of the midday, they had ferried twenty-two people back to his house.

\*\*

Hiro sat next to Erica, who was scribbling the number four in a notebook he had found. He was worried that she was withdrawing into herself.

“Would you like some biscuits?” asked Hiro.

She didn’t respond, just kept scribbling the number four, the number of death.

“They’re very good,” he said, biting one.

She didn’t respond.

Hiro put the biscuits next to her, next to the bowl of noodles and the orange she hadn’t touched. He got up and made his way through the maze of people on the gymnasium floor. Some were sleeping, but most were sitting, and a low murmur of chatter filled the gym.

He was halfway across when the gym suddenly went silent. A man, holding the body of a high school girl in his arms, stood in the entrance. There was complete silence; everyone’s eyes were fixed on the man.

“Tomomi!” shrieked a woman.

Hiro searched for the woman who owned the voice. He caught sight of her frantically making her way to the man. And then his heart stopped; following her was the skinny boy. He remembered the mother had said her husband had gone looking for their daughter in Kamaishi.

The man fell to his knees and laid the limp body of his daughter on the floor.

“Tomomi! Are you all right?” There was a strange sense of hope in her voice. A hope that everyone in the gym knew was false. “Mommy’s coming!”

No one said a word as they watched the horrifying scene play out.

She reached her daughter’s body and knelt down and brushed her matted hair from her face. “I’m glad Father found you.”

The lifeless eyes of her daughter stared back at her.

“You must be hungry. Would you like some noodles?” she asked.

Her husband put his hand on his wife’s shoulder, and she looked up into his tear-filled eyes. “She’s de—” But the word got stuck in his throat.

She bent down and gave her daughter a hug and said, “It’s all right. I know you’re tired. You need to sleep.”

The skinny boy stood behind his mother, staring at his dead sister. His face showed no grief, no pain.

An old woman came over and knelt beside her. “I’m sorry for your loss, but your daughter is dead.”

“I’ll make your favorite spaghetti when you wake,” said the mother as if the woman hadn’t spoken.

“She’s dead,” repeated the woman.

The mother stroked her daughter’s hair and began to sing a lullaby to her.

An eerie tune floated through the air, and no one said a word.

The woman closed the dead daughter’s eyes and then put a blanket over her and pulled it up to her neck. “She’s asleep now,” said the woman, smiling.

The mother stopped singing and tucked her daughter in.

Hiro let out a sigh and continued to the other side of the gym.

\*\*

The elderly lady in the no-entry zone stood hunched over in her kitchen; her body was shaking violently from the bitter cold. Snow was falling diagonally, and gusts of wind shook the house. She opened the fridge and took out some cabbage and tofu—the last of her food. She looked out the window and wondered if anyone would come for her.

\*\*

The residents of Tomioka town had reached Kawauchi a few hours after the explosion at the Daiichi reactor the previous day. The Kawauchi mayor had prepared for their arrival, and they’d been given temporary shelter in gyms and community centers.

“Have you heard anything from the central government?” asked Saito. He was sitting opposite the mayor in a small room in the community center.

“Nothing much, just that we’re safe here and there’s nothing to worry about.”

Saito frowned. “Do you really believe what they are telling you?”

The mayor took off his glasses and rubbed his eyes with the back of his hands. “Yes, I do. I don’t think the government would be so irresponsible as to put its citizens in unnecessary danger—especially young children and women.”

“I guess you’re right,” said Saito. “It’ll probably be over in the next few days, and we’ll all be able to go home.”

A slight smile flickered across the mayor’s lips—the first smile since the tsunami had decimated half his town. “We’ll be home soon and things will be back to normal in no

time.”

Saito forced a smile, but he knew, and the mayor knew as well, that it was just not possible, but his words gave hope for the time being.

“Have you been able to contact your wife and family?” asked the mayor.

“Yes, they managed to get through to me last night. They’re fine and are going to stay in Okinawa until this all blows over.”

\*\*

Suzuki answered his phone.

“Who gave the order to inject seawater?” asked Yamada.

“No one,” replied Suzuki. “The orders seemed to have gotten confused, and Kenichi started to inject seawater.”

“There are a lot of pissed off people here in Tokyo.”

“Do they actually understand the severity of the crisis?” countered Suzuki, his voice tinged with anger.

“They are concerned that the reactors will be unusable in the future.”

Suzuki’s voice took on an annoying tone. “Tell them that’s right—the reactors are wrecked. Tell them to stop worrying about profit and start thinking about the safety of the Japanese people.”

There was silence at the other end.

“Tell them if we don’t get power restored ASAP the crisis will go to a whole new level.” He paused to let the words sink in. “If there is a major radiation leak, they will be up for an unimaginable amount of money. There will be decontamination costs, damage to business, lawsuits, and an endless list of compensation—enough to bankrupt the company.”

There was no reply.

“Did you hear me?” asked Suzuki.

“Yes.”

“When will we get power restored?”

“Soon,” replied Yamada.

“When is ‘soon’?”

“I’ll get back to you.” He hung up abruptly.

Suzuki slammed the phone down.

“Excuse me, sir.”

Suzuki looked up to see Kenichi standing in the darkened doorway. “Yes.”

“You asked me for an update.”

“Let’s hear it.”

“It’s difficult to know exactly what is happening inside the reactors because most of the systems are nonoperational.”

“What do you presume is happening inside the reactors?”

Kenichi ran his hand through his hair slowly, as if trying sooth his nerves. “I guess Reactor One has had a complete meltdown, and the nuclear fuel has burnt through

the reactor vessel and is sitting like a blob of molten lava on the bottom of the containment vessel.” He paused and looked at Suzuki.

Suzuki stared back at him flatly. “And the other reactors?”

“Seawater is being injected by means of fire engines, although much of the water is leaking from the cracks and flooding the turbine buildings. Radioactive steam is also gushing out into the atmosphere.”

“Why do you think Reactor One has had a complete meltdown?” asked Suzuki.

“Because of the type of radiation that is being released. This type of radiation is only generated when there is a meltdown.”

Suzuki leaned back in his chair. “Go on.”

“Reactor Two fuel rods seem to be still covered by water, but the temperature and pressure is increasing. We’ll need to vent the reactor to lower the pressure so we can inject more seawater. I’m also concerned if the rods get exposed and hydrogen leaks into the containment vessel, the hydrogen could travel through the venting pipes into Reactor Three; there is no backflow valve to prevent this.”

Suzuki let out an exasperated sigh. “Continue.”

“Reactor Three is basically in the same situation as Reactor Two, but if the hydrogen travels to Reactor Three, we will have a much greater buildup of hydrogen.”

“What does that mean?”

“We could have a small nuclear explosion,” replied Kenichi.

“What?” said Suzuki, gawking at him.

“An explosion equivalent to a small nuclear bomb. If the venting system fails, the buildup of hydrogen will be double that of Reactor One.”

“What do you suggest we do?” asked Suzuki.

Kenichi looked him straight in the eyes. “Blow a hole in the side of the building or drop something from a helicopter onto the roof to create a hole and allow the hydrogen to escape.”

Suzuki shook his head. “No, let’s keep our heads together. Try venting the reactor buildings first.”

Kenichi nodded.

“And Reactor Four?” asked Suzuki.

“Reactor Four was shut down for maintenance before the earthquake, and all the fuel rods are stored in the spent fuel pool. However, I think the water has dropped below the top of the fuel rods, and a partial meltdown will occur soon if we don’t get some water into the pool.” He paused and looked Suzuki straight in the eyes. “You are aware that the spent fuel pool in Reactor Three contains a different fuel and could release plutonium into the atmosphere?”

Suzuki nodded. “Yes. I’m aware. How about Reactors Five and Six?” His voice was vacant of panic or stress. It was flat and logical.

“We have managed to restart one of the generators and are injecting water, they should be fine.”

“Thank you,” said Suzuki.

“Do you have any new orders for me?” asked Kenichi.

Suzuki fixed his eyes on him. “Do whatever you can to contain the crisis. I’m not following orders from the head office anymore. It’s up to us now.”

“I understand. Have you heard when the power will be restored?”

“Soon is all they say.”

“When is ‘soon’?”

Suzuki shrugged his shoulders. “They’re going to get back to me.”

\*\*

Taka put on his coat and then handed one to Yukino. “It’s a bit big, but it will keep you warm.”

Yukino shrugged into the coat and stood there grinning. Her hands were lost under the long sleeves and the length dangled just above her ankles. “I must look like a sack of potatoes.”

Taka’s raised his eyebrows. “No...it suits yo—” He burst out laughing.

“Maybe I should go in a fashion contest,” said Yukino and began laughing.

Taka let out another burst of laughter.

Yukino saw the joy in his face and a sudden bitterness welled up in her and she sunk to the floor crying.

The joy vanished from Taka’s face and he quickly knelt next to her. “What’s wrong?” he asked.

Yukino wiped the tears back. “What’s wrong?” her voice rattled with anger. “Everything is wrong!” She put her face in her hands and sobbed. “The tsunami has destroyed everything—killed so many!”

“It’s OK,” said Taka, rubbing her back.

“No it’s not!” she sobbed, taking her hands from her face. Tears streamed down her cheeks. “Many died without knowing the real world!”

Taka stopped rubbing her back. “Sorry, I don’t understand.”

Yukino wiped her tears on the jacket sleeves. “They didn’t experience the real riches of the earth.”

Taka knelt there not knowing what to say, or what she was saying.

“They were too caught up in the material world. Too caught up in media, work and shopping. They preferred to watch the TV rather than watch the sunset. They chose to play computer games and use iphones rather than talk. They wasted so much time on shopping for things they didn’t need.” She stopped and looked at Taka. “Now they’re gone and it’s too late.”

Taka, all of a sudden understood what she was saying. “Not all of them.”

Yukino wiped the tears off her cheeks.

“Some people love the nature the world offers. I am one of those. I don’t have a TV and I don’t buy things I don’t need. I love to watch the sun rise and set.”

“Are there many like that?” asked Yukino.

“Yes, many,” he replied, patting her on the head. People are beginning to wake

up and see the real beauty of life. Starting to realize that what the mass media celebrities do is just commercialism. More and more people are beginning to use renewable power and live self-sustaining lives.”

“Really?”

“Really,” he said smiling. “I’ll explain it to you once things get back to normal.”

“Do you think things will ever get back to normal?”

“Of course,” he replied, getting to his feet.

“But the town has been destroyed.”

“Rebuild,” he said, offering his hand.

“Can you?” she asked, taking his hand.

He pulled her to her feet. “Anything can be achieved if you believe it can.”

She smiled and nodded.

“And now I should get you home,” he said, sliding the front door open.

They stepped out into cold.

“It’s freezing,” said Yukino, pulling the hood over her head.

Taka ignored her words. “We’ll have to go that way. I don’t think we can get through the other way.”

Yukino nodded.

They followed a path along the bottom of the hills until they came to a small river with a narrow wooden bridge.

“It doesn’t look safe to cross,” said Taka, surveying the bridge that tilted dangerously to one side. “It’s been badly damaged.”

“I’ll cross first. I’m lighter,” said Yukino.

“What? It’s the other way around. The heaviest goes first and then the lighter follows.”

Embarrassment flushed Yukino’s cheeks red. “OK...I guess you’re right.”

Taka lifted his eyebrows. “I guess I am.”

He stepped out onto the bridge and tested his weight against the structure. “Seems OK so far.”

“Be careful,” said Yukino.

He took two more steps.

Yukino held her breath.

Another step and the wood made a groaning sound.

“Be careful,” whispered Yukino.

Three more steps.

No sound.

Yukino’s heart was racing and she pulled her hood off to cool the sweat on her forehead.

Four more steps.

“I think it’s OK!” shouted Taka without looking back.

Yukino let out a sigh of relief.

One more step.

The rumble came from the north.

“Earthquake!” yelled Yukino.

Taka turned and she could see panic manifested in his eyes.

“Run!” she screamed.

The ground jolted and the bridge twisted, throwing Taka down. He hung on as the bridge began to rattle and the shake.

“Run!” screamed Yukino over the din.

A wave of energy surged through the ground and the bridge buckled, lurched to the side and then collapsed into the river.

“Taka!” screamed Yukino. She ran to the edge and searched the broken remains.

“Taka!” she screamed again, but he was gone.

Without thinking, Yukino stripped down to her underwear and dived into the frigid water.

\*\*

“I don’t think anyone is coming,” said Seko, looking at her watch. “I need to get the medicine for her.”

“Are you sure you know the mountains well?” asked one of the old ladies.

“Yes, I have hiked over them many times.”

Seko went over and checked what food they had. “You have enough food for tomorrow and the next day. I should be back by then.”

“What if something happens to you and you don’t come back? Our mobile phones have lost reception since the earthquake,” said Mrs. Sasaki. “We have no way to communicate to the outside world.”

“If I don’t come back, you’ll have to find another way.”

Mrs. Sasaki nodded reluctantly. “Be careful.”

“I will.” Seko took a flashlight and a bottle of water off the bench and put her gloves on and left the house. She stopped and took out her mobile phone; the battery was almost flat, so she turned it off to save the remaining power. When she got over the mountain she might get some reception and be able to call for help. She then climbed to the edge of the forest, looked down at the house her neighbors were sheltered in, and then disappeared into the trees.

\*\*

Tomo crawled back to the man. “Wake up,” he said, nudging his shoulder.

The man’s eyes slowly opened. “Where...am I?”

“We had a car crash. Don’t you remember?”

The man pushed himself groggily onto his elbows and shook his head.

“Are you OK?” asked Tomo. “We need to try and find some shelter before it gets dark.”

The man looked at Tomo without answering and then stumbled to his feet. “Eri!” he howled. “Eri!”



Tomo stood up. "Are you OK?"

The man swung around his eyes glinting madness. "You killed her!"

"What?" replied Tomo.

"You killed my Eri-chan," he rasped like a madman.

Tomo put his hands up in a gesture of innocence. "No, I've never even met her."

"You killed her!" he swore, clenching his fists and stepping forward.

"No! No!" He never saw right hook coming.

\*\*

Sachie trudged toward her home after spending a few hours listening to Toshimi's singing. Although she hadn't found Yukino, her heart was happier; the burden she was carrying felt lighter. She hummed the tune to herself, and a smile grew across her face, and a shimmer of hope lit her eyes. "Everything will be fine!" she said out loud.

\*\*

Hiro sat with Erica while she continued to scribble the number four into a notebook. She had withdrawn into herself and refused to eat or drink. He took the blanket off the floor and wrapped it around her; she didn't respond.

He sat back down and stared aimlessly across the hundreds of sleeping bodies; the smell of sweat began to sting his nose.

\*\*

The skinny boy sat with his mother, who sang lullabies to his dead sister. He stared at his deceased sister from behind his black-framed glasses. His face was pale and expressionless, his eyes empty. His mother turned to him. "She looks like an angel when she's sleeping," she whispered.

He stared back vacantly at her.

\*\*

Kubo, Natsumi, and his three daughters served the twenty-two people hot soup. The people were from all walks of life: a doctor, a lawyer, a shop owner, a carpenter, mothers and fathers with children, a few elderly couples, and even two dogs and a cat.

"Could you help me with this?" said Kubo, pointing at the box of potatoes. "I want to put them out side."

Natsumi went over and helped him lift them outside.

"I feel good that we are helping these people," said Natsumi, brushing her hair back and revealing her pretty face.

"Me too," replied Kubo. His eyes caught hers, and he reached out and took her by the hands. She didn't refuse, letting him draw her to him. There was a momentary

pause and then their lips touched.

\*\*

Seko reached the top of the mountain and started to make her way down toward Otsuchi. She took out the flashlight and turned it on; darkness was almost upon her and the mountain treacherously steep. A bitter coldness was creeping into the night. She pulled the collar of her parka up and began the descent.

\*\*

The two fat boys and their parents had made it to their uncle's house in Tono. They sat in the candlelit living room, unhappily eating the meager portion of food that had been rationed to them.

\*\*

Ryota sat with Karina and Yurie around a gas burner cooking the fish they had caught. Junk Island was drifting farther out to sea, and the sky was growing grey. The wind had strengthened and tossed white caps across the surface, but this didn't concern them. All that mattered was the fish; it smelled delicious, and the three of them were ravenous.

“Is it ready?” asked Yurie hungrily.

“Just a little more,” replied Ryota.

“It smells so good,” said Karina, breathing in the salty fragrance.

\*\*

Kumiko sat next to her husband, stroking his hair and singing “Red Dragon Fly.” Her father was outside, standing around a fire with a few other men planning what to do next. Her father was very concerned about the explosion at the Fukushima nuclear power plant. His granddaughter was only fifty kilometers from the plant, and he didn't believe what he was hearing on the radio. The media kept saying everything was OK, but he knew that when a nuclear reactor explodes, there is no way that everything is OK.

\*\*

The elderly lady in the no-entry zone lay in her futon staring out at the smoke and steam coming from the Daiichi plant about two kilometers away. She was cold and hungry and wished someone—anyone—would come for her. A warm tear slid down her cold cheek, and she stuck out her tongue and caught the salty liquid. She rolled over and stared at the photo of her husband set against the Buddhist altar. How she longed for him to be with her. Her eyes moved to a photo of her daughter and granddaughter on the wall, and a smile came to her dry lips. She closed her eyes and let the smiling face of her

granddaughter send her to sleep.

\*\*

Mackeller put the chopper down on the Matsushima Base's runway.

"Are we going back up?" asked his new copilot.

Mackeller took off his helmet and wiped the sweat off his brow. "No, not until morning. I need some rest."

"Roger that, sir"

Mackeller opened the cockpit door and slid his feet onto the tarmac. His legs shook a little from fatigue. He hadn't slept since he left Fukushima airport, ferrying supplies to towns and villages that had been hit hardest by the tsunami.

He walked slowly towards the buildings and his thoughts wandered back to Riona. He knew the wind was still blowing out to sea, but his weather report had said it would swing onshore tomorrow. He took out his phone and dialed Riona.

"*Moshi moshi*. Hello," she answered.

"Hello, this Mackeller."

There was a long pause. "Hi...I wasn't expecting your call."

"Just wanted to check you were OK."

"I'm fine. How's your copilot doing?"

"He's doing just fine, thank you."

"There was an awkward pause, neither able to find words.

Riona broke the silence. "Have you been flying supplies?"

"Yes, the devastation is unbelievable."

"I know, I've been watching it on TV."

There was another long pause and then Mackeller said. "My base's weather report says the wind will change and blow in your direction tomorrow. I am offering evacuation if you want it."

There came a short giggle from the other end of the phone. "You're not still worried about the nuclear reactor, are you?"

"Yes, I am," he replied flatly. "Our ships off shore are detecting high levels of airborne radiation."

"It must be from something else. Our government has assured us that there is nothing to worry about—everything is OK."

Mackeller swallowed hard. "I'm sorry, but your government is either receiving wrong information or deliberately releasing false information."

"Do you know what you're suggesting?"

"Yes," replied Mackeller.

"You're suggesting that our government is lying to us. Exposing us to dangerous levels of radiation."

Mackeller thought about his own government. The government he once so believed in. The government he had proudly supported and gone to war for. The fucking government that orchestrated the 9/11 attack and blamed it on terrorists, using it as a

pretext to go to war—a war that made the elite’s pockets overflow with coin. “Yes, they know how dangerous the situation is, but they don’t want to cause panic. The IAEA has already told the Japanese government to evacuate people in an eighty kilometer radius.”

“Why would they do such a thing? There are women and children in these areas.”

“If they evacuate, the areas will face economic bankruptcy. If the situation worsens then they might be forced to evacuate Tokyo. You know what that would mean for Japan—total economic collapse. If they don’t evacuate the areas close to the power station then the people in Tokyo will think it’s safe to stay.”

“Are you sure? I find it difficult to believe our government would lie to us.”

“I know my information is correct.”

“I can’t accept that my government is deliberately lying to me—I just can’t.”

There it was again thought Mackeller. The Japanese willingness to believe their government, even when the facts showed otherwise. “OK, call me if you change your mind.”

“Thank you for calling.”

“Call me if you change your mind,” repeated Mackeller.

“I will.”

Mackeller hung up.

\*\*

As the sun slipped below the Sea of Japan on the third day of the disaster, millions of people still remained without water, gas, and electricity. Hundreds of thousands of people were crammed into gyms, schools, and public halls or wherever the government could find a place for them. Fires continued to burn, and people searched for survivors and loved ones. Aftershocks, now over 300, continued to shake northern Honshu.

Three elderly people were pulled from a car after being washed several kilometers inland by the tsunami and trapped for three days. They had survived the freezing temperature by cuddling together for warmth.

A woman and her grandson were rescued from their collapsed house. The fourteen-year-old grandson had kept his severely injured grandmother alive by burrowing through the wreckage to get food and water from the kitchen.

Parents searched for their children at Nakamaru Elementary School, but no survivors or bodies were found, so they decided to widen the search area the next day.

## Chapter Sixteen

Monday, March 14, 2011

Kenichi, dressed in protective gear, stood outside Reactor Two. He hadn't slept for three days and was exhausted and on the verge of collapse. "Damn!" he cursed to himself. He had been worried the amount of water that was being injected wasn't enough and the water level might drop below the fuel rods. Within a few hours of the nuclear fuel rods being exposed to air, their temperature would rise from 100 degrees Celsius to 2,000 degrees Celsius, causing the fuel to melt down. Failure to continuously rotate fresh coolant water would mean catastrophe.

He looked at the Geiger counter. The radiation level was almost 1,000 times higher than normal—the same level just before the Number One reactor had exploded. The water had dropped below the fuel rods. He knew they needed to vent the containment building, but more of a concern was how much hydrogen had seeped into Reactor Three through the venting system. He looked up into the night sky and watched the clouds slowly drifting from the sea to the land. He cursed, knowing that if they vented, the radiation wouldn't blow out to sea but inland. The heavier particles would fall within the evacuation zone. But the lighter particles—cesium, iodine, strontium, and other deadly hot particles—would float up into the atmosphere and travel much farther beyond the evacuation zone. They would easily reach Koriyama, fifty kilometers away, where his wife and children were stranded. He thought how absurd it was to set an evacuation zone of twenty kilometers. The Japan Atomic Energy Agency knew full well that radioactive particles could travel much farther. In fact they knew that the fallout could rise into the atmosphere and blow to the west coast of America. There had been countless simulations done. But, as usual, they had been hidden from the public; greed and profit had once again reigned over the safety and well-being of the people.

