

The pills can reduce the chances of getting thyroid cancer if radioactive iodine is released during a nuclear emergency.

Terjesen said everyone living within 10 miles of Oyster Creek should have on hand the pills, which are offered free to residents in that area.

"We've always had these offered as a preparedness measure for close to 10 years, and it's certainly not in response to any imminent danger or threat like that," Terjesen said.

KI should be taken only after public health officials tell you to do so, according to the health department.

But it's highly unlikely that Americans would be exposed to radioactive iodine from the damaged nuclear complex thousands of miles away in Japan, according to the Union of Concerned Scientists.

Thursday's report from the organization focused on the safety-related performance of U.S. nuclear power plant owners and the NRC.

Many of the 14 near-misses happened because reactor owners, and frequently the NRC, tolerated known safety problems, the report stated. But the report commended the NRC's work to address safety problems at some plants.

At Oyster Creek, workers discovered leaks of radioactive tritium, which can cause cancer, in April 2009 and August 2009. The tritium contaminated parts of two aquifers, but the NRC issued no fines.

New Jersey officials last year ordered the plant to clean up the contamination, following New Jersey Press Media inquiries on the issue.

Plant owner Exelon is pumping out contaminated groundwater. Officials have said the tritium has not threatened public health and safety.

According to Lochbaum's report, NRC rules allow nuclear facilities to routinely release radiation-contaminated air and water.

Still, plant owners must monitor and control radioactive discharges. Overall releases must meet federal limits in an effort to protect the public, the report says.

But the NRC has enforced its rules inconsistently over the last decade, the report says.

In 2008, the NRC prevented Entergy's River Bend plant near Baton Rouge, La., from restarting after Hurricane Gustav tore metal siding from much of the turbine building. Allowing the plant to restart without walls could have allowed an uncontrolled and unmonitored release of radiation, according to the report.

But when tritium contamination was discovered at Entergy's Vermont Yankee plant last year, the NRC allowed the plant to continue operating while workers searched for the leak, the report says.

The NRC "did the right thing at River Bend by enforcing its regulations and not allowing Entergy to intentionally violate them," the report says. "The agency did the wrong thing at Vermont Yankee and at Pilgrim in Massachusetts, Oyster Creek in New Jersey, Brunswick in North Carolina, and many other plants by pretending that those same regulations did not exist.

"The people living in Vermont and other states expect and deserve the same protections as those the NRC provided to residents of Louisiana," the report says.

Report: Safety Lapses 'High' At U.S. Nuclear Plants (USAT)

By Wendy Koch

[USA Today](#), March 18, 2011

U.S. nuclear power plants operate with known safety problems because of inadequate federal inspections, faulty maintenance and poor design, concludes a report Thursday by U.S. scientists.

The Nuclear Regulatory Commission investigated 14 safety lapses at these plants last year, an error rate that's "high for a mature industry," according to the Union of Concerned Scientists, an environmental and nuclear watchdog group. Its report, prepared before Friday's earthquake and tsunami in Japan triggered a nuclear crisis, is the first in an annual series on NRC performance.

"If there is a common theme among last year's near-misses, it's that none would have happened had prior warning flags been heeded rather than discounted or ignored," said report author David Lochbaum. He said the NRC, an independent agency that oversees safety at the nation's 104 nuclear reactors, inspects about 5% of plant operations.

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The report comes as President Obama ordered a "comprehensive review" Thursday of U.S. nuclear power plants. He said they're designed to withstand major natural disasters, but the U.S. had a "responsibility" to learn the lessons from the Japanese nuclear crisis.

The scientists' report warns that ignoring safety flaws can snowball into catastrophes, adding known problems triggered the near meltdown at Three Mile Island in Pennsylvania 1979 and a worse disaster, an actual meltdown, at Chernobyl in the Ukraine in 1986.

The report, which gives the NRC a mixed grade, cites three examples where its inspectors made outstanding safety changes.

For example, in Oconee, S.C., NRC inspectors averted a possible safety problem by refusing to accept plant operators' rationale for allowing a component in Units 2 and 3 to go untested after a similar component in Unit 1 had failed.

The report says the 14 safety lapses at U.S. plants last year ranged widely. Among them were equipment failures, such as a leaking liner at a portion of the Indian Point facility in New York, as well as poor employee training, such as occurred at a Southpoint, N.C., plant when workers didn't call for help during an emergency because they didn't know how to turn on a new automated system.

The incidents occurred at plants operated by Progress Energy Inc; Constellation Energy Group; Duke Energy Corp; First Energy; Pacific Gas & Electric Corp; Southern Nuclear; Omaha Public Power District; Dominion Generation; and Wolf Creek Nuclear.

Complacency Raises U.S. Nuclear Risks, Report Finds (REU)

By Scott Malone

[Reuters](#), March 18, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

Citing Near Misses, Report Faults Both Nuclear Regulators And Operators (NYT)

By Tom Zeller Jr.

[New York Times](#), March 18, 2011

The Nuclear Regulatory Commission, which oversees the nuclear power industry in the United States, came under fire from critics on Thursday for recommending that Americans in Japan remain at least 50 miles away from the ailing Fukushima Daiichi nuclear power plant there.

That distance exceeds the official evacuation zone surrounding nuclear power plants in the United States by 40 miles, said Edwin Lyman, a senior scientist at the Union for Concerned Scientists, an environmental and nuclear watchdog group based in Cambridge, Mass.

Mr. Lyman was speaking in a conference call with reporters on the release of a report examining critical problems — known as "near misses" — at various nuclear facilities in the United States last year, and the N.R.C.'s handling of critical problems — or so-called near-miss events — at nuclear power plants in the United States in 2010.

Citing plants like the Indian Point nuclear site north of New York City, Mr. Lyman, a physicist and member of the Institute of Nuclear Materials Management, called it "utterly unrealistic" to expect that an effective evacuation could be undertaken should a disaster like the earthquake and tsunami that hit Japan last week occur in this country.

The agency "should not be using different standards for Americans abroad than it does at home," Mr. Lyman said.

David McIntyre, a spokesman with the Nuclear Regulatory Commission, said that the commission continued to believe that a 10-mile evacuation zone — required as part of the emergency protection plant at every nuclear facility in the United States — was adequate for what would be an "anticipated event."

In Japan, Mr. McIntyre said, "you have a multiple worst-case scenario."

He also noted that the standard evacuation zone is backed up by a "50-mile ingestion zone," in which potential radiation contamination of food supplies is planned for, and that the 10-mile evacuation zone could be expanded as circumstances warranted.

"However," Mr. McIntyre added, "once this is over, we're going to evaluating everything for lessons that can be learned, and I would be very surprised if this wasn't one of the things that we look at."

The Union of Concerned Scientists' report, which examined 14 significant events requiring special inspection by federal regulators at nuclear plants last year, evaluated both the problems as described by the commission inspectors in public documents and the inspectors' response.

Twelve of the events involved safety problems ranging from enduring roof leaks and floods in buildings with safety equipment to faulty pumps and rusty pipes. Two incidents involved security shortcomings, the details of which were not explained.

Progress Energy, a utility operating five nuclear facilities in the Carolinas and Florida, was singled out as being particularly problematic, with four of its plants being among the 14 that required special inspections.

In one instance described by David Lochbaum, the author of the report and the director of the nuclear safety program for the organization, a high-voltage power cable at Progress Energy's Robinson nuclear power plant near Florence, S.C., failed, causing a fire.

"Ensuing equipment failures and operator mistakes — quite a large number of mistakes," Mr. Lochbaum said in a prepared statement, "transformed a relatively routine event into a very serious near-miss."

"Illustrative of the unbelievably poor worker performance contributing to this near miss is this fact," he added. "Hours after the fire had been put out, workers re-energized the cable that had started it all. It was still failed, and ignited a second fire."

Mr. Lochbaum suggested that the broader corporate safety culture at Progress should be a target of investigation for the regulatory commission.

Responding to the report, Mike Hughes, a spokesman for Progress Energy, said: "We have the highest safety standards for our nuclear plants and our employees, and we work continuously to improve safety. We remain focused on addressing each of the events last year that led to special inspections.

"In parallel," he added, "we have evaluated — and continue to evaluate — corporate policies and practices to ensure that they create and sustain a culture of questioning and safe, conservative operation. We are taking definitive steps to address the issues raised and return our fleet to the highest performance standards."

The report highlighted instances in which the N.R.C. managed to catch problems at several plants before they escalated into bigger problems. But it also said that because federal regulators audited only about 5 percent of the activities at plants each year, the agency's "spotlight is more like a strobe-light, providing brief, narrow glimpses into plant conditions."

It also suggested that federal regulators needed to do more to investigate why problems existed in the first place — including examining the overall safety culture of companies that operate nuclear power plants — rather than simply order them to be fixed.

Mr. McIntyre of the N.R.C. said that the commission has inspectors stationed full-time at each plant. "We think our oversight is good," he said, "and a corporate culture of safety is important to us."

Questions of risk and emergency preparedness at nuclear power plants have gained new prominence for citizens and regulators around the world after an earthquake measuring 9.0 in magnitude, and a subsequent tsunami, crippled the Fukushima Daiichi nuclear power facility about 140 miles north of Tokyo.

The German authorities announced plans this week to shut down seven of that nation's nuclear reactors to review the plants' safety — although other countries in Europe described that move as rash.

In the United States, Americans have begun scrambling to acquire stores of potassium iodide, which can offer some protection from the effects of radiation leakage. Federal regulators have come under criticism for not distributing the drug more widely, as prescribed by federal legislation in 2002.

That legislation required the federal government to supply potassium iodide capsules to people in a 20-mile radius of nuclear power plants, but neither the administrations of President George W. Bush nor Barack Obama have followed through, opting instead for alternatives they say were permitted under the law.

Some states have given pills to people living within 10 miles of nuclear plants, or stockpiled the pills for those people.

In a letter sent to President Obama earlier this week, Representative Edward J. Markey, the Massachusetts Democrat who is the author of the 2002 legislation, suggested that the nation was underprepared for the sort of emergency now unfolding in Japan.

"The tragic events in Japan highlight the need for more intensive and specific nuclear disaster response plans," Mr. Markey said.

Japan's Nuclear Crisis No Danger To U.S., Officials Say (AP)

Associated Press, March 18, 2011

WASHINGTON - U.S. officials said Thursday that it could take weeks to bring the crippled Japanese nuclear complex under control but that there was no danger from leaking radiation to the western United States or its Pacific territories at this time.

The officials defended their recommended 50-mile evacuation zone for American troops and citizens in Japan.

The first evacuation flight of U.S. citizens left Japan, the State Department said, as President Barack Obama made a brief visit to the Japanese Embassy in Washington to sign a condolence book.

Obama was to address the crisis in a public statement late in the afternoon.

Gregory Jaczko, chairman of the Nuclear Regulatory Commission, told reporters at a White House briefing it could be some time before the crisis is brought under control as crews are working to cool spent-fuel rods and get the damaged Japanese reactors under control. The activity could continue for days and "possibly weeks," Jaczko said.

He said the U.S. recommendation that American troops and citizens stay 50 miles away from the nuclear complex was "a prudent and precautionary measure to take." That evacuation zone is far wider than that established by Japan, which has called for a 12-mile zone and has told those within 20 miles to stay indoors.

Daniel B. Poneman, deputy secretary of energy, told the briefing that his agency agreed with the 50-mile zone. A "very dangerous situation" remains in Japan, he said.

Still, Jaczko said, "Basic physics and basic science tells us there really can't be any harm to anyone here in the United States or Hawaii or any territories," such as Guam, American Samoa or the Northern Marianas.

Jaczko said the U.S. recommendation for the 50-mile evacuation zone was based on the "possibility of scenarios that we haven't seen yet." He also said it was based on "prudent assumptions and prudent assessments about what could happen." Yet Poneman said the Japanese recommendation also was prudent.

Asked what could be done to make sure that radiation from the world's worst nuclear emergency in a quarter century would not harm the United States, Jaczko said: "We are really focused on making sure first and foremost that the plants in this country are safe."

The officials spoke as Japanese emergency workers sought to regain control of the dangerously overheated nuclear complex, dousing it with water from police cannons, fire trucks and helicopters to cool nuclear fuel rods that were threatening to spray out more radiation.

The U.S. Energy Department said it had conducted two separate tests to measure how much radioactive material had been deposited on the ground in Japan. That data, Poneman said, was consistent with the recommendation for American citizens to evacuate a 50-mile radius around the plant.

The U.S. officials declined to criticize the Japanese call for a smaller evacuation zone.

"We're analyzing the information, and we're sharing it with the Japanese," said Poneman. "The preliminary look has indicated that the measures that have been taken (by the Japanese) have been prudent ones. And we have no reason to question the assessment that has been made or the recommendation that has been made by the Japanese authorities."

Facts on the ground at the damaged nuclear plant are "genuinely complex and genuinely confusing," the deputy energy secretary added.

Meanwhile, Obama visited the Japanese Embassy in Washington to sign a condolence book. White House aides said he wanted to show the nation's commitment to standing by the Japanese during the time of crisis.

The crisis has been complicated by the spare and often contradictory information issued by the Japanese government and the Tokyo Electric Power Co., heightening a sense of uncertainty about what's happening in the reactors.

"It's not easy to get information from the site," said White House spokesman Jay Carney.

Carney said that Obama had taken the rare step of asking the NRC, which is an independent agency, to take into account what is happening in Japan and to apply lessons learned to the analysis of security and safety of reactors here. "The fact that the president has made that request himself only adds to the urgency of that mission," Carney said.

Some critics have suggested the administration should do more to closely re-examine the nation's aging network of nuclear power plants with an eye toward making them more accident-proof. In other countries, China has said it would hold off on approving new nuclear plants, and Germany has said it would temporarily switch off seven aging reactors.

Earlier this week, European Union energy officials agreed to apply stress tests on plants across the 27-nation bloc. Spanish Prime Minister Jose Luis Rodriguez Zapatero commissioned studies to determine how vulnerable his country's six nuclear plants are to earthquakes or flooding.

Carney, when asked why the United States was not taking the more stringent measures of some other countries, said Obama had "full confidence" the NRC was doing its job.

"We ... have an independent regulatory agency whose sole mission is to constantly review and evaluate the safety and security of the reactors in the United States," Carney said. The nation's 104 nuclear reactors provide 20 percent of U.S. electricity.

Japan Disaster Troubles Few Near Growing Georgia Nuclear Plant (USAT)

By Larry Copeland, Usa Today

[USA Today](#), March 18, 2011

A nuclear plant disaster in Japan has done little to change the thinking about nuclear energy in Waynesboro, Ga., where the USA's first nuclear power plant construction in decades is planned.

Mayor George DeLoach, 70, says people in Waynesboro trust Southern Co., which is expanding its Alvin W. Vogtle Electric Generating Plant from two nuclear reactors to four.

"We have a lot of confidence in the Southern Co.," says DeLoach, who is in his 16th year as mayor. "The plant is over 20 years old. It's been operating since the late '80s and we haven't had a serious accident or complaint out there. They do a great job."

In Shell Bluff, the view isn't as charitable, according to the Rev. Charles Utey, pastor of McElmurray Spring Branch Baptist Church, which is about 5 miles from the plant in rural Burke County.

"There is great concern," Utey says. "There has been a lot of talk about it. The situation in Japan has increased their interest, especially in the design of it. We're planning a meeting of residents to work on a strategy."

He says people are concerned that the reactors planned for Vogtle could be damaged in a hurricane or earthquake, causing radiation to leak into the environment.

The last construction permit for a nuclear plant was issued on Jan. 27, 1978, according to the Nuclear Regulatory Commission. The last nuclear plant to go on line was in 1996, according to the U.S. Energy Information Administration.

The Japan disaster is reverberating across other communities in the USA where nuclear power plants are planned or under consideration:

- The Healthy Environment Alliance of Utah, opponents of a nuclear power plant proposed near Green River, Utah, says the Japan catastrophe highlights the dangers of nuclear power development. Aaron Tilton, president and CEO of Blue Castle Holdings, which hopes to begin the plant in five years, says it underscores the need for strict safety regulations.

- In Iowa, Democratic state Sen. Sen. Matt McCoy says legislators should consider waiting until next session to take up bills that would make it easier for energy companies to build nuclear plants. MidAmerican Energy President William Fehrman, whose company is considering a nuclear plant in Iowa, was appearing before a state Senate subcommittee Thursday.

- Executives of the Tennessee Valley Authority, which operates six nuclear reactors in east Tennessee and north Alabama and has another under construction, say they are in areas not prone to frequent or extremely large earthquakes and are equipped with numerous safety features.

In Georgia, the Vogtle plant, about 25 miles south of Augusta, opened the first of its two reactors in 1987. In the regulatory process now are two new reactors, scheduled for completion in 2016 and 2017 at a cost of \$14.8 billion. They would make Vogtle the nation's only nuclear plant with four reactors. In February 2010, the Obama administration announced \$8.33 billion in loan guarantees for construction and operation of the two new reactors.

Les Peel, 62, the finance director of Burke County schools, says, "I don't think anybody's apprehensive. Really, nobody knows what's going on in Japan. That could be operator error over there. I haven't heard anybody say they're scared. My next-door neighbor works at Vogtle. It's no big deal. I'm not going to feel apprehensive unless there's something that comes out that says there's a design flaw or something like that."

Sara Barczak, who spent 10 years in the region as a program director with the Southern Alliance for Clean Energy, says it's not just residents of Burke County who might have concerns. "In something like the Japan situation, it's not just the community right by the reactor that's affected," she says. "It's the folks downwind and downstream. If that happened, there would be a lot of communities in Georgia and South Carolina who would be in a world of harm."

Valerie Hendrickson, a spokeswoman for Southern Co., says the company expects to move ahead with its application for a combined construction and operating license from the Nuclear Regulatory Commission later this year. "(We) remain committed to this project," she says. "As of now, we don't anticipate" any changes to the construction schedule.

She says there is a key difference between the reactors proposed at Vogtle and those at Japan's Fukushima plant: The Vogtle reactors are specifically designed with "passive safety systems" that can keep the plant in a safe shutdown even with the loss of all power and all pumps. The Japan plant requires electricity to power pumps that provide cooling.

Plant Vogtle is a source of considerable largesse in Waynesboro, which bills itself as the Bird Dog Capital of the World for the Georgia Field Trials held there since 1901. Vogtle is the county's largest employer and generates about \$25 million annually in utilities taxes — 70% of the local tax base. That is expected to double to \$50 million to \$60 million with the new reactors, which will generate 3,000 construction jobs and 800 to 900 new permanent positions, the mayor says.

"We have five new schools, a new hospital, a new library and one of the best rural emergency management systems in the state," he says. "The nuclear plant in Japan was built in 1971. That's 40 years. We've had a lot of new technology that's come out since that plant was built in Japan."

Contributing: Scott Kerbs, thespectrum.com; The Tennessean, Nashville; Associated Press

Air Support Assists In Japanese Nuclear Crisis (POPSCI)

By Clay Dillow

[Popular Science](#), March 18, 2011

As helicopters drop tons of water on the fuel rods, a U.S. Global Hawk drone monitors the situation from above

Japanese Helicopter Collects Water This Chinook CH-47's bucket holds more than seven tons of water, which it will dump on the Fukushima reactor. AFP/Getty Images

The aerial water bombardment of Japan's Fukushima Daiichi nuclear facilities began in earnest late yesterday after being deemed too risky earlier in the week. The strategy--previously untested as far as we know--is aimed at cooling the reactor cores and spent fuel rod storage pools, but it's highly unclear whether it's doing any good. The choppers are dropping their payloads on the go, presumably out of radiation fears, and as such Japanese authorities can't ascertain whether any of the water has actually been delivered to its targets.

Helicopters aren't the only aircraft in the air over Japan's stricken nuclear plant today. The U.S. Air Force is dispatching a Global Hawk UAV from Guam to Japanese airspace today to gather high-resolution images of the situation at Japan's nuclear facilities and perhaps even peer into the damaged reactors and cooling pools from above.

The Global Hawk has been gathering aerial data for days over other parts of Japan in order to assist with relief efforts, but this will be its first attempt to assist in the ongoing nuclear crisis there. And the Global Hawk is well suited for the job; Aside from being unmanned (it is a radioactive mess down there, after all), the Global Hawk's sensor array includes heat-detecting infrared sensors.

That means the UAV can gather imagery showing where the hot spots are, what parts of the reactors may be closest to rupture or other damage, whether or not fires have been completely extinguished, and, over time, the effectiveness of different methods of cooling.

At this point, those methods are diverse. The remaining workers on the ground are braving elevated radiation levels to direct fire hoses at the various overheating elements within the complex, and that previously-scrubbed strategy to drop water from above via firefighting helicopter has now been initiated as the situation becomes more desperate. The effectiveness of the water-bombing at this point is unknown, though it doesn't appear to be doing much good. May we recommend a bigger bomber?

Early Questions After Japan (NYT)

[New York Times](#), March 18, 2011

As Japan's nuclear crisis unfolds, nations around the world are looking at the safety of their nuclear reactors — as they should. But most are also waiting until all the facts are in before deciding whether or how to change their nuclear plans. The Obama administration has vowed to learn from the Japanese experience and incorporate new safety approaches if needed.

That makes sense to us — so long as there is rigorous follow-through. The operator of the stricken plant, the Tokyo Electric Power Company, and the Japanese government have been disturbingly opaque about what is happening at the Fukushima Daiichi complex and about efforts to prevent a meltdown and the potential public threat.

That has deepened anxieties in Japan and around the world and led the United States government to take the extraordinary step of announcing that the damage to at least one of the crippled reactors may be far worse than Tokyo had admitted — and urging Americans there to move further away from the official safety perimeter.

Still, enough is known to begin raising questions about our own nuclear operations. We hope regulators and industry leaders are equally forthcoming about this country's vulnerabilities and challenges.

One of the first questions is whether current evacuation plans are robust enough. The Nuclear Regulatory Commission requires plant operators to alert the public within a 10-mile radius if a dangerous plume of radioactivity will be heading their way, and local officials decide whether to order an evacuation. The American Embassy in Japan, based on advice from Washington regulators, has told Americans there to evacuate to a radius of about 50 miles from the Fukushima plant.

Why wouldn't a worst-case accident here merit the same caution? The difficulty, of course, is that some plants — including Indian Point north of New York City — are within 50 miles of millions of people. Regulators will need to clarify this discrepancy or start coming up with more ambitious evacuation plans.

Regulators need to immediately review their safety analyses of two California plants, which, like the Fukushima plant, are located on the coast and near geological faults and might theoretically face the double calamity of an earthquake and tsunami.

The type of reactors used at the Fukushima plant — made by the General Electric Company, they are known as Mark 1 boiling-water reactors — have long been known to have weak containment systems. In Japan, they appear to have been ruptured by explosions of escaping hydrogen. American regulators will need to determine whether similar reactors in this country are vulnerable and whether modifications in newer versions have made them sufficiently safe.

The stricken Japanese complex housed six reactors in close proximity; explosions, fires and radiation spread damage among four of them and has made rescue efforts harder. Regulators will need to look at whether American nuclear plants with multiple reactors are vulnerable to the same cascading effects. In recent days, a new danger has emerged in the spent fuel pools adjacent to the reactors. At least one has apparently lost its cooling water and another is cracked and possibly losing water. If the fuel catches fire, it could spew radiation over a large area. Regulators here may need to expedite the removal of some spent fuel from pools to dry storage in casks.

So far, the all-important lesson would seem to be: have sufficient emergency power at hand to keep cooling water circulating in the reactors to prevent a meltdown.

The Japanese reactors seem to have survived one of the most powerful earthquakes ever recorded without major structural damage. The crisis developed because the plant lost electrical power from the grid and the tsunami knocked out its backup diesel generators. American regulators must ensure that all nuclear plants have enough mobile generators or other backup power in place if their first two lines of defense are disabled.

Inviting A Nuclear Emergency (WP)

By Eugene Robinson

[Washington Post](#), March 18, 2011

The most urgent focus of Japan's worsening nuclear crisis is the threat from radioactive fuel that has already been used in the Fukushima Daiichi reactors and awaits disposal. In the United States, the nuclear industry has amassed about 70,000 tons of such potentially deadly waste material — and we have nowhere to put it.

U.S. officials' increasingly dire assessment of the situation in Japan stems largely from the fact that spent fuel rods — which were stored in pools of water to keep them cool — have apparently become uncovered. The material is "cool" only in the relative sense: Once exposed to air, the fuel rods rapidly heat up and release large amounts of radiation.

This is just one of several calamitous system failures at the Fukushima plant, but it is the most immediately perilous. For days, Japanese officials denied that there was any problem with the spent-fuel pools, which are located in the same structures that house the reactors. On Thursday, however, authorities acknowledged the seriousness of the situation and began doing everything they could to address it.

They even used helicopters to scoop up buckets of seawater and try to dump it onto the spent fuel rods in two of the plant's six reactors. But the rods were giving off so much radiation that chopper pilots, for their own safety, had to release the water from a great height. Almost all of it missed, and the effort was halted after just four passes.

The danger posed by radioactivity from the spent fuel is hampering workers' efforts to keep Fukushima's active reactors — filled with much "hotter" fuel — from melting down. It seems obvious that this kind of waste should be taken away and disposed of, if only to give plant operators one less thing to worry about in an emergency.

Yet in the United States, nuclear plants must store their used fuel rods on-site, in pools similar to the ones at Fukushima. A typical plant generates more than 20 tons of such waste material each year, according to the Nuclear Energy Institute. The fuel rods become less radioactive with time but ultimately must be isolated from the environment for many thousands of years.

U.S. officials have long sought a permanent solution for storing high-level nuclear waste. In 2002, after a long and bitter controversy, Congress designated a Nevada site, Yucca Mountain, as the nation's permanent nuclear waste repository.

That seemed to be the answer. The spent fuel rods from the nation's nuclear plants would be shipped to Yucca Mountain and forever entombed. Last year, however, the Obama administration filed a motion to withdraw the Energy Department's application to the Nuclear Regulatory Commission for a license to actually create and use the Yucca Mountain repository — thus effectively returning the whole argument to the vicinity of square one.

As practically every Nevada politician, of either party, will be eager to tell you, there are good reasons not to choose Yucca Mountain. It is not as remote as one might like — the Las Vegas metropolitan area is just 100 miles away — and the area is seismically active. While it is true that scientists believe nearby faults could never produce a large enough earthquake to breach a well-constructed repository, it is also true that scientists believed the Fukushima plant would never be hit by a quake of magnitude 9.0 followed by a biblical tsunami.

The Energy Department, aided by a blue-ribbon commission, is conducting a "comprehensive review" of the nuclear waste problem and will eventually come up with a plan. There are alternatives to simply putting all of the stuff inside a mountain — reprocessing, for example.

But one course of action that makes no sense at all is to just let the waste keep piling up at more than 100 nuclear plants across the nation. The chances of a mishap are quite small; the consequences, however, are wholly unthinkable.

This is the problem with the whole nuclear power industry, which employs a technology that is uniquely toxic. The impact of one miscalculation can be felt for a generation, a lifetime, even an eternity.

German Chancellor Angela Merkel gets it. She told her Parliament that the Japanese crisis made her realize that Germany must make a "measured exit" from nuclear power and "reach the age of renewable energy as soon as possible."

Merkel temporarily closed seven of Germany's oldest reactors as a first step. After Japan, "business as usual" is not an option, she said.

No one in Washington seems to be paying attention.

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Homer Simpson Need Not Apply (NYT)

By Michael Friedlander

[New York Times](#), March 18, 2011

Hong Kong

WATCHING the coverage of the crisis at the Fukushima Daiichi Nuclear Power Station unfold on TV, I was reminded of my own close call with a nuclear emergency.

In 1988 I was a newly minted shift technical adviser at the South Texas Project, a power plant near the Gulf Coast. Hurricane Gilbert, at the time a Category 5 storm, was bearing down on us. I received word from plant management that all workers should leave except for critical plant personnel like myself. I called my wife and told her to go inland with our 4-month-old daughter. Eventually the storm weakened and turned south. But there was never a question: my team and I would stay, regardless of what happened.

The situation facing the 50 workers left at Fukushima is a nuclear operator's worst nightmare. Fortunately, despite harrowing situations like mine, almost none of us will ever deal with anything like it. But the knowledge that a nuclear crisis could occur, and that we might be the only people standing in the way of a meltdown, defines every aspect of an operator's life.

The field attracts a very particular kind of person. I became a nuclear worker in the 1980s, in the wake of the oil crises of the 1970s. Nuclear power, for all its risks, seemed like the best alternative, and people like me who signed up at the time saw ourselves as the guardians of America's energy future. We were the ones who would prevent the risks of nuclear power from becoming a reality, who would keep the plants safe and, in turn, the country's way of life secure.

The same spirit motivates today's workers. Contrary to the depiction of nuclear operators as bumbling slackers in "The Simpsons," the typical employee is more like a cross between a jet pilot and a firefighter: highly trained to keep a technically complex system running, but also prepared to be the first and usually only line of defense in an emergency.

Training to be a senior reactor operator takes up to two years and involves demonstrating one's ability to process complex, sometimes contradictory information rapidly and under intense pressure. The training regimen also grinds into us the overwhelming importance of staying put in an emergency situation, even at great risk to our own safety. There are simply too many contingencies and too many functions that require close observation for an emergency to be handled remotely.

And so while the world wondered why the workers at the Fukushima plant didn't flee, my fellow nuclear operators and I weren't surprised. One employee is reported to have received a significant dose of radiation while trying to vent pressure on one of the reactor's containment vessels. There is no question that this act saved countless lives. But there is also no question that the operator acted knowing full well that he could suffer long-term injury from doing so.

Those of us in the industry are also watching the management of the crisis. It's easy to be critical, from a distance, and while I have yet to see anything that smacks of negligence or mishandling, a few obvious questions come to mind.

For one thing, considering the difficulties of managing a nuclear accident within a disaster zone, was the plant staff provided with the necessary technical support and equipment? It's also clear that procedures need to be in place for better handling of the insatiable demand for information from the news media. Finally, given the multiple problems at Fukushima, we should revisit the standard protocol for dealing with a nuclear emergency, which assumes a problem with a single reactor, even at a multiunit site.

We will likely hear numerous stories of heroism over the next several days, of plant operators struggling to keep water flowing into the reactors, breathing hard against their respirators under the dim rays of a handheld flashlight in the cold, dark recesses of a critically damaged nuclear plant, knowing that at any moment another hydrogen explosion could occur.

These operators will be hailed as heroes, and deservedly so. But if they are like the rest of the tightly knit community of nuclear workers, they will simply say they were doing their job.

Michael Friedlander is a nuclear engineer.

McDonnell "Bullish" On Nuclear Power Despite Japan Events (WASHEX)

By David Sherfinski

[Washington \(DC\) Examiner](#), March 18, 2011

Virginia Gov. Bob McDonnell wants to push forward with nuclear power in Virginia, including a proposed third reactor at the Lake Anna Power Station in Louisa County, despite the current turmoil in Japan.

"I think when you look at what's happening in Japan and low levels of radiation being emitted and potential meltdowns in a number of reactors, it's certainly a cause for concern," McDonnell told The Washington Examiner.

But, he added, new technology makes it "unlikely" that there would be similar problems with any new plants built in Virginia, or that the state would see any cataclysmic events that could affect power stations in Surry and Louisa counties.

Dominion Power currently has a third reactor in the works at Lake Anna.

"I think nuclear is a huge part of America's future," McDonnell said. "They're expensive to build, but they're relatively inexpensive to operate because the fuel cost is virtually nothing, there's no carbon footprint, so this is a strategy we ought to pursue."

"I think it's just wrong to write off an entire industry because you have one event, whether it's Deepwater Horizon in the Gulf and you write off the offshore drilling industry like President Obama's done, or you start to say, 'Well, we shouldn't be building nuclear plants because of one reactor event,'" he continued. "What we should do is learn from it, what are the regulations we need, what's the new technology we need. But the spirit of Americans is to achieve and to overcome and to fix problems, not to give up, and so I am bullish about moving forward with nuclear power."

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McDonnell: U.S., Virginia Should Continue To Develop Nuclear Power (SWORL)

[Staunton News Leader](#), March 18, 2011

Virginia and the nation shouldn't let the Japan's nuclear crisis deter them from developing nuclear power, Gov. Robert F. McDonnell says.

McDonnell reiterated his support for nuclear power and concerns about the nation's energy sources in a closed door meeting with Virginia's congressional delegation on Thursday.

"He's been pretty vocal about the issue," said press secretary Jeff Caldwell.

McDonnell supports nuclear power, as well as drilling for oil off the Virginia coast, as ways to enhance the nation's energy security and help contain energy costs, Caldwell said.

McDonnell also believes state, local and utility officials have strong plans in place to deal with potential disaster, Caldwell said.

Virginia has two nuclear power stations, in Surry and Louisa counties.

They are designed to withstand earthquakes registering 5.9 to 6.1 on the Richter scale, said Jim Norvelle, a spokesman for Dominion Resources' power-generating business.

The strongest earthquakes recorded in central Virginia would have registered 4.3 to 4.5 on the scale, according to the U.S. Geologic Survey. That's well under one-tenth the force the plants are built to withstand.

McDonnell's session with the members of Congress touched on a wide range of federal-state issues, Caldwell said.

The Washington Post reported discussions included the state's lawsuit against the federal health-care reform law and efforts to gain a seat on the board of the Washington Metro public transit system.

Bracing For Nuclear Energy Backlash (FMLS)

[Fredericksburg Free Lance-Star](#), March 18, 2011

Japan's reactor crisis has renewed anxiety about nuclear safety and could derail efforts to revive the U.S. industry as a clean alternative energy source.

