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Japan's Cut-Price Nuclear Cleanup 福島は割引清掃

David McNeill, Justin McCurry

Japanese translation available

TEPCO woes continue amid human error, plummeting morale and worker exodus

During a visit to Fukushima Daiichi in September, Abe Shinzo told workers: “the future of Japan rests on your shoulders. I am counting on you.”

The prime minister’s exhortation was directed at almost 6,000 technicians and engineers, truck drivers and builders who, almost three years after the plant suffered a triple meltdown, remain on the frontline of the world’s most hazardous industrial cleanup.

Yet as the challenges facing Fukushima Daiichi become clearer with every new radiation leak and mishap, the men responsible for cleaning up the plant are suffering from plummeting morale, health problems and deep anxiety about the future. Even now, at the start of a decommissioning operation that is expected to last four decades, the plant faces a shortage of workers qualified to manage the dangerous work that lies ahead, according to people with firsthand knowledge of the situation inside the facility.

The dangers faced by the nearly 900 employees of Tokyo Electric Power [Tepco] and some 5,000 workers hired by a network of contractors and sub-contractors were underlined in October when six men were doused with contaminated water at a desalination facility. Their brush with danger was a sign that the cleanup is entering its most precarious stage since the March 2011 meltdown.

Commenting on the latest leak, the head of Japan’s nuclear regulator Tanaka Shunichi, told reporters: "Mistakes are often linked to morale. People usually don't make silly, careless mistakes when they’re motivated and working in a positive environment. The lack of it, I think, may be related to the recent problems."



Fukushima nuclear workers 201

The radiation spill was the latest in a string of serious water and radiation leaks that have raised questions about the state of mind of the workforce, and Tepco’s ability to continue the cleanup alone. According to sources with inside knowledge of the plant, the slew of bad news is sapping morale and causing anxiety, as the public and international community raise pressure on Japan to show demonstrable progress in cleaning up the world’s worst nuclear accident since Chernobyl.

“Very little has changed at Fukushima Daiichi in the past six months,” says Shigemura Jun, a lecturer in the psychiatry department of the

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National Defense Medical College who heads a team of psychologists that counsels Fukushima plant workers. “Tepco is doing its best to improve the situation, but you can see that the situation is severe.”

Shigemura is most concerned about the 70 percent of Tepco workers at Fukushima Daiichi who were also forced to evacuate their homes by the meltdown. They have yet to come to terms with the loss of their homes, and many are living apart from their families in makeshift accommodation near the plant.



Inside the Fukushima Daiichi plant, a makeshift sleeping area for onsite workers.

“They were traumatized by the tsunami and the reactor explosions, and had no idea how much they had been irradiated,” Shigemura says. “That was the acute effect, but now they are suffering from the chronic effects, such as depression, loss of motivation and issues with alcohol.”

Men such as Watanabe Kai(30), who was forced to flee his family home in March 2011, have never had psychological counseling and were immediately thrown back into the fight to save the Daiichi plant. Today, he monitors tanks full of highly toxic water for leaks. For a job with potentially serious consequences on his health, he is paid 15,000 yen a day.

Relatively little is known about the people who work at the Daiichi plant. Tepco severely rations interviews with its full-time staff. Contract workers such as Watanabe, employed by one of dozens of subcontractors, rarely talk to journalists because they fear for their jobs. Watanabe insists on a pseudonym for interviews.

Born and raised in the town of Okuma, a few miles from the plant, Watanabe’s family are nuclear refugees. His mother and father left the home he shared with them on March 12th and now live and work in Iwaki, 34 km south of the plant. He doesn’t believe they will ever return. Like Pripyat, the Ukrainian town evacuated after the 1986 Chernobyl disaster, Okuma is a nuclear ghost town.

Watanabe labored through the disaster at the Daiichi plant until he reached his annual limit for radiation exposure. He then cycled through the remaining jobs for nuclear workers in Fukushima, ending up with a decontamination crew, cleaning up the radiation that poisoned his home. The irony wasn’t lost on him but he says he bears no grudges. “We have to fix the mess we made.”

Anxiety over pay, conditions and personal health is compounded by uncertainty over the future of their embattled employer. Tepco is coming under mounting pressure to resolve the worsening water crisis at Fukushima Daiichi, which recently prompted the government to

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step in with half a billion dollars to help contain the buildup of toxic water.

Its ability to solve stem the water leaks by the time Tokyo hosts the Olympics in 2020 – as promised by Abe – could be hampered by a looming labor shortage. As Tepco cut costs and attempted to calm public anger over its handling of the crisis, it imposed a 20 percent pay cut for all employees in 2011. From a total workforce of 37,000, 1,286 people left the firm between April 2011 and June this year. Tepco did not hire any employees in fiscal 2012 and 2013.

Remarkably, despite his service to the Daiichi plant, Watanabe was made redundant earlier this year. Tepco no longer had money to pay subcontractors, he says. (Tepco declined to comment on this allegation.)