His thoughts then drifted back to his boyhood. He'd grown up in Fukushima, near Inawashiro Lake, about eighty kilometers west of the Fukushima power plant. It was a beautiful prefecture, with mountains, lakes, and hot springs, and a major tourist destination for Tokyo people. Its produce of fruit, rice, and vegetables was not just famous in Japan but also overseas.

He had spent his winter weekends skiing at the many ski resorts around Mount Bandai. In spring, he had enjoyed hiking and mountain climbing; in the summer holidays, he had gone surfing on the coast; and in the autumn, he had spent most weekends playing golf with his father. But he knew he had to face the harsh reality: the land was being poisoned. He understood that no one would visit the prefecture in the future, and no one would buy its produce; it was dead, finished.

Fifteen minutes later he was back in the control room. He took out his phone and called his wife. It was six in the morning and a sleepy voice answered, "Hello."

"Sorry to wake you so early."

"That's all right. I was about to get up anyway."

"How are the children?" asked Kenichi.

“Fine. They’re still asleep.”

Kenichi could visualize his son and daughter curled up asleep. “Give them a kiss for me.”

“Sure. How are things at the plant?”

He thought about telling her that he had entered the Number One reactor after the explosion but decided against it. “Not good. The situation is critical. I want you to get as far south as possible. Did you get some petrol?”

“No, the only people who are allowed to get petrol are the police, firemen, ambulance drivers, and emergency helpers.”

“When are they expecting petrol to be distributed to the public?”

“Someone told me that new supplies would reach here this morning. And we will be able to get half a tank. That should get us to somewhere we can buy some more.”

“OK. Make sure you get some and start moving south.”

“I will.”

“I’ll call you later,” said Kenichi.

“Take care,” his wife said.

Kenichi put the phone on the desk. *Catch-22*, he thought. If he vented the reactor, then the wind would blow the radiation inland toward his children. If he didn’t, he risked another explosion, and much more radiation would be released into the atmosphere. He had no choice but to vent, and the vents would have to be manually opened. He’d already been exposed to massive amounts of radiation, but he would go in again, knowing he had a chance to reduce the harm of radiation to the children of Japan.

\*\*

A bitter wind tore through her drenched clothes and Seko trembled uncontrollably. It was snowing heavily by the time she reached the bottom of the mountain. She had spent the night climbing up and down mountains and was cold, hungry, and near exhaustion. Her aching hands brushed the snow off her muddied jacket as she forced her legs to move, knowing if she rested death was certain. Seko staggered along the river until she came to a narrow bridge. On her side, the land had escaped the tsunami unscathed, but on the other side lay utter devastation. She crossed the bridge and then stumbled along the river for half an hour. The scene was surreal, as if it belonged to some nightmarish fantasy; the ruins of the town lay under a thin blanket of snow, except for a few remaining skeletal concrete buildings, their rooftops fluffy white.

Her strength was quickly waning and an icy wind cut into her face, but she trudged on through the howling wind and snow. A gust hit her and she lost her footing and fell to her knees. She tried to get to her feet, but her strength was gone.

\*\*

Kenichi turned on his respirator and stepped outside. He stopped and looked up at the Number Two reactor building. He wondered if he’d ever see his wife and children again.

He had already been exposed to a massive amount of radiation and going into the reactor to open the vents would expose him to another lethal dose.

The shockwave knocked him to the ground. He lay there staring, his expression one of utter shock, at the mushroom cloud of black smoke rising up into sky. He got to his feet and watched debris, chunks of concrete and twisted metal, rain back down on the ruins of the Number Three reactor building. The roof and most of the sides had been blown off. Bits of rubble began to fall around him; he felt something land on his boot and looked down. His heart stopped; next to his boot was a piece of a spent fuel rod. He turned and fled back into the control room building. Once inside he would have usually taken off his protective gear, but not this time. He didn't need to be told what was spewing out of the reactor—deadly radiation. He sat down to try and organize his thoughts and make some sense of what had just happened. He remembered he had seen the flash on the top right side of the building. He assumed the explosion had been caused by hydrogen leaking from the containment vessel. But why had the initial explosion occurred on the top right of the building? And why had the explosion been so enormous? He replayed what he had seen in his mind; the spent fuel pool was located on the upper right side of the reactor building. It must have reached criticality and caused the explosion, and that meant that plutonium had been ejected into the atmosphere. How much he didn't know, but he did know that a few kilograms spread into the atmosphere was enough to wipe out all life on the planet.

He heard voices and looked up to see Suzuki, his face ashen, running down the stairwell followed by the operators.

Suzuki looked at Kenichi bizarrely; his eyes looked as if they were about to burst out of their sockets. "Evacuate immediately!" he yelled.

"We can't!" shouted Kenichi through his facemask.

The two simple words stopped Suzuki in his tracks. He fixed his eyes on Kenichi, who stared back at him unwaveringly through his facemask. Suzuki knew what he meant. If they abandoned the plant, the crisis would certainly spiral completely out of control and larger amounts of radiation would be released. Some of them had to stay and try to gain control of the situation. "How many?" he asked.

Kenichi took off his facemask. It didn't matter anymore. He wasn't going anywhere; his fate had been sealed. "Fifty," he replied. "All the others should evacuate."

\*\*

The door crashed open and a man burst into the room.

"Another reactor has exploded!" he shouted.

Saito and the mayor stared at him in disbelief.

"Did you hear me?" he repeated. "The Number Three reactor has blown up!"

"Are you...sure?" asked the mayor. His words struggled in his throat.

"Yes! You can see the smoke." His voice was filled with panic.

The mayor and Saito got up and went outside. They stood there staring in silence at the cloud of black smoke.

“We need to evacuate,” said Saito.

“Let me talk to NISA,” said the mayor, taking out his satellite phone and punching the automatic dial button. He had spoken to the director-general of NISA several times in the last two days and had been given the same answer every time: *The leak is small and there will be no exposure beyond the twenty-kilometer radius. Everything is under control. There is nothing to worry about.*

“Hello,” came the familiar young woman’s voice at the other end.

“This is the mayor of Tomioka town in Fukushima. Put me through to the director-general, please.”

“Uh...just a moment.”

But the mayor sensed anxiety in her voice, or was it guilt?

“Director-General speaking.”

The mayor was in no mood to waste time with niceties. “What the hell is happening at the Daiichi plant? Another reactor just exploded! How much radiation are we being exposed to? I have no information from TEPCO, and I have received no data on the radiation levels or the spread of radiation—nothing!”

“Calm down,” said the director-general. “Everything is fine. The amount of radiation is minimal and poses no threat to anyone beyond the twenty-kilometer radius.”

“If it doesn’t pose any health risk, why have you made the twenty-kilometer radius a no-go zone?”

There was a short silence on the other end. “It’s just a precautionary measure.”

But the mayor could detect the lie in his words. “So, if there’s no risk, why don’t you come up here and explain to the people yourself?”

Silence.

“Did you hear me?” insisted the mayor.

“It’s impossible for me to leave my post at this moment. I give you my honest assurance that there is nothing to worry about.”

“Crap!” The mayor hung up.

“What did he say?” asked Saito anxiously.

The mayor pointed to the cloud of black smoke blowing in their direction: *everything is OK—nothing to worry about.*

“Mr. Mayor,” called a man rushing out the door. “The police have been ordered to evacuate.”

“What?” said the mayor, not believing his ears.

“Yes, they are leaving now. They’ve been ordered to evacuate immediately.”

“They’re abandoning us,” said Saito dryly. “Leaving us to die.”

“Inform the people I will address them at an emergency meeting in ten minutes.”

“*Hai.* Yes,” the man said and ran off toward the gym.

“We have no choice but to evacuate ourselves.”

“Where will we go?” asked Saito.

The mayor’s face hardened. “I now realize that I cannot rely on the central government or the prefectural government. They have betrayed us, abandoned us, and exposed us to unnecessary risk.” He paused and thought for a moment. “I know the



mayor of a city in Saitama. He's an old friend."

"We'll need buses to transport everyone and doubt they will be able to get enough fuel," said Saito.

The mayor took out his phone and punched in the number.

A few minutes later, he hung up and looked Saito hard in the eyes. "They can accommodate us and are sending buses to Koriyama immediately."

"Thank goodness!" sighed Saito.

"We'll have to spend the night in Koriyama. We'll need somewhere to stay." He punched in another number and talked to the director of an exhibition site he knew. The man agreed to let them shelter at the facility.

The convoy set off in the early evening and reached the exhibition site in the city of Koriyama at midnight. The next day they boarded buses and were taken to Saitama Prefecture near Tokyo.

\*\*

The prime minister put down the phone. "The Number Three reactor just exploded," he told the chief cabinet minister.

"How much radiation has been released?" asked the minister.

The prime minister stared at him fixedly. "Too much."

"We should expand the evacuation zone from twenty kilometers to eighty kilometers as suggested by the American Atomic Energy Agency," he said, taking out his phone.

"No! Wait!" said the prime minister quickly. "We don't want to create mass panic."

The minister stared at him in disbelief. "We must release the data to the public; it is our responsibility. The SPEEDI data has still not been sent to the towns and villages close to the plant. The Americans have also given us a map of where the radiation is spreading. They collected the data by aircrafts, and it is very accurate."

The prime minister held the minister's stare. "TEPCO has assured me that exposure from radiation will be almost nil outside the twenty-kilometer zone, and there is no health risk. I agree with them and will issue only a volunteer evacuation order from twenty to thirty kilometers to be on the safe side."

"Mr. Prime Minister, you are putting hundreds of thousands of people's lives at risk. I strongly urge you to reconsider and start evacuating people from within eighty kilometers. SPEEDI data shows clearly that towns twenty to thirty kilometers northwest of the plant will be radiated with between 300 to 400 times the normal amount of radiation. People at this moment are evacuating from the towns of Namie and Futaba to these areas thinking they are safe."

The prime minister glared hard at the minister. "They are only predictions, not fact." He paused, not taking his eyes off the minister. "I want you to dispatch a team to those areas to monitor the radiation."

\*\*

“*Moshi moshi*. Hello,” said Riona into the phone.

“This is Mackeller. How are you doing?” His tone was flat and emotionless.

“Oh, Mackeller! Nice to hear from you. I’m fine, thank you.”

Mackeller could guess by her tone that she hadn’t heard the news. “Another reactor at the Fukushima plant just exploded.”

“What? I haven’t heard anything.” There was a pause and he could hear Riona talking to someone in Japanese. “No one here has heard anything about it.”

“Go look at the TV,” said Mackeller.

He heard the TV turn on.

“You’re right!” exclaimed Riona.

“You need to evacuate now.” His voice was hard but calm.

“Just a moment.”

He could hear her talking to someone again.

“Hello,” she said.

“Yes, I’m here.”

“They are saying that there is no need to panic and it’s under control. They have set a voluntary evacuation zone from twenty to thirty kilometers. I think it’s OK.”

Mackeller’s blood began to boil, but he kept his calm. “Look, we are detecting high levels of radiation as far as Tokyo. It ‘s not safe for you to stay. I’m very sorry, but your government is withholding the facts from the Japanese public.”

Riona let out a short laugh. “You Americans always over dramatize things. Just like in your movies.”

Mackeller couldn’t quell his frustration any more and his voice went raw with anger. “You have children in your hospital, don’t you?”

“*Hai*. Yes,” replied Riona timidly, taken aback by his harshness.

“You are responsible for them, aren’t you?”

“*Hai*. Yes.”

“Well at least let me evacuate them!”

There was a long silence. “Are you sure we’re in danger?”

“As sure as a bear shi—” He stopped short, knowing she wouldn’t understand.

“Shits in the woods,” she added.

“Yes... that’s right.”

“OK,” she said reluctantly. “We have about forty patients. Thirty are children.”

Relief swept across Mackeller’s face. “We’re on our way. Have everyone ready for evacuation. We’ll be there within the hour.”

“OK,” replied Riona.

“See you soon,” said Mackeller and hung up.

\*\*

Yukino finished refilling the kerosene heater; lit it and placed the kettle on top. She then knelt down next to Taka who lay unconscious in the futon, his breathing shallow. They had only survived the bitter cold because Yukino had taken off her clothes before she'd dived in the river. She had found Taka clinging to broken beam and had dragged him to shore where she'd quickly stripped him and wrapped him in the jacket she had worn. She'd then put on her jeans and shirt and pulled him to his feet. He was shaking uncontrollably, on the verge of hyperthermia, so she'd put his arm over her neck and staggered with him along the path. Taka had been only semi conscious and she'd had to keep talking to him to prevent him from falling into total unconsciousness. As they entered his yard, his legs gave way and she had been forced to drag him by his arms into the house.

Now she knelt staring at his pale face. "Don't die," she whispered, her eyes brimming with tears. "Please don't die." Suddenly, the eyes of the woman, caught in the collapsed hair salon, rushed into her mind and her words, *Don't leave me*, echoed through her head. Yukino wiped her eyes and forced the tears back. "No, you're not going to die. I'm not going to let you die like the others." She pulled back the futon cover and climbed in next to the old man, snuggling close to him. Taka groaned and Yukino whispered. "It's OK. I'm here. You'll be fine."

"*Arigatou*. Thank you," he murmured.

Yukino smiled, hearing the faint words, and closed her eyes. Exhausted, she slowly faded towards sleep when she remembered Yuta. She had totally forgotten about him. Her heart began to race and thoughts of drowning people filled her mind. "No," she whispered to herself. "He must have survived," she said, trying to calm herself; but dread crept over her like a dark shadow and she lay there, wide-eyed, staring at the ceiling.

\*\*

"Uh...uh," groaned Tomo, rubbing his pounding head. He rolled over and stared up at the truck seat. "Shit!" he swore. He tilted his head to one side and saw the man who had knocked him out glaring back at him from behind a makeshift fire. Tomo tried to move his arms, but they were tied behind his back. "Let me out!" he yelled.

The man got up, walked over to the upside-down truck and then squatted down. "You killed my Eli-chan," her rasped.

He looked wild. His hair unkempt, the side of his face caked with dry blood from the head wound. Tomo looked into the crazed eyes and knew any negotiations would be a waste of time – he would have to escape.

"I'm going to punish you!" screamed the man, kicking the side of the truck.

Tomo ignored him and looked the other way.

"I'm going to kill you!" screamed the man again.

Tomo didn't respond.

The man kicked the side of the truck again.

Tomo stayed silent.

The man went back to the fire and sat down keeping his eyes on Tomo.

Tomo let out a long sigh. He began to wiggle his hands free.

\*\*

Mackeller's chopper set down first, followed by seven others.

"Let's get these kids on board and get the hell out of here," said Mackeller over the radio. He took off his helmet and jumped from the cockpit. He stood scanning the group of children in wheelchairs for Riona. He spotted her at the back and made his way quickly to her. "Are you OK?"

"Yes, we're all fine," she said, pulling down the surgical mask to reveal a smile.

Mackeller returned her smile. "We'd better get moving before any of these children gets exposed to any more radiation.

"I've made them all wear masks and given most of them iodine pills except for a few the doctor said were too weak.

"Ok, let's load up and get out of here."

Within ten minutes, all the children and nurses were onboard and the rotors were thumping in the air ready for take off.

"You can fly with me!" yelled Mackeller over the noise.

Riona shook her head.

A startled look came over Mackeller. "What?"

"I can't leave the other patients. There are still some elderly people in the hospital!" she yelled back.

Mackeller was stuck for words. He knew she had a duty to stay. He knew the elderly would probably be dead before the effects of the radiation affected them, but she was young and it was dangerous for her. "How many elderly people are there?"

"Ten," she replied.

"I'll be back in about a hour with three choppers. Have them ready." He paused and looked hard at her. "You be ready, too."

"*Hai*," she said bowing.

Mackeller turned and ran, crouched over, to his chopper.

\*\*

The door flung open and a flurry of snow swept into the room. "Quick! Get some dry clothes, blankets, and some hot tea!" ordered Sachie's grandfather as he laid Seko on the carpet.

Sachie raced off and returned with some dry clothes and blankets. "Where did you find her?" she asked.

"Just down the lane," replied her grandfather, starting to remove Seko's clothes.

"Let me undress her," said Sachie, putting her hand on his.

Her grandfather stood up and went into the kitchen.

Seko was trembling uncontrollably, but she was still semiconscious. "I...to get...medicine," she muttered.

“Yes, we can do that,” replied Sachie, “but first I need to dress you in some warm clothes.”

“I’m...cold.”

Sachie quickly undressed her and put some blankets over her.

“Is she conscious?” asked Kumiko, entering the room with some hot tea.

“Yes, sort of.”

“Help me sit her up,” said Kumiko.

They propped her up against the wall.

“Seko-san, it’s Kumiko.”

Seko’s eyes fluttered open. “I’m cold.”

“Here, drink this. It’ll warm you,” Kumiko said, putting the cup to her lips.

Seko sipped the tea slowly at first and then gulped down the rest.

“Get some more,” said Kumiko, handing the cup to Sachie.

There was a dull rumble in the distance and they all froze. The floor started to shake and then the rumble turned to thunder.

“Hang on!” shouted Kumiko.

The house jolted back and forth. The Buddhist altar toppled over. The shaking increased, and plaster fell from the walls.

“Hang on!” yelled Kumiko again over the noise.

And then it faded into the distance.

No one said anything.

Sachie rushed into the kitchen and reappeared with another cup of hot tea. Seko drank it.

“Do you feel better?” asked Kumiko.

“Yes,” replied Seko, pulling the blanket up around her neck.

“Where did you come from?”

“From my house.”

“How did you get across the river?” asked Sachie.

Seko shook her head. “I didn’t. I came over the mountains.”

“How long did it take?” asked Kumiko.

Seko pulled the blanket tighter around her neck. “All night.”

“That was a very brave effort,” said Sachie’s grandfather. He placed the kerosene heater next to her and lit it.

“I need to get some medicine for one of the old people.”

Kumiko shook her head. “The hospitals have been destroyed.”

“Maybe the nursing home in the mountains. They may have some,” said Sachie’s grandfather.

“You need to get warm first,” said Kumiko, handing her another cup of tea.

“You can’t go over the mountains again,” said Sachie.

“Several of the fishermen headed out to sea straight after the earthquake to escape the tsunami,” said Sachie’s grandfather. “One of them can take you around and drop you off on the other side of the harbor.”

Seko nodded and drank the tea; her shaking had eased.

Sachie walked over and turned the battery radio on. An angelic voice filled the room; it was the song Toshimi had sung for her. They sat there listening and then her grandfather began to hum the tune, and then Sachie started to sing and Kumiko followed, and then Seko joined in.

\*\*

Riona heard the thumping and ran outside to see the three choppers set down. The door on the nearest opened and Mackeller jumped down and ran, head ducked, over to her.

“Have you got all the patients ready?”

“Yes,” she replied, putting her hands over her head to stop her hair from whirling around.

“Good. Let’s load them on board and get the hell out of here. The radiation level has gone off the chart.”

She stood, her hands clamped over her head, staring at him for a long while.

Mackeller swallowed dryly; she wasn’t coming, he could see it in her eyes.

“What’s wrong,” he asked.

“Nothing,” she replied, a smile surfacing on her face. “I’m just glad you came back.”

Mackeller let out a sigh of relief. “Let’s get moving.”

“We’ll need some help to wheel them out,” said Riona, pointing to the hospital.

“No problem,” replied Mackeller. He swung around and signaled his men.

Five minutes later, the wheels lifted off from the hospital car park.

“How are they doing?” asked Mackeller over the intercom.

“They’re fine,” Riona said into the helmet mic.

“We’ll take them to the base hospital in Matsushima. They’ll be well looked after there.”

“Thank you,” she replied.

“Our pleasure.”

“You were right,” she said.

“Right about what?”

“Right about my government withholding the true seriousness of the nuclear accident.”

“Uh...” But no words came to his lips.

His copilot turned and looked at him.

Riona broke the silence. “They lied to us. Our director managed to get hold of a Geiger counter. The level is around one hundred times the normal level.”

“I’m sorry,” said Mackeller.

“I can’t believe they lied to us. They let children be exposed to lethal amounts of radiation.” She stopped; only the thumping of the rotors reverberated through the chopper. “They chose to leave us unprotected while they stayed away in Tokyo. What are they thinking? There are hundreds of thousands of women and children still in highly exposed

areas.”

Mackeller banked the chopper to the north. “The plume of radiation is headed for Tokyo. It will hit later today.”

“Have they alerted the public?”

“No, they just keep saying everything is OK.”

Riona didn’t answer.

\*\*

Two reactors had exploded, but the Japanese government and TEPCO still insisted there was little danger from the radiation. They denied flatly that a meltdown had occurred and, furthermore, refused to increase the evacuation zone from twenty kilometers to eighty kilometers as suggested by the American Atomic Energy Agency. The Japanese government withheld information, which was available from SPEEDI. This withholding of information led people close to the nuclear plant to evacuate to areas that had high contamination outside the evacuation zone. The residents from Namie Machi were instructed to evacuate to Nihonmatsu that lay outside the exclusion zone, but it was in the direct path of the fallout. The same was for 1,200 residents from Tsushima, who evacuated to an area twenty-eight kilometers away, again in the direct path of the fallout; they were not evacuated from there until four days later, after they had been exposed to high doses of radiation.

Information that should have been released to the public and news channels was withheld on the assumption it would cause mass panic. The SPEEDI data was not released until April 25—more than a month after the catastrophe. The Japanese government deliberately withheld information from its own citizens and the international community.

Hirosaki University in Fukushima Prefecture was told to stop conducting internal radiation checks on prefectural residents days after the accidents on the grounds that the tests could “stir anxiety.” Thus, there is not much data on how much the people were actually exposed to in the days just after the accident.

Fifty brave men—workers with cast-iron guts—chose to stay and try to get the crisis under control. These men knew they would be exposed to massive amounts of radiation, but without concern for their own safety, they stayed. They are known as the Fukushima Fifty, and one must take one’s hat off to the courage these men showed. These were the workers and operators of the plant, not the pen pushers and executives who had constantly covered up safety warnings and disregarded the numerous reports that a tsunami could severely damage the plant. These are the brave men who saved Japan and the world from a catastrophe of colossal global magnitude.

## Chapter Seventeen

Tuesday, March 15, 2011, 5:30 a.m.

Six hundred and fifty workers had been evacuated from the Daiichi plant, leaving the Fukushima Fifty to try to stabilize the situation.