The failure of the Japanese reactors' backup cooling systems and the explosions that followed are likely to lead U.S. regulators to re-evaluate nuclear plant designs and safety. The heightened scrutiny could increase costs for new and existing reactors and make it harder to raise money for new plants.

The crisis comes just as the U.S. nuclear energy industry is starting to build the first new reactors in a generation.

"This accident has the potential to tamp down any nuclear renaissance that we're poised to experience," said Tim Echols, a utility regulator in Georgia who supports expanded nuclear power.

Before the crisis, the U.S. nuclear industry was enjoying more public and political backing than it had in years--62 percent of the public, according to a Gallup poll done last year. That support grew out of concerns about greenhouse gases, a growing record of safe and profitable nuclear power production and volatile fossil fuel prices.

The two projects that appear to be furthest along, both with regulators and financing, are in the Southeast.

The Atlanta-based Southern Co. and its partners are seeking to build two more reactors at Plant Vogtle in eastern Georgia. And SCANA, based in Cayce, S.C., has proposed adding two reactors to its Plant Summer site in Jenkinsville, S.C.

Both utilities have said they expect to be granted operating licenses this year and insist their projects will proceed.

Plans for two other U.S. reactors have suffered setbacks in recent months.

NRG Energy wants to add two reactors to its South Texas Project. But the project's future was already in doubt because of low natural gas and electricity prices. NRG's partner on the project, subject to a federal loan guarantee, is Tokyo Electric Power Co., owner of the stricken Japanese reactors.

Constellation Energy and Electricite de France had planned to build a new reactor at Calvert Cliffs, Md., but Constellation backed out of the partnership late last year. It's unclear whether EDF will be able to pursue the plan.

[Closer to home, Dominion Power has an application pending with the Nuclear Regulatory Commission to build a third nuclear reactor at its North Anna Power Station, on Lake Anna near Mineral. The NRC is expected to make a decision on the application sometime in 2013. Dominion has not yet decided whether to build Unit 3.]

North Anna Nuke Plant No. 7 On Most Earthquake-prone List (WTOP)

[WTOP-FM Washington, DC](#), March 18, 2011

WASHINGTON -- Unfazed by the potential fallout in Japan and a cautionary listing from nuclear regulators, one of two nuclear power plants in the D.C. area is considering expansion.

The North Anna Nuclear Generation Station, just off the shores of Lake Anna, Va., has been pushing for a third nuclear reactor for about eight years.

The Nuclear Regulatory Commission recently placed North Anna seventh on its list of the country's 10 most earthquake-prone nuclear sites, according to an MSNBC report.

"We believe it's important to build the infrastructure in-state necessary to secure safe and reliable and affordable electricity for our customers," says Dominion Power nuclear division spokesperson Richard Zuercher.

"North Anna unit three is part of that strategy."

Employees spend 20 percent of their time training for emergencies or "abnormalities in plant operations," Zuercher says, including earthquakes.

NRC is expected to make a decision on the potential expansion within two years. Follow Nathan Hager and WTOP on Twitter.

Those Iodide Pills They Said They Were Going To Give You: Sorry About That (FFLS)

[Fredericksburg Free Lance Star](#), March 18, 2011

First they said they would, then they said they wouldn't. What's going on at the Virginia Department of Health?

On Monday, Dr. Brooke Rossheim, director of the Rappahannock Area Health District, said that those who live near the North Anna Power Plant in Louisa County could pick up potassium iodide pills at local Health Department offices. The Health Department has been giving away the pills for several years, so what Rossheim said was more of a reminder than an announcement.

The idea has been to give the pills to those who live within 10 miles of the nuclear plant in case there's an accidental release of radioactive material. The pills can help protect the thyroid against radioactive iodine. Of course, all this is on people's minds because of what's happened in Japan.

When we reported about the give-away Tuesday, people went to or called the Spotsylvania Health Department office and tried to get their pills. No luck. One person who lived eight miles from the plant said he couldn't get his pills and called me to ask why.

Rossheim explained last night that department officials in Richmond had come up with a new unwritten policy that he was not aware of when we talked Monday. From now on, he said, the department would be handing out the pills only if there is an emergency at North Anna.

"I apologize for the confusion," he said.

It's not clear why the department changed its mind about residents having the pills ahead of time. Rossheim said the federal Centers for Disease Control and Prevention has taken note of the new interest in the pills and would soon have something to say about it.

Also, if you check on ebay, you'll see that the pills are selling for about \$6 each. Perhaps the department didn't want local residents taking advantage of the situation.

The pills are available online, but they appear to be scarce in the Fredericksburg area. A spot check yesterday of a local CVS, Walgreens, Walmart and Rite Aid found no pills available. "We don't carry them and can't get them," said a clerk at the CVS.

Even if you are able to find the pills, you probably don't want to take them unless there's a radioactive release. In California this week, health officials issued this statement:

"We urge Californians to not take potassium iodide as a precautionary measure. It is not necessary given the current circumstances in Japan, it can present a danger to people with allergies to iodine, shellfish or who have thyroid problems, and taken inappropriately it can have serious side effects including abnormal heart rhythms, nausea, vomiting, electrolyte abnormalities and bleeding."

North Anna Reactors In Seismic Zone (CENTVA)

[Central Virginian](#), March 18, 2011

The two nuclear reactors operating at the North Anna Power Station are located in the Central Virginia Seismic Zone.

But Dominion Virginia Power officials say that's no reason to believe that the nuclear disaster unfolding on the Japanese coast could happen on the shores of Lake Anna.

During the preliminary licensing and construction phases of the Louisa County plant, geological fault lines were discovered running through the area. At the time, scientists said that no notable seismic activity had occurred there for hundreds of thousands of years and reportedly characterized the area as "very quiet seismically."

"From time to time, we experience very minor tremors [at North Anna], but nothing that would cause us to shut the plant down," explained Richard Zuercher, a spokesperson for Dominion. "The plant has been designed to meet seismic standards in the region."

In the state's recorded history, the most powerful earthquake-which had its epicenter in Southwest Virginia-measured 5.7 in magnitude. Zuercher said that the reactors at North Anna are built to withstand quakes of approximately 6.0 in magnitude.

Carl Baab, spokesperson for the industry's Nuclear Energy Institute, said that utilities are required to consider the potential impact of seismology when locating, designing and operating a nuclear reactor.

For the entire story, see The Central Virginian available now on newsstands.

Can U.S. Power Plants Withstand Nature's Fury? (CBN)

By Mark Martin

[Christian Broadcasting Network](#), March 18, 2011

SURRY COUNTY, Virginia -- Japan's nuclear crisis has people around the world once again questioning the safety of nuclear power.

The mind-boggling images from Japan has raised concerns about the safety of nuclear power plants.

With a number of nuclear reactors sitting on earthquake danger zones in the U.S., nuclear experts wonder about the safety of the plants in the country.

However, measures have been set in motion to protect American communities.

Richard Zuercher is the spokesman of Dominion Power, the owner of a nuclear power station in Surry, Va. Surry is the home of two of the 104 operating nuclear reactors in the United States, which supply 20 percent of the country's electricity.

Zuercher has been fielding a lot of telephone calls in light of what has happened in Japan, but he told CBN News that Surry is safe.

"Safety in the nuclear industry in the United States is a real success story," Zuercher said. "The stations are very safe. Three Mile Island was the wakeup call to the industry. There's been a lot of thought into what happened there."

"We view nuclear energy as a very important component to the overall portfolio we're trying to build for a clean energy future," said Daniel Poneman, U.S. Deputy Secretary of Energy.

However, at least 22 of the nuclear reactors at American power plants are located in earthquake danger zones, including an area in the center of the country -- the infamous New Madrid Seismic Zone.

Still, Gregory Jaczco, the chairman of the Nuclear Regulatory Commission, said U.S. plants are prepared for such an emergency.

"All of our plants are designed to withstand significant natural phenomenon like earthquakes, tornadoes and tsunamis," Jaczco said.

A containment building is one of the protective measures used at the Surry facility and at other nuclear power plants across the country and around the world.

Containment buildings consist of massive steel-reinforced concrete walls that are nearly 4.5 feet thick. The nuclear reactors are located inside these buildings.

The concrete domes at the Surry power station define the containment buildings. They protect the entire nuclear power generation system.

Zuercher said the nuclear industry and other experts believe these structures provide protection from not only nature's fury, but also from terrorist attacks.

"They contend that these containment buildings can probably withstand an impact from a large jetliner," Zuercher said.

Officials said another line of defense is the pumping station, such as the one at a plant in Michigan. The water source for the plant can cool down the facility's reactors in an emergency -- at the rate of about 900 gallons per minute.

Other safety features include a 30-foot sea wall at a nuclear plant in California to protect against tsunami waves.

At the Surry power station, barriers have been installed to prevent flooding in the event of a hurricane.

"The bottom line is -- we as a nuclear industry in the United States will go over with a fine tooth comb what happened in Japan," said Shane Lies, nuclear plant manager for D.C. Cook Nuclear Power Plant in Bridgman, Mich. "And we will glean every lesson that we can, and we will make sure that the reactors in this country which are already safe can even be more safe."

However, the nuclear crisis in Japan -- where explosions likely cracked the critical containment buildings -- has critics questioning if a nuclear plant can ever be built strong enough to survive certain danger zones.

Nuclear Power Still A Viable Option (LAXTRIB)

[La Crosse \(WI\) Tribune](#), March 18, 2011

While state health officials assure us Wisconsin residents will not be affected by any radiation from Japan, there will be fallout of another kind from that country's nuclear disaster.

It will be even more challenging to consider nuclear power being part of any near-term energy alternative solutions in our state and in the country.

Wisconsin has had a nuclear moratorium since 1983, when anti-nuclear sentiment still was very strong after the 1979 accident at Pennsylvania's Three Mile Island.

Wisconsin has two 1970s-era operating nuclear plants — both on Lake Michigan near Kewaunee and Point Beach — which are licensed to keep running for at least 20 more years. They provide about 19 percent of the state's electricity.

Recent focus on carbon emissions and the need for cleaner energy — which was part of the failed clean energy bill last year in the Wisconsin Legislature — brought nuclear energy back to the table as an option. But a long-term waste disposal facility is needed before the moratorium could be lifted.

Former West Salem Rep. Mike Huebsch, now the state's Department of Administration secretary, has been a longtime supporter of lifting the nuclear ban and had introduced bills in every legislative session since 2003 to repeal the moratorium.

Huebsch said Thursday it's too early to tell what long-term impact the Japanese situation will have on nuclear energy. He said we need to have all the facts before making that assessment.

"How we come out of this and how we are able to go back and review this will determine the future of nuclear in this country and state," Huebsch said.

With Republicans in control, we should still expect a move in Madison to lift the statewide ban. But with worldwide concerns about nuclear safety and extending the life of aging plants, it will be more difficult.

Brian Rude, vice president of external and member relations for Dairyland Power Cooperative — which still owns the Genoa nuclear plant that shut down almost 25 years ago — agrees the Japanese disaster will slow the rebirth of nuclear power interest but not stop it.

Rude said nuclear power has bipartisan support — the Obama administration has \$36 billion in loans available for new reactors in its 2012 budget proposal — and is still a viable answer to concern about carbon emissions and climate change.

The impact, Rude said, will be even more scrutiny and tighter regulations on proposed plants, site locations and designs. In other words, the industry will learn from the Japanese disaster.

Even though we still haven't figured out what to do with the nuclear waste — some of it that's now more than 50 years old — Rude said the spent fuel can be reprocessed and handled safely.

"I still think eventually there is momentum and a desire to have a power source that is totally clean," Rude said.

Obviously the environmental impacts of nuclear disasters are far-reaching and need to be taken seriously. We learned from Three Mile Island, and we can learn from this disaster as well.

Nothing we can do will prevent all accidents. Gas pipelines will explode. Oil wells will leak. Coal mines will collapse.

Unless we're prepared to rely exclusively on wind and solar energy, there's no such thing as a foolproof, 100 percent guaranteed safe form of energy.

Tiny Reactor No Threat, URI Says (SOCORI)

By Iain Wilson

[South County \(RI\) Independent](#), March 18, 2011

NARRAGANSETT - The nuclear research reactor at the R.I. Nuclear Science Center on the University of Rhode Island's Narragansett Bay Campus is significantly different in several important ways from the nuclear reactor that exploded over the weekend at the Fukushima Daiichi nuclear plant in Japan.

"It's a thousand times smaller than the boiling water reactors that produce electricity," said Dr. Bahram Nassersharif, professor of mechanical engineering at URI. "And it does not produce electricity. Its sole purpose is for education and research."

To meet licensing requirements set by the Nuclear Regulatory Commission, the facility must prove it can maintain the integrity of the reactor under a series of increasingly hypothetical "what-if" situations.

"Not only do we have to have emergency systems in place for slightly abnormal situations, we have to account for basically any hypothetical accident that could take place," said Nassersharif.

Nassersharif dismissed the notion that the natural disaster most likely to hit the region could damage the reactor.

"Even during a hurricane, an extreme rise in water level would not be sufficient to get to the base of the reactor," he said. "It's kind of sitting on a hill looking over Narragansett Bay." He said that none of the existing hurricane data indicates a hurricane would affect the safety and the operation of the reactor.

The reactor itself, about half the size of a refrigerator, sits submerged in roughly 25 feet of water. The pool where it rests is surrounded on all sides by concrete walls several feet thick. The reactor's small size relative to the pool serves as a security blanket. In the case of a leak or a flood, the large volume of water surrounding the reactor would be sufficient to keep the reactor cool, even without the use of pumps. "The natural circulation of water is sufficient to keep the reactor cool," Nassersharif said.

"Really, the worst kind of accident would occur if somehow the pool developed a leak," said Nassersharif. Even then, he said, reserve water supplies are kept nearby.

The worst scenario, involving a meltdown of the 2-megawatt research reactor, would release a level of radioactive material that wouldn't affect anyone beyond the boundaries of the campus in Narragansett's North End. Radiation levels released during a meltdown would be fatal only if someone were standing directly next to the fuel in the reactor.

"We have to determine how much radioactive material could be released under the worst case for our reactor," Nassersharif said. "Then we have to determine how many feet or miles would be affected outside of our zone."

Nassersharif said a meltdown at the Millstone Power Station in Waterford, Conn., could affect people within a 50-mile radius, including some residents in South County. The two reactors at Millstone generate about 2,000 megawatts, but even they are not the same models that exploded in Japan over the weekend.

The nuclear reactors that failed in Japan were all equipped with emergency diesel generators that will run essential systems indefinitely under normal conditions. Nassersharif said keeping pressure levels low in the case of an incident is the primary concern, but the research reactor in Narragansett is not pressurized.

Only two universities in the United States boast a more powerful research reactor, one at the University of Missouri and another at Massachusetts Institute of Technology in Cambridge.

In 1994, URI's reactor core was upgraded as part of an effort to reduce the amount of nuclear material at the facilities. It was then that the facility switched to low-enriched uranium.

General Electric manufactures the Mark I models that failed over the weekend in Japan. According to information released from the Nuclear Information and Resource Center, a nuclear power watchdog agency, 23 Mark I reactors are operating in the United States. The closest Mark I can be found at the Vermont Yankee Nuclear Plant in Vernon, Vt.

Iain Wilson can be reached at Narragansett@scindependent.com.

Syracuse Peace And Environmental Groups Want New York To Halt Nuclear Power Production (SPS)

By Charley Hannagan

[Syracuse Post-Standard](#), March 18, 2011

Syracuse, NY -- A coalition of Syracuse peace and environmental groups today called on federal and state leaders to halt the spread of nuclear power plants in the United States in light of the nuclear disaster in Japan.

Although the nuclear power plant now in Fukushima experienced the double whammy of a major earthquake and tsunami, it was the failure of electricity used to power water pumps that cool the reactor core that caused its problem "and that could happen anywhere," said Gerald Lotierzo, chairman of Peace Action Central New York.

The Syracuse groups are concerned because the Oswego nuclear power plants are of a similar design, said Linda A. DeStefano, the conservation chairwoman of the Iroquois Chapter of the Sierra Club.

The Oswego plants could be affected by Central New York-type natural disasters, such as tornados, ice storms, or power loss that could cut off electricity to pumps that cool the reactors, she said.

Eight representatives from the Citizens Awareness Network of CNY, Peace Action, the Sierra Club and the Syracuse Peace Council gathered on the steps of the New York State Office Building on East Washington Street in Syracuse at a news conference.

Standing on the steps, Peace Council member Judy Lieblein held up a map showing the 50-mile radius of the three nuclear power plants in Oswego County on the shores of Lake Ontario. That radius would include most of Oswego and Onondaga Counties, half of Cayuga County and parts of Jefferson County.

The U.S. has told its citizens in Japan to evacuate the 50-mile radius around the troubled plants there.

The Central New York groups want:

the federal government not to subsidize loans to build new nuclear power plants.

To work on renewable energy, such as wind or solar power.

For Governor Andrew Cuomo to step in, order a review and phase out of all nuclear power plants in the state.

And for the three nuclear power plants in Oswego County to switch their spent fuel rod storage from water covered pools to hardened storage on site.

"To learn the lesson of Japan is that (nuclear power) is a gamble we cannot take in our communities," said Jessica Maxwell, of the Syracuse Peace Council.

Fears Of Radiation From Nuclear Power Plants In Japan Fuel Run On Potassium Iodide In Syracuse (SPS)

By Amber Smith

[Syracuse Post Standard](#), March 18, 2011

Fears of fallout from Japan's faltering nuclear power plants are causing a run on potassium iodide -- even here in Central New York, and even despite public health officials cautioning against serious side effects.

Stores that usually carry the compound are sold out and turning away would-be customers seeking the pills or liquid.

"Are you kidding?" Vitamin Warehouse co-owner Donna Smith said Thursday from the store on New Court Avenue in Syracuse. "The whole world is asking for it. We're all sold out."

Likewise at Mother Earth Health Foods on South Bay Road in Syracuse. Clerk Michelle Griffith said customers are worried about trade winds and weather patterns that could possibly bring traces of radiation to the area -- though the U.S. Nuclear Regulatory Commission said Sunday that the country is "not expected to experience any harmful levels of radioactivity."

Dr. Leonard Wartofsky, an endocrinologist at the Uniformed Services University of Health Sciences in Bethesda, Md., told the Los Angeles Times that "potassium iodide is not recommended until radiation levels are in the 50-rad region." It's not going to be anywhere near that in the United States. It's hitting the panic button unnecessarily. Wendy Meyerson, owner of the Natur-Tyme in DeWitt, said she believes customers suddenly realize the risks of living so near Oswego County's FitzPatrick Nuclear Plant and Nine Mile Point 2.

MORE ABOUT POTASSIUM IODIDE

"We have been absolutely all consumed with this," she said. "If I had hundreds of bottles, they would be gone." A list of special orders has more than 50 names.

An endocrinologist from Upstate Medical University in Syracuse says there is no reason panic -- and many reasons not to take potassium iodide without cause. Side effects include inflammation of the salivary gland, gastrointestinal disturbances and allergic reactions, says Dr. Roberto Izquierdo, director of the thyroid cancer program. People with thyroid conditions are likely to experience worsening of their symptoms if they take potassium iodide.

The compound is effective in reducing the risk of thyroid cancer in people who are exposed to radioactivity. The compound floods the thyroid with non-radioactive iodine, thus preventing the uptake of radioactive molecules, which are then excreted in the urine. Experts say the chances that North America will be harmed by radiation from Japanese nuclear reactors damaged in last week's earthquake and tsunami is negligible at best.

"I think it's exceedingly improbable -- I'd say impossible -- that this accident would deliver any detectable amount of radiation at ground level in the United States," said Elmer E. Lewis, a nuclear expert and professor emeritus of mechanical engineering at Northwestern University. "It would be barely detectable and have absolutely no health consequences."

The U.S. Nuclear Regulatory Commission said Sunday that the country is "not expected to experience any harmful levels of radioactivity."

--The Chicago Tribune contributed to this report.

Potassium Iodide Available In Oswego County (WSYR)

[WSYR-TV Syracuse \(NY\)](#), March 18, 2011

Fulton (WSYR-TV) -- The Oswego County Emergency Management Office sent a reminder to people that potassium iodide pills are available to residents who live within 10 miles of the nuclear power plants at Nine Mile Point.

The pills can be obtained through the county emergency management office in Fulton and at the county health department in Oswego.

Potassium iodide availability has become a concern for many Americans worried about the possible effects of radiation emanating from a nuclear plant in Japan, where two reactors have already experienced partial meltdowns. As of Thursday, the reactors are still in jeopardy as crews labor to cool them down.

Experts, along with President Barack Obama, are insisting that harmful levels of radiation should not reach the US.

"I want to be very clear: We do not expect harmful levels of radiation to reach the US," Obama said in a press conference Thursday afternoon.

Potassium iodide pills provide a limited amount of protection against thyroid cancer due to radiation exposure.

Director of the Oswego County Emergency Management Office Patricia Egan said that people in Oswego County should only ingest the pills if directed to do so during a nuclear emergency within the county.

Nuclear Emergency -- What If? - Canandaigua, NY - MPNnow (MESSPST)

[Messenger Post \(NY\)](#), March 17, 2011

As the world watches in horror at the unfolding nuclear disaster in Japan in the wake of the massive earthquake, many are asking if the same thing could happen here.

Although scientists have found a fault line running through Lake Ontario, the Ginna Nuclear Power Plant in Ontario is not in danger of being damaged by the magnitude of the quakes that shook Japan last week, said Maria Hudson, senior analyst for communications at the plant.

"All of our plants are outside of high-hazard earthquake zones," Hudson said. "So an event like the one happening in Japan is unlikely given the plant's locations."

"It's still too early to pull the lessons from Japan, but we are talking to people in the industry from around the world to see what we can learn," Hudson said.

While Japanese authorities struggle to contain the damage from a crippled nuclear power plant, local emergency management officials are watching the developments with interest.

"Any time there is any type of disaster, there is always something you can learn from it," said William Pulver, training officer for the Wayne County Office of Emergency Management.

Pulver said the massive earthquake and tsunami that triggered the nuclear crisis are things that "we in Wayne County will never experience."

But he does see it as a chance to learn from the Japanese response.

Maria Hudson, senior analyst for communication at the Ginna plant, said that while it is still too early to draw lessons from Japan, company officials are watching with interest.

"We're talking with others in the industry, in this country and around the world, to pull together the lessons learned," Hudson said.

The risks

Like the two other Constellation Energy nuclear power plants, the Ginna facility is outfitted with extremely sensitive seismic monitoring equipment that can detect even the smallest disturbance, Hudson said.

The safeguards

Hudson said the plant has been specially designed to withstand "the worst-case seismic scenarios," along with other natural disasters like flooding, tornados and high winds. The facility includes redundant safety systems and a "defense and depth" approach to ensuring safety in the event of a shutdown. Radioactive fuel rods have three layers of protection. The rods themselves are surrounded by a zirconium cladding, which are then encapsulated in a steel vessel.

Emergency planning

Officials at the Ginna Plant have worked closely with local governments and emergency responders to develop an emergency response plan for residents living in the 10-mile emergency planning zone surrounding the plant, Hudson said.

Training

Safety and emergency response training occur frequently at the facility, involving both plant personnel and its community partners, Hudson said. The plant conducts between 10 to 12 safety drills each year, as well as annual disaster drills alongside hospitals, police and emergency management departments, she said. Every other year, the plant holds drills that are graded by the Nuclear Regulatory Commission and the Federal Emergency Management Agency.

Waste storage

The safest place to store spent fuel rods for the time being, Hudson said, is at the site of the plant.

At Ginna, spent rods are sealed in steel-lined concrete vaults that are filled with water. Last summer, the plant finished work on an independent spent fuel rod storage installation, where the rods will be stored until the federal government approves of a permanent repository for nuclear waste.

Officials Stress Safety At Ginna Nuclear Plant (RD)

By Jeffrey Blackwell

[Rochester Democrat & Chronicle](#), March 18, 2011

The focus of much of the world is on the frantic efforts to prevent a nuclear catastrophe at the disabled Fukushima Dai-ichi nuclear power plant in Japan a week after a devastating earthquake and tsunami ravaged the Asian country.

But while the eyes of Rochester-area residents watch the drama being played out live through media outlets, many can't help thinking about the safety of the nuclear power plant in their own backyard.

The Robert E. Ginna nuclear power generating station on the shores of Lake Ontario is a little more than 20 miles from downtown Rochester.

However unlikely is the possibility of a tsunami or an earthquake like the one that rocked Japan striking Rochester, there are natural and man-made disasters that could cut the power to Ginna. But plant operators and federal regulators stress that U.S. nuclear facilities are safe.

Constellation Energy Nuclear Group (CENG) operates Ginna and two other power plants, Nine Mile Point Nuclear Station near Syracuse and Calvert Cliffs Nuclear Power Plant in Maryland. Together, the facilities have five reactors. Mark Sullivan, a spokesman for CENG, said all the plants are designed and built to withstand a wide range of both natural and man-made disasters.

"The nuclear power industry sets extremely high standards for safety, and has a history of learning from events to improve operations and safety," he said. "At CENG, we have multiple and redundant safety features to protect our Maryland and New York facilities."

David Lochbaum, the director of the Union of Concerned Scientists Nuclear Safety Program, said the nuclear industry looked at what's called station blackout, which is what the Japanese reactors faced. Station blackout is when there is a loss of electricity — from the electrical grid and by the emergency diesel generators — leaving only DC power from the batteries to run critical pumps and other systems.

"Station blackout events for many of our plants represent close to 90 percent of the risk of core damage," Lochbaum said Tuesday at a media briefing. "Even though you don't get into a station blackout using the same scenario of earthquake/tsunami that Japan did, our plants can get to that same station blackout condition through other mechanisms: hurricanes for the plants in the Gulf, Florida; earthquakes for the plants out in California; ice storms up in the Northeast; tornados in the Midwest; and so on."

(Page 2 of 3)

The Ginna station began generating electricity in 1969 from a pressurized water reactor designed by Westinghouse Electric Co. It generates 581 net megawatts and is licensed to operate until 2029.

One of the critical problems at the Japanese plant is with pools used to store and cool spent fuel rods from the reactors. When power systems failed after the tsunami, pumps feeding water into the pools to keep the spent fuel cool quit, and water levels began to fall to dangerous levels — creating a danger of the release of radioactive material into the atmosphere.

Different design

Sullivan said Ginna is not the same kind of reactor or design as the Fukushima Dai-ichi nuclear power plant and that redundant backup systems are in place at all the CENG plants to help prevent a similar problem. "The spent fuel at Calvert Cliffs, Nine Mile and Ginna are stored in auxiliary buildings designed to withstand the design basis earthquake as well as all other natural phenomenon the plant was licensed to by the NRC," he said. "As a result of enhancements implemented after Sept. 11, (2001), our sites have additional capabilities to handle beyond design basis events, including the capability to provide cooling to the spent fuel pool in the absence of electrical power. This capability includes equipment (diesel-driven pumps, hoses, valves, etc.) that has been pre-staged at the plant. Personnel are trained in their use."

Ginna was successfully shut down in August of 2003, for example, as a precaution during a massive blackout that affected more than 10 million people in eight states in the Northeast and Midwest.

What is still unclear is what can be learned from the nuclear drama playing out in Japan. Nuclear Regulatory spokesman Eliot Brenner stressed Sunday on the agency's website that federal regulations require that nuclear power plants be able to handle such events.

"NRC's rigorous safety regulations ensure that U.S. nuclear facilities are designed to withstand tsunamis, earthquakes and other hazards," he said.

The NRC has calculated the odds of an earthquake causing catastrophic failure to one of the nation's 104 nuclear power plants. Indian Point Energy Center, in Buchanan, Westchester County, is at the top of the list with reactor No. 3 at a 1 in 10,000 chance each year. Ginna is ranked 53rd with a 1 in 76,923 chance each year.

Frank Regan, a local environmental blogger and a leader of the Sierra Club chapter in Rochester, said the lesson of the unfolding tragedy in Japan should be that nuclear power, like coal and oil, is not an acceptable option. "It's really a matter of emphasis. We could change our ways and go with renewable energy if we went full-force toward it," he said. "But you're fighting big interests."

Sullivan said it was too soon to know what lessons to take from the disaster.

"The information coming out of Japan is sketchy, but one thing is that we are 100 percent committed to is learning from whatever lessons there are and look at our operation to make sure we are where we need to be," he said.

Emergency plan

There is an extensive emergency plan in place in case of a problem at Ginna. In the event of an emergency, municipalities, residents, schools and business within a 10-mile zone would be notified by a warning network of sirens, emergency radio alerts and reverse 911 calls. The area includes parts of eastern Monroe County and Wayne County.

The Webster school district is one of the districts within that zone. In a case of danger, more than 10,000 students and staff would be evacuated to Monroe Community College. The district also keeps on hand doses of potassium iodide to give to

students and staff to help prevent the thyroid gland from radiation contamination, said Neil Flood, the district's supervisor of safety, security and emergency planning.

"We always review our plans to make sure that everything is ready to go," he said. "This plan is done in conjunction with the state and the county, so that is kind of a constant process because we drill at least once or twice a year on the plan."

Another question yet to be answered is how the potential nuclear disaster in Japan will affect the debate about expanding the number of nuclear power plants in the U.S. For its part, Constellation Energy said it does not have any plans to build reactors.

"What we are trying to do is help the people in Japan. We have a lot of friends there, a lot of family over there and what we are trying to do is provide support, whether it is technical support through our own experience and expertise or humanitarian efforts," Sullivan said.

Nuclear Power Creates At Least 28% Of Local Electricity (POUGHJNL)

By Craig Wolf

[Poughkeepsie \(NY\) Journal](#), March 18, 2011

Nuclear power is a substantial part of the energy mix in New York state, including that of Central Hudson Gas & Electric Corp.

If the catastrophe at Japan's Fukushima nuclear complex were to put a damper on the state's atomic plants, it could potentially have a large impact.

Statewide, 32 percent of the electricity used in 2009 came from the six nuclear plants, making it the single largest type of energy in the mix, according to data from the New York Independent System Operator, which runs the state energy grid.

Central Hudson also gets much of its power from nuclear plants, having deals with two producers, those being Entergy's Indian Point Energy Center in Buchanan, Westchester County, and Constellation Energy Nuclear Group's Nine Mile Point Nuclear Station at Scriba in upstate Oswego County.

At Central Hudson, spokesman John Maserjian said the nuclear part of the fuel mix depends on how customers buy their power, either directly through Central Hudson or through an outside energy service company.

For direct "full-service" customers, 43 percent of their electricity came from nuclear plants in 2010. But overall, for combined full-service and outside energy service customers, 28 percent came from nuclear power.

Central Hudson has an energy supply contract with Constellation that began in 2001 and runs through November. It has a deal with Entergy that began in January and ends in December 2013.

New York State Electric & Gas Corp distributes power through eastern Dutchess County. In 2008, the most recent year for which it had data, nuclear provided 11 percent of NYSEG's total. Natural gas was the largest component at 58 percent.

The Japanese disaster has renewed calls to close Indian Point from groups concerned about its safety. Also, Gov. Andrew Cuomo has reportedly renewed his call for a shutdown, and President Barack Obama has called for an updated safety review of plants across the nation.

NYSEG spokesman Clayton Ellis said an Indian Point shutdown for any reason "may impact power prices."

Japan Crisis Puts Md. Power Plant In Question (WAMU)

[WAMU-FM \(DC\)](#), March 18, 2011

Japan Crisis Puts Md. Power Plant In Question

March 17, 2011 - As concern grows over the endangered Fukushima nuclear power plant in Japan, questions are being raised about a proposed expansion for Maryland's only nuclear power plant.

In 2007 officials of the Calvert Cliffs nuclear power plant in Lusby, Md., filed an application to add a third reactor to the facility. Since then, plans for the expansion have stalled due to economic concerns, and some expect the crisis in Japan could cast more doubt on those plans and the future of nuclear energy.

Mike Rencheck is the COO of Ariva Inc., the company slated to build the reactor. He says local industry analysts are watching the crisis, and learning.

"We'll take the lessons learned from this, do a systematic review, and there will likely be changes, new rules, and practices in the industry," Rencheck says.

Although scientists say large quakes or tsunamis are highly unlikely in our region, terrorism is a concern. Rencheck says new regulations and standards address the issue.

"It's been very thoroughly done over the past few years, really since 9-11, and have been in practice since then," he says. Calvert Cliffs' first reactor was commissioned in 1975.

Baltimore-area Businesses Aid Japan Relief Efforts (BBJ)

[Baltimore Business Journal](#), March 18, 2011

Baltimore-area businesses aid Japan relief efforts

Baltimore Business Journal - Alexander Jackson, Staff

Companies with Baltimore ties are trying to assist Japan in any way possible after disaster struck the country last week.

Thousands are dead after an 8.9-magnitude earthquake struck the country and a tsunami that followed destroyed much of its coastline.

Corporations, big and small, have been quick to respond.

Baltimore-based McCormick & Co. Inc. (NYSE:MKC) and Constellation Energy (NYSE:CEG) each donated \$50,000 and said they would match employee contributions made through employee donation programs they have set up. CareFirst BlueCross BlueShield has also donated \$50,000 plus employee gift match.

Spark Energy, also based in Baltimore, announced it made a \$5,000 donation. Spark also will donate \$1 to relief efforts for every person that 'likes' its Facebook page.

Other companies with operations in the area announced participation in the relief efforts as well.

Wegmans Food Markets Inc. gave \$100,000 to the American Red Cross. It also started accepting customer donations at checkout on Wednesday. Customers may donate any amount and 100 percent of their donations will go to the Red Cross fund.

