



NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

FRIDAY, APRIL 15, 2011 7:00 AM EDT

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NRC NEWS:

TVA Considers Improvements At Its Six US Reactors. The New York Times (4/15, A6, Wald, Subscription Publication, 950K) reports that the "Tennessee

Valley Authority said Thursday it was considering millions of dollars of improvements to protect its six nuclear reactors from earthquakes and floods." The TVA said it would considering "reducing the amount of fuel in its spent fuel pools" and transfer older fuel to "passively cooled 'dry casks' and adding additional backup diesel generators." The TVA

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said while none of six nuclear units are earthquake prone areas, "it was looking at 'potential vulnerabilities from a chain of events, such as damage from a tornado or earthquake combined with flooding from a dam failure.'"

The Chattanooga Times Free Press (4/14, Flessner, 78K) reported that the TVA also plans to "immediately add satellite telephones and small portable generators and could add more dry cask storage and hardened water supply pipes at its nuclear power plants, TVA Chief Operating Officer Bill McCollum said today." McCollum told the "TVA board today that TVA is looking at both short-term and long-term changes to minimize a nuclear plant accident like what happened in Japan." He said the agency is "trying to assure that we're ready for the unexpected."

Prior to the TVA Board meeting, the Tennessean (4/15, 129K) reported that "nuclear issues" were expected to be "high on the agenda of the Tennessee Valley Authority's board meeting" in Chattanooga. "Discussions about the safety of nuclear power are coming in the wake of disabled reactors and radioactive releases after an earthquake and tsunami in Japan."

In a later version Chattanooga Times Free Press (4/15, Flessner, 78K) reports, "During the board's public listening session in Chattanooga, most of the 14 speakers asked the board to review or even phase out its commitment to nuclear power." Sandra Kurtz of the group Bellefonte Efficiency & Sustainability Team, noted the decision in Japan to put diesel tanks at a level where a tsunami could wash them away, saying "The real cause of the Fukushima nuclear crisis is human error." She added, "Human error can happen here, too." But Rick Roden of the local Chamber of Commerce and Goodrich A. 'Dus' Rogers of the Economic Development Board "urged TVA directors to finish the long-delayed Bellefonte reactor."

WIAT-TV Birmingham, Alabama (4/14) also covered the story.

TVA To Delay Decision On New Bellefonte Reactor.

According to the Chattanoogan (4/15), TVA's COO Bill McCollum said that the "previously approved construction at Watts Bar Nuclear Plant Unit 2 in East Tennessee and engineering work at the Bellefonte site in northern Alabama are proceeding on schedule. Mr. McCollum said TVA staff will ask the board to make a decision on whether to move ahead with construction of a nuclear unit at the Bellefonte site 'after TVA has a clear understanding of the Japanese nuclear situation and any potential impact on the project.'"

The AP (4/15) reports, "TVA has decided to delay recommending a go-ahead on a reactor at its Bellefonte Nuclear Plant in northeast Alabama while the utility studies how to prevent anything like the radiation leak from Japan's tsunami-flooded nuclear plant."

TVA's McCollum Says Its Nuclear Plants Are Not Built In Earthquake-Prone Areas. On its website, WRCB-TV Chattanooga (4/15, Boyd) reported that in the "understatement of the month," TVA Chairman Dennis Bortorff said, "We probably are watching the Japan (nuclear) crisis even more closely than the common person in the street is." WRCB-TV noted that "Sequoyah, at Soddy Daisy, is among the five power plants that the Nuclear Regulatory Commission (NRC) considers most at risk for an 'earthquake that could cause catastrophic failure.'" But TVA's COO "Bill McCollum considers that a bit of a misnomer. 'Our nuclear plants are not built in areas where there are likely to be earthquakes,' says McCollum."

Residents Concerned About Safety Issues. On its website, WDEF-TV Chattanooga (4/14) reported that many Tennessee Valley residents "urged TVA's board to look away from nuclear power to meet the energy demands of this region. Gretel Johnston says 'you are simply gambling with our money and our lives.'" The Fukushima plant disaster "prompted a renewed call to halt work on new reactors at Bellefonte and Watts Bar," and the board "extended funding for engineering and design work at Bellefonte, but delayed further action to provide more time to review lessons learned from Japan."

WTVG-TV Chattanooga (4/14, Pless) reported on its website that during Board meeting's public comment period, "concerns over hundreds of 'events' at nuclear plants revealed just how many incidents go unreported for months." Spent fuel storage concerns in the "Tennessee Valley and the huge costs of securing and maintaining it were top of mind for several people. TVA officials maintain their nuclear fleet is safe and not subject to the vulnerabilities that have affected plants in Japan."

Growth Seen In East Tennessee Regions Near Sequoyia, Browns Ferry And Watts Bar Plants. On its website, WBIR-TV Knoxville (4/14, Welsch) reported that "Despite the potential for catastrophe near nuclear sites, the three nuclear plants closest to Knoxville have seen an increase in neighbors." The "50 mile evacuation zones surrounding the Sequoyia, Browns Ferry, and Watts Bar Nuclear plants all saw double digit increases in population from 2000 to 2010," a figure which makes that "about three times the growth rate seen by Rhea and Meigs counties during the same time period."

Increased Levels Of Radioactive Iodine Found In Chattanooga Drinking Water. The Chattanooga Times Free Press (4/15, Sohn, 78K) reports that radioactive iodine-131 was measure in Chattanooga drinking water at the second-highest levels measured in "anywhere in the US." But according to authorities, the "levels measured so far in Chattanooga's drinking water — although spiked — is not high enough to be dangerous. ... 'The results being reported

are well under the levels of health concerns,' said Tennessee American Water Co. spokeswoman Kim Dalton."

Sen. Alexander, NRC Commissioner Ostendorff To Visit Watts Bar Monday. According to the Chattanooga (4/15) reports, "Senator Lamar Alexander will visit the Watts Bar nuclear plant on Monday, with Commissioner Bill Ostendorff of the Nuclear Regulatory Commission." Of the "upcoming visit, Sen. Alexander said, 'I want to make sure that TVA is doing all it can to learn from the tragedy in Japan and that the six TVA reactors are operating as safely as possible.'"

Japan Atomic Disaster Shadow Likely To Loom Over TVA. The Scottsboro (AL) Daily Sentinel (4/15, Bonner, 5K) reports, "Japan's ongoing nuclear disaster will affect TVA's nuclear generation plans in both the short and long-term, according to reports presented at the utility's board of directors meeting held in Chattanooga Thursday." Van M. Wardlaw, executive vice president of enterprise relations said while "presenting the 20-year vision for the utility" that "TVA's Integrated Resource Plan is focused on what is best for the region we serve." He added, "It gives us diverse options, flexible options. It is a compass not a GPS." The IRP, "which was approved unanimously by the board, does include nuclear power as a viable option for producing electricity over the 20-year period," the Sentinel adds.

Blog: Radiation From Fukushima Disaster Spreading, Activist Says. In a piece for the blog website, Clean Energy News (4/15) Sara Barczak of Southern Alliance for Clean Energy, writes, "After over a month downplaying the disaster" at the Fukushima plant, "officials finally upgraded the disaster to a level 7 on the International Nuclear and Radiological Event Scale," and increased the evacuation zone "beyond the original 20-kilometer" radius. Also, radioactive contamination has been found in fish caught off the coast of the Ibaraki prefecture, and low levels of "strontium have also been detected in plants and soil outside of the 30-km zone around the plant."

In Southeast, Extreme Heat Is A Growing Concern For Nuclear Power Operators. SolveClimate News (4/15, Kenward) reports, "On July 8, 2010, as the temperature in downtown Decatur, Alabama, climbed to a sweltering 98 degrees Fahrenheit, operators at the Browns Ferry nuclear power plant a few miles outside of town realized they had only one option to avoid violating their environmental permit: turn down the reactors." TVA, which owns the nuclear plant, had to run the Browns Ferry at half its capacity when the adjacent waters of the Tennessee River hit 90 degrees Fahrenheit. For the next eight weeks, the plant continued to operate at only half of its regular output. The article notes that the total cost of the lost power amounts to more than \$50 million – a cost passed to TVA's customers.

TVA spokesman Ray Golden said that that the utility was impacted by the heat, and added that it "had to reduce power at the plant and get it from somewhere else."

Unidentified NRC Worker Say Middle Managers Could Be Cut To Reduce Budget.

The Washington Post (4/15, Rein, 572K) reports, "With the budget for the rest of the fiscal year finally passed and more cuts to spending on the way, we asked federal workers, contractors and others with in-depth knowledge of the workings of federal government to answer a simple question: What needs to be trimmed from the budget?" The Post notes some of their responses, one of which came from NRC. That response said, "Most middle [managers]; many have old-time skills and non-innovative processes. ... Redundant training, which has nothing to do with real-world skills."

Clean Energy Advocate Says Has High Praise For NRC.

The Syracuse, New York cable outlet, Your News Now (4/14) reported, "Radiation levels have dropped low enough to allow police to search for bodies in the rubble outside Japan's tsunami flooded nuclear plant," and crews are out searching a six mile radius at the Fukushima site. A "nuclear expert spoke with students at Syracuse University Thursday." Will Cothen of Clean Energy America said the "Nuclear Regulatory Commission in the US is the best in the world and they continue to learn and adapt in light of what has happened in Asia. 'One of the things we're looking at is how to deal with the most unimaginable situations and the actions that we need to be able to take in those situations and having some of these alternate ways of mitigating accidents.'"

Groups Demand NRC Suspend All Licensing Activities Until Broad Review Completed.

Bloomberg News (4/15, Lomax) reports, "The US should suspend licensing decisions for new and existing nuclear plants while it investigates Japan's reactor crisis, environmental groups said." On a conference call with reporters, lawyer Diane Curran said the groups "seek a 'credible Three Mile Island-style review' of Japan's failed reactors and implications for US safety," and added that the NRC "should 'immediately suspend all licensing activities.'"

Platts (4/15, Dolley) adds the "groups said 'the commission should suspend all decisions regarding the issuance of construction permits, new reactor licenses, combined construction permit and operating licenses, early site permits, license renewals, or standardized design certification' pending completion of reviews now being conducted by the NRC staff of lessons learned from the ongoing accident at Tokyo Electric Power Co.'s Fukushima 1 plant." The groups said the NRC's findings should "be supplemented by an investigation by a presidential

commission, similar to the Kemeny Commission, which was created by President Jimmy Carter to investigate the 1979 accident at Three Mile Island-2." Institute for Energy and Environmental Research president, Arjun Makhijani, "said the events at Fukushima are 'rewriting the book on nuclear reactor accidents,' and 'continuing business as usual in licensing and reactor certification in the face of the unprecedented, hugely complicated, and ongoing Fukushima accident would be rash.'"

According to the International Business Times (4/15), Sara Barczak of Southern Alliance for Clean Energy, "said the problem is that the nuclear industry has downplayed the seriousness of the Fukushima crisis and has pushed for building reactors whose safety is questionable." Barczak pointed to TVA's proposed Bellefonte Nuclear Generating Station and said the "reactor is a 1960s-era design, as construction was originally started in the late 1970s before being suspended in 1988. She said only two other reactors of this type have been built and neither is still operating."

The Cape Cod Times (4/15, Cassidy) notes the "45 groups and individuals, including a Duxbury-based organization focused on safety issues related to the Pilgrim Nuclear Power Station in Plymouth, filed a 35-page petition" with the NRC. Pilgrim Watch founder Mary Lampert, "said outstanding concerns about spent fuel rods, buried electric cables and emergency planning zones must be addressed" before relicensing at plants like Pilgrim Station proceeds.

Fukushima Plant Crisis Reenergizes Anti-Nuclear Movement. The Kansas City Star / Chicago Tribune (4/15, Wernau) reports, "When the Fukushima Dai-ichi nuclear power plant in Japan was knocked out with one mighty wave, the all-but-forgotten anti-nuke movement suddenly powered up in the US." Beyond Nuclear's Paul Gunter said he "barely found time to sleep" as web traffic spiked, "and Gunter's mailing list exploded with new members." In Pennsylvania, Eric Epstein of Three Mile Island Alert said he was deluged with media requests, traveling to the "infamous plant" as often as "11 times a day for TV interviews about whether what happened in Japan could happen here."

Anti-Nuclear Group Makes "Peace Pilgrimage" From Indian Point To Vermont Yankee. The Peekskill-Cortlandt Patch (4/15, Pesheva, Giegerich) reports on the "peaceful anti-nuclear power group" that started "its journey at Indian Point and walked on Route 202 in Peekskill and Yorktown on Monday as part of its Peace Pilgrimage for a Nuclear Free World." The group "will continue walking northeast over the next two weeks until they reach their final destination, Vermont Yankee Nuclear Power Plant in

Vermont. They will walk 206 miles, averaging about 15 to 18 miles a day and starting around 8:30 a.m. every morning."

In a news release on VT Digger (4/15), Deb Katz of Citizens Action Network wrote that the marchers "will arrive at Vermont Yankee April 24. Sister Jun Yasud said, 'The current crisis in Japan is a call to renew our efforts for a nuclear free world. A walk will pray for those affected in Japan and envision a world without nuclear energy or bombs.'"

California Lawmakers Press NRC To Halt Relicensing Work Pending Seismic Studies.

The AP (4/15, Weintraub) reports, "California lawmakers kept up the pressure Thursday for a harder look at earthquake safety at the two nuclear power plants in the state, questioning why federal regulators won't halt relicensing work until new seismic maps are completed." Sen. Alex Padilla, who chairs the California State Senate energy committee, said that since the state's nuclear plants, Diablo Canyon and San Onofre Station "face the highest seismic risk of any in the United States, continued scrutiny is needed to make the plants as safe as possible." According to Troy Pruett of the NRC, the agency has not responded yet but plans to move forward with other parts of the license review. In an abbreviated version, the AP (4/15, Weintraub) says, "Sen. Sam Blakeslee, whose district includes Diablo Canyon, says the commission sees earthquake risk through 'rose-colored glasses.'" An NRC "official says the agency would act immediately on fresh evidence about earthquake risk even if the license is renewed."

The Ventura County (CA) Star (4/15, Herdt, 67K) reports, "A top regional official of the US Nuclear Regulatory Commission told a legislative committee Thursday that the agency intends to proceed with its safety and environmental analysis for extending the license of the Diablo Canyon nuclear power plant, despite a request from the plant's operator that the agency take no final action until after more thorough seismic studies are completed." Troy Pruett, deputy regional director of the NRC's division of reactor projects said the agency hopes to proceed as scheduled with its review. "Staff has invested many thousands of hours in environmental and safety review," Pruett told members of the Senate Energy, Utilities and Communications Committee. "Our desire now is to publish that." Sen. Blakeslee told Pruett, "You're telling me you're going to proceed with business as usual? That's unacceptable."

KEYT-TV Santa Barbara, CA (4/14, 6:36 p.m. PT, 20,703) reported that California lawmakers "are criticizing two of the states nuclear plants," which includes Diablo Canyon nuclear plant in San Luis Obispo County. KEYT-TV adds that "lawmakers questioned the nuclear regulatory commission about why the agency has not suspended work on relicensing

the Diablo Canyon nuclear power plant" and they also wanted "more scrutiny of an offshore earthquake fault discovered in 2008." California State Senator Sam Blakeslee said that the NRC "sees earthquake risk through 'rose colored glasses.'" A NRC official "says the agency would act immediately on fresh evidence about earthquake risk even if" Diablo Canyon's "license is renewed."

KOVR-TV Sacramento, CA (4/14, 10:34 p.m. PT, 111,881) provide similar coverage.

Edison To Propose \$64 Million Fault Study For San Onofre Station. The Orange County (CA) Register (4/15, Brennan) reports, "A new, \$64 million study of earthquake fault patterns around the San Onofre nuclear plant will be proposed Friday by Southern California Edison, its scope broadened and its cost estimate more than doubled because of the nuclear disaster in Japan." SCE will propose to the California Energy Commission that the study be paid for through customer rates, "although Edison says that would add up to less than one percent of present overall rates." Edison is "still evaluating what type of technology to use, but sonar would likely be used to map the ocean floor near the nuclear plant, while seismic vibration measurements as well as lidar, which uses light beamed from planes, would be used on land."

Policymakers Want PG&E To Clarify Intentions On Diablo Canyon Relicensing. On its website, KVEC-AM San Luis Obispo, California (4/14, Harris) reported that few are "completely satisfied with PG&E's recent request to delay a final decision on renewing Diablo Canyon Nuclear Power Plant's operating licenses until in-depth seismic studies are complete." Even the NRC "has not decided how it will proceed in light of the PG&E request." Two days after its initial request, "PG&E sent a second letter to the NRC making it clear that the utility wants the processing of its renewal application to continue, but the issuance of a final decision should be delayed."

The San Luis Obispo (CA) Tribune (4/15, Sneed) reports the "San Luis Obispo Mothers for Peace want all license renewal activities stopped until the earthquake studies are done in light of the nuclear disaster in Japan, not just a possible postponement of a final decision." Jane Swanson of the Mothers group said "There are multiple lessons yet to be learned both from the future seismic studies and from the ongoing crisis at the Fukushima plants." NRC spokesman "Victor Dricks said the agency has not decided how it will proceed in light of the PG&E request."

The San Luis Obispo (CA) New Times (4/15, Fountain, 42K) reports that the seismic studies, currently in their "initial stages," were to have been "finished by 2015. However, in its letter to the NRC, PG&E said it plans to 'accelerate'

completion of the studies—but exactly what an acceleration means isn't yet clear. 'It's that we're going to be pursuing [the studies] more aggressively,' said PG&E Spokesman Paul Flake."

Capps, Blakeslee Renew Call For NRC To Halt Relicensing Activity. In an op-ed appearing in the San Luis Obispo (CA) Tribune (4/15), State Sen. Sam Blakeslee and US Rep. Lois Capps write, "Though PG&E acceded to our request" and asked the NRC to "delay its license renewal application while it completes recommended high energy, 3-D seismic studies of the new fault, the NRC has yet to agree to a delay nor has it agreed to suspend the application process." With the "ball" now "clearly in the NRC's court," Capps and Blakeslee say they are renewing the "call to the NRC to halt the relicensing process until the proper seismic studies are performed, independently reviewed, and furnished to state and federal regulators so that they may make informed, responsible decisions about relicensing."

NRC Discusses Safety Issues At Shearon Harris. The AP (4/14) reported, NRC regulators visited North Carolina to "answer questions about the safety performance at the Shearon Harris power plant." Agency staff discussed Thursday night the NRC's "role in ensuring safe plant operation," announcing that it had determined "that the Progress Energy plant 10 miles southwest of Raleigh met all the agency's safety objectives in 2010 and doesn't require any additional oversight."

WTVD-TV Raleigh-Durham, NC (4/14, 11:09 p.m. ET, 94,661) reported that a letter was sent out to residents living near the Shearon Harris nuclear plant assuring them that the plant is safe and "detailing the result of every incident at the plant in the past year." The NRC added that the plant "has very few safety issues and that may be why more people are willing to move near" it. On its website, WTLD-TV Raleigh-Durham NC (4/14) also reported.

NRC Holding Annual Safety Meeting At Plant Vogtle. The Augusta (GA) Chronicle (4/14) reports that NRC "will hold a public meeting Tuesday, April 19, to discuss Plant Vogtle's annual safety evaluation and assessment." The meeting will only detail the evaluation for Vogtle's current reactors and will not include discussion of "additional reactors planned in the future." During 2010, NRC found that the plant met safely and failed to find anything that would warrant increased inspection or oversight.

Georgia Regulators Setting Schedule For Vogtle Construction Costs. The AP (4/14) reports that the Georgia Public Service Commission met yesterday to discuss construction costs associated with Georgia Power's "proposed nuclear plant," which could "run over budget." Utility regulators were expected "to set a schedule for

deciding whether to cut the earnings of Georgia Power if construction costs rise. PSC's staff have "proposed taking a carrot-and-stick approach," and will allow Georgia Power to garner extra earnings if construction costs fall below \$5.8 billion, while the PSC will take some revenue if costs exceed \$6.4 billion.

WJB-TV Augusta, GA (4/14, 12:09 p.m. ET, 16,679) reported that a committee of the Public Service Commission met yesterday and was "expected to set a schedule for deciding whether to cut the earnings of Georgia Power if construction costs on a proposed nuclear plant runs over budget." WJB-TV also reported that regulators would like to trim Georgia Power's earnings off the new reactors at Plant Vogtle if its construction costs exceed \$6.4 billion. WJB-TV adds that this "issue has dragged on for more than two years for without a resolution."

Southern's Fanning Addresses US Chamber On Nuclear Safety, EPA's Overreach.

Georgia Public Broadcasting (4/14) reports on its website that Southern Company CEO Thomas Fanning told "US Chamber of Commerce gathering" that the additional reactors planned for Plant Vogtle will be safe. According to Fanning, the reactors "will have a 'completely different approach to nuclear safety.'" Fanning said the decision to review safety at the nation's nuclear plants is wise, but assured that "no one should worry over the nation's first new reactors in 30 years." Accordingly, Fanning said, "The site for our new units is not in a seismic sensitive area. And we're going to use the newest technology employing a completely different approach to nuclear safety."

The Birmingham (AL) News (4/15, Omdorff) adds that Fanning said the Japanese disaster should not deter the construction of new nuclear plants. During his US Chamber speech, Fanning remarked, "What's happened in Japan recently has made me more convicted than ever that we need to develop this generation of nuclear for America." Fanning's speech also included criticism of the EPA saying, "The existing coal industry is under attack by some in America. Decisions are being made today that will limit our ability long term to use coal and therefore negatively impact the nation's economic well-being." After his speech, Fanning refused to comment "whether some of the company's older coal-fired power plants may be shut down."

ClimateWire (4/15, Kirkland) also covers Fanning's Chamber speech, calling Southern "one of the biggest and most politically influential US electric utilities." Fanning's speech is seen as part of a growing trend among utility CEOs "giving their own policy speeches in Washington rather than leaning heavily on industry groups like the Edison Electric Institute to carry a common theme to Congress and the media."

Study Finds Millstone Brings \$1.2 Billion A Year To Economy.

The New London Day (4/15, Daddona) is reporting that according to a study by Dominion the Millstone Power Station "generates \$1.2 billion a year in economic benefits, including \$122 million in capital spending and tax revenues of nearly \$34 million." The power company "has been touting the nuclear complex's economic impact in Connecticut to lawmakers as it continues to fight a plan to tax its production of electricity." The study found "that Millstone operations produce about \$1.1 billion in economic benefits to the state each year, which supports 3,315 jobs."

Connecticut Tax On Nuclear Generation Draws Opposition.

The New Haven Register (4/15, Turmelle, 69K) reports, "Dominion Energy officials said Wednesday they would spend 'tens of millions of dollars' shutting down the Millstone Nuclear Power Plant the company owns in Waterford if Connecticut lawmakers impose a tax on electricity generators that would cost the utility \$320 million a year." Dominion officials "acknowledged there are other possible alternatives besides closing the plant, including a court challenge of the generation tax if it becomes law." But they maintained "the company is not bluffing with its threat to close the plant and that a shutdown would cost the state \$1.2 billion in both direct and indirect economic benefit."

An article highlighting the tax proposal of Gov. Dannel Malloy by the Waterford Patch (4/15, Petrone) quotes Dominion's Ken Holt saying, "We have expressed our concerns. ... Any tax that is put on Dominion will go on to the consumers." The Governor's "proposal taxes all energy generators at the same rate, including Millstone. SB 1176 stands to make \$335 million from Dominion, and less than \$10 million from all other energy generators combined." The Waterbury Republican-American (4/15, Hughes) also provides coverage of this story.

Delaware Officials Says State Is Prepared For Radiological Incident.

The AP (4/15) reports, "The state's top homeland security official says Delaware is prepared to handle a radiological incident in the state." On Tuesday, Lewis Schilliro said "that he does not have any specific concerns about the Salem/Hope Creek nuclear complex in New Jersey or other nuclear facilities." Delaware "is also within 50 miles of other nuclear generating stations - Limerick Nuclear Generating Station and Peach Bottom Atomic Power Station in Pennsylvania and Calvert Cliffs Nuclear Generating Station in Maryland."

NRC Says UniStar Not Eligible To Build A New Calvert Cliffs Reactor.

The Bay Net (4/15, Madden) reports, "The company that has applied for permission to build a third nuclear reactor at Calvert Cliffs Nuclear Power Plant in Lusby has been told by federal officials it doesn't

meet the ownership requirements" According to the NRC "last November's acquisition by Electricite de France (EDF) of Constellation Energy's 50 percent interest in UniStar rendered the Calvert Cliffs 3 application in noncompliance of the federal code governing nuclear plant ownership." A spokesman from UniStar said, "While EDF and UniStar disagree with the Nuclear Regulatory Commission's conclusion regarding UniStar's present governance structure, we are pleased that the NRC will continue to review all other aspects of our pending application." The "NewsWatch" section of the Gaithersburg Gazette (4/15) also covers this story.

UniStar Evaluating Building Third Reactor At Nine Mile Point. An article that highlights a speech made by a nuclear expert at Syracuse University by YNN (4/15) briefly notes, "Here in New York, UniStar is evaluating whether or not to build an additional reactor at Nine Mile Point in Oswego. The company is in the beginning stages of safety reviews."

Safety Grades At Wisconsin Nuclear Plants Markedly Improved In Recent Years. The AP (4/15) reports, "Wisconsin's two nuclear power plants will be under less scrutiny from federal regulators because of improved safety grades. The two-reactor Point Beach plant and single-reactor Kewaunee plant drew extra attention from regulators earlier in the decade because of spotty safety records." The NRC will still give the plants a safety review "during the next six months, as will all US nuclear plants because of the earthquake and tsunami in Japan." WTAQ-AM (4/15) also covered this story on its website.

Oconee Station Operated Safely NRC Says. The Greenville News (4/15, Simon, 58K) reports, "Oconee Nuclear Station met all safety requirements in 2010, according to the US Nuclear Regulatory Commission, which will present and discuss its annual safety performance review of Oconee in a public meeting Tuesday. Although all safety objectives were met, all three Oconee units were under additional NRC oversight in 2010 due to an inspection finding that raised safety concerns." According to the NRC, the plant had a "failure to adequately maintain the plant's standby shutdown systems that can be used if normal and emergency systems are unavailable." The Anderson Independent-Mail (4/14, 39K) also covers the meeting.

Dry Cask Expected To Emerge As Consensus Solution For Spent Fuel Storage. MIT's Technology Review (4/15, Talbot, 50K) reports, "One of the lesser-noted facts of the Fukushima nuclear disaster—where loss of coolant in spent-fuel pools has resulted in massive

radiation releases—is that some fuel at the plant was stored in so-called dry casks, and these casks survived the March 11 earthquake and tsunami intact." The Review says that that fact is likely to spur on calls to move spent fuel from reactor cooling pools to dry casks, and MIT nuclear engineer, Ron Ballinger said, "What will likely happen very quickly is that the NRC and utilities will arrive at a consensus that moving fuel to dry storage needs to be accelerated to get as much spent fuel out of the pools as fast as possible."

Nuclear Power Bill Subject Of Debate Among Iowa Lawmakers. The AP (4/14) reported, "Iowa legislative leaders say several measures that have drawn opposition remain in play as the session inches toward adjournment. Speaking at a news conference Thursday, Democratic Senate Majority Leader Mike Gronstal was asked about a bill allowing utilities to begin charging ratepayers for the cost of a nuclear power plant before construction begins." Gronstal "also was questioned" about an abortion bill and another regarding livestock, and he said "lawmakers are working privately to resolve differences over the bills."

Texas Senate Approves Bill Allowing Radioactive Dump To Accept More Waste. The AP (4/14, Vertuno) reported, "A low-level radioactive dump in remote West Texas could take in waste from dozens of states under a bill the Texas Senate approved Wednesday. The site in Andrews County could be ready to accept the waste by next fall, said a spokesman for Dallas-based Waste Control Specialists, which operates the site." According to the AP, "Environmentalists have resisted the move, warning that it would result in radioactive material rumbling through the state on trucks with few safeguards in case of an accident."

Revised "Safe & Green" Letter Concerning Shutdown Of Vermont Nuclear Plant Released. The Brattleboro Reformer (VT) (4/14, Cone, 8K) reports, "The newly revised Safe & Green letter regarding the shutdown of the Vermont Yankee nuclear power plant in Vernon [VT] was released by the Town Clerk's office Wednesday evening. The Selectboard will vote on whether or not to sign the letter, which is much the same as the original document, at its next regular meeting." According to the Reformer, "Safe & Green, a grassroots effort to close Vermont Yankee and replace it through conservation, efficiency and renewable solutions, has presented the letter to selectboards and city councils in Vermont, New Hampshire and Massachusetts cities and towns that neighbor the power plant."

NRC Forum In Minnesota Will Allow Opponents Of Nuclear Power To Air Concerns. The Minnesota Public Radio (4/14, Hemphill) reported on its

Website, "Opponents of nuclear power will meet in Red Wing [MN] Thursday to express their opposition to extending the life of the Prairie Island nuclear plant." According to MPR, "The Nuclear Regulatory Commission, or NRC, holds these meetings around the country on a regular basis. ... The NRC is considering Xcel's request to extend the life of the Prairie Island plant for 20 years, and to produce more power there."

DOE Fosters College Nuclear Programs With Grant. Georgia Public Broadcasting (4/14) reports that to help support two new nuclear facilities in Georgia that will demand "nearly 10,000 new nuclear workers," the Department of Energy has granted from colleges in the August area \$1 million to establish nuclear programs. "Andy Hauger is a physics professor at Augusta State University, one of the school's sharing in the money. He says the money will pay for lab equipment needed to train students in nuclear science technology." Other grant recipients include Augusta Tech, Aiken Tech, and the University of South Carolina in Aiken and Salkehatchie.