Kenichi sat in the dim control room. He ran his fingers through his hair and leaned back in his chair. Most of the gauges and monitors were inoperable, and there was almost nothing he could do unless power was restored. He got up and went into Suzuki's office. "Excuse me, sir."

Suzuki lifted his head from the desk where he had been trying, without much success, to get some much needed sleep. He had a few days' growth on his face, and patches of prickly hair on his bald head had begun to surface. "What's up?"

"I'm very concerned about Reactor Four. I fear we could have another explosion."

"What makes you think so?"

"Hydrogen is reaching the critical level."

"What do you want to do?"

"I want to take a six-man team in and try to manually vent."

Suzuki looked at Kenichi; his subordinate's eyes were void of fear or apprehension. He had said the words casually, as if he was going to do a routine inspection. "Do it," he replied.

Thirty minutes later, six men in radiation suits headed in the direction of the Number Four reactor. The sunrise cast eerie shadows across the broken landscape. Kenichi looked up at Reactor One and saw steam rising out from where the roof had once been. His eyes moved to Reactor Three, and he noticed grey smoke escaping from the top right side.

They were about 300 meters from Reactor Building Four when his Geiger counter started beeping. The readings were off the chart—more than 1,000 times higher than normal levels. It was too high for his men to enter. He signaled them to return to the control room.

Half an hour later, he was back in Suzuki's office. "What hap—"

There was an almighty bang and the building shook violently. Papers and files were thrown from Suzuki's desk. His computer crashed onto the floor. Kenichi grabbed hold of the doorframe, and Suzuki held onto his desk.

"Reactor Four!" shouted Suzuki over the thunderous noise.

"No!" shouted Kenichi, bracing himself against the doorframe.

The shaking increased, and pieces of the ceiling fell to the floor.

"Reactor Four has blown!" shouted Suzuki.

"No!" shouted Kenichi.

Then, as suddenly as it had hit, it was gone.

"Earthquake," said Kenichi. His voice was calm, no trace of panic.



Suzuki let go of the desk “How many more?” he cursed.

Kenichi didn't reply.

Suzuki stood up and brushed the dust off his clothes. “What happened out there?”

“The radiation level was too high for us to enter.”

Suzuki let out a deep sigh. “All we can do is hope it doesn't explode before we get some power.”

“When will that be?”

“They say some mobile power units will be here by tomorrow.”

Kenichi detected doubt in his voice. “How about the batteries? Has there been any reply?”

“None.”

Kenichi shook his head in despair. “There is another problem.”

“What?”

“I saw grey smoke coming from the top right side of Reactor Three.”

A look of deep concern ran over Suzuki's face. “Are you sure?”

“Positive. I think the fuel pool has been damaged, and the water level has dropped.”

“If that's so, we'll need to get water into it. If the spent fuel pool catches fire, vast amounts of radiation will be released.”

“I agree, but the radiation level is too high to get anywhere near it. It would be a death sentence if you sent the firemen in.”

Suzuki was quiet for a long while. “Any ideas?”

“Helicopters.”

“What?”

“We could use helicopters to drop water into the spent fuel pool.”

Suzuki's eyebrows arched. “I'll make the call.”

Kenichi returned to his seat and dialed his wife.

“Hello. How are you doing?” asked his wife.

“I'm fine. How are the children?”

“They're fine. What's happening at the plant?”

“The situation is still critical. Everything is moving so quickly. There was a short interlude of silence on the other end.

“What do you mean?”

Kenichi cleared his throat. “I'm not sure, but things are escalating much more quickly than I expected. Have you got petrol yet?”

“No. The supply never came.”

“When do they expect to get some?”

“No one really knows. There're all sorts of rumors flying around.”

“Call me when you get some.”

“I will. Take care.”

“You too.”

Kenichi hung up and leaned back in his seat. He knew the fallout would have

reached his wife and children by now. How much was the question. The thought of the possible answer filled his heart with dread.

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There was a thunderclap and then the control room shuddered. Kenichi knew exactly what had happened.

Suzuki rushed into the room. "What was that?"

Kenichi knew by the direction of the sound. "Reactor Four has exploded."

Suzuki stood there speechless, his face grave.

Kenichi got up. "I will go and assess the damage."

Suzuki nodded.

Thirty minutes later, Kenichi stood in front of what was left of the Number Four reactor building. More than 60 percent of the walls had been blown off, and the roof was gone, except for a few twisted iron beams. The whole building was leaning precariously to one side. Smoke and dust were rising from within. He looked at his Geiger counter; the radiation level was thousands of times above the normal level. He walked closer and examined the piping, of which most of the lower section seemed to be intact. He looked up. Through the dust and smoke he could make out the spent fuel pool; miraculously it also seemed to be intact. He tried to reach the entrance, but the way was blocked by chunks of concrete and twisted metal; that's when he noticed the hole blown out at the bottom of the wall. It was strange enough that the shutdown reactor had exploded. If hydrogen had been formed because of a partial meltdown of the spent fuel pool, which was situated near the top of the building., Why had a huge hole be blown out at the bottom?

He returned to the control room.

"I'm very worried that the whole structure is tilting to one side. If we have another big aftershock, it could tumble over," said Kenichi.

Suzuki ran his hands over the patches of prickly hair on his bald head. "We'll have to shore it up with some supports."

"Impossible at the moment. The radiation level is too high."

"You said most of the lower piping and the spent fuel pool are still intact?"

"Yes, if we get power back, we should be able to inject water into the spent fuel pool. If we don't get water in quickly, the rods will heat up and ignite. If that fuel pool ignites, it will release 200 times more radiation than Chernobyl."

Suzuki grimaced at his words. "Are you sure it would be that much?"

Kenichi nodded. "Yes. Because the reactor is in shutdown, all the fuel rods are in the spent fuel pool. If it catches fire, it will release enough radiation to make the whole of Japan uninhabitable as well as large areas of the Northern Hemisphere."

Suzuki stared at him speechless.

"And another thing."

"Yes," said Suzuki.

"There is a huge hole blown out of the bottom of the reactor building."

“What? That’s impossible.”

\*\*

Hiro sat with Erica; she had run out of space in the notebook and now scribbled the number four over the numbers she had already written. Next to her lay some fruit and rice crackers he had tried to get her to eat. She hadn’t said a word for two days now.

“Excuse me.”

Hiro looked up to see the skinny boy’s father. “Yes,” said Hiro, making a space for him to sit.

“Thank you,” he said, sitting down.

There was silence for a few seconds, and then the father put his hands on the floor in front of him and bowed deeply, his forehead touching the floor. “I want to thank you for saving my son.”

Hiro returned the bow. “I didn’t do so much.”

The father bowed again. “Really, thank you very much.”

“You know he acted very bravely. He saved two boys,” said Hiro, trying to force a smile.

The man looked up, a little surprised. “Really?”

“Yes, he saved two brothers.”

The man turned and looked to where his son and wife sat with the body of his daughter.

“I’m sorry for your loss,” said Hiro.

The man turned back to Hiro. “Thank you.”

Hiro tried to choose his next words carefully. “Has your wife accepted her loss yet?”

“No, she still believes our daughter is sleeping.”

“Perhaps if—” Hiro stopped short.

“Please go on,” beckoned the father.

“Perhaps if you remove her body while she’s in the restroom and place it with the other deceased, she’ll accept your daughter’s death.”

The father looked at Hiro, his eyes brimming with tears. “Would you help me?”

“Of course,” replied Hiro. “I’ll come over when I see her go to the restroom.”

“Thank you,” replied the father. He bowed and then got up and made his way back to his son and wife.

An hour later his wife and son went to the restroom.

Hiro rushed over to him. He stared down at the girl. She was dressed in pajamas, her hair plaited.

The father saw the look on Hiro’s face and said, “My wife did that.”

Hiro took hold of her by the legs and the father put his hands under her shoulders, and they picked her up. Her body was stiff with rigor mortis. The murmur of

chatting ceased in the gym as people stood and bowed, making way for them.

Suddenly, the mother appeared in the entrance. “What are you doing?” she screamed, rushing over.

“She’s dead,” said the father.

The mother ignored his words. “Don’t wake her; she needs her sleep.”

“She’s dead,” repeated the father. This time his words were harsh.

The gym was silent as everyone watched the tragic scene unfold.

The mother stroked her dead daughter’s head. “Please put her down; she needs her sleep.”

Hiro stood there, holding the body by the legs—uncertain what to do.

“She’s dead!” blurted the father. Tears began to spill from his eyes.

The mother looked at him strangely. “She’s fine. She’s just sleeping.”

“No! She’s dead!” cried the father.

The mother bent over and kissed her dead daughter on the forehead. “I’ll make you some soup when you wake up.” She then began to sing a lullaby. “*Nen nen kororiyo okororiyo...*”

Tears streamed down the father’s face. “She’s dead! Let her go!” He took a step and Hiro followed.

“No!” screamed the mother hysterically. She locked her arms around the body. “Put her down!”

“She dead!” yelled the father. “Dead!” The father tried to move, but the mother hung on to her daughter’s body.

Hiro stood there, silent, holding the daughter’s legs.

“She’s dead!” yelled the father, trying to pull the body away from her.

The mother held on tight. “Put her down; you’re hurting her.”

The father, tears dripping off his chin, looked at Hiro and motioned for him to move. They took a step, but the mother clung to the body.

“Let her go!” shouted the father. The tears had stopped and were replaced by anger. “She’s dead! Don’t you understand?”

Two women rushed over and pried her arms free.

“No!” shrieked the mother, fighting against the women’s restraint. “You can’t take her from me!”

Hiro and the father carried her through the crowd; everyone stood with their heads bowed.

“*Okasan, Okasan!* Mother, mother!”

Everyone turned and looked at the girl standing at the back of the gym.

“*Okasan, Okasan!* Mother, mother!” the girl screamed.

Hiro stared in disbelief at Erica.

Erica’s tone softened. “Mother, I’ve left, but we will meet again.” She sat down.

An eerie silence hung in the air.

The mother looked at her husband. “She’s...gone,” she said and then burst out crying.

“It’s all right,” said the father, resting their daughter’s body on the floor.

The two women let her go, and she put her arms around her husband and wept uncontrollably.

The skinny boy stood in the doorway staring vacantly at them from behind his black-framed glasses.

\*\*

Ryota stood on the oil tank looking at the snow clouds hanging above the distant mountains. He was glad he was under a blue sky.

“Morning,” said Karina, crawling out of the tent.

“Good morning,” said Ryota, looking at his watch. “You sleep well? It’s already 8:30?”

“Yes, I slept very well.”

Karina walked over to Ryota and stood close to him. She had been thinking about him all night; her dreams had been obsessed with him. “Your island is getting bigger,” she said, looking at the new debris that had collected around the tank. She moved closer and their shoulders touched.

He enjoyed the touch of her shoulder. His dreams had also been filled with her. “Yes, I think it’s twice as big now. A lot more wreckage has collected on the other side.”

“Look!” said Karina pointing. “There’s a fridge.”

Ryota eyes moved in the direction she was pointing. “Where?”

“Over there!” she exclaimed.

Ryota’s eye’s strained and then he saw the green fridge floating at the far edge of the debris. “I see it.”

“Maybe it has some food inside,” she said and started climbing over the wreckage.

Ryota looked at her surprised. It was the first time she’d shown any survival skills.

They climbed over the mound of wood and metal until they got to the other side. The fridge was floating face up, and Karina pulled open the door.

“Lucky!” exclaimed Karina.

The fridge was full of food: cans of tuna and soup, bread, noodles, juice, bottles of water, and fresh vegetables.

Karina reached in and took out a head of lettuce. “It’s still fine.”

“The sea is so cold that it kept it fresh,” said Ryota.

They carried as much as they could back to the tank and then made two more trips.

“Wow! We have enough for a few weeks,” said Karina.

“You’re becoming very resourceful,” said Ryota.

“I have a good teacher.”

Ryota smiled at her and she smiled back. A nervous silence stood between them and then Karina took a step forward and took his hand.

“What...would you like...for breakfast?” The words stumbled uncomfortably

from Ryota's lips.

Karina squeezed his hand and drew herself closer to him, their lips just centimeters from each other's.

"Wow! Where did you get all that?" said Yurie, climbing out of the tent.

Karina released Ryota's hand and spun around; her evil eye fell on Yurie.

Yurie blushed. She was old enough to understand. "Sorry!" she said, turning up her nose and then crawling back into the tent.

Karina turned back to Ryota, but this time Ryota took her hand and pulled her to him and kissed her softly on the lips.

\*\*

"Push!" shouted Kubo.

Natsumi and the other three men pushed the beam to one side.

"I can see a leg," said Natsumi.

They had heard the voice calling for help ten minutes ago.

Kubo looked into the hole. He could see a leg protruding from under the wreckage. He wasn't sure if it was male or female. "Can you hear me?" he called.

"Yes." The voice was faint, almost inaudible, but it was female.

"How many of there are you?"

"Just me," croaked the female.

Kubo carefully climbed down into the narrow opening. "Throw me down a flashlight."

Natsumi threw down a flashlight, and he switched it on and shone it into the wreckage. Two eyes of a young woman stared back at him. "Can you move at all?" he asked.

"I can move my arms, but my body is pinned down," she replied. Her voice was calm; the panic and hysteria had been eroded over the days of her entombment.

Kubo shone the flashlight around and surveyed the situation. There was about three meters of wreckage above her; if he tried to move some of the lower wreckage, he risked the whole thing collapsing and crushing the woman. "I'll have to use a crane to lift the wood off," he told her.

"OK," replied the woman. Her face was muddy and her hair bedraggled from a woolen cap, but otherwise she seemed dry.

He climbed back up the hole.

"How is she?" asked Natsumi.

"As far as I can tell, she's fine," replied Kubo.

He drove his truck as close as he could to the mound of wreckage. He then maneuvered the small crane that was mounted in the rear over the top and lowered the cable. Natsumi and the other three men hooked the cable around a beam, and Kubo carefully lifted it off. They repeated the procedure several more times.

"I can see her," shouted Natsumi excitedly.

Kubo got out of the truck and ran over. He climbed down what was left of the

hole and then removed the remaining timber off the woman. Natsumi lowered herself down, and they both helped the woman from the wreckage. They had rescued three others that morning as well as finding several dead.

\*\*

All of a sudden, the music was interrupted by a news flash announcing that at 6:14 a.m. there had been another explosion at the Daiichi nuclear power plant, this time at the Number Four reactor.

“Mariko,” said Kumiko. She took out her phone and dialed her elder daughter.

“Hello.”

“Mother, I’ve been trying to call you. Did you hear another reactor blew up?” Her voice had a trace of panic.

“Are you all right?”

“Yes, but people are fleeing in droves. They say the radiation is being blown toward us.”

“What does the government say?” asked Kumiko.

“They say everything is OK, but don’t go outside.”

Kumiko’s father took the phone. “Do you feel all right?”

“I feel fine, but I have this metallic taste in my mouth,” she replied.

He could hear the worry in her voice. “What about the other people in your apartment block?”

There was silence at the other end.

“Mariko?”

“Some of the children have had nosebleeds, and people are saying it’s from the radiation.” Her tone was on the verge of hysteria. “I want to get out, but I don’t have enough petrol, and I don’t know anyone who does! What shall I do? Can you help me, Grandpa?”

“Calm down,” he said. He thought quickly. “How much petrol do you have?”

“It’s on empty.”

“Does the gauge show above empty or below empty?”

“It’s just above empty,” she replied.

“Good, that means you have about ten to fifteen liters. I want you to cut off about two meters of garden hose and push it to the bottom of your car’s tank and then siphon the petrol into a jerry can.”

There was silence at the other end.

“Do you understand?”

“Uh...how do I siphon it out?”

“Suck on it till it comes out.”

“OK,” she replied.

“Do you remember my friend who owns the bike shop in town?”

“Yes.”

“Go there with the petrol. I will call him and organize a motor scooter for you.

Once you've got it, head toward the coast to the Sea of Japan and then go south. The petrol you've got should get you to somewhere you can buy more petrol."

"OK. Thank you," said Mariko.

"Do you have a mask?"

"What type of mask?"

"You know, the one you use when you have a cold."

"Yes, I have a few."

"Put one on when you're outside," he said.

"All right."

"I'll ring my friend and tell him you're on your way."

"Thank you, Grandpa."

"Call me when you get to the Sea of Japan."

"I will." She hung up.

He dialed his friend in Koriyama city.

\*\*

The elderly lady in the no-entry zone crawled from her futon to the low table and poured some water into a glass and drank it, trying to wash out the metallic taste she had in her mouth. Outside a light snow was falling, and her mind momentarily slid back to her childhood, where her father and her would build a snowman when the first of the winter snows fell. She poured herself another glass of water and again tried to wash the metallic taste from her mouth. Her eyes moved to the kitchen, and she crawled over and opened the fridge—nothing. She slumped down against the wall and let out a long sigh; no one was coming. She had been left, abandoned—forgotten, an old lady of no importance. She put her face on her knees and began to cry.

\*\*

Yukino yawned and stretched her arms. Outside she could see bright blue sky and hear birds chirping merrily. She rolled over and saw Taka sleeping peacefully next to her. She nudged his shoulder. "*Ohayou*. Morning," she whispered.

He didn't respond.

"*Ohayou*," she repeated, nudging him a little harder. But this time she felt the cold in his body.

"Taka-san," she said, shaking his shoulder. "Wake up."

He lay there silent.

Panic welled up in her. "Taka-san, Taka-san wake up!"

He lay there still.

She put her hand to his mouth, but could feel no breath.

"Taka-san, wake up!" she cried. She shook him frantically and then fell back in the futon, hands covering her face, and wept. "No, not Taka-san. Why did you have to take him? Tears streamed down her face. "He loved nature, he loved you. Why did you



take him?”

She crawled from the bed and stared out the window, but the sky seemed to be stained with darkness.

\*\*

A beam of sunlight washed over Tomo’s face and his eyes opened. He tilted his head to one side and saw the man asleep beside the smoldering fire. *My chance*, he thought rolling on to his back and raising his leg. His foot pushed at the door handle and he heard the click as it lifted. With his other leg he kicked the door open and wiggled out. He rolled over; arms still tied behind his back, and struggled to his knees. Steam puffed from his mouth as he knelt gaining his breath. *Run, run*, shouted a voice in his head. He got to his feet, saw the man was still sleeping and ran. Ran along the base of the hill—heart pounding, lungs burning until he came to a forest where he darted in, stopping under the cover to catch his breath.

*Keep going!* Shouted the voice in his head. *You’re not far enough away yet.*

He started forward when something from behind hit him and he crashed to ground. He tried to move, but was pinned down by something heavy.

“Try that again and I’ll kill you,” growled the man, his hot breath on Tomo’s cheek.

Tomo could smell the man’s rancid breath. “Fuck you!” he cried out, trying to struggle free.

The man grabbed him by the hair wrenched him to his feet. “You don’t deserve to die quickly,” he rasped. “You killed my Eli-chan and I’m going to make you suffer for that.”

“I didn’t—”

“Shut up!” he snapped, shoving him in the back.

\*\*

“Sir, radiation levels have risen significantly in the last few hours,” said Kenichi.

“We can’t abandon the plant. We need to do as much as possible to contain the crises,” replied Suzuki.

“We need power to be restored.”

Suzuki stared at him through the dimness of the control room. “They’re working as fast as they can.”

“The wind is blowing from the sea,” said Kenichi. “We need to get some water into the spent fuel pools before they—”

“Sir,” interrupted one of the operators. “Black smoke is coming from the Number Four reactor.”

“The spent fuel pool,” cursed Kenichi.

They went up to the observation deck. Black smoke was spewing from Reactor Four’s spent fuel pool.

“It’s on fire,” said Suzuki.

“When are the helicopters arriving?”

“In the next hour,” replied Suzuki.

“Damn!” cursed Kenichi. “There is nothing we can do until then.” He watched as the smoke blew inland toward his family.

\*\*

Kenichi dialed his wife.

“Hello?”

“Hi, it’s me. Where are you?” asked Kenichi.

“I’m stuck in a queue waiting to get petrol,” replied his wife.

“How long before you get petrol?”

“I don’t know, but maybe another three hours, and that’s if they don’t run out.”

“Good. Get as far south as you can.”

“I will. What’s the situation with the plant?”

“We’ve lost control. I don’t know what’s going to happen next.”

“Are you all right?”

“I’ll be fine. How are the kids?”

“They’re fine but both had nosebleeds earlier.”

A chill ran up his spine. His wife’s words had confirmed his children had been exposed. He knew children were much more susceptible to radiation. Their metabolism worked many times faster than an adult’s; thus, they would take in much more radiation, and girls were five times more susceptible than boys.

“Get as far away as you can as quickly as you can.”

“Are the nosebleeds related to the accident?”

Kenichi had no reason to lie. “Yes.”

He heard his wife gasp at the other end. “I have a metallic taste in my mouth.”

“It’s the radiation. You need to get as far south as you can,” repeated Kenichi.

There was silence at the other end.

“Are you OK?” asked Kenichi. He could hear the sound of plastic as she removed a tissue to wipe her eyes.

“Will the children be all right?” she asked, sniffing.

“You need to get moving south,” he insisted gently.

“I’m scared,” she whimpered.

“It’ll be fine, as long as you go south.”

“OK.”

“I’ve got to go. I’ll give you a call again, soon.”

“Please soon.” The phone went dead.

Kenichi leaned against the wall and let out a deep sigh and cursed the idiots in TEPCO who had knowingly allowed this crisis to come about.

\*\*

“Sir, the helicopters have arrived,” announced one of the operators.

Kenichi got up and went into Suzuki’s office. “The helicopters are here. Shall I give the order for them to drop water on the fuel pool of the Number Four reactor?”

Suzuki looked up, a slight glimmer of hope in his eyes. “Yes, do it immediately.”

Ten minutes later the first Self Defense Force twin rotor chopper, a CH-47 Chinook with a lead sheet laid on the floor to lessen the radiation exposure, flew toward the Daiichi plant. Attached by a cable dangled a tank holding 7.5 tonnes of water. The chopper flew off the ocean westward toward the mountains.

“The wind is too strong,” shouted Kenichi, standing next to Suzuki on the observation deck.

“At least it’s changed direction and is blowing out to sea,” shouted Suzuki over the gusting wind. He then took out some binoculars and put them to his eyes. “It’s strong, but we have to try something; anything is better than nothing. It’s up to us now. We can’t rely on the men in Tokyo any longer.”