Bank of America (NYSE: BAC), the largest bank in Maryland, will donate at least \$1.22 million to relief efforts. Half of that donation will go to the American Red Cross, while the other half will be used to match employees' donations. In result, the bank will not limit its overall donation.

Best Buy (NYSE: BBY) announced a \$500,000 donation to the Red Cross.

Wal-Mart (NYSE: WMT) said it was making an initial commitment of \$5 million in cash and donations to the relief effort. The company is also using its stores in Japan as distribution points for aid.

Costco (NASDAQ: COST) will be accepting donations at cash registers for the Red Cross/Red Crescent Relief Fund.

JP Morgan Chase (NYSE: JPM) is donating \$5 million.

Wells Fargo (NYSE: WFC) will contribute \$1.5 million to assist victims. ajackson@bizjournals.com or (410) 454-0516.

In Japan Quake's Aftermath, Authorities Say Faults Near US Nuclear Plants Pose Unknown Risks (AP)

[Associated Press](#), March 17, 2011

LOS ANGELES — Two years before an immense coastal earthquake plunged Japan into a nuclear crisis, a geologic fault was discovered about a half-mile from a California seaside reactor — alarming regulators who say not enough has been done to gauge the threat to the nation's most populous state.

The situation of the Diablo Canyon plant is not unique. Across the country, a spider's web of faults in the Earth's crust raises questions about earthquakes and safety at aging nuclear plants, amplified by horrific images from Japan, where nuclear reactors were crippled by a tsunami caused by a 9-magnitude quake.

The Indian Point Energy Center, for example, lies near a fault line 35 miles north of Manhattan; on Wednesday, New York Gov. Andrew Cuomo ordered a safety review at the plant.

But none of the questions are more pressing than in quake-prone California, where about 10 powerful shakers — stronger than magnitude 7 — have hit since 1900.

At issue at Diablo Canyon is not what is known, but what is not.

Preliminary research at the site, which sits on a wave-washed bluff above the Pacific, found its twin reactors could withstand a potential earthquake generated by the recently identified Shoreline Fault, just off the coast.

But that hasn't satisfied California regulators. Since late 2008, when the undersea crack was identified, they have pressed plant owner Pacific Gas & Electric Co. to conduct sophisticated, independently reviewed studies that they say are needed to fully assess the danger at a site within 200 miles of Los Angeles.

The recently discovered fault is close to, and might intersect with, another bigger crack three miles offshore, and the fear is the two faults could begin shaking in tandem, creating a larger quake than either fault would be capable of producing on its own.

"We don't yet have a firm idea of the hazard posed by the Shoreline Fault," says Thomas Brocher, director of the Earthquake Science Center at the U.S. Geological Survey in Menlo Park, Calif., who led the team that discovered the fault.

State Sen. Sam Blakeslee, a Republican who holds a doctorate in earthquake studies, wants PG&E to pull back an application to extend the plant's operating license for 20 years until more is known.

"Aging nuclear power plants and large, active fault systems should not be in close proximity. This isn't exactly rocket science," Blakeslee says. Because the Shoreline Fault is so close to the Diablo Canyon plant it "can produce shaking far in excess of what's expected."

The U.S. Nuclear Regulatory Commission and PG&E say the plant is safe and built to withstand a magnitude 7.5 earthquake, the maximum considered possible for the site. Damage from a Japan-like tsunami is unlikely, because the reactors sit on an 85-foot cliff above the ocean and fault structure in the area differs from the Pacific Rim.

Critics around the United States say the government has moved too slowly to assess possible threats from earthquakes.

NRC spokeswoman Lara Uselding said she did not know of a single case in which a U.S. reactor was damaged by a quake. But this does not dispel concerns that may be unavoidable because the study of earthquakes remains an imprecise science. They cannot be predicted, and the damage — as witnessed in Japan — can be catastrophic.

The dangers of earthquakes have been raised repeatedly by opponents of nuclear energy. The Perry nuclear plant, east of Cleveland, lies within 40 miles of two faults; in 1986, a year before the plant opened, a 5.0 earthquake shook the area, but didn't damage the plant, said Todd Schneider, a FirstEnergy spokesman. There have since been less severe quakes.

A citizens group filed suit after the quake, trying to block the plant from opening. They argued that an earthquake greater than the plant was built to withstand was likely to occur in the future; U.S. Supreme Court Justice Antonin Scalia turned down their request.

The plant's design includes piping with shock absorbers intended to prevent breakage in a quake. "Before the plants are even built, there's research done by seismologists and geologists to determine what the maximum earthquake could be," Schneider said. "The plants are designed beyond that."

Indian Point, too, is safe and built to withstand earthquakes, says a spokesman for owner Entergy Nuclear. But earlier this week, Rep. Nita Lowey, D-N.Y., urged the NRC to look closely at the earthquake preparedness there. A 2008 analysis of earthquake activity around New York City found that many small faults that were believed to be inactive could contribute to a major temblor, and that a line of seismic activity comes within two miles of the plant on the Hudson River.

Another fault line near Indian Point was already known, so the findings suggest Indian Point is at an intersection of faults. The environmental group Riverkeeper says seismic studies used to assess safety are decades out of date.

Major earthquakes are rare in the southeast United States, although the region is crossed by the New Madrid fault in the west and a fault near Charleston, S.C. in the east. University of Georgia geologist Jim Wright said although the plate sitting under the southeast is stable it's also rigid, meaning the jolt from an earthquake would carry farther than in a region where the earth's crust has been fragmented by seismic activity.

The Atlanta-based Southern Co. has reviewed seismic activity in the area that could impact the Wayneboro, Ga., site where it has two operating reactors and hopes to build two more. Among the largest known regional earthquakes was an 1886 earthquake that struck Charleston, S.C., about 85 miles from the Plant Vogtle site, according to the company's regulatory filings.

To this day, geologists are divided on exactly which faults caused the earthquake. Southern Co. spokeswoman Beth Thomas said the company's reactors comply with federal requirements that they be able to safely withstand the strongest earthquake that could be expected in a 10,000-year period. Thomas said the company has not seen anything in Japan to make it alter its current operations.

The Tennessee Valley Authority's Browns Ferry plant, which is located near Athens, Ala., has boiling water reactors similar in design to the malfunctioning reactors in Japan. That plant was designed to withstand a 6.0-magnitude earthquake based on its proximity to the New Madrid fault, TVA spokesman Duncan Mansfield said.

The TVA's Watts Bar nuclear plant at Spring City, Tenn., and its Sequoyah plant at Soddy-Daisy, Tenn., are designed to withstand a 5.8-magnitude quake based on an 1897 tremor at Giles County, Va., Mansfield said. None of the TVA's reactors are seen as being vulnerable to tsunamis since they are so far inland.

Arkansas' only nuclear plant is located about 150 miles away from the New Madrid fault zone, which produced a series of large quakes in 1811 and 1812, including several over magnitude 7. The shaking was so strong that it reportedly caused the Mississippi River to flow backward and could be felt as far away as New England. Arkansas Nuclear One officials said the plant is designed to withstand natural disasters including quakes, has an emergency plan in place, and routinely trains for the worst-case scenario.

Using increasingly sensitive technology, scientists are constantly identifying new faults in the country, sometimes after earthquakes are detected. In Southern California alone, there are an estimated 10,000 earthquakes a year, though most of them are too small to be noticed by residents.

The state's senators, Barbara Boxer and Dianne Feinstein, on Wednesday sent a letter to Nuclear Regulatory Commission Chairman Gregory Jaczko, asking that the agency "perform a thorough inspection" of the plants at Diablo Canyon and San Onofre.

A 30-foot concrete seawall surrounds San Onofre, built along the beach in northern San Diego County, where officials say it's strong enough to withstand major quakes and any potential tsunami.

Diablo Canyon, whose reactors began operating in the mid-1980s, has a long history of seismic issues. The discovery of the offshore Hosgri Fault in 1971, after the plant's construction permits were issued, forced a major, costly redesign.

Brocher, the USGS scientist, said scientists do not know how fast the adjacent sides of the Shoreline Fault are sliding, a key measurement to determine potential danger. A higher rate of slippage leads to increased pressure — and a greater chance for an earthquake.

With the two faults in proximity "the uncertainty is ... to what extent they might interact," says Barbara Byron, a senior nuclear policy adviser for the California Energy Commission. Since 2008, the commission has urged the plant to conduct three-dimensional mapping of the Shoreline Fault, using technology employed in oil exploration.

Funding has been approved for the study. In testimony to the NRC last year, she called the plant's seismic data "incomplete ... outdated" and urged a review of its evacuation plans.

Uselding, the NRC spokeswoman, said preliminary reviews found that it's unlikely an earthquake would take place directly under Diablo Canyon, but that potential shaking could cause minor damage to buried piping and conduits.

Diablo Canyon has an extensive seismic monitoring system, ready to detect any shifts in the area. "Potential impacts of the Shoreline Fault fall within all safety margins," company spokesman Kory Raftery said.

To University of Southern California professor Naj Meshkati, an expert on earthquakes and nuclear power plants, the risk is not the massive plant structures but the reliability of backup systems that failed in the Japanese tsunami.

While such a large quake and killer wave is unlikely in California, the plants face similar dangers in backup equipment.

"If someone says this cannot happen here, they should really ... take a very hard look at some of their assumptions," Meshkati said.

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Browns Ferry's Design Flawed? - Decaturdaily.com (DECD)

By Eric Fleischauer

[Decatur Daily](#), March 18, 2011

The Tennessee Valley has more reason than much of the world to study the nuclear disaster unfolding in Japan.

Browns Ferry Nuclear Plant — 11 miles northwest of downtown Decatur — has the same General Electric reactor design, the Boiling Water Reactor Mark I, as the damaged reactors at the Fukushima Dai-ichi plant in Japan. The disaster in Japan has, according to some experts, highlighted problems in the Mark I design.

GE defended the Mark I design Monday, calling it an "industry workhorse" and saying, "There has never been a breach of a Mark 1 containment system."

By Wednesday, indications from Japan were that there had now been at least two such breaches.

The event jeopardizing the reactors in Japan was cataclysmic. A 9.0 earthquake was followed by a tsunami. By itself, the earthquake did not create an unforeseen nuclear emergency. The plants successfully inserted neutron-absorbing control rods, which ended the nuclear fission within the reactors.

The combination of earthquake and tsunami, however, was disastrous. All AC power to the plant was lost. Flooding from the tsunami rendered the backup power supply, diesel generators, useless. The final electrical backup, batteries that could operate the plant's essential functions for eight hours, did not last long enough to permit replacement with another power supply.

The power loss disrupted efforts to cool the still-hot fuel rods in the reactors and spent-fuel pools. It also disabled hydrogen igniters, designed to remove the gas before it reached explosive levels. Hydrogen explosions damaged the buildings around three of the reactors, disabling a last-resort system designed to keep radiation from entering the atmosphere.

The combination of earthquake and tsunami could not happen in Alabama, but similar double disasters could, said David Lochbaum, a nuclear engineer who worked at Browns Ferry.

"While many of our plants may not be vulnerable to the one-two punch of earthquake and then tsunami, many of our reactors are in situations where earthquakes or hurricanes in the Gulf or ice storms in the Northeast or a tree in Cleveland can cause an extensive blackout that puts us in a very similar situation."

A tornado could disrupt the power grid and compromise Browns Ferry. An earthquake could damage both Browns Ferry and, by disabling dams on the Tennessee River, cause flooding. Either an earthquake or tornado could cause a fire at Browns Ferry, potentially damaging backup power supply. Spent-fuel pools

An increasingly dangerous problem in Japan involves the spent-fuel pools. In the Mark I design, the pools are essentially in the plant's attic, above the reactor.

Fuel rods in the pool are thermally hot and radioactive.

They rely on water and circulation pumps to avoid reaching temperatures that melt the metal cladding around the fuel rods, a condition that releases radiation. The spent fuel is not as well protected as the fuel in the reactor. In Japan, the spent fuel is now open to the atmosphere in at least two plants. The danger posed by the pools is significant. According to Lochbaum, a U.S. study showed that a drained spent-fuel pool delivers a lethal dose of radiation to a worker at its railing in 16 seconds.

Browns Ferry is more vulnerable to problems with the spent-fuel pools than are the plants in Japan. Delays in constructing a storage facility for depleted fuel — planned at Yucca Mountain in Nevada — resulted in Browns Ferry and other plants stockpiling the fuel in the cooling pools. TVA is gradually moving the spent fuel to on-site dry casks, but the pools remain near capacity.

That means they have more radioactive content than the pools at the Japan reactors, and they are more dependent upon electric pumps to circulate water within the cramped quarters.

"Our spent fuel pools in the reactors like the one in Japan are almost filled to the brim, and the risk from the spent fuel pools — either from an accident or from an act of malice — are about as high as you could possibly make them," said Lochbaum, director of the nuclear safety program at the Union of Concerned Scientists, which describes itself as a watchdog group that neither supports nor opposes nuclear power.

Another issue that some experts fear will come into play in Japan involves the consequences of melting fuel rods within the reactor. Fuel rods melting

If cooling efforts fail, the fuel rods ultimately will melt into a lava-like substance. The heat would melt the steel reactor vessel, allowing the melted fuel to drop to the concrete containment vessel. In Mark I reactors, the containment vessel is concrete with steel at the edges.

"In the Mark I containment, there is a known vulnerability to containment failure known as liner melt-through," said Ed Lyman, a physicist at Union of Concerned Scientists. "If that melt spreads to the corners, then it may be able to melt through the steel shell of the containment as it ate through the reactor vessel."

If it happens, especially if the containment vessels are damaged as they are in Japan, "that would essentially mean large radiological release to the environment."

TVA Chief Operating Officer Bill McCollum said he is confident the authority's reactors are safe, but TVA will seek to learn from the problems in Japan.

"TVA's plants are designed, built and operated to be safe," McCollum said. "That's our No. 1 mission. Our plants are designed to be very robust against all types of occurrences.

"It's far too early to assess the total impact of this," McCollum said. "I believe we'll have to wait to understand the facts and events as they've really occurred, and what actions may need to be taken and lessons to be learned out of this."

Quake Faults Could Affect Sequoyah, Watts Bar (ISTOCKAN)

iStockAnalyst.com, March 18, 2011

By Pam Sohn, Chattanooga Times Free Press, Tenn.

March 17--The two reactors at TVA's Sequoyah Nuclear Plant in Soddy-Daisy have the nation's fourth-highest earthquake risk, according to assessments by the Nuclear Regulatory Agency.

Understanding of the risk at TVA nuclear plants at Sequoyah, Watt's Bar in Spring City, Tenn., and Browns Ferry in Athens, Ala., has grown in recent decades as knowledge has increased about earthquake research and fault mapping.

What's unclear now is what, if any, changes the upgraded risks might prompt.

At Sequoyah, about 20 miles north of Chattanooga, the chances of an earthquake causing core damage at each reactor are 1 in 19,608, according to an MSNBC analysis of new NRC risk assessments.

For local residents, those core odds are far greater than the chance of being struck by lightning, which the National Weather Service says is about 1 in 500,000.

NRC spokesman Roger Hannah on Wednesday said the analysis and a spreadsheet ranking of the nation's plants and their risks shouldn't be misinterpreted.

"It doesn't mean there is a safety issue or need for immediate action," Hannah said. "It may be determined that nothing needs to be done."

Up the road in Spring City, Tenn., the Watts Bar Nuclear Plant, licensed in 1996, has the 14th-highest quake risk among the nation's 65 operating plants.

There, the chance for reactor core damage is 1 in 27,778, according to the NRC.

And at Browns Ferry, licensed in the 1970s, the odds are 1 in 185,185 in reactors 2 and 3. Reactor 1's risk is 1 in 270,270.

Learning more

While Japan faces a crisis at a nuclear plant damaged after a 9.0 magnitude earthquake caused a tsunami, TVA called off a long-scheduled media tour Wednesday at its Watts Bar plant, the site of the only U.S. nuclear reactor under construction.

The utility said in a statement that the tour was indefinitely postponed "while the industry focuses on events in Japan."

When Sequoyah was licensed in 1980 and 1981, its risk for quake-induced core damage was 1 in 102,041. TVA officials have said it was built to withstand a 5.8-magnitude quake.

But at that time, most geologists thought the nearest seismic zone of note was West Tennessee's New Madrid fault. That fault let go in a series of quakes in 1811-1812 that formed Reelfoot Lake in West Tennessee and made the Mississippi River run backward for a time.

In the years after Sequoyah's design, researchers began studying the East Tennessee Seismic Zone, which scientists now know is the second-most-active quake zone east of the Mississippi River.

Stretching up along the Tennessee mountains from Alabama to Virginia, the 185-mile-long, 30-mile-wide East Tennessee seismic zone runs right through Chattanooga and the tri-state area.

It was responsible for a 4.6-magnitude quake near Knoxville in 1973 and a 4.6 quake near Fort Payne, Ala., in 2003.

TVA spokesman Ray Golden said conversations have just begun among TVA officials and NRC about the new risk assessments.

"There is a design basis [in place now] for all of our plants, and we are in full compliance with that. We will abide by whatever [new] requirement NRC has for us," he said.

Hannah said it's too early to know if the assessments will prompt changes, or what those changes might be. The rankings to help NRC prioritize further study were just completed in the fall, he said.

"We'll be sending letters soon," he said.

For now, a Sept. 2, 2010, memorandum sums up the work on "Generic Issue 199," as the effort is labeled in NRC documents online.

"Recent data and models indicate that estimates of the potential for earthquake hazards for some nuclear power plants in the Central and Eastern United States may be larger than previous estimates. While it has been determined that currently operating plants remain safe, the recent seismic data and models warrant further study and analysis."

No Nukes Is Good Nukes (BHAMWK)

[Birmingham Weekly](#), March 18, 2011

In the wake of the tsunami, we are reminded that nothing brings our enormous planet down to size quite like its basic building block. We have seen now the astonishing damage that the kinetic energy in the earth's crust can do, but we wait with trepidation to learn what damage the lowly atom will have done to Japan this time.

It's been almost 46 years since the power of nuclear fission was unleashed upon two cities forever linked with atomic energy; Hiroshima and Nagasaki. The bombs detonated there were the physical proof of a theory first proposed forty years before that, in the work of physicist Albert Einstein, whose simple equation about what energy equals concealed mathematics of the utmost complexity.

As a nuclear arms race heated up after World War II, some scientists suggested that atomic fission could be put to use for mankind's good, and the first atomic power plant went online in Idaho in 1951. Then as now, the atomic reactor served as a glorified tea kettle, boiling water to spin turbines that would generate electricity. Skeptics warned that the potential harm to residential areas latent in the plants' radioactive fuel outweighed the potential benefits, but proponents noted that nuclear power plants cut down carbon emissions as well as dependence on foreign oil.

America's first commercial reactor opened in 1957; Alabama's first in 1974. The Browns Ferry nuclear plant, operated by TVA near Athens, was the first in the nation with a capacity for generating a billion watts of electricity. Unfortunately, it may be better known for catching fire in 1975. Four years before Three Mile Island, thanks to a careless electrician, northwest Alabama came perilously close to experiencing core meltdown, when nuclear fuel rods exposed after a cooling system failure liquefy and

send toxic levels of radioactivity into the air. Browns Ferry Unit One was repaired subsequently and two other reactors added, but all three were shut down in 1985 by TVA over continuing safety concerns.

Unit One returned to full service in 2007, but the Nuclear Information and Resource Service claimed TVA still hasn't addressed the safety issues that shut the reactor down in 1975. "If this is proof of a nuclear power resurgence," NIRS executive director Michael Mariotte said, "then the industry is in big trouble. TVA spent \$1.8 billion just to get this obsolete reactor running again, and the utility still can't meet basic federal safety regulations."

Here in Birmingham, our current is fed by Alabama Power, part of Southern Company and owner of the Joseph M. Farley Nuclear Electric Generating Plant, located at the other end of the state, near Dothan. It's suffered no major mishaps on the Browns Ferry level, but in January, the Nuclear Regulatory Commission cited the licensee for two performance deficiencies, each rated "more than minor".

It's not the first time Farley Units One and Two have been in NRC's crosshairs. In 1996 the commission levied a \$50,000 fine to the licensee for having insufficient fire protection on electrical cables involved in safe shutdown procedures. The NRC also issued several Notices of Violation related to safety issues to the Farley plant between 2007-2009.

Alabama's nuclear plants have shown that they can generate electricity safely and unobtrusively on a daily basis. Japan's nuclear plants have shown that at any time and without warning, the caprice of fate could turn Reddy Kilowatt into Godzilla.

Shouldn't our power providers be turning away from life-threatening nuclear reactors and coal-fired steam plants toward cleaner, safer renewable energy sources? Alabama Power's Michael Sznajderman stepped up to respond:

"We (Alabama Power) are supportive of renewables and want to expand their use where and when it makes economic sense for our customers. As you may know, we have offered our residential customers a biomass-based Renewable Energy Rate since 2003 and it has since been expanded to commercial accounts. We recently partnered with the Westervelt Company in west Alabama on a timber-waste project that will produce about 7 megawatts of biomass energy for us in about a year. (That's enough power for about 3,000 homes.) We also offer an alternate-energy rate for customers who want to install small solar systems and sell their excess power back to us.

"We are aggressively researching other renewable technologies, such as solar, that show promise but are still prohibitively expensive in the South compared to conventional sources. (Solar is about half as efficient here as in the desert Southwest, hence twice as expensive here than there.) We have installed four types of the latest solar technologies at our corporate headquarters so we can look closely at how well they work in real-world conditions in our muggy, more-cloudy-than-sunny climate, and are planning some other small installations around our system. We also are looking at some limited wind applications—we have a wind turbine on our roof, too, with some additional wind technologies on the way..."

We also have put out requests for renewable projects and are evaluating several now. And we are upgrading turbines at some of our hydro plants so we can produce more emission-free hydro energy with the same amount of water. (BTW, Alabama happens to be sixth in the nation in renewable capacity according to the Energy Information Administration because of our hydro capacity)."

The news from Japan is agonizing to apprehend, with hundreds of thousands affected by the primordial power of an earthquake, and thousands more exposed to the dangers of unfettered radioactive isotopes. As Fukushima joins Three Mile Island and Chernobyl in the disquieting lexicon of nuclear power failure, our proximity to nuclear hazards right here in Alabama makes the words of Albert Einstein in 1947 worth recalling: "We scientists recognize our inescapable responsibility to carry to our fellow citizens an understanding of atomic energy and its implication for society. In this lies our only security and our only hope—we believe that an informed citizenry will act for life and not for death."

Courtney Haden is a Birmingham Weekly columnist. Write to courtney@bhamweekly.com.

Japan Quake Mustn't Trigger Nuclear-Phobia (ROLLCALL)

By Morton M. Kondracke

[Roll Call](#), March 18, 2011

I never agree with Rush Limbaugh about anything, but here's an exception: The mainstream media habitually spreads panic in the population — right now, about the safety of nuclear power.

The danger of a meltdown at Japan's Fukushima Daiichi reactors is real, but the media made it a "crisis" from the get-go. The New York Times said the crisis had "veered toward catastrophe."

And on MSNBC's "Morning Joe" on Wednesday, co-host Mika Brzezinski opined it might prove "apocalyptic," which is to say, world-ending.

In California, alarmed people have started stocking up on potassium iodide to guard against radioactivity-induced cancer even though 5,000 miles of ocean separate them from Japan.

The real threat here is that nuclear-phobia will take hold in the U.S. as happened following the partial meltdown and radioactive release at Three Mile Island in 1979, resulting in no new nuclear plant construction for 30 years.

As Sen. Lamar Alexander (R-Tenn.) said in a speech on Monday, "today 104 civilian reactors produce 20 percent of America's electricity and 70 percent of our clean electricity.

"Without nuclear power, it is hard to imagine how the United States, which uses up 25 percent of all the energy in the world, could produce enough cheap, reliable clean energy to keep our economy going and keep our jobs from going overseas."

The good news is that the Obama administration is not running away from its support of loan guarantees for new nuclear facilities, and nuclear power has significant Republican support.

It also has been gaining public support, with 62 percent of U.S. adults favoring nuclear power in a 2010 Gallup poll. New polls, post-Japan, should appear shortly.

As Energy Secretary Steven Chu testified this week, the U.S. "naturally" will thoroughly study the lessons of Japan's experience and try to ensure that existing and planned new plants are safe.

That should especially apply to two California nuclear reactors located near seismic faults.

But opponents of nuclear power are seizing on the disaster in Japan — caused by a gigantic tsunami triggered by the fourth-most-powerful earthquake in recorded history — to stop nuclear power in its tracks.

That would compound the lack of a coherent U.S. energy policy that has resulted from polarized U.S. politics.

Republicans (and some Democrats) are determined to maintain fossil fuels — oil, natural gas and coal — as the mainstays of U.S. energy for as long as possible.

They pooh-pooh evidence that fossil fuels cause global climate change and are trying to defund conservation and alternative energy programs.

Meantime, most Democrats (but hardly any Republicans) think the world is menaced by global warming and are determined to close down the carbon economy and substitute wind, solar and other "renewables" for oil, gas and coal.

The public is confused — and divided — about what to think. According to a March Gallup poll, only 51 percent — down from 66 percent three years ago — are "worried" about global warming.

That includes 72 percent of Democrats (who also think it's caused by human activity), but only 31 percent of Republicans, two-thirds of whom think (with Limbaugh) that its seriousness is exaggerated by the news media.

Sixty percent favor increasing offshore drilling for oil (83 percent of Republicans, 40 percent of Democrats) while a whopping 83 percent say Congress should pass an energy bill that provides incentives for solar and other alternative energy as a top priority.

Actually, the public may have it right, given \$4-a-gallon gasoline and possible oil disruptions in the Mideast. The fact is that, for the foreseeable future, the U.S. will primarily depend on fossil fuels for its energy, so domestic production should be increased.

But longer term, cleaner fuels make sense. Global warming is a fact — the polar ice caps are melting — though it's debatable whether the consequences will be as dire as worst-casers like Al Gore maintain. A carbon tax would encourage new energy sources.

Clearly, expansion of nuclear power should be part of the solution. Utilities now find it cheaper to use natural gas as fuel, so government loan guarantees — not direct subsidies — are needed to get plants built. They cost, on average, \$6 billion.

But once they are built — if they are built — they produce energy at a much cheaper long-run cost than any other fuel. It's why nuclear accounts for 80 percent of France's electricity generation and coal-rich China is building 27 new nuclear reactors.

As Alexander said in his Senate speech, "the United States invented nuclear power, but ... of the 65 reactors under construction around the world, only one is in the United States," part of the Tennessee Valley Authority anchored in his state.

He pointed out that "no one has ever died from a nuclear accident at any of our commercial or naval reactors," including the Three Mile Island incident, which led to vast upgrades in safety oversight.

And, he said, while nuclear energy has risks, "it is also important to remember that we do not abandon highway systems because bridges and overpasses collapse during earthquakes. ...

"We cannot stop drilling after a tragic oil spill unless we want to rely more on foreign oil, run up our prices, turn our oil drilling over to a few big companies and all our oil hauling to leaky tankers."

That's on the mark. America needs a do-it-all energy policy, and if nuclear isn't part of it, we will be under-powered.

Nuclear Power's Future (MH)

[Miami Herald](#), March 18, 2011

As the news from Japan worsens, the anxiety level rises. Phrases like "radioactive release," "partial meltdown" and "damaged reactor" send chills up the spine.

The most important lesson to emerge from the tragedy in Japan is that safety must be the top priority in the operation of nuclear plants, always. There's no such thing as a foolproof system or disaster-proof construction. The crisis should serve as a wake-up call for the nuclear power industry and regulators around the world.

A safety review of U.S. power plants, both current and planned, is needed. Congress should hold hearings that can inform the public about safety issues. But let's take a deep breath before leaping to declare a permanent moratorium on nuclear power plant expansion. Unless new forms of energy generation can be found relatively soon, the world will need more nuclear plants in the near future.

In Florida, FPL is seeking the go-ahead to build two new reactors at Turkey Point. Progress Energy wants to build a new plant in Levy County. The state already has three operating plants (Crystal River, St. Lucie and Turkey Point) housing five reactors. Without new generating facilities, Florida could fail to meet its growing energy needs.

Nationally, there are 104 commercial nuclear power plants in the United States. They provide about 20 percent of the nation's electricity. For three decades, an all but officially-declared moratorium has prevented the building of new plants. The Tennessee Valley Authority is the only utility actively building a new nuclear plant in America, the Watts Bar Unit, but ground on that project was broken decades ago, before the episode at Three Mile Island that brought new nuclear-power development to a standstill.

However, a consensus had begun to emerge that new nuclear plants were the key to meeting the energy needs of the future. There's no mystery about why.

Based on existing technology, nuclear power has a critical role to play in devising a climate solution. It's a form of clean energy. Other clean sources such as solar and wind power — as desirable as these are — require significant new levels of investment and a hefty commitment of public funding before they can match the output of other large-scale generators of energy. Meanwhile, the explosion at the Upper Big Branch coal mine in West Virginia and the Deepwater Horizon blowout offer a fresh reminder of the perils of coal and oil.

Energy-starved countries like China and India have ambitious plans to build their own networks of nuclear plants. On Wednesday, China's government announced that it is suspending plans for new nuclear power plants so that safety standards can be revised, and it ordered inspections of all existing facilities. That's a wise move, but it's only a yellow light, not a red light. Eventually, China may have no choice but to proceed cautiously with nuclear expansion.

According to the World Nuclear Association, an industry trade group, the globe's existing stock of 443 nuclear reactors could more than double in 15 years.

The terrible events in Japan are a warning about the need to plan for a nightmare scenario. Better engineering, appropriate placement (not on or near a fault line) and more back-up safety systems can reduce, but never eliminate, the risks and unanticipated vulnerability of nuclear plants.

But as horrifying as this episode is, it should not deter this country from developing nuclear power. Let's learn from Japan's experience and make the operation of existing and future plants as safe as possible.

Coal's Return To Fashion (WSJ)

By Andrew Peaple

[Wall Street Journal](#), March 18, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

Japan Set To Reignite Demand For King Coal (FT)

By Javier Blas

[Financial Times](#), March 18, 2011

Full-text stories from the Financial Times are available to FT subscribers by clicking the link.

NRC Spokesperson: We Don't Rank Plants By Seismic Risk (PHOEPATCH)

The Nuclear Regulatory Commission's Neil Sheehan writes with a clarification regarding yesterday's article about the earthquake risk to Exelon Nuclear's Limerick Generating Station

[Phoenixville Patch](#), March 17, 2011

Regarding: "NRC: Risk of quake event at Limerick plant third highest in U.S."

The MSNBC [msnbc.com] story has to do with a seismic risk ranking it created. It is not the result of an NRC review. The NRC does not rank plants by seismic risk.

The objective of the NRC study was to perform a conservative, screening-level assessment of earthquake risk. The NRC results to date should not be interpreted as definitive estimates of seismic risk. The nature of the information used to make these estimates are useful only as a screening tool.

Currently operating nuclear power plants in the U.S. remain safe, with no need for immediate action. This determination is based on NRC staff reviews of updated seismic hazard information and the conclusions of the screening panel. Existing plans were designed with considerable margin to be able to withstand the ground motions from the largest earthquake expected in the area around the plant.

Neil Sheehan, NRC Public Affairs

Regulators Cancel Nuclear Plant Meeting (MH/AP)

[Associated Press](#), March 18, 2011

Federal regulators have canceled a scheduled meeting about a Florida nuclear plant because of ongoing repairs at the facility.

Staff at the Nuclear Regulatory Commission said Thursday that Progress Energy's Crystal River plant appears to have a new gap in the concrete containment which would prevent it from reopening anytime soon. Because of that, next week's meeting to discuss the reopening of the plant was nixed.

The plant had been set to restart in April. It shut down in 2009 for repairs.

NRC spokesman Joey Ledford says the gap in the containment poses no threat since the plant is not in operation and there is no fuel in the reactor.

More Containment Problems At Crystal River Nuke? Hearing Cancelled Pending Further Checks (ORS)

[Orlando Sentinel](#), March 18, 2011

More containment problems at Crystal River nuke? Hearing cancelled pending further checks

Kevin Spear

Email: (required)

By Kevin Spear, Orlando Sentinel

Amid the nuclear disaster in Japan, U.S. officials announced today they have cancelled a public meeting to consider the much-awaited restart of Progress Energy's Crystal River nuclear plant about 85 miles west of Orlando and 70 miles north of Tampa.

The reason: there may be another gap or void within the 3-foot-thick concrete wall of the reactor's massive containment dome.

Such a flaw was found in mid-2009 when Progress Energy began an extensive refurbishment of their nuclear facility's single, 800-megawatt reactor. The dome was cut open for the work, which apparently caused a portion of the concrete wall to come apart.

The plant was supposed to have been restarted in late 2009. But investigations, hearings and eventual repairs pushed the expected restart to this spring.

That downtime has been costly, forcing Progress to acquire electricity from other, more-expense sources.

Some of the added expense will be recovered through insurance claims, but customers also are contributing. Progress is tacking an extra \$3.55 \$5 onto monthly bills for residential customers consuming 1,000 kilowatt hours.

The Nuclear Regulatory Commission said it was cancelling the meeting, to have been held Tuesday in a Progress training center in Crystal River, because of "indications of additional separation or gap resulting from the repair work on the original containment wall."

Entergy: Indian Point Is Built To Withstand Quakes (POUGHJNL)

By John W. Barry

[Poughkeepsie \(NY\) Journal](#), March 18, 2011

A nuclear crisis nearly 10,000 miles from Poughkeepsie has got Hudson Valley residents debating the safety of nuclear power and a reactor less than 50 miles from Poughkeepsie.