Obama To Nominate Ostendorff To Another Term As NRC Commissioner. From the office of the Press Secretary, the White House (4/14) announced President Barack Obama's intent to nominate William C. Ostendorff, to another term as Commissioner, Nuclear Regulatory Commission. "Bill Ostendorff was sworn in as a member of the Nuclear Regulatory Commission on April 1, 2010 for a term ending June 30, 2011. Prior to his appointment to the Nuclear Regulatory Commission, he served as Director of the Committee on Science, Engineering and Public Policy at the National Academies."

Local Communities Support Expanding WIPP's Use As Nuclear Waste Repository. Reuters (4/15, O'Grady) reports that community officials in southeast New Mexico, home to the Waste Isolation Pilot Plant, are supporting expanded use of the site as a nuclear waste repository, in light of the apparent end to plans to use Yucca Mountain as a permanent site and the ongoing nuclear crisis in Japan. Although WIPP is legally designated to accept only defense-generated radioactive waste, John Heaton, a former state representative from Eddy County, New Mexico, said the ancient salt bed could also accommodate high-level commercial waste, following additional studies. Heaton said, "We are convinced more and more every day that we are on the right track."

Population Density Near US Nuclear Facilities Increasing Census Data Shows. On its website, MSNBC (4/15, Dedman) reports that "A new map of data from the 2010 US Census shows that the number of people

living within the 10-mile emergency planning zones around nuclear power plants rose by 17 percent in the past decade, compared with an overall increase of less than 10 percent in the US population." MSNBC asks why the population would "rise sharply near nuclear power plants, even in lower-growth states outside the Sun Belt." The article suggests normal population expansion could account for part of the growth. "Another reason: Nuclear reactors use water for cooling, from lakes, rivers or oceans, so the reactors are typically built on waterfront property."

Questions Raised About US Spent Nuclear Fuel Storage Policy. CNN (4/15, Fitzpatrick, Griffin) reports on the lack of a permanent storage facility for spent nuclear fuel and how the Fukushima plant crisis has placed that issue squarely into focus. CNN notes that ratepayers have been paying "a tax, whether you realize it or not, to fund the storage of nuclear waste" in a safe place. "Collected at an estimated \$750 million a year, the Nuclear Energy Institute now says this so-called 'nuclear waste fund' amounts to close to \$30 billion," but it isn't being used to "pay for the storage of a single ounce of spent nuclear fuel." Washington lawyer Jay Silberg, who represents some of the nation's biggest nuclear power companies, has "been involved in lawsuits against the government, trying to make it pay for what he says it promised to do way back in 1982."

Equipment From SRS, Other Sites Headed To Japan. The Augusta (GA) Chronicle (4/15, Pavey) reports, "Storage tanks, pumps and monitoring equipment from Savannah River Site will be shipped from South Carolina to Japan to help in the battle to stabilize the damaged nuclear reactors at Fukushima." DOE spokesman Jim Giusti said, "This is what we can send them at this point to support their activities." He added that "equipment is also being gathered from other federal nuclear sites around the country," and "its transfer is being expedited as a 'government to government diplomatic exchange' that will convey the gear directly to the Japanese government."

INTERNATIONAL NUCLEAR NEWS

Japanese Regulators Say High Radiation Level From "Outside Debris." On its website, CNN (4/15, Smith) reports Japan's Nuclear and Industrial Safety Commission "discounted concerns about damage to the still-potent spent fuel from the Fukushima Daiichi nuclear power plant's No. 4 reactor Thursday, saying high radiation levels reported earlier this week 'most probably' came from outside debris. A high reading above the pool prompted the plant's

owner, the Tokyo Electric Power Company, to take a sample from the spent fuel pool on Tuesday." But Hidehiko Nishiyama, the chief spokesman for the regulatory agency, said "the radiation levels are far lower than they would be if there were damage to the fuel rods."

Journalists Detail Trip To Stricken Nuclear Plant.

The Los Angeles Times (4/15, Glionna, 657K) reports on the trip made by two journalists to the gate of the stricken Fukushima nuclear plant, in which they carried a radiation gauge. They "made an agreement: If the dosimeter hit 15, we'd turn around." The journalists and their driver and interpreter made it to the gate, but, "suddenly, as we approached the main gate, security guards were upon us, two figures who'd seemingly stepped out of 'Star Wars,' menacing in their dual-intake respirator masks and head-to-toe white hazmat gear." The journalists wanted to visit the site, a decision they say they did not make lightly, because they wanted to see what it looked and smelled like, and to see whether they would be allowed inside. "The best description of the scene: silence."

NPR (4/15, Memmott) adds of the journalists' adventure that Steve Herman from Voice of America said that "for most of the 20-kilometer journey we spotted only police, military and other official vehicles. ... Not a single person was seen outside in Futaba and Okuma, which until March 11 [the date of the earthquake and tsunami that devastated the area] had a combined population of about 18,500." Herman added that at the gate they found an "extremely ironic proclamation" in the form of a sign that read, "Zero disasters for this year."

Uncertainties Surround Future Cleanup Efforts.

The New York Times (4/15, Tabuchi, Subscription Publication, 950K) reports, "Even before the troubled Fukushima nuclear plant has been brought under control, two rival conglomerates likely to be part of an eventual cleanup are estimating that the effort could take 10 years — or 30." The widely divergent estimates — the shorter coming from Toshiba and the longer forecast from Hitachi — "underscore the basic uncertainties clouding any forecast for Fukushima: when cooling stems will be restored and radiation emission halted; how soon workers can access some parts of the plant; and how bad the damage to the reactors, their fuel, and nearby stored fuel turns out to be." The Times points out that the NRC "has warned that at least one reactor's fuel may even have leaked out of the reactor pressure vessel, something that has never before happened in a nuclear accident."

Japan To Provide More Information On Radioactive Water Dumping. The Wall Street Journal (4/15, Obe, Iwata, Subscription Publication, 2.02M) reports that the Japanese government announced it would provide new details on the radioactive water that has been dumped into the ocean from the Fukushima Daiichi nuclear power plant. Hidehiko

Nishiyama, a Nuclear and Industrial Safety Agency senior official and spokesman, said Thursday that Japan has a responsibility to provide the additional information because "there are countries that are worried about the impact of the operation on the ocean."

Pump Manufacturer: Fukushima Encasement Would Be More Difficult Than Chernobyl. In an interview with Reuters (4/15, Cox), Gerald Karch, an executive with Putzmeister, the firm that manufactured pumps that assisted with relief efforts at Chernobyl, said that encasing Fukushima's reactors would be more difficult than the job at Chernobyl, because there was only one reactor to be encased at the European site. Karch said, "In Chernobyl, where a single reactor was encased, 11 trucks were in action for a number of months. In Fukushima we're talking about four reactors." Although no decision has been made to encase Fukushima's reactors, he added, "In my opinion, when a closed-circuit cooling system has been developed and successfully set up, there will be no other option but to encase the reactors in concrete."

TEPCO To Begin Initial Payments To Evacuees.

The New York Times (4/15, Bradsher, Subscription Publication, 950K) reports, "The Tokyo Electric Power Company announced plans on Friday to distribute 50 billion yen, or \$600 million, in initial payments to 50,000 people evacuated because of the accident at its Fukushima Daiichi nuclear power plant, as technicians continued to struggle to repair cooling and electrical systems at the damaged reactors." The Japanese government said that TEPCO "acted after a request from Banri Kaieda, the minister of economy, trade and industry." TEPCO president Masatake Shimizu "said that single-person households would receive about \$9,000 and larger households would receive about \$12,000."

With a different take on the government's role in TEPCO's decision to award payments to evacuees, the AP (4/15) reports that the Japanese government "ordered the operator of a tsunami-damaged nuclear plant Friday to pay \$12,000 to each household forced to evacuate because of leaking radiation, but some of the displaced slammed the handout as too little." AFP (4/15) and Bloomberg News (4/15, Nakayama, Alpeyev) also cover this story.

WTEN-TV Albany, NY (4/15, 5:19 a.m. ET, 5,932) reported that the Japan's trade ministry is ordering the Tokyo Electric Power Company (TEPCO) to pay \$12,000 to each household forced to evacuate due to the radiation leaks in its Fukushima Dai-ichi nuclear plant. A ministry spokesman says that the "arrangement is a provisional one, with more compensation expected. Roughly 48,000 households within about 19 miles of the...nuclear plant would be eligible for the payments." TEPCO's arrangement with Japan's trade

ministry received widespread local TV coverage with more than 50 stories on broadcasts throughout the day, nationwide.

Toshiba's CEO Says Daiichi Will Have Little Effect On Bottom Line. Bloomberg News (4/15, Yasu, Shiraki) reports, "Toshiba Corp., Japan's biggest maker of nuclear reactors, rose to the highest level in 10 days in Tokyo trading after President Norio Sasaki said the company may beat its profit forecast" to post a 2% gain for the day. Sasaki believes that the March 11 earthquake will have a limited impact on Toshiba's factories. Sasaki added that Toshiba "is sticking with its goal of winning 39 reactor orders by 2015," despite the fact it helped build the failed reactors at Daiichi. He also disclosed that clients with pending orders for reactors haven't cancelled or changed their plans. As a result of the tsunami that knocked out the Daiichi plant, Sasaki called on strategies to protect nuclear power plants from tsunamis.

However, Japan Today (4/15) reported, "Sasaki said Thursday the company may be forced to revise its plan to win orders to build 39 nuclear reactors around the world by fiscal 2015 following the nuclear power plant accident." Sasaki cautioned, "at this point, no one has told us about dropping (plans to build new nuclear plants), but they may be delayed even if we win orders." Meanwhile, "Hitachi Ltd has also said it plans to review its goal of winning orders for 38 nuclear power generation projects by fiscal 2030 and revise downward its goal of posting sales of 380 billion yen in fiscal 2020 in the nuclear power business."

The Financial Times (4/14, Soble, Subscription Publication, 448K) similarly reports this, detailing that Sasaki explained that Daiichi may slow Toshiba's growth in the near-term, but over the long-term, the disaster will have a miniscule effect on the company. During his speech, Sasaki touted that environmental advantage nuclear has over other energy sources.

The Wall Street Journal (4/15, Osawa, Iwata, Subscription Publication, 2.02M) specifies that Sasaki believes that the company's goal to a ¥1 trillion revenue goal from its nuclear unit may be delayed from 2014 until 2015. Toshiba's Sasaki plans to augment its business with greater investments in additional power systems, including solar and fossil fuels, Nikkei (4/15) reports. Reuters (4/15) also covers this.

Japanese Experts Suggest Banking Workers' Stem Cells For Future Treatment. The AP (4/15) reports that Japanese experts from institutions including Toranomon Hospital and the Japanese Foundation for Cancer Research in Tokyo have suggested that "workers at Japan's troubled nuclear plant should store blood cells now in case they need them later as treatment for radiation overdose." The AP explains that "high doses of radiation can destroy the blood-making cells of the bone marrow, a potentially fatal outcome that can be treated with transplants of blood stem cells," but

receiving such transplants "takes time, and potential incompatibility between the donated cells and the recipient can lead to severe complications," the experts said.

Bloomberg News (4/15, Hallam) adds that "storing the workers' blood would make transplants easier because the body will recognize and accept its own cells. That eliminates the needs for drugs that suppress the immune system, which might make a patient vulnerable to infections," the experts wrote in a letter published by The Lancet. Citing a March 29 statement from the Japanese Society for Haematopoietic Cell Transplantation, they said that "about 107 transplant teams are standing by to handle the cells," and more than 50 European hospitals have offered their assistance if necessary.

Reuters (4/15, Steenhuysen) reports the experts write that so far Japanese nuclear regulators have rejected the idea because it would cause a "physical and psychological burden for nuclear workers." They also admitted that this was not a perfect solution to the workers' potential health problems, because the radiation could also attack cells in their lungs, skin, and digestive system, which a stem cell transplant could not address.

N12LI-TV New York, NY (4/15, 5:24 a.m. ET, 52,130) reported that "workers at Japan's damaged nuclear plant are being told to store their blood cells" since, according to experts, could "be used to revive blood-making cells in bone-marrow damaged by high amounts of radiation."

Travel Ban Lifted. WNBC-TV New York, NY (4/15, 5:05 a.m. ET, 88,920) reported that the US government has lifted its travel ban to Japan but still advises that Americans should "stay out of the 50-mile evacuation zone around the Fukushima nuclear plant" and be aware that there is still a "serious threat of aftershocks."

Countries Pledge To Act On Fukushima Lessons.

The AP (4/15, Oleksyn) reports, "Countries attending a nuclear safety conference pledged Thursday to act on lessons learned from the Japanese reactor crisis triggered by last month's devastating earthquake but stressed they needed more specifics to do so." All the nations are party to the Convention on Nuclear Safety, which was agreed to following the Three Mile Island and the Chernobyl nuclear accidents. The AP adds that "a vice-president of the gathering, Bill Borchardt of the United States, said more information was needed in order to know how best to respond and proceed in the aftermath of the Fukushima accident that has raised fears over radioactive fallout and questions about the safety of nuclear power." Borchardt said there was "much more to be learned before we can even understand what the full range of follow-up actions would be for both the regulators in each of the nations and for the operators of the nuclear power plants around the world."

Nuclear Regulators Delay Fukushima Review Until August 2012. Bloomberg News (4/15, Tirone) reports that the 72-nation Convention on Nuclear Safety "ended a closed-door meeting by delaying for 16 months consideration of the failures that triggered the meltdown at Japan's Fukushima Dai-Ichi plant." They "pledged to hold an extraordinary meeting in August 2012 to review the breakdown of safety systems at Fukushima, according to a seven-paragraph statement released today in Vienna." According to the statement, "It is understood that the lessons-learned process cannot be completed until sufficient additional information is known and fully analyzed," adding, "Japan has committed to provide this information as soon as possible."

Reuters (4/15, Westall) adds that the statement also assured, "(We) are committed to draw and act upon the lessons of the Fukushima accident." Reuters points out that the meeting, which was scheduled prior to the events unfolding in Japan, was the first international forum on nuclear safety since the crisis began. The group also said it supported plans to hold a ministerial conference on nuclear safety in June focusing on the Japanese disaster, which will be hosted by the UN's International Atomic Energy Agency.

Siemens Rethinking Nuclear Unit. The Wall Street Journal (4/15, Fuhrmans, Subscription Publication, 2.02M) reports that Siemens may abandon plants to become a global nuclear leader in light of the events in Japan. Leading Siemens executives are discussing whether the company should rethink a partnership with Rosatom, the Russia's state nuclear provider. Unlike their counterparts at other nuclear companies, Siemens executives have been guarded in their remarks to the press about nuclear energy. Some Siemens employees and executives believe Siemens' nuclear ambitions contrasted with the vision of CEO Peter Loscher, whom seeks to make the company an environmental leader.

Areva's Lauvergeon Defends Reactor Costs, Touts Nuclear Potential. BusinessWeek (4/15, Brady, 921K) carries a piece by Areva CEO Anne Lauvergeon. The Areva chief details her biography from leading Cogema to being considered by President Sarkozy for a cabinet position. Lauvergeon says that she's firmly committed to Areva and nuclear power and sees the industry as one with great potential. She defends the cost of Areva reactors, saying "we build them to withstand the crash of a wide-body aircraft or any type of serious accident, including a core meltdown. There is a cost." She adds, "I believe that low-cost reactors are not and should not be the future."

Germany's Chancellor Under Pressure To Close All Nuclear Power Plants. Bloomberg News (4/15, Czuczka, Comfort) reports that German "Chancellor

Angela Merkel faces a bid by members of the upper house of parliament to force her to abandon nuclear power as she tries to rally German state leaders behind an overhaul of energy policy by the middle of May. The main opposition Social Democratic Party will put a bill to the upper house in Berlin today calling for the immediate closure of eight reactors and all 17 nuclear plants to be shut within about a decade." According to Bloomberg, the "bill steps up the pressure on Merkel to speed the exit from atomic power as she works on an unprecedented shift in the energy mix driving Europe's biggest economy."

Czech Nuclear Plant Shuts Down Reactor Again Due To A Malfunction. The AP (4/14) reported, "An official says a Czech nuclear power plant is shutting down one of its four reactors for the second time this month due to a malfunction that poses no safety threat. Petr Spilka, spokesman for the Dukovany nuclear plant says the problem occurred on one of the reactor's 12 fittings that regulates the flow of water." Spilka "said Thursday it would take several days to fix the problem, which last occurred in the plant in 1985."

India Facing Shortage Of Nuclear Power Specialists. The New York Times (4/15, Timmons, Subscription Publication, 950K) reports, "Besides political protests, India's nuclear energy ambitions face another big roadblock, critics say: a shortfall of trained people to run, repair and regulate power plants. If it proceeds with plans to build 44 nuclear plants over the next decade, India needs to add 10,000 to 19,000 skilled people to the nuclear industry, according to PricewaterhouseCoopers." However, "India's top universities are graduating only about 50 nuclear specialists a year" and "special graduate programs approved by the Department of Atomic Energy to address the shortage will add only about 100 master's-level graduates this year."

China Remains Committed To Nuclear Expansion. Bloomberg Businessweek (4/15, Roberts, 921K) reports on China's continued pursuit of nuclear power, evident at the "Ninth China International Exhibition on Nuclear Power Industry" which opened in Shenzhen April 6, "drawing 300 companies from around the globe," even as the Fukushima Dai-Ichi plant "was on everyone's mind." Attending were "industry leaders Areva and Hitachi, as well as mainland companies that may someday challenge them: China Guangdong Nuclear Power, China National Nuclear Power, and China Power Investment. China still seems committed to boosting its nuclear power from 10.8 gigawatts, or 2 percent of its energy mix today, to up to 80 gigawatts and 5 percent by 2020," but it will need to "bring 10 new reactors online every year" to reach that goal.

China May Give Green Light To Building Of Nuclear Plant In Eastern Province. Bloomberg News (4/15) reports, "China may approve construction of a nuclear plant in the eastern Chinese province of Shandong's Rongcheng city in 'near future', the China Business News reported, citing an unidentified person familiar with the situation."

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NUCLEAR REGULATORY COMMISSION NEWS CLIPS

FRIDAY, APRIL 15, 2011 7:00 AM EDT

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NRC NEWS:

T.V.A. Considers Improvements For 6 US Nuclear Reactors (NYT)

By Matthew L. Wald

New York Times, April 15, 2011

WASHINGTON — The Tennessee Valley Authority said Thursday it was considering millions of dollars of improvements to protect its six nuclear reactors from earthquakes and floods.

It is the first American reactor operator to announce safety changes that it is weighing since an earthquake and tsunami set off a nuclear crisis at the Fukushima Daiichi plant in Japan last month. Other operators have said publicly that they might have to make changes, but they have avoided saying what those were.

The T.V.A. issued a fact sheet saying that it was considering reducing the amount of fuel in its spent fuel pools by transferring older fuel to passively cooled “dry casks” and adding additional backup diesel generators.

It also listed three changes that are less commonly discussed: improving electrical switchyards to make them more resistant to earthquakes, adding small generators to recharge cellphone batteries and keep the lights on, and reinforcing the pipes that provide cooling water to spent fuel pools.

Of the six reactors operated by the T.V.A., three are boiling water reactors that resemble the Fukushima reactors. The authority said that none of its reactors are in areas where an earthquake risk is high. But it said it was looking at “potential vulnerabilities from a chain of events, such as damage from a tornado or earthquake combined with flooding from a dam failure.”

Nuclear critics have argued that all plants should be required to undertake such analyses of simultaneous events, although the Nuclear Regulatory Commission has generally rejected such hazards as too unlikely for such studies to be mandated. The commission's staff recently began a 90-day review of how prepared American reactors are for severe accidents, but the first progress report on that effort is not expected until early next month.

The spent fuel storage problem has been debated for years. After the attacks of Sept. 11, 2001, Congress asked the National Academy of Sciences to look into the problem, and in 2005 the academy reported that the pools might in fact be vulnerable to terrorism. It said the Nuclear Regulatory Commission should evaluate whether some of the fuel should be moved to dry casks.

Lately some members of Congress have suggested more use of dry casks.

When spent fuel is removed from a reactor, it continues to generate heat and must be kept submerged for about five years. But after that it can be sealed inside a steel can that is filled with inert gas to prevent rust; the can is then loaded into a small concrete silo with air vents. Air circulating around the can keeps the fuel well below the melting point.

American reactor operators have so far resorted to that technique only when their pools have reached capacity. The pools were designed in an era when nuclear engineers thought the fuel would be hauled away from reactors after a few years for recycling or burial and are therefore quite small; most reactors have installed new equipment in their pools to be able to squeeze in more than was originally intended. But some engineers say that this raises the risk that if the pool were emptied, the fuel could heat to the point that the metal it contains is ignited.

Thinning out the pools by removing old fuel would still leave the hottest materials in place but would reduce the chance of fire.

Robert Alvarez, a former Energy Department official, calculated recently that removing the backlog of fuel older than five years from the spent fuel pools of all 104 operating reactors would cost \$3.5 billion to \$7 billion and take several years to accomplish.

TVA Adding Satellite Phones, Portable Generators At Nuclear Plants (CHTNGA)

By Dave Flessner

Chattanooga Times Free Press, April 15, 2011

TVA will immediately add satellite telephones and small portable generators and could add more dry cask storage and hardened water supply pipes at its nuclear power plants, TVA Chief Operating Officer Bill McCollum said today.

The federal utility is making the changes — and studying other plant changes — in response to the earthquake-damaged nuclear plant in Japan.

McCollum told the TVA board today that TVA is looking at both short-term and long-term changes to minimize a nuclear plant accident like what happened in Japan.

The utility may add more diesel generators as backup power, McCollum said.

TVA officials insist its nuclear plants are safe.

"We are trying to assure that we're ready for the unexpected," McCollum said.

TVA put off a decision today on whether to finish the Bellefonte Nuclear plant in Northeast Alabama while the staff assesses the Japanese nuclear disaster.

"We continue to view nuclear power as a viable option for the future, but we are taking a pause as we consider the future of our Bellefonte plant," TVA Chairman Dennis Bortorff said.

TVA To Discuss Nuclear Safety At Meeting (TENN)

Tennessean, April 15, 2011

Nuclear issues are high on the agenda of the Tennessee Valley Authority's board meeting today in Chattanooga.

Discussions about the safety of nuclear power are coming in the wake of disabled reactors and radioactive releases after an earthquake and tsunami in Japan.

TVA, the nation's largest independent power producer, has been aggressively pursuing building more nuclear power into its system.

The meeting, which is open to the public, begins with an opportunity for public comment at 8:30 a.m. EDT.

Anyone wanting to speak must pre-register at TVA's website or sign in that day before the meeting begins.

The meeting is at TVA's Chattanooga office complex, 1101 Market St., but it can be watched on streaming video at the board's website, www.tva.com/abouttva/board/index.htm.

TVA Board Discusses Changes To Nuclear Reactors (CHTNGA)

By Dave Flessner And Pam Sohn

Chattanooga Times Free Press, April 15, 2011

TVA immediately will add satellite telephones and small portable generators at its three operating nuclear plants, and could within months strengthen power and water supplies to spent fuel pools and speed up the transfer of nuclear waste from pools to dry cask storage.

Chief Operating Officer Bill McCollum told board members Thursday at a meeting in Chattanooga that reviews after the Japanese nuclear crisis confirm that the utility's six reactors and five spent fuel pools are safe.

They already had been "retrofitted with safety measures to assure defense-in-depth," he said. "But we are working to assure that we're ready for the unexpected."

TVA board Chairman Dennis Bortorff said the board has hired consultants to help assess the utility's nuclear program.

While TVA reassesses its existing plants, the board delayed a decision on whether to complete a reactor at the 30-year-old Bellefonte Nuclear Plant in Hollywood, Ala.

"We continue to view nuclear power as a viable option for the future," Bortorff said. "But we also think it's a good time to take a pause."

During the board's public listening session in Chattanooga, most of the 14 speakers asked the board to review or even phase out its commitment to nuclear power.

"The real cause of the Fukushima nuclear crisis is human error," said Sandra Kurtz, a member of the Bellefonte Efficiency & Sustainability Team, referring to a Japanese decision to put diesel tanks at a level where a tsunami could wash them away. "Human error can happen here, too."

But Jackson County, Ala., Chamber of Commerce President Rick Roden and Economic Development Board President Goodrich A. "Dus" Rogers urged TVA directors to finish the long-delayed Bellefonte reactor.

"We trust TVA to do the right thing," Roden said. "Take what you learned from Japan to make Bellefonte the most reliable and safe plant in our backyard."

Lessons learned

Shortly after a 9.0 earthquake and tsunami triggered the Japan crisis, TVA established a centralized response center to monitor conditions at the Fukushima Dai-ichi plant and coordinate with the Institute of Nuclear Power Operations and the World Association of Nuclear Operators.

Since then, TVA has reviewed local plant requirements and response plans to a slate of disasters, single or multiple.

One example would be damage from a tornado or earthquake combined with flooding from a dam failure, with emergencies involving one or more reactor.

That look prompted a 90-day plan to add satellite phones and portable generators. It also has prompted a recommendation for the following changes within 12 months:

- Move additional nuclear fuel from spent-fuel pools into dry cask storage
- Harden cooling-water supply pipes to spent-fuel pools
- Add a fifth generator for backup power at Sequoyah and Watts Bar nuclear plants.
- Harden electrical switchyards to better withstand seismic impacts.

TVA Focused On The Future (WIAT)

WIAT-TV Birmingham (AL), April 15, 2011

The Tennessee Valley Authority, which operates a nuclear plant in northeast Alabama, is holding a series of meetings to discuss the future of its operations.

TVA executives have opted to delay recommending a go-ahead on a reactor at its Bellefonte Nuclear Plant. Instead, TVA managers will study how to prevent the types of radiation leaks effecting Japan.

In what's considered a major victory for environmental groups across Alabama, TVA has agreed to phase out 16 percent of its coal fired plants over the next five years.

They also agreed to modernize pollution control systems on three dozen units across the southeast, including here in Alabama, Kentucky and Tennessee.

The company will also invest \$350 million in programs designed to help customers in those states, conserve energy.

TVA Officials Say They Will Learn From Nuclear Calamity In Japan (CHATNOOG)

Chattanooga, April 15, 2011

TVA's chief operating officer Bill McCollum briefed the TVA board of directors Thursday on the utility's nuclear operations and on potential implications of last month's nuclear-plant problems in Japan.

Mr. McCollum told directors that safety is TVA's top priority in designing and operating its plants and that its nuclear program will incorporate lessons learned from Japan into the operations, designs and features of its nuclear plants, including those under construction and projects that are under consideration.

The previously approved construction at Watts Bar Nuclear Plant Unit 2 in East Tennessee and engineering work at the Bellefonte site in northern Alabama are proceeding on schedule. Mr. McCollum said TVA staff will ask the board to make a decision on whether to move ahead with construction of a nuclear unit at the Bellefonte site "after TVA has a clear understanding of the Japanese nuclear situation and any potential impact on the project."

Chief Financial Officer John Thomas told the board that colder weather has increased demand for TVA electricity and fuel expenses since the fiscal year began in October, but uncertainty resulting from the slow US economic recovery and from the Japanese nuclear situation could increase the volatility of TVA's revenue for the remainder of the year.

Mr. Thomas added that TVA has managed cash flows well and is on track to achieve its fiscal 2011 financial objectives, which include avoiding increases in the base wholesale rate for electricity during the fiscal year.

The board also voted to re-elect director Dennis Bottorff of Nashville as chairman. Mr. Bottorff became chairman last year, succeeding director Mike Duncan of Inez, Ky., who stepped down as chairman but remains on the board. The board also named Director William Sansom to serve as vice chairman.

In other business, the board of directors:

Authorized the CEO to approve certain major contracts for electrical transformers;

Approved a pilot program for additional customer participation in the Valley Investment Initiative economic development program; and

Approved de-watering facilities for bottom ash at the Kingston Fossil Plant and for bottom ash and gypsum at the Bull Run Fossil Plant, part of ongoing efforts to convert coal byproducts to dry storage.

The Tennessee Valley Authority, a corporation owned by the US government, provides electricity for utility and business customers in most of Tennessee and parts of Alabama, Mississippi, Kentucky, Georgia, North Carolina and Virginia – an area of 80,000 square miles with a population of 9 million. TVA operates 29 hydroelectric dams, 11 coal-fired power plants, three nuclear plants and 11 natural gas-fired power facilities that can produce about 34,000 megawatts of electricity, delivered over 16,000 miles of high-voltage power lines.

TVA Board Weighs Impact Of Japan's Nuke Problems (AP)

Associated Press, April 15, 2011

CHATTANOOGA (AP) — The Tennessee Valley Authority board is discussing its nuclear ambitions in the aftermath of the emergency in Japan.

The TVA board's Thursday agenda in Chattanooga includes a report on its nuclear safety review.

TVA has decided to delay recommending a go-ahead on a reactor at its Bellefonte Nuclear Plant in northeast Alabama while the utility studies how to prevent anything like the radiation leak from Japan's tsunami-flooded nuclear plant.

TVA managers will present the utility's 20-year energy plan to the board. That plan recommends reducing the agency's reliance on coal-powered plants and pursuing new natural gas and nuclear capacity.

TVA also is considering programs to increase power generated from wind, solar and biomass while promoting conservation.

Post Japan Crisis, TVA Reinvests In, Reconsiders, Nuclear Power (WRCB)

By Gordon Boyd

WRCB-TV Chattanooga, TN, April 15, 2011

CHATTANOOGA (WRCB) - Rarely known to exaggerate, TVA Chairman Dennis Bottorff may have uttered the understatement of the month at the annual Board meeting of the Tennessee Valley Authority in Chattanooga, Thursday.