Kenichi nodded his agreement. He was surprised by the change in his boss’s attitude over the past few days. His true leadership qualities were surfacing. He was, after all these frustrating years, beginning to like him and even respect him.

The chopper banked around to the east and raced toward the Number Four reactor, throttled back as it neared, and then dumped its load, but the water blew like a sheet out to sea.

“Damn!” cursed Kenichi. “Did any of it land on the reactor?”

Suzuki withdrew the binoculars from his eyes. “A little.”

Minutes later the second chopper came thundering across and dumped its load.

“It’s useless,” said Kenichi, watching the sheet of water being blown out to sea. “We should stop them before they’re exposed to any more radiation.”

Suzuki stared through the binoculars. “More landed in the spent fuel pool this time. They seem to be gauging the wind better.”

They watched several more futile attempts, the helicopters fighting to hit their targets in the gale force winds.

Suzuki put down his binoculars. “Perhaps it’ll give us a little more time.”

Kenichi didn’t look at Suzuki; his eyes were trained on the next helicopter. “We need every minute we can get.”

\*\*

A burning sun sank below the snow clouds that stretched across the horizon on the fifth day after the Great Tohoku Earthquake. People continued to search for survivors and lost ones. The Japanese Self Defense Force was trucking in supplies and overseeing the massive rescue operation. Thousands upon thousands of people were volunteering from all over Japan. The American Marines were flying in supplies to some of the most isolated villages. Construction to fix major roads and bridges was going at full speed, and

supply trucks were starting to get through, but still millions of people were without gas, water, and electricity, and hundreds of thousands were homeless.

\*\*

Sachie and Seko sat eating hot stew and bread at a nursing home. They had trudged three hours through the howling wind and snow. The doctor had given Seko the medicine she needed. They would stay the night and head back the next morning.

\*\*

Kumiko sat with her father listening to the updates from the nuclear accident. Kumiko hadn't been able to make contact with her elder daughter Mariko since her father had told her to siphon the petrol from her car.

\*\*

Mariko's eyes were focused on the winding road. She had been given a motor scooter and was racing over the mountain roads in the direction of the Sea of Japan.

\*\*

Kenichi's wife had returned to the hotel where they were staying. The petrol station had run out of petrol two cars before hers. Her two children continued to suffer from nosebleeds, and as much as she washed her mouth, she couldn't get rid of the metallic taste.

\*\*

Kubo sat with Natsumi in his truck outside his home. She was crying. The day had been too much for her. Even though they had rescued three people, they had found seven dead. They had taken the bodies to the makeshift morgue. Natsumi had broken down when she saw a young girl, dressed in a red dressing gown, lying among the other bodies.

\*\*

Ryota sat with his arm around Karina, her head snuggled warmly against his chest. Yurie cast the fishing line out again and glanced at the grey storm clouds on the horizon.

\*\*

Kamata's boat chugged slowly through the entrance to Otsuchi harbor. Next to him sat a dog he had found floating on some wreckage.

\*\*

Hiro sat with Erica watching her scribbling the number four.

\*\*

The skinny boy sat with his parents, a vacant look in his eyes. His mother was still weeping, and his father was rubbing her back.

\*\*

Tomo lay on the ceiling of the truck, his throat raw with thirst. "Water!" he called to the man, rolling onto his side.

The man threw another branch on the fire, smiled maliciously, picked up a bottle of water and emptied it on the ground.

"Fuck you!" yelled Tomo.

The man snarled something incoherent, picked up another bottle and drank deeply.

\*\*

Mackeller and Riona sat drinking coffee in the hospital cafeteria.

"Thank you for evacuating the children," she said.

Mackeller put down his cup. "No problem."

"I still can't believe that my government is withholding the correct information from the public," she said, staring down at the table.

Mackeller reached out and put his hand on hers. "It's OK."

She looked up and shook her head. "No, it's not. There are hundreds of thousands of people, women and children, being exposed to deadly levels of radiation."

Mackeller saw the tears in her eyes. "Your government is not the only government. My government has lied to us for years. I went to war believing in my government." He touched the scar on his right cheek.

Riona nodded and then asked. "How did you get that injury?"

His mind fell back to the day he had been wounded. "I was flying a rescue mission in Afghanistan. We were called in to evacuate two wounded soldiers. Their hummer had been hit by a roadside bomb." He stopped. He had never told anyone, outside the military, what had happened. "We came in low and fast and then put down next to the burning vehicle. There were two other hummers that hadn't been hit and the soldiers were holding back a group of angry Afghans who wanted to overrun them. And then a man, casually, stepped out of the crowd with a rocket launcher on his shoulder and fired. That's the last thing I remember until I gained consciousness around an hour later.

A medic was standing over me speaking to me, but I was still deaf from the explosion. Later, I was told that the rocket had exploded ten meters short of my chopper, shrapnel ripping through my copilot, killing him instantly but shielding me.” He paused. “Except for this,” he said, rubbing the scar.

“I’m so sorry,” Riona said, wiping back the tears.

“They all lie. We are just pawns on a chessboard that are expendable.”

“No, I don’t believe that. My government couldn’t be so cruel as to abandon children. There must be some other reason—perhaps the data is wrong.”

*There it was again,* thought Mackeller. The Japanese stern belief in their government and their unwavering will to stand by them. *If only their government would do the same for them.*

## Chapter Eighteen

Wednesday, March 16, 2011, 4:00 a.m.

The sides of the tent flapped violently, and water dripped onto their sleeping bags.

Another gust of wind tore in off the ocean, threatening to shred the tent to pieces as the tank rocked heavily from side to side.

“I feel sick,” moaned Yurie.

Karina put her arm around her. “It’s OK. Everything will be fine,” she said, trying to comfort her sister. But her voice lacked certainty, and she looked to Ryota for reassurance.

He forced a smile and nodded. “It’s just a passing squall. I’ll go outside and have a look. He grabbed his backpack and then unzipped the flap of the tent.”

Karina grabbed his arm. “Be careful!”

“I will.” He pushed open the flap and crawled out onto the cold wet metal of the tank. He could barely see in the howling wind. Spray splashed over the sides, and he tried to steady himself on his feet. He stared out into the darkness, but all he could make out were the whitecaps churned up by the raging storm. He didn’t see the wave coming, which crashed over the tank, sweeping him off his feet and smashing him back into the tent. He heard both girls scream and could feel them squirming around under him. He struggled to his feet, the wind and spray cutting icily into his face. He saw the two shapes of the girls moving under the collapsed tent. He tore open the flap and dragged them out. Another wave crashed over the side and swept them off their feet.

“Hold on!” yelled Ryota over the fury of the storm.

“Help!” screamed Yurie as water surged over and washed her past Ryota.

He reached out and grabbed her jacket collar just before she went over the side.

Karina crawled across the tank and helped him pull Yurie back. “We need to get up higher!” yelled Karina, jabbing her hand toward the mound of wreckage.

They pushed Yurie up first and then followed.

“We’ll die of the cold if we stay out here,” yelled Karina.

“Follow me!” shouted Ryota. He took hold of Yurie’s hand and scrambled over the mound of broken timber. “In here,” he shouted.

They crawled through the hole.

“We’re going to die,” whimpered Yurie.

Ryota took out a flashlight and switched it on. They were sitting in the roof of the house where Ryota had first found the tents and supplies. Outside they could hear the fury of the storm and below them the sloshing of water. “Wrap yourself in this,” he said, stripping off some of the insulation from the roof.

“We’re going to die!” cried Yurie.

“No, we’ll be fine,” said Karina, wrapping the spongy insulation around her sister. “Ryota will look after us, won’t you?” She looked at Ryota pleadingly.

He nodded, a mischievous grin spreading across his face. He then took off his backpack. He had put some emergency supplies in it yesterday—just in case. He took out

a small portable gas cooker and inserted a gas cartridge and turned it on. The ceiling glowed yellow and Yurie stopped crying.

“Some hot soup?” he asked, smiling.

“You’re amazing,” said Karina.

“*Miso* soup, please,” said Yurie and then laughed.

They all laughed, oblivious to the fury of the storm outside.

\*\*

“Excuse me, sir,” said Kenichi.

Suzuki lifted his head off the desk. He had managed to sneak a few hours of much needed sleep. “Yes?” he said groggily.

“The radiation level is increasing very rapidly,” Kenichi said.

Suzuki rubbed his eyes with the backs of his hands. “Why?” asked Suzuki.

Kenichi shrugged his shoulders. “I’m not sure. Things are escalating far more quickly than I expected. It’s almost as if—” He stopped. The walls of the building began to shake and a dull rumble filled the air, and then it faded away and the shaking ceased.

“As if what?” asked Suzuki, ignoring the aftershock.

Kenichi cleared his throat. “As if some...external force is at work.”

Suzuki looked at him puzzled. “Some external force?”

“Yes, I keeping thinking about the hole that was blown out at the bottom of reactor four. Hydrogen rises, it should have blow upwards.”

“I know,” said Suzuki. “It has me puzzled, too.”

Kenichi put some papers on his desk. These are calculations I have done. I have based the calculations on the worst-case scenario in which all four reactors melt down and their containment vessels are breached.”

Suzuki studied the paper for a few minutes. “The radiation level is much higher than what you have calculated.”

“That’s what I am saying,” said Kenichi. “I don’t know what is happening out there. If the level increases any further, we’ll need to evacuate the workers.”

“We can’t. We must stay,” countered Suzuki.

“If they stay much longer, they will definitely die. I suggest we evacuate to the Daini plant ten kilometers to the south until the level of radiation drops. We can monitor the situation from there.”

Suzuki thought for a moment and then said, “We’ll stay as long as we can.”

“I want to go out and check the radiation level around Reactor Two.”

Suzuki nodded.

Thirty minutes later, Kenichi stood outside the Number Two reactor building. The radiation level was over 3,000 times higher than normal. He could see steam rising from Reactors One and Three and black smoke spewing out of Number Four. He turned and was about to head back when he heard a strange sound. He turned back to face Reactor Two; it sounded like someone was smashing the inside of the steel reactor vessel with a sledgehammer. He stood there listening for a few minutes.



Half an hour later, Kenichi entered Suzuki's office. "Something strange is happening inside Reactor Two."

"What do you mean?"

Kenichi explained what he had heard.

Suzuki rubbed his hands over his bald head and could feel patches of brittle surfacing from the several days of not shaving. He looked at his watch, which read 6:05 a.m. "Give the order to evacuate to the Daini plant."

"Yes, but someone must stay," said Kenichi.

Suzuki looked at his colleague. Kenichi's eyes were void of fear or concern. "You understand that if the level increases further you'll be exposed to a lethal dose of radiation."

"I have already been exposed," replied Kenichi flatly.

"Very well. You may stay if you wish." He paused a moment and fixed his eyes on Kenichi. "I promise your family will be looked after, and I will make sure they are paid enough compensation so they'll never have to worry about money in the future."

"Thank you," said Kenichi bowing.

\*\*

"We've lost all our supplies," said Karina.

Ryota stood on Junk Island with the wind flapping his windbreaker and water sloshing over the tank. The storm had washed the tents and all their food and water overboard. "I know. We'll need to find some more," he said, his eyes searching the debris.

"We still have the fishing rod," said Yurie, holding it up. Her hair was a mess and her clothes filthy.

"Where did you get that?" asked Karina. "That's not the same one as Yuta had."

"Over there," she replied, pointing to the other side of Junk Island.

Ryota stared closely in the direction she was pointing. "That wasn't there before the storm!"

Karina saw it as well, the top of a house stuck out of the water at the far side of Junk Island. "That's why you're so dirty. You've been inside, haven't you? You shouldn't have gone alone."

Yurie stood there holding the fishing rod, eyes cast down. "I'm sorry," she mumbled.

Karina glared down at her, and then her expression softened and she said, "You're a really good scavenger, aren't you?"

Yurie looked up, a naughty smirk across her grubby face. "You really think so?"

"Yes," replied Sachie.

Ryota laughed and then said, "Let's check it out!"

The three scrambled over the wreckage until they came to the roof.

"Did you see any food or water?" asked Karina.

Yurie shook her head. "I could only get into the roof. I think they used it as

storage.”

Ryota poked his head through the broken vent and shined his flashlight inside. “It’s completely flooded now.”

Karina sighed. “We need to find something or we’ll starve.”

“We’ve still got the fishing rod,” said Yurie gaily.

Karina shot her a look, which meant *Shut up little pest of a sister*.

The smile vanished from Yurie’s face.

“I’ll have to dive down to the living area and see if I can locate the kitchen,” said Ryota.

“The water’s too cold. You won’t last more than a few minutes,” said Karina.

“I’ll have to be quick,” replied Ryota, taking off his jacket.

“No! It’s too cold!” Karina picked up his jacket and handed it back to him.

Ryota put the jacket down. “Do you have a better idea?”

Karina knew whatever she said wouldn’t stop him. “No, but—”

“We should make a fire so he can warm himself after he gets out of the water,” interrupted Yurie.

Karina looked at her younger sister. “Good idea. We still have the gas burner.”

“Make the fire over there,” said Ryota, pointing to a metal sheet. “That way you won’t set my island on fire.”

They gathered some wood and lit it using the gas burner.

“Yurie, keep the fire going until I get back. Can you do that?” asked Ryota.

“Yes,” replied Yurie.

Ryota walked over to the roof with Karina and stripped down to his underpants.

“*Kiotsukete*. Be careful,” she said.

“I will.”

Karina gave him a hug and a kiss. “Just some extra warmth,” she whispered.

“Thank you.” Ryota picked up his empty backpack, put on some swimming goggles, and crawled through the broken vent and slid into the frigid water. He sucked in a deep breath and disappeared below the surface. His body was instantly assaulted by the coldness, his head ached and his chest constricted. He swam quickly above the rafters of the ceiling until he found the storage entrance and swam down through the hole. The right side of the house had been torn off, and this allowed for good visibility. He saw a TV and sofa overturned and swam through a doorway into the kitchen. The fridge lay face down, but the cupboard was open and he spotted some canned food. He quickly filled his backpack and swam back the way he had come. Seconds later he broke the surface; his body was shaking, and he was hyperventilating.

“Are you all right?” asked Karina.

“Ye...s,” stammered Ryota, almost unable to speak. His face was red, and his heart pulsated irregularly.

“Get out!” said Karina, stretching her hand out.

“No...there’s...more food.”

“You can’t. You’ll die—”

Ryota took a deep breath and disappeared below the water.

His body ached with coldness, but he forced himself down through the storage hole and into the kitchen. He grabbed the remaining cans and put them in his backpack and headed for the surface. His head broke the water, and he passed the bag up.

“Quick, get out!” said Karina, reaching for him.

He grabbed her arm, and she hauled him from the icy water. He was shaking uncontrollably, his breaths coming in short gasps.

Karina helped him to his feet, but he fell back down. “Yurie! Help me!” she shouted.

Yurie climbed over the pile of wood to where Ryota lay trembling. They wrapped his arms around their necks and dragged him to the fire.

“Ryota, can you hear me?” asked Karina.

Ryota’s face was as blue as a corpse and his eyes open. “Yes...I...can hear you,” his voice rattled.

“Don’t go to sleep. You have to stay awake,” said Karina, putting his jacket over him.

“You need to dress him,” said Yurie.

Karina looked at her with an embarrassed expression. “Uh...yes. You keep feeding the fire, and I’ll put his clothes on.”

“You’ll have to take his underpants off,” said Yurie, a slight smirk touching her lips.

“I know, you idiot! Just keep the fire going.”

Yurie turned her nose up and threw another piece of wood on the fire.

Karina stripped his underpants off, trying to avoid looking. She then dressed him in his jeans and T-shirt. “Can you sit up a little? I need to put your jacket on.”

Ryota’s eyes groggily opened. “Yes.”

He sat up and Karina put the jacket on and zipped it up.

“Thank you,” said Ryota, putting his arms around her.

“Not at all,” she said, hugging him tightly.

Yurie rolled her eyes and threw another piece of wood on the fire.

Ryota and Karina lay entwined next to the fire while Yurie stared out over the ocean. She had spotted something—the black shape of a man lying on some wreckage.

\*\*

Yukino knelt staring at Taka. “I’m sorry,” she whispered, but her throat stung with guilt.

She got to her feet and walked to the door and put on the jacket. Her mind raced back to the day before when they had laughed and joked about the jacket. A tear slid down her cheek. “Good-bye Taka-san,” she said, sliding the door open. Outside, she bowed towards the house and then slowly walked away.

\*\*

Kamata nudged his boat through the debris that clogged the entrance to the small fishing

harbor on the other side of Otsuchi Bay. He throttled back to neutral, and the boat slid up to the side of the concrete dock—one of the few that had survived the tsunami. He, Seko and Sachie jumped off and tied up the boat.

“Where are they?” asked Kamata.

Seko’s eyes searched the area; only a few rooftops and pieces of timber protruded from the mud. “There!” she said, pointing to the two remaining houses halfway up the hill.

The three trudged through the mud and up the hill until they reached the houses. They could see a faint glow coming from the window of the house on the left and went up and knocked.

“Hello!” Seko called, sliding open the door. Inside a group of elderly people sat huddled around a kerosene heater.

One of the women ran over and hugged Seko. “You made it! Are you OK?,” she asked, crying.

“Yes, I’m OK,” she said, hugging the woman.

Kamata entered and another woman ran over and hugged him. Kamata reluctantly put his arms around her. He wasn’t used to such an emotional outburst; it wasn’t part of the Japanese culture, but he could feel the woman’s emotion and held her comfortingly.

Sachie entered and the same thing happened.

After a few minutes, Seko gently pulled away the woman’s arms and took out a small package from her jacket. “Here’s the medicine.”

“Thank you,” said the woman, taking the medicine and handing it to the old woman who needed it.

“You’re welcome,” replied Seko. “We will take you back to the other side of the bay where they have food and somewhere warm for you to stay.”

The woman bowed deeply. “Thank you so much.”

\*\*

Natsumi sat in Kubo’s truck, her face buried in her hands, crying. They had spent most of the day searching Nakamaru Elementary School and the surrounding area for survivors. Late in the afternoon, the search had been widened, and they had come across two girls in Mickey Mouse T-shirts, one with plaits. The two girls lay dead, holding hands, one with a plait in her mouth. They had survived the tsunami and miraculously washed onto higher ground but had then later died of hypothermia.

Kubo rubbed her shoulders. “I’m sorry,” he whispered.

Natsumi looked up, tears streaming down her face. “What type of God would do this to young children?”

Kubo just stared back unable to answer. The question had raw truth in it. She was right. *What kind of God would be so merciless to his own children? We surely wouldn’t do this to our own children.*

“I don’t believe in God anymore,” she sobbed.

Kubo rubbed her shoulders. "I'm sorry," he whispered again.

\*\*

The skinny boy and his parents stood dressed in black. The mother placed the last flower on her daughter's body and cried.

"Let her go," whispered her husband, putting his hand on hers and withdrawing it from the casket.

"Yes," she said, sobbing.

Her brother stared down at his sister from behind his black-framed glasses. "Goodbye, sister," he whispered.

A man in black walked over and bowed. "We will send her now."

The three of them stood in silence as he wheeled the casket over to the furnace, slid it in, and then locked the door.

The roar of the fire resounded around the crematorium, and the mother collapsed to the floor unconscious.

\*\*

Hiro sat with Erica in the Tono town hospital. He had decided that she needed some medical help and had managed to get a ride from the Self Defense Force.

"Would you like something to eat?" asked Hiro.

Erica didn't respond and just kept scribbling the number four in her notebook.

She had lost a lot of weight since the quake, and Hiro was very concerned. "You need to eat something," he said.

She didn't look up and just continued writing.

"Erica Noguchi," came over the speaker. "Please go to Room Three."

Hiro stood up. "It's your turn," he said.

Erica didn't respond.

Hiro reached down and gently took hold of her arm. "Let's see the doctor."

She tore her arm away and screamed "No!"

Hiro was surprised by her outburst. "The doctor will help you." He reached out again, but she slumped to the floor holding the notebook tight to her chest.

Everyone in the waiting room stared at her.

"It's all right," he said softly.

"No!" she screamed.

A nurse heard the racket and came out.

"She doesn't want to see the doctor," said Hiro.

The nurse, a pretty woman in her mid-twenties, knelt down. "What's your name?" she asked in a soft tone.

Erica glared at her.

"My name is Kiyo."

Erica's face flushed red. "Death!" she shouted.

The nurse looked confused. "What?"

"Death! We're all going to die!" she screamed.

There was an uncomfortable silence in the waiting room.

"That's not true," said the nurse, smiling. "Come with me." She put her hand out.

"Death! Death! Death!" ranted Erica and kicked the nurse's hand away.

The nurse let out a short cry and stood up and rushed off into one of the rooms.

"That wasn't very nice," said Hiro.

Erica didn't look up and began scribbling the number four again.

"What seems to be the problem?" asked the doctor, appearing with the nurse.

Hiro explained what Erica had been through.

"I see." He squatted down in front of her. "I'm a doctor," he said, smiling.

Erica looked up and glared at him.

"I can help you." He reached out for her hand.

"Death!" she screamed and kicked his hand hard.

This didn't go down well with the doctor, who had had almost no sleep for the past few days and was on the verge of cracking. "Call the orderlies," he said to the nurse and then went back into the room.

A few minutes later, the orderlies arrived, and the doctor reappeared with a syringe.

"What are you going to do?" asked Hiro.

The doctor looked at Hiro. "I'm going to sedate her and put her on a drip."

"Is the sedation necessary?"

"Yes," snapped the doctor. He motioned for the two male orderlies to restrain her.

Erica resisted, kicking and thrashing around on the floor.

"Hold her still!" yelled the doctor.

The two men fought to restrain the squirming girl.

"Hold her!" yelled the doctor again.

He stuck the needle into her arm, and her eyes went blurry.

\*\*

Seko and Sachie walked away from the shelter where they had left the old people. "That was really brave of you," said Sachie.

"What do you mean?" asked Seko.

Sachie looked at her surprised. "Well you hiked over the mountains by yourself."

"Oh...that," she said, smiling mischievously. "Nothing really."

Sachie let out a short laugh. "Nothing much! I don't know if I could do it."

"Remember what your father used to say. *Where there is a will there is a way.*"

The words caused Sachie's eyes to brim with tears.