A 9.0-magnitude earthquake struck Japan on March 11. Japanese officials Thursday scrambled to avert a nuclear meltdown after a tsunami triggered by the earthquake knocked out cooling systems at the Fukushima Dai-ichi nuclear power plant.

The crisis in Japan is resonating locally, as the Indian Point nuclear power plant sits on the eastern shore of the Hudson River in Westchester County, less than an hour's drive from Poughkeepsie, near a seismic fault.

"Indian Point is a very safe plant," said Bob Seeger of Hopewell Junction, the former business manager for Millwright and Machinery Erectors Local 740 in New York City, who installed equipment at Indian Point prior to becoming business manager. "I can't tell you how many times I've been in there, working on their turbines and different systems. I would say that Indian Point is definitely, not only by design, but also by the people who run the place, one of the safest plants I've ever been in."

Frank Stoppenbach of Red Hook said the crisis in Japan was inevitable.

"Accidents, if they do occur, have the potential to be catastrophic and to guarantee that accidents can never happen, we have to have perfect fore-knowledge and flawless execution," Stoppenbach said.

A spokesman for Entergy Nuclear, which owns Indian Point, said the plant is built to safely shut down in the event of an earthquake of magnitude 6.0 or greater on the Richter scale, but can handle a much more severe quake.

The plant is built to "withstand an earthquake greater in size than this area has ever experienced," Entergy spokesman Jerry Nappi said. "Indian Point is neither susceptible to the type of earthquake that occurred in Japan, nor the tsunami that followed that ultimately removed the cooling capability of the Japanese plant. Nevertheless, over the next 30 days as part of an industry initiative, Indian Point will be performing a comprehensive review of the plant's ability to respond to catastrophic events."

The plant sits near the Ramapo Fault, where substantial earthquakes are infrequent. A 2008 analysis of recent earthquake activity around New York City, however, found that many small faults that were believed to be inactive could contribute to a major, disastrous earthquake.

In the wake of the disaster in Japan, the Westchester-based environmental organization Riverkeeper has called for the closure of Indian Point.

"The events in Japan are eye-opening," said New Paltz attorney David Gordon, who represented Riverkeeper in a previous Indian Point matter. "You like to believe in the safety and the assurances that are given by the government and the industry whenever something comes along that they can't handle. The impact is very far-reaching and in ways we don't ever expect."

UPDATE: Entergy To Review Safety At New York Nuclear Plant (WSJ)

By Naureen S. Malik

[Wall Street Journal](#), March 18, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

Entergy To Review Indian Point Nuclear Safety (REU)

[Reuters](#), March 18, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

Exelon: Deal To Close Oyster Creek By 2019 Is Purely A Business Plan (ASBPP)

By Moore

[Asbury Park Press](#), March 18, 2011

Exelon Corp. executives saw their deal with the Christie administration to close the Oyster Creek nuclear plant by 2019 purely as a prudent business plan, given the age of the reactor and New Jersey's movement toward requiring cooling towers as a condition for continued long-term operation, Exelon chief operating officer Charles G. 'Chip' Pardee said today.

"We think our impact on Barnegat Bay is minimal," Pardee said this morning on National Public Radio's Diane Rehm Show. But it was apparent state officials would demand a major new investment in the nation's oldest commercial nuclear plant, he said.

"It was clear to us we were going to be required by the state of New Jersey to install cooling towers...It was no more complicated than that," Pardee said. "We did what we thought was best, given the environment in New Jersey and what was best for our shareholders."

With the ongoing nuclear crisis in Japan, safety at their own plants is a twice-daily discussion among executives of Illinois-based Exelon, Pardee said. The company's Oyster Creek installation is a General Electric Mark I boiling water reactor, the same type used at the Fukushima Daiichi site, but the power plant in Lacey has significant differences in equipment.

State environmental officials had drafted a water discharge permit that would have required Oyster Creek to build cooling towers to recycle cooling water and reduce its need for water withdrawals from Barnegat Bay. Studies over the years showed losses of juvenile fish, eggs and larvae that are not blocked by screening, although the cooling intake does bypass larger fish and animals for release back into the canal between the South Branch of the Forked River and the Oyster Creek discharge side.

Even before Japan's crisis, Exelon chairman John W. Rowe said in a March 9 speech to the American Enterprise Institute in Washington, DC that cheap and abundant natural gas supplies in North America will likely make construction of new reactors uncompetitive for years to come. That prognosis is one reason Exelon gave up plans for a new nuclear station in Texas, Pardee said.

U.S. Nuclear Output Rises As Entergy Boosts Reactor In Michigan (BLOOM)

By Colin McClelland

[Bloomberg News](#), March 18, 2011

U.S. nuclear-power output rose 0.7 percent after rates increased at the Calvert Cliffs 2 reactor in Maryland and Entergy Corp. boosted its Palisades unit on Lake Michigan, the Nuclear Regulatory Commission said.

Production nationwide increased by 619 megawatts from yesterday to 87,161 megawatts, or 86 percent of capacity, according to a report today from the NRC and data compiled by Bloomberg. Fifteen of the nation's 104 reactors were offline.

Constellation Nuclear Energy Group LLC, a joint venture of Constellation Energy Group Inc. (CEG) and Electricite de France SA, boosted its 867-megawatt Calvert Cliffs 2 reactor to 83 percent of capacity from 56 percent yesterday.

Another reactor at the plant, the 867-megawatt Calvert Cliffs 1, is operating at full power. The plant is located 38 miles (61 kilometers) south of Annapolis.

Entergy Corp. (ETR) increased its 778-megawatt Palisades reactor to full power from 52 percent of capacity yesterday. The plant is located 37 miles west of Kalamazoo, Michigan.

Some reactors close for maintenance and refueling during the spring and fall in the U.S., when demand for heating and cooling is lower. The outages can increase consumption of natural gas and coal to generate electricity.

The average U.S. reactor refueling outage lasted 41 days in 2009, according to the Nuclear Energy Institute.

Progress Energy Led U.S. Nuclear Near-Misses, Group Says (BLOOM)

By Jim Polson And Jeremy Van Loon

[Bloomberg News](#), March 18, 2011

Progress Energy Inc. (PGN), which plans to merge with Duke Energy Corp. (DUK) to create the largest U.S. utility owner, led a list of 14 near-misses by U.S. nuclear plant operators last year, the Union of Concerned Scientists, a watchdog group, said today in a report.

Progress, based in Raleigh, North Carolina, suffered four accidents at three reactors, the group said today in a report written by its chief of nuclear safety, David Lochbaum, a former safety instructor for the U.S. Nuclear Regulatory Commission.

"When the NRC tolerates unresolved safety problems, this lax oversight allows that risk to rise," wrote Lochbaum in the report, which he said is based on NRC data. "The more owners sweep safety problems under the rug and the longer safety problems remain uncorrected, the higher the risk climbs."

The release of the report came as helicopters dropped water on the stricken Fukushima Daiichi nuclear station north of Tokyo to prevent meltdowns of reactor cores and stored fuel after an earthquake and tsunami knocked out power and backup generators March 11, the worst nuclear accident since Ukraine's Chernobyl reactor burned in 1986.

Progress was responsible for the most costly event, damage to concrete walls containing the reactor at the Crystal River plant in Florida, which has been shut down for more than a year, the Cambridge, Massachusetts-based group said.

The NRC said today that it canceled a meeting to discuss the restart of the Crystal River plant following the discovery of a new gap in the concrete containment structure. The plant was shut down in 2009 for a planned refueling outage and during the work, the company found gaps in the structure.

"We have the highest safety standards for our nuclear plants and our employees, and we work continuously to improve safety," Mike Hughes, a spokesman for Progress, said in an e-mailed response. "We are taking definitive steps to address the issues raised and return our fleet to the highest performance standards."

The most serious U.S. reactor accident last year occurred when electrical fires at Progress Energy's H.B. Robinson plant in South Carolina triggered an unplanned reactor shutdown, followed by an "incredibly long series of mistakes" by plant operators that "revisited nearly all the problems" that led to a partial meltdown at Pennsylvania's Three Mile Island plant 31 years earlier, the report said.

At Entergy Corp. (ETR)'s Indian Point power plant in New York, the NRC has been aware of a leak in the liner of refueling cavity since 1993 and yet allowed the plant to continue operating, putting people living in the area at "undue risk," Lochbaum wrote. The Indian Point reactor is about 24 miles north of New York City.

The liner was installed to prevent leaking of radioactive material during an earthquake and the chances of that equipment fulfilling its safety function is "nil," the report said. The two Indian Point reactors are near the intersection of two seismic zones, identified in 2008 by scientists at Columbia University's Lamont-Doherty Earth Observatory, who said a magnitude 7 earthquake in the region is possible.

"Leakage has been captured, understood, analyzed and determined to pose no safety issue," said Jim Steets, a spokesman for Entergy, in a phone interview. "This is not leakage into the environment that we're walking away from. We are acting responsibly."

While the Nuclear Regulatory Commission "often tolerated known safety problems," the inspectors responsible for detecting potential dangers made "outstanding catches" of safety issues at other plants, the report said.

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Progress Logs Most N-plant Problems (RALEIGH)

[Raleigh News & Observer](#), March 18, 2011

Progress logs most N-plant problems

STAFF WRITER JOHN MURAWSKI

Friday, March 18, 2011 12:00 AM

Progress Energy nuclear plants ranked among the nation's worst last year by a number of key safety and performance measures, according to a report issued Thursday by the Union of Concerned Scientists, a nuclear watchdog group.

Nuclear plants owned and operated by the Raleigh-based electric utility experienced the nation's most serious reactor mishap as well as the most expensive malfunction.

Additionally, four of the 14 most serious incidents took place at Progress nuclear plants in North Carolina, South Carolina and Florida, according to the Union of Concerned Scientists' report. None of the problems cited occurred at Progress' Shearon Harris nuclear plant in Wake County, which is consistently ranked by federal nuclear regulators as one of the nation's better-performing nuclear facilities.

The Union of Concerned Scientists noted that none of the nuclear problems cited in the report posed an immediate risk to public health, but the number and the frequency of problems were unacceptable for an industry that prides itself on protecting public safety.

The report was based on incident reports and other documents from the U.S. Nuclear Regulatory Commission. It does not analyze foreign nuclear plants and does not mention the crisis unfolding in Japan, where several nuclear reactors are at risk of meltdown and radio active release in the wake of a massive tsunami.

Progress Energy did not specifically address the findings in the report, but said it is working diligently to resolve the problems and to improve its performance record.

The most serious sequence of events took place at Progress' H.B. Robinson plant in South Carolina. In October, an electrical fire triggered an emergency shutdown, power failure, coolant problems and another fire.

Exelon To Give 'Fresh Look' To Nuclear Activities (CHIT)

CEO says multibillion-dollar 'power uprate' will be looked at

By Julie Wernau

[Chicago Tribune](#), March 18, 2011

Exelon Chief Executive John Rowe acknowledged that the universe has changed and said all of the company's nuclear activities are under review, including, a multibillion-dollar "power uprate" program to wring more power from the company's aging reactor fleet.

For the past decade, the nuclear energy business has had a solution to the problem of building expensive new plants: Get government approval to run the ones they own at nearly 20 percent beyond the originally licensed level.

That strategy has been questioned by some, but not very aggressively, even after there was a problem, such as when Chicago-based Exelon Corp. upped power output by about 18 percent at its Quad Cities plant in Cordova in 2002. Key components began shaking so badly that vibration monitors were thrown from their mounts and insulation fell from steam lines.

In the wake of the nuclear reactor disaster in Japan, it's evident that the whole issue of nuclear safety has been thrown into immediate, sharp focus, with President Barack Obama and key senators Thursday calling for safety reviews. One of the issues certain to be looked at is the practice of boosting power plant output, which Exelon plans to keep doing in Illinois and elsewhere.

Exelon Chief Executive John Rowe acknowledged that the universe has changed and said all of the company's nuclear activities are under review, including a multibillion-dollar "power uprate" program to wring more power from the company's aging reactor fleet.

"I believe we will be able to add some capacity to our different plants. We will, of course, give that a fresh look in the wake of this event," Rowe said Wednesday in an interview with Bloomberg.

Though the comment might appear vague, it stands in contrast to Rowe's record until now on the company's nuclear power strategy.

Pushing more power out of existing nuclear plants has been a key component of Exelon's business strategy and that of other nuclear operators. Compared with the cost of building a new nuclear plant at more than \$130 per megawatt-hour (which hasn't happened in decades), nuclear uprates cost \$40 to \$91 per megawatt-hour, according to Exelon.

Exelon Nuclear, which owns 20 percent of U.S. nuclear power by capacity, is spending more than \$3.65 billion to squeeze as much power as possible out of its existing nuclear fleet through a "power uprate" program.

The uprates, which are expected to result in 1,300 to 1,500 megawatts of total additional generating capacity within eight years, will give Exelon enough new generating capacity to match that of a new nuclear plant.

In Illinois, new uprate programs are planned or under way at Byron, Braidwood, Dresden, LaSalle and Quad Cities, plants that have already undergone uprates. Elsewhere in the country, the Nuclear Regulatory Commission is expecting more than 30 applications for power uprates at nuclear plants during the next five years.

Though nuclear operators have engaged in increased output programs since 1977; until the early 2000s, those increases hovered near 5 percent increased capacity. It wasn't until 2001 that such operators began gaining approval to stretch capacity by 15 percent to 20 percent, programs that required extensive upgrades and new equipment to meet NRC approval.

The result is that America's nuclear fleets, which averaged about 56 percent capacity two decades ago, are operating at 90 percent capacity, said Gwyneth Cravens, author of "Power to Save the World: The Truth About Nuclear Energy."

"In some cases, so many components have been replaced that a plant built four decades ago is as nearly up to speed as newer ones," she said. "Each plant must satisfy stringent NRC requirements."

But such output increases have drawn scrutiny through the years from the Union of Concerned Scientists and other nuclear watchdog groups, who say that nuclear power plants operating at 15 percent to 20 percent beyond their originally licensed levels might not be wise.

David Lochbaum, director of the Nuclear Safety Project of the Union of Concerned Scientists, said that such power uprates have meant a step back in safety, even as plant operators squeeze more profits out of their existing plants.

Lochbaum has argued since at least 2004 that such uprates to boiling water reactors like those at Quad Cities, Dresden and in Fukushima, Japan, remove an extra layer of protection meant to prevent a meltdown.

Boiling water reactors like those in Fukushima and Illinois sit atop a doughnut-shaped well filled with water that soaks up heat in the case of an accident. Lochbaum argued that in the case of an accident, that water might not be enough to stop the added heat from a power plant whose capacity has been uprated beyond its original design.

A second layer of protection, in the form of pressure in the containment area, helps prevent that water from boiling, but any breach in that containment, Lochbaum argued, would leave the reactor wide open to a meltdown.

"Public protection standards are being sacrificed at the corporate altar," Lochbaum wrote in a 2004 brief.

Exelon spokeswoman Judith Rader said the company does not compromise safety when performing uprate work, regardless of the containment design.

At Quad Cities, Exelon eventually upgraded a steam separator that had shaken loose multiple times, which ended complications.

"Heat-removal systems are designed to remove the additional heat from the core. We are in the process of analyzing the potential effects, if any, of increased heat on containment (systems), following regulatory criteria. We believe the results of the analysis will demonstrate an acceptable margin of safety consistent with regulatory requirements," she said.

What the events unfolding in Japan will mean for reactors in Illinois and elsewhere is unclear.

"We'd be arrogant, indeed, not to take a fresh look in view of this tragic situation," Rowe told Bloomberg, adding that he has asked his site managers to review plants for safety in light of expected NRC reviews.

Rowe's comments came ahead of signals from the U.S. government that the nation's nuclear plants will likely undergo an intensive review in light of the events in Japan.

Thursday, the chairmen of the Senate Environmental and Public Works Committee and Clean Air and Nuclear Safety Subcommittee requested that the NRC conduct a comprehensive investigation of all nuclear facilities in the United States to assess their capacity to withstand catastrophic natural or man-made disasters.

At the same time, Obama has asked U.S. regulators to undertake a comprehensive review of domestic nuclear plants, according to Reuters.

Rader said that so far, Exelon's plans for increasing the output of its nuclear plants through uprates is unchanged and that it is too early to speculate on how potential regulatory changes could affect the industry.

"Our uprate projects have always had offramps if the economics don't support individual projects. If an uprate project is not economical, whether that's due to natural gas prices or potential increased regulation, we will evaluate it at the appropriate time and proceed accordingly," she said.

While uprate projects at Dresden, Quad Cities and LaSalle are approved and under way, Exelon's planned uprates for Braidwood and Byron have not yet been submitted for NRC approval, along with an additional uprate planned for LaSalle. Exelon has not yet decided if it will pursue an approved uprate at Clinton, the company said.

"With uprates, they are going to be putting a lot of money into these plants, and they owe it not just to their stockholders, but to the public, to examine these things," said Robert Rosner, senior adviser to the American Academy of Arts and Sciences' Global Nuclear Future Initiative. "Nothing will be as normal (after Japan). I think it will slow the uprate process down."

Tribune reporter Cynthia Dizikes contributed.

Iowa Republicans: Nuclear 'solid, reliable power' (DMR)

[Des Moines Register](#), March 18, 2011

Republican leaders today expressed support for the continued study of expanding nuclear power in Iowa but acknowledged the discussion has changed due to the recent events in Japan.

"Most people playing politics with this are playing politics with the future of Iowa," said Senate Republican Leader Paul McKinley, R-Chariton, who expressed concern about tightening federal regulations on coal-powered plants.

A Senate commerce subcommittee will discuss Senate File 390 at 2 p.m. today.

The bill outlines how the Iowa Utilities Board should proceed with rate-making principles should a rate-regulated public utility move forward with plans to build a nuclear plant.

The House Commerce Committee approved a similar bill earlier this month. House File 561 is now eligible for debate by the full House.

Republicans addressed questions about nuclear energy during a press conference at the Capitol today. They noted that the legislation is not the end to the debate but rather pushing for further consideration.

"I think the legislature is taking the appropriate steps to make sure what happened in Japan doesn't happen here," said House Leader Craig Paulsen, R-Hiawatha.

Paulsen said the nuclear plants in Japan are far different from those that would likely be built in Iowa.

"Only thing that's similar is both use nuclear power," Paulsen said. "Otherwise, they're entirely different technologies. They're entirely different designs.... It is solid, reliable power."

The Iowa legislature has been moving forward with discussions of nuclear power expansion for years.

Gov. Chet Culver last year signed into law a bill allowing MidAmerican Energy to study building a nuclear power plant.

The law allows the utility, which is under a rate freeze, to charge its Iowa customers \$15 million for a three-year study examining the feasibility of building a nuclear plant to generate electrical power. MidAmerican's residential customers will pay about \$4 extra per year; commercial customers, about \$15; and industrial customers, \$1,100.

Advocates of nuclear energy say it's a relatively safe source of power that pollutes less than coal plants, which are becoming more expensive because of federal emissions regulations.

But, in light of the Tsunami in Japan and the problems with their plants, there is heightened interest about safety.

On Wednesday nine Democratic senators signed a letter asking lawmakers to postpone a vote on Senate File 390.

"We are extremely concerned about proposed legislation that appears to be on a fast track to pave the way for the construction of one or more new nuclear power plants in Iowa," the senators' letter read.

"I think we all have concerns about that legislation. I think that's why we have a committee process," said Senate Majority Leader Michael Gronstal, D-Council Bluffs.

The 2 p.m. meeting will be held in room 116 at the Capitol.

MidAmerican CEO: Approve Nuclear Power Bill (SIOUX)

By Boshart

[Sioux City Journal](#), March 18, 2011

The leader of MidAmerican Energy said Thursday that a delay by state lawmakers in approving the company's request for legislation this session that would help attract potential private investors needed to build a nuclear power plant in Iowa likely would hurt and slow the process but would not kill the project.

"We have not made any decision to build," MidAmerican Energy President William Fehrman told reporters after an hour-long meeting where he worked to allay public concerns that have risen as Japan battles a nuclear crisis in the wake of this month's devastating earthquake, tsunami and aftershocks. "We have a lot more to assess and a lot more to understand before those decisions are made."

"We have concluded that the state of Iowa can be a host for a new nuclear power plant," he added, noting that the current site of a nuclear power plant near Palo is among the potential sites being considered for a second facility in Iowa.

Fehrman appeared before a Senate Commerce subcommittee hearing packed with Iowans on both sides of the issues to promote Senate File 390, a bill he said would help address hurdles that might impeded MidAmerican Energy's exploratory plans to build a nuclear-powered facility costing \$1 billion to \$2 billion employing new technology that consists of a cluster of small modular reactors rather than the large-scale structure currently besieged with major problems in Japan.

"The technology we're talking about here is significantly different from what's being used in Japan and because of that I have more comfort about where we're heading with this alternative," he said.

The utility executive told lawmakers that costs for MidAmerican's 600,000 customers likely will be going up in the future - the first rate increases since 1995 - whether the company proceeds with a nuclear option due to changing requirements for coal, gas, wind, solar and other methods of generating electricity. He said the company's customers likely will see their electricity bills increasing by 10 percent over the next decade.

Fehrman said the proposed legislation is intended to help the company attract potential investors and spread out costs to avoid a "rate shock" that would come if customers saw a spike on their monthly utility bills once the proposed project became operational by 2020.

However, not everyone came away convinced.

Sen. Rob Hogg, D-Cedar Rapids, said the fact that the Iowa utility won't know until 2015 or 2016 whether federal regulators will approve the new technology MidAmerican wants to employ tells him there's no rush for the Legislature to act this session.

"It makes no sense for us to take up this bill this year or next year when they're going to have to wait four or five years for the technology to be approved anyhow," Hogg said.

Utilities: Nebraska's 2 Nuclear Plants Safe (AP)

[Associated Press](#), March 18, 2011

Owners Nebraska's two nuclear power plants tried to reassure the public Wednesday that their facilities are safe and designed to handle any likely natural disaster.

Representatives of the Omaha and Nebraska public power districts responded to questions related to the nuclear disaster unfolding in Japan, where officials have been fighting to prevent a nuclear meltdown at a power plant damaged by last week's earthquake and tsunami.

"The safety of the public and the OPPD team will be maintained," said Gary Gates, CEO of the Omaha Public Power District.

OPPD owns Fort Calhoun Nuclear Station, about 19 miles north of Omaha near Blair. The Nebraska Public Power District, or NPPD, owns Cooper Nuclear Station near Brownville in southeast Nebraska. Both plants are located along the Missouri River, which provides water to cool the nuclear reactors.

Both the Nebraska nuclear power plants are designed to handle strong winds from a tornado, flooding along the Missouri River or an earthquake. And both nuclear plants have been operating for nearly four decades with few problems.

"It's been a safe, reliable operation for Nebraskans," NPPD spokeswoman Jeanne Schieffer said.

Both Cooper and Fort Calhoun nuclear plants are designed to handle an earthquake with a magnitude of about 6.0 because that's the most severe quake expected in the area.

Cooper also is designed to withstand winds up to 300 mph and a 1 million-year flood.

Fort Calhoun is built to handle winds up to 500 mph and a 1,000-year flood.

The Nebraska plants also have diesel generators that could provide power in an emergency, and both utilities conduct extensive disaster training to handle different scenarios.

"Our operators are trained extensively," Schieffer said.

Both NPPD and OPPD are watching the situation in Japan closely. Officials said that the Nebraska utilities and other nuclear plant owners worldwide will look for lessons in the Japanese disaster and work to improve their own operations. Follow Yahoo! Finance on ; become a fan on Facebook.

Illinois Gov To Seek Higher Fees On Nuclear Generators (BSWK)

[BusinessWeek](#), March 18, 2011

Gov. Pat Quinn says he plans to seek higher fees on power generator Exelon Corp. to ensure the safety of Illinois nuclear power plants in the aftermath of Japan's nuclear crisis.

Quinn says he met with state emergency management officials on Wednesday to discuss the safety of the state's 11 nuclear reactors.

He says the events in Japan show the need to review the safety of the plants.

Quinn says fees on Exelon haven't increased in nearly a decade and he wants state officials to determine if they need additional money to conduct safety inspections of the plants.

Chicago-based Exelon is a major operator of nuclear power plants and has marketed wind energy in several states.

Groups Opposed To Virginia Uranium Mining Seek To Broaden NAS Study To Include Japan Disaster (AP)

[Associated Press](#), March 18, 2011

Groups opposed to tapping a rich uranium deposit in Southside Virginia want members of a National Academy of Sciences study committee to consider the catastrophic events in Japan as they weigh the consequences of uranium mining in the state.

The committee is in the middle of a study assessing various aspects of uranium mining and its conclusions are likely to be critical to the General Assembly's deliberations over whether a 29-year ban on uranium mining should be lifted, which could clear the way to opening a 119-million-pound deposit in Pittsylvania County. The committee's findings, due by year's end, will not include a recommendation on whether the moratorium should end.

In their filing with the NAS, the five groups said committee members should examine the potential that the nuclear power crisis in Japan after an earthquake and a tsunami will ultimately depress global uranium prices, potentially making the Coles Hill site unsustainable after mining has begun.

"Who deals with the situation if the uranium company starts mining and milling, becomes unprofitable, and abandons the site?" Deborah Lovelace, president of League of Individuals for the Environment Inc., wrote in a joint statement. "What will happen to our farming and water while waiting for a clean-up? Who pays for the contamination?"

The other groups seeking the Japan-inspired reviews are the Roanoke River Basin Association, Dan River Basin Association, Southside Concerned Citizens Inc. and the Blue Ridge Environmental Defense League.

Jennifer Walsh, a spokesman for the NAS, said Thursday the board's governing body and staff can expand the scope of a study to consider relevant developments. She said the decision is on a case-to-case basis, and declined to speculate if the devastation in Japan would be deemed relevant to the Virginia study.

A description of the study's scope includes a review of global and national uranium market trends.

An official with Virginia Uranium Inc. on Thursday described the request as a delay tactic by opponents of ending the moratorium.

"Certainly there has been an immediate impact on the spot price of uranium," said Patrick Wales, project manager for the company. "It's pretty early to tell what the long-term ramifications this may or may not have."

In Japan Thursday, emergency workers attempted to regain control of Japan's dangerously overheated nuclear complex to cool nuclear fuel rods at risk of spraying out more radiation. They used police water cannons, heavy-duty fire trucks and military helicopters dropping bucket after enormous bucket of water onto the stricken system.

Virginia Uranium has banked on growing global interest in nuclear power development, especially in China. In the U.S., nuclear power has also had a rebirth after Three Mile Island and Chernobyl dampened enthusiasm for nuclear energy investments.

The groups also asked the NAS panel to examine whether current federal laws are sufficient to safely monitor uranium milling and storage of waste products from the mining.

"The U.S. Nuclear Regulatory Commission's regulations of conventional uranium mills are antiquated and NRC has not had a single application for a conventional mill license for almost 25 years until very recently," wrote Andrew Lester of the Roanoke River Basin Association.

Experts Say No Radiation Worry For West Coast; Some Californians Call Hotline With Concerns (AP)

[Associated Press](#), March 18, 2011

The U.S. government and scientists insist that there's no threat of radiation from Japan endangering people on the West Coast — but that hasn't stopped roughly 1,000 worried Californians from flooding a state hotline.

"Radiation is one of those words that get everybody scared, like 'plague,'" said Dr. Jonathan Fielding, director of public health for Los Angeles County. "But we're 5,000 miles away."

Some computer models tracking the possible path of radioactive material from the stricken Japan nuclear reactors suggest it could cross the Pacific, swipe the Aleutian Islands and reach Southern California as early as Friday.

Even if particles waft to the U.S. coast, the amount will be so diluted that it will not pose any health risk. Wind, rain and salt spray will help clean the air over the vast ocean between Japan and the United States.

Nuclear experts say the main elements released are radioactive cesium and iodine. They can combine with the salt in sea water to become cesium chloride and sodium iodide, which are common and abundant elements and would readily dilute in the wide expanse of the Pacific, according to Steven Reese, director of the Radiation Center at Oregon State.

"It is certainly not a threat in terms of human health" added William H. Miller, a professor of nuclear engineering at the University of Missouri.

Earlier this week, the U.S. Environmental Protection Agency deployed extra radiation detectors throughout the country to allay public concerns. On Thursday, President Barack Obama said "harmful levels" of radiation from the damaged Japanese nuclear plant are not expected to reach the U.S.

The radiation stations will send real time data via satellite to EPA officials, who will make the data available to the public online. The monitors also contain two types of air filters that detect any radioactive particles and are mailed to EPA's data center in Alabama.

That information, as well as samples that numerous federal agencies are collecting on the ground and in the air in Japan, also will be sent to the Department of Energy's atmospheric radioactivity monitoring center in California, where teams are creating sophisticated computer models to predict how radioactive releases at Fukushima could spread into the atmosphere.

Inside Lawrence Livermore National Laboratory near San Francisco, scientists, engineers, and meteorological experts were analyzing those charts and maps to help policymakers predict where radioactive isotopes could travel.

"The models show what happens if the situation gets worse, if the winds change, or if it rains to predict what could happen," National Nuclear Security Administration spokesman Damien LaVera said. "The Nuclear Regulatory Commission has said they see no radiation at harmful levels reaching the United States, and we're not seeing anything that is inconsistent with that."

An arm of the United Nations earlier this week made a forecast of the possible trajectory of the radioactive fallout from Japan. The forecast only showed how it might move, but does not have information about radiation levels.

On Thursday, air quality regulators in Southern California said they have not detected increased levels of radiation.

"So far there's nothing out of the ordinary," said Sam Atwood of the South Coast Air Quality Management District.

The agency is continuing to monitor radiation levels at its three stations every hour and planned to post daily updates on its website.

In the unlikely event that the situation escalates, the California Emergency Management Agency would coordinate emergency response efforts with state public health officials and local officials.

"Worst-case scenario, there is no threat to public health in California," said the agency's acting secretary Mike Dayton.

The California Department of Public Health, which set up the hotline, also has its own network of 8 monitors sampling the air, water, and soil for harmful substances, including radiation, said agency spokesman Ron Owens.

Farther north in Alaska, people also have been asking where they can buy potassium iodide pills. Greg Wilkinson, a spokesman for the state Department of Health and Social Services, said the state doesn't monitor or track private inventories, but he also said it's seen no indication that potassium iodide will need to be taken by Alaskans in response to events in Japan.

Health officials throughout the western U.S. have said there's no need to take them.

Hanford Officials Say Work Must Focus On Innovation (TRICITYH)

By Annette Cary

[Tri-City Herald \(WA\)](#), March 18, 2011

Hanford will have to be innovative as it faces the likely loss of young workers in job cuts related to budget challenges, said Department of Energy officials Wednesday night in Richland.

About 100 people attended the Tri-Cities Hanford State of the Site meeting, with issues from layoffs to the Japan nuclear crisis to Hanford's safety culture discussed.

About 25 percent of the present Hanford work force could be gone by the time operations are ramping up at the Hanford vitrification plant, said Laura Hanses, a Hanford worker and member of the Hanford Advisory Board.

"Now is not the time to lay off but to continue to grow so in 2016 we have a high confidence in the work force," she said.

The most immediate cutback is a projected decrease of 1,600 jobs as federal economic stimulus money is spent by Oct. 1.

"We can't control a lot of what is happening now, but we have to start thinking outside of the box," said Jonathan "JD" Dowell, acting manager of the DOE Hanford Office of River Protection.

One possibility might be rehiring older and experienced workers to come back as mentors to new workers, he said.

Under the proposed Hanford budget for fiscal 2012, environmental cleanup work would stop at the Plutonium Finishing Plant. Retraining those workers would take six to nine months when work resumes, DOE said.

"This is shocking," given the cleanup progress that was made using economic stimulus money, said Gerald Pollet, executive director of Heart of America Northwest.

DOE has formed a team that will scrub every dollar in the budget, looking at money that could be made available for cleanup, with the Plutonium Finishing Plant a top priority, said Doug Shoop, deputy manager of the DOE Hanford Richland Operations Office.

Tom Carpenter, executive director of Hanford Challenge, asked whether DOE would be rethinking the robustness of the design of the Hanford vitrification plant, given the events in the last week in Japan.

Comparing issues such as heat decay in the fuel at the Japanese nuclear power reactor to the radioactive waste at the vitrification plant is an apples to oranges comparison, Dowell said. If power shut down at the vit plant, the heaters would cool, rather than create higher temperatures, he said.

But that said, DOE will be looking closely and thoroughly at what lessons can be learned from Japan, he said.

DOE continues to work on more testing of solutions to technical issues at the vitrification plant, he said. The same issues raised by whistleblower Walt Tamosaitis, a top manager who alleges he lost his position at the plant after raising safety issues, also were raised by Tamosaitis' counterparts at DOE and continue to be studied, Dowell said.

One man, who did not identify himself, said he was concerned that some workers in the Hanford tank farms are unwilling to bring up safety concerns or call for a stop to work they believe is unsafe for fear of losing their jobs.

"We still have management that thinks it knows better than anyone else," despite a Hanford-wide program that allows any worker to stop work if they believe there is a safety issue, said Keith Smith, a retired Hanford worker and member of the Hanford Advisory Board.

Washington River Protection Solutions, the contractor in charge of the tank farm, does not tolerate retaliation, said spokesman Jerry Holloway after the meeting. But while all concerns are investigated, the outcomes of the investigation do not always please everyone, he said.

Hanford Needs \$2.9 Billion In 2013 For Cleanup (AP)

Energy Department officials say the Hanford nuclear reservation will need \$2.9 billion in the 2013 budget to keep environmental cleanup work on schedule.