"We probably are watching the Japan (nuclear) crisis even more closely than the common person in the street is," says Bottorff.

TVA generates almost a third of its electricity from nuclear power. The facility in Chattanooga's side yard, Sequoyah, at Soddy Daisy, is among the five power plants that the Nuclear Regulatory Commission (NRC) considers most at risk for an 'earthquake that could cause catastrophic failure.'

But Chief Operating Officer Bill McCollum considers that a bit of a misnomer.

"Our nuclear plants are not built in areas where there are likely to be earthquakes," says McCollum.

McCollum maintains that Sequoyah's emergency generators and electrical gear sit high enough that the worst floods can't get to them. And backup pumps can keep the reactors cool if the main diesels fail.

What's more, McCollum claims, Browns Ferry, near Athens, Alabama, is built to stand up a quake ten times stronger than our country's ever recorded.

"Having people come in and see the actual facility did take some of the mystery out of this," TVA Chief Executive Officer Tom Kilgore says.

Eyewitness News was among a number of media outlets to tour Browns Ferry, March 25.

TVA's Board has decided to implement more protective measures. Several could be in place by mid-July; including more satellite phones to serve as back-up communication, and more portable generators to power lights or to re-charge batteries.

The Board also is considering whether to thicken the reactors' cooling pipes.

But perhaps the biggest aftershock, how the Japanese crisis could affect TVA's decisions regarding Watts Bar Unit #2, near Spring City; and the scuttled Bellefonte site in Hollywood, Alabama.

"What we're asking management to do is expand the scope of the feasibility study," Bottorff says.

Last year, TVA estimated that a build-out of only one of Bellefonte's reactor could cost almost \$4 billion.

Forty-five environmental groups, including the Knoxville-based Southern Alliance for Clean Energy (SACE) have asked the NRC to suspend licensing for all nuclear plants until it can review Japan's response to its crisis.

TVA Plans Short, Intermediate, & Long Term Safety Improvements At Nuclear Plants (WDEF)

WDEF-TV Chattanooga, TN, April 14, 2011

One by one, folks from across the Tennessee Valley urged TVA's board to look away from nuclear power to meet the energy demands of this region.

Gretel Johnston says "you are simply gambling with our money and our lives." Sandra Curtz says "we do not want to be guinea pigs for nuclear power roulette. Steven Smith says "you have options other than Bellefonte and I think you need to pursue those options and not put us sort of all at risk."

The disaster at Japan's nuclear plant prompted a renewed call to halt work on new reactors at Bellefonte and Watts Bar.

The board extended funding for engineering and design work at Bellefonte, but delayed further action to provide more time to review lessons learned from Japan. TVA Chief Operating Officer Bill McCollum says "we're continuing to get information from Japan."

TVA developed short, intermediate, and long term plans to add additional defense and depth to deal with simultaneous disasters. Short term, McCollum says "providing additional satellite phones for emergency responders to use in the event that normal communication methods are damaged by an event or unavailable. Additional small portable electric generators to be able to accomplish functions like powering lighting, charging batteries, or providing local power for other vital equipment."

While these things can be accomplished in 90-days, McCollum says TVA will need 12-months or more to move spent fuel to dry cast storage canisters; install hardened water pipes with outside connections; and add additional diesel generators at Sequoyah and Watts Bar.

Since only design and engineering are underway at Bellefonte, McCollum says there's still time to incorporate lessons learned from Japan in that project.

He'll ask the board to make a decision on whether to move ahead with construction after gaining a clear understanding of the Japanese nuclear situation.

Concerns Over Nuclear Safety Voiced At TVA Board Meeting (WTVC-TV)

By John Pless

WTVC-TV Chattanooga, TN, April 14, 2011

A number of people are voicing their concerns about the safety of TVA's fleet of nuclear power plants.

During the public comment period of the TVA Board meeting in Chattanooga Thursday morning, concerns over hundreds of "events" at nuclear plants revealed just how many incidents go unreported for months.

Citizens said the nuclear disaster in Japan have highlighted their ongoing fears over nuclear power.

Citizens are urging the TVA Board to scrap aggressive plans to expand their nuclear fleet and invest money in other, more clean technologies like solar and wind.

Concerns over the massive amounts of nuclear waste stored in the Tennessee Valley and the huge costs of securing and maintaining it were top of mind for several people.

TVA officials maintain their nuclear fleet is safe and not subject to the vulnerabilities that have affected plants in Japan.

East TN Not Phased: Nuclear Neighborhoods Growing (WBIR)

By Anthony Welsch

WBIR-TV Knoxville, TN, April 14, 2011

Ask Glenn Garrett or his brother Don as they fish near Watts Bar, it's not the nuclear plant that kept them in Tennessee, or even the dam that their father helped build.

The reason they grew up near Crossville and always came back has to do with everything around nuclear facility.

"I used to drive a truck and people would ask me, 'what's the prettiest country I've seen?' and I'd tell them, 'that Cumberland County sign when I get back,'" Glenn Garrett said. "We've got the most beautiful area of the world right here."

Like a lot of East Tennesseans, he can tell you about how far he lives from Watts Bar, the closest nuclear reactor to his home.

"I believe it's 25 miles," Garrett said.

But that close proximity has never phased them. A recent poll and census data suggests the Garretts are not alone.

Despite the potential for catastrophe near nuclear sites, the three nuclear plants closest to Knoxville have seen an increase in neighbors. The 50 mile evacuation zones surrounding the Sequoya, Browns Ferry, and Watts Bar Nuclear plants all saw double digit increases in population from 2000 to 2010.

In the area surrounding Watts Bar, that population increase was nearly 13% over the past decade. That's about three times the growth rate seen by Rhea and Meigs counties during the same time period.

That increase includes Dustin Ely. A job manufacturing catalytic converters in Detroit for General Motors went away and now he's in East Tennessee, living nearly in the shadow of what is expected to soon be two nuclear reactors at Watts Bar.

"I don't worry about it because, well, I know I'm safe. If something did happen, I've seen plenty of signs around that say things like 'escape route', you know, things like that," Ely said.

Following the nuclear disaster in Japan, Gallop conducted a poll of Americans and found 58% still believe nuclear power is safe. 6% were not sure and 36% felt nuclear power was definitely not safe.

However, fewer than half felt nuclear power was necessary in helping the United States meet power demands of the future.

Now, Ely's looking for a job with the Tennessee Valley Authority

"From what I understand, there are like 2,000 employees over there," he said.

And Thursday afternoon, there's also a couple of fishermen over there. While they can't quite cast to the Watts Bar stacks from their position, it's clear their chief concern has more to do with fishin' than with nuclear fission.

"It never bothered us. We never heard anybody say anything about it. We're just thankful to have electricity," Garrett said.

Japan Radiation Found In Local Water (CHTNGA)

By Pam Sohn

Chattanooga Times Free Press, April 15, 2011

While a cloud of radiation from Japan's maimed and melting nuclear plant snaked across the Pacific and curled along America's jet stream, Chattanooga collected the second-highest radioactive iodine-131 level measured in drinking water anywhere in the US

Radioactive iodine-131 is easily absorbed by the human thyroid and can cause thyroid cancer.

But authorities say there is good news.

They say levels measured so far in Chattanooga's drinking water — although spiked — is not high enough to be dangerous.

And unlike most radioactivity types, iodine-131 is short-lived. Its half-life is eight days, meaning half of the radioisotope's radioactivity decays in that time.

"The results being reported are well under the levels of health concerns," said Tennessee American Water Co. spokeswoman Kim Dalton. "We will continue to follow the situation closely."

Iodine-131 is produced by the fission of uranium atoms in nuclear reactors and by plutonium (or uranium) in the detonation of nuclear weapons.

The radioactive plume that prompted Chattanooga's findings swirled through the region on the jet stream early in the Fukushima-Dai-ichi Nuclear Plant crisis. The Japanese plant was crippled March 11 when a 9.0 earthquake and tsunami hit the island nation.

The Chattanooga water sample showing radiation was collected March 28, according to US Environmental Protection Agency's nationwide radiation monitoring system, known as RadNet. The finding was posted in the RadNet database April 8.

Since then, US and Japanese authorities have said more radiation has been released, but new sampling data has not yet been posted because of the time it takes to collect and analyze samples, according to EPA and state officials.

The EPA's maximum allowable amount for iodine-131 in drinking water is 3.0 picocuries per liter, according to EPA spokeswoman Dawn Harris-Young. Chattanooga had 1.6 picocuries per liter.

A picocurie is a tiny fraction of a curie. A curie is a measurement of radioactive decay.

The RadNet database on Wednesday afternoon listed 69 drinking water samples collected and analyzed across the nation since March 28. More than half — 42 — found no detection of iodine-131.

RadNet also is sampling air, rainwater and milk. No Chattanooga-area samples have been posted in rainwater databases. Earlier this month, officials detected air samples near Sequoyah with radioactive isotopes.

Milk samples taken in Athens, Tenn., and Knoxville on March 31 showed no detection for iodine-131, according to the databases.

LOOKING AHEAD

With greater radiation releases in Japan in recent days, Mike Stafford, director for the nuclear and radiological protection division at Oak Ridge National Laboratory, acknowledged that officials may see higher sample readings.

But he said the duration of spikes shouldn't last much longer if Fukushima conditions stabilize. He also said radiation may not show up again in the same places across the US

"You'll see patterns that will be linked to the jet stream and where there was a rain right before [the sample was taken]," he said.

While Chattanooga's drinking water sample measured 1.6 picocuries per liter, the highest reading on one of Oak Ridge's five sample spots registered 0.63 and was collected the same day as Chattanooga's. Another of Oak Ridge's sample spots, collected the following day, showed no detection.

Meg Lockhart, a spokeswoman for the Tennessee Department of Environment and Conservation, said the level detected in Chattanooga water is so low that even an infant would have to drink 600 liters of water to receive a dose equivalent to one day's background radiation in nature.

EPA, too, has stressed that levels seen to date are low and are not expected to cause health effects.

But EPA's website acknowledges risks from too much exposure. Radioactive iodine can cause thyroid problems, but it also can help diagnose and treat thyroid problems, according to EPA.

Still, the agency says physicians must maintain "a fine balance between the risks and benefits of using radioactive iodine because this small, additional exposure may tip the balance in favor of cancer formation."

The National Academies of Science has said there is no safe level of exposure to radiation.

MORE UNKNOWNNS

Neither EPA nor state and local authorities will acknowledge where the Chattanooga drinking water sample was taken.

"We do not divulge that information," Harris-Young said.

Previously she and TDEC officials indicated they thought the samples were taken from water taps at Tennessee American Water Co.

Dalton, Tennessee American's spokeswoman, seemed to deny that by questioning where that information came from.

"We have been in contact with the regulatory agencies to determine the location of the samples taken," Dalton wrote in a e-mail.

SIDEBAR:

TOP FIVE

The five cities with the top five iodine-131 detections in drinking water are:

Philadelphia/Queen — 2.2 picocuries per liter

Chattanooga — 1.6 picocuries per liter

Philadelphia/Belmont — 1.3 picocuries per liter

Oak Ridge/371 — 0.63 picocuries per liter

Philadelphia/Baxter — 0.46 picocuries per liter

Source: US Environmental Protection Agency

FAST FACTS

* Iodine-131 is produced by fission of uranium atoms during operation of nuclear reactors and by plutonium (or uranium) in the detonation of nuclear weapons.

* Iodine released to the environment from nuclear power plants is usually a gas. It emits beta particles during radioactive decay.

* Anywhere spent nuclear fuel is handled, there is a chance that iodine-131 and longer-lived iodine-129 will escape into the environment.

* Nuclear fuel reprocessing plants, which dissolve the spent fuel rods in strong acids to recover plutonium and other valuable materials, also release iodine-129 and -131 into the airborne, liquid, and solid waste processing systems.

Source: US Environmental Protection Agency

Alexander, Nuclear Regulatory Commissioner To Visit Watts Bar Nuclear Plant (CHATNOOG)

The Chattanooga, April 15, 2011

Senator Lamar Alexander will visit the Watts Bar nuclear plant on Monday, with Commissioner Bill Ostendorff of the Nuclear Regulatory Commission, which regulates nuclear reactor and nuclear material safety in the US

Of the upcoming visit, Sen. Alexander said, "I want to make sure that TVA is doing all it can to learn from the tragedy in Japan and that the six TVA reactors are operating as safely as possible. Nuclear power produces 80 percent of the Tennessee Valley's clean, reliable, emissions-free electricity. There has never been a fatality at an US commercial or naval reactor, and in the Three Mile Island accident, no one was hurt."

Mr. Ostendorff was appointed to the NRC by President Barack Obama. Immediately prior to his appointment, Mr. Ostendorff served as the director of the Committee on Science, Engineering and Public Policy and as director of the board on Global Science and Technology at the National Academies of Science.

He served as an officer in the US Navy from 1976 until he retired in 2002 in the grade of captain, having commanded an attack submarine, an attack submarine squadron and served as Director of the Division of Mathematics and Science at the US Naval Academy.

TVA To Retire 18 Coal-fired Units (SDS)

By Ken Bonner

Scottsboro (AL) Daily Sentinel, April 15, 2011

Japan's ongoing nuclear disaster will affect TVA's nuclear generation plans in both the short and long-term, according to reports presented at the utility's board of directors meeting held in Chattanooga Thursday.

"TVA's Integrated Resource Plan is focused on what is best for the region we serve," Van. M. Wardlaw, executive vice president of enterprise relations said in presenting the 20-year vision for the utility. "It gives us diverse options, flexible options. It is a compass not a GPS."

The IRP, which was approved unanimously by the board, does include nuclear power as a viable option for producing electricity over the 20-year period, including several choices for the Bellefonte Nuclear Power Plant near Scottsboro.

TVA Chief Operating Officer Bill McCollum said that engineering and design work ongoing at Bellefonte would take into account lessons learned from the failure of reactors to natural catastrophe at Japan's Fukushima Dai-ichi nuclear facility.

"We will definitely make improvements at Bellefonte," McCollum said. "We will incorporate lessons learned in going forward. Our plants remain safe and we intend to keep them safe."

TVA Board Chairman Dennis Bortorff, who was reelected to the position for an additional one-year term, praised McCollum and his team for monitoring the Japanese situation and how the utility is reacting to it now and for the long term.

"Nuclear power is one of the best options," Bortorff said. "We need to take into account what happened in Japan, what we learn and incorporate it into our entire nuclear fleet."

The IRP was developed over two years with the assistance of a Stakeholder Review Group that consisted of representatives of the business, consumer, political and environmental communities providing a range of expertise and viewpoints. It also allowed for public input through meetings held at various locations in the service region, online and by mail.

The process "added important perspectives as we formulated our Integrated Resource Plan," TVA President and CEO Tom Kilgore said. "Diversity proved to be the most prudent course in meeting future energy needs in all the various future scenarios we studied. A variety of electricity sources, rather than heavy reliance on any single source, reduces long-term risks and helps keep costs steady and predictable."

The plan recommends utilizing a diverse mix of power generation sources, including nuclear power, renewable energy and natural gas. It also incorporates traditional coal and hydroelectric power and places an emphasis on energy efficiency.

As part of its efforts to provide cleaner power for the 9 million customers it serves in seven southeastern states, TVA will retire 18 of its coal-fired units including six at the Widows Creek Fossil Plant in Bridgeport. Units will also be retired at TVA's Johnsonville and John Sevier plants.

"We have the oldest and largest coal fleet in the nation," Kilgore said. "Our plants average 47 years old. We can't keep all of our plants on line."

The retirements will help TVA reduce emissions of sulfur dioxide and nitrogen oxides. The utility will idle approximately 2,700 megawatts of its 17,000-megawatt coal-fired capacity by the end of 2017. It will be replaced with low-emission or zero-emission sources.

The process will be implemented over six years. Few if any job losses are anticipated as part of plan. Some of the employees likely effected will retire, others will stay on at their current locations to dismantle or modify units and some will be asked to be flexible and move to other plants.

"In the longer term, these actions reinforce our vision to keep bills low, keep our service reliability high and further improve air quality as we modernize the TVA power system," Kilgore said.

TVA estimates that it will invest an additional \$3-5 billion in the next 10 years on new emission-control equipment and upgrades of existing equipment at the coal-fired units it will continue to operate. In an agreement with the Environmental Protection Agency the utility will provide \$350 million to fund environmental improvements and will pay a \$10 million civil penalty to end ongoing litigation over regulatory compliance.

TVA's vision includes high reliability, promoting and encouraging economic development in the area, assisting in creating employment opportunities across the region and reducing emissions. It also stresses the need for energy efficiency and promotes expanding the utilities participation in an electric vehicle project to provide public charging stations in Chattanooga, Knoxville, Memphis and Nashville.

The utility will continue to utilize renewable generation options such as wind, solar and biomass and is considering expanding its use of natural gas fired power plants. The idea behind the IRP, according to Wardlaw, is to provide a guide for providing "low-cost, cleaner energy."

TVA's next board meeting is scheduled for August 18 in Knoxville. Its last meeting of 2011 is tentatively scheduled for November 17 in Starkville, Mississippi.

CleanEnergy Footprints: April 14: Japan Nuclear Disaster Update (CENEWS)

By Sara Barczak

Clean Energy News, April 15, 2011

After over a month downplaying the disaster at the Fukushima nuclear reactors in Japan, officials finally upgraded the disaster to a level 7 on the International Nuclear and Radiological Event Scale. Previously, the ranking was 5, meaning "accident with wider consequences." Before now, Chernobyl was the only accident rated 7, which is the highest on the scale and indicates a "major accident." Also this week, the evacuation zone was increased beyond the original 20-kilometer zone. Now all those within the 20-30 km zone are being asked to stay indoors and to prepare to leave within a month.

Radioactive contamination is being found in more areas. Highly radioactive fish have been caught off the coast of the Ibaraki prefecture, outside of the 20-km evacuation zone. Low levels of strontium have also been detected in plants and soil outside of the 30-km zone around the plant. Despite the low levels, this is a cause for concern as there is no set 'safe' limit for exposure to strontium, which can cause bone cancer and leukemia.

Unfortunately, Japan will be dealing with repercussions from both the earthquake/tsunami and the Fukushima Daiichi disaster for years to come. Current speculations claim that it will take at least 5 years just to deal with the 60,000 tons of radioactive water that has flooded the basements of the reactor buildings; these speculations do not even take into consideration the new radioactive waste being created as the struggle to get the nuclear complex under control continue.

And the reality is that it will take years to fully understand the far-reaching impacts of this situation. We continue to hold the people of Japan in our thoughts and prayers as they struggle through this complex, seemingly never-ending tragedy. Some additional resources to consider:

Videos released this week show the Fukushima Daiichi nuclear complex being inundated by the tsunami and footage of a Geiger counter tour within the evacuation zone;

An International Nuclear and Radiological Event Scale fact sheet details the types of nuclear events and how they are classified by severity, as well as a historical overview of past events;

A summary of past significant nuclear events as analyzed by Tom Cochran of the Natural Resources Defense Council;

Nuclear Information Resource Service (NIRS) has short, frequently updated summaries of the situation at the Fukushima Daiichi nuclear complex;

"Chernobyl: A Million Casualties" is a 30-minute program produced by EnviroVideo that will be broadcast on Saturday, April 16, at 6:00 a.m., 10:00 a.m., and 9:00 p.m., EDT, on Free Speech TV in 39 states and on the DISH Network (Channel 9415) and DIRECT TV (Channel 348). The program is also available on YouTube and at envirovideo.blip.tv;

The Emergency Petition for the NRC filed today by 45 groups across the US calls on the Nuclear Regulatory Commission to suspend all reactor licensing until lessons can be learned from the Fukushima disaster, a thorough analysis can be done of US safety systems and new rules and guidelines can be established based on that analysis. See the press release and read about it in today's article from the International Business Times.

In the United States, the public is concerned about radiation that has been detected in multiple US cities. Cesium-137, for instance, has been found in milk supplies in Montpelier, Vermont. Phoenix and Los Angeles milk supplies are registering levels of iodine-131 at the legal maximum limits set by the Environmental Protection Agency (EPA). Rainwater and drinking water in multiple cities are registering higher than normal, but mostly below regulated 'safe' levels for both contaminants, which are proven to increase the risk of cancer.

While radioactivity from the Fukushima Daiichi reactor complex continues to be measured here in the US, the EPA continues to debate whether it should increase the 'allowable limits' of various radioactive contaminants. According to the Public Employees for Environmental Responsibility, "The internal documents show that under the updated PAG [Protective Action Guides] a single glass of water could give a lifetime's permissible exposure. In addition, it would allow long-term cleanup limits thousands of times more lax than anything EPA has ever before accepted. These new limits would cause a cancer in as much as every fourth person exposed." This debate has been underway for a long time. You can find more background information from NIRS [here](#).

FPL's Turkey Point in Miami-Dade County

Another primary concern in the US relates to evacuation zones. Turkey Point in south Florida and Indian Point near New York City are particularly vulnerable considering the high population densities of Miami-Dade county and New York City. US officials have recommended a 50-mile evacuation zone around Fukushima, but still maintain a standard of 10 miles around US nuclear reactors.

The integrity of the Nuclear Regulatory Commission (NRC) as a regulatory body is also being called into question, with rumors of "regulatory capture" and comparisons to the Minerals Management Service (MMS), the regulatory body that oversees offshore drilling permits. MMS came under scrutiny during the Gulf Horizon oil disaster. Accusations charge that the NRC has at times put industry profit and interest before safety by allowing spent fuel pools to exceed design limits, and that the agency cannot stay objective when 90 percent of its budget comes from industry fees.

As the Japanese nuclear disaster ensues, the so-called "nuclear renaissance" here in the US continues to falter. The NRC has denied Unistar's combined operating license application to build and operate a third reactor at their Calvert Cliffs plant in Maryland, stating that the corporation is not compliant with laws that prohibit nuclear projects that are dominated by foreign interests. American-owned Constellation Energy pulled out of the project late last year, leaving the majority French government-owned Electricite de France as the primary investor.

Tennessee Valley Authority (TVA) has extended the timeline on its decision to complete the two reactors at Bellefonte, a troubled project that was abandoned in 1985 after billions of dollars had already been spent. Bellefonte was an agenda item for TVA's board meeting this week, with the notation "Extension of Decision and Budget." However, as reported in the Chattanooga, in light of the Japan nuclear disaster, TVA's COO Bill McCollum said at today's TVA board meeting that a decision on the Bellefonte project would occur, "after TVA has a clear understanding of the Japanese nuclear situation and any potential impact on the project." Read the SACE blog posting about the numerous safety concerns regarding Bellefonte.

And in North Carolina, the utility push to get even worse state legislation passed to make it easier to charge electric customers in advance in order to fund new reactor proposals (referred to as "SuperCWIP") was dealt a setback. According to the Charlotte Business Journal:

"The public advocate for North Carolina utilities customers has reversed position and will oppose any proposal to make it easier for utilities to recover some costs for nuclear plant construction before plants are built. Robert Gruber, executive director of the Public Staff of the N.C. Utilities Commission, says the nuclear crisis in Japan may drive construction costs for new nuclear plants in the United States prohibitively high. He says the only prudent course is to put off any legislation until federal regulators establish new safety rules based on lessons learned at the four crippled Fukushima reactors in northern Japan. After that, the impact on plant costs can be evaluated."

It seems clear to many that the time is now for regulators, policymakers, utilities and the nuclear industry to take a step back and pause in order to fully understand how the events unfolding in Japan could have implications for nuclear power here in the US. This careful consideration will benefit ratepayers, US taxpayers and the communities near existing and proposed new reactors. The phrase "an ounce of prevention is worth a pound of cure" has never been more appropriate. Caution should predominate before billions more dollars are spent and lives are at risk.

—SACE staffer Mandy Hancock contributed to this blog

In Southeast, Extreme Heat Is A Growing Concern For Nuclear Power Operators (SCN)

By Alyson Kenward

SolveClimate News, April 15, 2011

On July 8, 2010, as the temperature in downtown Decatur, Alabama, climbed to a sweltering 98 degrees Fahrenheit, operators at the Browns Ferry nuclear power plant a few miles outside of town realized they had only one option to avoid violating their environmental permit: turn down the reactors.

For days, the Tennessee Valley Authority (TVA), which owns the nuclear plant, had kept a watchful eye on the rising mercury, knowing that more heat outside could spell trouble inside the facility. When the Tennessee River, whose adjacent waters are used to cool the reactors, finally hit 90 degrees Fahrenheit and forced Browns Ferry to run at only half of its regular power output, the TVA hoped the hot spell would last just a few days.

Eight weeks of unrelenting heat later, the plant was still running at half its capacity, robbing the grid of power it desperately needed when electricity demand from air conditions and fans was at its peak.

The total cost of the lost power over that time? More than \$50 million, all of which was paid for by TVA's customers in Tennessee.

"Last summer, the water in the Tennessee River warmed up early and stayed warm," says TVA spokesman Ray Golden. "When it got hot again in July and August, we were impacted by that and had to reduce power at the plant and get it from somewhere else."

With river water so warm, the nuclear plant couldn't draw in as much water as usual to cool the facility's three reactors, or else the water it pumped back into the river could be hot enough to harm the local ecosystem, says Golden.

But for every day that the Browns Ferry plant ran at 50 percent of its maximum output, the TVA had to spend \$1 million more than usual to purchase power from somewhere else, he says.

No Threat of Meltdown, But Hefty Fines

What happened in northern Alabama last summer, at the largest of TVA's nuclear power plants, did not present a human safety concern. Operators knew there was never a risk of an explosion or nuclear meltdown, nor was there a threat of leaking radioactive material.

But the prolonged spell of hot weather put the TVA at risk of violating environmental permits, with hefty fines as one consequence and potential harm to the Tennessee River ecosystem as another.

It's not the first time high temperatures have affected the performance of the Browns Ferry plant, and extreme heat is a growing concern for power plant operators across the Southeast. While some nuclear plants can improve their cooling procedures to cope with the intake of warmer water, the upgrades can cost hundreds of millions of dollars and still don't offer an indefinite defense against extreme heat.

Because scientists say the Southeast (like many other parts of the world) can expect to see more frequent and intense heat waves by the end of this century, the problems for nuclear power and the people that rely on it for electricity may only be beginning.

Extreme Heat Limits Nuclear Energy Production

The disaster still unfolding at Japan's Fukushima Daiichi nuclear plant has refocused America's attention on nuclear power, calling into question its future role in the country's energy portfolio.

Many advocates of nuclear power say that we need to maintain — and even expand — nuclear power to get away from using fossil fuels such as coal, and to help lower greenhouse gas emissions.

But nuclear power has a paradoxical relationship with climate change. Even though it might help mitigate long-term global warming, nuclear power is already being challenged by rising temperatures and the increasing number of heat waves around the world. Throughout the last decade, several plants have had to reduce electricity production during heat waves, just when electricity demand typically reaches peak levels.

"It's a dilemma between mitigation of climate change and adaptation to it," says Natalie Kopytko, an energy policy doctoral student at the University of York in England. Having recently studied the ways in which climate change could have a negative

impact on nuclear power, she says nuclear power is caught in the middle because it could be used to help lower greenhouse gas emissions, but global warming is making the technology less effective at providing electricity.

Most nuclear power plants draw water from nearby sources to help cool the reactors. Several American plants are on the coast and rely on ocean water, but the vast majority of nuclear reactors in this country (89 of the total 104) are inland, next to freshwater sources, and many of these are constantly cycling through river or lake water.

Normally, there isn't much difference between the water cooling process of inland and coastal facilities, but when hot weather strikes, a slow-moving and shallow river or a lake heats up a lot quicker than the ocean does. And when a nuclear power plant is drawing in such warm water, it can end up releasing unusually hot water back into the river. That's because the water gains heat while cycling through the plant.

Laws to Ensure Water Temps at Safe Levels

Power companies like the TVA can't control the weather. Nevertheless, plant operators are bound by environmental guidelines that are meant to keep temperatures at a safe level for fish in the river. For example, the Alabama Department of Environmental Management (ADEM) stipulates Browns Ferry cannot release water back into the Tennessee River that is above 90 degrees Fahrenheit.

"I know this past summer the TVA was worried about exceeding their permits," says Scott Hughes from the ADEM. "But they adjusted their operations and stayed within the limits."

The 90 degree Fahrenheit ceiling has been especially problematic for the TVA because in the past five years, the river water has, on several occasions, warmed that much on its own. And each time, Browns Ferry has been forced to reduce electricity production. This puts a pinch in the electricity supply for the more than 2.1 million homes and businesses that depend on electricity from Browns Ferry.

More importantly, the problem gets transferred to the pocketbooks of TVA's customers.

"When we can't generate that power from our nuclear plant, we have to go elsewhere in the energy market to get it," says the TVA's Golden. "In some cases, we have to increase the production from some of our other plants, including coal plants, and in other cases we go to other companies and buy power."

In addition to finding power from other sources, last summer the TVA called upon its customers to cut down on their electricity use throughout July and August. But the request came at the hottest time of the year, when electricity demand is usually at its highest.

Other large-scale power plants, including coal and biomass plants, are also vulnerable to heat waves and are subject to the same kind of environmental permits for hot water.

But according to the TVA's Golden, while "it is also a problem for coal-fired power plants, the size of nuclear power plants is much larger so the cooling problem is bigger." That's because cooling at many nuclear power plants isn't as efficient as at coal-fired power plants, and the nuclear power plants usually require more water for their cooling than other types of plants.

Heat Waves in Southeast on the Rise

What happened last summer at Browns Ferry may be a sign of what people living in the Southeast can expect in the future. As average global temperatures rise, studies show the risk of heat waves also increases. New research suggests extreme heat will become a more regular occurrence across the US.