"I'm sorry I didn't mean to—"

Sachie began to cry. Nothing could match the pain she'd kept locked up inside her since her father's accident. "I didn't mean...to...hurt him," she sobbed.

Seko was stuck for words.

Sachie wiped the tears from her eyes and looked up. "I hurt him."

"Who?" asked Seko.

"My father. I was the cause of his accident."

"What do you mean?"

"Do you remember when Yukino broke her leg at New Year?"

"Yes."

"After my father returned from taking her to hospital, he went into the barn to clean up." She paused for a moment and saw the look of realization on Seko's face; she also was a member of the secret sect. "He found the swords."

Seko's face drained of color.

"I was sleeping by myself in Aunt's house next door when he burst into the bedroom around one in the morning. He was furious and demanded to know how I had come into possession of the swords. I told him it was none of his business and that I was old enough to make my own decisions. He screamed at me to tell him. I'd never seen him in such a rage; his face was red with fury, and I could see the veins bulging in his forehead. I screamed back that I had the right to belong to the sect. This only maddened him further, and he smashed the box to pieces. I yelled that he was an idiot, and he tore the covers off me and yanked me to my feet. I tried to break free, but he slapped me hard across the face." She stopped and tears spilled from her eyes. "He had never once hit me in my life, never once. I lost control and slapped him back across the face. He didn't flinch, just stood there, eyes narrowed, the veins bulging out of his forehead. And then he collapsed. His brain had hemorrhaged."

Seko stood there in silence watching Sachie sob and then gave her a hug. "It's all right; it wasn't your fault. If Yukino hadn't been so stupid to break her leg in the barn, it would never have happened."

They both hugged each.

"It was my fault," said Sachie.

"It wasn't your fault," said Seko. "It was just an unfortunate accident."

Sachie nodded wiping the tears from her eyes.

"Does Yukino know this?" asked Seko.

"No," she muttered. "And don't tell her."

"I won't."

\*\*

Kumiko took her phone from the battery charger. "I'm going to go and look for Sachie!" she said, heading to the door.

"She's all right," said her father, grabbing her arm. "She's gone to help Seko."

Suddenly her phone rang and she took it out. "It's Mariko."

"Hurry and answer it," her father said.

"Hello, where are you?"

"I'm in Shikoku," the voice at the other end said.

“Where are you staying?”  
“I’m staying at a friend’s house.”  
“Are you OK? Do you need any money?” asked Kumiko.  
“No, I’m fine. How is everyone?”  
Kumiko was silent for a moment.  
“Hello,” came her daughter’s voice at the other end.  
“Sachie is helping Seko. Grandpa’s with me.”  
“Where’s Yukino?”  
Kumiko didn’t know what to say.  
“Mother are you there?”  
“Yes,” replied Kumiko.  
“What’s happened to Yukino?”  
“We haven’t heard from her.”  
“What? Have you gone looking for her?”  
“Yes, Sachie went looking for her, but she could find her.”  
There was a long silence at the other end and then Mariko said. “I’m sure she’s fine. She’s probably helping someone.” But her words lacked confidence.  
“Yes, you’re probably right.” He words also lacking the same confidence.  
“I have to go. My credit is running out.”  
“I’ll give you a call back later,” said Kumiko.  
“Bye.”  
“Bye.” Kumiko hung up and stared at her father.  
“Is she safe?” he asked, meeting her glare.  
“Yes, Mariko’s safe.”  
“I’m glad to hear that.”  
“What about Yukino?”  
Her father sighed. “I don’t know.”  
The door opened and Sachie and Seko walked in.  
“Are you all right?” asked Kumiko, noticing Sachie’s red eyes.  
“Yes, we’re fine,” answered Seko quickly. “We took the medicine to the stranded people and then evacuated them to a temporary shelter.”

\*\*

Kenichi dialed his wife’s number.

“Hello,” said his wife.

“Where are you?” he asked anxiously.

“We just arrived in Tokyo. We’re staying in a small hotel near Ueno Station.”

“How are the children?”

There was a long silence, and then his wife said, “They seem to be fine, except they are still getting nosebleeds.” She paused and then asked, “Will they be all right?”

Kenichi had no idea how much radiation they had been exposed to and couldn’t really give an answer. However, he didn’t need to cause any more anxiety for his wife.



“They’ll be fine. You’re a safe distance away now.”

“How about the children who are still in Koriyama and other places around the nuclear plant?”

“I don’t know,” said Kenichi. “The government should have at least evacuated the children to outside the 80-kilometer zone, as was recommended by the Americans.”

There was silence at the other end and then she asked, “How are you?”

“I’m fine,” he replied. But she could tell he wasn’t.

“When will you be able to leave the plant?”

“I’m not sure.”

“I have to go now. The children are calling me. Take care and call me soon”

“I will,” he said, hanging up the phone. He closed his eyes and leaned against the wall. A terrible fear crept into him as images of his children with nosebleeds surfaced in his mind.

\*\*

The elderly lady lay in her futon. She was cold and very weak. The vile metallic taste still stayed in her mouth. She rolled over and reached for a piece of paper and a pen and began to write a letter to her daughter and granddaughter. She knew for certain no one was coming and that she would die where she was.

*Dear Sayaka,*

*I’m very sorry we will never meet again. I was so looking forward to traveling to Kyushu in the summer to attend my granddaughter’s sports carnival. Please tell Rika Grandma is very sorry she could not ...*

When she finished, she hugged the letter to her chest and closed her eyes, letting the sweet images of her granddaughter lull her to sleep.

\*\*

Yukino wandered aimlessly through the forest, her mind empty of thought. Suddenly the smell of smoke pervaded the air and without thinking she headed in that direction. A few minutes later, she came out of the forest. In the distance, she could see a man sitting by a fire, an overturned truck in front of him.

She walked closer. “Hello!” she called out.

The man turned around and glared at her. “What do you want?” he spat.

Yukino’s eyes caught movement in the truck and she moved a little closer.

“Stay away,” growled the man, getting to his feet.

Her eyes focused on the movement in the truck and she gasped. “Tomo!”

The man grabbed a piece of wood. “He’s mine! He killed my daughter!” he snarled.

“What?” said Yukino.

“Yukino! He’s lying,” shouted Tomo. “He hit his head in a car crash! He doesn’t know what he’s doing!”

“Tomo!” Yukino’s stare swept to the man. She could plainly see the crazed look in his eyes. “What are you doing in the truck?”

“He’s holding me prisoner. He thinks I killed his daughter.”

“Eli-chan,” howled the man and then charged at Yukino, the piece of wood raised above his head.

Yukino barely had time to dodge the first blow, diving to the side and somersaulting to her feet. She searched around her for a weapon and saw a long piece of wood to her left. As the man came at her again, she sent herself sailing through the air, snatching up the piece of wood and rolling back on to her feet. He charged at her again, but she blocked his blow and then span around and hit him square between the shoulders with the piece of wood. The man let out a painful cry and stumbled forward.

“I’m going to kill you!” he screamed.

Yukino stood there in a defensive stance, silent, her breathing steady.

He ran at her, but she easily sidestepped him and slammed him on the back, sending him crashing to the ground.

“Enough,” said Yukino.

“Fuck you!” spat the man, crawling to his feet.

“Is that so,” said Yukino. She took a step closer and, calmly, clobbered him over the head.

The man collapsed to the ground unconscious.

“Yukino,” called Tomo.

Yukino threw down the stick and walked over to the truck. “I have a right mind to leave you in there.”

“Get me out of here!” insisted Tomo. “I never intended to hurt you.”

Yukino thought back to the BBQ last summer. It had all gone fine until, Tomo who was already drunk, offered her some vodka. She had never drunk before and the effect of the vodka had exhilarated her. After everyone had left or gone to sleep, the two of them drank and laughed long into the night. He was an attractive young man and she was an inexperienced young girl flying high on vodka, so when he made his move and kissed her, she simply melted in his arms and he had carried her off to bed. But when he awoke in the morning, eyes still half shut, he had kissed her and said, *I love you Sachie*.

“You really hurt me, you know,” she said, glaring at him.

“I was drunk. I thought you were Sachie. I didn’t mean to hurt you.”

Yukino squatted down next to the window. “Is that supposed to make me feel better? You prefer my cousin to me.” She paused and wiped the tears back that were brimming in her eyes. “I thought you loved me. It was my first time, you know. You spoiled it.”

“I didn’t mean to spoil it,” he said softly. “And if it means anything to you, I couldn’t get you out of my head for months—I still can’t. I’ve thought so many times of breaking up with Sachie and going after you.”

“Really?”

“Really. But I know it would make Sachie and you hate each other.”

“It would,” nodded Yukino.

“Would you mind letting me out now?”

Yukino pulled open the door and helped Tomo out and then untied his hands.

“Thank you,” he said.

“You’re welcome,” she replied grinning.

Tomo helped her to her feet and said. “You fight really well.”

“I have a good teacher, don’t I?”

Tomo flinched and then nodded.

“What shall we do about him?” she said, pointing to the man sprawled on the ground.

“I guess, tie him up and when he wakes up take him to a hospital—if there are any.” Tomo picked up the rope the man had used on him and started towards him.

“Wait,” said Sachie.

Tomo looked at Yukino. “What?”

“Would you hold me one last time?” she said, almost in a whisper.

“Do you think that’s a good idea?”

“Just this time.”

Tomo walked over and they both wrapped their arms around each other, hugging tightly.

“Don’t forget me if you ever break up with Sachie,” she said, snuggling her face into his chest.

“I won’t.” He gently pushed her back and their eyes met.

“Kiss me,” she whispered. “Just one last time.”

Their lips met and all the suffering of the past days drained from her.

\*\*

Mackeller walked Riona to her room on Matsushima base.

“I hope you like the room,” said Mackeller, unlocking the door.

“I’m just thankful to have somewhere dry and warm to sleep. Hundreds of thousands of people are homeless and trying to survive in the freezing conditions.”

“Yes, you’re right.” He pushed open the door and turned the light on.

The room was small with one bed, a TV and a small kitchenette.

“Would you like to come in for a cup of coffee?” asked Riona.

“That’d be nice,” said Mackeller.

Riona made the coffee but they never drank it and Mackeller didn’t leave.

## Chapter Nineteen

Thursday March 16, 2011.

Yukino and Tomo had spent the night in the overturned truck. In the morning they'd marched the man into town and handed him over to some medical workers at one of the evacuation centers. They then returned to Yukino's cousin's house and were standing outside.

"Just friends, right?" said Yukino.

Tomo sighed. "Just friends."

Yukino stuck out her hand and Tomo reluctantly shook it.

"Shall we," he said, pointing to the stairs.

"Yes, you lead the way."

They climbed the stairs and Yukino was about to knock on the door when she turned and looked Tomo straight in the eyes. "Just friends, right?"

Tomo nodded.

Yukino knocked on the door and a few seconds later Sachie face appeared.

"Oh my god!" exclaimed Sachie. "You're still alive."

Yukino smiled. "We came across each other."

Sachie, paying no attention to Yukino, pushed past her and hugged Tomo. "I thought you were dead. It's like a dream come true."

"I'm fine," said Tomo, looking over her shoulder at Yukino.

Yukino shrugged and entered the house.

"Yukino!" shrieked Kumiko and Seko, running over and hugging her.

Her uncle hearing all the commotion entered the living room, a big smile stretched across his face. "I knew you'd be fine."

Kumiko made some tea and they sat around explaining what had happened over the last several days.

\*\*

Mackeller kissed Riona on the back of neck and she rolled over and kissed him back.

"I have to leave. I have relief missions to fly this morning," he said.

Riona gave him another kiss and released him from her grip. "I must get moving myself," she said. "I have to check on the children."

"Will I see you tonight?"

She giggled softly. "Every night, I hope."

\*\*

By Thursday afternoon the radiation levels had decreased and the Fukushima Fifty had returned.

Kenichi entered Suzuki's office. "Main power has been hooked up sir. We're

about to start the cooling systems.”

Suzuki looked up. Dark circles ringed his eyes and clumps of spiky hair dotted his head. “Let’s hope it works.”

They both entered the control room.

“Start the cooling systems,” ordered Suzuki.

Suzuki, Kenichi and the other operators stood staring as the monitors and cooling systems hummed to life.

“Number One reactor’s systems operational,” called one of the operators.

“Number Two and Three reactors back online,” called another.

“How’s the cooling system for the Number Four reactor’s spent fuel pool?” asked Kenichi.

“Operational,” said an operator.

Suzuki let out a long sigh of relief.

Someone began to clap and then everyone joined in.

Suzuki nodded to Kenichi and he nodded back.

## Chapter Twenty

One month later.

Otsuchi lay in ruins. The streets had been cleared by heavy machinery allowing the roads to be used. A temporary mobile phone tower had been set up, but basically the town looked much like Hiroshima or Nagasaki after the A-bomb. Volunteer workers were slowly trickling into the town with much needed supplies. Kumiko was surprised when a truckload of futons arrived and a foreigner got out and helped unload them. People from all over the world were volunteering.

\*\*

Ryota, Karina, and Yurie had rescued a young man who had been stranded on some wreckage. They survived in the ocean for one month before being found by Mr. Kamata. Ryota and Karina fell in love. Ryota returned to school and entered the same university as Karina. Yurie started to write a book about her adventures on Junk Island.

\*\*

Hiro stayed close to the hospital and checked in everyday to see if Erica was fine. One morning, Hiro managed to get Erica out of bed and take her for a walk in the hospital garden.

“Eri-chan!” came a voice from behind them.

Erica whirled around to see her father running towards her. “*To-san*. Father!” she screamed, running towards him.

He picked her up; swung her round and then gave her a cuddle. “I thought you drowned.”

Erica shook her head. “No.”

Tears of joy burst from both of them.

“Excuse me,” said Hiro. “I’m Erica’s teacher.”

The father put Erica down. “Thank you so much for helping my daughter,” he said, bowing deeply. “I don’t know how to repay you.”

“You’re welcome and you don’t need to repay me.”

“If it wasn’t for him, I would have drowned,” blurted Erica.

“Thank you so much,” he said, bowing again.

“You’re welcome,” replied Hiro, returning the bow. “What happened to you? Where did you go?”

“No where,” said the father, picking up Erica. “I was here in this hospital all the time.”

“What do you mean?” asked Hiro with a puzzled look on his face.

“I was involved in a car accident the day after the earthquake and lost most of my memory for three weeks.”

“I see,” said Hiro.

Erica climbed down from her father and held Hiro's hand. "Thank you."  
Hiro couldn't hold back the tears.

\*\*

Sachie, Seko and Tomo had worked day and night to get Kumiko's shop back up and running and now helped in the shop. Tomo and Sachie did most of the cooking, while Kumiko ran the shop with Seko. Her father looked after deliveries.

\*\*

Yukino decided to stay and help the people of Otsuchi. One morning she went and placed some flowers where the hair salon had once been and then went down to the harbor to visit Mr. Kamata.

"It's a beautiful day, isn't it?" said Yukino.

"Yes, it is," said Kamata, pouring Yukino and himself two cups of sake.

"To the respect of Mother Nature," she said, lifting the sake cup.

"To Mother Nature," he said, raising his cup.

"*Kampai!* Cheers!" said Yukino.

"*Kampai!*" replied Kamata.

They both knocked the sakes back.

"How many people did you find at sea?" asked Yukino, putting her cup down.

Kamata refilled the cups. "Four. Only four," he said sadly.

How long had they been stranded?"

He picked up his cup. "Almost a month," he said and knocked back another sake.

"Did they find their families?" she asked, taking a sip.

"Yes, they did, and one of them now works for me," he said, pointing behind her.

Yukino turned to see Yuta standing with a big grin plastered across his face.

"Yuta-kun!" she yelled. She jumped to her feet and raced over and gave him a big hug.

Mr. Kamata chuckled at the beauty of life and poured himself another sake.

## Chapter Twenty-One

One year later.

Months after the nuclear accident, rescue workers found several elderly people dead at home in the no-go zone. All of them had starved to death after being left behind during the rushed evacuation. They found one old lady curled up dead in her futon, clutching a piece of paper to her chest.

*Dear Sayaka,*

*I'm very sorry we will never see each other again. I was so looking forward to traveling to Kyushu in the summer to attend my granddaughter's sports carnival. Please tell Rika grandma is very sorry she could not make it, and give her a big hug for me.*

*I will miss you both very much and am saddened I will not be around to see Rika grow up. Please live your lives to the fullest every day, as you never know when it may suddenly be snatched away from you. The destruction and death the earthquake and tsunami have wrought on this area is unimaginable and has made me realize that every second of every day is precious to us and should not be wasted on negative thoughts; be positive and enjoy what this wonderful world has to offer. Don't waste it on needless arguments or complaints. Don't let your dreams be washed away by others' negative opinions; stand strong and your dreams will come true. Allow yourself to be cloaked in the true magic of the world.*

*To my darling Rika,*

*I would like you to do a few things for your grandmother while she's away.*

*Every morning when you wake, I would like you to thank Mother Earth for what she has given you. Just say thanks for the warm sun in spring, or the rain in June, or the snow in winter; thank her for whatever you want, and thank her as many times as you want. And when you go to the mountains or the sea, breathe the air in deeply and taste its fragrance. Try to look at the stars and the moon every night and watch as many sunrises and sunsets as you can.*

*Could you do these things for your grandma?*

*I won't be seeing you for a long time, so please don't stop doing these things when you grow older.*

*Love,*

*Grandma*

*PS: Don't eat so many chocolates; they will make you fat.*



\*\*

Kenichi placed the folder on Suzuki's desk.

"Is it finished?" asked Suzuki.

"I have a few little bits to add, but basically it's finished."

Suzuki stared down at the folder for short while and then asked, "What have you added?"

"I've combined the two reports I gave you before—the one predicting the killer tsunami and the other that went into details about the defects of the Mark 1 BWR reactors. I have also included a new report about how the Japanese government and TEPCO have downplayed and withheld important information about the nuclear accident. It includes the spread of radiation and the effects it will have on people.

Suzuki rubbed his hands over the stubs of brittle hair on his bald head. "You know what this means, don't you? Both you and I will lose our jobs and pensions."

"Yes," replied Kenichi.

"Who do you intend to give it to?"

"The international media."

Suzuki's mind wandered momentarily to the white sandy beaches of Hawaii, where his dream of retirement had all but been lost. And then he refocused on Kenichi. "Tell me what you have uncovered."

Kenichi picked up the file and opened it. "I will skip the section that explains in detail how the prime minister's interference was seen as a major cause of the accident, as you already know the details. Instead, I will start with the cover-ups. Our government is responsible for withholding crucial information during and after the accident and is still doing so. The citizens—not only of Japan but of the entire world—should be given access." Kenichi paused and turned the page. "The Number Four reactor is a ticking time bomb. The reactor building has been so severely damaged that it is barely standing. The spent fuel pool, which is located thirty meters above the ground, is holding 1,035 spent fuel rods. These rods are not in any containment vessel but open to the air and are still releasing radiation. If the fuel pool runs dry of water and the spent fuel rods catch on fire, it will release fifty times the amount of radiation released by the Chernobyl reactor. The plant will become so contaminated that it will become uninhabitable, and we will have no choice but to abandon the plant. This will, in turn, lead to the failure of the cooling systems for the other spent fuel pools in Reactors One, Two, and Three and also the common spent fuel pool, which all together hold around 11,400 fuel rods. If these catch fire, it will cause a global catastrophe, releasing so much radiation into the atmosphere that Japan would become unlivable—as well as most of the Northern Hemisphere. Engineers have just completed a survey of the Number Four reactor building, and the results indicate that the building stands a zero chance of surviving a magnitude 6.5 earthquake. The possibility of a magnitude 6.5 earthquake has been raised due to the discovery of a fault line just south of the plant that has become active since the March 11 earthquake." Kenichi looked at Suzuki.

Suzuki rubbed his brow in frustration. "Continue."

“This is no longer just a Japanese problem but a global one. We need the international community’s help. Although the head office has drawn up plans to construct a crane building over the remains of Unit Four, with a crane big enough to lift the one hundred-ton canister necessary for storing the fuel rods, they estimate it will take three to four years. The possibility of a magnitude 7 quake hitting during this time is extremely high.”

Suzuki leaned back in his chair and sighed. “I have requested the project be moved forward and completed as quickly as possible, but all I get is closed ears from the Tokyo office. It seems that everyone is oblivious to the risk of a global catastrophe that could change the very way we live. I have repeatedly called for an international team to be formed to deal with the fuel pool in Reactor Four.” He stopped and fixed his eyes on Kenichi. “Do you have more to add?”

Kenichi nodded. “For months after the accident, the government repeatedly refused to admit there had been a meltdown, even though they were fully aware that it had happened two days after the tsunami. They kept the disaster level at Level 5 for weeks after the accident before raising it to a Level 7. This again allowed people in the surrounding areas to believe the accident was not so severe, exposing them to high levels of radiation. The government decided that exposing hundreds of thousands of people to unacceptably high doses of radiation was better than having a mass exodus from the surrounding areas. These unscrupulous men in Tokyo took it upon themselves to play God with people’s lives. The CEO of TEPCO did not once visit the Daiichi plant during or any time soon after the crisis.” He paused and sweat trickled down his forehead. “The Japanese government, in conjunction with the American government, deliberately hid information from the public. The Americans and Canadians shut down all their radiation monitoring stations on the west coast just a week after the accident. They said that there was no radiation reaching the coast; therefore, they didn’t need to keep monitoring. This was while independent laboratories and universities were showing massive amounts of radiation hitting the west coast. Just five days after the accident, xenon and krypton were measured at 40,000 times above the normal level on the west coast.” His voice was loaded with anger. “A report recently released in the US said this.” He took out a sheet of paper and handed it to his boss.

Suzuki bent forward, his chin on his hands, and started to read.

#### MEDICAL JOURNAL ARTICLE: 14,000 US DEATHS TIED TO FUKUSHIMA REACTOR DISASTER FALLOUT

‘Impact Seen As Roughly Comparable to Radiation-Related Deaths After Chernobyl; Infants Are Hardest Hit, With Continuing Research Showing Even Higher Possible Death Count.’

WASHINGTON, DC – December 19, 2011. An estimated 14,000 excess deaths in the United States are linked to the radioactive fallout from the disaster at the Fukushima nuclear reactors in Japan, according to a major news article in the December 2011 edition of the *International Journal of Health Services*. This is the first peer-reviewed study

published in a medical journal documenting the health hazards of Fukushima.