If it seems odd that the utility is running out of cash to clean up from the world's worst nuclear disaster since Chernobyl, that's because it is, says Watanabe. "Every penny the company spends in Fukushima is a loss. So the mentality is to save as much as possible, not to ensure good conditions and safety for workers."

Tepco's astonishing penny-pinching became evident during the summer of 2013, when the company revealed it was relying on a skeleton crew to monitor a huge plantation of 1,000-ton makeshift water tanks for leaks. Instead of installing gauges, engineers were checking 1,000 tanks visually by standing on top of them.

Japan's nuclear regulator said the leak was serious enough to warrant level three on the International Nuclear and Radiological Event Scale (Fukushima and Chernobyl were level seven). More problematically for Japan, the revelation triggered a political furor just as Tokyo, 230km from the plant, made its final pitch to host the 2020 Olympics. In a controversial speech to the International Olympic Committee in Buenos Aires, Prime Minister Abe told the world to stop worrying. "Let me assure you the situation is under control," he said, advising committee delegates to read "past the headlines and look at the facts".

For Watanabe, the pledge was important. A few days later, he got a call from his subcontractor. Flush with new cash, Tepco was now hiring nearly 100 men to monitor those leaking tanks. The utility also promised to finally install gauges on about one-third of the most vulnerable water tanks, and build a giant artificial wall to stop contaminated groundwater from reaching the Pacific.

So Watanabe has a job again, for now. Some time soon, he will have absorbed 50 millisieverts of radiation – twice the annual recommended dose for nuclear workers, and then he will have to reconsider his options.

As a nuclear refugee, he gets free health treatment but no life insurance – he has been told that's his responsibility. He is not married, and doubts he ever will be: "I would have to confess what I did, and what woman would accept it?" Eventually, he believes, Tepco and the government will run out of people to do what he does. "What will they do then?"

The utility plans to take on 331 new employees next April, according to Mayumi Yoshida, a Tepco spokeswoman. "[The employment] system will change so it will be easier for talented employees to gain promotion, and for unproductive employees to be demoted," Yoshida said.

Even if, as many predict, Tepco's balance sheet is in better shape this time next year, there is little it can do about the exodus of some workers. Tepco documents show that between March 2011 and July this year, 138 employees reached the 100-millisievert [mSv] threshold; another 331 had been exposed to between 75 mSv and 100 mSv, meaning their days at the plant are numbered. Those nearing their dose limit have reportedly been moved to other sites

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(like Watanabe) or asked to take time off, so they can return to work at Fukushima Daiichi at a later date. Others have left due to exhaustion and stress or to find work closer to their displaced relatives. “They are less motivated, “ says Shigemura, “and worried about continuing to work for a firm that might not exist in a decade from now.” Workers who have stayed on do so in the knowledge that they risk damaging their health through prolonged exposure to radiation and in accidents of the kind that occurred this week.

Earlier this year, Tepco said that 1,973 workers, including those employed by contractors and subcontractors, had estimated thyroid radiation doses in excess of 100 mSv, the level at which many physicians agree the risk of developing cancer begins to rise.

“These workers may show a tiny increased risk of cancer over their lifetimes,” says Gerry Thomas, professor of molecular pathology at Imperial College, London University.

“100 millisieverts is the dose we use as a cut-off to say we can see a significant effect on cancer rate in very large epidemiology studies. The numbers have to be large because the individual increase is minuscule. But, she added: “I would be far more worried about these workers smoking or feeling under stress due to the fear of what radiation might do to them. That is much more likely to have an effect on any one person's health.”

But Ian Fairlie, a London-based independent consultant on radioactivity in the environment is among those who have challenged the view of 100 mSv as a reliable threshold. Citing studies of tens of thousands of Japanese A-Bomb survivors, Fairlie concluded in a blog post last year that “very good evidence exists showing radiation effects well below 100 mSv”.

In mid-October, UN experts said Japanese authorities may have underestimated radiation doses received by workers in the early days of the disaster by as much as 20 percent. The UN scientific committee on the effects of atomic radiation (Unscear) said tests on workers did not take into account some types of radiation. It voiced concern that workers had been tested for thyroid gland doses "after a significant delay", and that doses from iodine-132 and -133, which have half-lives of two hours and 20 hours, had not been taken into account. If Unscear's assessment is accurate, more Fukushima Daiichi workers would be eligible for free health checks.

While some experts have cautioned against reaching hasty conclusions about a possible rise in thyroid cancer among Fukushima Daiichi workers, there is little doubt that the punishing work they perform at the site is taking a toll on their health. A physician who visits Tepco employees at Fukushima Daiichi said he had observed symptoms of a stress-related condition associated with an imbalance between effort expended and the rewards that follow.

“I’m particularly worried about depression and alcoholism,” says Tanigawa Takeshi, a professor in the department of public health at Ehime University in western Japan. “I’ve seen high levels of physical distress and symptoms of post-traumatic stress disorder.”