"One of the things that is happening is that the heat wave season, the time over which heat waves might occur, is actually getting longer," says Kenneth Kunkel, a climate scientist from the Cooperative Institute for Climate and Satellites in North Carolina. "Consequently, you can get heat waves a lot earlier in the year, and the season can also extend a lot longer."

Kunkel and his colleagues have recently modeled the future of heat waves across the United States, depending on what global greenhouse gas emissions are like during the rest of this century. In the Southeast, they found that by 2100, every year there could be between 60 and 80 more days with heat wave-level temperatures than there are currently. More frequent heat waves will mean higher Tennessee River water temperatures.

A separate Climate Central analysis shows similar trends for the region. For example, each summer between June and September, there is an average of 44 days when the temperature is above 90 degrees Fahrenheit in Athens, Ala., a location nearby to the Browns Ferry nuclear power plant. By the end of the century, however, Athens should expect to see about 80 summer days above 90 degrees Fahrenheit.

That 80-day estimate is based on a future climate scenario with relatively low greenhouse gas emissions; if atmospheric carbon dioxide emissions continue to climb at the current rate or higher, Athens could see even more of those exceptionally hot days.

"It may be that humans are able to adapt to the higher temperatures," says Kunkel, "but of course, a nuclear power plant is just going to have to deal with the conditions."

When Nuclear is Primary, Extreme Heat Can Hit Hard

The vulnerability of nuclear power to heat waves isn't restricted to the Southeast. In the summer of 2003, during a record-breaking heat wave in Western Europe, millions of people across France and Italy suffered through an extended power shortage after the French network of 19 nuclear power plants had to reduce their operations.

In France, over 70 percent of the country's electricity comes from nuclear power, and Italy also purchases about a third of its electricity from French nuclear providers.

During the heat wave, France took some of the pressure off its electrical grid by purchasing power from other sources, promoting energy conservation among citizens and industry, and by exporting less to Italy — causing many Italian towns to endure blackouts.

Although the energy shortage can't be solely blamed for the thousands of heat wave-related deaths in France and Italy that summer, it put a strain on people who lost air conditioning, as well as hospitals.

In Illinois, where a larger portion of electricity comes from nuclear power than any other state, plants have also fallen prey to summer heat waves. Back in 1988, which featured an unusually hot and dry summer, several reactors were reduced to just one-third of their maximum power output during a 90-day bout of abnormally hot weather.

But while inland nuclear power plants everywhere are threatened by heat waves, the dilemma may be growing worse in the Southeast.

Last summer was the hottest on record for the region. An early season heat wave in May warmed the Tennessee River more than usual for that time of year. And then more hot weather settled in a few months later and sent water temperatures soaring; August 4, 2010 marked the hottest single day in the TVA region in more than 50 years — temperatures in Nashville climbed as high as 111°F, for example.

The power lost at Browns Ferry during the late summer heat wave of 2010 was enough to catch the TVA's attention. In late August, the company decided to invest in more cooling infrastructure at their biggest nuclear power plant.

"At Browns Ferry, we're spending about \$160 million on retrofits to improve the cooling," says Golden. "It's an awful lot of money but the project should pay for itself in just a few short years — especially if there are more heat waves."

The upgrade has added a larger cooling tower to the nuclear plant than the one originally there, which helps bring down the temperature of the water before it is sent back into the river. A few more similar improvements will be made in the next two years, says Golden.

Other power companies may have to explore similar options in the years to come. Installing better cooling to combat high water temperatures, and designing more efficient closed-loop systems that don't constantly demand fresh water are technically feasible, says Golden, but they could prove to be prohibitively expensive upgrades for older power plants.

The Browns Ferry upgrades will be enough to combat heat waves similar to those seen in 2010. Whether they are able to withstand the earlier and more intense heat waves of the future, on the other hand, isn't something the TVA can tell just yet. The repairs may end up being just a short-term solution for a long-term problem the nuclear industry is facing.

Senior Scientist Claudia Tebaldi conducted heat wave calculations for this story.

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Federal Workers Tell Us What Should Be Cut From The Budget (WP)

By Lisa Rein

Washington Post, April 15, 2011

With the budget for the rest of the fiscal year finally passed and more cuts to spending on the way, we asked federal workers, contractors and others with in-depth knowledge of the workings of federal government to answer a simple question: What needs to be trimmed from the budget?

Here are some suggestions from online responses. We have identified only the employees' departments.

Treasury Department

Social Security: The retirement age should be adjusted every five years based on updated life-expectancy rates. If the average life expectancy in the 1930s was 73 and the retirement age was 64, then the retirement age for Social Security going forward should be the 2011 average life expectancy less nine years. To the extent there is a large disparity in the retirement age under current law and the "new" retirement age, the spread should be phased in over the same number of years as the difference (add one year longer per year of disparity).

Social Security payments received by individuals with adjusted gross income greater than \$500,000 (or \$1 million jointly) should be subject to 100 percent tax. If a recipient knows he will be above the threshold, he could make an irrevocable election with SSA to forgo payments for the balance for the next year (or permanently) — thus not taking them into income. The election would not affect survivor benefits.

Agriculture Department

I would reduce the Paperwork Reduction Act. Making sure the government doesn't impose excessive paperwork and information-collecting on the public is laudable, but there should be a threshold for reporting. What constitutes information collection and a "burden" is ridiculous. . . . The government is spending much more time and money justifying the collection of information than the public is spending actually providing the information.

Defense across the board. The food-stamp program needs major overhaul. Way too many people are just plain living off of it now. It accounts for over 75 percent of the USDA budget.

Interior Department

All subsidies to oil and coal industry, agricultural subsidies in most cases, and defense should be cut by 25 percent. Bush tax cuts should be eliminated. Corporations should be taxed at 15 percent.

Social Security Administration

Corporate subsidies, foreign aid to some countries, US defense of foreign countries, tax cuts to the very wealthy, tax concessions/subsidies to churches, congressional perks, subsidies to private schools and colleges.

Internal Revenue Service

Bottom line, there are way too many levels of management, too many executives, too much duplication of effort, too many meetings, etc. We simply have too much "managing" going on: meetings about meetings, time spent fine-tuning the administration of the organization and so on. We could greatly reduce our budget by simplifying the management areas of responsibility, thereby reducing the executive and upper-level management ranks. We also have too many employees (many of them in higher pay brackets) in the administrative areas and too few in the field, assisting taxpayers. (By the way, I work in headquarters, so I don't say this out of malice but based on firsthand observation.)

National Institutes of Health

I think the workforce needs to be

looked at. There are a lot of workers who are not doing 100 percent of what they should be doing. Due to such things as the misuse of EEO (equal employment opportunity), there are a lot of employees who are able to hold onto their positions, collect paychecks and not do what they were hired to do. This creates more work for those who do their jobs, as well as a waste of taxpayers' money. A really good way to accomplish this is to do an overhaul of the PMAP system, that is, the performance-based system that the grade-scaled federal employees are on. Under this system, most employees receive a "fully successful," even if they are not performing their duties, due to their supervisor's fear of backlash from that employee. If the PMAP system can be redone in order to have it more based on performance, employees who are not performing can be let go easier, and this will cut costs.

Environmental Protection Agency

Management. The layers of management are insane. . . . It takes 13 steps and five layers to get a signature from our office director, more to get a signature to the assistant secretary/administrator.

Nuclear Regulatory Commission

Most middle managers; many have old-time skills and non-innovative processes. . . . Redundant training, which has nothing to do with real-world skills.

Nuclear Expert Speaks At SU (YNN)

YNN, April 14, 2011

SYRACUSE, N.Y. — Radiation levels have dropped low enough to allow police to search for bodies in the rubble outside Japan's tsunami flooded nuclear plant. For the first time, crews are searching within a six mile radius of the Fukushima site. They believe as many as 1,000 bodies of missing victims may be in the area.

Inside the plant, workers are running into new setbacks as they struggle to stabilize the reactors.

Here in the United States, nuclear experts say they are learning a tremendous amount from the disaster in Japan. A nuclear expert spoke with students at Syracuse University Thursday. He says the Nuclear Regulatory Commission in the US is the best in the world and they continue to learn and adapt in light of what has happened in Asia.

"One of the things we're looking at is how to deal with the most unimaginable situations and the actions that we need to be able to take in those situations and having some of these alternate ways of mitigating accidents," said Will Cothen of Clean Energy America.

Here in New York, UniStar is evaluating whether or not to build an additional reactor at Nine Mile Point in Oswego. The company is in the beginning stages of safety reviews.

US Should Halt Approvals For Nuclear Reactors, Groups Say (BLOOM)

By Simon Lomax

Bloomberg News, April 15, 2011

The US should suspend licensing decisions for new and existing nuclear plants while it investigates Japan's reactor crisis, environmental groups said.

The groups seek a "credible Three Mile Island-style review" of Japan's failed reactors and implications for US safety, lawyer Diane Curran said today on a conference call.

The Nuclear Regulatory Commission should "immediately suspend all licensing activities," Curran said, speaking for 45 groups and individuals including the Knoxville, Tennessee-based Southern Alliance for Clean Energy, the Institute for Energy and Environmental Research of Takoma Park, Maryland, and San Luis Obispo Mothers for Peace.

The NRC is conducting a two-step safety review of US nuclear plants after a magnitude-9 earthquake and tsunami on March 11 crippled Tokyo Electric Power Co.'s Fukushima Dai-Ichi plant in Japan with fires, explosions and radiation leaks.

A 90-day review that started last month will identify near-term changes that might be needed at US reactors, NRC Chairman Gregory Jaczko said April 12. It would be followed by a six-month examination based on additional information on the Japanese reactor crisis, Jaczko said.

The NRC can order US plants to add safeguards during the review, he said. New-reactor applications and proposals to extend licenses can be reviewed because the agency's processes "are robust enough to deal with the new issues" that may arise after the Japanese nuclear disaster, he said.

After a 1979 accident resulting in a partial meltdown at the Three Mile Island nuclear plant near Middletown, Pennsylvania, former US President Jimmy Carter appointed an independent commission to conduct a six-month investigation.

On March 25, the New York-based Natural Resources Defense Council urged President Barack Obama to appoint a similar panel to investigate Japan's nuclear crisis and implications for US reactor safety. The NRC should suspend work on license renewals for reactors in earthquake-prone areas until the investigation is finished, the NRDC wrote to Obama.

Groups Petition US NRC To Suspend Nuclear Power License Reviews (PLATTS)

By Steven Delley

Platts, April 15, 2011

A coalition of 45 groups and individuals has asked the US Nuclear Regulatory Commission to "immediately suspend" all licensing of new nuclear power reactors and license renewals for operating reactors "until the the agency completes a thorough post-Fukushima reactor crisis examination," the coalition said Thursday.

The groups said "the commission should suspend all decisions regarding the issuance of construction permits, new reactor licenses, combined construction permit and operating licenses, early site permits, license renewals, or standardized design certification" pending completion of reviews now being conducted by the NRC staff of lessons learned from the ongoing accident at Tokyo Electric Power Co.'s Fukushima 1 plant.

In a news conference, the petitioners said the agency's reviews should be supplemented by an investigation by a presidential commission, similar to the Kemeny Commission, which was created by President Jimmy Carter to investigate the 1979 accident at Three Mile Island-2.

Diane Curran, an attorney representing the petitioners, said the NRC is legally obligated under the National Environmental Policy Act to complete its review of the Fukushima accident "before it allows another reactor to operate."

The petition said that NEPA and the Atomic Energy Act "forbid the NRC from issuing licenses for which it lacks reasonable assurance or safe operation or for which it failed to consider all information significantly bearing on the environmental impacts of reactor operation."

Arjun Makhijani, president of the Institute for Energy and Environmental Research, said the events at Fukushima are "rewriting the book on nuclear reactor accidents," and "continuing business as usual in licensing and reactor certification in the face of the unprecedented, hugely complicated, and ongoing Fukushima accident would be rash."

The NRC is actively reviewing 13 applications to build 22 new nuclear units and considering some new designs for certification. The agency announced March 21 that it would conduct a 90-day review of lessons learned from the Fukushima accident, followed by a six-month review that would begin when more solid information becomes available.

NRC Chairman Gregory Jaczko said last month that some of these applications are "in the last phase" of their reviews and the NRC could be ready to decide on them by "later this summer or early fall." Jaczko said he would like to see NRC's Fukushima reviews "very far along if not resolved" by that time.

"If information tells us we need to make changes to our licensing process, we will do that," Jaczko said.

After Fukushima, Groups Ask NRC To Suspend Licensing Plants (INTLBIZ)

International Business Times, April 15, 2011

Several advocacy groups have petitioned the Nuclear Regulatory Commission to suspend reactor licensing until a full review of the Fukushima disaster in Japan is complete.

Public Citizen, Southern Alliance for Clean Energy and San Luis Obispo Mothers for Peace are among the organizations urging the NRC to delay licensing while the agency and a presidential commission conduct a full study of the Fukushima disaster's implications.

The Fukushima Daiichi nuclear power station, operated by Tokyo Electric Power Co., was hit by a tsunami in the wake of the Tohoku Earthquake

on March 11. The tsunami knocked out the generators that ran the cooling systems. That resulted in a partial meltdown in at least one of the six reactors on the site, as well as hydrogen explosions that destroyed two reactor buildings. Spent fuel in a reactor that was already shut down for maintenance was damaged when the water that cools them partially boiled away.

At a press conference, the groups said they were concerned that the NRC was bowing to pressure from the nuclear industry and moving forward with new plant licenses. The major concern, they said, was that operators may not have studied what happens when grid power to cooling systems is lost.

Another issue is whether many plants that are already under construction may require expensive retrofits, the cost of which could ultimately fall on ratepayers.

Sara Barczak, high risk energy director at the Southern Alliance for Clean Energy, said the problem is that the nuclear industry has downplayed the seriousness of the Fukushima crisis and has pushed for building reactors whose safety is questionable.

Barczak pointed to the Bellefonte Nuclear Generating Station in Alabama as an example. The reactor is a 1960s-era design, as construction was originally started in the late 1970s before being suspended in 1988. She said only two other reactors of this type have been built and neither is still operating.

Dr. Arjun Makhijani, president, Institute for Energy and Environmental Research, said the biggest issue is that the Fukushima crisis is the first time a nuclear accident has involved spent fuel rods, and it is important to study what an accident that involves a loss of coolant would mean in American reactors.

Makhijani said the petition isn't a bid to stop constructing nuclear plants entirely or shut them all down, though some of the groups backing it might have that goal. "I know we have 104 operating reactors, and we can't shut them down overnight," he said. "We have a serious interest in keeping them safe while they are operating."

He added that opposition to nuclear power by environmentalists wasn't necessarily what stopped construction before. "It was Wall Street," he said, noting that many companies were not seeing a sufficient return on investment.

NRC Asked To Suspend Licensing Decisions (CAPECOD)

By Patrick Cassidy

Cape Code Times, April 15, 2011

A group of nuclear safety activists and other organizations called Thursday for a suspension of all licensing activities for reactors in the United States until a "Three Mile Island style" review of the Japanese nuclear crisis is complete.

The 45 groups and individuals, including a Duxbury-based organization focused on safety issues related to the Pilgrim Nuclear Power Station in Plymouth, filed a 35-page petition with the Nuclear Regulatory Commission demanding that the agency suspend all pending proceedings on nuclear licensing decisions until the review is complete.

The Pilgrim plant's operating license expires in 2012, and Entergy's request to extend the license for another 20 years is pending.

Mary Lampert, founder of Pilgrim Watch, said outstanding concerns about spent fuel rods, buried electric cables and emergency planning zones must be addressed at Pilgrim before the plant's license is extended.

The NRC has embarked on a "two-pronged review" of US nuclear power plants in response to the Japanese reactor events, the agency's spokesman Neil Sheehan wrote in an e-mail to the Times.

"The review will have both near-term and long-term components," Sheehan wrote. "In the meantime, our assessment is that US reactors can continue to operate safely. We have no current plans to halt licensing reviews, including our evaluation of relicensing applications."

Japan Crisis Renews Interest In US Anti-nuke Movement (KCS)

By Julie Wernau

Kansas City Star, April 15, 2011

When the Fukushima Dai-ichi nuclear power plant in Japan was knocked out with one mighty wave, the all-but-forgotten anti-nuke movement suddenly powered up in the US

Paul Gunter, director at Maryland-based Beyond Nuclear, barely found time to sleep. Web traffic spiked, and Gunter's mailing list exploded with new members.

David Kraft, who for 30 years has quietly operated a Chicago-based nonprofit committed to ending nuclear power, scored his organization's first face-to-face meeting with the governor of Illinois. The state boasts the largest number of nuclear plants in the country.

And in Pennsylvania, Eric Epstein, chairman of Three Mile Island Alert, was deluged with media requests. He trekked to the infamous plant as many as 11 times a day for TV interviews about whether what happened in Japan could happen here.

The renewed interest in nuclear power comes at a time when it has become more accepted, somewhat aligned with the green movement, and opponents had largely dwindled to a small band of scientists and aging hippies.

"From my vantage point, many of our meetings look like AARP reunions," Epstein said. Prior to the accident in Japan, he said, "this younger generation was more interested in a rainforest in Brazil than they were a nuclear power plant in their backyard."

That may have changed as a result of Japan.

"You're dealing with a crisis that's going to have an ongoing impact," said Peter Kuznick, director of American University's Nuclear Studies Institute. "The worst thing from the standpoint of the nuclear industry nationally is that this is going to remain in the eyes of the public for a long time."

In Chicago last week, gray-haired protestors donning anti-nuke buttons from the Cold War era and dreadlocked 20-somethings in hazmat suits joined forces to stage the city's first anti-nuke demonstration in 10 years, rallying outside the World Nuclear Fuel Cycle Conference at the Swissotel Chicago.

The rally was a first for 23-year-old Carlyn Crispell, a student at the School of the Art Institute of Chicago, who admitted that protesting nuclear power hadn't been her top priority.

Her Facebook profile picture features a soot-spewing coal plant overlaid with the words, "Coal power's toxic fallout is poisoning our community." But last week Crispell sparred with Facebook friends who defended nuclear power as a clean energy source.

"I think most environmentalists are anti-nuclear," she said. "Maybe it's just the crowd I run with?"

Over the years the nuclear power industry has worked hard to align itself with the green movement, a cause near and dear to young activists.

"Environmentalists are torn about this," said Regina Axelrod, professor and chairwoman of the political science department at Adelphi University in New York and an expert on nuclear power and energy policy. "They think that climate change is the most profoundly dangerous issue we have to deal with in stabilizing planet Earth, which is under attack."

It's the reason people like Kraft have invested so much time trying to win over students to his cause.

"We're getting older," Kraft, 59, said. "We definitely need to bring in some young folks."

He said he fanned interest in the Chicago protest rally by attending a clean-energy discussion at the University of Illinois at Chicago. Kraft parked himself at a table near the back of the room and stacked it with three piles of anti-nuke literature, including brochures and maps of Illinois' 11 operating reactors. He kept the flier about the anti-nuclear rally face down until the discussion ended and students began filing out.

Over the three decades since Kraft took up the anti-nuclear banner, he has become more polished, less strident, more politically astute.

Kraft's group supports a "methodical replacement" of nuclear power. "Even if you could shut down every nuclear reactor in the United States today, you wouldn't want to. It's not only insane, it would probably black out most of North America. You can't do it."

His political savvy was reflected in the planning that went into last week's 45-minute meeting with Gov. Pat Quinn. Kraft had decided arguments couldn't be too technical and activists present couldn't be too combative. They needed to control half the agenda; the governor the other half. It would be wise to bring another activist group but not one that would dilute the message.

While Kraft's organization boasts a core of about 30 people, he brought just two: the state director of a public advocacy group and another with political background.

"I needed people who have the background and sensitivity to deal with a politician of this stature," he said.

Kraft, who went to the meeting dressed in a suit and hiking boots, offered the governor practical solutions to his group's concerns, ones that he felt also would fly politically in Illinois. For every bullet point, Kraft handed a folder of materials to Quinn's aides, with each page highlighting key information.

Pleased with how the meeting went, Kraft said, "I think they understand now that these are go-to people that they can turn to."

His upbeat attitude contrasts with activists like Ralph Nader. Last month, Nader renewed a nearly 2-year-old request to US Secretary of Energy Steven Chu to meet with several anti-nuke groups.

Chu has yet to respond.

"These guys are digging in their heels," Nader said in an interview. "They're playing Russian roulette with a technology that is uneconomical, unsafe and unnecessary, and cannot exist without government subsidies."

Kraft was 27 when he watched "The China Syndrome," a thriller that played in movie theaters just two weeks before the Three Mile Island partial core meltdown. Outside the theater, he encountered anti-nuclear activists passing out leaflets. The more Kraft learned about nuclear power, the more he became an opponent.

In 1981, Kraft and six others formed Nuclear Energy Information Service, with a mission to end nuclear power. Two decades passed before the organization grew large enough to be able to pay him a salary. Today he remains the only paid employee at NEIS headquarters, a cramped second-floor office in Logan Square, filled with neat stacks of anti-nuke literature, post-it note reminders and homemade bumper stickers.

Anti-nuke activists say sticking to a single issue for decades tends to focus on technical and complex issues, and at times is downright boring.

"It's like being a prison guard," said Epstein, of Three Mile Island Alert, who tends to radiation monitors the group set up more than 15 years ago at the site because they didn't trust the government.

Even after Three Mile Island and reports of cancer deaths in Ukraine from the nuclear meltdown in that country, health and safety concerns have proven a difficult sell.

"It's hard to do a ballistics analysis on a neutron particle that gives you cancer," said Gunter, of Beyond Nuclear. "It's not like you find a body in your yard with a bullet hole."

Raising funds also is difficult for single-issue organizations, Kraft said. Grant-making organizations like to see a broader focus and more collaboration. Most anti-nuclear organizers say they have kept themselves afloat by having other full-time jobs. Kraft's organization reported total revenue of about \$50,000 in 2008.

"We fund ourselves," Kraft said. "We get no government grants, no corporate grants."

It's the smaller victories, activists said, that keep them going. For example, Kraft's group helped maintain a moratorium on new nuclear reactors in Illinois that has been in effect for 24 years.

And Epstein's group has had visitors from all over the world looking to copy its system of radiation monitors around Three Mile Island.

Jeff Garrett, chief executive of Skokie, Ill.-based CTLGroup, which works with the nuclear industry, credits the vigilance of anti-nuclear groups for helping make the nuclear industry one of the "most regulated" and, therefore, safe.

"Watchdog organizations demand that," he said.

Peaceful Anti-Nuclear Energy Group On Route From Indian Point To Vermont (PCP)

By Plamena Pesheva, Liz Giegerich

Peekskill-Cortlandt Patch, April 15, 2011

In an effort to show solidarity to those who suffered from the tragedy in Japan and to support a nuclear-free future world, a peaceful anti-nuclear power group started its journey at Indian Point and walked on Route 202 in Peekskill and Yorktown on Monday as part of its Peace Pilgrimage for a Nuclear Free World.

The group will continue walking northeast over the next two weeks until they reach their final destination, Vermont Yankee Nuclear Power Plant in Vermont. They will walk 206 miles, averaging about 15 to 18 miles a day and starting around 8:30 a.m. every morning.

Anti-nuke Protesters Walk From Indian Point To Vermont Yankee (VTD)

By Deb Katz

VTDigger, April 15, 2011

Nuclear-Free Walkers from Indian Point to Vermont Yankee

On April 10, two dozen people began a 206-mile walk from Indian Point Nuclear Power Station in the Hudson Valley of New York to Vermont Yankee in Vernon, Vermont. Japanese Buddhist nun Jun Yasuda is leading the walk as a meditation on peace and a nuclear free world. They will arrive at Vermont Yankee April 24. Sister Jun Yasuda said, "The current crisis in Japan is a call to renew our efforts for a nuclear free world. A walk will pray for those affected in Japan and envision a world without nuclear energy or bombs."

The Safe and Green Campaign and Citizens Action Network are recruiting local walkers and sponsoring events in the Brattleboro area. Safe and Green organized the successful walk from Brattleboro to Montpelier in January of 2010, just prior to the Vermont Senate's vote to close Vermont Yankee in 2012.

On Sunday April 24, the public is welcome to join the walkers for their last 9 miles to Vermont Yankee. At 10:15 am they will leave West Brattleboro (55 Marlboro Road), on Route 9 two miles west of I-91 Exit At noon, walkers can join the last six-mile leg of the walk at the Marlboro Graduate Center in downtown Brattleboro. After a prayer vigil at the Vermont Yankee gates, car pools will return to Brattleboro and West Brattleboro. At 5:00 pm, there will be a simple dinner at the West Village Meeting House (All Souls Unitarian Church) in West Brattleboro. All are welcome; a \$5 donation is requested.

Those interested in walking should register by e-mail safeandgreencampaign@gmail.com.

The walk is initiated by the Nipponzan Myohoji Buddhist order, based at the Grafton Peace Pagoda in New York and in Japan. They are 'engaged' Buddhists whose founder was inspired by the walks of Gandhi and Martin Luther King. These actions are in response to the disaster at Fukushima, the 25th anniversary of the Chernobyl disaster, and the similarities of the nuclear reactors at Fukushima, Indian Point and Vermont Yankee. Entergy owns both US plants, and both are seeking to extend their license to operate for another twenty years. Vermont Yankee and the Fukushima reactors share the same GE design, manufacture and age. "We walk together in love and solidarity to pray for those affected by the tragedy in Japan and as a meditation upon a future world that is nuclear free," says the order, "So that all living beings upon the earth may live in peace and safety."

On Tuesday, April 26, a memorial vigil will be held to honor the 25th anniversary of the Chernobyl nuclear reactor disaster. The memorial will be from 9:00 AM – 1:00 PM at Wells Fountain in downtown Brattleboro. Japanese Buddhists from the Grafton, NY, Peace Pagoda will lead the vigil with drumming, chanting and prayers. The vigil is sponsored by the Nuclear Free Future Coalition of Western Ma., The Citizens Awareness Network and the Traprock Center for Peace and Justice.

The Chernobyl, Russia nuclear power station exploded at 1:32 am on April 26, 1986, sending plumes of radioactive fallout into the atmosphere. Radiation was found in every country in the northern hemisphere, and some parts of Europe are still impacted. Today, there is an uninhabitable wasteland for 25 kilometers around Chernobyl, including the abandoned city of Pripyat.

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The Japanese Buddhists live at the Grafton Peace Pagoda, a Buddhist center founded by Nipponzan Myohoji . Sister Jun Yasuda led a 206-mile walk from Indian Point to Vermont Yankee, as a meditation on peace and a nuclear free world. Their walk, which will arrive at Vermont Yankee on Sunday, April 24, was inspired by the Chernobyl anniversary, the nuclear disaster in Fukushima, Japan, and the similarities of the Fukushima reactors to Indian Point and Vermont Yankee.

Lawmakers Seek Studies For Calif. Nuclear Plants (AP)

By Adam Weintraub

Associated Press, April 15, 2011

California lawmakers kept up the pressure Thursday for a harder look at earthquake safety at the two nuclear power plants in the state, questioning why federal regulators won't halt relicensing work until new seismic maps are completed.

"The seismic safety of our plants cannot be an afterthought," said Sen. Alex Padilla, D-Los Angeles, chairman of the Senate energy committee.

It's the second time a state Senate committee has addressed nuclear safety since a massive earthquake and tsunami on March 11 damaged several nuclear reactors in Japan.

Given that California's nuclear plants - Diablo Canyon near San Luis Obispo and San Onofre north of San Diego - face the highest seismic risk of any in the United States, continued scrutiny is needed to make the plants as safe as possible, Padilla said.

Pacific Gas and Electric Co., which operates Diablo Canyon, has applied to renew licenses that expire in 2024 and 2025.

This month, after pressure from state lawmakers and California's US senators, PG&E asked the US Nuclear Regulatory Commission to delay issuing the licenses until it completes three-dimensional seismic maps of a newly discovered offshore fault less than a half-mile from Diablo Canyon.

The NRC has not responded but was moving forward with other parts of the license review, according to Troy Pruett, deputy director for reactor projects for an NRC division in Dallas.

The NRC staff has spent thousands of hours preparing an environmental and safety review and wants to get that information to the public for review even if the seismic mapping work continues, Pruett said.

State Sen. Sam Blakeslee, R-San Luis Obispo, said the newly discovered Shoreline fault presents a threat to Diablo Canyon, and the mapping work is crucial to understanding that threat.

"How can you possibly make an assertion about the safety ... if you have not yet reviewed the data?" he asked.

"We're reviewing the data we have in hand," Pruett replied.

"The data you have in hand is not adequate," Blakeslee replied.

Pruett said the licensing work and seismic safety studies are related but independent.

"If NRC became aware of a seismic or safety concern that threatened safe operation, we would take action immediately," he said.

Blakeslee, a geophysicist who has been a frequent critic of Diablo Canyon and PG&E, pointed out the NRC signed off on the original license based on seismic studies by the utility indicating there were no faults nearby, but since then two faults have been discovered.

"I'm very concerned that the NRC is looking at this issue with rose-colored glasses," he said.

Pruett said available evidence, including reports from NRC inspectors working on site, indicates both California plants are being operated safely.

PG&E and Southern California Edison, which operates San Onofre, have said their reactors are different from those damaged in Japan.

The California facilities have been designed to withstand earthquakes and tsunamis and have redundant safety systems if a disaster or malfunction jeopardizes the reactors, the utilities contend.

Critics say those designs date back decades and engineering assumptions can be wrong.

A realistic assessment of risk has to be part of the discussion on nuclear power, said Rochelle Becker, executive director of the Alliance for Nuclear Responsibility.

"Ratepayers shouldn't be paying a penny for license renewal until seismic studies are completed," she said.