Authors Joseph Mangano and Janette Sherman note that their estimate of 14,000 excess US deaths in the fourteen weeks after the Fukushima meltdowns is comparable to the 16,500 excess deaths in the seventeen weeks after the Chernobyl meltdown in 1986. The rise in reported deaths after Fukushima was largest among US infants under age one. The 2010-2011 increase for infant deaths in the spring was 1.8 percent, compared to a decrease of 8.37 percent in the preceding fourteen weeks.

The IJHS article will be published Tuesday and will be available online as of eleven a.m. EST at <http://www.radiation.org>.

Just six days after the disastrous meltdowns struck the four reactors at Fukushima on March 11, scientists detected the plume of toxic fallout had arrived over American shores. Subsequent measurements by the US Environmental Protection Agency (EPA) found levels of radiation in air, water, and milk hundreds of times above normal across the US. The highest detected levels of Iodine-131 in precipitation in the US were as follows (normal is about 2 picocuries I-131 per liter of water): Boise, ID (390); Kansas City, MO (200); Salt Lake City, UT (190); Jacksonville, FL (150); Olympia, WA (125); and Boston, MA (92) ...'

Suzuki stopped and looked up at Suzuki. His breathing was hard, and he fought to control his temper. "My God! What have we done? Fourteen thousand deaths in America alone. How many more in Japan and other countries will there be?"

Kenichi's face burned red. "The Japanese government's medical establishment has not released the annual death rates for Fukushima in the areas around the plant for months!" he roared.

"Calm down," said Suzuki.

Kenichi took a few deep breaths to quell his anger. "May I continue?"

Suzuki nodded.

"There seems to be a concerted effort by the nuclear industry—the NRC (Nuclear Regulatory Commission), IAEA (International Atomic Energy Agency), JAEA (Japan Atomic Energy Agency), and the NISA (The Japanese Nuclear Regulatory Commission)—to deliberately downplay what happened at Fukushima. There is a deliberate worldwide push by these and other agencies to downplay the effects of low-level radiation exposure. A recent report, called BEIR V, cites that long periods of low-level radiation exposure are far more dangerous than a short high dose of exposure. Its research found that children and young women were more at risk of cancer than men or elderly people. It reported that young girls and infants were the most vulnerable to radiation exposure and had a five to ten times more chance of developing cancer."

Kenichi took a deep breath and wiped the sweat off his forehead. "Our government has raised the allowable annual dosage from 1 mSv a year to 20 mSv a year. A report found that the mortality rate increased significantly among workers at nuclear plants who were exposed to 4 mSv per year, just one-fifth of the level set for Fukushima.

The radiation in Fukushima will primarily kill young women and children.” Kenichi stopped and thought of his own two children. Both had just been tested for thyroid cancer, and lumps had been found in both of their necks. He cleared his throat. “One thousand out of 3,000 children tested for thyroid cancer in Itate village, Fukushima, thirty-nine kilometers from the Daiichi plant, and have lumps in their thyroids—one-third—and not even a year has gone by. The NRC estimates that Fukushima released 200% as much radioactive iodine as Chernobyl.”

Suzuki laid his face in his hands and moaned. “What have we done?”

“Shall I continue?” asked Kenichi.

Suzuki nodded without looking up.

“The radiation is spreading!”

“What do you mean?” asked Suzuki.

“Recent data shows that cesium fallout equals 4,023 Hiroshima bombs. That cesium is being washed off the mountains in Fukushima and into the rivers. Four main rivers for drinking water originate in Fukushima or drain water from Fukushima. Naka and Kuji Rivers that feed into Ibaraki Prefecture, the Abukuma River that supplies Sendai, and the Arakawa River that provides a large portion of Tokyo’s water. Cesium has been detected in all these rivers. The cesium then spreads along these rivers, contaminating farmland further downstream—sometimes hundreds of kilometers away. Cesium, strontium, and cobalt, as well as other radioactive particles, have been found along the rivers where they hadn’t been found a few months ago. Eventually, these particles flow into the ocean and the marine life is contaminated. Fish recently caught forty kilometers off the coast of Fukushima were found to have 38,000 becquerels of cesium per kilo of meat. The government safety level is 50 becquerels. Cesium was recently found in the fish in the Sea of Japan, which was previously thought to be safe.” Kenichi paused and turned the page. “In one city, around fifty kilometers from here, they found the radiation level of the sludge at the bottom of the pond in the center of the city to be 300,000 times higher than normal.”

“What?” exclaimed Suzuki.

“Yes, 300,000 becquerels per kilogram. The tributaries that flow through the pond originate higher up in the mountains where contaminated soil is washed into them.”

“Are you sure of the figure? It seems exceedingly high,” said Suzuki.

“I’m sure,” replied Kenichi, turning the page. “There is also evidence that the underground water tables have been contaminated, some of which travel for thousands of kilometers underground.” Kenichi paused and looked at Suzuki. “It gets worse,” he said.

Suzuki rolled his eyes. “What could be worse?”

“A scientific study recently found that the flowers of the male cedar tree in Fukushima have extremely high levels of cesium, and when spring comes, it will be released with the pollen into the air. This will increase the level of cesium in the air by ten to a hundred times. Fukushima’s mountains are covered with cedar trees as well as the rest of Japan; they estimate that Fukushima Prefecture alone has 250 million cedar trees.”

“Are you sure?” asked Suzuki.

“Yes, and let me quote what was published in the Japanese media. *The Japan*

*Times* reported,

‘Extremely high radiation of more than 250,000 becquerels per kilogram have been detected in the male flowers of cedar trees...’

NHK, the national television station reported,

‘The agency reports this is not a great health hazard, as it is only about ten times what a person would be exposed to from background radiation in Tokyo’s Shinjuku ward.’”

“Has the government ordered a health warning?” asked Suzuki.

“No! They are saying there is nothing to worry about. There is no health hazard.”

Suzuki sat there with a stunned look on his face. “Nothing? There’s no health warning?” he asked again.

Kenichi shook his head. “And this will happen for the next 200 years or so—the trees sucking up the cesium from the soil and releasing it with the pollen into the air.” He stopped momentarily as a shot of contempt ran through him. “There is more.”

“Go on,” said Suzuki.

“The government has decided to burn material that is contaminated with radiation.”

“Burn it?” he said, sitting up straight. “That’ll send it back up into the atmosphere and it’ll spread farther.”

“That’s right,” said Kenichi. “They should bury it in a regulated depository and leave it for 300 years. Our country’s solution is very different from that of other countries. We will dilute contaminated material 1,000 to 1 with clean material and then burn them. However, this causes two problems—some is released into the air and some remains as ash.”

“They should bury the ash,” said Suzuki.

“Yes, they should. But instead they are dumping some of it in Tokyo Bay as landfill.”

“I thought the dumping of radioactive waste into the ocean was prohibited by the London Convention,” said Suzuki.

“It is, but our government seems to think that dumping it into Tokyo Bay as landfill is not in violation of the international treaty.”

“That’s outrageous. People in the surrounding area will be unnecessarily exposed,” said Suzuki. “How many tonnes of debris were generated by the tsunami?”

“Twenty-five million tonnes.”

“Where do they plan to burn such vast amounts?” asked Suzuki.

“It’s impossible to burn it all in the tsunami hit areas, so they have requested other prefectures accept some of debris.”

“What? Accept it and burn it?” Suzuki asked with a look of disbelief on his face.

“That’s right, further spreading the radiation throughout Japan.”

Suzuki shook his head slowly. “That’s insanity. They need to contain it, not spread it. What prefectures have agreed to this?”

“Not many because of opposition from the citizens groups. Although Tokyo was the first to accept contaminated material.”

Suzuki shook his head again. “How much more is in the report?”

Kenichi leafed through the report. “They have decided to reopen some of the towns and villages within the twenty- to thirty-kilometer evacuation zone.”

Suzuki stood up and motioned for the report, and Kenichi handed it to him. “Kawauchi village, that’s located just twenty-three kilometers from here. Does the government realize that radiation is still escaping from the damaged reactors—10 million becquerels per hour of radioactive cesium? The accident is far from contained.” Suzuki’s temper flared and he had difficulty controlling his voice. “That...make-believe...statement TEPCO and the government published in December about the reactors achieving cold shutdown is absolutely absurd. Cold shutdown is when a reactor is safely put into shutdown with its fuel rods intact and the cooling systems operational.” He stopped and took a few gasps of air to cool his temper. “Does the government have any idea what is going on? They seem to be like ostriches with their heads stuck in the ground: everything’s OK if we can’t see it.” Blood gushed into his face, and he slammed his fist on the desk. “I’m going to hit the next government official who says, ‘*It’s OK! There’s nothing to worry about!*’”

Kenichi flinched. He had never seen his boss so angered, but he liked what he was hearing. “They say they have decontaminated the area.”

Suzuki wiped the sweat off his brow with the back of his hand, gave the report back to Kenichi, and sat down. “How did they do that?” he asked flatly. The physical outburst of hitting the desk had calmed Suzuki’s rage.

Kenichi picked up the file and flicked it open. “They have removed five to ten centimeters of topsoil from schools, parks, public areas, and routes children take to school. Also they have washed the insides of public offices, schools, and hospitals and are planning to wash the exterior of every house in the village with high pressure water.”

“So where does the runoff go?” asked Suzuki.

Kenichi shrugged. “Into the rivers I guess.”

“And the contaminated soil?”

Kenichi turned a page and studied the report. “They’re still stored in the village—some in cement casing but most in vinyl sacks. It seems the government is finding it difficult to find a place to store the contaminated soil, as no one wants it anywhere near them. An area near Satomi village, Ibaraki prefecture has just been approved for the construction of a disposal site for the contaminated soil and debris from the Daiichi plant; thus moving it to around 120 km from Tokyo.”

“The whole thing is ridiculous. Don’t they understand that when the wind blows contaminated soil will be carried from the surrounding area? It’ll cover the decontaminated areas, and the dust will be inhaled into the villagers’ lungs.”

Suzuki let out a long sigh. “Has anyone said they will return to the village?”

Kenichi studied the report for a few seconds and then said, “The village had a population of 3,000 before the accident. One hundred and sixty people have already returned. Fourteen percent say they will return in April 2013, and another 14 percent say they will return after three years, depending on the radiation level. Sixty-eight percent said they have no intention of returning.”

Suzuki leaned back in his chair. "Anything else in the report?"

"Much more," he replied, turning a page.

"Go on. Let's hear it!"

Kenichi cleared his throat. "There was a case a few months ago of a primary school in another prefecture that gave their students green tea powder to gargle. The tea is given every year, as it is supposed to protect the children against influenza. The problem is the leaves that were used to make the tea powder had been tested and found to be contaminated. But the school and local governments wanted to show everyone their products were safe for consumption. They chose profit over the safety of the children."

"Fools!" cursed Suzuki.

Kenichi nodded. "A nuclear worker, whose job it is supervising the construction of a new facility to extract radioactive materials such as cesium and strontium from the contaminated water used to cool the plant's crippled reactors, is rumored to have posted on the web that they are leaking highly radioactive water into the ocean. He said that they have 250,000 tonnes of radioactive water stored at the plant and it is impossible to store any more." He stopped and eyed Suzuki.

"Does the head office know about this?"

Kenichi nodded slowly.

"Why haven't we been informed?"

Kenichi shrugged his shoulders. "They said it was only a rumor."

"Do you know what this rumor actually stated?" asked Suzuki.

"Yes, he posted the following: *"Everyone there knows that the amount of water is huge but does not speak about it. Anyone who works there understands that nothing can be done except to leak the water! Everyone criticizes North Korea for its missile launch. But what about Japanese morality? The contamination will spread all over the world, reaching to Kamchatka, Hawaii, and the US soon."*

He paused and looked up. "At the end, he said, *You know, in Japan, there is 'honne' (honest feeling) and 'tatemae' (polite-face). Our tatemae is that we are doing our utmost to stop the leakage of contamination, and our honne is that we are dumping massive amounts of contaminated water into the ocean.*" Kenichi stopped and turned a few pages. *"A large amount of the water that we are pumping into the reactors to cool the molten fuel is escaping from the cracks in the containment vessels. The ground beneath and around the reactors is so saturated that it has started leaking into the ocean and will do so for many years until the cracks are repaired or the fuel removed."*

Suzuki sat there in complete shock. How on earth had they managed to keep it quiet from him? "What the hell do they think they are doing?" he blurted.

"There is more," said Kenichi.

"Go on!" said Suzuki, his temper flaring again.

"The mayor of a village just outside the evacuation zone has lost all his body hair and suffers from continuous nosebleeds. Radiation-protective children's clothing is being advertised in local newspapers. An apartment building in Nihon Matsu was constructed for evacuees using contaminated materials, exposing the residents to high doses of

radiation. A beauty contest, supported by the Ministry of Agriculture was held to find the prettiest student who ate only produce from the Fukushima region...”

“Stop!” said Suzuki.

Kenichi looked up from the report. “There is a lot more.”

“Just give me the summary,” he sighed.

“Before I sum up, there is one more section that I would like to read,” said Kenichi.

“What’s it about?” asked Suzuki, running a hand over patches of hair on his bald head.

“It’s about the silent suffering of the Fukushima people. The world is unaware of what these people are going through, especially the women.”

Suzuki nodded for him to continue.

Kenichi cleared his throat and flipped over several pages. “The number of women deciding to have abortions has risen to an alarming rate from fear of giving birth to deformed babies. Many engagements with Fukushima women have been broken off, and men are very reluctant to marry the women.” He paused and looked at Suzuki. “One seventeen-year-old girl said that she would never be able to get married because no one would want to marry a woman from Fukushima. Another said that even if she could get married, she could never have children because she didn’t want a child to go through a nightmarish life of cancer or leukemia. Suicides have become a part of life. A week ago a farmer’s wife poured kerosene over herself and burnt herself to death in front of her husband; she couldn’t bare the agony of not ever being able to return home. Two days ago another farmer hung himself. The suicide rate is skyrocketing.”

Suzuki rested his face in his hands. “What have we done?” he rasped. “We have destroyed the future of the young women and people of Fukushima.”

“That’s right,” said Kenichi. “The decommissioning and cleanup will take a minimum of forty years but probably many years more. The cost is estimated at \$250 billion but will probably end up around triple that amount. Plus we have a serious problem with the decommissioning.” He paused and looked hard at his boss. “We are running out of *gamma sponges*.”

“Don’t use that word,” barked Suzuki.

“Sorry, I didn’t mean to be disrespectful to the laborers who are clearing the debris. Without these brave men the situation would be desperate.”

“I understand,” said Suzuki. “I don’t know who the idiot was that labeled these men, who do the dirty and dangerous work of the nuclear industry, *gamma sponges*.”

“Sorry,” repeated Kenichi.

“Continue,” motioned Suzuki with a nod.

“Thousands of workers have already reached their maximum exposure levels and



cannot work at the plant. We are having difficulty finding new workers or anyone willing to do the work. And we need a steady supply for at least the next ten to fifteen years.”

Suzuki stared at Kenichi. “This is an evil energy,” he spat.

Kenichi nodded and leafed through the pages. “I would like to sum up by saying the IAEA, the NRC, the NISA, and JAEA and other nuclear agencies are not nuclear watchdogs but are, in fact, promoters of nuclear energy. These big players, in conjunction with the world governments, are toying with people’s lives. The nuclear industry is overwhelming the world’s mainstream media with misinformation so the real information is hidden. This unscrupulous world organization is known as the ‘Nuclear Priesthood,’ and its main purpose is profit.” He paused and threw the report on Suzuki’s desk. “Money and fucking greed!” he said.

There was silence while the two of them stared at the report.

Kenichi broke the silence. “If we want to ride the world of nuclear power, we must start to think like capitalists.”

“What do you mean?” asked Suzuki.

“It costs around \$12 to \$14 billion and takes about fifteen years to construct a nuclear power plant with just one reactor. The cost is astronomical, and no one on Wall Street would ever contemplate buying into one of them. The only way they can be financed is by the government, so the simplest way to stop nuclear power is to stop federal funding. One prominent American businessman looked into the nuclear business and said he couldn’t figure out how it could be possible to make a profit if he had to fund the whole project himself. On the other hand, if we look at alternative energy like wind power—a windmill costs around \$2,000 per kilowatt to construct, while a nuclear reactor costs about \$9,000 per kilowatt—you can clearly see that alternative clean energy is much cheaper. You can build four windmills for almost the same price as one reactor. And once you calculate the outage time for a nuclear reactor and no wind time for a windmill, the power output will be roughly the same, and there are no issues, such as terrorist attacks or waste deposal.” Kenichi handed the report to Suzuki.

“Give me a day or two to read through it and see if I can add anything else.”

Suddenly an alarm rang and a worker ran into the office. “Sir, the temperature in Reactor Two is rising. I think it’s gone critical again.”

Kenichi ran out of the room.

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Mr. Yamada was found in early April 2012 hanging dead from the ceiling of a Tokyo hotel. He had hung himself with a TEPCO power cord and left a suicide note:

*I have taken my life because of the untold suffering my company TEPCO has inflicted on the people of Japan. We knew about the defects of Mark 1 BWR and continued to use them. We covered up and withheld information from the public and government. We ignored warning after warning that a tsunami as high as fifteen meters could hit the plant and failed to take adequate precautions.*

*We are guilty of crimes against humanity, crimes against the children and*

*people of Fukushima, and my death is a representation of these crimes.*

*Yamada*

A newspaper lay open on the bed. The article at the top read: *Farmer's wife douses herself with kerosene and burns herself to death.*

TEPCO reluctantly paid for his funeral, but not a single soul attended.

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Mr. Saito and his family still live in Saitama in two apartments provided by the government. After realizing that he would never be able to return to his farm, he decided to file for compensation. He wanted TEPCO to either buy him a new farm or compensate him for the cost, which he calculated to be around \$900,000, including house and equipment. TEPCO sent him a ridiculous sixty-page application form, accompanied by another 150 pages of instructions, but to his astonishment he found there was no space to write his sort of claim. He attached a separate page explaining his claim instead. A TEPCO official eventually rang back to query his claim and in the end offered him about \$2,000. Mr. Saito told him not to send the money, as he was going to take them to court.

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The two fat boys and their parents ended up living in Tokyo's famous Akasaka Prince Hotel, which the Japanese government is using for temporary housing for evacuees.

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Natsumi stayed with Mr. Kubo and his daughters, helping him with his business.

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The skinny boy and his parents stayed in temporary housing in Otsuchi. The mother never got over the grief of losing her daughter. In the summer of 2011, she went with a framed picture of her daughter to cheer her daughter's basketball team. She set the picture on the team bench and after the match broke down crying.

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Mackeller became very disillusioned with the navy and handed in his resignation. He moved to Ibaraki Prefecture with Riona where they bought a small farm and got married.

What caused him to resign was the news that USS Ronald Reagan had been caught in the direct path of the radioactive plume, exposing the crew to high levels of radiation. Some of the crew developed symptoms of radiation sickness and filed lawsuits

against the Japanese Government. The Navy, instead of supporting these lawsuits, withdrew any support for them.

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## Chapter Twenty-Two

Three years later.

Mackeller and his wife became very active in an organization called, 'Help Save The Fukushima Kids From Radiation'. He received an email from a politician to visit a town, which lies 24 km from the nuclear plant—half the town is a no-go zone.

After the visit he wrote this on his blog.

I left his house early, driving through the paddy fields where the farmers were harvesting the rice—a telltale sign that the unbearable summer heat would soon flee and a much more pleasant autumn would take its place.

I drove through several villages that had been evacuated. The once fertile farmland now lined with blue sacks filled with radioactive topsoil that had been removed with the naive hope of decontaminating the area.

I was surprised when I drove through the town. Everything looked normal—a mother pushing her baby in a stroller, a man out cycling, young people milling around the Seven Eleven store.

I visited the house of one of the town politicians. He had evacuated his wife and two daughters to another prefecture.

“How bad is the situation here?” I asked.

“We’re living in a nuclear nightmare,” he said.

“What is the government and the power company doing to help?”

He looked at me a long moment and then shrugged. “Not much. It’s still spewing out 10,000,000Bq of radiation every hour, every day.

I was stunned.

“Best we go indoors,” he said, gesturing to the door.

We had a long talk about how bad nuclear energy was and what the government and power company should be doing to help the people – but I won’t bore you with those fruitless words. He informed me that in some areas in Fukushima 60% of the children already have lumps in their thyroids. 30 to 40% are expected to develop cancer. Around 30 to 40 thousand children.

Later he took me to the house of an old couple. They had prepared a beautiful lunch—fish, rice, salad and some fruit. I thought it would be rude to ask where the food was from – so I didn’t ask.

After lunch I had a chance ask a few questions.

“Do you feel the government and Power Company are compensating you adequately?”

“No!” blurted the wife. “They do nothing!”

“Calm down!” said the husband.

“What do you mean calm down! People need to know what is really happening!” insisted the wife.

A tense silence hung in the air for a few moments.

“She’s right,” said the husband. His tone was solemn. “We feel like we have been abandoned by the government.”

“They’ve left us to die!” snapped the wife. Her voice was sharp with anger. “They treat us like damn guinea pigs!”

“Has the decontamination work been effective?” I asked.

“No!” replied the wife quickly. “They take the topsoil off but when the wind blows the dust is carried back and the radiation level climbs again.”

“We live in constant fear,” said the husband.

“I haven’t had a good night sleep since the accident,” said the wife, standing up and moving to the sliding door. “At anytime it could release 20 to 30 times more radiation than Chernobyl.”

I was confused. “What do you mean?”

“Don’t you know about the Number Four reactor?” she said with a bemused expression.

I shook my head.

She slid the door open and a hot breeze blew in to challenge the air-conditioning. “The wrecked Number Four reactor building is leaning precariously to one side. Engineers say it will collapse if there is another 6.5 quake. The spent fuel pool will then drain and catch fire, releasing 20 to 30 times more radiation than Chernobyl.”

I felt a sense of panic and wanted to jump in my car and speed away. “Are you kidding me?”

“No,” said the husband. “If that happ—”

There was a sudden rumble in the distance and then the ground shook. I leapt from my chair and raced to the door. A jolt of energy hit the house and I stumbled to the side—then it was gone.

“A 5.5,” said the wife calmly. “Second one today.”

“Yeah,” I said, staggering back to the table.