[Associated Press](#), March 18, 2011

Energy Department officials say the Hanford nuclear reservation will need \$2.9 billion in the 2013 budget to keep environmental cleanup work on schedule.

The Tri-City Herald reports Hanford officials are submitting a budget request for \$1.5 billion for the Office of River Protection and \$1.4 billion for the Richland Operations Office.

The \$2.9 billion compares with \$2.2 billion in this year's budget proposal and \$2.4 billion for next year.

INTERNATIONAL NUCLEAR NEWS:

Is There A Nuclear Plant In A Quake Zone Near You? (AOLNEWS)

By Lauren Frayer

[AOL News](#), March 18, 2011

Is There a Nuclear Plant in a Quake Zone Near You?

A staggering one-fifth of the world's nuclear power stations sit on potentially shaky ground in earthquake zones, raising the specter that what's happening in Japan could come to a community near you.

Two of the world's biggest nuclear plants located in seismically active areas are in California: the San Onofre plant near San Diego and Diablo Canyon near San Luis Obispo. They're among 88 of the world's 442 nuclear power stations built in earthquake zones, according to the U.N.'s International Atomic Energy Agency.

The San Onofre nuclear power plant near San Diego is in an earthquake zone in California. Eighty-eight of the world's 442 nuclear power stations are in quake zones. The most active quake zones in the U.S. are California's San Andreas Fault and the New Madrid seismic zone in Arkansas, Missouri and Tennessee -- potentially imperiling nuclear power stations in all those states.

The U.S. Nuclear Regulatory Commission has also determined America's top 10 nuclear sites at risk of quake damage. No. 1 is the Indian Point plant about 30 miles north of New York City, which supplies a quarter of the Big Apple's electricity. The chance of core damage from an earthquake there is 1 in 10,000 each year, according to NRC figures excerpted by MSNBC.

The rest of the top five:

2. Pilgrim 1, Plymouth, Mass.
3. Limerick 1 and 2, Limerick, Pa.
4. Sequoyah 1 and 2, Soddy-Daisy, Tenn.
5. Beaver Valley 1, Shippingport, Pa.

Virginia and Florida also have risky sites.

City councils across America have mandated increased safety checks at local nuclear power plants in the wake of Japan's nuclear crisis. On Wednesday, organizers called off an ill-timed media tour of the only U.S. nuclear reactor under construction, in Watts Bar, Tenn., to allow workers to "focus on events in Japan," a local newspaper, the Chattanooga Times Free Press, reported.

President Barack Obama has announced ambitious plans to revamp the U.S. energy system with more low-emission nuclear plants, to reduce carbon-dioxide emissions that are harmful to the climate and wean the U.S. off foreign oil. But those plans could be dealt a setback by what's happening in Japan, as people begin to wonder about whether the risks of nuclear power are worth the benefits.

"The Japan thing, it really makes you think twice about having the reactor in your own backyard," Kayla Hoteling, who lives near Missouri's Callaway County Nuclear Plant, told her local KSDK TV station.

Most U.S. nuclear power stations are designed to survive a 6.0- or 7.0-magnitude earthquake intact. But Japan's massive quake last Friday hit a magnitude of 9.0, triggering a tsunami that splashed over sea walls and knocked out operations at the Fukushima Dai-ichi nuclear plant on the country's northeast coast. Backup generators were also destroyed, ruining the plant's ability to cool its reactors.

In Japan, scientists have long warned about the precarious position of the country's nuclear plants.

"Of all the places in all the world where no one in their right mind would build scores of nuclear power plants, Japan would be pretty near the top of the list," Leuren Moret, a geoscientist who worked at California's Lawrence Livermore Nuclear Weapons Laboratory, warned in a 2004 op-ed in The Japan Times. "There is almost no geologic setting in the world more dangerous for nuclear power than Japan -- the third-ranked country in the world for nuclear reactors."

The top two nuclear-powered countries are the United States and France. The U.S. gets about 20 percent of its electricity from nuclear power.

Moret quoted Katsuhiko Ishibashi, a seismologist and professor at Japan's Kobe University, as describing the idea of building a nuclear station on a seismic fault as extremely dangerous.

Sponsored Links "It's like a kamikaze terrorist wrapped in bombs just waiting to explode," Ishibashi said.

The world may be changing its tune when it comes to the wisdom of nuclear power -- at least in earthquake-prone areas. China suspended approval for new nuclear power stations today and said it'll carry out checks on existing plants and those under construction. Forty percent of the total number of nuclear power stations being built around the world are in China, which needs to fuel its escalating energy needs.

Earlier this week, Germany and Switzerland

both said they'll reassess nuclear safety and possibly reduce their reliance on nuclear power, closing their oldest plants. Spain

also announced a review of all six of its nuclear stations.

Poles Uneasy On Nuclear Plant Plan, Government Says Safe (Reuters)

By Jones

[Reuters](#), March 18, 2011

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Japan Crisis Turns Germany, Italy Against Nuclear (REU)

By David Stamp And Stephen Jewkes

[Reuters](#), March 18, 2011

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Greenpeace: Quake-Prone Turkey Should Drop Nuclear (Reuters)

By Reuters

[Reuters](#), March 18, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

S. Africa Commits To Nuclear Power As China Halts Expansion (BSWK)

By Mike Cohen

[BusinessWeek](#), March 18, 2011

South Africa, the continent's largest electricity producer, approved a 20-year plan that will see an increased reliance on nuclear energy even as Japan battles to prevent a meltdown at one of its plants and China halts all atomic-power expansion plans.

South Africa needs to "diversify the energy mix" away from coal, Collins Chabane, a minister in the presidency, told reporters in Cape Town today. Under the so-called Integrated Resource Plan, 23 percent of newly generated power should come from nuclear sources by 2031. That compares with 2.1 percent in 2009, according to BP Plc statistics.

The decision comes amid fears of radiation leaks from a stricken atomic facility north of Tokyo, after a magnitude-9 earthquake and 7-meter (23-foot) tsunami hit Japan on March 11. China, building more nuclear reactors than any other nation, will stop approving new atomic plants "until safety and improved long-term development plans are cleared," it said.

Nuclear power has a role to play meeting those energy needs, Brian Dames, chief executive officer of state-owned power utility Eskom Holdings Ltd., said yesterday. "From a South African perspective, our geological conditions are distinctly different" to those in Japan, he said.

"We haven't chosen a technology" for the nuclear plants, South Africa's Nelisiwe Magubane, director-general of the energy department, told reporters today.

Independent Power Producers

"We're not in a position to say how many plants are going to be built," who will build them or what the cost will be, she said.

Under South Africa's latest energy plan, 15 percent of newly generated power will come from coal, 42 percent from renewable sources and 6 percent from gas.

In 2009, South Africa got 78.3 percent of its energy from coal, 19.2 percent from oil and 2.1 percent from nuclear power, according to BP. Hydroelectric power accounted for less than 1 percent of the nation's energy supply and natural gas none.

South Africa's Cabinet also today approved a draft law to establish an agency that will buy power from independent electricity producers. Eskom, based in Johannesburg, currently provides about 95 percent of South Africa's electricity.

The agency will facilitate "participation by the independent power producers," Energy Minister Dipuo Peters told reporters. "We have a policy in the country that says 30 percent of power in the country must be generated" by independent companies.

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Indonesia To Continue Plans For Nuclear Power (NYT)

By Aubrey Belford

[New York Times](#), March 18, 2011

While the world looks on with trepidation at the nuclear crisis touched off by the earthquake and tsunami in Japan, officials in Indonesia, one of the world's most seismically active countries, are pushing ahead with plans to build the country's first nuclear power plants.

The nuclear plans, which are still in the early stages, are part of an ambitious proposal by Indonesia, Southeast Asia's largest economy, to triple its electricity output by 2025 while weaning itself off imported oil and onto local coal, gas, and renewable and atomic energy. A 2006 decree by President Susilo Bambang Yudhoyono calls for 5 percent of electricity to come from nuclear and other "new energy and renewable energy" sources by then.

Proposals to build plants have been floated despite years of protests by environmentalists and community activists who argue that Indonesia, an archipelago that largely sits on a number of major fault lines, is too unstable to safely support nuclear power. As images from Japan's disaster dredge up memories of the 2004 Asian tsunami — in which nearly 170,000 Indonesians died — these concerns have only grown.

"Nuclear power plants are inherently dangerous. And if we build them in a country as prone to disasters as Indonesia, located on the Ring of Fire, the Pacific Rim, we're creating the potential for a tremendous disaster," said Arif Fiyanto, a climate and energy campaigner for Southeast Asia at the environmental group Greenpeace.

"Indonesia has probably worse disaster characteristics than Japan," Mr. Fiyanto said. "Japan has an excellent safety culture and an excellent early warning system. For the time being, Indonesia — we have to be honest — has been left far behind when it comes to this."

Deeply entrenched corruption and a culture of corner-cutting on other large projects are additional causes for concern, he said.

The most prominent project is a proposal to build two plants with a combined capacity of 18,000 megawatts by 2022 in the provincial government of Bangka-Belitung, between the islands of Sumatra and Borneo.

The government is seeking bids for a feasibility study at the site. Supporters say both sites are far from Indonesia's most active fault lines. Other sites have been suggested on the densely populated island of Java, as well as Madura, Kalimantan and Sulawesi.

Adiwardojo, the head of nuclear energy development at Indonesia's National Nuclear Energy Agency, said that concerns about a disaster like that of Japan's were misplaced because any plants Indonesia would use would have technology far more advanced than that of the four-decade-old reactors at the Fukushima plant in Japan.

Indonesia is carrying out its assessment of potential nuclear sites using standards and guidance from the International Atomic Energy Agency, Mr. Adiwardojo said.

"The important thing isn't that Indonesia is on the Ring of Fire or there are tsunamis, so we can't build," he said. "No, the important thing is that we fulfill the requirements."

Until the recent crisis, a number of governments in Southeast Asia — which, with the exception of one inactive plant in the Philippines, has no nuclear power — had been seriously reconsidering nuclear power to cope with growing populations and rising affluence.

Events in Japan, however, have led the government of Thailand to announce a freeze on developing the country's first nuclear power plants, while the Philippines has discarded plans to activate the shelved Bataan reactor. In Malaysia, the government has said it has not yet decided whether to proceed with its nuclear power plans. But in Vietnam, plans to build a series of reactors, the first of which is projected to go online by 2020, have not been disrupted.

In China, meanwhile, the government announced on Wednesday that it was suspending approvals of new nuclear power plants and stepping up inspections at its existing plants.

In Indonesia, the move toward nuclear power has hardly been relentless. The country looks almost certain to miss a target set by Parliament to have nuclear power online between 2015 and 2019.

Another flagship proposal to build a plant on Java's coastal Muria Peninsula, at the foot of a dormant volcano, has also lost steam in the face of local opposition — although Mr. Adiwardojo says it is still part of the government's plans.

Within the presidential advisory body tasked with planning Indonesia's power development, the National Energy Council, opinions are split.

Herman Darnel Ibrahim, a council member, said nuclear power needed to be studied more but was unfeasible in areas where strong community objection persisted. "To make the people happy, that's the bottom line of development," he said.

"If we build something and the people are not happy with it, they are worried, then maybe that development is meaningless," Mr. Ibrahim said.

But for the majority of those drafting Indonesia's energy future, nuclear power remains a necessity. "We have to consider our energy supply in the long term," said Herman Agustiawan, another council member. "Our population is 240 million. We have no choice."

Sharon LaFraniere contributed reporting from Beijing.

In India, Leaked Cable About Bribes Sets Off A Furor (NYT)

By Jim Yardley and Lydia Polgreen

[New York Times](#), March 18, 2011

NEW DELHI — India's Parliament erupted in outrage on Thursday over a report of an American diplomatic cable that described insiders in the governing Congress Party showing off chests of money and boasting of paying bribes to wavering lawmakers to secure passage of a critical 2008 vote on a landmark civilian nuclear deal between India and the United States.

The revelations, contained in a July 18, 2008, cable obtained by WikiLeaks, portray a large, all-out effort by the Congress Party to win a confidence vote in Parliament that could have toppled the wobbly coalition government and doomed the nuclear deal. According to the cable, written five days before the critical vote, a political assistant to an influential Congress Party lawmaker told a United States Embassy diplomat that one small regional political party had already been paid millions of dollars in bribes for support.

The aide also "showed the Embassy employee two chests containing cash and said that around Rupees 50-60 crore (about \$25 million) was lying around the house for use as pay-offs," according to the cable. Another Congress Party member told an American diplomat that Kamal Nath, a government minister, "is also helping to spread the largesse" and was offering jet airplanes as enticements.

"Formerly, he could only offer small planes as bribes," the unnamed Congress Party member told the American diplomat, according to the cable, which was reported in Thursday's edition of *The Hindu*, an English-language Indian newspaper.

The uproar comes as the Congress Party has been besieged for months over allegations of corruption. Prime Minister Manmohan Singh, known for his integrity, has been hammered by opposition leaders for failing to prevent a telecom scandal that may have cost India's treasury as much as \$40 billion. A parliamentary committee is now investigating the telecom scandal, and Mr. Singh has defended himself in remarks made to Parliament.

Now the nuclear vote controversy has again inflamed criticism of the government. "It is clear now that this government survived on the strength of a political sin," Arun Jaitley, a senior leader of the opposition Bharatiya Janata Party, or B.J.P., said Thursday on the floor of the upper house of Parliament.

The 2008 nuclear deal is regarded as a crowning achievement of Mr. Singh's tenure and is credited with improving the growing partnership between the United States and India, even as technical hurdles remain. Mr. Singh has described nuclear power as a critical component of expanding India's power supply, though he has called for safety inspections in the wake of the catastrophe in Japan.

But at the time of confidence vote, the nuclear deal was an angrily contested political issue that almost fractured the government. Both the Congress Party and the rival B.J.P. maneuvered frantically over the vote, wooing tiny political parties, most of them regional organizations with no national agenda.

According to the leaked American cable, the leader of the small party at the center of the bribery allegations, the Rashtriya Lok Dal, demanded that Congress rename an airport in Lucknow, the capital of India's most populous state, after his father in exchange for his support. The government apparently agreed, sending a notification that the airport would be renamed. Despite this and the alleged cash payments described in the cable, the party ultimately voted against the Congress Party in the confidence vote.

From the outset, corruption allegations have swirled around the issue. During an angry floor debate before the 2008 vote, B.J.P. lawmakers waved wads of cash they said were bribes offered by the Congress Party. A parliamentary committee led by a senior Congress leader later investigated the bribery allegations but concluded that there was not enough evidence to support the charges.

Mahesh Rangarajan, a political analyst in New Delhi, said Thursday's revelations would contribute to an erosion of confidence in the Congress Party, though he predicted the political damage would be limited, given the longstanding suspicions about the issue.

"WikiLeaks confirms what everyone expected," Mr. Rangarajan said. "There is nothing earth-shattering in the revelation. But, of course, it is damaging to the Congress. This season of scams seems to continue. Every week, every month, something new happens."

Elizabeth Fitzsimmons, spokeswoman for the United States Embassy in New Delhi, declined to comment on the cable, noting that the State Department "does not comment on material, including classified documents, that may have been leaked." Ms. Fitzsimmons reiterated that the United States considered India one of its most important allies.

A spokesman for Mr. Singh declined to comment on the issue. But on the floor of Parliament, India's finance minister, Pranab Mukherjee, testily rebuked opposition lawmakers as they tried to shout him down and said it was impossible to confirm or deny the claims made in the cable because the author was protected by diplomatic immunity.

"This piece of information is not admissible in any court of law," Mr. Mukherjee said.

The Congress Party political assistant described in the cable as showing off the boxes of cash denied ever meeting an American diplomat.

"No, I did not meet him," the political assistant, Nachiketa Kapur, told NDTV, an all-news channel. "There was no cash. I never discussed anything related to the vote of confidence."

Publication Of WikiLeaks Cable Leads To Calls For Indian Prime Minister's Resignation (WP)

By Rama Lakshmi

[Washington Post](#), March 18, 2011

NEW DELHI — A WikiLeaks cable suggesting Indian government payoffs to lawmakers to secure support for a controversial nuclear deal in 2008 rocked the parliament Thursday, when opposition parties demanded the resignation of Prime Minister Manmohan Singh.

The leaked cables, published in The Hindu newspaper, claimed that Singh's government used cash to win a crucial vote in parliament in 2008 following a debate on the controversial civilian nuclear agreement between India and the United States. The cable quoted an American diplomat, Steven White, saying a Congress Party aide showed an embassy staffer the cash available for the payoffs.

The newspaper report created an uproar in parliament, and angry opposition leaders said the government had no right to stay in power any longer.

Sushma Swaraj, a lawmaker with the opposition Bharatiya Janata Party (BJP), said the report brought "shame to the nation." Both houses of parliament were adjourned amid a din of shouting.

The WikiLeaks disclosure is the latest corruption charge to besiege Singh's government in the last six months, implicating several officials.

The nuclear deal with the United States was bitterly opposed by several parties, including the Communist members in Singh's coalition government. To survive after several Communist Party members withdrew their support, Singh had to face a crucial vote of confidence.

Finance Minister Pranab Mukherjee, responding to the attacks in parliament, described the leaked cable as "a correspondence between a sovereign government and its mission abroad, and it enjoys diplomatic immunity. Therefore, it is not possible for the government to either confirm it or deny it."

Arun Jaitley of the BJP countered by pointing his finger at Mukherjee and saying, "You are guilty of a cover-up. Diplomatic immunity may be available to U.S. diplomats, but the same immunity can't be used by Indians in India."

The cable, dated July 17, 2008, was sent by White, charge d'affaires of the U.S. Embassy in New Delhi, and titled, "Political bargaining continues prior to key vote in parliament." It said that a Congress Party political aide named Nachiketa Kapur told an embassy staff member that about \$ 2.5 million was paid to opposition lawmakers in return for their votes.

The cable said Kapur claimed that "money was not an issue at all, but the crucial thing was to ensure that those who took the money would vote for the government." According to the cable, Kapur then showed the embassy employee "two chests containing cash . . . for use as pay-offs." The cable said the chests held about \$11 million.

In an interview with the Times Now news television channel, Kapur said, "I vehemently deny this malicious allegation."

Rajiv Shukla, a Congress Party lawmaker, defended the government in an interview. "Quoting WikiLeaks in Indian parliament is ridiculous, frivolous and trivial," he said. "No government in the world recognizes WikiLeaks. The allegation has got no basis.

"I dare the opposition leaders to say that they treat every word of WikiLeaks as the holy scriptures, the Bhagwat Gita, Bible and Koran," Shukla said. "They will not because tomorrow WikiLeaks can leak something against them, too."

Shukla pointed out that the lawmakers mentioned in the cable as Kapur's cash recipients had eventually voted against Singh in the parliament vote. "This demolishes the allegation," he said.

In June 2008, three opposition lawmakers also had displayed wads of cash in parliament and said they were offered money to abstain from voting. Singh's coalition won the vote of confidence, 275 to 256.

The Hindu newspaper published another WikiLeaks cable on Tuesday that said an outspoken, pro-Iranian petroleum minister, Mani Shankar Aiyar, was replaced by a pro-American minister in 2006, ahead of President George W. Bush's visit to India. This also embarrassed Singh in parliament on Wednesday.

New WikiLeaks Cables Roil New Delhi (WSJ)

By Vibhuti Agarwal

[Wall Street Journal](#), March 18, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

Singh Faces WikiLeaks Cable Claims (FT)

By James Lamont

[Financial Times](#), March 18, 2011

Full-text stories from the Financial Times are available to FT subscribers by clicking the link.

Malaysia: Ship With Illegal Cargo Was Iran-bound (AP)

[Associated Press](#), March 18, 2011

KUALA LUMPUR, Malaysia – Malaysian police say a ship smuggling equipment that possibly could be used to make nuclear weapons had been headed to Iran.

National police chief Ismail Omar told The Associated Press on Friday the Malaysian-registered ship was traveling from China to Tehran.

The cargo was seized two weeks ago at a central Malaysia harbor. Authorities are investigating whether the equipment could be used to make nuclear weapons.

The Sun newspaper reported Friday the equipment was declared as two agitating mixer machines and a stainless steel storage tank. But investigations showed they required a special permit under a law Malaysia passed last year to curb the trafficking of nuclear weapon components.

The Sun did not cite any sources. It was first to report on the cargo's seizure Thursday.

From: [LIA07 Hoc](#)
Subject: USNRC Earthquake-Tsunami Update - 1800 EDT (March 18, 2011)
Date: Friday, March 18, 2011 6:36:57 PM
Attachments: [USNRC Earthquake-Tsunami Update.031811.1800EDT.pdf](#)

Attached, please find an 1800 EDT March 18, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

-Sara

Sara K. Mroz

Communications and Outreach

Office of Nuclear Security and Incident Response

US Nuclear Regulatory Commission

Sara.Mroz@nrc.gov

LIA07.HOC@nrc.gov (Operations Center)

LII/25

Matakas, Gina

From: Jackson, Donald
Sent: Friday, March 18, 2011 7:49 AM
To: Dean, Bill; Lew, David; Wilson, Peter; Roberts, Darrell; Collins, Daniel; Lorson, Raymond; Baker, Pamela; Walker, Tracy; Clifford, James; Miller, Chris; Weerakkody, Sunil
Cc: Screnci, Diane; Sheehan, Neil; Trapp, James; McNamara, Nancy; Tifft, Doug; Hansell, Samuel; Hinson, Felicia; McKinley, Raymond; Rogge, John; Jackson, Donald
Subject: March 17, 2011- 0730- CA Briefing On Japan Reactor Accidents
Attachments: NRC Status Update 3-18 11--0600am.pdf

Confusion over briefing time....so one did not occur at 0730 as scheduled. I have attached the latest written update. If a briefing occurs at 9am....I will provide an update.

VR

Don Jackson

Chief- Region I DRP PB5
(610) 337-5306

III / 76

From: PMT03 Hoc
Sent: Friday, March 18, 2011 1:49 PM
To: PMT07 Hoc
Subject: FW: For chronology

From: Hoc, PMT12
Sent: Friday, March 18, 2011 1:32 PM
To: PMT03 Hoc
Subject: For chronology

Please add to the chronology.

Talked with DOE/NIT (Bob Gerald) to point out that an item in the DOE SITREP report was in conflict with an item that NRC has the lead on. The DOE SITREP said that, "Based on measurements from March 17 flights, the Department of Energy (DOE) assesses Japan's 12-mile (20-km) evacuation and 18-mile (30-km) shelter areas are adequate." I asked DOE to remove the information and if they had to say something about protective actions that they should refer to the NRC 50 mile evacuation zone.

III/17

Satorius, Mark

From: Pederson, Cynthia
Sent: Friday, March 18, 2011 7:41 AM
To: All R3 Users
Subject: FW: USNRC Earthquake-Tsunami Update.031811.0600EDT
Attachments: NRC Status Update 3-18 11--0600am.pdf

Please note that this information is "Official Use Only" and is only being shared within the federal family

This includes a listing of how the NRC sees the priorities.

From: LIA07 Hoc
Sent: Friday, March 18, 2011 5:14 AM
To: LIA07 Hoc
Subject: USNRC Earthquake-Tsunami Update.031811.0600EDT

Attached, please find a 0600 EDT from March 18 situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 11, 2011.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

Thank you,

Rebecca Clinton
EBT Coordinator

III/78

1025-ESNIE
Dean, Bill

From: OST05 Hoc
Sent: Friday, March 18, 2011 9:24 AM
To: Piccone, Josephine; Jackson, Deborah; Barker, Allan; Browder, Rachel; Erickson, Randy; Logaras, Haral; Maier, Bill; McNamara, Nancy; Tifft, Doug; Trojanowski, Robert; Woodruff, Gena; Easson, Stuart; Flannery, Cindy; LIA04 Hoc; Lukes, Kim; Maupin, Cardelia; Noonan, Amanda; OST05 Hoc; Rautzen, William; Rivera, Alison; Ryan, Michelle; Turtill, Richard; Virgilio, Rosetta; Collins, Elmo; Dean, Bill; Heck, Jared; McCree, Victor; Pederson, Cynthia; Satorius, Mark
Subject: FW: USNRC Earthquake-Tsunami Update.031811.0600EDT
Attachments: NRC Status Update 3-18 11--0600am.pdf

FYI

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Attached, please find a 0600 EDT from March 18 situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 11, 2011.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

Kim Lukes
State Liaison – Liaison Team
Incident Response Center

From: PMT03 Hoc
Sent: Friday, March 18, 2011 2:34 PM
To: PMT07 Hoc
Subject: Friday AI log.doc
Attachments: Friday AI log.doc

III/10

PMTR Action Item Registry

Friday, March 18, 2011

Action Item	Assignee	Due
1. Develop source term for Worst case-4 unit scenario	Bruce	
2. Coordinate with Chairman Jaczko before release to DOE	John	
3. Review NARAC's assessment for "Super Core" scenario, when received	Bruce	TBD
4. Update PMT Chronology log for shift events	Duane	3/18, 14:30
5. Share modeling results and dose rate data with UK	John	
6. Update SITREP for shift events	Kathryn	3/18, 14:30
7. Provide explanation of assumptions for source term for "Super Core" scenario (see Tasker record#1525)	Bruce	
8. Provide explanation of assumptions for source term for Worst-case-4 unit" scenario (see Tasker record#1527)	Bruce	
9. Coordinate with DOE to assess their published PAR. DOE differs from NRC recommendations and need unified message	Kathryn	
10. Evaluate usefulness of actual data from Japanese Ministry for measured dose rates: a. If useful, report how it will be used b. Determine/recommend if data will be released	Bruce John	
11. Contact CMT for updated AMS data (no current data has been received today)	Kathryn	
12. Report status of coordination with DOE for dose assessment (re: Tom Agastino call to SECY)	John	
13. Continue to work with R-IV for Diablo Canyon Iodine-131 readings	Bruce	
14.		
15.		

From: OST02 HOC
Sent: Friday, March 18, 2011 2:29 PM
To: PMT03 Hoc; PMT07 Hoc; Hoc, PMT12
Subject: Japanese dose measurements
Attachments: Document.pdf

III/81

環境放射能水準調査結果

JST

From J. SCHWARTZMAN

→ Japan Ministry METI
Actual,
Measured
DOSE RATES

H23.3.17 19:00

(μ Sv/h)

	Prefecture(City)	16/03/2011								17/03/2011							
		17-18	18-19	19-20	20-21	21-22	22-23	23-24	0-1	1-2	2-3	3-4	4-5	5-6	6-7		
1	Hokkaido(Sapporo)	0.027	0.028	0.027	0.028	0.027	0.028	0.028	0.028	0.028	0.028	0.029	0.031	0.031	0.030		
2	Aomori(Aomori)	0.042	0.050	0.050	0.032	0.026	0.024	0.028	0.026	0.022	0.020	0.026	0.023	0.021	0.020		
3	Iwate(Morioka)	0.039	0.036	0.034	0.034	0.034	0.033	0.034	0.036	0.041	0.045	0.048	0.043	0.036	0.033		
4	Miyagi(Sendai)	0.155	0.153	0.153	0.153	0.151	0.149	0.148	0.147	0.146	0.145	0.144	0.143	0.141	0.140		
5	Akita(Akita)	0.035	0.036	0.037	0.042	0.040	0.038	0.039	0.042	0.044	0.048	0.047	0.040	0.036	0.034		
6	Yamagata(Yamagata)	0.056	0.052	0.053	0.052	0.055	0.053	0.051	0.050	0.050	0.050	0.054	0.056	0.051	0.055		
7	Fukushima(Futaba)																
8	Ibaraki(Mito)	0.248	0.244	0.241	0.239	0.237	0.235	0.233	0.232	0.231	0.230	0.228	0.226	0.225	0.225		
9	Tsushima(Utsunomiya)	0.214	0.213	0.212	0.212	0.211	0.210	0.208	0.208	0.207	0.205	0.203	0.203	0.201	0.200		
10	Gunma(Maebashi)	0.110	0.109	0.109	0.109	0.108	0.108	0.107	0.106	0.106	0.105	0.104	0.104	0.103	0.102		
11	Saitama(Saitama)	0.086	0.088	0.087	0.087	0.087	0.087	0.087	0.087	0.086	0.086	0.086	0.086	0.085	0.085		
12	Chiba(Ishihara)	0.041	0.041	0.040	0.040	0.041	0.040	0.040	0.040	0.039	0.039	0.039	0.039	0.038	0.038		
13	Tokyo(Chinjyuku)	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.052	0.052	0.052	0.052	0.052		
14	Kanagawa(Chigasaki)	0.056	0.056	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.054	0.054	0.054	0.054		
15	Niigata(Niigata)	0.047	0.048	0.048	0.047	0.047	0.047	0.047	0.047	0.047	0.048	0.048	0.048	0.048	0.047		
16	Toyama(Imizu)	0.051	0.055	0.052	0.050	0.049	0.050	0.055	0.056	0.051	0.050	0.049	0.051	0.055	0.051		
17	Ichikawa(Kanazawa)	0.051	0.050	0.048	0.047	0.048	0.051	0.053	0.052	0.049	0.048	0.047	0.047	0.047	0.048		
18	Fukui(Fukui)	0.046	0.049	0.049	0.047	0.046	0.048	0.049	0.051	0.048	0.048	0.046	0.049	0.052	0.048		
19	Yamanashi(Kofu)	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.044	0.044	0.044		
20	Nagano(Nagano)	0.087	0.087	0.089	0.088	0.088	0.089	0.087	0.086	0.086	0.085	0.085	0.085	0.085	0.085		
21	Gifu(Kakumihara)	0.061	0.061	0.061	0.061	0.061	0.061	0.060	0.061	0.061	0.061	0.061	0.061	0.061	0.061		
22	Shizuoka(Shizuoka)	0.042	0.040	0.040	0.040	0.040	0.040	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039		
23	Aichi(Nagoya)	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.039	0.039	0.039	0.039		
24	Mie(Yokkaichi)	0.053	0.055	0.057	0.056	0.060	0.057	0.055	0.052	0.052	0.056	0.052	0.049	0.048	0.047		
25	Shiga(Otsu)	0.035	0.034	0.034	0.034	0.036	0.034	0.033	0.033	0.033	0.032	0.033	0.033	0.033	0.033		
26	Kyoto(Kyoto)	0.041	0.039	0.038	0.038	0.038	0.038	0.038	0.040	0.039	0.038	0.038	0.038	0.038	0.038		
27	Osaka(Osaka)	0.044	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.042	0.042	0.043	0.043		
28	Hyogo(Kobe)	0.038	0.037	0.037	0.038	0.038	0.038	0.039	0.038	0.038	0.037	0.036	0.037	0.037	0.037		
29	Nara(Nara)	0.047	0.047	0.047	0.047	0.048	0.047	0.047	0.048	0.047	0.047	0.047	0.047	0.047	0.047		
30	Wakayama(Wakayama)	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.031	0.031	0.032	0.032	0.032	0.032		
31	Tottori(Tohhaku)	0.075	0.074	0.072	0.067	0.064	0.063	0.063	0.063	0.063	0.064	0.069	0.071	0.071	0.069		
32	Shimane(Matsue)	0.038	0.037	0.036	0.036	0.036	0.036	0.036	0.036	0.037	0.037	0.038	0.038	0.037	0.038		
33	Okayama(Okayama)	0.049	0.049	0.048	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.050	0.050	0.050	0.051		
34	Hiroshima(Hiroshima)	0.046	0.046	0.046	0.047	0.047	0.048	0.048	0.049	0.049	0.049	0.049	0.050	0.049	0.049		
35	Yamaguchi(Yamaguchi)	0.092	0.092	0.092	0.093	0.093	0.094	0.095	0.096	0.096	0.095	0.096	0.098	0.099	0.098		
36	Iokushima(Tokushima)	0.040	0.040	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.037	0.038	0.038		
37	Kagawa(Takamatsu)	0.053	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052		
38	Ehime(Matsuyama)	0.047	0.048	0.048	0.047	0.047	0.048	0.049	0.050	0.049	0.050	0.050	0.050	0.051	0.050		
39	Kochi(Kochi)	0.024	0.024	0.025	0.025	0.025	0.025	0.025	0.026	0.026	0.026	0.026	0.026	0.027	0.027		
40	Fukuoka(Dazaifu)	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.037	0.037	0.037	0.037	0.037	0.037	0.036		
41	Shiga(Shiga)	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.041	0.041	0.041	0.041	0.041	0.041	0.040		
42	Nagasaki(Ohmura)	0.029	0.029	0.029	0.029	0.030	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029		
43	Kumamoto(Uto)	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.028	0.028	0.028	0.027	0.027	0.027	0.027		
44	Oita(Oita)	0.050	0.050	0.049	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050		
45	Miyazaki(Miyazaki)	0.026	0.026	0.026	0.026	0.026	0.027	0.027	0.027	0.026	0.027	0.027	0.027	0.027	0.026		
46	Kagoshima(Kagoshima)	0.034	0.035	0.034	0.034	0.034	0.034	0.035	0.036	0.036	0.035	0.035	0.035	0.035	0.034		
47	Okinawa(Uruma)	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021		

*Blanks are caused by device clearance, but the area was measured by Monitoring Posts.

*These dates are estimated as 1μ Gy/h = 1μ Sv/h.

*The table was made by MEXT, based on the reports from prefectures.

→ Highest
→ Tokyo

WHAT DOES THIS TELL US.