Lawmakers Seek Studies For Calif. Nuclear Plants (AP)

By Adam Weintraub

Associated Press, April 15, 2011

California lawmakers are pushing for tougher scrutiny of earthquake risk at the state's two nuclear plants, questioning whether updated safety measures and studies are needed after the earthquake and tsunami that devastated nuclear plants in Japan.

During a legislative hearing Thursday, lawmakers questioned a Nuclear Regulatory Commission official about why the agency has not suspended work on relicensing the Diablo Canyon plant near San Luis Obispo until new studies are completed. They want more scrutiny of an offshore fault discovered in 2008.

Sen. Sam Blakeslee, whose district includes Diablo Canyon, says the commission sees earthquake risk through "rose-colored glasses."

A commission official says the agency would act immediately on fresh evidence about earthquake risk even if the license is renewed.

State Senator Tells Feds To Pause License Review For Diablo Canyon Nuclear Plant (VENCSTR)

By Timm Herdt

Ventura County (CA) Star, April 15, 2011

SACRAMENTO — A top regional official of the US Nuclear Regulatory Commission told a legislative committee Thursday that the agency intends to proceed with its safety and environmental analysis for extending the license of the Diablo Canyon nuclear power plant, despite a request from the plant's operator that the agency take no final action until after more thorough seismic studies are completed.

The federal licensing agency hopes to proceed as scheduled with its review, said Troy Pruett, deputy regional director of the Nuclear Regulatory Commission's division of reactor projects.

"Staff has invested many thousands of hours in environmental and safety review," Pruett told members of the Senate Energy, Utilities and Communications Committee. "Our desire now is to publish that."

The senator, whose district includes the site of the nuclear plant, assailed the federal agency for what he called its decision to look at Diablo Canyon seismic issues "through rose-colored glasses" despite the damage to nuclear reactors in Japan resulting from last month's earthquake and tsunami.

"You're telling me you're going to proceed with business as usual? That's unacceptable," Sen. Sam Blakeslee, R-San Luis Obispo, told Pruett.

Blakeslee testified earlier this week at a hearing in Congress on the issue of seismic safety and nuclear reactors — an issue of specific concern in California because it is home to the only two of the nation's 104 nuclear plants located in earthquake-prone areas.

In Washington, D.C., Blakeslee told Pruett, "I heard the same doublespeak from your boss."

Blakeslee urged the federal agency to hold off on its safety review until it receives updated data from three-dimensional seismic mapping studies that PG&E is now undertaking.

The Diablo plant is licensed through 2024. In November 2009, it applied to the federal agency for a 20-year extension.

Blakeslee last month asked the utility to suspend that process. PG&E stopped short of asking for a suspension of review, but did send a letter this week asking that the Nuclear Regulatory Commission not complete its process until the updated seismic data is obtained.

The plant, near San Luis Obispo, sits near the offshore Hosgri Fault, capable of producing a 7.5 magnitude earthquake. In addition, a fault discovered in 2009, called the Shoreline Fault, sits less than a mile from the plant.

More studies are needed to determine the length of the fault and its possible interaction with the Hosgri Fault, Blakeslee said.

Pruett acknowledged the NRC considers the Shoreline Fault the biggest seismic threat at Diablo Canyon. Because of its proximity, he said, an earthquake along that fault would produce greater ground-shaking at the site.

A PG&E official testifying at the hearing said he believes the NRC's intent to continue with its safety and environmental reviews is proper.

"It seems like it would be more beneficial to the public to get that information out for review," said Loren Sharp, director of technical services at the Diablo Canyon plant.

The draft safety and environmental reviews are now set for release in June.

Pruett said the commission has not yet formally responded to PG&E's letter, but that its staff hopes to abide by the existing timetable.

\$64 Million Quake Study For Nuclear Plant (OCR)

By Pat Brennan

Orange County Register, April 15, 2011

A new, \$64 million study of earthquake fault patterns around the San Onofre nuclear plant will be proposed Friday by Southern California Edison, its scope broadened and its cost estimate more than doubled because of the nuclear disaster in Japan.

Edison will propose the study to the California Energy Commission; if approved, it would be paid for through customer rates, although Edison says that would add up to less than one percent of present overall rates.

The study will use state-of-the-art technology, characterizing in three dimensional detail the sea floor near the coastal plant and the geological picture beneath the land surface.

Edison is still evaluating what type of technology to use, but sonar would likely be used to map the ocean floor near the nuclear plant, while seismic vibration measurements as well as lidar, which uses light beamed from planes, would be used on land.

"One of the distinctions of the new study will be the use of new technology that can look deeper beneath the ocean and land surface to see what geologic conditions may exist," said Edison spokesman Gil Alexander.

A company that could be chosen by Edison to conduct the study, Fugro Earthdata, Inc., has been mapping the California coastline since 2006 using a combination of sonar for ocean floor measurements and lidar.

The \$25 million state effort involving state and federal agencies is still under way, said Fugro president Ed Saade.

"California was way ahead of the curve, way ahead of the rest of the nation and the world, trying to get a baseline for offshore sediments and habitats," he said. "But also for setting a baseline for sea-level rise monitoring, even tsunami inundation modeling."

The intensive mapping effort around San Onofre will augment existing data to create a sharper picture of earthquake and tsunami hazards facing the nuclear plant.

But the study, estimated at \$31 million in November 2010, grew substantially in scope after Edison officials decided to expand it in light of the Japanese nuclear disaster.

Edison officials outlined why they believe the San Onofre plant is well protected against earthquakes and tsunamis in a hearing on Thursday before the state's Energy, Utilities and Communications Committee on nuclear power plant safety.

Edison officials say the plant is built to withstand shaking from a 7.0 quake, the maximum thought possible when the plant was being designed. It also has a 30-foot seawall, thought higher than necessary to protect against tsunamis.

But California's US senators, Barbara Boxer and Dianne Feinstein, have questioned whether the plant's protections are sufficient, citing a 2008 report from the Energy Commission that said San Onofre could experience larger quakes than it was designed for.

Officials at California's other nuclear plant, Diablo Canyon near San Luis Obispo, are embroiled in disagreements over their own pending seismic study and its effect on relicensing.

The company earlier this week asked the Nuclear Regulatory Commission to delay issuing any new licenses until seismic tests can be completed, no later than 2015.

But the San Luis Obispo County Board of Supervisors wants the plant's operator, Pacific Gas & Electric, to go further: withdraw its relicensing application entirely.

The board voted Tuesday to send the company its request by letter.

The plant's licenses for its two reactors expire in 2024 and 2025.

The main concern is over the possibility of simultaneous shaking by two faults near the plant.

The licenses for San Onofre's two reactors expire in 2022. Edison officials have not yet decided whether to pursue relicensing for San Onofre, but said in a statement Thursday that they believe relicensing efforts and the seismic study could be done at the same time.

Diablo Canyon Licensing Renewal Update (KVECAM)

By King Harris

KVEC-AM San Luis Obispo, CA, April 15, 2011

San Luis Obispo, CA – Few are completely satisfied with PG&E's recent request to delay a final decision on renewing Diablo Canyon Nuclear Power Plant's operating licenses until in-depth seismic studies are complete. The Nuclear Regulatory Commission has not decided how it will proceed in light of the PG&E request.

Two days later, PG&E sent a second letter to the NRC making it clear that the utility wants the processing of its renewal application to continue, but the issuance of a final decision should be delayed. This prompted supervisors Tuesday to request clarification from the utility about its intentions. Mothers for Peace is holding a peaceful protest over re-licensing of the plant Saturday April 12 at noon in Avila Beach.

A Bad Reaction To Diablo License Debate (SLOT)

By David Sneed

San Luis Obispo (CA) Tribune, April 15, 2011

Few are completely satisfied with PG&E's recent request to delay a final decision on renewing Diablo Canyon nuclear power plant's operating licenses until in-depth seismic studies are complete.

Organizations as diverse as the county Board of Supervisors and the anti-nuclear group San Luis Obispo Mothers for Peace want all license renewal activities stopped until the earthquake studies are done in light of the nuclear disaster in Japan, not just a possible postponement of a final decision.

"There are multiple lessons yet to be learned both from the future seismic studies and from the ongoing crisis at the Fukushima plants," said Jane Swanson, Mothers for Peace spokeswoman.

NRC spokesman Victor Dricks said the agency has not decided how it will proceed in light of the PG&E request.

For its part, PG&E says the delay request to the NRC is not just window dressing. It is intended to give the NRC as much information as possible about Diablo Canyon's earthquake danger before its licenses are renewed, said Kory Raftery, PG&E spokesman.

"If the seismic data leads to the conclusion that changes are required at Diablo Canyon, we will act on that issue immediately with the NRC rather than waiting until our current licenses expire," he said.

County supervisors and others remain confused and skeptical. They cite a seemingly contradictory chain of events that began with a formal request to the NRC on Sunday to "delay the final processing" of its license renewal application pending completion of the seismic studies.

This was followed two days later with a second letter to the NRC making it clear that the utility wants the processing of its renewal application to continue — only issuance of a final decision should be delayed. This prompted supervisors Tuesday to request clarification from the utility about its intentions.

PG&E executives have promised to give regular public updates at board meetings as additional information becomes available.

One thing is clear: Diablo Canyon's renewal process is shaping up to be one of the lengthier ones.

The seismic report to the NRC that would allow final relicensing could be sent as late as the end of 2015, six years after the utility applied for renewal. Renewal typically takes from two to six years to complete.

If there is no local opposition to license renewal, the process can take two to 2½ years, Dricks said. However, Mothers for Peace has filed formal objections with the NRC.

These require local hearings before an NRC panel called an Atomic Safety and Licensing Board, which can add years to the process. Dates for those hearings have not yet been set, Dricks said.

PG&E Cries Uncle (SLONT)

By Matt Fountain

San Luis Obispo (CA) New Times, April 15, 2011

Nearly a year and a half after Pacific Gas & Electric (PG&E) announced it was seeking to relicense the Diablo Canyon Nuclear Power Plant, the energy company has succumbed to pressure to delay its relicensing efforts.

Though the utility hasn't halted the federal process, it sent a letter to the Nuclear Regulatory Commission on April 10 requesting the agency not finalize its application until in-depth 3D seismic studies are completed.

Currently in their initial stages, those studies were previously expected to be finished by 2015. However, in its letter to the NRC, PG&E said it plans to "accelerate" completion of the studies—but exactly what an acceleration means isn't yet clear.

"It's that we're going to be pursuing [the studies] more aggressively," said PG&E Spokesman Paul Flake. "As of right now, I don't have any information on how soon we can finish. The thing we're asking is that the NRC delay their final decision until we are done."

Flake said the decision was made as a direct response to local concerns over seismic safety following the ongoing Japanese nuclear disaster.

"Basically, we're trying to be responsive to what we're hearing, and what we've heard is an extreme amount of interest after what happened in Japan," Flake said. "When the studies are done, we will have that added assurance of the safety of the plant."

However, many critics, including David Weisman of the nuclear watchdog group the Alliance for Nuclear Responsibility, say the announcement was little more than a public relations move that creates more questions than answers, including the accuracy of "accelerated" seismic studies, and how those studies will be reviewed.

"They're handing out this brightly colored lollipop, but we're not suckers," Weisman said.

"We are currently reviewing [PG&E's request] to see what impact—if any—it will have on the review schedule," NRC Spokesman Victor Dricks told New Times.

A spokesperson for Republican State Sen. Sam Blakeslee—a geophysicist by training, who had repeatedly called for PG&E to halt the relicensing process until the studies are completed—told New Times the senator was notified of the announcement as he traveled to Washington, D.C., to testify before the US Senate Committee on Environment and Public Works on the nuclear emergency in Japan and its implications for the United States.

"I commend PG&E for taking the responsible action of delaying relicensing until critical seismic questions are answered. It's our duty to learn and apply the lessons of Japan to ensure we protect our communities," Blakeslee said in a statement within an hour of PG&E's announcement.

"We respect that this is a difficult decision that demonstrates their willingness to prioritize the safety of Californians," he said.

PG&E's move didn't go far enough for the SLO County Board of Supervisors, however, who on April 12 voted to send a letter to PG&E requesting the utility completely halt its relicensing bid until completion of the studies, noting the utility is requesting customer money to pay for them.

Viewpoint: Before Diablo Relicensing, Concerns Must Be Answered (SLOT)

By State Sen. Sam Blakeslee And US Congresswoman Lois Capps

San Luis Obispo (CA) Tribune, April 15, 2011

Over the last couple of weeks, we have independently called for a suspension of the relicensing effort under way at Diablo Canyon nuclear power plant until a myriad of questions regarding the seismic setting at the facility are answered.

This week, we both testified before the US Senate Committee on Environment and Public Works, which is chaired by Sen. Barbara Boxer, reiterating our deep concerns about the Nuclear Regulatory Commission's decision to process the relicensing application for Diablo Canyon, in spite of the newly discovered offshore fault system that lies within hundreds of meters of the plant.

Though PG&E acceded to our request and asked the Nuclear Regulatory Commission to delay its license renewal application while it completes recommended high energy, 3-D seismic studies of the new fault, the NRC has yet to agree to a delay nor has it agreed to suspend the application process.

The ball is now clearly in the NRC's court, and we are renewing our call to the NRC to halt the relicensing process until the proper seismic studies are performed, independently reviewed, and furnished to state and federal regulators so that they may make informed, responsible decisions about relicensing.

We want answers to the major questions surrounding the seismic setting and emergency preparedness at Diablo Canyon. This includes issues regarding the ability of the plant and the area's infrastructure to withstand an earthquake and nuclear accident at the same time and how long the plant would be self-sustaining in the event of such damage. This is particularly pertinent given that just last month the NRC confirmed that Diablo Canyon is one of two nuclear power plants in the highest-risk seismic areas in the country.

We are, to put it lightly, concerned that the NRC has not taken seriously a 2008 California Energy Commission report clearly delineating that more information is needed to determine the true seismic risk surrounding Diablo Canyon. Simply put, a new fault line was discovered a mere half mile from the plant and given the complexity of the fault system, could potentially intersect the dangerous and powerful Hosgri fault that lies three miles offshore, we need to know what kinds of risk this fault system now poses to the facility, prior to relicensing the plant through 2045.

California law, authored by Sen. Blakeslee, requires the California Energy Commission to perform seismic assessments of our state's nuclear plants. As a result of that legislation, the Energy Commission recommended — and our state Public Utilities Commission directed — that independent, peer-reviewed, advanced seismic studies are performed prior to applying for relicensing. The California Coastal Commission has also filed comments in the license renewal proceedings reiterating the same concerns.

To address this, Congresswoman Capps has called on the NRC to establish an independent panel, including representatives from the affected federal and state agencies, to review the findings on these studies prior to moving forward with the relicensing process.

It's important to note that there is no hurry to relicense Diablo Canyon, as the current operating licenses run to 2024 and 2025. Surely, that is more than enough time to adequately address seismic concerns in a thoughtful and transparent manner, so that the NRC and the California Public Utilities Commission has the full spectrum of information on which to base critical decisions on the plant's future operations. Furthermore, this pause in the relicensing would not prejudice NRC from granting PG&E new licenses after considering all the seismic studies should the utility still be able to demonstrate its ability to run the plant safely and efficiently and to be able to prepare for and deal with potential disasters.

To be clear, we are not calling for Diablo Canyon to be shut down or for the plant to be denied a new operating license. What we have done is ask that the relicensing process be halted until comprehensive, independent analyses of the seismic setting are done and that they be considered as part of the relicensing process.

While the tragic events in Japan have brought seismic concerns at Diablo Canyon to the forefront, these concerns are not new for us or the communities we represent on the Central Coast. And while we know Diablo Canyon provides more than 3 million people in California with affordable electricity, safety must always be everyone's No. 1 concern.

Now that PG&E has indicated that a delay in relicensing is solely the NRC's call, we urge the agency to make the right one:

Suspend the relicensing process and allow time for independent, advanced and peer-reviewed studies to be completed and analyzed before moving forward.

Sam Blakeslee, R-San Luis Obispo, represents San Luis Obispo County in the state Senate.

Lois Capps, D-Santa Barbara, represents portions of San Luis Obispo County in Congress.

Nuclear Regulators To Discuss Plant Safety In NC (AP)

Associated Press, April 15, 2011

HOLLY SPRINGS, N.C. – Nuclear regulators are visiting North Carolina to answer questions about the safety performance at the Shearon Harris power plant.

Staff from the US Nuclear Regulatory Commission will also discuss Thursday night the agency's role in ensuring safe plant operation. The NRC found that the Progress Energy plant 10 miles southwest of Raleigh met all the agency's safety objectives in 2010 and doesn't require any additional oversight.

The meeting is open to the public. Representatives from Progress Energy will also participate in the meeting.

Panel Tries To Ease Concerns Of Residents Near Nuke Plant (WTLD)

WTLD-TV Raleigh, NC, April 15, 2011

NEW HILL (WTVD) – People living near the Shearon Harris Nuclear Power Plant want to know if the facility is safe and voice their concerns.

Residents have received e-mails and have access to information detailing the result of every incident at the plant in the past year.

Thursday night the public can take their concerns to the Nuclear Regulatory Commission and Progress Energy officials at a public meeting. The NRC and Progress energy are meeting to review evaluations of Shearon Harris.

According to the NRC, the plant had very low safety issues, which may explain why more people are willing to move near the plant.

According to US Census data analyzed by Longcreative, the number of people living within the 10-mile emergency planning zones around nuclear power plants rose by 17 percent in the past decade. Among the 100 most populous cities on the map, 26 of them have a nuclear plant within 50 miles.

Raleigh and Durham are among those cities with more people trading in their nuclear fear for a place to call home.

The map shows more than 2.5 million people live within in 50 miles of Shearon Harris and more than 9,000 are within five miles.

The meeting begins at 7 p.m. at Shearon Harris.

NRC Plans Tuesday Vogtle Meeting (AUGC)

Augusta Chronicle, April 14, 2011

The US Nuclear Regulatory Commission will hold a public meeting Tuesday, April 19, to discuss Plant Vogtle's annual safety evaluation and assessment.

The meeting, which begins with an open house at 6 p.m. and includes a presentation at 6:30 p.m., covers only the site's two existing units – and not the additional reactors planned in the future. There will be a question and answer session after the presentation. The meeting will be held in the Burke County Public Library, 130 Ga. Highway 24 S. in Waynesboro, Ga.

The Vogtle plant, which has two pressurized-water reactors, is located near Waynesboro, about 26 miles southeast of Augusta. It is operated by Southern Nuclear Operating Co.

Overall, the NRC staff concluded that the Vogtle plant operated safely in 2010, and there were no inspection findings or performance indicators that would cause the NRC to increase its level of oversight and inspection. Based on the plant's performance, the NRC staff plans to continue the detailed routine or baseline inspections all nuclear power plants receive.

Regulators Weigh Timeline On Nuke Plant Case (TIFTON)

Associated Press, April 14, 2011

ATLANTA — Utility regulators are expected to set a schedule for deciding whether to cut the earnings of Georgia Power if construction costs on a proposed nuclear plant run over budget.

A committee of the Public Service Commission planned to meet Thursday to consider a new schedule for the case. The issue has dragged on for more than two years without resolution, and the commission recently decided it needed more information.

The PSC staff has proposed taking a carrot-and-stick approach with the subsidiary of the Atlanta-based Southern Co.

If the company's share of building two new reactors at Plant Vogtle costs less than \$5.8 billion, it could earn extra money off its new reactors. If costs exceed \$6.4 billion, regulators would trim the company's earnings off the new plant.

'Different Approach' For Safety Of Planned Reactors (GPB)

Georgia Public Broadcasting, April 14, 2011

Southern Company's CEO told a group in Washington that the planned new reactors in east Georgia will have a "completely different approach to nuclear safety". (GPB photo-Noel Brown)

Despite the nuclear disaster in Japan, there should not be any safety concerns for two new nuclear reactors planned at Plant Vogtle near Augusta. That's what Southern Company's top official told a US Chamber of Commerce gathering in Washington Wednesday.

CEO Thomas Fanning says it's wise to review the nation's other nuclear plants, especially in earthquake-prone areas. But no one should worry over the nation's first new reactors in 30 years, slated for east Georgia.

"The site for our new units is not in a seismic sensitive area. And we're going to use the newest technology employing a completely different approach to nuclear safety."

The new Vogtle reactors already have \$8 billion in loan guarantees from the government.

Fanning says he's confident federal regulatory officials will license the project by the end of the year.

Southern Co. Chief Tom Fanning Urges Nuclear Push (BIRMNEWS)

By Mary Orndorff

Birmingham (AL) News, April 15, 2011

WASHINGTON – Japan's nuclear catastrophe should not derail the construction of new nuclear power plants in the US, Southern Co. President and CEO Tom Fanning said Wednesday.

"What's happened in Japan recently has made me more convicted than ever that we need to develop this generation of nuclear for America," Fanning said in a major energy policy speech to the US Chamber of Commerce.

Fanning, who has led the Atlanta-based utility giant since December, said his company's current fleet of six nuclear units at three plants – including one in southeastern Alabama – are safe, but that new designs are even safer.

The company is planning to add two more units to a plant in Georgia to generate 2,200 megawatts of electricity by 2017. A key design improvement is that they will rely on gravity to disburse water and shut down a reactor safely in the event of a loss of power, he said.

The Fukushima plant that failed after a massive earthquake and tsunami struck Japan has prompted American regulators to review safety systems, especially those nuclear plants in areas prone to earthquakes and along the coastline.

Fanning, addressing an audience of business advocates at US Chamber headquarters across from the White House, was also critical of the US Environmental Protection Agency for what he says are aggressive regulations that sidestep the role of Congress in setting national energy policy, and will lead to higher electricity prices for customers.

"The existing coal industry is under attack by some in America," Fanning said. "Decisions are being made today that will limit our ability long term to use coal and therefore negatively impact the nation's economic well-being."

Southern Co.'s subsidiary, Birmingham-based Alabama Power Co., operates six coal-fired power plants in Alabama.

Newly proposed rules to regulate more strictly the mercury and other emissions from coal-fired power plants could increase power bills by 20 percent, he predicted. EPA, when it announced the rule in March, estimated it would cause power bills for homeowners to go up by \$3 or \$4 per month. Fanning, in speaking to reporters after his speech, declined to address the different predictions. He said the industry needs more than 60 days to respond to the EPA's rule and may need more than three or four years to fully comply with the tighter regulations.

EPA is also looking to limit greenhouse gases, "which could lay another costly burden on our energy sector," Fanning said.

Last week the US House passed a bill that would gut the EPA's ability to regulate greenhouse gases, and all seven members of Alabama's congressional delegation – six Republicans and one Democrat – voted for it. A similar amendment failed in the Senate, with Alabama's two GOP senators voting for it.

Fanning also declined to discuss whether some of the company's older coal-fired power plants may be shut down, saying those decisions have significant consequences on social policy, such as the loss of jobs and tax revenue, especially in the rural areas where they are located.

Southern Co. CEO Protests 'War On Coal' And Says Nuclear Projects Are On Track (CWIRE)

By Joel Kirkland

ClimateWire, April 15, 2011

The chief executive of Southern Co., one of the biggest and most politically influential US electric utilities, marched well-trodden ground yesterday to defend coal-fired power against tougher air quality rules and said his company will press ahead with nuclear expansions.

"Coal is under attack, there's no question," asserted Chairman and CEO Thomas Fanning after a speech at the Washington headquarters of the US Chamber of Commerce.

Fanning, who took the helm in December, hit US EPA hard in a speech that had been billed as a road map for energy policy and creating jobs. He pressed the agency to slow down its implementation of court-ordered rules targeting toxic air pollution, and he warned that a three-year time frame to upgrade or shut down the dirtiest plants would be too costly.

"Nationally, those energy costs could rise as much as 20 percent as a result of this new proposed regulation, and reliability could suffer," he said.

Starting down the path of limiting greenhouse gas emissions tied to climate change "could lay another costly burden on our energy sector," he told the business crowd.

"EPA clearly has an important and critical role to play," he added. "But they do not set policy. That is the job of Congress."

Atlanta-based Southern, which produces electricity for some 4.4 million customers across the Southeast, has often led the charge for investor-owned utilities banding together during recent energy and climate policy battles on Capitol Hill. That cohesion among utilities has appeared more fragmented in recent months, as messaging about energy policy and environmental regulations is increasingly tethered to a utility's specific energy portfolio.

Pushing company-based strategies

Utility CEOs have appeared more comfortable giving their own policy speeches in Washington rather than leaning heavily on industry groups like the Edison Electric Institute to carry a common theme to Congress and the media. In yesterday's appearance before the chamber, Fanning joined the likes of Exelon CEO John Rowe, who in March extolled the virtues of natural gas as a cleaner fuel for power generation in a speech before the American Enterprise Institute.

Rowe, whose Chicago-based company operates the largest US fleet of nuclear power plants, gave his talk just days before a massive earthquake and tsunami caused major damage at Japan's nuclear power plants. Fanning wasn't so lucky.

With two nuclear plants planned for Georgia, Fanning and the Nuclear Regulatory Commission (NRC) have been answering questions about safety standards they're using for the new units. Southern, which has already spent \$2 billion on the nuclear project, has said safety is improved by using Westinghouse Electric's new AP1000 reactor. The NRC is expected to issue construction and operating licenses by year's end.

Fanning said Southern and the nuclear industry "need to be thoughtful" about the disaster that continues to play out at Japan's Fukushima Daiichi nuclear complex. And he sought to link concerns about safety and the cost of building nuclear power plants to anti-nuclear politics.

"Rest assured, we will continue to focus on safety and be diligent in making sure that our plants remain as safe and efficient as possible," he said. "But let's not let politics hinder our progress in this nuclear renaissance."

Fanning sidestepped concerns about backup power capacity and spent fuel disposal issues that dog nuclear power, and he said US nuclear plants have a "terrific track record" in excess of any "reasonable occurrence" of a natural or man-made disaster that could cripple a power plant or trigger a meltdown.

Losing market and clout to natural gas

In terms of cost and regulatory policies, both nuclear power and coal are running up against the emerging heft of cheap natural gas. Gas produces far smaller amounts of toxic and carbon emissions when powering electric turbines and is competing more favorably against coal on price.

In another example of shifting messages in the energy industry, Fanning warned against an overreliance on gas as a substitute for coal and cast far more doubt than Rowe on domestic supply. "Pending federal regulations have virtually declared a war on coal. As a result, much of our industry is rushing to gas-fired generation," Fanning said.

"Whatever you believe about the future price of natural gas, it's reasonable to believe it will remain volatile," he said.

Fanning's position stands in contrast to claims made by natural gas producers and by others in the energy industry that development of massive new onshore gas fields is a bankable "game changer." Domestic natural gas prices that had shot up to nearly \$15 per million British thermal units last decade could remain closer to \$4 or \$5 for decades, they assert, which would compete with Southern's fleet of coal and nuclear power plants.

Fanning spent much of his time talking about coal, however.

"Decisions are being made today that will limit our ability long-term to use coal, and, therefore, negatively impact the economy," Fanning said in the speech.

He asserted there are "enormous social consequences" to shutting down 30- or 40-year-old coal-fired power plants, including loss of jobs he claims could never be replaced in full.

Frank O'Donnell, president of Clean Air Watch, in a brief sent to reporters criticized Southern for battling regulators on implementation of new air quality standards. He took aim at Republican leaders and Southern, which has a long history of big

spending to lobby Congress, for downplaying the public health benefits associated with cutting toxic air emissions from coal-fired power plants.

Burn US coal here or abroad?

O'Donnell cited an EPA projection that enforcing the fleet of standards required under the Clean Air Act would prevent as many as 26,000 premature deaths a year and create new jobs, as utilities and factories replace their dirtiest plants and boilers.

"But that appears to be of little interest to the Republican leaders of the House Energy and Commerce Committee," O'Donnell wrote, taking special aim at Rep. Ed Whitfield (R-Ky.), a powerful subcommittee chairman. Whitfield, he asserted, is a "big defender of coal dating back to his days as a lobbyist for the coal-hauling CSX railroad company."

As Fanning spoke, the left-leaning Center for American Progress blasted out a brief arguing that a big expansion of US coal exports would conflict with environmental and economic goals. "If the United States is serious about combating the perils of climate change through economic and environmental transformation," said policy analysts Tom Kenworthy and Kate Gordon, "should we really be encouraging the export of American coal to Asian markets?"

The center's brief gets into an issue that so far has flown just under the radar in the national energy debate. Gasoline prices and EPA air quality and greenhouse gas regulations are dominating the discussion. As this goes on, the largest US coal producers are trying to push through significant expansions of export terminal capacity along the West Coast so they can send more American coal to Asia, particularly China.

Peabody Energy and Arch Coal, the two largest producers, have been telling their shareholders that bigger coal shipments to China will cushion them against the financial impact of declining coal consumption in the United States.

Fanning jumped into the fray yesterday, suggesting above all that the United States should continue to use cheap domestic coal to meet its energy needs.

"The coal will get sold and the coal will be consumed," Fanning said. But he said US energy policies will ultimately steer US coal reserves toward US plants or to Asia. "It would be a shame to give those advantages to somebody else."

Study: Millstone Adds \$1.2B A Year To Economy (NLDAY)

By Patricia Daddona

New London (CT) Day, April 15, 2011

The Millstone Power Station, which employs 1,080 people at its Waterford complex, generates \$1.2 billion a year in economic benefits, including \$122 million in capital spending and tax revenues of nearly \$34 million, according to a study commissioned by owner Dominion.

Dominion has been touting the nuclear complex's economic impact in Connecticut to lawmakers as it continues to fight a plan to tax its production of electricity. The company is opposing a legislative proposal that would tax the electric output of Millstone at 2 cents a kilowatt hour, or as much as \$335 million a year.