“Are you OK?” asked the husband.

I nodded.

“As I was saying, it means game over for Japan as well as large parts of the Northern Hemisphere.”

“What are they doing about it?” I asked.

“Not much,” he shrugged. “The technology to deal with it hasn’t even been invented.”

No words came to my lips.

“They say no one has died,” the wife said, breaking the silence. “Lies! People have died of leukemia, heart disease and lung cancer.”

The husband closed the sliding door. “It’s not just the physical effects—it’s also the psychological traumas. Just two days ago, our good friend’s wife poured petrol over herself and burnt herself to death in front of her husband—the stress of never being able to return home was too great.”

I sat there trying to gather my thoughts. “Why isn’t this in the news?”

The husband came over and sat in front of me—his eyes bore into me. “The

media has been ordered not to publish it.”

“Are you sure?” I asked.

“Would you like to see first hand?” asked the wife.

“Uh...yeah,” I said, nodding.

A few minutes later, we were in a house a few doors down. The house was dark, the shutters closed. The couple, in their mid-thirties, bowed politely and we exchanged small talk about the weather. They then ushered me into the bedroom where their teenage daughter sat next to the bed stroking her younger sister’s bald head.

“Cancer,” said the mother, her eyes brimming with tears.

“How old is she?”

The mother wiped her tears back. “She turned twelve yesterday.”

I moved a little closer and saw the frail body—no more than a skeleton covered by skin. Next to her bed was a pencil sketch of hills and flowers—a spring scene I guessed—at the top was written, *Mommy Don’t Let Me Die*.

“Let’s go back into the living room,” suggested the father.

We all sat at the table in silence.

“I will never be able to get married!” blurted the sister suddenly. “No one wants to marry women from Fukushima!”

There was silence.

“Even if I do get married, I’d never have a baby!” I’d never put a child through what my sister is going through!” She began sobbing. “Why doesn’t anyone...help us? Why has the world abandoned us?”

I left the Town at sunset. The sky was awash with orange, the hills a vibrant green—the countryside so so beautiful—but so toxic with an invisible poison.

Two weeks ago I received an email that the girl had passed away.

I feel guilty! I feel like I’ve abandoned the kids of Fukushima.

I’m going back next month to see if there is anything I can do. As an individual, I can’t do much. But individual contributions add up and I’ll work on the principle that every little bit helps.

# Chapter

## The aftermath

Natsumi never moved out of Mr. Kubo's house. They were married a year later. Natsumi gave birth to a baby boy, and Mr. Kubo's daughters were delighted to have a younger brother they could dress up in the cutest clothes they could buy.

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Kenichi and Suzuki became leading advocates in outlawing nuclear power, not only in Japan, but also around the world. Unfortunately, Kenichi's children both died of thyroid cancer. His wife never recovered from their children's death and took her own life two years later. Amazingly, Kenichi never suffered any illness from the massive amounts of radiation exposure. He lived by himself and died at eighty-one.

Suzuki's wife never returned home, and his son and daughter alienated themselves from him. He lived alone until he passed away at the age of eighty-six. He did, however, take a vacation to Hawaii each year.

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Ryota and Karina finished university and were married a year later. Yurie finished her children's book about her adventures on Junk Island and sold over a million copies; she went on to be a famous children's books writer.

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Mackeller and Riona had three beautiful daughters and live a peaceful farming life in Hitachiota, Ibaraki Prefecture. They stayed very active in the antinuclear movements. Fortunately, the last part of his dream never came true—up until now.

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Sachie eventually split up with Tomo and lived with her mother, father, and grandfather. Her father trained her in kendo, and she went on to win the national titles. She traveled to many countries for tournaments and exhibitions and eventually married a Canadian and now lives in Vancouver, where she has her own kendo *dojo*. Her mother, father, and grandfather visit her three times a year.

Tomo was too late to go after Yukino as she had married Yuta. Yuta fulfilled his dream and became a professional surfer. They both travel the world on the Surfing World Tour and in 2015 Yuta became the first Japanese to win the ASP World Tour.

Tomo continued his seafood export business and married a blonde American

woman. She divorced him a few years later after she found him in bed with her best friend.



## Author's Afterword

The people of Tohoku have suffered greatly from the tsunami, which washed away whole towns and livelihoods. My wife and I have visited the town of Otsuchi several times, the first time just weeks after the disaster. We are truly amazed by the peoples' spirit and determination to rebuild their communities.

Japan suffered three meltdowns, but it could have been a much worse disaster with a total of fifteen reactors affected by the tsunami. The Onagawa, Fukushima, and Tokaimura plants have a total of fifteen reactors with thirty-six water service pumps used to cool the emergency generators. Twenty-four of the thirty-six pumps were destroyed by the tsunami.

Most of the residents of Tomioka town, Futaba village, and the Minamisoma district still live in temporary housing provided by the prefectural government. They have moved, on average, four times. Some have been sent to other prefectures, while others have moved away and started a new life. Most have come to terms with the harsh reality that they will never be able to return to their homes—not for at least a hundred years. The people who have stayed suffer mentally and physically. Their farmlands have been contaminated, and they have no choice but to eat contaminated food and drink contaminated water. One woman told me she would love to bring her granddaughter to Fukushima to play in its beautiful nature, but she knows that dream is impossible.

TEPCO, even after a year and a half, has not been forthcoming with compensation payments. Usually, one needs to fill out a sixty-page claim document with receipts attached, and accompanying the document is 150 pages of instructions on how to fill out the document. Many people find the claim form too difficult to understand and simply give up. It seems TEPCO and the Japanese government are making it as difficult as possible for the people to claim compensation. TEPCO has tried to escape the responsibility of the decontamination costs for the radiation that was showered across Fukushima and other prefectures. Its lawyers claim that the radiation, as well as the cost of the cleanup, now belongs to the landowners, not the company—not surprising when one considers the total cost of cleaning up and decommissioning the reactors will be approximately \$600 billion and a further 450 billion yen in compensation for the victims and businesses. TEPCO is claiming it doesn't own the radiation that is spread across Japan, and one can only wonder if they are trying to protect themselves against international lawsuits, especially from the west coast of America where a lot of the radiation ended up.

According to the *Asahi* newspaper, during a deposition to hear demands from the Sunfield Nihonmatsu Golf Club, located about forty-five kilometers west of the plant, the golf club argued that TEPCO was liable for the cost of decontaminating the property. But TEPCO said that they didn't own the radiation on their golf course and it was now the golf club's radiation. The owners said they were utterly shocked by TEPCO's argument and were speechless when Tokyo District Court essentially freed the utility from

responsibility.

Compensation should be paid, not only to the victims and businesses in Fukushima, but also to businesses outside the prefecture, such as the tourist industry that has suffered severely from cancellation of foreign tourists and food and beverage businesses that have had export bans slapped on their products. This list goes on, and one can only wonder if TEPCO and the Japanese government will have the honesty and the guts to properly compensate the victims and businesses. Much of this is confirmed in a Greenpeace report. <http://www.fairewinds.com/content/lessons-fukushima>

The characters in the book are fictional but are based on interviews I have done and stories I have heard.

Most mobile phones in Japan have an earthquake early warning system that gives a person a thirty-second warning before an earthquake hits.

Love hotels can be found all over Japan, and almost any room your mind can imagine exists. Many look like comic castles festooned with neon lights.

Project Seal was a real project undertaken by the New Zealand military to produce a tsunami bomb. They conducted over 4,000 tests but concluded that the force needed to produce a tsunami was not possible for them to simulate.

[http://www.bibliotecapleyades.net/ciencia/esp\\_ciencia\\_tsunami37.htm](http://www.bibliotecapleyades.net/ciencia/esp_ciencia_tsunami37.htm)

Nakamaru Elementary School is fictional but is based on Okawa Elementary School, where seventy-four out of the 108 students perished in the tsunami.

Forty-five firefighters as well as 245 volunteer firefighters were killed while trying to manually close tsunami gates and evacuate people in Fukushima, Miyagi, and Iwate Prefectures.

The Kamaishi breakwater wall was destroyed and is now in the process of being reconstructed. It did make it into the Guinness Book of World Records as the longest breakwater wall in the world, and the song about it is also real. The city used to be the capital of steel production but has been struggling in recent years.

The small fishing town of Ryoshi and Kariyado were both wiped out by the tsunami that was deflected off the Kamaishi breakwater wall. Witnesses say the wave double in size to twenty-one meters.

The *Asian Symphony* is a real 170,000 tonne freighter and was washed into the city of Kamaishi and was still there the last time I visited the city.

If you were to calculate the length of all Japan's breakwater walls, it works out to be

longer than the Great Wall of China.

The tsunami created around twenty-five million tonnes of debris of which, by March 2012, only 5 percent had been disposed. It's impossible for Fukushima, Iwate, and Miyagi Prefectures to incinerate all of the debris themselves. They have asked other prefectures to help with the disposal, but many are reluctant because of fears of radiation contamination.

A total of 15,845 people were killed, mostly drowned. Another 3,155 are still missing.

Kasagiyama (island) recorded the highest tsunami at forty-three meters.

There wasn't just one tsunami. Tsunamis continued hitting the coast all through the night of March 11, although most were relatively small. The tsunami warning was not lifted until late in the afternoon the following day.

The Tohoku and Kanto areas, especially Fukushima and Ibaraki Prefectures, have had a total of 2,705 earthquakes with magnitudes above 4.5 as of August 22, 2013. (That doesn't include quakes below 4.5 because it would be around 10,000 to 20,000.) To watch the earthquake monitor, Google *Japan quake map*.

It is well-documented that the Japanese prime minister's interference and bad decision-making contributed greatly to the nuclear accident. The visit of the Japanese prime minister to the Daiichi plant on the morning of March 12 has been criticized by many and has been blamed for the delay in venting the Number One reactor, which led to the first explosion. This is a debatable point, considering there were two similar explosions over the next few days in which they had ample time to vent.

A recently released independent report, which condemns the gross mishandling of the nuclear accident, cites TEPCO's refusal to allow any of its workers to be interviewed for the report.

The results from a test done at the Brunswick plant in North Carolina on a reactor similar to the Mark 1 BWR had been known for over forty years, though nothing was done to fix the problem. In the 1970s, one of the chief designers of the Mark 1 BWR resigned from the company in protest. He said the Mark 1 containment was not safe enough to use. The venting system was added to the design in the 1990s after they discovered there could be a hydrogen explosion; this is after the reactors had been in use since the 1960s. The other defects in the design, such as the torus and reactor vessel being prone to melt-throughs, were all common knowledge in the nuclear industry.

America has twenty-three similar reactors operational, all with the Mark 1 containment vessel. Many are operating with extended lives. I have listed them below.

- Browns Ferry 1, Athens, AL, operating license since 1973, reactor type GE 4.
- Browns Ferry 2, Athens, AL, 1974, GE 4.
- Browns Ferry 3, Athens, AL, 1976, GE 4.
- Brunswick 1, Southport, NC, 1976, GE 4.
- Brunswick 2, Southport, NC, 1974, GE 4.
- Cooper, Brownville, NE, 1974, GE 4.
- Dresden 2, Morris, IL, 1970, GE 3.
- Dresden 3, Morris, IL, 1971, GE 3.
- Duane Arnold, Palo, IA, 1974, GE 4.
- Fermi 2, Monroe, MI, 1985, GE 4.
- FitzPatrick, Scriba, NY, 1974, GE 4.
- Hatch 1, Baxley, GA, 1974, GE 4.
- Hatch 2, Baxley, GA, 1978, GE 4.
- Hope Creek, Hancock's Bridge, NJ, 1986, GE 4.
- Monticello, Monticello, MN, 1970, GE 3.
- Nine Mile Point 1, Scriba, NY, 1969, GE 2.
- Oyster Creek, Forked River, NJ, 1969, GE 2.
- Peach Bottom 2, Delta, PA, 1973, GE 4.
- Peach Bottom 3, Delta, PA, 1974, GE 4.
- Pilgrim, Plymouth, MA, 1972, GE 3.
- Quad Cities 1, Cordova, IL, 1972, GE 3.
- Quad Cities 2, Moline, IL, 1972, GE 3.
- Vermont Yankee, Vernon, VT, 1972, GE 4.

Japan has seventeen Mark 1 reactors. They can be found at the nuclear power plants listed below.

Higashidori Aomori  
 Onagawa Miyagi  
 Fukushima Daiichi  
 Hamaoka Shizuoka  
 Shiga Ishikawa  
 Shimane Shimane  
 Tsuruga Fukui

Just five days after accident, on March 16, the NRC extended the life of the Vermont Yankee reactor in Vermont for another twenty years, but this has now been reversed and the extension revoked.

The Japanese central government didn't give the go-ahead for the distribution of iodine pills until five days after the accident. However, the towns of Tomioka and Futaba distributed them without waiting for Tokyo's permission. Similar action was taken by

officials in Iwaki city and the town of Miharu.

People from around the Fukushima plant were evacuated far too late. The evacuation zone should have been expanded to at least eighty kilometers, as the IAEA suggested. Some people were evacuated from safe areas to highly radioactive areas. This was due mostly to the Japanese government's withholding of SPEEDI information from the public. SPEEDI is the system that predicts the dispersion of radiation based on wind and terrain.

The public, including women and children and especially young girls who are five to ten times more susceptible to radiation than their male counterparts, were unnecessarily exposed to high doses.

Many children, again more girls than boys, experienced nosebleeds during the first two weeks of the accident; some continued into May.

The metallic taste was common in the mouths of the people in Fukushima for the first two weeks after the disaster.

In some areas of Fukushima children are not allowed to play outside or are restricted to forty-five minutes a day.

Greenpeace did its own monitoring on the ground straight after the accident, even before the IAEA. These results were given to the IAEA, who were going to give the information to the Japanese government. Two days later, the IAEA changed its mind and said it wasn't necessary. This was probably due to pressure from the Japanese government. If the Japanese authorities had used this information, the evacuation of some residents to higher radioactive areas wouldn't have occurred. Some residents were left in these highly radioactive areas for a month.

<http://www.fairewinds.com/content/lessons-fukushima>

The Japanese government didn't release the SPEEDI data until April 25—more than a month after the disaster.

The Greenpeace ship *Rainbow Warrior* was prohibited to come closer than thirty-two kilometers from the coast.

The report from the US attributing 14,000 infant deaths to the Fukushima accident is true. The article is **MEDICAL JOURNAL ARTICLE: 14,000 US DEATHS TIED TO FUKUSHIMA REACTOR DISASTER FALLOUT**

<http://www.radiation.org>

Japan has not released any infant mortality rates from Fukushima for the last ten months.

The closure of radiation monitoring stations on the west coast of America and Canada just a week after the accident was totally irresponsible. They had detected radiation levels hundreds of times higher than usual as well as xenon and krypton measuring 40,000 times above the normal level.

It is true that they tested 3,000 children in the village of Itate for thyroid cancer and found lumps in 1,000 of them. Further tests done in Fukushima found that 36 percent of children had lumps in their thyroids. Recent data revealed that 43.7 percent of children in Fukushima city have nodules or crystals in their thyroids and 58 percent of all children in the prefecture.

The BEIR V report is true and stresses long-term exposure to low doses of radiation is more dangerous than a short high dose.

<http://www.fairewinds.com/content/cancer-risk-young-children-near-fukushima-daiichi-underestimated>

The spreading of radiation throughout Japan by burning contaminated debris is true. The radiation level in Kobe city rose sharply just after they began incinerating debris. The dumping of radioactive ash in Tokyo as landfill is also true.

The London Convention that prohibits the dumping of nuclear material into the oceans was signed by Japan in 1975. Japan seems to think that Tokyo Bay is not part of the ocean.

Firefighters were sent in to hook up water with no protective clothing. I remember when I saw it on TV. My first comment was why aren't they wearing any protective gear?

Several elderly people were found starved to death months later in the no-go zone. In Futaba Hospital, bedridden patients were left bedridden for three days without food or water. They were then sent to a shelter that had no medical structure. Out of the 440 patients from Futaba Hospital and a nearby nursing home, forty-five died.

As of June 2012, 537 deaths have been certified as nuclear disaster-related by thirteen municipalities. A disaster-related death certificate is issued when the death is determined to be indirectly related to the disaster.

The nuclear industry says that there were no deaths caused by the Three Mile Island accident in Pennsylvania on March 28, 1979. Recent research has shown a 10 to 15 percent increase in lung cancer amongst people who were in the vicinity of the plant up to two weeks after the accident.

The Russian government said that only twenty to thirty firemen died during the Chernobyl

accident, but the military sent in 600,000 men, who were used as liquidators; that means they were sent to pick up nuclear fuel that lay around the plant and move it to where it would be buried beneath concrete. These men worked once for five minutes only and were exposed to huge amounts of radiation. One hundred thousand of them have already died of cancer. It is estimated that a further one million people have died of cancer related to Chernobyl.

The Fukushima Fifty are real men who risked their lives to bring the crisis under control. If it weren't for those brave men, the crisis would have escalated into an unimaginable catastrophe. If they hadn't been able to contain the accident, it would have led to the evacuation of Tokyo and surrounding areas—around thirty to forty million people.

The reopening of Kawauchi village, just twenty-three kilometers from the Daiichi plant, is a fact. They intend to reopen kindergartens and elementary, junior high, and high schools.

How much the radiation will spread will depend on how they contain it. Sending the contaminated debris to other prefectures to be incinerated will not help contain it. The washing of contaminated houses and roads with high-pressure hoses and allowing the water to run back into the rivers will not help the spread. Cesium is now being found hundreds of kilometers downstream in rivers that originate in Fukushima or neighboring prefectures. Cesium has even been found in the Arakawa River that supplies Tokyo with drinking water. Fourteen prefectures have been found to have cesium in their drinking water. Ibaraki had the highest of 0.0112 Bq/kg and 0.0049Bq/kg in Tokyo. Below is a list of the affected prefectures.

Fukushima  
Ibaraki  
Tochigi  
Gunma  
Saitama  
Chiba  
Tokyo  
Kanagawa  
Chiba  
Nagano

October 16, 2012 the International Federation of Red Cross and Red Crescent Societies (IFRC) determined Fukushima to be an “ongoing humanitarian crisis”.

Compensation by TEPCO and the Japanese government has been suppressed, and the examples in the book are based on true facts. Recently TEPCO was taken to court by a kindergarten that is situated ten kilometers from the Daiichi plant. Again TEPCO has refused to pay for the kindergarten's relocation. It seems that TEPCO thinks it's not its responsibility.



The facts in Kenichi's speeches are mostly true.

The facts in the book are mostly true. The timeline for the nuclear disaster I changed a little to fit in with the storyline. The real details of what really went on at the Fukushima Daiichi plant will probably not be known for years to come. The health effects on the people will also not be known for some years to come.

Five hundred days after the accident, TEPCO calculated that the Daiichi plant is still emitting ten million Becquerels per hour of radioactive cesium. In August 2013, TEPCO admitted that 300 tonnes of radioactive water was leaking into the Pacific Ocean every day, and has probably been doing so from when the accident started. After they announced this they upgraded the level of seriousness from a level 1 to a level 3 on the International Nuclear Event Scale.

On August 7, 2012, the US federal nuclear regulators froze nineteen final reactor licensing decisions in response to a ruling by the US Court of Appeals. The main reason for the ruling was that the US has no long-term storage for any of its nuclear fuel. At present, all spent fuel rods are kept in the spent fuel pools inside the reactor buildings—most holding four times their capacity. In total the US has 71,000 metric tonnes of spent nuclear fuel. These fuel pools are located near the top of the reactor buildings and are vulnerable to aerial attack. These pools hold, on average, five to seven times more nuclear fuel than the fuel pool in Reactor four at Fukushima.

The facts about the spent fuel pool in Reactor Four are true and very disturbing. The international community needs to form a special team to deal with this problem as soon as possible. If the fuel pool collapses or runs dry, the world will be contaminated with massive amounts of radiation for centuries to come; Japan will be destroyed, and many parts of the Northern Hemisphere will become too contaminated to inhabit. Although I said that 200 times more radiation than Chernobyl would be released, it would probably be around 10 to 50 times. However, if the plant had to be evacuated and the four other spent fuel pools caught on fire, we would then be looking at around 100 to 200 hundred times. TEPCO plans to start removing the fuel rods from Reactor Four spent fuel pool in November 2013. They plan to do this manually, which has never been done. This is incredibly dangerous and "*criticality*" that would result in a chain reaction could take place at any point, if the rods break or even so much as collide with each other in the wrong way.

Crewmen from the USS Ronald Reagan have filed a Federal lawsuit against TEPCO and the Japanese Government for withholding data about how much radiation was being released. The aircraft carrier, which was participating in 'Operation Tomodachi' after the earthquake and tsunami, supposedly sail straight through the plume of radiation fallout.

Please say a pray for the children of Fukushima and the people of Tohoku.

Lastly, you should be aware that an abundance of natural, clean, free energy exists and has always existed. Ancient civilizations knew about this energy. The circles carved into the ball under the Chinese Foo Dog's paw that guards the Forbidden City in China is the formula to free, unlimited energy. This same pattern can be found represented as the Hebrew Kabbalistic Tree of Life and the Chinese I Ching. It appears on the floor of Ephesus in Turkey and the Golden Temple of the Sikhs in India. Thousands of years ago, this icon was burned into the atomic structure of stone in the Temple of Osiris in Egypt. It has been embedded into cultures throughout history as symbols, buildings, paintings, and stories. Once this pattern of sixty-four circles is decoded into 3D, it gives us the formula to free, abundant clean energy. In modern science it is known as the Torus or  $V = 22RrZ$ .

In 1901, Nikola Tesla tapped into this energy and constructed a machine to harness it. The device, known as the Tesla's Tower, was capable of extracting electrical power from the air and providing free wireless energy to the public, but his investor, JP Morgan, who had a monopoly on copper used for electric cables, dropped him because free energy was a direct threat to his business. Subsequently, Tesla's lab was burned down, and he was ostracized from the scientific community—all because of his dream to provide free energy to the world. Instead, Edison was allowed to create an energy monopoly for profit.