環境放射能水準調査結果

H23.3.17 18:00

(μSv/h)

	Prefecture(City)	17/03/2011										Range of past usual figures
		7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	
1	Hokkaido(Sapporo)	0.030	0.029	0.028	0.028	0.031	0.035	0.033	0.031	0.031	0.029	0.02~0.105
2	Aomori(Aomori)	0.020	0.020	0.020	0.020	0.022	0.027	0.033	0.033	0.029	0.026	0.017~0.102
3	Iwate(Morioka)	0.032	0.031	0.031	0.031	0.030	0.030	0.030	0.029	0.030	0.030	0.014~0.084
4	Miyagi(Sendai)	0.131		0.138	0.137	0.139	0.143	0.141	0.141	0.141	0.141	0.0176~0.0513
5	Akita(Akita)	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.036	0.041	0.044	0.022~0.086
6	Yamagata(Yamagata)	0.054	0.051	0.052	0.053	0.050	0.052	0.052	0.047	0.046	0.047	0.025~0.082
7	Fukushima(Futaba)											0.037~0.071
8	Ibaraki(Mito)	0.224	0.222	0.218	0.217	0.215	0.214	0.212	0.212	0.210	0.209	0.036~0.056
9	Toshigi(Utsunomiya)	0.199	0.197	0.195	0.194	0.193	0.192	0.191	0.190	0.189	0.189	0.030~0.067
10	Gunma(Maebashi)	0.101	0.101	0.100	0.099	0.099	0.099	0.098	0.097	0.096		0.017~0.045
11	Saitama(Saitama)	0.065	0.064	0.064	0.064	0.064	0.063	0.063	0.063	0.063	0.062	0.031~0.080
12	Chiba(Ishihara)	0.038	0.038	0.038	0.038	0.038	0.037	0.038	0.038	0.038	0.037	0.022~0.044
13	Tokyo(Chinjyuku)	0.052	0.052	0.052	0.051	0.051	0.051	0.051	0.051	0.050	0.050	0.028~0.079
14	Kanagawa(Chigasaki)	0.054	0.054	0.053	0.053	0.053	0.053			0.052	0.053	0.035~0.069
15	Niigata(Niigata)	0.047	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.031~0.153
16	Toyama(Imizu)	0.048	0.049	0.050	0.049	0.048	0.049	0.049	0.050	0.050	0.052	0.029~0.147
17	Ichikawa(Kanazawa)	0.049	0.047	0.047	0.050	0.048	0.048	0.049	0.048	0.050	0.050	0.0291~0.1275
18	Fukui(Fukui)	0.046	0.050	0.051	0.049	0.049	0.048	0.046	0.046	0.045	0.050	0.032~0.097
19	Yamanashi(Kofu)	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.040~0.064
20	Nagano(Nagano)	0.083	0.082	0.081	0.080	0.079	0.078	0.078	0.078	0.077	0.077	0.0299~0.0974
21	Gifu(Kakumihara)	0.061	0.061	0.060	0.061	0.060	0.060	0.060	0.061	0.060	0.060	0.057~0.110
22	Shizuoka(Shizuoka)	0.038	0.039	0.043	0.044	0.044	0.044	0.044	0.044	0.044	0.043	0.0281~0.0765
23	Aichi(Nagoya)	0.039	0.039	0.039	0.040	0.040	0.039	0.039	0.039	0.039	0.039	0.035~0.074
24	Mie(Yokkaichi)	0.046	0.045	0.045	0.045	0.045	0.046	0.046	0.047	0.049	0.049	0.0416~0.0789
25	Shiga(Otsu)	0.033	0.033	0.033	0.033	0.033	0.033	0.038	0.036	0.034	0.033	0.031~0.061
26	Kyoto(Kyoto)	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.041	0.041	0.039	0.033~0.087
27	Osaka(Osaka)	0.043	0.042	0.042	0.043	0.043	0.043	0.043	0.046	0.044	0.043	0.042~0.061
28	Hyogo(Kobe)	0.037	0.036	0.036	0.036	0.037	0.038	0.039	0.039	0.040	0.039	0.035~0.076
29	Nara(Nara)	0.047	0.047	0.047	0.047	0.047	0.048	0.048	0.048	0.048	0.048	0.046~0.08
30	Wakayama(Wakayama)	0.032	0.031	0.031	0.031	0.031	0.031	0.032	0.032	0.035	0.034	0.031~0.056
31	Tottori(Tohhaku)	0.076	0.076	0.079	0.083	0.078	0.066	0.061	0.062	0.063	0.061	0.036~0.11
32	Shimane(Matsue)	0.042	0.043	0.039	0.041	0.042	0.043	0.039	0.037	0.036	0.036	0.033~0.079
33	Okayama(Okayama)	0.051	0.051	0.049	0.048	0.048	0.048	0.049	0.053	0.051	0.049	0.043~0.104
34	Hiroshima(Hiroshima)	0.049	0.049	0.048	0.048	0.048	0.047	0.049	0.049	0.048	0.047	0.035~0.069
35	Yamaguchi(Yamaguchi)	0.096	0.094	0.092	0.092	0.092	0.092	0.092	0.092	0.094	0.099	0.084~0.128
36	Yokushima(Tokushima)	0.038	0.038	0.037	0.037	0.037	0.037	0.037	0.037	0.039	0.045	0.037~0.067
37	Kagawa(Takamatsu)	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.053	0.055	0.054	0.051~0.077
38	Ehime(Matsuyama)	0.050	0.049	0.048	0.047	0.047	0.047	0.047	0.047	0.047	0.048	0.045~0.074
39	Kochi(Kochi)	0.028	0.027	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.023~0.076
40	Fukuoka(Dazaifu)	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.034~0.079
41	Shiga(Shiga)	0.040	0.040	0.040	0.039	0.039	0.039	0.039	0.039	0.040	0.039	0.037~0.086
42	Nagasaki(Ohmura)	0.028	0.028	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.028	0.027~0.069
43	Kumamoto(Uto)	0.027	0.027	0.027	0.027	0.028	0.028	0.028	0.027	0.027	0.027	0.021~0.067
44	Oita(Oita)	0.050	0.050	0.049	0.050	0.050	0.049	0.049	0.049	0.049	0.049	0.048~0.085
45	Miyazaki(Miyazaki)	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.0243~0.0664
46	Kagoshima(Kagoshima)	0.034	0.034	0.034	0.034	0.034	0.034	0.033	0.034	0.033	0.034	0.0306~0.0943
47	Okinawa(Uruma)	0.021	0.021	0.021	0.021	0.021	0.021	0.022	0.021	0.021	0.021	0.0133~0.0575

*Blanks are caused by device clearance, but the area was measured by Monitoring Posts.

*These dates are estimated as 1 μGy/h=1 μSv/h.

*The table was made by MEXT, based on the reports from prefectures.

環境放射能水準調査結果

H23.3.18 19:00

(μ Sv/h(マイクロシーベルト毎時))

	都道府県名	3月17日							3月18日						
		17-18	18-19	19-20	20-21	21-22	22-23	23-24	0-1	1-2	2-3	3-4	4-5	5-6	6-7
1	北海道(札幌市)	0.027	0.028	0.029	0.028	0.027	0.028	0.031	0.030	0.028	0.028	0.029	0.028	0.028	0.027
2	青森県(青森市)	0.024	0.022	0.021	0.021	0.020	0.020	0.019	0.019	0.020	0.020	0.019	0.019	0.019	0.019
3	岩手県(盛岡市)	0.031	0.033	0.031	0.031	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.031
4	宮城県(仙台市)														
5	秋田県(秋田市)	0.039	0.035	0.034	0.034	0.036	0.035	0.034	0.033	0.033	0.033	0.033	0.034	0.033	0.033
6	山形県(山形市)	0.049	0.052	0.047	0.049	0.050	0.047	0.043	0.041	0.041	0.040	0.040	0.040	0.040	0.040
7	福島県(双葉郡)														
8	茨城県(水戸市)	0.209	0.207	0.207	0.208	0.205	0.205	0.204	0.203	0.202	0.201	0.201	0.199	0.199	0.198
9	栃木県(宇都宮市)	0.188	0.186	0.187	0.185	0.185	0.183	0.182	0.182	0.181	0.180	0.179	0.178	0.177	0.175
10	群馬県(前橋市)	0.098	0.095	0.095	0.095	0.094	0.093	0.093	0.092	0.092	0.091	0.091	0.090	0.090	0.089
11	埼玉県(さいたま市)	0.063				0.063	0.063	0.062	0.061	0.061	0.061	0.061	0.061	0.060	0.060
12	千葉県(市原市)	0.037	0.037	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036
13	東京都(新宿区)	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.049	0.050	0.049	0.049	0.049
14	神奈川県(茅ヶ崎市)	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.051	0.051	0.052	0.051
15	新潟県(新潟市)	0.047	0.046	0.046	0.046	0.046	0.046	0.047	0.047	0.050	0.049	0.047	0.047	0.046	0.046
16	富山県(射水市)	0.053	0.049	0.048	0.051	0.051	0.051	0.049	0.048	0.047	0.046	0.046	0.046	0.046	0.046
17	石川県(金沢市)	0.049	0.048	0.047	0.049	0.048	0.047	0.047	0.047	0.047	0.047	0.046	0.046	0.046	0.046
18	福井県(福井市)	0.050	0.047	0.046	0.047	0.050	0.047	0.044	0.044	0.044	0.044	0.044	0.044	0.043	0.043
19	山梨県(甲府市)	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
20	長野県(長野市)	0.077	0.077	0.078	0.078	0.078	0.079	0.079	0.079	0.079	0.080	0.078	0.077	0.076	0.075
21	岐阜県(各務原市)	0.060	0.060	0.060	0.060	0.060	0.061	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060
22	静岡県(静岡市)	0.040	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038
23	愛知県(名古屋市)	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
24	三重県(四日市市)	0.051	0.050	0.049	0.048	0.048	0.048	0.049	0.048	0.049	0.047	0.046	0.045	0.045	0.045
25	滋賀県(大津市)	0.033	0.033	0.034	0.033	0.032	0.032	0.036	0.036	0.034	0.033	0.032	0.032	0.032	0.032
26	京都府(京都市)	0.038	0.038	0.038	0.039	0.038	0.038	0.038	0.041	0.039	0.038	0.038	0.038	0.038	0.037
27	大阪府(大阪市)	0.043	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.043	0.042	0.042	0.042	0.042
28	兵庫県(神戸市)	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037
29	奈良県(奈良市)	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047
30	和歌山県(和歌山市)	0.033	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.031
31	鳥取県(東伯郡)	0.059	0.058	0.058	0.057	0.063	0.060	0.058	0.057	0.058	0.058	0.057	0.057	0.057	0.058
32	島根県(松江市)	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.037	0.038	0.039
33	岡山県(岡山市)	0.049	0.048	0.048	0.049	0.049	0.049	0.049	0.049	0.050	0.050	0.050	0.050	0.050	0.051
34	広島県(広島市)	0.046	0.047	0.047	0.046	0.047	0.047	0.048	0.048	0.050	0.050	0.050	0.051	0.051	0.051
35	山口県(山口市)	0.102	0.098	0.093	0.093	0.093	0.094	0.094	0.095	0.095	0.096	0.096	0.096	0.096	0.097
36	徳島県(徳島市)	0.042	0.040	0.039	0.038	0.038	0.038	0.037	0.038	0.038	0.038	0.038	0.038	0.038	0.038
37	香川県(高松市)	0.053	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.053
38	愛媛県(松山市)	0.049	0.050	0.048	0.048	0.048	0.048	0.049	0.049	0.049	0.050	0.050	0.051	0.050	0.050
39	高知県(高知市)	0.026	0.028	0.025	0.025	0.025	0.025	0.025	0.025	0.026	0.026	0.026	0.026	0.026	0.027
40	福岡県(太宰府市)	0.036	0.036	0.036	0.036	0.036	0.037	0.037	0.037	0.037	0.038	0.037	0.037	0.037	0.038
41	佐賀県(佐賀市)	0.039	0.040	0.040	0.040	0.040	0.040	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041
42	長崎県(大村市)	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.030
43	熊本県(宇土市)	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.028	0.028	0.028	0.028	0.028
44	大分県(大分市)	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.050	0.050	0.050	0.051	0.051
45	宮崎県(宮崎市)	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.027	0.027	0.027	0.027	0.027	0.027	0.027
46	鹿児島県(鹿児島市)	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.035	0.035	0.035	0.035	0.035
47	沖縄県(うるま市)	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021

*宮城県では、測定実施場所が倒壊の危険性があるため測定不能。宮城県内のモニタリング結果は、宮城県原子力安全対策室HPで公開

*福島県では、モニタリングポスト周辺の空間線量が高いことから測定が困難であるが、その分のデータはモニタリングカーを用いて測定。

別資料の「福島第一原子力発電所の20km以遠のモニタリング結果について(3月18日19:00現在)」参照。

*空間は機器点検等のための欠測等

*本データは、1 μ Gy/h(マイクログレイ毎時)=1 μ Sv/h(マイクロシーベルト毎時)と換算して算出

*文部科学省が各都道府県等からの報告に基づき作成

環境放射能水準調査結果

H23.3.18 19:00

(μSv/h(マイクロシーベルト毎時))

	都道府県名	3月18日										過去の平常値の範囲
		7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	
1	北海道(札幌市)	0.027	0.027	0.027	0.027	0.028	0.027	0.027	0.027	0.027	0.027	0.02~0.105
2	青森県(青森市)	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.019	0.019	0.019	0.017~0.102
3	岩手県(盛岡市)	0.031	0.030	0.029	0.029	0.028	0.028	0.028	0.028	0.028	0.028	0.014~0.084
4	宮城県(仙台市)											0.0176~0.0513
5	秋田県(秋田市)	0.034	0.034	0.034	0.034	0.033	0.033	0.034	0.033	0.034	0.033	0.022~0.086
6	山形県(山形市)	0.040	0.040	0.040	0.040	0.040	0.040	0.039	0.040	0.040	0.040	0.025~0.082
7	福島県(双葉郡)											0.037~0.071
8	茨城県(水戸市)	0.197	0.195	0.195	0.193	0.192	0.191	0.190	0.189	0.188	0.187	0.036~0.056
9	栃木県(宇都宮市)	0.175	0.175	0.172	0.171	0.170	0.169	0.168	0.167	0.166	0.165	0.030~0.067
10	群馬県(前橋市)	0.089	0.088	0.087	0.087	0.086	0.086	0.086	0.086	0.085	0.085	0.017~0.045
11	埼玉県(さいたま市)	0.060	0.059	0.059	0.058	0.058	0.058	0.058	0.058			0.031~0.060
12	千葉県(市原市)	0.036	0.035	0.035	0.035	0.034	0.034	0.034	0.034	0.034	0.034	0.022~0.044
13	東京都(新宿区)	0.049	0.049	0.049	0.048	0.049	0.049	0.049	0.048	0.048	0.048	0.028~0.079
14	神奈川県(茅ヶ崎市)	0.051	0.051	0.051	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.035~0.069
15	新潟県(新潟市)	0.046	0.045	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.031~0.153
16	富山県(射水市)	0.046	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.029~0.147
17	石川県(金沢市)	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.0291~0.1275
18	福井県(福井市)	0.043	0.044	0.043	0.043	0.043	0.044	0.044	0.044	0.044	0.045	0.032~0.097
19	山梨県(甲府市)	0.044	0.043	0.043	0.043	0.044	0.043	0.043	0.043	0.043	0.044	0.040~0.064
20	長野県(長野市)	0.074	0.073	0.072	0.072	0.071	0.071	0.071	0.071	0.071	0.071	0.0289~0.0974
21	岐阜県(各務原市)	0.061	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.057~0.110
22	静岡県(静岡市)	0.038	0.037	0.038	0.038	0.038	0.038	0.038	0.037	0.037	0.037	0.0281~0.0765
23	愛知県(名古屋市)	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.035~0.074
24	三重県(四日市市)	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.0416~0.0789
25	滋賀県(大津市)	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.033	0.031~0.061
26	京都府(京都市)	0.038	0.038	0.038	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.033~0.087
27	大阪府(大阪市)	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042~0.081
28	兵庫県(神戸市)	0.037	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.035~0.076
29	奈良県(奈良市)	0.047	0.046	0.047	0.046	0.047	0.047	0.047	0.047	0.047	0.047	0.048~0.09
30	和歌山県(和歌山市)	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031~0.056
31	鳥取県(東伯郡)	0.058	0.058	0.058	0.058	0.058	0.058	0.060	0.061	0.062	0.062	0.038~0.11
32	島根県(松江市)	0.039	0.038	0.037	0.037	0.036	0.037	0.036	0.037	0.036	0.036	0.033~0.079
33	岡山県(岡山市)	0.051	0.050	0.049	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.043~0.104
34	広島県(広島市)	0.051	0.051	0.049	0.047	0.047	0.047	0.047	0.047	0.046	0.046	0.035~0.069
35	山口県(山口市)	0.097	0.097	0.095	0.093	0.093	0.092	0.092	0.092	0.092	0.092	0.084~0.128
36	徳島県(徳島市)	0.038	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037~0.067
37	香川県(高松市)	0.053	0.052	0.052	0.052	0.052	0.051	0.052	0.052	0.051	0.052	0.051~0.077
38	愛媛県(松山市)	0.050	0.049	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.045~0.074
39	高知県(高知市)	0.027	0.027	0.025	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.023~0.076
40	福岡県(太宰府市)	0.038	0.037	0.037	0.036	0.036	0.037	0.036	0.036	0.036	0.036	0.034~0.079
41	佐賀県(佐賀市)	0.041	0.041	0.041	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.037~0.086
42	長崎県(大村市)	0.029	0.030	0.030	0.030	0.029	0.029	0.029	0.029	0.029	0.029	0.027~0.089
43	熊本県(宇土市)	0.028	0.028	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.021~0.067
44	大分県(大分市)	0.051	0.051	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.048~0.085
45	宮崎県(宮崎市)	0.027	0.027	0.027	0.027	0.026	0.026	0.026	0.026	0.026	0.026	0.0243~0.0664
46	鹿児島県(鹿児島市)	0.035	0.035	0.035	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.0306~0.0943
47	沖縄県(うるま市)	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.020	0.021	0.020	0.0133~0.0575

*宮城県では、測定実施場所が倒壊の危険性があるため測定不能。宮城県内のモニタリング結果は、宮城県原子力安全対策室HPで公開

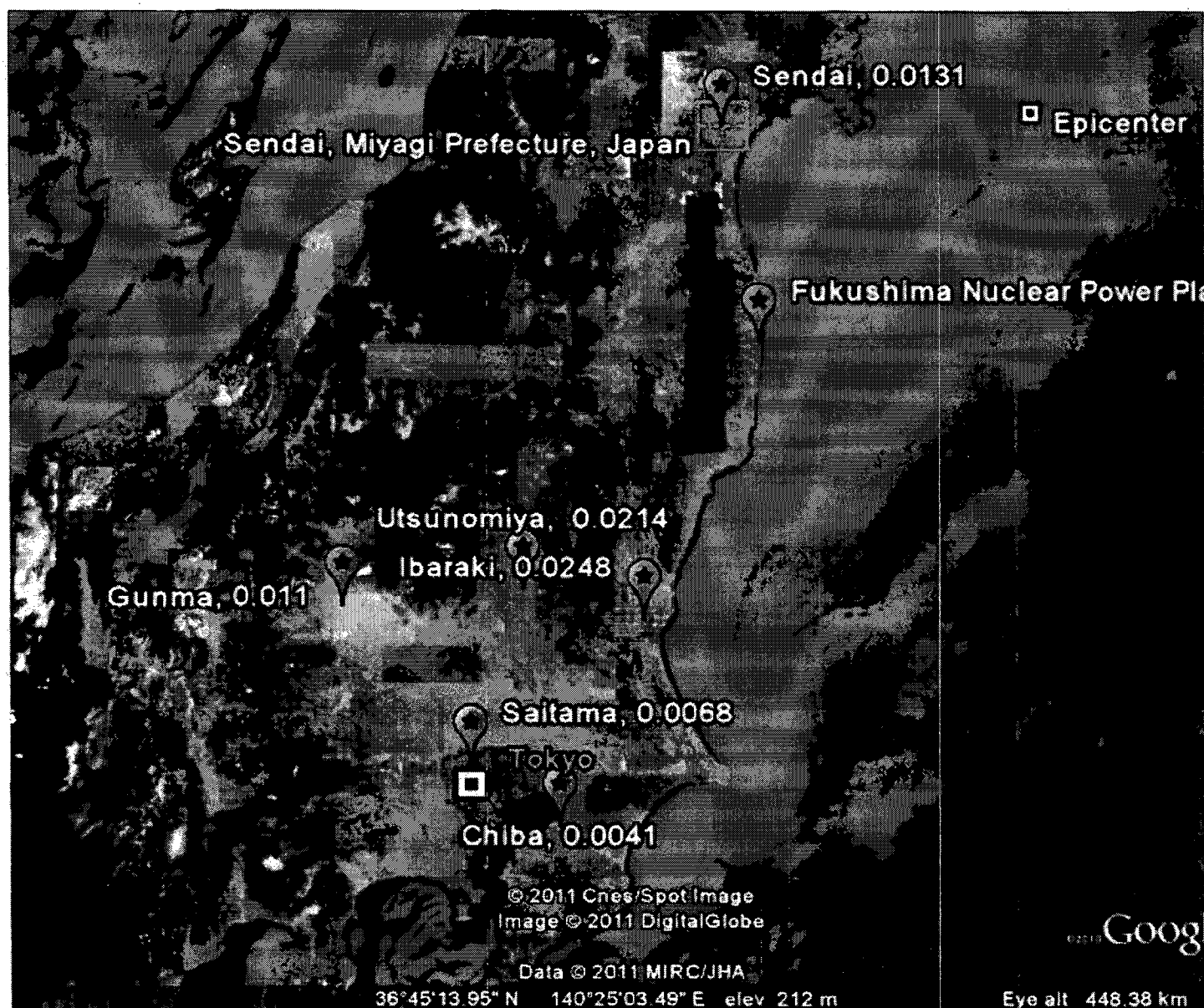
*福島県では、モニタリングポスト周辺の空間線量が高いことから測定が困難であるが、その分のデータはモニタリングカーを用いて測定。

*別資料の「福島第一原子力発電所の20km以遠のモニタリング結果について(3月18日19:00現在)」参照。

*空欄は機器点検等のための欠測等

*本データは、1μSv/h(マイクログレイ毎時)=1μSv/h(マイクロシーベルト毎時)と換算して算出

*文部科学省が各都道府県等からの報告に基づき作成



Max. Exposure/Dose measurements

MAX from Japanese measurement

3/16 - 3/17.

Allen, Linda

From: Tschiltz, Michael
Sent: Saturday, March 19, 2011 8:17 AM
To: Smith, Brian; Hiltz, Thomas; Habighorst, Peter; Campbell, Larry; Silva, Patricia; Johnson, Robert
Cc: Bailey, Marissa; Kinneman, John
Subject: "Official Use Only" : USNRC Earthquake-Tsunami Update - 0600 EDT (March 19, 2011)
Attachments: USNRC Earthquake-Tsunami Update.031911.0600EDT.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Please share with your staff.. Thanks. Mike

From: LIA07 Hoc
Sent: Sat Mar 19 06:15:50 2011
Subject: USNRC Earthquake-Tsunami Update - 0600 EDT (March 19, 2011)

Attached, please find an 0600 EDT March 19, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

Thanks,
Christine

Christine A. Steger
US Nuclear Regulatory Commission
Christine.Steger@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

9
Hansell, Samuel

From: Jackson, Donald
Sent: Saturday, March 19, 2011 7:07 AM
To: Burritt, Arthur; Dentel, Glenn; Gray, Mel; Krohn, Paul; Bellamy, Ronald; Powell, Raymond; Kennedy, Silas; Henderson, Pamela; Conte, Richard; Doerflein, Lawrence; Rogge, John; Hansell, Samuel
Subject: FW: USNRC Earthquake-Tsunami Update - 0600 EDT (March 19, 2011)
Attachments: USNRC Earthquake-Tsunami Update.031911.0600EDT.pdf

FYI...please do not forward

From: LIA07 Hoc
Sent: Saturday, March 19, 2011 6:16 AM
Subject: USNRC Earthquake-Tsunami Update - 0600 EDT (March 19, 2011)

Attached, please find an 0600 EDT March 19, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

Thanks,
~~Christine~~

Christine A. Steger
US Nuclear Regulatory Commission
Christine.Steger@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

From: GIS Hoc
Sent: Saturday, March 19, 2011 5:28 PM
To: yong.li@nrc.gov

2 questions

What is multiplier we use once we pick the ground motion, and on what earthquake basis (10^{-5} , $1-6$?) for conservatism .

US commercial nuclear reactors were designed using

However, the result matches with probability seismic hazard research (hazard consistent method)

What is the SSE (10^{-4} or what ?)

4/11/84

From: GIS Hoc
Sent: Saturday, March 19, 2011 6:17 PM
To: Munson, Clifford; Karas, Rebecca
Subject: Answer to the active earthquake zone question

How many US reactors are located in active earthquake zones?

Seismologists typically separate the US into low, moderate and high seismicity zones based on modern seismic activity. Based on this, nuclear power plants in California (Diablo Canyon and San Onofre) can be considered located in relatively active earthquake zones. Their design earthquake ground motions are relatively higher than the nuclear power plants located in the other part of the country.

III/85

From: PMT01 Hoc
Sent: Saturday, March 19, 2011 9:31 AM
To: GIS Hoc
Subject: Updated short term met forecast

Current Conditions: West @ 5 m/s (11 mph)

Forecast Conditions

Sunday March 20: 9 AM – 6 PM JST

Light Winds from East @ 2 m/s (5 mph)

Rotating clockwise to the southeast and eventually south.

Winds increasing to 6 m/s (13 mph)

Sunday night into Monday morning JST

Wind rotating from south clockwise to the northwest.

Winds light between 1 – 5 m/s (3 – 11 mph)

Light to moderate rain is expected.

III/86

From: Munson, Clifford
Sent: Saturday, March 19, 2011 6:33 PM
To: GIS Hoc; Karas, Rebecca
Cc: Kammerer, Annie
Subject: RE: Answer to the active earthquake zone question

Yong,

We need a more detailed answer. Annie is working on it now and is going to talk to Josh. So don't send this answer.

Thanks,
Cliff

From: GIS Hoc
Sent: Saturday, March 19, 2011 6:16 PM
To: Munson, Clifford; Karas, Rebecca
Subject: Answer to the active earthquake zone question

How many US reactors are located in active earthquake zones?

Seismologists typically separate the US into low, moderate and high seismicity zones based on modern seismic activity. Based on this, nuclear power plants in California (Diablo Canyon and San Onofre) can be considered located in relatively active earthquake zones. Their design earthquake ground motions are relatively higher than the nuclear power plants located in the other part of the country.

XII/87

From: LIA02 Hoc
Sent: Saturday, March 19, 2011 5:05 AM
To: Foster, Jack
Cc: LIA03 Hoc; LIA06 Hoc; Smith, Brooke; Foggie, Kirk
Subject: NRC EOC communication with NISA EOC

Hello, Jack,

We wanted to let you know about interactions we initiated with NISA's Emergency Operations Center. This was requested by Tom Blount, the LT director on our shift. We established contact with NISA's international office. They said they could put us directly through to NISA's ops center, but wanted to know what questions we had first. The Reactor Safety Team and the Protective Measures Team put together a list of questions. I will forward them to you in a separate message.

We sent the questions. They are finding the right people to respond (probably via conference call), and will get back to us asap to discuss the responses (they already called to say they located a cognizant reactor safety person; now they are locating a radiological safety person). We will keep you informed about the results of the conference call after it takes place (as of now, we don't have a set time).

I understand that you were planning for a similar effort with TEPCO's emergency operations center. Please let us know how that works out, and if we can help in any way on our end.

Best regards,
Elizabeth of OIP, International Liaison team

From: PMT01 Hoc
Sent: Saturday, March 19, 2011 5:07 AM
To: GIS Hoc
Subject: New weather information for screen A

Current Conditions

March 19, 2011 6 PM JST
Wind from West @ 20 mph

Forecast Conditions

Sunday, March 20, 9 AM – 6 PM JST, winds light and variable (<10 mph), including onshore flow from the east to south.

Monday, March 21, 9 AM JST through Wednesday, March 23, 1 AM, light variable winds (<10 mph) from north shifting to winds from the east.

III/89

From: PMT01 Hoc
Sent: Saturday, March 19, 2011 10:49 AM
To: GIS Hoc
Cc: PMT01 Hoc
Subject: Updated short term met forecast

Forecast Conditions

Sunday March 20: 7 AM – 7 PM JST

Winds rotating from northeasterly flow to southeasterly flow (onshore)

Winds will be light @ 1 – 5 m/s (2 - 11 mph)

Sunday night through Monday 3 PM

Winds will be variable between northwesterly (offshore) and northeasterly (onshore) flow.

Winds variable between 2 - 6 m/s (5 - 13 mph)

Light to moderate rain is expected.

DEI/90

From: LIA02 Hoc
Sent: Saturday, March 19, 2011 12:19 PM
To: OIP Distribution; Liaison Japan
Cc: LIA03 Hoc; LIA06 Hoc; LIA08 Hoc
Subject: Next Travelers

All,

Michelle Evan has given us the next set of travelers to Japan, with some recommendations for travel dates based on getting these new staff over to Japan so that the existing staff is relieved within 2 weeks.

Dan Dorman leaving today

Mike Scott (RES) and Alan Blamey (Region II) March 22

Todd Jackson (REG I) March 23

Jack Giessner (REG III), Rob Taylor (NRR), Marie Miller (REG I), Syed Ali (RES), Adbul Sheikh (NRR), Ralph Way (NSIR), Jack Ramsey (OIP) March 24

Steve Bloom

III/a1

From: LIA02 Hoc
Sent: Saturday, March 19, 2011 1:07 PM
To: RST01 Hoc; Liaison Japan
Cc: LIA03 Hoc
Subject: Question from UK

I received a call from the UK as a followup to the 9:30 call with them. They are asking about crystallization on the fuel. With the decay heat they anticipate that there will be crystallization on the surface area within a day of them starting to inject seawater, and significant clogging within 3 days. They want to know our thoughts.

They also asked about where the water is going. If they continue to add water and the water is going out the relief valve into containment, then the pressure would increase, which has not been seen.

They would like to discuss today at the 2 pm call with the health physics folks.

Steve Bloom

III/92

From: Harrington, Holly
Sent: Sunday, March 20, 2011 9:18 AM
To: LIA03 Hoc
Subject: FW: emergency in Japan

I am dutifully forwarding this because it is from another country, but OPA is not doing anything with unsolicited advice for Japan.

Holly

-----Original Message-----

From: OPA Resource
Sent: Saturday, March 19, 2011 9:55 AM
To: Harrington, Holly; Burnell, Scott
Subject: FW: emergency in Japan

Don't know if this is contact or not?

Ivonne L. Couret
Public Affairs Officer
Office of Public Affairs
Media Desk
opa.resource@nrc.gov
301-415-8200

Visit our online photo gallery. Incorporate graphics and photographs to tell your story!
<http://www.nrc.gov/reading-rm/photo-gallery/>

2010-2011 Information Digest - Where you can find NRC Facts at a Glance <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1350/>

-----Original Message-----

From: Abas Sultan [mailto:ubukhy@mail.ru]
Sent: Friday, March 18, 2011 6:39 PM
To: OPA Resource
Subject: emergency in Japan

Below is the result of your feedback form. It was submitted by

Abas Sultan (ubukhy@mail.ru) on Friday, March 18, 2011 at 18:38:44

comments: Dear US NRC,

IIH/93

Thank you for your email. I am passing on your email to our technical team for their consideration. Thank you again for taking the time to contact us. We appreciate your concern for the emergency in Japan. Best regards, Greg GrelIAEA Press and Public Information Officer Ph: [43-1-2600-22047](tel:43-1-2600-22047) www.iaea.orgPress@IAEA.org

From: ubukhy@mail.ru [mailto:ubukhy@mail.ru]

Sent: Thursday, 17 March 2011 13:05

To: iaeany@un.org; Official Mail - IAEA Mail address; VIDRICAIRE, Marc; IAEA - Press Office; VERLINI, Giovanni; UNOG - IAEA Contact Geneva; Marine Environment Laboratory; japan-info@mw.mofa.go.jp; kurokawa-s@nifty.com; shinichiro.kanoya@mofa.go.jp

Subject: Dear Yukiya Amano, Director General, Japanese Ambassador Masaharu Kono, John SCOTT!

Dear

Yukiya Amano, Director General,
Japanese Ambassador Masaharu Kono,

John Scott,

Today Tokhtsbiev Sergei PhD Chief Ubykh Circassian Tribe gave his drawings relating to cessation of radiation contamination on the ruined nuclear power plants in Japan to SAKNOUE YOKO from Japan Foundation Moscow office. Tohtabiev Sergei suggested the use of Airships for Cooling destroyed nuclear reactor. Water through the pipes should be supplied to the nuclear station, then pump fed up to the airship.

The second method proposed Tohtabiev- if from the destroyed reactor released the radioactive clouds-then to the airship will be attached the sprinkler 100 meters. They are widely used in reclamation in Russia. Water is supplied to the airship, then through the sprinklers in creating the so-called rain, which destroys the radioactive cloud. Will be saved from infection Tokyo, the Japanese people and people of other countries
We ask you urgently to discuss Tohtabiev's proposals with specialists. And apply for the salvation of nations.

And the most important. Sergey Tokhtabiev on behalf of the Indigenous Peoples of Russia offered to save the children, women, old teenagers-

placing them in Resorts
in the Caucasus and Siberia.

Reference

: Tohtabiev graduated in 1971 professional- technical school.
He has several inventions-

Chief Indigenous Circassian Ubykh Tribe Tokhtabiev Sergey PhD , Imir , with Zalina 20 YEARS created a new technology of food corn, which is cheaper world analogues five times. They can feed the starving population of Africa, Bangladesh, Ethiopia. EU documents attached.