Dominion has said the tax, if passed, would force the company to shut down one, if not both, reactors. Millstone's two nuclear reactors generate 2,100 megawatts of electricity, which is enough to supply about 500,000 homes.

The economic impact study by Chmura Economics & Analytics of Richmond, Va., was completed in late March. Dominion periodically reviews Millstone's economic impact on the community and decided to seek revisions of outdated figures when the tax proposal was introduced "so that we had current numbers to talk about when discussing the bill," said company spokesman Ken Holt.

"It's absolutely valuable to (Connecticut)," state Rep. Betsy Ritter, D-Waterford, said of the study. "When we look at tax policy, you have to evaluate the economic impacts. These are big numbers, so I think it needs to be part of the discussion."

Chmura found in its study that Millstone operations produce about \$1.1 billion in economic benefits to the state each year, which supports 3,315 jobs. The company's capital spending alone at Millstone produces about \$122 million annually in economic benefits and supports another 915 jobs, the report stated.

The study looked at both direct impact, such as jobs at the plant, as well as indirect and "induced" impacts, such as products from suppliers and workers spending their earnings as consumers.

In total, the study found that Millstone supports 4,230 jobs a year.

Over the past three years, Dominion has invested an average of \$90 million annually at Millstone and is likely to continue to invest similar amounts, Chmura found.

In addition, the nuclear complex generates as much as \$33.6 million a year in state and local taxes. Those estimates are conservative, relying only on tax revenues from direct impacts, according to the study consultant.

The analysis "clearly demonstrates that Millstone has a huge impact on Connecticut's economy as a whole - especially on the local area," said Holt. "Not only does the station directly support the community with spending and jobs, but that spending also creates jobs in the community."

Waterford First Selectman Dan Steward said earlier this week that Dominion represents about 30 percent of the town's tax base. The uncertainty surrounding the tax and the potential plant shutdown may already be costing the town money as it issues bonds for school projects, he said.

Millstone Owner Threatens Shutdown If Taxed (video)- The New Haven Register (NHR)

By Luther Turmelle, North Bureau Chief

New Haven Register, April 15, 2011

Dominion Energy officials said Wednesday they would spend "tens of millions of dollars" shutting down the Millstone Nuclear Power Plant the company owns in Waterford if Connecticut lawmakers impose a tax on electricity generators that would cost the utility \$320 million a year.

Officials with the Virginia company acknowledged there are other possible alternatives besides closing the plant, including a court challenge of the generation tax if it becomes law.

But they insisted the company is not bluffing with its threat to close the plant and that a shutdown would cost the state \$1.2 billion in both direct and indirect economic benefit.

"We believe that, by even discussing, the legislature is doing damage to the state's reputation as a place to do business," Daniel Weekly, Dominion's vice president of government affairs said following a press conference at the Legislative Office Building that included lawmakers from southeastern Connecticut who are opposed to the plan.

David Christian, chief executive officer of Dominion Generation, on why the company is considering closing the plant:

A pair of Democratic lawmakers from Waterford, State Rep. Betsy Ritter and State Sen. Andrea Stillman, said the proposed legislation that would tax power generators, SB 1176, would deal Connecticut's economy a major setback it can't afford during tough economic times.

The bill "has the damaging effect of putting our state in one corner and one single corporate entity in the opposite corner, ahead of what promises to be a bruising, knockdown showdown between the two," Stillman said.

Ritter said the proposed legislation ignores "sound environmental, tax and business policies" in favor of "selectively and punitively targeting certain large companies."

The proposed legislation also taxes coal and oil-fired power plants, but at a much lower rate than power generated by nuclear plants, and doesn't tax electricity produced by natural gas-fired units.

Bryan Dorsey, vice president of Canberra Industries, reacts to the threat of the Millstone plant being closed:

That means the bulk of the taxes would be paid by nuclear power plant operators and Dominion is the only company that operates a nuclear plant in Connecticut.

But Dominion's threat to shut down Millstone doesn't sit well with Connecticut's Consumer Counsel Mary Healey.

"I don't like brinkmanship where citizens and ratepayers are concerned," Healey said, adding it is highly unlikely that Dominion would walk away from tens of millions of dollars in payments that the company will receive annually for providing up to 2,100 megawatts of power into the New England power grid on a daily basis.

Those payments now stand at \$95 million a year, although they will go down over the next several years, said Joe Rosenthal, the principal attorney for the Office of Consumer Counsel.

Dominion has contracts to provide electricity into the regional power grid through June 2014, Rosenthal said.

Shutting down Millstone would require Dominion to buy power to replace the electricity it has already signed contracts to provide. It would also require approval from grid operator ISO-New England (ISO-NE), Rosenthal said.

When Dominion tried to get the grid operator to grant a request to permanently shut down a coal-fired power plant the company operates in Salem, Mass., ISO-NE refused.

Even if it had to pay the tax, Rosenthal said Dominion would still have a rate of return on its investment that is "well above 11 or 12 percent."

Weekly, the Dominion executive, declined to comment on what the profit margin is for the company's Connecticut operations, but said estimates that it is in the vicinity of 50 percent are "wildly inaccurate."

One Fist Of Iron, The Other Of Steel (WATRFPTC)

By Paul Petrone

Waterford (CT) Patch, April 15, 2011

Most people would be outraged over a 100 percent tax increase. But when you are looking at a 1,000 percent tax increase, it might not seem so bad.

Lately, there has been heavy coverage of a State Bill 1176, which would place a \$330 million tax on Millstone Power Station. But before that bill even came out, a \$32 million tax was already proposed on Millstone Power Station, by Gov. Dannel Malloy.

Millstone Power Station currently pays \$32 million in state and town taxes. A \$32 million increase would double that tax rate in one year, a far cry from increasing taxes tenfold like SB 1176 does, but still a substantial amount, Dominion spokesman Ken Holt said.

"We have expressed our concerns," Holt said. "Any tax that is put on Dominion will go on to the consumers."

Dominion makes hundreds of millions of dollars in profit off of Millstone Power Station, according to state estimates. Still, the tax would be passed onto the consumers because of a "legal responsibility to the shareholders," Holt said.

"Any tax on any business will be passed on," he said. "It is just how it is."

Malloy's proposal was made in January as part of his efforts to balance the budget. The energy committee in the state legislature, with no input from Malloy, approved SB 1176 in March.

Malloy's proposal taxes all energy generators at the same rate, including Millstone. SB 1176 stands to make \$335 million from Dominion, and less than \$10 million from all other energy generators combined.

Both proposals need to be passed by the state legislature to become law.

State And Local Support?

State Rep. Elizabeth "Betsy" Ritter and First Selectman Dan Steward have both been very vocal in their criticism of SB 1176. However, neither showed much emotion in opposition to Malloy's proposal.

"I am not a big fan of any new tax," Steward said. "But it is part of Malloy's 'spread the pain' philosophy."

Steward said the tax would increase the cost of electricity. But it would not have any of the effect that SB 1176 would have, he said.

Ritter was equally ambivalent about Malloy's tax. At least the tax is equitable, she said.

"The governor's proposal ... has many new taxes," she said. "It is part of trying to balance the budget."

Ritter would not say if she was in favor of or opposed to the bill, because it was not yet made available to the legislators. It could be given to the finance committee as soon as Monday, and then it will become more clear, she said.

State Sen. Andrea Stillman, who represents Waterford and is on the finance committee, did not return a voicemail from Patch.

Production Tax?

One thing SB 1176 and Malloy's proposal have in common is that they are both production taxes, Holt said. No other state in the nation has a production tax, he said.

In other states, taxes are based on what electricity is bought at, not simply a flat fee on all energy generated at the plant, Holt said.

If both bills pass as is, Dominion would pay an additional \$367 million in state taxes; 11 times what it currently pays in state and town taxes.

However, the reality is if both bills pass, Millstone will pay almost nothing in taxes, because Dominion will shut down the plan, Holt said. At that point the plant would be too expensive to operate, he said.

The \$32 million tax alone would not force Millstone to close down, Holt said.

Suffering Budget Jitters (Waterbury)

Business Interests, Local Officials Lobbying To Avoid Taxes, Cuts

By Paul Hughes

Waterbury Republican-American, April 15, 2011

A serious case of budget jitters is breaking out as the legislature and Gov. Dannel P. Malloy work out spending and tax plans for the next two years.

The nervousness was on display Wednesday at the state Capitol, as meetings of the House and Senate provided anxious stakeholders opportunities to lobby lawmakers and make news.

The owners of the Millstone nuclear plants in Waterford are warning that a proposed tax on electricity generation could lead the company to shutter its power station.

"We believe this tax is onerous and disparate in its impact," said David Cameron, chief executive of Dominion Generation, a Virginia-based company that operates Millstone.

Officials Say Del. Can Handle Nuclear Emergency (AP)

Associated Press, April 15, 2011

The state's top homeland security official says Delaware is prepared to handle a radiological incident in the state.

Lewis Schiliro is the secretary of the state's Department of Safety and Homeland Security. He said Tuesday at a US Senate hearing that he does not have any specific concerns about the Salem/Hope Creek nuclear complex in New Jersey or other nuclear facilities.

Japan's nuclear crisis recently has increased concerns among residents who live near the Salem/Hope Creek complex, which is 2.5 miles from the Delaware shoreline. About 41,000 residents live within 10 miles of the plant.

The state is also within 50 miles of other nuclear generating stations - Limerick Nuclear Generating Station and Peach Bottom Atomic Power Station in Pennsylvania and Calvert Cliffs Nuclear Generating Station in Maryland.

Feds Say UniStar Application Fails To Meet Requirements (BAYNET)

By Marty Madden

Baynet.com (MD), April 15, 2011

The company that has applied for permission to build a third nuclear reactor at Calvert Cliffs Nuclear Power Plant in Lusby has been told by federal officials it doesn't meet the ownership requirements.

In a letter sent last week to George Vanderheyden, president and CEO of UniStar Nuclear Energy, a Nuclear Regulatory Commission (NRC) official stated last November's acquisition by Electricite de France (EDF) of Constellation Energy's 50 percent interest in UniStar rendered the Calvert Cliffs 3 application in noncompliance of the federal code governing nuclear plant ownership.

"UniStar is 100 percent owned by a foreign corporation (EDF), which is 85 percent owned by the French government," stated David B. Matthews, director of the NRC's Division of New Reactor Licensing, Office of New Reactors. "If requested, NRC staff will support a public meeting with UniStar to discuss the results of its review."

"As we have consistently stated, Calvert Cliffs 3 will ultimately have a US partner," a UniStar spokesperson stated. "While EDF and UniStar disagree with the Nuclear Regulatory Commission's conclusion regarding UniStar's present governance structure, we are pleased that the NRC will continue to review all other aspects of our pending application. This allows the project to continue moving forward as anticipated. UniStar and EDF will work with the NRC to resolve the governance issues prior to the issuance of the license."

"We were not surprised by it," said Allison Fisher, a spokeswoman for Public Citizen, a Washington, DC-based consumer watchdog organization, which opposes the Calvert Cliffs 3 project. "They have been trying to find a domestic partner to participate in the expansion of nuclear power and they haven't had any takers."

Fisher said the Calvert Cliffs 3 project might be "the first casualty" in the wake of the ongoing crisis at Japan's Fukushima Dai-ichi nuclear plant. That facility has been plagued by radiation leaks since last month's devastating tsunami/earthquake. Earlier this week Japanese officials stated the crisis at Fukushima Dai-ichi was on a par with the 1986 disaster at Chernobyl.

While Fisher acknowledged Calvert Cliffs is not susceptible to tsunamis, she added, "aging reactors have different vulnerabilities. Just the idea there are unknowns....it could be a different series of events in the US"

"We plan to continue our review of the Calvert Cliffs 3 new reactor application," stated NRC spokesman Neil Sheehan. "For its part, UniStar will have to revisit its approach to satisfying our requirements on foreign ownership of US nuclear power plants."

Hedge Fund Manager Charged In HGS Insider Trading Case (GAITHG)

Gaithersburg (MD) Gazette, April 15, 2011

The Securities and Exchange Commission has charged Joseph F. Skowron III — a former Morgan Stanley manager of the six hedge funds that dumped large chunks of Human Genome Sciences stock after receiving insider tips about its drug trials in 2008 — with insider trading.

Skowron, who managed funds affiliated with FrontPoint Partners, received information from Yves M. Benhamou, a member of the steering committee overseeing the Rockville biotech's clinical trial of Albuferon for hepatitis C, according to the SEC complaint. Benhamou told Skowron about two serious adverse incidents with the drug, including one death, prompting Skowron to sell 6 million shares. When the stock price fell 44 percent upon announcing the negative trial results, the hedge funds avoided at least \$30 million in losses. HGS has since discontinued developing the drug.

The US Attorney's Office for the Southern District of New York also announced criminal charges against Skowron. The SEC is seeking permanent injunctions and financial penalties against both men. The hedge funds have agreed to pay \$33 million in restitution. Benhamou was charged in November with conspiracy to commit securities fraud and other counts.

Protest upheld in \$46M federal IT deal

A Chevy Chase information technology company's \$46.1 million State Department contract might be in jeopardy after the Government Accountability Office upheld a competing bidder's protest of the award.

Abacus Technology won the award with the low bid, while protester Technology Concepts & Design of Reston, Va., the incumbent contractor and one of four bidders, submitted the highest, \$49.6 million.

"We find that the State's assessment of a number of weaknesses in [Technology Concepts'] proposal is unsupported in the record, and sustain [its] protest on this basis," Lynn H. Gibson, general counsel for the GAO, said in a March 25 report. "If [Technology Concepts'] proposal is selected for award, we recommend that the State Department terminate the awardee's contract and make award to the protestor."

Abacus did not respond to a request for comment.

NRC: No license for reactor at Calvert Cliffs

The Nuclear Regulatory Commission said last week it won't issue a license for a third reactor at Calvert Cliffs Nuclear Power Plant in Lusby because the applicant, UniStar Nuclear Energy, is owned by a foreign entity, Électricité de France.

NRC regulations prohibit a foreign entity from owning or controlling a US nuclear plant's operations for security reasons. UniStar submitted a combined license application and "negation action plan" in January in an effort to address the issue, citing US individuals who would oversee operations of the reactor, estimated to cost \$10 billion. EDF bought out Constellation Energy Group's stake in UniStar last year.

EDF is 85 percent owned by the French government.

"As we have consistently stated, Calvert Cliffs 3 will ultimately have a US partner," an EDF spokesman said. "While EDF and UniStar disagree with the Nuclear Regulatory Commission's conclusion regarding UniStar's present governance structure, we are pleased that the NRC will continue to review all other aspects of our pending application. This allows the project to continue moving forward as anticipated. UniStar and EDF will work with the NRC to resolve the governance issues prior to the issuance of the license."

Michael Mariotte, executive director of the Nuclear Information and Resource Service in Takoma Park, called the proposed reactor "the first US nuclear casualty of the post-Fukushima era" in a press release, referring to Japan's ongoing nuclear emergency.

Mortgage lender defrauded;
defendant gets 65 months

Dema Daiga, 29, of College Park was sentenced Monday in US District Court to 65 months in prison for defrauding a Beltsville mortgage lending company, Landmark Funding, of \$664,493 in connection with six Baltimore properties, according to federal prosecutors. Daiga also was ordered to pay restitution.

Daiga worked as a mortgage loan broker and assisted with property appraisals. In 2008, he and another defendant, Oluseun Oshosanya, aka Olu Campbell, who also worked in the mortgage lending field, recruited two straw purchasers and used the names and identifying information of four other individuals, without their knowledge, to apply for mortgages on six properties, according to court records.

They filled out mortgage loan applications on behalf of the straw purchasers and the other individuals, using false employment histories, earnings, assets and other information.

Five of the six properties soon went into default, resulting in a \$664,493 loss to Landmark Funding, according to court records. Landmark was forced to lay off at least 20 employees and is no longer in business because of these losses, prosecutors said in a statement.

Oshosanya, 30, of Laurel previously was sentenced to 54 months in prison.

Recycling executive sentenced
in federal bribery case

Jeffrey M. Harmon, 45, of Windsor Mill, the former president of Berg Bros Recycling of Baltimore, was sentenced Tuesday in US District Court in Baltimore to one year and one day in prison and fined \$25,000 for conspiring to bribe a National Security Agency official, according to federal prosecutors.

Harmon worked with another Berg employee, Adam W. Berg of Stevenson, 49, the son of the company's owner, and Robert B. Adcock of Parkville, 44, an NSA contracting officer, to have copper cable and other materials from Fort Meade sent to the company for recycling, according to court documents. All told, the company, under the direction of Harmon and Berg, made 39 payments to Adcock totaling \$104,989 from May 2004 to March 2006. The next month, Harmon joined another recycling company and paid Adcock an additional \$4,931 for recyclables from NSA.

Berg and Adcock have pleaded guilty to conspiracy, according to court records, and await sentencing.

Pawn shop owner is
sentenced in \$20M scheme

Louis Leitch Sr., 62, of Baltimore, co-owner of E-Z Money Pawn Shop of Baltimore, was sentenced Tuesday in US District Court in Baltimore to 33 months in prison for conspiring to commit money laundering and trying to evade taxes, federal prosecutors announced.

From 2007 to March 2010, Leitch conspired with others to launder the proceeds of the sale of over-the-counter medications, health and beauty aid products, gift cards, DVDs, tools and other merchandise that had been shoplifted from Target, Safeway, Walmart, Kohl's and other retailers in Maryland and other states, according to his plea agreement. Leitch and others removed security labels, sometimes using a heat gun and lighter fluid, before they were sold, sometimes online via eBay and Amazon.com.

When they raided Leitch's and other pawn shops, federal agents recovered more than \$1 million in stolen merchandise, about \$1 million in bank accounts, more than \$140,000 in cash and 44 firearms, prosecutors said. The entire scheme involved about \$20 million in stolen merchandise, with \$2.5 million attributable to Leitch, who also failed to file tax returns in 2005 and 2006, evading \$401,600 in taxes.

Thirteen defendants have pleaded guilty to the money laundering conspiracy.

Title company executive guilty in fraud case

Daniel E. Fink Jr., 44, of Baltimore, who operated Homemaxx Title & Escrow in Middle River and Parkville, pleaded guilty April 8 in US District Court in Baltimore to wire fraud in a scheme to defraud lenders and homeowners of more than \$2.2 million, according to prosecutors.

From February 2003 to July 2004, Fink defrauded lenders, a title insurance company and homeowners, according to his plea. Fink caused title insurance to be issued to individuals purchasing or refinancing real estate, but concealed facts that hurt the buyers' title in the transactions. Fink also made misrepresentations to lenders.

Fink used the money to buy personal gifts for women, including more than \$200,000 of escrow money to buy a property in Florida for a female acquaintance, and \$59,728 to purchase a new 2004 Mercedes CLK 500 for a woman Fink knew from the Gentlemen's Gold Club, prosecutors said. Fink also used \$61,965 to buy a 2003 Hummer H2 and repeatedly spent the proceeds of his scheme at the Gentlemen's Gold Club on gambling and on trips to Paradise Island, Bahamas.

He was indicted in March 2009 and arrested Florida in February 2010, prosecutors said.

Fink is required to pay restitution of \$2.2 million. He faces up to 20 years in prison and a \$250,000 fine, but prosecutors said they expect a four-year sentence if the plea agreement is accepted. Sentencing is scheduled for June 17.

Merkle lands Olympic marketing deal

Merkle of Columbia has been named agency of record by the US Olympic Committee to market its national direct response fundraising program.

The committee will retain Merkle's services for a 26-month period, covering the 2012 Olympic Games and 2014 Olympic Winter Games, to provide analytical, strategic and creative positioning, mail production and product management services, according to a company statement.

Scheer, university working to develop technology park

Scheer Partners of Rockville is putting its commercial real estate expertise in the life sciences sector to work for the University of Rhode Island.

The university has hired the company to provide consulting services to establish and confirm the viability of developing a research and technology park on its north campus that would house science, engineering and technology companies.

Scheer Partners already is conducting a financial analysis and market research, and compiling a list of companies to target for tenancy. It also is working with economic development officials to secure funding at the state and local levels. The park would initially include a 50,000-square-foot building and in total encompass from 200,000 to 300,000 square feet of space.

University President David M. Dooley said in a statement that "continuing to enhance the University's research agenda, as well as expanding our economic development partnerships, makes such a park a focus for us. URI's grants and research portfolio exceeded \$105 million last year."

Constellation goes solar in Holyoke, Mass.

Constellation Energy of Baltimore and Holyoke (Mass.) Gas & Electric Department have announced the development of a new 4.5-megawatt solar installation, scheduled for operation this summer.

The installation will generate electricity for 18,000 customers and will be the largest solar installation in New England, according to a Constellation statement. The system will comprise 18,400 photovoltaic ground-mounted panels at two locations and is expected to produce almost 5,500 kilowatt-hours of electricity annually.

Constellation will build, own and maintain the system and the utility will purchase all of its electricity under a 20-year agreement.

Wisconsin Nuclear Power Plants Improve Safety Records (AP)

Associated Press, April 15, 2011

Wisconsin's two nuclear power plants will be under less scrutiny from federal regulators because of improved safety grades.

The two-reactor Point Beach plant and single-reactor Kewaunee plant drew extra attention from regulators earlier in the decade because of spotty safety records. Operating under new ownership, the plants have improved those safety grades, the Milwaukee Journal Sentinel reported.

The plants will get a safety review by the Nuclear Regulatory Commission during the next six months, as will all US nuclear plants because of the earthquake and tsunami in Japan.

The plants generate nearly one-fifth of Wisconsin's electricity.

Plant operators said the facilities are designed to withstand extreme natural events, such as tornadoes, flooding and earthquakes.

State's Nuclear Plants No Longer Need Extra Security (WTAQ)

WTAQ-AM, April 15, 2011

Wisconsin's two nuclear power plants have improved their safety records in recent years.

As a result, the Kewaunee reactor and the two Point Beach reactors at Two Rivers will not get extra scrutiny from the federal government in 2011. Both will join other US plants in getting federal safety reviews in the next six months in response to the nuclear meltdown in Japan.

The plants' operators say they're designed to withstand tornadoes, earthquakes, and other extreme disasters. The 3 reactors provide about one-fifth of Wisconsin's electricity. And critics said they were among just 6 in the nation which had extra scrutiny from the Nuclear Regulatory Commission for most of the last decade.

Katie Nekola of Clean Wisconsin said things got so bad, the plants were forced to improve. Both have had new owners in the last 6 years who appear to have made safety a priority.

Dominion Resources has owned the Kewaunee plant since 2005. Spokesman Mark Kanz said it took a lot of hard work to get the government's top rating the past two years – and that's where they intend to stay.

Next-Era Energy Resources of Florida bought the Point Beach plant in 2007, and the firm says it's been years since the plant had extra scrutiny for safety problems – even when We Energies owned it.

Oconee Nuclear Station Meets Safety Objectives, NRC Says (GRNVN)

By Anna Simon

Greenville News, April 15, 2011

OCONEE NUCLEAR STATION — Oconee Nuclear Station met all safety requirements in 2010, according to the US Nuclear Regulatory Commission, which will present and discuss its annual safety performance review of Oconee in a public meeting Tuesday.

Although all safety objectives were met, all three Oconee units were under additional NRC oversight in 2010 due to an inspection finding that raised safety concerns.

The NRC cited a failure to adequately maintain the plant's standby shutdown systems that can be used if normal and emergency systems are unavailable. Last December, the NRC completed inspections that determined necessary corrective actions had been completed.

The public meeting will be in Duke Energy's World of Energy at the nuclear station at 7812 Rochester Highway, Seneca. The meeting will begin with a short presentation at 6:30 p.m., followed by an informal open house ending at 8 p.m.

NRC staff will be available to answer questions on the safety performance of the Oconee plant, as well as the NRC role in ensuring safe plant operation.

"The NRC evaluates nuclear power plants in a systemic and detailed way every year," said NRC Region II Administrator Victor McCree. "The inspections and oversight at Oconee ensure that the plant is operated in a way that protects people and the environment."

The three Oconee units will receive detailed baseline NRC inspections in 2011, according to the NRC. In addition, the agency will complete some generic inspections related to spent fuel storage and reactor coolant system maintenance.

Operator licensing examinations also will be conducted and NRC staff will continue to review ongoing significant modifications to the plant.

NRC Schedules Oconee Safety Assessment Meeting (ADERSN)

Anderson Independent-Mail, April 15, 2011

SENECA — The US Nuclear Regulatory Commission staff has scheduled a meeting at 6:30 p.m. Tuesday, April 19, to discuss the agency's assessment of safety performance during 2010 at the Oconee nuclear power plant.

The meeting, in the Oconee World of Energy, 7812 Rochester Highway in Seneca, will begin with a short presentation followed by an informal open house ending at 8 p.m. NRC staff will be available to answer questions on the safety performance of the Oconee plant, as well as the NRC role in ensuring safe plant operation.

The three Oconee units will receive detailed baseline NRC inspections in 2011. In addition, the agency will complete some generic inspections related to spent fuel storage and reactor coolant system maintenance. Operator licensing examinations will also be conducted. The NRC staff will also continue its review of continuing modifications to the plant.

Inspection findings and performance indicators are updated each quarter on the NRC's website, www.nrc.gov.

The Case For Moving US Nuclear Fuel To Dry Storage (TECHREV)

Nuclear waste pools are packed more densely in the US than those at Fukushima, with no removal plan in sight.

By David Talbot

Technology Review, April 15, 2011

One of the lesser-noted facts of the Fukushima nuclear disaster—where loss of coolant in spent-fuel pools has resulted in massive radiation releases—is that some fuel at the plant was stored in so-called dry casks, and these casks survived the March 11 earthquake and tsunami intact.

This fact is likely to result in new calls to move some spent fuel out of water pools at reactor sites in the United States—where it is packed more densely than the fuel in the stricken Japanese pools—and into outdoor dry casks, experts say.

"What will likely happen very quickly is that the [Nuclear Regulatory Commission] and utilities will arrive at a consensus that moving fuel to dry storage needs to be accelerated to get as much spent fuel out of the pools as fast as possible," says Ron Ballinger, an MIT nuclear engineer. In Japan, he says, "the dry storage casks weathered the earthquake and tsunami with zero problems."

Until now, US regulators have decided that keeping fuel in pools—and even allowing the fuel to be more densely packed—is safe. Most US nuclear reactors have air-cooled, dry-cask storage for some reactor waste, but generally this is only because the pools cannot fit any more. Older waste that has had a chance to cool for a few years in pools can be moved to dry casks.

The US is home to at least 65,000 tons of nuclear reactor waste, more than in any other nation, and this figure grows by about 2,200 tons each year.

"In general, US reactors have a great deal more fuel in their spent-fuel-pools than the reactors at Fukushima," says Richard Lester, who heads the Department of Nuclear Science and Engineering at MIT. If a Fukushima-scale event were to strike a typical US nuclear plant fuel pool, he says, "I think you would potentially have a worse situation simply by virtue of there being more fuel—a lot more fuel in the cases of the pools at the US reactors."

Spent uranium reactor fuel generates great quantities of heat even after it is removed from the core of a reactor. For that reason, spent rods must be immersed in deep pools of circulating water for several years in order to cool them enough. But after several years, dry casks become a feasible storage option. The casks—generally barrel-shaped steel-and-concrete structures that stand 20 feet high and sit outdoors—only need passive air cooling.

In a pool, by contrast, the proximity of fuel rods to one another causes heat buildup that requires water to be circulated continually. As Fukushima has demonstrated, pumps and their backup systems can fail, and water in spent fuel pools can leak out or boil away.

Over the past three decades, delays in opening a permanent repository for spent nuclear fuel in the United States has led the US Nuclear Regulatory Commission to allow existing spent fuel pools to be "reracked" to increase the density of rods inside them.

Of 84 current or former US reactor sites holding spent fuel—a figure that includes some sites with more than one power plant—63 already have dry casks, 10 are applying to build them, and 11 haven't yet announced plans, according to Nuclear Regulatory Commission data.

"If there is a loss-of-coolant accident, you are going to be in big trouble, especially with these high-density racks and the pools being heavily loaded—and even more so if there happens to be freshly discharged fuel in the pool," says Allison

Macfarlane, a geologist and associate professor of environmental science and policy at George Mason University, who was one of several coauthors of a 2003 report warning of the danger posed by dense reracking. "A lot of these pools are in upper stories at the power plant," meaning breaches or cracks could let water run out. "If there is a loss of water, you can have a release of radioactivity much larger than Chernobyl, because there is a lot more fuel in the pool than in the core of the reactor."

Last year, President Obama canceled plans to open the Yucca Mountain underground fuel repository 90 miles northwest of Las Vegas, and appointed a commission to come up with alternatives. The commission, due to issue its report in June, has not made any statements about Fukushima. Macfarlane, a commission member, says she could not discuss its possible suggestions. However, the body is scheduled to meet in a public session May 13 in Washington.

The 2003 report said that in the event of coolant loss in a densely packed pool, air cooling would not suffice. Temperatures could rise to 600 °C within an hour, causing the zirconium fuel cladding to rupture, and then increase to 900 °C, whereupon the cladding would burn, resulting in huge quantities of released radioactive material, the report said.

The report proposed immediate reversion to lower-density pool configurations, with more cooled fuel put in dry casks and moved to central sites. In looser-packed pools, the report said, airflow alone could be enough to prevent fire in the event of coolant loss. It said this could be done for no more than \$7 billion nationally, which would work out to a wholesale electricity price increase of 0.06 cents per kilowatt-hour generated from the fuel.

These steps were not carried out. A subsequent National Research Council report also said the fire scenarios required more study, and suggested other measures while leaving dense configurations intact. "It appears to be feasible to reduce the likelihood of a zirconium cladding fire by rearranging spent fuel assemblies in the pool and making provision for water-spray systems that would be able to cool the fuel, even if the pool or overlying building were severely damaged," the report said. Fuel rearranging and backup cooling of pools are being implemented, a Nuclear Regulatory Commission spokesman says.