Many of the casual laborers employed by subcontractors live in cheap accommodation in places such as Yumoto, a hot-spring resort south of the exclusion zone around the plant. The number of workers has declined in the past year amid complaints from hoteliers and inn-keepers about drink-fuelled fights. These days, more seem to prefer the bars and commercial sex establishments of nearby Onahama port.

A 42-year-old contract worker, who asked not be named, confirmed that alcohol abuse had become a problem among workers. "Lots of men I know drink heavily in the evening and come to work with the shakes the next day. I know of several who worked with hangovers

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during the summer and collapsed with heatstroke."

"There isn't much communication between workers. People want to look after number one. Newcomers are looked down on by their colleagues and some don't really know how to do their jobs."

Another worker, who spoke on condition of anonymity, said he had seen hung over colleagues collapse with heatstroke just minutes after beginning work.

The longer decommissioning continues, the harder it will become to find enough people with specialist knowledge to see it through, says Naka Yukiteru, a former General Electric employee who helped build some of Fukushima Daiichi's reactors. "There aren't enough trained people at Fukushima Daiichi, even now," he says. "For Tepco, money is the top priority – nuclear technology and safety comes second and third. That is why the accident happened. The management insists on keeping the company going. They think about shareholders, bank lenders and the government, not the people of Fukushima."

Naka, who now runs a firm in Iwaki that provides technical assistance to Tepco, said the lack of expertise afflicts the utility and general contractors with a pivotal role in the cleanup.

"Most of their employees have no experience of working in conditions like these, and all the time their exposure to radiation is increasing, Naka says. "I even suggested to Tepco that it bring in retired workers who are willing to help, but the management refused."

"As someone who helped build the plant and was aware of the technology was still in its infancy, I feel partly responsible for what happened. That's why I'm trying to help now."

Tepco is coming under renewed pressure to accept more specialist help from overseas. In October, Abe Shinzo told an international science conference in Kyoto: "My country needs your knowledge and expertise." But this apparent spirit of openness is unlikely to turn the decommissioning operation into a genuinely international affair, says Fairlie. "Japanese officials say they want help, but Tepco and the government are not in the business of saying, 'This is serious, please come and help us.'"

Tepco's unshakable belief in its ability to complete the decommissioning operation rules out any meaningful cooperation, even with Japanese government officials, said Yoshikawa Akihiro, a Tepco employee of 14 years who recently left the company. "Tepco has always wanted to do its own thing," he said. "It doesn't want the government stepping in and telling it what to do; it just wants the government's money."

Yoshikawa said the spirit of resilience his former colleagues felt in the aftermath of the accident had turned to despondency, forcing younger workers to leave and older ones to take early retirement.

"They felt like they were being bullied, even though they were putting their lives at risk," he said.

"Tepco is spending its money fixing the technical problems, but it also needs people to carry out that work. I'm very worried about the labor shortage. If they don't do something about it soon, the employment system at Fukushima Daiichi will collapse first, not the plant.

For the thousands of non-Tepco employees hired across Japan to perform backbreaking work for subcontractors, the lure of earning decent money in return for working close to lethal levels of radiation has proved an illusion. Once money for accommodation has been subtracted, laborers are typically left with a few thousand yen at the end of each day. In some cases, employers withhold danger money,

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which can amount to more than half of a worker's daily wage, because, they say, they need the cash to keep the company in business.

"The real work at Fukushima Daiichi s being done by the general contractors, with the smaller companies picking up the crumbs," Yoshikawa said. "They outbid each other for contracts and so end up with less money to pay workers. They have no choice but to hire cheap labor.

Conditions for Tepco workers living in J Village – a football training complex just south of Fukushima Daiichi – have only recently improved. For two years after the disaster, those living in prefabricated units at J Village had to walk hundreds of meters at night to use communal toilets. Tepco belatedly installed private toilets earlier this year after the firm's incoming president, Hirose Naomi, heeded health experts' warnings that the lack of facilities was compromising the workers' health.

"Tepco's headquarters has little idea of how the workers live," said Tanigawa. "It is focused on the compensation problem and doesn't want to be accused of only looking after its own when there are still evacuees who haven't been compensated."

But as concern grows over Tepco's ability to address the myriad technical challenges facing Fukushima Daiichi – starting, next month, with the removal of 1,300 spent fuel assemblies from the top of reactor No. 4 – the unfolding human crisis is being largely ignored.

There is still no full-time mental health counseling available at the plant, said Shigemura, whose team of mental health professionals visits the plant about once a month to talk to workers and administer pharmacological treatments. "That amazes me," he said.

"Tepco workers worry about their health, but also about whether Tepco will take care of them if they were to fall ill in the future. They put their lives and their health on the line, but in the years to come, they wonder if they will just be discarded."

Justin McCurry is Japan and Korea correspondent for the Guardian and the Observer. He contributes to the Christian Science Monitor and the Lancet medical journal, and reports on Japan and Korea for France 24 TV.

David McNeill writes for The Independent, The Irish Times, The Economist and The Chronicle of Higher Education. He is the co-author of the 2012 book Strong in the Rain: Surviving Japan's Tsunami, Earthquake and Fukushima Nuclear Disaster.

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