Also they created a new technology soil remediation in the desert for save forests.

Tokhtabiev Sergey was in Washington DC at CSCE Commission of the USA Congress and at United States Institute of Peace with his project " Hayma of Peace"- for Environment protection.

Indigenous Tokhtabiev together with Zalina Tokhtabieva 20 years Ubykh girl engineer and Imir suggested how to eliminate BP oil Spill accident and to save million Birds, they offer a secure oil and gas exploration at great depths in the ocean. They suggested how eliminate traffic jam in Moscow and London.

They was able to decrypt the purpose of the Pyramids.

They were built to optimize the coordinates of the Earth's rotation around its axis. Also they created a new technology soil remediation in the desert.

Sergey and Zalina are ready to publish their offer in your newspaper or magazine ..

Tokhtabiev's new

Project Peace Rally Tokyo- Moscow- London-Washington. For protecting Indigenous ,Global Climate and Wild Nature,

organization: International Fund for Indigenous

address1: Mechnikova 130/8

address2:

city: Nalchik, Russia

state: WA

zip: 360022

country: Russia

phone: 79654314733

From: Hoc, PMT12
Sent: Sunday, March 20, 2011 4:01 PM
To: GIS Hoc
Subject: FW: Task Tracker Record #1320

From: Hoc, PMT12
Sent: Sunday, March 20, 2011 12:42 PM
To: OST01 HOC
Subject: RE: Task Tracker Record #1320

Clyde,

The PMT hasn't had the opportunity to view the simulation data. We put in a request with the International Liaison to get this information.

Nima
PMT Coordinator

From: OST01 HOC
Sent: Sunday, March 20, 2011 12:39 PM
To: Hoc, PMT12
Subject: Task Tracker Record #1320

Record #: <u>1320</u> EST Actions Officer Melissa Ralph	Desc: Provide written update to the ambassador about France's posting of simulation data.	PMTR (All) PMTR Director	03/17/2011 22:49:00	ET & Site Team	3: Accepted
--	--	---	--------------------------------------	---	------------------------------

Hi Kathryn,

Do you know if the status of this task can be changed to "In Progress" or "Complete"? Thanks!

Clyde
EST Coordinator

III/94

From: Hoc, PMT12
Sent: Sunday, March 20, 2011 1:09 AM
To: GIS Hoc
Subject: Map of offsite dose
Attachments: picture of RASCAL composite TEDE dose.docx

III/95

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From: PMT01 Hoc
Sent: Sunday, March 20, 2011 11:14 AM
To: GIS Hoc
Subject: Updated Met forecast for GIS display

Current Conditions: NNW @ 2 m/s (5 mph)

Forecast Conditions

Monday March 21: Midnight – 1800 JST

Winds light and variable between northwesterly and southwesterly until 0900 JST.

Winds mainly from north until 1800 @ 9 - 15 mph

Light to moderate rain expected between 0900 and 1500

Monday 1800 through Tuesday 1500 JST

Winds out of the NW until approx. 0900 on Tuesday

Winds rotate clockwise to east-northeast by 1500 on Tuesday

Wind speeds between 5 – 10 mph

III/96

From: LIA02 Hoc
Sent: Sunday, March 20, 2011 2:57 AM
To: Shaffer, Mark R; LIA03 Hoc
Subject: RE: Infrared photos...

Here's the deal - email the HOO at hoo1@nrc.sgov.gov from your class account and they will email you back with the link. (It's part of their process for class email that the email actually has to come from you - it's not enough for me to provide your address.)

-----Original Message-----

From: Shaffer, Mark R [mailto:ShafferMr@state.gov]
Sent: Sunday, March 20, 2011 2:42 AM
To: LIA02 Hoc; LIA03 Hoc
Subject: Infrared photos...

I seem to be the only one who hasn't seen the infrared photos of the plant. Can you get them to send them to me, please. My "high-side" e-mail address is ShafferMr@state.sgov.gov (I hope).

III/97

From: Hoc, PMT12
Sent: Sunday, March 20, 2011 1:48 AM
To: GIS Hoc
Subject: Flipped map
Attachments: picture of RASCAL composite TEDE dose flipped.docx

III/98

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	5
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From: LIA06 Hoc
Sent: Monday, March 21, 2011 7:27 PM
To: FOIA Response.hoc Resource
Subject: FW: FYI - GERMAN DECISION ON NUCLEAR POWER PLANTS

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Weber, Michael
Sent: Monday, March 21, 2011 5:20 PM
To: LIA06 Hoc; LIA03 Hoc
Cc: Burnell, Scott; OST02 HOC; Doane, Margaret; Mamish, Nader; Schwartzman, Jennifer; Virgilio, Martin; Borchardt, Bill; Leeds, Eric
Subject: FYI - GERMAN DECISION ON NUCLEAR POWER PLANTS

May be old news (last week), but here is a summary article on the German decision regarding older NPPs from Homeland Security News...

Germany ends nuclear program

Published 21 March 2011

Last Thursday German chancellor Angela Merkel declared that her government plans to close its nuclear power plants in a "measured exit"; the decision to end Germany's nuclear power program was a result of the continuing nuclear crisis in Japan; some believe that Chancellor Merkel's announcement is driven more by politics than safety concerns; recent polls show that 80 percent of voters are opposed to nuclear power; Merkel's party faces close regional elections in states where nuclear plants are located; Switzerland, Venezuela, and China have also announced that they will suspend or delay plans to build new nuclear plants

In an abrupt announcement, last Thursday, German chancellor Angela Merkel declared that her government plans to close its nuclear power plants in a "measured exit."

Merkel said the decision to end Germany's nuclear power program was a result of the continuing nuclear crisis in Japan.

After a massive 8.9 magnitude earthquake and tsunami rocked Japan, crews have been battling to control several nuclear reactors which have begun to overheat. Three reactors have suffered from partial meltdowns and radiation leaks have forced thousands to evacuate.

In a speech to the lower-house of Parliament, Merkel said, "If the seemingly impossible becomes possible, the absolutely unlikely becomes reality in a highly developed country like Japan, that changes the situation."

She continued, "Then we have a new situation, and this requires action."

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Earlier last week, Chancellor Merkel declared a three month moratorium on nuclear power to conduct safety reviews at the country's seventeen nuclear power plants.

At the time of the initial announcement, Merkel said, "We can't yet make do without the peaceful use of nuclear power as a bridge technology if we want to continue to reliably cover our energy requirements as Europe's biggest economy and if we want to continue to live up to the need to protect the climate," Merkel said.

Following the moratorium, Environment Minister Norbert Roettgen said that two of Germany's older nuclear plants that have been in operation since the mid-1970s would be shut down regardless of the results of the safety inspection.

Some believe that Chancellor Merkel's announcement is driven more by politics than safety concerns.

In response to her remarks to Parliament, Sigmar Gabriel, a leading voice against Merkel's party, said, "No more lies, Chancellor. Last year you claimed that we wanted to exit nuclear energy too fast. Now you stand here and have the chutzpah to say that we were too slow to exit."

Nuclear power has been a divisive issue in German politics since the Chernobyl nuclear disaster in 1986. The government's decision last year to extend the life of its seventeen nuclear power plants for another twelve years was met with wide-spread protests.

After an explosion at Japan's nuclear power plant, on Saturday 12 March 2011, tens of thousands of Germans formed a human chain in Stuttgart to protest the nuclear plant there. Activists carried signs that read, "Nuclear power – no thanks."

The Baden-Württemberg state in southern Germany, which houses one of the aging reactors scheduled to be shut down shortly, is holding regional elections this month. The Christian Democrats, Merkel's party, are struggling to maintain their hold in that state and five additional regional elections will be held this year.

Recent polls show that 80 percent of voters are opposed to nuclear power.

Merkel maintained that the move was not motivated by politics, but by safety issues.

"This is a regulatory step. There is no deal, no agreement with the industry," she said.

The chancellor has also insisted that nuclear power will not be imported.

"I'm against shutting down our nuclear power plants only to have atomic power imported to Germany from other countries," she said. "That won't happen on my watch."

Instead, Merkel plans to use the cancellation of nuclear power as a catalyst to hasten the transition to clean energy.

"We will use the moratorium period, which we deliberately set to be short and ambitious, to drive the change in energy policy and accelerate it wherever possible, as we want to reach the age of renewable energy as quickly as possible," she said.

Switzerland, Venezuela, and China have also announced that they will suspend or delay plans to build new nuclear plants.

Mike

Michael Weber
Deputy Executive Director for Materials, Waste, Research,
State, Tribal, and Compliance Programs
U.S. Nuclear Regulatory Commission

301-415-1705
Mail Stop O16E15

From: LIA02 Hoc
Sent: Monday, March 21, 2011 2:08 PM
To: RST01 Hoc; PMT01 Hoc; Hoc, PMT12; LIA08 Hoc; LIA06 Hoc; LIA01 Hoc; LIA03 Hoc
Subject: Latest update from IAEA on plant status
Attachments: Letter - Summary of reactor unit status at 1700 UTC 21-March[1].pdf

Please see attached update from IAEA on current status at Fukushima. Note it is from 1700 Japan time, which makes it about 10 hours old.

III/100

International Atomic Energy Agency

Subject: Status of the Fukushima Daiichi nuclear power plant

Based on information received by 12:00 UTC on March 21, 2011 the following updated information for the reactor units at the Fukushima Daiichi Nuclear Power Plant is provided:

Off-Site Environmental Radiation Measurements

Dose rates have been provided by Ministry of Education, Culture, Sport, Science and Technology for all 47 prefectures (excluding Fukushima). The data set covers the period from 15 March 08:00 UTC to 21 March 08:00 UTC.

A new update for the environmental measurements carried out at various locations in Fukushima prefecture has been provided (see the map below). There are no significant changes to report. The environmental radiation measurements stay somewhat elevated in the north of Fukushima prefecture outside of the 30 km exclusion zone.



Since the status note of 20 March 04:00 UTC, the IAEA has received further information from the Japanese Ministry of Health Labor and Welfare and prefectural authorities regarding the presence of radioactivity in milk, drinking water and vegetables. The data were based on laboratory analysis of samples taken over the last three days from different areas. The results of some samples were above

the limits specified in the Japanese food hygiene law for emergency monitoring criteria for intake of vegetables.

Those limits are:

Nuclide	I-131	Cs-137
Drinking water and Milk	300 Bq/kg	200 Bq/kg
Vegetables	2000 Bq/kg	500 Bq/kg

In Fukushima prefecture four milk samples and one drinking water sample had shown concentration of Iodine 131 in excess of the limits. In Ibaraki and Tochigi both I-131 and Cs-137 were detected in spinach samples and the concentration was in some of these samples above the limits. The concentration values vary considerably among the samples and range from a few hundreds to a few thousands Bq/kg.

On 21st March the Chief Cabinet Secretary announced that the shipment of spinach and kakina from the prefectures of Fukushima, Ibaraki, Tochigi and Gunma prefectures has been restricted for the time being. The shipment of milk from the Fukushima prefecture has also been restricted.

Deposition Data for Prefectures

MEXT has published deposition data for all prefectures (excluding Fukushima) for I-131 and Cs-137 covering the period March 18 and 19. Deposition over a 24 hour period was measured at what is assumed to be a single monitoring location. Most prefectures report no detection of either Cs-137 or I-131 deposition, however, eight prefectures did report detectable I-131 or Cs-137. Depositions range from a few tens to a few hundreds of Bq/m², with one exception: the March 18 measurement of I-131 in Tochigi that measured 1300 Bq/m². This value is less than default criteria for protective actions based on deposition in Table B3 of TECDOC-955.

The Japanese authorities have made available additional measurements of deposition of iodine-131 and caesium-137 for March 19 and 20. Radioactivity has been detected in the additional prefectures of Iwate, Niigata and Yamagata. The levels reported are a few tens of Bq/m².

Screening of Individuals

On March 20, the Local Emergency Response Headquarters issued a directive to amend the reference value for the screening level for decontamination. The old value, measured with a gamma survey meter, was 40 Bq/cm² (corresponding to 6,000 counts per minute). This has now been changed to 100,000 counts per minute.

Administration of Stable Iodine

On March 21, the Local Emergency Response Headquarters instructed the Prefectural Governor and the heads of a number of cities, towns and villages - Tomioka Town, Hutaba Town, Okuma Town, Namie Town, Kawauchi Village, Naraha Town, Minamisouma City, Tamura City, Kazurao Village, Hirono Town, Iwaki City and Iitate Village - to administer stable iodine under the direction of the headquarters and in the presence of medical experts, and not to administer it based on personal judgements.

On-Site Environmental Radiation Measurements

Fukushima Daiichi NPP: Since the last status report, there has been little change in reported radiation levels on-site.

Status of the Fukushima Daiichi Nuclear Power Plant

Units 1 to 4

The restoration work of off-site power from the grid operated by TOHOKU EPC is currently in progress. On-site activities for connecting electric cable to Units 3 and 4 were completed. Power is restored to the transformer of Units 5 and 6. Power Center of Unit 2 is already connected to electricity and the integrity of each load is under confirmation. Work for the recovery of off-site power supply to Units 3 and 4 is being carried out (Scheduled to be completed on March 21st).

Unit 1

Seawater is continued being injected as of 03:00 UTC, March 19. Drywell pressure indication restored on March 19.

Unit 2

Seawater is being injected as of 03:00 March 19. No smoke or vapour was observed coming from the Unit-2 reactor building on the March 19 11:30 UTC (satellite image). Injection of 40t of Seawater to the Spent Fuel Pool of Unit 2 was performed from 6:00 until 18:20 UTC March 20. Power Center of Unit 2 has received electricity (6:46 UTS March 20th)

Unit 3

Water spraying was planned to continue until 15:30 UTC, March 19. Seawater is being injected to the reactor pressure vessel since 13:00 UTC March 18. White smoke/vapor from the reactor building is still observed, but less intense than for previous days. Additional fire trucks for external spraying have arrived and spraying of the reactor building is in progress. The pressure in PCV of Unit 3 initially raised to 320 kPa at 2:00 UTC March 20th. Monitoring continues and shows that the pressure has decreased to 120kPa at 03:15 UTC on March 21st. Water spray over the Spent Fuel Pool of Unit 3 by Hyper Rescue Unit of Tokyo Fire Department was started at 1:39 UTC March 20th and finished 18:58 March 20st. Work for the recovery of external power supply is being carried out (Scheduled to be completed on March 21st). Gray smoke was observed at on March 21st in the Southeast corner of the Unit 3 building and TEPCO order an evacuation of Unit #3 plant personnel.

Unit 4

No information is available regarding the spent fuel pool water level. Around 08:30 UTC 17 March the seawater injection into the spent fuel pool was terminated. The most recent satellite image (19-March, 01:44 UTC) showed no smoke/vapor coming out from the Unit-4 spent fuel pool area. At 23:20 UTC March 19 spraying to direct water into the spent fuel pool was started. Water spraying over the Spent Fuel Pool of Unit 4 by Self-Defense Force (13 fire engines) was resumed at around 21:37 UTC March 20th and finished at 23:41 UTC March 20th. Works for the recovery of external power supply are being carried out (Scheduled to be completed on March 21st).

Unit 5

The reactor vessel water level remains stable at approximately 2m above the top of the fuel. Residual Heat Removal system (RHR) is in service to cool both the reactor and spent fuel pool, using power from diesel generators. Reactor is in cold shutdown state. Spent fuel temperature continue to decrease (from 37.1° to 35.1°C). Power supply for Unit 5 was switched from emergency diesel generator to external power supply at 02:36 UTC March 21st.

Unit 6

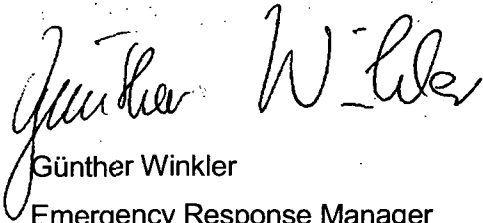
The reactor vessel water level is maintained between 1.5 to 2.5 meters above the top of the fuel. RHR system is in service to cool both the reactor and spent fuel pool, using power from diesel generators. Unit 6 is in the state of cold shut down (10:27 UTC March 20th). Offsite power is partially restored on 10:52 UTC March 20th.

Spent Fuel Pools

Latest temperatures of the water in the spent fuel pools in Units 4, 5 and 6 have been measured with the results below:

Unit 4	Unit 5	Unit 6
84°C at 19:08 UTC 13-Mar	66.6 °C at 02:00 UTC19-Mar	66.5 °C at 02:00 UTC19-Mar
Not measurable since 04:08 JSTMarch 14	48.1 °C at 09:00 UTC19-Mar	67.0 °C at 09:00 UTC19-Mar
	37.1 °C At 22:00 UTC 19-Mar	41.0 °C at 22:00 UTC19-Mar
	35.1 oC At 10:00 UTC 20-Mar	28.0 oC at 16:00 UTC20-Mar
	<u>39.5 oC</u> <u>At 5:00 UTC 21-Mar</u>	<u>32.0 oC</u> <u>At 5:00 UTC 21-Mar</u>
	<u>42.3 oC</u> <u>At 8:00 UTC 21-Mar</u>	<u>36.5 oC</u> <u>At 8:00 UTC 21-Mar</u>

As for the Common Use Spent Fuel Pool, it was reported that the spent fuels are fully covered by water with the temperature of 57°C, as of 10:52 UTC March 20 (pool design temperature is 66 °C).



Günther Winkler

Emergency Response Manager

21-March-2011 17:00 UTC

Units 1, 2, 3, 4, 5 and 6 Plant Status

Parameter / Indications	Unit	Fukushima Daiichi					
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Reactor Pressure Vessel Pressure	MPa	<u>0.299 (A)</u> <u>0.272 (B)</u>	<u>0.078 (A)</u> <u>0.076 (B)</u>	<u>0.013 (A)</u> <u>0.146 (B)</u>	=	<u>0.108</u>	<u>0.104</u>
	atm	<u>2.99 (A)</u> <u>2.72 (B)</u>	<u>0.78 (A)</u> 0.76 (B)	<u>0.18 (A)</u> <u>0.144 (B)</u>	-	<u>1.09</u>	<u>1.09</u>
Reactor Pressure Vessel Level	mm (above the top of active fuel)	-1750 (A) -1750 (B)	-1350 (A) (B) not available	<u>-1550 (A)</u> <u>-2025 (B)</u>	-	<u>2069</u>	<u>1560</u>
Containment Vessel (Drywell) Pressure	kPa	160	120	120	-	-	-
	atm	1.6	1.20	1.2	-	-	-
Suppression Pool Temperature	°C	No Data	No Data	No Data	No Data	No Data	No Data
Suppression Pool Pressure	kPa	<u>155</u>	Below the scale	Below the scale	-	-	-
	atm	<u>1.55</u>					
Adding water to Reactor Pressure Vessel	<ul style="list-style-type: none"> • Adding • Not adding Unknown 	Sea water injection is continued using fire extinguish line into RPV	Sea water injection is continued using fire extinguish line into RPV	Sea water injection is continued using fire extinguish line into RPV	-	Injection to RPV and the Spent Fuel Pool using make up water	Injection to RPV and the Spent Fuel Pool using make up water
Date/Time of Data Acquisition		<u>March 21</u> <u>5:25 UTC</u>	<u>March 21</u> <u>5:25 UTC</u>	<u>March 21</u> <u>5:25 UTC</u>	-	<u>March 21</u> <u>8:00 UTC</u>	<u>March 21</u> <u>8:00 UTC</u>

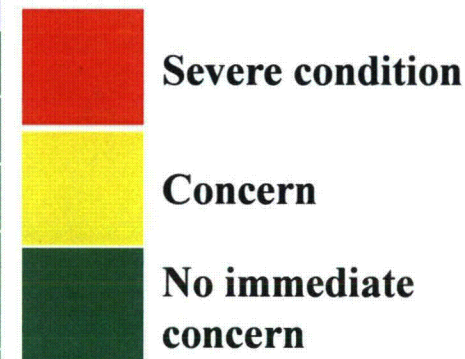
* All pressures are absolute pressure (pressure including normal atmospheric pressure)

** (A) and (B) refer to two measurement channels

Unit	1	2	3	4
Power (MWe /MWth)	460/1380	784/2381	784/2381	784/2381
Type of Reactor	BWR-3	BWR-4	BWR-4	BWR-4
Status at time of EQ	In service – auto shutdown	In service – auto shutdown	In service – auto shutdown	Outage
Core and fuel integrity	Damaged	Damaged	Damaged	No fuel in the Reactor
RPV & RCS integrity	Unknown	Unknown	Unknown	Not applicable due to outage plant status
Containment integrity	Not Damaged	Damage suspected	No information	
AC Power	Substation connected	<u>AC Power available – Load check is ongoing</u>	Not available	Not available
Building	Severe damage	Slight damage	Severe damage	Severe damage
Water level of RPV	Around half of Fuel is uncovered (Stable)	Around half of Fuel is uncovered (Stable)	Around half of Fuel is uncovered (Stable)	Not applicable due to outage plant status

Unit	1	2	3	4
Pressure of RPV	Stabilized	Unreliable Readings	<u>Decreased</u>	
CV Pressure Drywell	Stable	Stable	<u>Decreased</u>	
Water injection to RPV	Seawater	Seawater	Seawater	
Water injection to CV	No information	No information	No information	
Spent Fuel Pool Status	No information	<u>Periodic spraying from outside</u>	<u>Periodic spraying from outside</u>	<u>Periodic spraying from outside</u>

Unit	5	6
Power	784/2381	1100/3293
Type of Reactor	BWR-4	BWR-5
Status at the EQ occurred	Outage	Outage
Core and Fuel	<u>Cold Shutdown</u>	<u>Cold Shutdown</u>
RPV & RCS integrity	Intact	Intact
Containment int.	No damage expected	No damage expected
AC Power	2 nd Emergency diesel from Unit 6	<u>Off-site power available</u>
Building	No damage reported	No damage reported
Water level of RPV	Above fuel	Above fuel
Pressure of RPV	Cooling restored	Cooling restored
Containment Pressure	No information	No information
Water injection to RPV	Injection in Progress	Injection in Progress
Water injection to CV	<u>Not needed now</u>	<u>Not needed now</u>
Spent Fuel Pool Status	Cooling restored	Cooling restored



Helton, Donald

From: Helton, Shana
Sent: Monday, March 21, 2011 8:13 AM
To: Helton, Donald; Bagchi, Manash; Beall, Robert; Deeds, Erin; Dudley, Richard; Inverso, Tara; Markley, Anthony; Padovan, Mark; Reed, Timothy; Schneider, Stewart
Subject: FW: Official Use Only: USNRC Earthquake-Tsunami Update 03.20.11--1800 EDT
Attachments: USNRC Earthquake-Tsunami Update.032011.1800EDT.pdf

This is Official Use Only – for your info on the latest status of Japan events. Do not discuss or distribute beyond the federal family, and treat in accordance with Official Use Only information handling requirements.

Thanks,
Shana

From: Tschiltz, Michael
Sent: Monday, March 21, 2011 7:40 AM
To: Habighorst, Peter; Hiltz, Thomas; Smith, Brian; Silva, Patricia; Campbell, Larry; Johnson, Robert
Cc: Bailey, Marissa; Smith, James; Kinneman, John
Subject: Official Use Only: USNRC Earthquake-Tsunami Update 03.20.11--1800 EDT

Branch Chiefs.. please share with your staff.. **Please note that this information is "Official Use Only" and is only being shared within the federal family.**

Thanks.. Mike

From: LIA07 Hoc
Sent: Sun Mar 20 17:56:57 2011
Subject: USNRC Earthquake-Tsunami Update 03.20.11--1800 EDT

Attached, please find the **1800 EDT March 20, 2011** status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

- Caroline

Caroline Nguyen
Office of Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Caroline.Nguyen@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

Ramsey, Kevin

From: Johnson, Robert
Sent: Tuesday, March 22, 2011 12:30 PM
To: NMSS_FCSS_FMB
Subject: FW: 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update
Attachments: USNRC Earthquake-Tsunami Update.032111.1800EDT.pdf

All,
Additional status update on events in Japan. Missed it earlier and wanted to make sure that you all had it, if interested.
Thanks,
Robert

From: Bailey, Marissa
Sent: Tuesday, March 22, 2011 8:58 AM
To: Hiltz, Thomas; Habighorst, Peter; Smith, James; Smith, Brian; Damon, Dennis; Silva, Patricia; Campbell, Larry; Johnson, Robert
Subject: FW: 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update

Please share with your staff.

From: Haney, Catherine
Sent: Tuesday, March 22, 2011 4:59 AM
To: Kinneman, John; Tschiltz, Michael; Bailey, Marissa; Pulliam, Timothy; Ordaz, Vonna; Weaver, Doug; Mohseni, Aby; Davis, Jack; Kokajko, Lawrence
Subject: Fw: 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update

From: LIA07 Hoc
Sent: Mon Mar 21 18:16:05 2011
Subject: 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 21, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

-Sara

Sara K. Mroz
Communications and Outreach
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
Sara.Mroz@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

III/102

From: Stahl, Eric
Sent: Tuesday, March 22, 2011 10:41 PM
To: Schwartzman, Jennifer; Abrams, Charlotte; Emche, Danielle; Mayros, Lauren; Afshar-Tous, Mugeh; Bloom, Steven; English, Lance; Owens, Janice; Tobin, Jennifer; Smiroldo, Elizabeth; Shepherd, Jill; Henderson, Karen; Fragoyannis, Nancy; Baker, Stephen; Wittick, Brian; Rosales-Cooper, Cindy; Jones, Andrea; Young, Francis; Fehst, Geraldine
Cc: Doane, Margaret; Foggie, Kirk; Smith, Brooke; Smith, Wilkins; Mamish, Nader; Dembek, Stephen; Kreuter, Jane; Armstrong, Janine; Floyd, Daphene; LIA02 Hoc; LIA03 Hoc; OST02 HOC; Ramsey, Jack; Shaffer, Mark
Subject: RE: OIP Ops Center Coverage: March 21-April 15
Attachments: March 21 - April 15 - International Liaison Schedule.doc

Please find an update coverage schedule for the Ops Center attached. As a reminder, the 11pm-7am shift will only need to be covered by one person (it is up to the two people scheduled to determine who will staff the Ops Center and who will serve as a back-up).

Thank you all for your help with staffing and for volunteering to take extra shifts!

Eric

From: Stahl, Eric
Sent: Tuesday, March 22, 2011 7:21 AM
To: Stahl, Eric; Schwartzman, Jennifer; Abrams, Charlotte; Emche, Danielle; Mayros, Lauren; Afshar-Tous, Mugeh; Bloom, Steven; English, Lance; Owens, Janice; Tobin, Jennifer; Smiroldo, Elizabeth; Shepherd, Jill; Henderson, Karen; Fragoyannis, Nancy; Baker, Stephen; Wittick, Brian; Rosales-Cooper, Cindy; Jones, Andrea; Young, Francis
Cc: Doane, Margaret; Foggie, Kirk; Smith, Brooke; Fehst, Geraldine; Smith, Wilkins; Mamish, Nader; Dembek, Stephen
Subject: RE: OIP Ops Center Coverage: March 21-April 15

Based on the decreased level-of-work during the **11pm-7am** shift in recent days, only one staff member will need to cover the international liaison desk during that shift from now on.

On the coverage sheet, two people will still be listed as responsible for the shift's coverage. Now, only one of you will be expected to staff the Ops Center, while the other will be expected to serve as their back-up (in case you need to be called in due to heavy workload, illness, etc.). It is up to the two staff members designated to work the shift to determine who is responsible for being in the office. One person can cover all three days, you can rotate days, you can flip a coin for each day - the choice is yours and yours alone.

At this point, all other shifts will require two staff members covering the international liaison desks. If you all believe that two staff members is superfluous at any other times, please let me know.

I have attached the coverage document to this email for your awareness. If you have any other questions, please let me know.

Thanks again,
Eric

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From: Stahl, Eric

Sent: Monday, March 21, 2011 10:39 PM

To: Schwartzman, Jennifer; Abrams, Charlotte; Emche, Danielle; Mayros, Lauren; Afshar-Tous, Mugeh; Bloom, Steven; English, Lance; Owens, Janice; Tobin, Jennifer; Smirolodo, Elizabeth; Shepherd, Jill; Henderson, Karen; Fragoyannis, Nancy; Baker, Stephen; Wittick, Brian; Rosales-Cooper, Cindy; Jones, Andrea; Young, Francis

Cc: Doane, Margaret; Foggie, Kirk; Smith, Brooke; Fehst, Geraldine; Smith, Wilkins; Mamish, Nader; Dembek, Stephen

Subject: RE: OIP Ops Center Coverage: March 21-April 15

Is everyone having fun yet?

Please find a slightly revised copy of the OIP Ops Center coverage sheet through April 15. This document should include all changes made through Monday (that I was notified about). If you have any other changes, please let me know. If you have already told me you cannot work a shift, it is highlighted in yellow. If you would like to volunteer for one of the yellow shifts, please let me know. In addition, if you cannot work a shift that you have been designated to cover and have been unable to find a replacement yet, please let me know and I will update the sheet and try to find volunteers. Lastly, if you see any inaccuracies, please let me know.

As a reminder, please respond only to me and not the whole email distribution.

Thanks,

Eric

From: Stahl, Eric

Sent: Thursday, March 17, 2011 11:44 AM

To: Schwartzman, Jennifer; Abrams, Charlotte; Emche, Danielle; Mayros, Lauren; Afshar-Tous, Mugeh; Bloom, Steven; English, Lance; Owens, Janice; Tobin, Jennifer; Smirolodo, Elizabeth; Shepherd, Jill; Henderson, Karen; Fragoyannis, Nancy; Baker, Stephen; Wittick, Brian

Cc: Doane, Margaret; Young, Francis; Foggie, Kirk; Smith, Brooke; Fehst, Geraldine; Smith, Wilkins; Jones, Andrea; Mamish, Nader; Dembek, Stephen

Subject: OIP Ops Center Coverage: March 21-April 15

Team OIP –

First of all, thank you for providing input on such short notice concerning OIP's coverage of the international liaison desks in the Ops Center. Attached you will find the coverage sheet from March 21 through April 15. Most of you will work for three days on, followed by six days off. The reason for this is that management believed it was important to maintain staff consistency in the Ops Center, while not overburdening specific people.

Please read the following information carefully:

- I did my best to incorporate when you all preferred to work. Since most people preferred 7am-3pm, this did not always work.
- I did my best to incorporate feedback concerning you leave, CWS and travel into the document, this did not always work.
- If you are scheduled to work a shift that you cannot work (whether because you have leave, have other obligations, are on CWS, etc.), it is your responsibility to find a replacement. I will maintain the master copy, so if there is a change, please email it to me. I will plan on sending out updates to the sheet as necessary every few days.
- In addition to the people who have already been working in the Ops Center or will start shifts there soon, feel free to reach out to Gerri, Wilkins, Andrea, Kirk and Brooke when they return to the office. We have 20+ people in the office who are available and eager to help, so it should not be too difficult to find a replacement when needed.

- At this point, we are under the assumption that we will need two people manning the international liaison desk through April 15. If this changes, we will let you know.

Once again, please look at the coverage spreadsheet closely. Your name may only appear a few times or it may appear 10+ times. In some cases you may have been substituted for people who are away on travel in what may appear to be random fashion. It is your responsibility to show up during your designated shift or to find a replacement for it. If you have any questions or concerns, please reply directly to me **only**.

Please note: coverage through this Sunday (March 20) has already been finalized. The document with this information is also attached.

Once again, thank you all for your contributions. Everyone understands this has been an overwhelming and challenging time for OIP, but I think everyone's eagerness to help and flexibility have been clearly demonstrated.

International Liaison Coverage for the NRC's Japan Disaster Response
March 21-April 15, 2011

Below you will find the schedule for OIP coverage of the Ops Center. If you cannot work a shift you are scheduled for, it is your responsibility to find a replacement. Once again, thank you for your time, effort and flexibility.