If the US government had followed through on its 1982 commitment to open a spent-fuel repository— and its subsequent contracts with utilities to begin removing the fuel in 1998—the pressure on US spent fuel pools would have been relieved, Lester says. "There were schedules that described how the DOE [Department of Energy] was going to move the fuel, and which fuel would be moved," he says. "I think we can say, on the basis of all of that, that the pools would not be nearly as full as they are now."

He says it was crucial to begin establishing central sites for dry-cask storage as part of a comprehensive plan for waste storage and disposal, which he says should not rule out Yucca Mountain. "One possible use for the site is for temporary storage," Lester says.

Iowa Legislative Leaders Say Nuclear Power Measure, Other Bills Still In Play This Session :: The Republic (REPUBLIC/AP)

Associated Press, April 14, 2011

DES MOINES, Iowa — Iowa legislative leaders say several measures that have drawn opposition remain in play as the session inches toward adjournment.

Speaking at a news conference Thursday, Democratic Senate Majority Leader Mike Gronstal was asked about a bill allowing utilities to begin charging ratepayers for the cost of a nuclear power plant before construction begins. He also was questioned about a measure banning abortions after 20 weeks of pregnancy and another outlawing the secret videotaping of livestock operations.

Gronstal says lawmakers are working privately to resolve differences over the bills.

Texas Senate OKs Taking In More Radioactive Waste (AP)

By Jim Vertuno

Associated Press, April 14, 2011

AUSTIN, Texas — A low-level radioactive dump in remote West Texas could take in waste from dozens of states under a bill the Texas Senate approved Wednesday.

The site in Andrews County could be ready to accept the waste by next fall, said a spokesman for Dallas-based Waste Control Specialists, which operates the site.

Environmentalists have resisted the move, warning that it would result in radioactive material rumbling through the state on trucks with few safeguards in case of an accident.

The Senate bill allows Waste Control Specialists to set disposal fees for 36 states that are not part of the original compact between Texas and Vermont. Previously, environmental regulators were to determine the rates.

Texas and the city and county governments in Andrews will get a share of those fees, said Waste Control Specialists spokesman Chuck McDonald.

"They are anxious to get started," McDonald said. "This paves the way for that to happen."

The bill by Sen. Kel Seliger, R-Amarillo, still needs House approval, which could come next week.

The Senate bill requires that waste from the non-compact states take up no more than 30 percent of capacity at the facility. It also bans waste from foreign countries.

Other states can pay \$30 million to join the compact through 2018 before the price increases to \$50 million. Generators from non-party states would pay a surcharge for their imported waste.

Supporters say the Andrews County site can be a secure solution for states to dump radioactive waste. Environmentalists worry that Texas may be taking in more waste than it can handle and want the Texas Commission on Environmental Quality to first study the impact of possible transportation accidents or the impact of leakage into ground water.

Those studies could be done in the next two years before the 2013 legislative session, said Tom "Smitty" Smith, director of Texas Public Citizen, a political watchdog group.

"This waste is going to be around tens of thousands of years," Smith said. "What's the rush?"

Selectboard Unveils VY Shutdown Revised Letter (BRATBORO)

By Jaime Cone

Brattleboro Reformer (VT), April 14, 2011

BRATTLEBORO – The newly revised Safe & Green letter regarding the shutdown of the Vermont Yankee nuclear power plant in Vernon was released by the Town Clerk's office Wednesday evening.

The Selectboard will vote on whether or not to sign the letter, which is much the same as the original document, at its next regular meeting.

At a Selectboard meeting April 5, the board voted to table the issue of signing the letter with the expectation that the document would be revised by board members in time for the next meeting.

Paragraphs were re-arranged and some of the wording is different, but the sentiment of the letter remains the same.

The first two paragraphs state that "full attention should be paid to maintenance and repair of all systems associated with the reactor," and "necessary maintenance and repairs should not be delayed or canceled during the reactor's final months," in light of Vermont Yankee's scheduled closure in 2012.

Some items were removed, including the mention of severance packages for Vermont Yankee employees and the creation of a citizens advisory board to help facilitate communication regarding Vermont Yankee.

Safe & Green, a grassroots effort to close Vermont Yankee and replace it through conservation, efficiency and renewable solutions, has presented the letter to selectboards and city councils in Vermont, New Hampshire and Massachusetts cities and towns that neighbor the power plant.

The letter is addressed to "those with authority over the Vermont Yankee Nuclear Power Station in Vernon, including the Entergy Nuclear Corporation, the Vermont Legislature and Public Service Board and the US Nuclear Regulatory Commission."

David Gartenstein, Selectboard member, said that since the meeting, the letter was made available for comment by Safe & Green members and all members of the Selectboard.

Bob Bady, Brattleboro resident and member of Safe & Green, said he can live with the alterations Selectboard members made to the original letter.

"I don't have any major problems with it," Bady said. "This letter that the Selectboard has proposed is fairly true to the original."

But the paragraph about the citizens advisory board was significant, he said, adding that Safe & Green plans to approach the board again later this spring with more information about the committee they would like to see formed.

"Hopefully in a couple of months or so, when we have a proposal for more specific criteria for forming a citizens advisory committee, then we can bring that to the board. ... we'll work on that this spring and get back to the towns that have signed the letter and see where they're at," Bady said.

Kenneth Schneck, Selectboard member, said that revising the letter was an opportunity to alter its tone.

"For me, as I went through it, it was a matter of tone and really front-loading the Brattleboro concerns," he said. Several points that appeared later in the original letter were moved closer to the beginning.

Selectboard Chairman Richard DeGray said he will not support signing the letter.

"There are more pressing things facing the town than this issue, and I hope it's dealt with quickly and we can get on to more important issues facing the town of Brattleboro," DeGray said.

Selectboard members are expected to vote on whether or not to sign the revised letter at the board's next regular meeting, scheduled for April 19, starting at 6:15 p.m. in the Selectboard Meeting Room of the Municipal Center.

Jaime Cone can be reached at jccone@reformer.com or 802-254-2311, ext. 277.

Opponents To Air Concerns Over Extension Of Prairie Island Nuclear Plant (MPR)

By Stephanie Hemphill

Minnesota Public Radio, April 14, 2011

St. Paul, Minn. — Opponents of nuclear power will meet in Red Wing Thursday to express their opposition to extending the life of the Prairie Island nuclear plant.

The Nuclear Regulatory Commission, or NRC, holds these meetings around the country on a regular basis.

Attorney Paula Maccabee from the grassroots Prairie Island Study Group says — given concerns raised by the accident at a nuclear plant in Japan — it's a good time to take another look at Minnesota's nuclear risks.

"We have stored fuel in casks and in pools right near the Mississippi River, which is the source of our drinking water," Maccabee said.

The NRC is considering Xcel's request to extend the life of the Prairie Island plant for 20 years, and to produce more power there. It already approved similar measures at the plant in Monticello.

About a dozen people attended an NRC meeting in Monticello last week.

Feds Boost College Nuke Programs (GPB)

Georgia Public Broadcasting, April 14, 2011

A grant from the US Department of Energy will foster nuclear studies at five Augusta-area colleges. The award comes with a rise in demand for nuclear workers. (Photo by Noel Brown)

A recent government study says two nuclear facilities near Augusta — Plant Vogtle and the Savannah River Site

— will need nearly 10,000 new nuclear workers in the next decade.

To head off an impending worker shortage, the DOE is spending nearly a million dollars to help area colleges set up nuclear programs.

Andy Hauger is a physics professor at Augusta State University, one of the school's sharing in the money. He says the money will pay for lab equipment needed to train students in nuclear science technology.

"It's not inexpensive to run these things and to maintain these labs so this is really a huge jumpstart for this program," says Hauger.

The other schools participating in the grant are Augusta Tech, Aiken Tech and the University of South Carolina in Aiken and Salkehatchie.

President Obama Announces Key Administration Post (WHBLOG)

White House Blog, April 15, 2011

Today, President Barack Obama announced his intent to nominate the following individual to a key Administration post:

•William C. Ostendorff, Commissioner, Nuclear Regulatory Commission

President Obama announced his intent to nominate the following individual to a key Administration post:

William C. Ostendorff, Nominee for Commissioner, Nuclear Regulatory Commission

Bill Ostendorff was sworn in as a member of the Nuclear Regulatory Commission on April 1, 2010 for a term ending June 30, 2011. Prior to his appointment to the Nuclear Regulatory Commission, he served as Director of the Committee on Science, Engineering and Public Policy at the National Academies. He came to the National Academies after serving as Principal Deputy Administrator at the National Nuclear Security Administration from April 2007 until April 2009. From 2003-2007, he was a member of the staff of the House Armed Services Committee where he served as counsel and staff director for the Strategic Forces Subcommittee. Mr. Ostendorff was an officer in the United States Navy from 1976 until he retired in 2002 in the grade of Captain. During his naval career, he commanded an attack submarine, an attack submarine squadron and served as Director of the Division of Mathematics and Science at the United States Naval Academy. He is a member of the State Bar of Texas. Mr. Ostendorff's education includes a degree in systems engineering from the United States Naval Academy, a JD from the University of Texas and an LLM from the Georgetown University Law Center.

New Mexico Looks To Expand Nuclear-waste Business (REU)

By Eileen O'Grady
Reuters, April 15, 2011

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

Population Rises Near US Nuclear Reactors (MSNBC)

By Bill Dedman
MSNBC, April 15, 2011

WATERFORD, Conn. — Who's afraid of nuclear power? Not the American people, judging by where they choose to live.

A new map of data from the 2010 US Census shows that the number of people living within the 10-mile emergency planning zones around nuclear power plants rose by 17 percent in the past decade, compared with an overall increase of less than 10 percent in the US population.

If the circles on the map are widened to a 50-mile radius (the same evacuation area that US nuclear officials recommended for Americans living near Japan's troubled Fukushima Dai-ichi reactors), they would cover one in three people in the US

That's 116 million nuclear neighbors, up from 109 million a decade earlier, according to the analysis conducted for msnbc.com by Longcreative, a data analysis and design company.

The population within 10 miles of Pennsylvania's Three Mile Island reactor grew 11 percent. At Pilgrim, outside of Boston, the increase was 41 percent. Near San Onofre on the California fault lines, 50 percent.

Among the 100 most populous cities on the new census map, 26 have a nuclear plant within 50 miles: New York, Chicago, Philadelphia (3 different plants nearby), Phoenix, San Diego, Fort Worth, Charlotte (2 plants), Detroit, Baltimore, Boston (2 plants), Washington, Virginia Beach and Norfolk, Omaha, Raleigh and Durham, Miami, Cleveland, Minneapolis and St. Paul (2 plants), New Orleans, Pittsburgh, Toledo (2 plants), Newark, Baton Rouge, and Rochester, N.Y.

To get more information: The interactive map on this story shows the populations within 5, 10, 20 and 50 miles of each nuclear power plant in the US And a ranking of nuclear plants by population is at the bottom of the text, along with a data file for readers who want to do their own analysis.

'It makes a hissing noise'

Why would the population rise sharply near nuclear power plants, even in lower-growth states outside the Sun Belt? One reason could be normal population expansion, with previously unoccupied areas being filled in. Another reason: Nuclear reactors use water for cooling, from lakes, rivers or oceans, so the reactors are typically built on waterfront property. Is the sun rising or setting over the ocean any less beautiful if you can also see a cooling tower?

On a recent spring evening, two boys were shooting hoops in the driveway of a beachfront house on Millstone Beach in Waterford, a Connecticut town on Long Island Sound midway between New York City and Boston. The neat houses look out on glorious sunrises.

And if you turn your head to the right, the orange-and-white-striped tower of the Millstone Power Station reaches high above the white sand. The estimated population within 10 miles of Millstone grew 30 percent in the past decade, to 123,482. The population within 50 miles grew to 3 million, an increase of 10 percent, much faster than the state's general growth rate of 4.9 percent.

The father of one of the boys, Paul Van der Putten, 49, bought his home in 2003 for \$378,000. It has increased roughly 75 percent in value since. He said he isn't worried about the nuclear plant, which is about six-tenths of a mile away, the length of 10 football fields. It has two operating nuclear reactors as well as a third reactor, mothballed but still a storehouse for nuclear fuel rods.

"It is what it is," he said. "It makes a hissing noise sometimes at night. That rattles the windows. They let us know when they have that scheduled. They let off the steam at night because no one wants to see the plume. It's just an industrial plant."

Where are those pills?

"They're in the house somewhere. I'm really not sure where."

Most reactors have more neighbors

Journalist Andrew Long at Longcreative plotted the 65 nuclear power locations for msnbc.com on a computerized map of the 2000 and 2010 census data, calculating the population within different distances from each plant. (One of the leading nuclear power companies, General Electric, is a part owner of NBCUniversal, which co-owns msnbc.com through a joint venture with Microsoft.)

Other conclusions from the mapping of census data:

•Within 5 miles of the nation's nuclear plants, there are an estimated 916,330 residents, up 15.0 percent from a decade earlier.

•Within 10 miles, the population jumps to 4,079,007, up 16.9 percent.

•Within 20 miles, there are 18,510,584 people, up 12.3 percent.

•And within 50 miles, 116,223,077 people, up 6.5 percent.

No matter what size the circle, the pattern is consistent: Most nuclear plants have growing neighborhoods. Out of the 65 nuclear power plants in the US, 55 plants had more people living within 5 miles than a decade earlier; 54 plants had more people within 10 miles; and 56 plants had more people within 50 miles.

Growth even in slow-growth states

Looking at individual nuclear plants, these patterns jump out:

The reactors with the most neighbors within 50 miles:

•Indian Point, near Buchanan, N.Y., 41 miles upriver from the center of New York City, with 17.2 million people within 50 miles.

•San Onofre, near San Clemente, Calif., and 45 miles from San Diego, 8.5 million.

•Limerick, near Limerick, Pa., and 28 miles from Philadelphia, 8.0 million.

•Dresden, near Morris, Ill., and 43 miles from Chicago, 7.3 million.

•Peach Bottom, near Delta, Pa., and 36 miles from Baltimore, 5.5 million.

•Hope Creek and Salem, both near Hancocks Bridge, N.J., and 43 miles from Philadelphia, 5.5 million.

The nuclear plant with the fewest neighbors is Nebraska's Cooper Nuclear Station, in a rural area on the Missouri border, with only 164,000 people within 50 miles.

The view from the bay window

Next door to the Van der Putten family on Millstone Beach in Waterford, Vincent E. McCurdy has a living room full of boxes. His family bought the house in late January for \$760,000, moving in just before the Japanese nuclear emergency. He and his wife have a daughter at home and a son away at college.

As they shopped for waterfront property, McCurdy said, the nuclear power plant figured into their thinking mostly in terms of whether it could be seen through the bay window. The family's view of the Sound is unobstructed, but if they stand on the patio, they can see the orange and white tower.

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"The plant was definitely way down on the list of considerations."

After Fukushima, nuclear power has been more on their minds, he said, but it wouldn't change their decision to choose this location.

"It's been elevated in terms of thinking about it, but we don't really talk too much about it, because we view the overall risk to be low."

McCurdy, 54, is a senior pharmaceutical scientist for Pfizer Inc., and approaches the question with an analytical mind. While he acknowledged there are some risks, "The safety record of the nuclear industry has been pretty good overall." Millstone is not near a fault line. Long Island would buffer them against a tsunami. Hurricanes in this area are infrequent and relatively mild. And if something catastrophic were to happen, he said, a nuclear emergency can be slow to develop.

"You'd have some time to react, to get the family out of town."

Growth even outside the Sun Belt

Even nuclear plants in low-growth areas of the country showed increases in population. For example, the population in the 10-mile preparedness zone around the Salem and Hope Creek plants, near Hancocks Bridge, N.J., grew by 54 percent. The state population grew just under 5 percent in the same decade.

These plants showed the most population growth, judged in percentage terms, using a 10-mile radius: Palo Verde, near Wintersburg, Ariz.; Brunswick, near Southport, N.C.; Calvert Cliffs, near Lusby, Md.; McGuire, near Huntersville, N.C.; Turkey Point, near Homestead, Fla.; and Shearon Harris, near New Hill, N.C. Each of these showed increases of more than 60 percent in a decade, from relatively small base populations in 2000.

Any idea that most reactors are in unpopulated areas is not borne out by the data, not when a 50-mile circle is drawn. The median, or middle, nuclear plant has 1.4 million residents within 50 miles. Out of 65 plants, 42 exceed a million people within that 50-mile zone.

How close is close?

Before Fukushima, people within a mile or two already knew they lived close to nuclear power. At Millstone, the neighborhood and the plant have the same name. The back gate of the plant was usually unlocked until after the Sept. 11 terrorist attacks, Van der Putten said, and workers could walk from the plant to the neighborhood beach to have lunch.

Now, with all the talk of evacuation zones in Japan, Americans living 10 or 20 or 50 miles away may be calculating for the first time their distance from a nuclear reactor. In Japan, the evacuation zone has been expanded to 12 miles for everyone, and 12 to 19 miles for children, pregnant women and hospitalized patients.

Some critics of nuclear power have said that the standard emergency planning zone for the US should be expanded to 20 or 50 miles. The US Nuclear Regulatory Commission has said it's sticking with 10 miles, but that the zone can always be expanded in an emergency.

In Waterford, more than 100 people packed a meeting Monday evening at Town Hall to hear from officials of Dominion, the Virginia energy company that owns the Millstone nuclear plant. Though a few anti-nuclear activists were louder, a larger group of nuclear supporters shouted them down.

Dominion executives stressed differences between their plant's design and the troubled reactors in Japan, and emphasized the multiple backup systems and emergency plans. (See this PDF file for a typical set of emergency instructions for a nuclear power plant.) Among other differences, Millstone has pressurized-water reactors, not the boiling-water reactors used in Fukushima and in many US plants. Dominion's main current concern is not fear but taxation: A proposed state tax in Connecticut would hit nuclear power hardest of all. Dominion has threatened to close the plant if the \$335 million tax increase is approved and it can't pass the cost on to customers.

Judging by interviews in the neighborhoods, and conversation at the Main Street Grille in the village of Niantic, which has the best view of the plant, residents are less worried by the nuclear emergency than by another emergency just up the road in Boston: Two weeks into the baseball season, the Red Sox are in last place.

More than half of Americans polled say nuclear power is safe

Gallup, the polling organization, has asked two main questions on nuclear power.

Americans are divided on the question of construction of more nuclear power plants. In late March, with Japan very much in the news, 46 percent of those surveyed told Gallup that nuclear power is necessary to help solve the nation's current energy problems, while 48 percent said the dangers of nuclear power are too great, even if it would help solve energy problems. That's very nearly the same split as 10 years earlier.

On the issue of safety, there is a clear pro-nuclear majority: In the same Gallup poll in late March, 58 percent said that nuclear power plants are safe, while only 36 percent said they are not safe, with 6 percent expressing no opinion.

Gallup's editor in chief, Frank Newport, summarized: "It may be months or years before the final impact of the Japanese disaster on American attitudes toward nuclear power can be assessed. In the short term, Americans are concerned about the dangers of a nuclear crisis in this country. But Gallup's most recent survey suggests that support for nuclear power may be more stable than some might think."

Ranking of US nuclear plants by population within 50 miles

These are the 65 commercial nuclear power plants in the United States, showing the estimated populations within 10 and 50 miles, the changes in population between 2000 and 2010, and distances to selected larger cities within 50 miles. These 65 locations have 104 operating nuclear reactors.

The plants are ranked here by population within 50 miles.

More information: This information is summarized on the accompanying map, and more details on each plant and its population changes are available in an Excel spreadsheet.

1 Indian Point, near Buchanan, N.Y., two reactors, licensed 1973/1976, 2010 population within 50 miles is 17,220,895 (increase of 5.1 percent in a decade), 2010 population within 10 miles is 272,539 (increase of 17.6 percent), cities within 50 miles include New York (41 miles to city center); Newark, N.J., (39 miles); Stamford, Conn., (24 miles); Bridgeport, Conn., (40 miles).

2 San Onofre, near San Clemente, Calif., two reactors, licensed 1982/1983, 2010 population within 50 miles is 8,460,508 (increase of 14.9 percent in a decade), 2010 population within 10 miles is 92,687 (increase of 50.0 percent), cities within 50 miles include San Diego (45 miles).

3 Limerick, near Limerick, Pa., two reactors, licensed 1985/1989, 2010 population within 50 miles is 8,027,924 (increase of 6.1 percent in a decade), 2010 population within 10 miles is 252,197 (increase of 18.7 percent), cities within 50 miles include Philadelphia (28 miles).

4 Dresden, near Morris, Ill., two reactors, licensed 1969/1971, 2010 population within 50 miles is 7,305,482 (increase of 3.5 percent in a decade), 2010 population within 10 miles is 83,049 (increase of 47.6 percent), cities within 50 miles include Chicago (43 miles).

5 Peach Bottom, near Delta, Pa., two reactors, licensed 1973/1974, 2010 population within 50 miles is 5,526,342 (increase of 10.6 percent in a decade), 2010 population within 10 miles is 46,536 (increase of 7.2 percent), cities within 50 miles include Baltimore (36 miles).

6 Hope Creek, near Hancocks Bridge, N.J., one reactor, licensed 1986, 2010 population within 50 miles is 5,523,010 (increase of 7.5 percent in a decade), 2010 population within 10 miles is 53,811 (increase of 53.3 percent), cities within 50 miles include Philadelphia (43 miles).

7 Salem, near Hancocks Bridge, N.J., two reactors, licensed 1976/1981, 2010 population within 50 miles is 5,482,329 (increase of 7.6 percent in a decade), 2010 population within 10 miles is 52,091 (increase of 54.1 percent), cities within 50 miles include Philadelphia (43 miles).

8 Braidwood, near Braceville, Ill., two reactors, licensed 1987/1988, 2010 population within 50 miles is 4,976,020 (increase of 5.3 percent in a decade), 2010 population within 10 miles is 33,910 (increase of 6.5 percent), cities within 50 miles include Joliet (20 miles).

9 Fermi, near Monroe, Mich., one reactor, licensed 1985, 2010 population within 50 miles is 4,799,526 (decrease of 3.4 percent in a decade), 2010 population within 10 miles is 92,377 (increase of 9.5 percent), cities within 50 miles include Detroit (30 miles) and Toledo, Ohio, (27 miles).

10 Pilgrim, near Plymouth, Mass., one reactor, licensed 1972, 2010 population within 50 miles is 4,737,792 (increase of 10.2 percent in a decade), 2010 population within 10 miles is 75,835 (increase of 40.5 percent), cities within 50 miles include Boston (35 miles).

11 Oyster Creek, near Forked River, N.J., one reactor, licensed 1969, 2010 population within 50 miles is 4,482,261 (increase of 10.4 percent in a decade), 2010 population within 10 miles is 133,609 (increase of 35.8 percent), cities within 50 miles include Atlantic City (30 miles), Toms River (10 miles), Lakewood (19 miles), Asbury Park (30 miles), Cherry Hill (42 miles).

12 Seabrook, near Seabrook, N.H., one reactor, licensed 1990, 2010 population within 50 miles is 4,315,571 (increase of 8.7 percent in a decade), 2010 population within 10 miles is 118,747 (increase of 10.1 percent), cities within 50 miles include Boston (40 miles).

13 Turkey Point, near Homestead, Fla., two reactors, licensed 1972/1973, 2010 population within 50 miles is 3,476,981 (increase of 15.1 percent in a decade), 2010 population within 10 miles is 161,556 (increase of 62.8 percent), cities within 50 miles include Miami (25 miles).

14 Beaver Valley, near Shippingport, Pa., two reactors, licensed 1976/1987, 2010 population within 50 miles is 3,140,766 (decrease of 3.7 percent in a decade), 2010 population within 10 miles is 114,514 (decrease of 6.6 percent), cities within 50 miles include Pittsburgh (27 miles).

15 Millstone, near Waterford, Conn., two reactors, licensed 1975/1986, 2010 population within 50 miles is 2,996,756 (increase of 9.5 percent in a decade), 2010 population within 10 miles is 123,482 (increase of 29.5 percent), cities within 50 miles include Hartford (41 miles).

16 Monticello, near Monticello, Minn., one reactor, licensed 1971, 2010 population within 50 miles is 2,977,934 (increase of 8.6 percent in a decade), 2010 population within 10 miles is 62,976 (increase of 36.5 percent), cities within 50 miles include Minneapolis (38 miles), St. Paul (45 miles) and St. Cloud (22 miles).

17 Prairie Island, near Welch, Minn., two reactors, licensed 1974, 2010 population within 50 miles is 2,945,237 (increase of 7.8 percent in a decade), 2010 population within 10 miles is 27,996 (increase of 4.6 percent), cities within 50 miles include Minneapolis (39 miles) and St. Paul (32 miles).

18 Calvert Cliffs, near Lusby, Md., two reactors, licensed 1974/1976, 2010 population within 50 miles is 2,890,702 (decrease of 2.0 percent in a decade), 2010 population within 10 miles is 48,798 (increase of 86.4 percent), cities within 50 miles include Washington, D.C., (45 miles).

19 McGuire, near Huntersville, N.C., two reactors, licensed 1981/1983, 2010 population within 50 miles is 2,850,782 (increase of 23.3 percent in a decade), 2010 population within 10 miles is 199,869 (increase of 66.8 percent), cities within 50 miles include Charlotte (17 miles).

20 Three Mile Island, near Middletown, Pa., one reactor, licensed 1974, 2010 population within 50 miles is 2,803,322 (increase of 10.3 percent in a decade), 2010 population within 10 miles is 211,261 (increase of 10.9 percent), cities within 50 miles include Harrisburg (12 miles), York (13 miles), Lancaster (24 miles).

21 Shearon Harris, near New Hill, N.C., one reactor, licensed 1987, 2010 population within 50 miles is 2,562,573 (increase of 26.0 percent in a decade), 2010 population within 10 miles is 96,401 (increase of 62.6 percent), cities within 50 miles include Raleigh (21 miles), Durham (24 miles), Fayetteville (39 miles).

22 Catawba, near York, S.C., two reactors, licensed 1985/1986, 2010 population within 50 miles is 2,559,394 (increase of 25.0 percent in a decade), 2010 population within 10 miles is 213,407 (increase of 53.3 percent), cities within 50 miles include Charlotte (17 miles).

23 Surry, near Surry, Va., two reactors, licensed 1972/1973, 2010 population within 50 miles is 2,292,642 (increase of 13.9 percent in a decade), 2010 population within 10 miles is 127,041 (increase of 21.9 percent), cities within 50 miles include Virginia Beach (47 miles), Norfolk (30 miles), Richmond (50 miles).

24 Perry, near Perry, Ohio, one reactor, licensed 1986, 2010 population within 50 miles is 2,281,531 (decrease of 3.0 percent in a decade), 2010 population within 10 miles is 83,410 (increase of 8.0 percent), cities within 50 miles include Cleveland (36 miles).

25 Palo Verde, near Wintersburg, Ariz., three reactors, licensed 1985/1986/1987, 2010 population within 50 miles is 1,990,846 (increase of 28.6 percent in a decade), 2010 population within 10 miles is 4,255 (increase of 132.9 percent), cities within 50 miles include Phoenix (47 miles).

26 Waterford, near Killona, La., one reactor, licensed 1985, 2010 population within 50 miles is 1,969,431 (decrease of 0.8 percent in a decade), 2010 population within 10 miles is 75,538 (increase of 7.4 percent), cities within 50 miles include New Orleans (33 miles).

27 North Anna, near Louisa, Va., two reactors, licensed 1978/1980, 2010 population within 50 miles is 1,912,015 (increase of 22.6 percent in a decade), 2010 population within 10 miles is 21,396 (increase of 15.7 percent), cities within 50 miles include Richmond (40 miles).

28 LaSalle, near Marseilles, Ill., two reactors, licensed 1982/1984, 2010 population within 50 miles is 1,902,775 (increase of 22.6 percent in a decade), 2010 population within 10 miles is 17,643 (increase of 7.1 percent), cities within 50 miles include Joliet (34 miles).

29 Davis-Besse, near Oak Harbor, Ohio, one reactor, licensed 1977, 2010 population within 50 miles is 1,791,856 (increase of 1.4 percent in a decade), 2010 population within 10 miles is 18,635 (increase of 14.2 percent), cities within 50 miles include Toledo (26 miles).

30 Susquehanna, near Salem Township, Pa., two reactors, licensed 1982/1984, 2010 population within 50 miles is 1,765,761 (increase of 5.5 percent in a decade), 2010 population within 10 miles is 54,686 (increase of 3.3 percent), cities within 50 miles include Wilkes-Barre (18 miles).

31 Comanche Peak, near Glen Rose, Texas, two reactors, licensed 1990/1993, 2010 population within 50 miles is 1,755,528 (increase of 22.9 percent in a decade), 2010 population within 10 miles is 30,653 (increase of 44.1 percent), cities within 50 miles include Fort Worth (41 miles).

32 Vermont Yankee, near Vernon, Vt., one reactor, licensed 1973, 2010 population within 50 miles is 1,533,472 (increase of 2.9 percent in a decade), 2010 population within 10 miles is 35,284 (increase of 1.4 percent), cities within 50 miles include Brattleboro (6 miles); Keene, N.H., (16 miles); Fitchburg, Mass., (38 miles).

33 Oconee, near Seneca, S.C., three reactors, licensed 1973/1973/1974, 2010 population within 50 miles is 1,404,690 (increase of 14.8 percent in a decade), 2010 population within 10 miles is 66,307 (increase of 11.5 percent), cities within 50 miles include Greenville (30 miles).