Time and time again, inventors of free energy have been suppressed, harassed, and even murdered. Adam Trombly, a physicist and inventor, created a machine, based on Tesla's ideas, which also took electrical power straight out of the air. He was invited to demonstrate his device at the United Nations and in front of the US Senate, but these events were undermined by the first Bush administration. Soon after, the device was seized in a police raid. These are only two examples of the many who have been repressed. Wouldn't our world be a better place if everyone had access to an energy source that is unlimited and freely available? Yes, of course. But this unlimited, free energy is extracted from the fabric of space around us and cannot be metered. This means it is a direct threat to the biggest establishment in the world—the energy giants. It means bye-bye to the oil, gas, coal, and nuclear companies. *Sayonara* to linear transmission of electricity through power lines. It means free energy for everyone. Obviously, this is not good news for the few who control these corporations—the corporations that fill the world's politicians' pockets with money and thus control global politics. The combined reserves of coal, oil, and gas are estimated to be in excess of \$200 trillion; free energy spells disaster for them. Those few at the top know that if people could access this energy they would lose their stranglehold over society. They don't want the populace to be free; they want control, and fear gives them control. Their agenda is to spread fear—fear that there is not enough. This fear of scarcity causes unrest, riots, and even war, which enables them to step in and tighten laws that restrict our freedom and further increase their stranglehold over us. We are now living in a corporatocracy—our governments controlled by the corporations and banks. Free energy will never be accessible until this changes.

Change starts with *you*.

More info on free energy.

[http://www.youtube.com/watch?feature=player\\_detailpage&v=IEV5AFFcZ-s](http://www.youtube.com/watch?feature=player_detailpage&v=IEV5AFFcZ-s)

Throughout history world conflicts have been deeply rooted to energy. If we find the solution to sustainable energy, we may gain the answer to peace.

## Up Date August, 2013

The four stricken reactors are still spewing out 10,000,000 Becquerels of radiation into the air every hour, every day, every week.

In July TEPCO admitted, after two and half years of denials, that highly radioactive water is leaking into the Pacific Ocean. TEPCO reported that between 20,000 to 40,000 tonnes of tainted water have escaped into the sea.

Water is being pumped into the reactors to cool the molten fuel, but the water leaks from cracks in the containments and mixes with ground water in the basements of the turbine buildings. Everyday TEPCO has to pump 400 to 500 cubic tonnes into hastily made storage tanks, some which have leaked recently. This will continue for a minimum of another five years. TEPCO can barely keep up with the construction of tanks. The question is what are they going to do with all this highly radioactive water?

Around 60% of children in Fukushima now have lumps in their thyroids. They expect 30,000 to 40,000 to develop cancer.

NHK WORD NEWS. August 20, 2013.

### **Thyroid cancer found in 18 Fukushima children**

Medical examinations in Fukushima Prefecture following the nuclear crisis of 2011 have detected 18 children with thyroid cancer.

The finding was reported on Tuesday by a prefectural panel examining the impact of radiation on the health of local residents.

The prefecture is giving medical checkups to all 360,000 children aged 18 or younger at the time of the accident at the Fukushima Daiichi plant in March 2011.

That's because radioactive substances released in the accident can accumulate in children's thyroid glands, possibly increasing their risk of developing cancer.

Some 210,000 children had been tested by the end of July.

Besides the 18 minors diagnosed with cancer, 25 others are suspected to have the illness.

The incidence rate of thyroid cancer in children is said to be one in hundreds of thousands. In Japan, 46 people under 20 were diagnosed with thyroid cancer in 2006.

The panel says it cannot determine if the accident has affected the incidence of cancer among children in Fukushima. But it has decided to set up an expert team to look into the situation.

The Number Four Reactor is still a precarious situation that could trigger a world nuclear disaster, and will remain so until the spent fuel rods are removed.

Gundersen, Fairewinds.com: Moving fuel risks nuclear chain reaction; You can't stop it, no control rods to control it — Consultants: World's most serious radiological disaster by far is possible.

Title: [Insight: After disaster, the deadliest part of Japan's nuclear clean-up](#)

Source: Reuters

Author: Aaron Sheldrick and Antoni Slodkowski

Date: Aug 14, 2013

[...] The operation, beginning this November at the plant's Reactor No. 4, is fraught with danger, including the possibility of a large release of radiation if a fuel assembly breaks, gets stuck or gets too close to an adjacent bundle, said Arnie Gundersen, a veteran U.S. nuclear engineer and director of Fairewinds Energy Education, who used to build fuel assemblies] and other nuclear experts.

[...] independent consultants Mycle Schneider and Antony Froggatt said recently in their World Nuclear Industry Status Report 2013: "Full release from the Unit-4 spent fuel pool, without any containment or control, could cause by far the most serious radiological disaster to date." [...]

"There is a risk of an inadvertent criticality if the bundles are distorted and get too close to each other," Gundersen said. He was referring to an atomic chain reaction [...]

"The problem with a fuel pool criticality is that you can't stop it. There are no control rods to control it," Gundersen said. [...]

"Previously it was a computer-controlled process [...] It has to be done manually so there is a high risk that they will drop and break one of the fuel rods," [Toshio Kimura, a former Tepco technician, who worked at Fukushima Daiichi for 11 years] said. [...]

TEPCO is not sure exactly is what happening in the Number Two Reactor. The radiation level is too high for any work to be done in the building.

Below are a few news articles, which will reinforce what I have been saying.

**Former chief of Fukushima nuclear plant dead from cancer at 58 years old —NHK WORLD**, July 9, 2013: The former head of the Fukushima Daiichi nuclear power plant has died of esophageal cancer. [...] [Masao Yoshida] was 58 years old. [...] He left the post in December [2011] after being diagnosed with esophageal cancer. In July 2012, he had surgery after a brain hemorrhage. [...] Yoshida said knowledge should be gathered from around the world to stabilize the Fukushima Daiichi plant [...]

**"You do not know what you're doing" — Japan Times: Time for gov't to take over AFP**, July 26, 2013: Foreign nuclear experts on Friday blasted the operator of

Japan's crippled Fukushima nuclear plant, with one saying its lack of transparency over toxic water leaks showed "you don't know what you're doing". [...] "appears that you are not keeping the people of Japan informed. These actions indicate that you don't know what you are doing...you do not have a plan and that you are not doing all you can to protect the environment and the people." [said Dale Klein, Former NRC Chairman and Tepco advisory committee member]

[Japan Times](#), July 26, 2013: *Time to take over Daiichi?* [...] This recent series of incidents should be the canary in the coal mine telling us that Fukushima No. 1 remains vulnerable and unstable. [...] it is time for the NRA and the Japanese government to seriously consider directly taking control of Fukushima No. 1. [...]

Title: [Highly Contaminated Water Found at Fukushima, Japan Nuclear Accident Site](#)

Source: Wall St. Journal

Author: WILLIAM SPOSATO, MARI IWATA

Date: July 27, 2013 at 6:24a ET

*Levels Recorded Haven't Been Seen Since Soon After 2011 Disaster*

Extremely high concentrations of radiation have been detected in water from near one of the reactors at the Fukushima Daiichi nuclear plant, [Tepco] said Saturday. [...]

The radiation is millions of times higher than Japan's acceptable limit under normal circumstances.

Radiation of 750 million Becquerels a liter of cesium-134 and 1.6 billion becquerels a liter of cesium-137 was recorded, Tepco said. [...] In April 2011 a combined 1.8 billion becquerels was recorded. [...]

The sample came from a trench near the No. 2 reactor turbine building, the utility said. [...]

Tepco is searching for the water source. It is probably from one of the damaged reactor cores. It is trying to stop the water leaking into the sea, it said. [...]

[Asahi Shimbun](#): A liter of the water was also found to contain 750 million becquerels of radioactive substances that emit beta rays, such as strontium.

[EXSKF](#): 5,000 cubic meters, or 5,000 tonnes of this water is in the trench.

Note: 5,000 cubic meters of water is equal to 5 million liters. One liter was found to contain 2.35 billion becquerels of cesium. If this concentration is consistent, the total amount would be nearly 12 quadrillion becquerels of cesium in this one trench

### **It's "inevitable" that Fukushima radioactive water will be dumped in Pacific Ocean — "Tepco has no choice"**

Title: [NRA chairman says release of radioactive water into sea is inevitable](#)

Source: Asahi Shimbun

Author: JIN NISHIKAWA

Date: July 25, 2013

The head of Japan's nuclear watchdog body has acknowledged for the first time that Tokyo Electric Power Co. has no choice but to release radioactive water accumulating at the crippled Fukushima No. 1 nuclear power plant into the sea.

“The Fukushima No. 1 plant is filling up with water,” Shunichi Tanaka, chairman of the Nuclear Regulation Authority, told a news conference on July 24. “Inevitably the contaminated water will have to be discharged into the sea after TEPCO processes it properly and lowers (its radioactivity levels) below the standards.”

[...] He indicated that the NRA will conduct a long-term investigation to assess the environmental impact of radioactive water discharged into the sea.

[...] The groundwater is mixed with water used to cool the melted fuel, and is accumulating with high radioactive levels at the plant.

### **We are planning to dump water from Fukushima plant into Pacific Ocean**

(Subscription Only) Title: [TEPCO plans to dump water from Fukushima plant after cleaning it](#)

Source: Kyodo News

Date: Jan. 24, 2013

*TEPCO plans to dump water from Fukushima plant after cleaning it [...]*

[Tepco] said Thursday it plans to dump contaminated water into the Pacific Ocean after removing radioactive substances to reduce contamination to legally permissible levels.

[...] it fears eventually running out of capacity to store radioactive water that continues to accumulate at the plant [...]

Still, the utility acknowledged that it needs to win approval of local governments and other parties concerned in actually discharging the water into the ocean. An official said, “Nothing specific has been decided at this moment.” [...]

*“It also contains nuclear fuel — There will be uranium in that water and plutonium in that water as well” -Nuclear Engineer Arnie Gundersen.*

### **Title: Stunning Story from a Fukushima Daiichi Nuclear Power Plant Worker: Interview by Comedienne Oshidori Mako**

Source: “Datsutte miru?” Magazine 9 (April 15, 2013); No Border Asia

Translation: World Network For Saving Children From Radiation

Date: June 23, 2013

– Then, what is the most serious problem?

Worker: That is undoubtedly reactor #2.

Professor of Tokyo University: As I thought! Even among researchers, the situation of reactor #2 is beyond imagination.

Workers: [...] But we are clueless about reactor #2. [...]

I’ll give you an extreme example. Let’s assume that the situation worsens to the point that it becomes impossible to pour water in order to cool off the reactor. For reactors #1, #3 and #4, a specialized squad prepared to bear the risks of radiation exposure can always enter the building and do the work required.

But in the case of reactor #2, radioactive emissions inside most buildings are extremely high that a prepared squad is likely to perish before it accomplishes its mission. [...]

## **Japan's First Astronaut: Gov't lies about Fukushima disaster — Vital info on radiation risks kept from public to “maintain law and order”**

Title: [Cautionary tales from one not afraid to risk all](#)

Source: The Japan Times

Author: TOMOKO OTAKE

Date: August 3, 2013

[Former TBS reporter and Japan's first-ever astronaut Toyohiro Akiyama's] home was only 32 km from [Fukushima Daiichi] [...] On March 12, he packed a few valuables, hung a portable radiation detector around his neck and drove his truck to the city of Koriyama [...]

As a former newsman, Akiyama was well aware not only of official reactions to the 1986 Chernobyl disaster and other nuclear accidents in the past, but also of the workings of Japan's “nuclear village” [...] Consequently, he knew that the Tokyo government would withhold vital information on radiation risks to “maintain law and order,” he says.

[...] I had reported on the fifth anniversary of the 1986 Chernobyl disaster and the Three Mile Island accident, so I knew all too well what the governments of the U.S. and Russia had done.

I had read books on how the Japanese government has dealt with nuclear accidents in the past. When there's an emergency, what the authorities try to do is to maintain “law and order.” What is order? It's protecting the system presiding at the time. [...]

The government was bound to lie. [...]

## **The situation at Fukushima is bleak — “This discharge is beyond our control” (VIDEO)**

Title: [Japan's nuclear body says radioactive groundwater at Fukushima an ‘emergency’](#)

Source: Arirang News

Date: Aug. 6, 2013

*Transcript Excerpts*

Two and a half years may have passed since the Fukushima nuclear disaster, but problems there are as serious now as they've ever been [...] The head of the country's Nuclear Regulatory Authority task force Shinji Kinjo told Reuters on Monday that the leak was an emergency, but he was worried the plant's operator, TEPCO, had no sense of how to deal with it. [...]

In a recent news conference, TEPCO General manager Masayuki Ono said the situation was bleak.

“We understand that this discharge is beyond our control and we do not think the current situation is good.” [...]

## **Fukushima: Massive Leaks Continuing On a Daily Basis ... For Years On End**

Posted on [April 6, 2013](#) by [WashingtonsBlog](#)



## Is Fukushima Leaking ... Or Are the Reactors Wholly Uncontained?

You may have heard that Tepco – the operator of the stricken Fukushima nuclear power plants –[announced](#) a [large leak](#) of radioactive water.

You may have heard that the cooling system in the spent fuel pools at Fukushima has [failed for a second time in a month](#).

This is newsworthy stuff ... but completely misses the big picture.

Associated Press [notes](#):

*Experts suspect a continuous leak into the ocean through an underground water system, citing high levels of contamination in fish caught in waters just off the plant.*

(Tepco graphics of the Fukushima plants even appear to show water [directly flowing](#) from the plant to the ocean. And see [this](#).)

In fact, Japanese experts say that Fukushima is currently releasing up to [93 billion becquerels of radioactive cesium](#) into the ocean *each day*.

How much radiation is that?

A quick calculation shows that Chernobyl released around ten thousand times more radioactive cesium each day [during the reactor fire](#). But the Chernobyl fire only lasted 10 days ... and the Fukushima release has been ongoing for more than *2 years* so far.

Indeed, Fukushima has *already* spewed much more radioactive [cesium](#) and [iodine 131](#) than Chernobyl. The amount of radioactive cesium released by Fukushima was some [20-30 times higher](#) than initially admitted.

Fukushima also pumped out huge amounts of radioactive [iodine 129](#) – which has a half-life of [15.7 million years](#). Fukushima has also dumped up to [900 trillion becquerels of radioactive strontium-90](#) – which is a powerful internal emitter which [mimics calcium and collects in our bones](#) – into the ocean.

And the amount of radioactive fuel at Fukushima [dwarfs Chernobyl](#) ... and so could keep leaking for decades, centuries or millenia.

The bottom line is that the reactors have [lost containment](#). There are not “some leaks” at Fukushima. “Leaks” imply that the reactor cores are safely in their containment buildings, and there is a small hole or two which need to be plugged. But scientists [don’t even know where the cores of the reactors are](#). That’s not leaking. That’s [even worse than a total meltdown](#).

So what are the consequences for people living outside of Fukushima itself?

They [could](#) be [quite severe](#), [indeed](#).

**Gundersen: Moving fuel risks nuclear chain reaction; You can’t stop it, no control rods to control it — Consultants: World’s most serious radiological disaster by far is possible**

Title: [Insight: After disaster, the deadliest part of Japan’s nuclear clean-up](#)

Source: Reuters

Author: Aaron Sheldrick and Antoni Slodkowski

Date: Aug 14, 2013

[...] The operation, beginning this November at the plant’s Reactor No. 4, is fraught with

danger, including the possibility of a large release of radiation if a fuel assembly breaks, gets stuck or gets too close to an adjacent bundle, said [Arnie Gundersen, a veteran U.S. nuclear engineer and director of Fairewinds Energy Education, who used to build fuel assemblies] and other nuclear experts.

[...] independent consultants Mycle Schneider and Antony Froggatt said recently in their World Nuclear Industry Status Report 2013: “Full release from the Unit-4 spent fuel pool, without any containment or control, could cause by far the most serious radiological disaster to date.” [...]

“There is a risk of an inadvertent criticality if the bundles are distorted and get too close to each other,” Gundersen said. He was referring to an atomic chain reaction [...]

“The problem with a fuel pool criticality is that you can’t stop it. There are no control rods to control it,” Gundersen said. [...]

“Previously it was a computer-controlled process [...] It has to be done manually so there is a high risk that they will drop and break one of the fuel rods,” [Toshio Kimura, a former Tepco technician, who worked at Fukushima Daiichi for 11 years] said. [...]

**Navy sailor’s health melted down after exposure to Fukushima fallout** — Now a shaking, withering patient unable to walk by himself — Lives of younger service members “at stake as well” — Doctors won’t give a diagnosis (PHOTOS)

Title: [Without medical diagnosis, Utah sailor lives in limbo](#)

Source: Deseret News (Utah)

Author: Jed Boal,

Published: Aug. 14 2013

[...] Over the last 21 months, [Lt. j.g. Steve Simmons, who served on board the USS Ronald Reagan with the U.S. Navy during Fukushima crisis] said his health has melted down, too, and he’s not alone. [...]

He believes he’s suffering from radioactive contamination [...]

Since November of 2011 Lt. j.g. Steve Simmons has been sick. He believes he’s suffering from radioactive contamination, but doctors won’t give him a diagnosis. (Simmons Family via Deseret News)

After November 2011, Simmons said he went from being a fitness buff always up for a challenging hike to a shaking and withering patient who cannot walk on his own. He’s lost 25 pounds, down to 128 pounds, and lost 25 percent to 30 percent of his muscle mass.

“The muscle weakness has progressed to the point where he needs 24-hour care,” his wife said.

[...] doctors won’t provide a diagnosis, he said. [...]

Simmons is not part of the lawsuit [150 former sailors and Marines suing Tepco].

He’s especially concerned about the younger sailors and Marines. “Their lives are at stake as well,” he said. [...]

[View photos of Lt. j.g. Simmons here](#)

## **They are turning ground into quicksand at Fukushima plant — Engineers warn reactor units may topple (VIDEO)**

Title: [Interview with Kevin Kamps](#)

Source: Thom Hartmann Program

Date: August 12th, 2013

*At 4:10 in*

*Thom Hartmann, Host:* So what's the fate and future Fukushima first of all?

*Kevin Kamps, [Beyond Nuclear](#):* [...] In the context of what's going on now with the groundwater flooding of the site — because one of their mitigation measures which is pretty not very well thought out, was building a seawall by freezing the ground — and guess what? The groundwater is piling up behind the seawall. [...] by backing up the water under the entire site, they are turning the ground into quicksand. And that's causing less stability — more instability. There are structural engineers and [nuclear engineers](#) warning that may be the final straw that's needed to topple not only Unit 4, but perhaps some of those other destroyed units with their high-level radioactive waste stored in pools fifty feet up in the air. [...] If that [Unit 4] pool goes down — enough of that fuel is still in there — it'll be on fire [...]

*Hartmann:* And the prevailing winds and the prevailing ocean currents take water from the coast of Japan where?

*Kamps:* To North America. Within days of the Fukushima Daiichi catastrophe beginning, we were getting fallout coming down in rain in the United States — not in insignificant quantities. And also, of course, the seafood. Not only does the ocean's currents bring the radioactivity this way, but also the sea life itself. The blue fin tuna migrated from Japan to North America and carried the radioactive cesium in its flesh over here.

*See also: [Japan Official: Fukushima reactor buildings could "topple" -- Tepco's work to change flow of groundwater can form pools below surface that soften the earth](#)*

Wall St. Journal: Unknown where Fukushima's nuclear fuel went; Even if found, they don't know how to get it out — RT: No one knows where the three 100-ton blobs are [Wall St. Journal](#), Aug 15, 2013: Most of the world may not have noticed, but the cleanup efforts at Japan's Fukushima Daiichi nuclear plant passed a big milestone on Wednesday. A bureaucratic milestone, at least. [...] On Wednesday, the Nuclear Regulation Authority, Japan's nuclear regulator, officially approved an [sic] plan that lays out — [in 3,695 detailed pages](#) — everything from the broad road map that Fukushima Daiichi operator Tokyo Electric Power Co. is following to clean up and dismantle the crippled plant [...] Of course, there are still lots of unknowns and unknowables about the cleanup at Fukushima Daiichi — where exactly the melted fuel rods are, for instance, and how to get them out safely. Thus, the plan will be changed and updated as needed in the future, an NRA official told

[RT](#), Aug 17, 2013 – *Christina Consolo, [Naked Radio](#)*: We have three 100-ton melted fuel blobs underground, but where exactly they are located, no one knows. Whatever 'barriers' TEPCO has put in place so far have failed. Efforts to decontaminate radioactive water have failed. Robots have failed. Camera equipment and temperature gauges...failed.

Decontamination of surrounding cities has failed. We have endless releases into the Pacific Ocean that will be ongoing for not only our lifetimes, but our children's' lifetimes. We have 40 million people living in the Tokyo area nearby. [Read the full RT interview here](#)

So one must come to the conclusion that this is not a safe, clean and cheap energy source when contamination of the land and ocean will last for hundreds of years, and the eventual cost for damage and clean up will exceed 200 billion dollars.

I'd like to finish with an article from the BBC.

BBC. May 3, 2013.

### **Japan signs Turkey nuclear deal**

#### **The Turkish government has signed a deal with a Japanese-French consortium to build a new nuclear power station.**

The \$22bn (£14bn) contract is Japan's first successful bid for an overseas nuclear project since a tsunami wrecked the Fukushima power station.

The deal was signed by visiting Japanese Prime Minister Shinzo Abe.

Turkish Prime Minister Recep Tayyip Erdogan said it would transform relations with Japan into a "strategic partnership".

"What happened at Fukushima upset all of us. But these things can happen. Life goes on. Successful steps are being taken now with the use of improved technology," the Turkish prime minister added.

The deal comes as part of renewed efforts to promote Japanese nuclear technologies abroad, despite concerns over safety.

One of the Japanese firms included in the consortium is Mitsubishi Heavy Industries, one of the companies behind the Fukushima plant damaged in the 2011 earthquake and tsunami.

Turkey is also prone to earthquakes, and the government cited Japan's expertise in earthquake protection as one of the factors in signing the deal.

The other firms are Itochu Corporation and French utility group GDF Suez.

Japan is looking to boost exports of its technological expertise as it attempts to increase economic growth and escape two decades of near stagnation.

Fast-growing Turkey, meanwhile, is planning to invest in domestic energy generation to reduce its dependence on imports as the economy expands.

The new nuclear plant will be Turkey's second. It is currently dependent on imported oil and gas to meet 97% of its energy needs.

The Japanese prime minister's wife's response.

Japan Times.

*"I'm opposed to nuclear power," she said in a June 6 speech in Tokyo. "My heart aches to see him selling nuclear power overseas."*