SHIFT 1

MONDAY, MARCH 21

	Staff #1	Staff #2
7:00a-3:00p	Jen S.	Charlotte (Nancy from 12-3pm)
3:00p-11:00p	Danielle	Lauren
11:00p-7:00a	Eric	Mugeh

TUESDAY, MARCH 22

	Staff #1	Staff #2
7:00a-3:00p	Jen S.	Charlotte
3:00p-11:00p	Danielle	Lauren
11:00p-7:00a	Eric	Mugeh

WEDNESDAY, MARCH 23

	Staff #1	Staff #2
7:00a-3:00p	Jen S.	Charlotte
3:00p-11:00p	Danielle	Lauren
11:00p-7:00a	Eric	Mugeh

SHIFT 2

THURSDAY, MARCH 24

	Staff #1	Staff #2
7:00a-3:00p	Steve Bloom	Lance
3:00p-11:00p	Janice	Jenny
11:00p-7:00a	Andrea	Elizabeth

FRIDAY, MARCH 25

	Staff #1	Staff #2
7:00a-3:00p	Steve Bloom	Lance
3:00p-11:00p	Janice	Jenny
11:00p-7:00a	Andrea	Elizabeth

SATURDAY, MARCH 26

	Staff #1	Staff #2
7:00a-3:00p	Steve Bloom	Lance
3:00p-11:00p	Janice	Jenny
11:00p-7:00a	Cindy	Elizabeth

SHIFT 3

SUNDAY, MARCH 27

	Staff #1	Staff #2
7:00a-3:00p	Jill	Karen
3:00p-11:00p	Nancy	Jenny
11:00p-7:00a	Steve Baker	Brian

MONDAY, MARCH 28

	Staff #1	Staff #2
7:00a-3:00p	Jill	Karen
3:00p-11:00p	Nancy	Cindy
11:00p-7:00a	Steve Baker	Brian

TUESDAY, MARCH 29

	Staff #1	Staff #2
7:00a-3:00p	Jill	Karen
3:00p-11:00p	Nancy	Gerri
11:00p-7:00a	Steve Baker	Brian

SHIFT 4**WEDNESDAY, MARCH 30**

	Staff #1	Staff #2
7:00a-3:00p	Eric	Lauren (Jenny from 12-3pm)
3:00p-11:00p	Danielle	Mugeh
11:00p-7:00a	Jen S.	Charlotte

THURSDAY, MARCH 31

	Staff #1	Staff #2
7:00a-3:00p	Danielle	Lauren
3:00p-11:00p	Eric	Mugeh
11:00p-7:00a	Jen S.	Charlotte

FRIDAY, APRIL 1

	Staff #1	Staff #2
7:00a-3:00p	Cindy	Lauren
3:00p-11:00p	Danielle	Mugeh
11:00p-7:00a	Jen S.	Charlotte

SHIFT 5**SATURDAY, APRIL 2**

	Staff #1	Staff #2
7:00a-3:00p	Steve Bloom	Karen
3:00p-11:00p	Janice	Jenny
11:00p-7:00a	Gerri	Elizabeth

SUNDAY, APRIL 3

	Staff #1	Staff #2
7:00a-3:00p	Steve Bloom	Karen
3:00p-11:00p	Janice	Jenny
11:00p-7:00a	Jill	Elizabeth

MONDAY, APRIL 4

	Staff #1	Staff #2
7:00a-3:00p	Steve Bloom	Lance
3:00p-11:00p	Janice	Jenny
11:00p-7:00a	Jill	Elizabeth

SHIFT 6**TUESDAY, APRIL 5**

	Staff #1	Staff #2
7:00a-3:00p	Skip	Kirk
3:00p-11:00p	Steve Baker	Brian
11:00p-7:00a	Jill	Gerri

WEDNESDAY, APRIL 6

	Staff #1	Staff #2
7:00a-3:00p	Skip	Kirk
3:00p-11:00p	Steve Baker	Brian
11:00p-7:00a	Jenny	Gerri

THURSDAY, APRIL 7

	Staff #1	Staff #2
7:00a-3:00p	Skip	Kirk
3:00p-11:00p	Steve Baker	Brian
11:00p-7:00a	Jenny	Gerri

SHIFT 7**FRIDAY, APRIL 8**

	Staff #1	Staff #2
7:00a-3:00p	Eric	Mugeh
3:00p-11:00p	Jen S.	Charlotte
11:00p-7:00a	Danielle	Lauren

SATURDAY, APRIL 9

	Staff #1	Staff #2
7:00a-3:00p	Eric	Mugeh
3:00p-11:00p	Jen S.	Charlotte
11:00p-7:00a	Danielle	Lauren

SUNDAY, APRIL 10

	Staff #1	Staff #2
7:00a-3:00p	Eric	Mugeh
3:00p-11:00p	Jen S.	Charlotte
11:00p-7:00a	Danielle	Lauren

SHIFT 8**MONDAY, APRIL 11**

	Staff #1	Staff #2
7:00a-3:00p	Steve Bloom	Lance
3:00p-11:00p	Janice	Jenny
11:00p-7:00a		Elizabeth

TUESDAY, APRIL 12

	Staff #1	Staff #2
7:00a-3:00p	Steve Bloom	Lance
3:00p-11:00p	Janice	Jenny
11:00p-7:00a		Elizabeth

WEDNESDAY, APRIL 13

	Staff #1	Staff #2
7:00a-3:00p	Steve Bloom	Lance
3:00p-11:00p	Janice	Jenny
11:00p-7:00a		Elizabeth

SHIFT 9**THURSDAY, APRIL 14**

	Staff #1	Staff #2
7:00a-3:00p	Steve Baker	Brian
3:00p-11:00p	Jill	Karen
11:00p-7:00a	Skip	Nancy

FRIDAY, APRIL 15

	Staff #1	Staff #2
7:00a-3:00p	Steve Baker	Brian
3:00p-11:00p	Jill	Karen
11:00p-7:00a	Skip	Nancy

From: LIA02 Hoc
Sent: Tuesday, March 22, 2011 6:01 PM
To: PMT01 Hoc; PMT02 Hoc; LIA03 Hoc
Subject: FW: MEXT monitoring data for March 22 - Fukushima Daiichi 20 km zone
Attachments: 1303997_2213.pdf; 1303997_2216.pdf; 1303997_2219.pdf; 1303972_2210_1.pdf

-----Original Message-----

From: Michael W. Chinworth [mailto:michael-chinworth@jnes-usa.org]
Sent: Tuesday, March 22, 2011 5:37 PM
To: LIA02 Hoc; Emche, Danielle
Subject: MEXT monitoring data for March 22 - Fukushima Daiichi 20 km zone

--
Michael W. Chinworth
Senior Researcher
Japan Nuclear Energy Safety Organization (JNES) 1850 M Street, N.W.
Suite 1070
Washington, D.C. 20036
202-223-9584 (tel)
202-223-9585 (fax)

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Ramsey, Kevin

From: Johnson, Robert
Sent: Tuesday, March 22, 2011 12:30 PM
To: NMSS_FCSS_FMB
Subject: FW: 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update
Attachments: USNRC Earthquake-Tsunami Update.032111.1800EDT.pdf

All,
Additional status update on events in Japan. Missed it earlier and wanted to make sure that you all had it, if interested.
Thanks,
Robert

From: Bailey, Marissa
Sent: Tuesday, March 22, 2011 8:58 AM
To: Hiltz, Thomas; Habighorst, Peter; Smith, James; Smith, Brian; Damon, Dennis; Silva, Patricia; Campbell, Larry; Johnson, Robert
Subject: FW: 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update

Please share with your staff.

From: Haney, Catherine
Sent: Tuesday, March 22, 2011 4:59 AM
To: Kinneman, John; Tschiltz, Michael; Bailey, Marissa; Pulliam, Timothy; Ordaz, Vonna; Weaver, Doug; Mohseni, Aby; Davis, Jack; Kokajko, Lawrence
Subject: Fw: 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update

From: LIA07 Hoc
Sent: Mon Mar 21 18:16:05 2011
Subject: 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 21, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

-Sara

Sara K. Mroz
Communications and Outreach
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
Sara.Mroz@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

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From: Hoc, PMT12
Sent: Sunday, March 20, 2011 4:02 PM
To: GIS Hoc
Subject: FW: Latest forecast for Fukushima Daiichi 1
Attachments: Fukushima_Forecast_20March12Z.xlsx

From: OST02 HOC
Sent: Sunday, March 20, 2011 3:57 PM
To: Hoc, PMT12
Subject: FW: Latest forecast for Fukushima Daiichi 1

From: HOO Hoc
Sent: Sunday, March 20, 2011 3:56 PM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: Latest forecast for Fukushima Daiichi 1

From: Vogt, Phil [mailto:vogt4@llnl.gov]
Sent: Sunday, March 20, 2011 3:49 PM
To: CMHT@nnsa.doe.gov; nitops@nnsa.doe.gov; HOO Hoc; PMT02 Hoc; PMT01 Hoc; na30ecc@nr.doe.gov; 'McMichael, Lukas C CIV SEA 08 NR'; alan.remick@nnsa.doe.gov
Cc: narac@llnl.gov
Subject: Latest forecast for Fukushima Daiichi 1

The latest forecast from our 1200Z WRF run is in the table below, and the attached spreadsheet.

Date	Hr (UTC)	Speed (m/s)	Dir	Stability	Precip
20-Mar	20	2.9	353	F	0
	21	2.7	8	F	0
	22	3.4	11	D	0
	23	4.1	341	C	0
21-Mar	0	3.7	338	C	0
	1	4.3	2	C	0.05
	2	5.8	12	C	0.04
	3	6.7	9	C	0.04
	4	6.6	17	C	0.01
	5	5.9	16	C	0
	6	5.5	17	C	0
	7	4.3	5	D	0
	8	2.9	1	D	0
	9	2.6	331	C	0

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	10	3.4	314	D	0
	11	3.8	308	D	0
	12	4.1	306	E	0
	13	3.8	297	E	0
	14	3.7	303	E	0
	15	3	325	E	0
	16	4.2	326	D	0
	17	4.6	311	E	0
	18	4.7	318	E	0
	19	4.8	325	E	0
	20	5.3	327	D	0
	21	5.6	327	D	0
	22	5.7	328	D	0
	23	5.3	332	D	0
22-Mar	0	4.7	350	C	0
	1	4.9	6	C	0
	2	4.8	18	C	0
	3	4.5	32	C	0
	4	4.1	51	C	0
	5	3.8	67	C	0
	6	3.2	70	C	0

NARAC Operations
925-422-7627
narac@ltnl.gov

Date	Hr (UTC)	Speed (m/s)	Dir	Stability	Precip
20-Mar	20	2.9	353	F	0
	21	2.7	8	F	0
	22	3.4	11	D	0
	23	4.1	341	C	0
21-Mar	0	3.7	338	C	0
	1	4.3	2	C	0.05
	2	5.8	12	C	0.04
	3	6.7	9	C	0.04
	4	6.6	17	C	0.01
	5	5.9	16	C	0
	6	5.5	17	C	0
	7	4.3	5	D	0
	8	2.9	1	D	0
	9	2.6	331	C	0
	10	3.4	314	D	0
	11	3.8	308	D	0
	12	4.1	306	E	0
	13	3.8	297	E	0
	14	3.7	303	E	0
	15	3	325	E	0
	16	4.2	326	D	0
	17	4.6	311	E	0
	18	4.7	318	E	0
	19	4.8	325	E	0
	20	5.3	327	D	0
	21	5.6	327	D	0
	22	5.7	328	D	0
	23	5.3	332	D	0
22-Mar	0	4.7	350	C	0
	1	4.9	6	C	0
	2	4.8	18	C	0
	3	4.5	32	C	0
	4	4.1	51	C	0
	5	3.8	67	C	0
	6	3.2	70	C	0

From: LIA02 Hoc
Sent: Tuesday, March 22, 2011 10:37 AM
To: Carter, Mary; Mamish, Nader; Dembek, Stephen
Cc: LIA03 Hoc
Subject: FW: Travel From Japan
Attachments: FW: NRC TEAM IN JAPAN

FYI – According to Mike Dudek, NRC is responsible for getting Jim and Tony home. I will take this to mean we can make their arrangements. Please let us know what information you need from Jim and Tony to get their return flights done. Thanks!

From: RMTPACTSU_ELNRC [mailto:RMTPACTSU_ELNRC@ofda.gov]
Sent: Tuesday, March 22, 2011 10:34 AM
To: LIA02 Hoc
Subject: RE: Travel From Japan

Please see Josh Batkin's email attached above. The NRC staff is still responsible for Jim Trapp and Tony Ulsis. USAID is responsible for all other NRC travelers.

If you have any additional questions, please don't hesitate to ask.

Thanks!
Michael I. Dudek

From: LIA02 Hoc [mailto:LIA02.Hoc@nrc.gov]
Sent: Tuesday, March 22, 2011 9:19 AM
To: RMTPACTSU_ELNRC
Subject: FW: Travel From Japan

Please see below request from Jim Trapp regarding return flight arrangements. Please let us know what other information you may need in order to make the reservations.

Thanks!

From: Carter, Mary
Sent: Tuesday, March 22, 2011 9:16 AM
To: Trapp, James
Cc: LIA02 Hoc; LIA03 Hoc; Mamish, Nader; Ramsey, Jack
Subject: RE: Travel From Japan

Mr. Trapp,
You will cross the international dateline and arrive in Philadelphia on March 25.

Our Op Center will receive a copy of this e-mail. Please send your request to them cc

AID will make your travel arrangements for your return from Tokyo. Our Liaison in the OP Center will forward your request.

American Airlines is the contract carrier between Tokyo and Philadelphia. They offer 2 connections which are both available for March 25. The contract fare is in Y class.

American 176 Tokyo Narita-Dallas/Ft. Worth 12:05p 9:20a

Elapsed time 11hr 15min

American 446 Dallas-Ft/Worth-Philadelphia 11:15a 3:25p

Elapsed time 3hr 10min

Or

American 154 Tokyo Narita-Chicago O'Hare 6:05p 3:40p

Elapsed time 11hr 35min

American 408 Chicago O'Hare-Philadelphia 5:40p 8:35p

Elapsed time 1hr 55min

AID will need the following information:

Your name (as it appears on your Passport)

DOB

Gender

Passport number and expiration date

Passport type Official/Personal

From: Trapp, James

Sent: Tuesday, March 22, 2011 5:07 AM

To: Carter, Mary

Subject: Travel From Japan


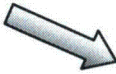
Mary - Hello,

If possible, I would like to have a flight on Friday 3/25 and fly to Philadelphia.

I had a one way ticket to get over here and I didn't go thru USAID (I was part of the first wave).



I appreciate your support. Thanks

From: PMT01 Hoc
Sent: Tuesday, March 22, 2011 2:50 PM
To: GIS Hoc
Cc: PMT01 Hoc
Subject: Updated weather forecast
Attachments: image001.png; image002.png

	<u>Current Conditions at JMA Station (Soma)</u> Wed., Mar-23, 3 am JST Temperature 35°F, no precip. Light winds from the NW at 5 mph
	<u>Forecast Conditions (NARAC):</u> Wed., Mar-23, 9 pm to Mar-24, 3 pm JST Temperature 30 to 45 °F, no precip. Winds initially from NNW from 5 to 20 mph, turning to come from W

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From: PMT01 Hoc
Sent: Tuesday, March 22, 2011 8:41 AM
To: GIS Hoc
Cc: PMT01 Hoc
Subject: Updated Weather Conditions/Forecast
Attachments: image001.png; image002.png

	<u>Current Conditions at JMA Station (Soma)</u> Tues., Mar-22, 9 PM JST Temperature 40°F, no precip. Light winds from the WSW at 3 mph
	<u>Forecast Conditions (NARAC):</u> Tues., Mar-22, 9 pm to Mar-23, 9 am Temperature 32 to 40 °F, no precip. Winds from NNW from 5 to 15 mph

III/109

From: Johnson, Michael
To: [Rosales-Cooper, Cindy](#)
Subject: RE: Emails to International Counterparts from RIC
Date: Tuesday, March 22, 2011 2:52:00 PM

Let's take care of this in the morning.

From: Rosales-Cooper, Cindy
Sent: Tuesday, March 22, 2011 12:59 PM
To: Johnson, Michael; Holahan, Gary
Cc: Williams, Donna
Subject: Emails to International Counterparts from RIC

Per the discussion this morning, I went ahead and drafted short emails to the international counterparts you met with jointly and independently during the RIC. I have separated the emails based on those I think should be sent from Mike and those from Gary.

Mike, I didn't draft an email to La Coste because Gary is sending him a thank you letter that incorporates your discussion. The email to Japan expresses your concern in the wake of the tragedy.

I've also included the email addresses of the recipients with the exception of the Italian Commissioners and Mr. Houdre of France. I'm waiting on those email addresses from OIP.

EMAILS from Mike

UAE
Dr. Travers (Bill),
william.travers@fanr.gov.ae

Thank you for meeting with Gary and me during the 2011 RIC. It was good to see you again. As we discussed, I think an exchange of staff in construction inspection will be mutually beneficial. We anticipate hosting Rashid Al Hammadi of your staff in early June of this year. I also look forward to your support on our efforts to raise international awareness of Counterfeit, Fraudulent, and Suspect Items (CFSI). I believe this issue goes beyond non-conforming parts and will affect all countries building new reactors or extending the life of existing ones.

As Gary mentioned, the NRC would be supportive of and interested in issue-specific working groups for the AP 1400 under MDEP.

I look forward to future interactions with you and FANR.

CANADA
Mr. Jamieson (Terry),

III/110

Terry.jamieson@cnscccsn.gc.ca
Greg.rzentkowski@cnscccsn.gc.ca

Thank you for meeting with Gary and me during the 2011 RIC. I found our discussions with you and Greg Rzentkowski on CNSC-NRC cooperation on new reactors to be very positive. As I mentioned during our meeting and during the CNRA Bureau Meeting that Greg attended, I am championing an effort to raise international awareness of Counterfeit, Fraudulent, and Suspect Items (CFSI). To this end, I am very interested in having follow-up discussions with you on the CNSC draft regulatory guidance on CFSI and digital instrumentation. I also think follow-up discussions on regulatory approaches for small and medium sized reactors would be mutually beneficial. Perhaps we can plan for a bilateral meeting in the near future to discuss our mutual interests in these areas.

CZECH Rep.
Mr. Krs,
Petr.krs@sujb.cz

It was good to meet you during the NRC 2011 RIC. I found our discussion to be very informative and think that we successfully identified areas of mutual interest and benefit. I reiterate my willingness to assist your agency in developing your evaluation of the Westinghouse AP 1000 reactor by answering questions and providing access to our design review materials. As I mentioned during our meeting, I am championing an effort to raise international awareness of Counterfeit, Fraudulent, and Suspect Items (CFSI). To this end, I am very interested in having follow-up discussions with you on your experiences with CFSI during your review of digital instrumentation and controls of nuclear power plants in the Czech Republic. If you agree, I would like to plan a bilateral meeting in the near future to discuss our mutual interests in these areas.

KOREA
Dr. Youn-Won Park,
pyw@kins.re.kr

It was a pleasure to meet you and the KINS delegation at the NRC 2011 RIC. Gary Holahan and I found the discussion to be very positive and mutually beneficial. I am pleased to move forward with the NRC/NRO- KINS exchange of staff and have asked Samuel Lee and Hossein Hamzehee to plan a short visit in July/August to KINS to further solidify their assignments on your staff. Hossein is one of our Severe Accident Analysis specialists and will be prepared to assist you with your inquiries in this area. I've also asked my staff and the Office of International Programs to assist you in placing the KINS assignee in the NRC's Region II Office.

I also look forward to your support on our efforts to raise international awareness of Counterfeit, Fraudulent, and Suspect Items (CFSI). I believe this issue goes beyond non-conforming parts and will affect all countries building new reactors or extending

the life of existing ones. As Gary mentioned, the NRC would be supportive of and interested in issue-specific working groups for the AP 1400 under MDEP.

I look forward to future interactions with you and KINS.

JAPAN

Mr. Tatsuo SATO

Sato-tatsuo@jnes.go.jp

Thank you for meeting with me during the NRC's 2011 Regulatory Information Conference. I am writing to express my sincere concern and condolences for the tragedy that has fallen on Japan. As the country of Japan and its nuclear regulatory agencies NISA and JNES moves forward with the cleanup of the earthquake, tsunamis, and accident at Fukushima-Daiichi, please know that your colleagues at the US NRC are willing to assist in providing technical support. Please feel free to contact me with requests for technical assistance during your national recovery efforts.

EMAILS from Gary

RUSSIA

Irina Sokolova

ivs@gan.ru

Thank you for meeting with me during the NRC's 2011 Regulatory Information Conference. I use individual meetings with MDEP Steering Technical Committee members as an opportunity to gather feedback on MDEP. I found our discussions on future NRC-Rostekhnadzor cooperation in the area of new and advanced reactors to be positive. As I mentioned during our meeting, my office is championing an effort to raise international awareness of Counterfeit, Fraudulent, and Suspect Items (CFSI). To this end, I was very pleased to learn of Rostekhnadzor's mutual interest in this area and look forward to your support. I also look forward to working with your agency on creating a workshop at the IAEA to focus on small and medium sized reactors. I think we can have mutual success in this endeavour.

I look forward to seeing you at the April MDEP meeting in Paris.

ITALY

Mr. Ricotti (Commissioner)

roberto.ranieri@isprambiente.it

It was a pleasure to meet you, Commissioner LaPorta, and Mr. Ranieri during the NRC 2011 RIC. As I mentioned in the meeting, your organization, the Italy-ASN, is faced with a task similar to the challenge the NRC faced when we created the Office of New Reactors. We will be happy to meet with you to discuss our approach to creating this office and consult on the challenges of qualification programs and

staffing. We are also working with the NRC's Office of International Programs to support your request for a two week seminar on the NRC's Combined Operating License (COL) approach.

FINLAND

Petteri Tippi

Petteri.Tippi@stuk.fi

Thank you for meeting with me during the NRC's 2011 Regulatory Information Conference. I hope that your visit to Washington was successful. I think that we have a positive history of staff exchange for which we can expand and build upon; therefore, I propose that we look for opportunities to again exchange staff. As I mentioned during our meeting, my office is championing an effort to raise international awareness of Counterfeit, Fraudulent, and Suspect Items (CFSI). I believe this issue goes beyond the problem of non-conforming parts and will affect all countries building new reactors or extending the life of existing ones.

I look forward to seeing you again in the future.

FRANCE

Houdre

Thank you for meeting with me during the NRC's 2011 Regulatory Information Conference. I use individual meetings with MDEP Steering Technical Committee members as an opportunity to gather feedback on MDEP. I found our discussions on cooperation in the area of new and advanced reactors to be positive. I have asked my staff to work with the Office of International Programs to assist with your request to have ASN staff visit the NRC Region II Center for Construction Inspection and the Vogtle new reactor site.

I look forward to seeing you at the April MDEP meeting in Paris.

Cindy E. Rosales-Cooper

Technical Assistant for International Activities

Office of New Reactors

(301) 415-1168

Masnik, Michael

From: Webb, Michael
Sent: Tuesday, March 22, 2011 10:43 AM
To: Masnik, Michael
Subject: RE: 0600 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update

You're welcome (although it did not look like the report provided much new info regarding the actual condition of the plants).

You might also find the Sharepoint link below interesting.

<http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Items%20that%20May%20Be%20Useful%20in%20Answering%20Questions%20-%20Contains%20THOROUGH%20SEISMIC%20ANALYSIS!/Seismic%20Questions%20for%20Incident%20Response%203-20-11%208pm.pdf>

From: Masnik, Michael
Sent: Tuesday, March 22, 2011 10:03 AM
To: Webb, Michael
Subject: RE: 0600 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update

Thanks, Mike

From: Webb, Michael
Sent: Tuesday, March 22, 2011 9:01 AM
To: Masnik, Michael
Subject: FW: 0600 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update

FYI.

From: LIA07 Hoc
Sent: Tuesday, March 22, 2011 6:20 AM
To: LIA07 Hoc
Subject: 0600 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update

Please find attached a 0600 EDT (March 22, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is only being shared within the federal family.

Please call the Headquarters Operations Officer at 301-816-5100 with questions.

-Jim

Jim Anderson
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
James.anderson@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

From: LIA02 Hoc
Sent: Wednesday, March 23, 2011 8:40 AM
To: Carter, Mary; Mamish, Nader
Cc: LIA03 Hoc
Subject: RE: Travel for Trapp/Ulises

Mary,

Have you been in touch with the CFO's office on this? Otherwise we can contact them to see what they'd advise us to do.

From: Carter, Mary
Sent: Wednesday, March 23, 2011 8:02 AM
To: LIA02 Hoc; Mamish, Nader
Subject: RE: Travel for Trapp/Ulises

I can make the reservations, but the CFO would be required to authorize payment and they have not been given instructions to do this.

From: LIA02 Hoc
Sent: Wednesday, March 23, 2011 6:21 AM
To: Mamish, Nader
Cc: Carter, Mary
Subject: Travel for Trapp/Ulises

Nader –

For your information, Mary Carter will have to make Jim and Tony's travel reservations back home since they do not have travel authorizations through USAID. Kirk has already emailed Mary and NRC liaisons at USAID about this.

Thanks,
Eric

III/12

From: LIA10 Hoc
Sent: Wednesday, March 23, 2011 7:15 PM
To: LIA02 Hoc; LIA03 Hoc
Subject: Nikkei Article: Fukushima Dai-ichi - 3 possibilities - depends on cooling system 6:56am March 24
Attachments: image001.jpg; image002.gif

福島第1原発、3つの可能性 冷却システムが左右

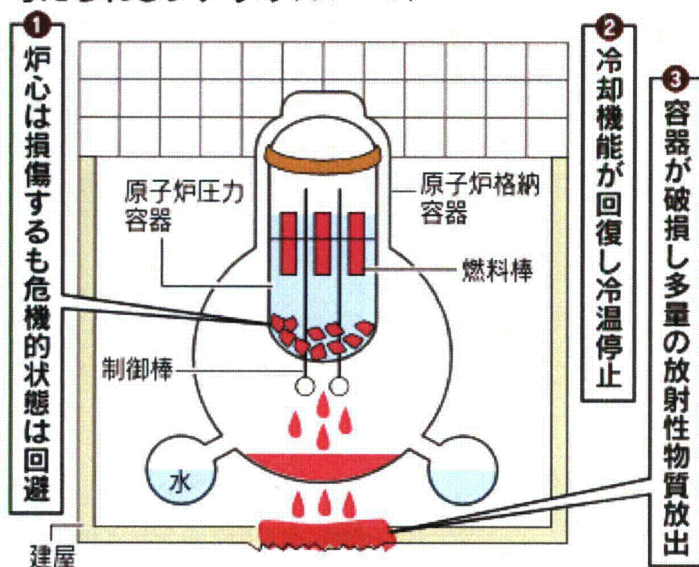
Fukushima Dai-ichi, 3 Possibilities – all Depends on the Cooling System

(6:56am, March 24)

東京電力福島第1原子力発電所では外部電源を使う準備が整い、原子炉内の燃料の過熱が懸念される1～3号機で外部電力を使った冷却作業が始まる。原子炉を安全な状態にどう持っていけるか、想定されるシナリオを検証する。

At Fukushima Dai-ichi, they are going to start cooling operations using external power sources for unit 1-3 which are

考えられるシナリオ(イメージ)



【ケース1】炉心損傷したが危機は回避

[Case 1] reactor core is damaged, but crisis is avoided

Possible scenarios

1 reactor core is damaged but crisis is avoided

2 cooling function is restored and operation is suspended at cool temperature

3 container is damaged and the large amount of radioactive materials are released

外部電源は使えるようになったものの、冷却に使える装置がすぐには 100%動かず、現在の応急的な冷却に頼りながら徐々に原子炉を冷やしていく。最もあり得るシナリオだ。

津波などの影響で冷却システムのポンプやモーターなどのすべては順調に動かない可能性が高いためだ。「電気は通じるようになったがまだすぐ使える状況ではなく、予断を許さない」（中野益宏・日本原子力技術協会情報・分析部長）との見方が根強い。

この場合、本来の冷却システムの復旧を目指しながら、消火用のシステムを使ってポンプで海水を断続的に注入するという現在の方法を続けることになる。

このやり方では安全な温度に下がるまで数週間かかるとみられる。水の注入が長期化すると、原子炉内の圧力を下げるため炉内の水蒸気を外に出す必要が生じ、放射性物質が徐々に放出される。注入した水の一部が漏れて現場付近の汚染が広がる懸念も出てくる。

また、現在のように冷却に海水を使い続けると「冷却水の蒸発で塩がたまり、配管をふさいで冷却効果を落としたり弁をつまらせたりする恐れがある」（有富正憲・東京工業大学原子炉工学研究所長との懸念もある。

Although external power sources become available, the cooling equipments are not restored 100%. Reactor will be cooled down gradually using emergency cooling system. Most likely scenario.

Due to the effect of Tsunami, the cooling pumps and motors do not perform well.

Under these circumstances, they need to continue current operation, which is to intermittently inject seawater using fire pump as they work at restoring the cooling system.

Under this scenario, it would take weeks to bring the temperature down to the safe level. If water continue to be injected for long period of time, there would be a need for releasing moisture vapor in order to lower the pressure inside the reactor resulting in gradual release of radioactive materials. There is also concern that some of the water injected could be leaked outside causing contamination in the vicinity of the plant.

【ケース 2】冷却機能が回復し冷温停止

[Case 2] Reactor stops at cool temperature as a result of restoration of the cooling system

最も好ましいケースは、原子炉を冷却するための本来のシステムが外部電源の開通によってトラブルなく動くこと。そうなれば数日で原子炉を「冷温停止」と呼ばれる安全な状態に持っていくことができる。

利用できる冷却機能には炉心への注水システムと、冷却水を循環させて炉心を冷やすシステムがあるが、まず炉心への注水の実施を目指す。ホウ酸水注入系と制御棒駆動系という、通常は別の目的で備えた仕組みを使い、海水や水を注入する。

これらによって応急的に原子炉を冷やした後、水を循環させて原子炉を冷やすシステムを動かすことになる。

だが、故障部品などがあればこうしたシナリオは狂ってしまう。

Most favorable scenario is to restore the cooling system. Once the cooling system starts to operate using external power source, the reactor would stop at cool temperature and become stabilized in a few days.

【ケース3】容器破損で放射性物質放出

[Case 3: radioactive materials released as a result of container damage]

最も懸念されるのは燃料棒が完全に溶けて、圧力容器や格納容器を破損させてしまうこと。大量の放射性物質を含む燃料が外部に出てしまう。高温の燃料が付近の水と反応して水蒸気爆発が起きることも心配される。

燃料棒の温度上昇と応急措置的な冷却のバランスが崩れて、燃料棒が過熱する可能性は捨てきれない。だが出光一哉・九州大学教授は「これまでの冷却で燃料棒の溶解を抑え込んできた。これ以上過酷な事故に進展する可能性は低いだろう」とみている。

ただ、たとえ1つの原子炉で事態が悪化するだけでも、そこで放射線量が急増すれば他の炉の復旧作業が困難となり作業員が退避を迫られる。すべての原子炉や使用済み燃料プールの注水作業ができなくなり、手がつけられない状態になる。

The worst scenario is a complete meltdown of fuel rods resulting in damages of containment and container vessel. This will cause the large amount of radioactive materials to be released. There is also a concern for possible water vapor explosion as a result of reaction between high temperature fuel and water near it.

We can't rule out the possibility of fuel rods becoming overheated due to imbalance between rising temperature of fuel rods and emergency cooling operation. According to Prof Kazuya Idemitsu of Kyushu University, "Probability of the situation getting worse than it is now is low because so far we have managed to prevent fuel rods from being melted down.

However, even one element went wrong at nuclear reactor which would cause radiation dose to surge, restoration activities have to be suspended and workers need to be evacuated therefore unable to continue watering the reactors and spent fuel pool. This may lead to unmanageable situation.

福島第1原発の現状

(current situation of Fukushima Dai-ichi)

号機 (地震発生時の状況)	使用済み 建屋核燃料 プール	圧力容器の燃料棒	格納 容器
1号機 (運転中)	× 水素 爆発	不明 × 損傷	○ 維持
2号機 (運転中)	△ 壁に 損傷	△ やや高め × 損傷か	△ 損傷か
3号機 (運転中)	× 水素 爆発	△ 過熱か × 損傷か	○ 維持
4号機 (停止中)	× 一時 火災	△ 過熱か なし	○ 維持

(注) 5、6号機は安定した「冷温停止」状態

利用できる冷却機能には炉心への注水システム

(current situation of Fukushima Dai-ichi)

Unit #	Building	Spent fuel pool	Fuel rods in containment	Container vessel
1	Hydrogen explosion	Unknown	Damaged	maintained
2	Damages on the wall	Slightly high	Damaged?	Damaged?
3	Hydrogen explosion	Overheated?	Damaged?	maintained
4	Temporary fire	Overheated?	Damaged?	maintained

Notes: Units 5 and 6 are in stable condition: operation suspended at cool temperature

From: LIA02 Hoc
Sent: Wednesday, March 23, 2011 5:52 AM
To: LIA03 Hoc
Subject: FW: Fukushima Nuclear Accident: Information Sheet

From: Shaffer, Mark R [mailto:ShafferMr@state.gov]
Sent: Wednesday, March 23, 2011 2:41 AM
To: Davies, Glyn T; Wood, Robert A; Scheland, Mark DL; IAEA Vienna
Cc: Schwartzman, Jennifer; LIA02 Hoc
Subject: Fukushima Nuclear Accident: Information Sheet

IAEA has moved light years ahead in past day or so to provide information on all aspects of the Fukushima accident that the public might be interested in. They now have on their web site the **Fukushima Nuclear Accident: Information Sheet**.

The fact sheet is introduced by stating...."we understand that after the Fukushima nuclear accident, you and thousands of others are concerned about the safety of the people in Japan, as well as the safety of your family and yourself. With this information sheet, we hope to provide useful resources to address the thousands of queries we receive."

The fact sheet contains lots of information, broken down in the following areas:

- What IAEA's experts are doing now
- Radiation and Health Information,
- Restrictions on Travel to Japan
- Concerns about radioactively contaminated products or commodities
- Information for shipping
- Impact of nuclear and radiological accidents
- Background on Radiation
- Information about Boiling Water Reactors
- Information regarding donations to the people of Japan

This email is UNCLASSIFIED.

From: [Correia, Richard](#)
To: [Layton, Michael](#); [Caldwell, Robert](#); [Coe, Doug](#); [Wastler, Sandra](#); [Erlanger, Craig](#); [Huyck, Doug](#)
Subject: FW: 1800 EDT (March 23, 2011) USNRC Earthquake/Tsunami Status Update
Date: Wednesday, March 23, 2011 6:47:14 PM
Attachments: [USNRC Earthquake-Tsunami Update.032311.1800EDT.pdf](#)

From: LIA07 Hoc
Sent: Wednesday, March 23, 2011 6:02 PM
Subject: 1800 EDT (March 23, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 23, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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Please call the Headquarters Operations Officer at 301-816-5100 with questions.

-Sara

Sara K. Mroz
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