34 Palisades, near Covert, Mich., one reactor, licensed 1972, 2010 population within 50 miles is 1,326,618 (increase of 4.4 percent in a decade), 2010 population within 10 miles is 28,644 (decrease of 4.5 percent), cities within 50 miles include South Bend (45 miles).

35 Byron, near Byron, Ill., two reactors, licensed 1985/1987, 2010 population within 50 miles is 1,273,771 (increase of 14.5 percent in a decade), 2010 population within 10 miles is 25,679 (increase of 5.9 percent), cities within 50 miles include Rockford (17 miles).

36 Saint Lucie, near Jensen Beach, Fla., two reactors, licensed 1976/1983, 2010 population within 50 miles is 1,271,947 (increase of 37.0 percent in a decade), 2010 population within 10 miles is 206,596 (increase of 49.7 percent), cities within 50 miles include Ft. Pierce (8 miles) and West Palm Beach (42 miles).

37 Ginna, near Ontario, N.Y., one reactor, licensed 1969, 2010 population within 50 miles is 1,269,589 (increase of 2.1 percent in a decade), 2010 population within 10 miles is 66,847 (increase of 12.7 percent), cities within 50 miles include Rochester (17 miles).

38 D.C. Cook, near Bridgman, Mich., two reactors, licensed 1974/1977, 2010 population within 50 miles is 1,225,096 (increase of 2.8 percent in a decade), 2010 population within 10 miles is 54,638 (increase of 3.4 percent), cities within 50 miles include South Bend (26 miles).

39 Summer, near Jenkinsville, S.C., one reactor, licensed 1982, 2010 population within 50 miles is 1,187,553 (increase of 14.3 percent in a decade), 2010 population within 10 miles is 17,599 (increase of 26.2 percent), cities within 50 miles include Columbia (30 miles).

40 Watts Bar, near Spring City, Tenn., one reactor, licensed 1996, 2010 population within 50 miles is 1,186,648 (increase of 12.8 percent in a decade), 2010 population within 10 miles is 18,452 (increase of 4.1 percent), cities within 50 miles include Oak Ridge (37 miles).

41 Sequoyah, near Soddy-Daisy, Tenn., two reactors, licensed 1980/1981, 2010 population within 50 miles is 1,079,868 (increase of 11.1 percent in a decade), 2010 population within 10 miles is 99,664 (increase of 13.8 percent), cities within 50 miles include Chattanooga (14 miles).

42 Crystal River, near Crystal River, Fla., one reactor, licensed 1977, 2010 population within 50 miles is 1,046,741 (increase of 32.4 percent in a decade), 2010 population within 10 miles is 20,695 (increase of 50.9 percent), cities within 50 miles include Ocala, (38 miles) and Spring Hill (34 miles).

43 Browns Ferry, near Athens, Ala., three reactors, licensed 1973/1974/1976, 2010 population within 50 miles is 977,941 (increase of 11.0 percent in a decade), 2010 population within 10 miles is 39,930 (increase of 12.3 percent), cities within 50 miles include Huntsville (28 miles).

44 Fort Calhoun, near Fort Calhoun, Neb., one reactor, licensed 1973, 2010 population within 50 miles is 953,410 (increase of 11.1 percent in a decade), 2010 population within 10 miles is 20,639 (increase of 9.7 percent), cities within 50 miles include Omaha (18 miles).

45 River Bend, near St. Francisville, La., one reactor, licensed 1985, 2010 population within 50 miles is 951,103 (increase of 11.2 percent in a decade), 2010 population within 10 miles is 23,466 (increase of 11.1 percent), cities within 50 miles include Baton Rouge (25 miles).

46 FitzPatrick, near Scriba, N.Y., one reactor, licensed 1974, 2010 population within 50 miles is 909,798 (increase of 3.2 percent in a decade), 2010 population within 10 miles is 35,136 (increase of 17.0 percent), cities within 50 miles include Syracuse (36 miles).

47 Nine Mile Point, near Scriba, N.Y., two reactors, licensed 1969/1987, 2010 population within 50 miles is 909,523 (increase of 3.2 percent in a decade), 2010 population within 10 miles is 35,632 (increase of 17.0 percent), cities within 50 miles include Syracuse (36 miles).

48 Robinson, near Hartsville, S.C., one reactor, licensed 1970, 2010 population within 50 miles is 893,536 (increase of 10.3 percent in a decade), 2010 population within 10 miles is 32,675 (increase of 2.6 percent), cities within 50 miles include Columbia (49 miles).

49 Clinton, near Clinton, Ill., one reactor, licensed 1987, 2010 population within 50 miles is 813,658 (increase of 5.7 percent in a decade), 2010 population within 10 miles is 14,677 (decrease of 0.4 percent), cities within 50 miles include Springfield (51 miles) and Champaign (30 miles).

50 Point Beach, near Two Rivers, Wis., two reactors, licensed 1970/1973, 2010 population within 50 miles is 777,556 (increase of 10.0 percent in a decade), 2010 population within 10 miles is 19,975 (decrease of 6.7 percent), cities within 50 miles include Green Bay (28 miles).

51 Kewaunee, near Kewaunee, Wis., one reactor, licensed 1973, 2010 population within 50 miles is 776,954 (increase of 10.1 percent in a decade), 2010 population within 10 miles is 10,292 (decrease of 0.9 percent), cities within 50 miles include Green Bay (26 miles).

52 Vogtle, near Waynesboro, Ga., two reactors, licensed 1987/1989, 2010 population within 50 miles is 726,640 (increase of 8.8 percent in a decade), 2010 population within 10 miles is 5,845 (decrease of 16.3 percent), cities within 50 miles include Augusta (26 miles).

53 Duane Arnold, near Palo, Iowa, one reactor, licensed 1974, 2010 population within 50 miles is 658,634 (increase of 7.1 percent in a decade), 2010 population within 10 miles is 107,880 (increase of 8.2 percent), cities within 50 miles include Cedar Rapids (10 miles).

54 Quad Cities, near Cordova, Ill., two reactors, licensed 1972, 2010 population within 50 miles is 655,207 (decrease of 0.3 percent in a decade), 2010 population within 10 miles is 34,350 (decrease of 0.5 percent), cities within 50 miles include Moline (19 miles).

55 Callaway, near Fulton, Mo., one reactor, licensed 1984, 2010 population within 50 miles is 546,292 (increase of 15.0 percent in a decade), 2010 population within 10 miles is 10,092 (increase of 3.8 percent), cities within 50 miles include Fulton (11 miles), Jefferson City (26 miles), Columbia (32 miles).

56 Brunswick, near Southport, N.C., two reactors, licensed 1974/1976, 2010 population within 50 miles is 468,953 (increase of 39.6 percent in a decade), 2010 population within 10 miles is 36,413 (increase of 105.3 percent), cities within 50 miles include Wilmington (18 miles).

57 Diablo Canyon, near Avila Beach, Calif., two reactors, licensed 1984/1985, 2010 population within 50 miles is 465,521 (increase of 22.4 percent in a decade), 2010 population within 10 miles is 26,123 (increase of 50.2 percent), cities within 50 miles include San Luis Obispo (12 miles) and Paso Robles (31 miles).

58 Columbia, near Richland, Wash., one reactor, licensed 1984, 2010 population within 50 miles is 445,416 (increase of 23.4 percent in a decade), 2010 population within 10 miles is 10,055 (increase of 10.4 percent), cities within 50 miles include Richland (12 miles) and Pasco (18 miles).

59 Hatch, near Baxley, Ga., two reactors, licensed 1974/1978, 2010 population within 50 miles is 424,741 (increase of 12.0 percent in a decade), 2010 population within 10 miles is 11,061 (increase of 6.7 percent), cities within 50 miles include Vidalia (19 miles).

60 Farley, near Columbia, Ala., two reactors, licensed 1977/1981, 2010 population within 50 miles is 421,374 (increase of 6.1 percent in a decade), 2010 population within 10 miles is 11,842 (increase of 8.0 percent), cities within 50 miles include Dothan (17 miles).

61 Grand Gulf, near Port Gibson, Miss., one reactor, licensed 1984, 2010 population within 50 miles is 321,400 (decrease of 0.4 percent in a decade), 2010 population within 10 miles is 6,572 (decrease of 18.6 percent), cities within 50 miles include Jackson (54 miles).

62 Arkansas Nuclear, near London, Ark., two reactors, licensed 1974/1978, 2010 population within 50 miles is 308,219 (increase of 13.3 percent in a decade), 2010 population within 10 miles is 44,139 (increase of 17.2 percent), cities within 50 miles include Russellville (6 miles).

63 South Texas, near Bay City, Texas, two reactors, licensed 1988/1989, 2010 population within 50 miles is 254,049 (increase of 10.2 percent in a decade), 2010 population within 10 miles is 5,651 (decrease of 2.4 percent), cities within 50 miles include Lake Jackson (40 miles).

64 Wolf Creek, near Burlington, Kan., one reactor, licensed 1985, 2010 population within 50 miles is 176,656 (decrease of 1.7 percent in a decade), 2010 population within 10 miles is 5,466 (decrease of 2.8 percent), cities within 50 miles include Emporia (30 miles).

65 Cooper, near Brownville, Neb., one reactor, licensed 1974, 2010 population within 50 miles is 163,610 (decrease of 1.6 percent in a decade), 2010 population within 10 miles is 4,414 (decrease of 5.9 percent), cities within 50 miles include Nebraska City (25 miles).

About the study

Geographic information system (GIS) analysis was done by Longcreative, a data analysis and design company, for msnbc.com. Distances to cities within 50 miles were calculated by msnbc.com.

Population figures use the 2000 and 2010 US Census. The Census Bureau reports population within areas called census tracts, relatively small areas of less than 10,000 people. The mapping program drew circles around the plant at 5 miles, 10 miles, etc. (A 1-mile radius wouldn't be meaningful: Measuring from the reactor site itself, much of the land within 1 mile would either be on plant property or in the water in most cases.)

As the circle around a plant cuts through census tracts, the map assigned a share of each tract's population to the circle based on the percentage of the tract's land area that is within the circle. The analysis focused on 10 miles, the standard area in the US for preparing for nuclear emergencies, and 50 miles, because of the recommendation given to Americans in Japan after the Fukushima emergency.

The estimates for total population living with certain distances from any nuclear power plant:

- Within 5 miles, 916,330 residents, up 15.0 percent from 796,509.
- Within 10 miles, 4,079,007 residents, up 16.9 percent from 3,488,328.
- Within 20 miles, 18,510,584 residents, up 12.3 percent from 16,480,894.
- Within 50 miles, 116,223,077 residents, up 6.5 percent from 109,105,722.

Japan Crisis Raises Questions About US Spent Nuclear Fuel (CNN)

By David Fitzpatrick And Drew Griffin, CNN Special Investigations Unit
CNN, April 15, 2011

If you're one of the millions of Americans who get even a portion of your electric power from a nuclear generating plant, for more than three decades you've been paying a tax, whether you realize it or not, to fund the storage of nuclear waste from that plant in a safe place.

Collected at an estimated \$750 million a year, the Nuclear Energy Institute now says this so-called "nuclear waste fund" amounts to close to \$30 billion. And it is not being used to pay for the storage of a single ounce of spent nuclear fuel.

"The government has made much more of a mess than it should have been," Jay Silberg, a Washington lawyer, told CNN.

Silberg represents many of the nation's biggest nuclear power companies and for more than 20 years, he's been involved in lawsuits against the government, trying to make it pay for what he says it promised to do way back in 1982.

"That program, when it was set up, was supposed to be science-based," he says.

At one point, all of the nation's spent nuclear fuel – at least the spent fuel used for commercial power generation – was supposed to end up at a bleak spot in Nevada, about 90 miles north of Las Vegas, called Yucca Mountain.

Since the project began, the government has spent close to \$11 billion in construction, engineering and scientific studies and there have been several blue ribbon commissions examining the safety of Yucca Mountain to hold all that waste.

What happened?

"Rather than let the science take its course, politics has interfered and the plug has been pulled on Yucca, at least so far," Silberg told CNN.

And by politics, he means politics at the highest level.

Almost from the start, Nevada politicians said they wanted nothing to do with the Yucca Mountain Project. But it wasn't until Barack Obama began his presidential campaign that Nevada's opposition gained serious traction.

Obama wrote to a Las Vegas newspaper, The Review-Journal, in the spring of 2007 saying he had "always" been against storing nuclear waste at Yucca Mountain.

And then after he became president, Obama killed nearly all of the essential government funds for Yucca Mountain.

And he did one more thing.

Obama appointed Gregory Jaczko as chairman of the Nuclear Regulatory Commission, the government agency with the power to regulate the nation's nuclear plants and with oversight over Yucca Mountain.

Jaczko (pronounced "Yaz-Koh") served for years as chief of staff to Senate Majority Leader Harry Reid of Nevada, who vowed never to allow Yucca Mountain to proceed.

The offices of Sen. Reid and Jaczko told CNN that the nation's spent nuclear fuel is safe right where it is, strung out across 65 storage sites nationwide.

That spent fuel ...tiny uranium pellets surrounded by steel rods coated with a zirconium alloy all packaged in a highly engineered assembly... now totals more than 70,000 tons nationwide. Two thirds of that spent fuel, according to the Nuclear Energy Institute, is now in pools under about 40 feet of water. Some anti nuclear organizations say those pools are too jammed with spent fuel rods and are vulnerable to accident or terrorist attack.

The nuclear industry says the spent fuel is safe and NRC officials say they believe the spent fuel can be reliably stored where it is for another 40 years.

CNN wanted to visit Yucca Mountain to see what's become of the project. The most recent television footage available of Yucca Mountain was taken in 2002. But officials from the Department of Energy, which oversees Yucca, declined, citing safety reasons. Some Republican members of Congress say they, too, were blocked in an attempt to visit Yucca.

At a Senate hearing this week in Washington, Sen. Lamar Alexander, R-Tennessee, pointedly told NRC Chairman Jaczko that it was "important to ask about Yucca Mountain."

"We have collected \$30 billion to pay for an eventual disposal," he said. "Why not use it?"

SRS Equipment Headed To Japan (AUGC)

By Rob Pavey, Staff Writer

Augusta Chronicle, April 15, 2011

Storage tanks, pumps and monitoring equipment from Savannah River Site will be shipped from South Carolina to Japan to help in the battle to stabilize the damaged nuclear reactors at Fukushima.

Five 16,000-gallon steel tanks will be moved from Savannah River Site to Japan to help in the effort to stabilize the damaged reactors.

"This is what we can send them at this point to support their activities," said Jim Giusti, a US Department of Energy spokesman.

Equipment is also being gathered from federal nuclear sites around the country, he said. Its transfer is being expedited as a "government to government diplomatic exchange" that will convey the gear directly to the Japanese government.

The primary items from SRS, identified by its management contractor, Savannah River Nuclear Solutions, include a "radioactive liquid transport assembly," a high-tech, self-contained trailer housing a 1,000-gallon tank, pumps and a monitoring system. A smaller trailer that goes with it includes fuel tanks and a diesel generator.

Also being sent are five storage tanks, each with a 16,000-gallon capacity. They can be used to store radioactive water – one of the primary contaminants at the Japan site. The total value of all the equipment is about \$400,000.

Giusti said the 36-foot-long tanks are made of stainless or carbon steel and were formerly used to store contaminated nitric acid and other materials from the site's F Canyon chemical separations facility.

The tanks, and all other equipment being sent to Japan, are clean and free of any contamination or radioactivity.

"These tanks will be useful for anything liquid they need to treat or do anything with," Giusti said.

Workers at the site are also building wooden "cribbing" to hold the tanks on flatbed trailers.

No departure schedule has been arranged, Giusti said, and US officials are in discussions with Japan's government to determine the best means of transportation to relocate the equipment from SRS to Japan.

No SRS workers are currently scheduled to go to Japan, but site officials were working extra hours to expedite security badges for transportation workers who will help move the equipment.

Another piece of equipment from SRS – a 190,000-pound cement pump that was in use at the construction site of the mixed oxide fuel facility – was airlifted from Atlanta to Japan, where it arrived in Tokyo earlier this week. It remained at a facility in Chiba, Japan, on Thursday awaiting transport to the crippled Fukushima plant.

INTERNATIONAL NUCLEAR NEWS

Japan Eyes Possible Damage To Spent Nuclear Fuel (CNN)

By Matt Smith

CNN, April 15, 2011

Japanese regulators discounted concerns about damage to the still-potent spent fuel from the Fukushima Daiichi nuclear power plant's No. 4 reactor Thursday, saying high radiation levels reported earlier this week "most probably" came from outside debris.

A high reading above the pool prompted the plant's owner, the Tokyo Electric Power Company, to take a sample from the spent fuel pool on Tuesday. But the radiation levels are far lower than they would be if there were damage to the fuel rods, said Hidehiko Nishiyama, the chief spokesman for Japan's Nuclear and Industrial Safety Commission.

"We need more analysis to identify the precise status of the spent fuel in unit 4," he said.

Tokyo Electric said Thursday night that the sample was the first time they have taken a reading off one of the spent fuel pools. The water temperature in the No. 4 pool was 90 degrees Celsius, more than twice a normal reading, and more coolant water was poured into the reservoir on Wednesday.

The company said it suspects the fuel rods were damaged due to insufficient coolant at some point since the crisis began, but could not clarify the timing.

Nishiyama told reporters Thursday evening that the fuel rods have not suffered "any particular damage." Officials are still looking at the readings from that water sample before reaching a final conclusion, but said the radiation reading was "most probably due to debris" blown into the badly damaged housing around the No. 4 reactor.

The Tokyo Electric Power Company reported a cumulative radiation reading above the pool at 84 millisieverts on Tuesday, about a third of the annual allowable dose for plant workers during the emergency. Water samples from the pool showed a concentration of radioactive iodine-131, the most commonly measured reactor byproduct, at 220,000 becquerels per liter – more than 730 times the amount considered safe for drinking water in Japan.

Outside observers have expressed concerns about the status of the spent fuel in reactors 1, 3 and 4 several times during the month-long crisis at Fukushima Daiichi, about 240 km (150 miles) north of Tokyo. Temperature sensors in those pools have been out since mid-March, and workers have been spraying water into the damaged housings of those reactors on a near-daily basis to keep them topped off.

The battle began March 11, when the tsunami that followed Japan's magnitude 9 earthquake knocked out the plant's cooling systems. Tokyo Electric estimated the height of that wall of water at 14 to 15 m (45 to 48 feet) – a level Nishiyama said would be the new standard for barriers around Japanese nuclear power plants.

The sea wall around Fukushima Daiichi was 5 m. In the aftermath of the tsunami, the cores of three of Fukushima Daiichi's six reactors were damaged by overheating and resulting hydrogen explosions blew apart the buildings surrounding reactors 1 and 3.

The vast amount of radiation released from the plant, largely in the first two weeks of the disaster, prompted Japanese authorities to rate the crisis at the top of the international scale that measures nuclear accidents. The Level 7 designation puts Fukushima Daiichi on par with the April 1986 Chernobyl accident in the former Soviet Union, though Japanese authorities say their plant has spewed only 10 percent of the radioactivity that was emitted from Chernobyl.

Plant workers have been pouring hundreds of tons of water a day into the three reactors that were damaged in the aftermath, and at least one of the reactors, in unit 2, is believed to be leaking highly radioactive water. Radioactive contamination spread across a wide swath of land around the plant and into the adjacent Pacific Ocean, though data released by government ministries has shown a decline in radiation levels in recent weeks.

Engineers have taken steps this week toward containing the disaster, pumping radioactive water from service trenches and tunnels into a storage reservoir for No. 2 reactor's steam condensers. And they are laying the piping needed to transfer an estimated 10,000 tons into a facility designed for treating low-level radioactive waste Tokyo Electric said Thursday.

The company dumped more than 9,000 tons of less-radioactive water into the Pacific last week to make room for the more-dangerous fluid believed to be leaking from reactor No. 2 – a move Japanese authorities described as an emergency measure, but one that enraged the country's fishermen.

The government issued expanded evacuation orders Monday for several towns outside the 30-kilometer radius that was declared a danger zone in the early days of the disaster, warning that prolonged exposure to radiation levels there could pose a long-term danger to human health. And Japanese government data this week reported finding low levels of radioactive strontium, another reactor byproduct, in two of those towns in the days after the disaster.

Strontium-90 is considered a health hazard not only because of its 29-year radioactive half-life but because a portion of it gets absorbed by bone if ingested, according to the US Environmental Protection Agency. There is no acceptable standard for strontium under Japanese regulations, but Japan's science ministry said the reported figures were not high enough to pose an immediate danger to human health.

The Japanese government has tried to limit the damage done to farmers in Fukushima and other prefectures where contamination from the plant has been found, lifting bans on farm products from surrounding areas if they pass three tests in three successive weeks.

Chief Cabinet Secretary Yukio Edano, the government's point man on the crisis, announced Thursday that kakina, a leafy green, from Tochigi Prefecture was now safe for shipment. The move follows a ban on outdoor-grown shiitake mushrooms from 16 towns and villages neighboring damaged plant to the country's banned food list Wednesday.

A Wary Drive Up To The Gate Of Fukushima (LAT)

Two journalists, their interpreter and their driver set out to see the damaged Japanese nuclear plant the world has been watching. Along the way, the radiation gauge kept ticking upward.

By John M. Glionna

Los Angeles Times, April 15, 2011

The radiation gauge beeped, signaling that isotopes were in the atmosphere.

As our SUV followed a line of electricity towers marching across deserted farmland, we made an agreement: If the dosimeter hit 15, we'd turn around. The device inched up to 12, its faint beep seeming more like a scream. Each time, edgily, we called out the number.

Thirteen.

The ventilation was off and the windows were sealed tight, even though the afternoon was warm. With our heads covered and our mouths sheathed in breathing masks, the SUV became a sauna as we bumped along roads with cracks as wide as a man's head.

The minutes ticked by.

Fourteen.

Miles past a police checkpoint, we finally saw it. In Japanese and English, a large blue sign. Fukushima, the place where no one else in the world wanted to be.

We — two journalists, an interpreter and a driver — wanted to see the villain at the center of Japan's nuclear nightmare. As we pulled up to the gate, we knew that somewhere in the near distance, scores of workers were scrambling to bring the damaged reactors under control.

But those efforts were as invisible as the nuclear threat itself.

Suddenly, as we approached the main gate, security guards were upon us, two figures who'd seemingly stepped out of "Star Wars," menacing in their dual-intake respirator masks and head-to-toe white hazmat gear.

Peering into the SUV, expressions obscured, they shook their heads as they waved us off, refusing to answer questions, repeating the dismissive circular hand motion for a U-turn.

They noted our license plate as we turned around and slowly embarked along a side road, briefly trailed by guards in another vehicle.

A hundred yards away, several mysterious towers shone white in the afternoon sunlight, hiding their secrets. It was difficult to get a bead on the place; trees seemed to have been placed strategically to prevent a full-on view of things.

To the side, we saw a sign posted by the nuclear plant's safety committee. It carried an announcement: "This month's safety slogan: Make sure to check everything and do the risk assessment. The goal is zero disasters for this year."

In the weeks since the March 11 tsunami destroyed Fukushima's emergency cooling system, people as far away as California have fretted over full nuclear meltdown at the plant 155 miles north of Tokyo. Explosions in four of Fukushima's six reactors have spewed dangerous radioactive isotopes of iodine, cesium and strontium, which can cause bone cancer and leukemia.

Most residents within 18 miles have evacuated, leaving behind a post-apocalyptic landscape and a decades-old plant that's now sick and dying.

We traveled to Fukushima with questions. What does it look like? Smell like? Would they let us inside? So far, the few pictures have come from aerial fly-bys that showed smoking reactors in a soulless industrial setting.

As we neared the coastal plant, we peered out the SUV windows, trying to create a lasting mental image of a place many say will one day be sealed off in concrete to protect against nuclear poisoning.

The best description of the scene: silence. We mostly stayed inside the vehicle, but once in a while, we opened a window, or briefly jumped out to take a picture. And we listened.

They say that following the 1986 Chernobyl disaster, the birds stopped singing. At Fukushima, we didn't hear birds, or anything else. No children shouting, no car horns honking, not even the waves on the too-distant shore. Just the wind.

Fukushima translates as "fortunate isle," and it once signified purity, used to brand fruit and vegetables. Now it carries the whiff of Armageddon.

This week, officials raised the severity rating of the nuclear crisis to a maximum level 7, a threshold reached only once before in the history of nuclear power, at the now-shuttered Chernobyl reactor.

We didn't make the decision to go to Fukushima lightly. We brought along the dosimeter, which gives an accumulated total of radioactivity exposure. The device was loaned to us by a scientist who assured us it was safe to travel near the reactor as long as there was no explosion. Otherwise, our exposure would be equivalent to what we might get on a cross-country flight. In other words, not that much — a level people experience daily. (An exam later at a nearby center confirmed it: We tested negative for radiation.)

Still, our interpreter was worried at first. A 22-year-old college student, she wants to have children one day. The driver, on the other hand, never blinked. Also 22, he had on a previous trip to the hot zone worn a shirt that read, "It is a good day to die."

In the end, we didn't merely leave the plant; we fled. On the rise of a hill, we looked back a last time at the complex, but we saw nothing except the trees that shelter it from prying eyes.

Sign Says 'Zero Disasters For This Year' : The Two-Way : NPR (NPR)

By Mark Memmott

NPR, April 15, 2011

Two American reporters, John Glimona of the Los Angeles Times and Steve Herman from Voice of America, drove into the evacuation zone around Japan's crippled Fukushima Dai-ichi nuclear power plant on Wednesday and made it all the way to the facility's main gate.

There, Herman reports, they were told to turn around. And they had been previously ordered "not to open our vehicle windows and to report to a radiation screening center in the town of Tamura afterwards, where we should wash the truck."

As for what they saw, Herman says that "for most of the 20-kilometer journey we spotted only police, military and other official vehicles. Even those we could count on one hand. Not a single person was seen outside in Futaba and Okuma, which until March 11 [the date of the earthquake and tsunami that devastated the area] had a combined population of about 18,500. The doors of some businesses remain open through which people hastily fled when the ground shook with unprecedented fury."

And at the gate, they found what Herman says was an "extremely ironic proclamation." It was a sign, obviously put up before the March 11 disaster, that reads: "This month's safety slogan: Be sure to check everything and do a risk assessment. Zero disasters for this year."

He adds, by the way, that it's not illegal to be inside the evacuation zone — but likely will be soon as Japanese authorities move to further restrict the area. Herman also talked to CNN about the experience. While he tells the network that they brought along a radiation detector, which he says registered "a very small amount of radiation, Herman does not say whether they wore any protective gear.

Nuclear Cleanup Plans Hinge On Unknowns (NYT)

By Hiroko Tabuchi

New York Times, April 15, 2011

TOKYO — Even before the troubled Fukushima nuclear plant has been brought under control, two rival conglomerates likely to be part of an eventual cleanup are estimating that the effort could take 10 years — or 30.

The widely divergent outlooks underscore the basic uncertainties clouding any forecast for Fukushima: when cooling stems will be restored and radiation emission halted; how soon workers can access some parts of the plant; and how bad the damage to the reactors, their fuel, and nearby stored fuel turns out to be. The United States Nuclear Regulatory Commission has warned that at least one reactor's fuel may even have leaked out of the reactor pressure vessel, something that has never before happened in a nuclear accident.

A global team led by Hitachi said Thursday that it would take at least three decades to return the site to what engineers refer to as a "green field" state, meaning within legal limits of radiation for any residents. Toshiba, Japan's biggest supplier of nuclear reactors, said it could take as little as 10 years.

Both companies have large nuclear-related businesses and appear to be eager to speak about endgame scenarios to a crisis that has heightened global public mistrust over nuclear power. There are also billions of dollars likely at stake in the clean-up, which could help Hitachi and Toshiba buoy their sinking bottom lines. The two said this week that annual profits would fall short of their forecasts because of the widespread disruptions in production and supply chains.

At a roundtable with reporters on Thursday, Toshiba's chief executive, Norio Sasaki, wielded an inch-thick proposal outlining the dismantlement plan submitted to the plant's operator, Tokyo Electric Power, last week. Hitachi has presented a competing plan.

The scale and complexity of the challenge is unprecedented. No nuclear reactor has ever been fully decommissioned in Japan, let alone the four certain to be dismantled at Fukushima, after being flooded with seawater to avert meltdowns, and after suffering explosions and other damage. The final fate of the two other reactors there has not been announced, but they too may need to be decommissioned.

The accident at Three Mile Island in 1979 involved just one reactor, and though there was a partial meltdown of the nuclear fuel rods, the chamber holding them did not rupture. The cleanup there still took 14 years and cost about \$1 billion. (Two reactors that continue to operate at the site are set to be decommissioned in 2014.)

Recovery from the disaster at Chernobyl in 1986, meanwhile, is an example engineers are not eager to study. Following the multiple explosions and fire that sent huge radioactive plumes into the atmosphere, workers covered the remains of the reactor with sand, lead and eventually entombed it with concrete to halt the release of radiation. The concrete coffin still remains at Chernobyl, and the area remains uninhabitable.

For now, workers continue to try to stem leaks of highly radioactive water from the plant even as they add to the flow by continuing to pump in water — now fresh, not salts. They are also racing to revive the contained cooling systems that circulate water and do not bleed contaminants.

But serious challenges that remain, including what Japan's nuclear regulator said Thursday were rising temperatures at one of the units, as well as a series of strong aftershocks. Later, Hidehiko Nishiyama, the deputy director-general of Japan's Nuclear and Industrial Safety Agency, said the situation at the plant remained "difficult."

Still, Toshiba's engineers expect the plant to stabilize "in several months," Mr. Sasaki said, and for full-scale cooling to resume. It would be five years before engineers would be able to open up the pressure vessels to remove the nuclear fuel, he said, and dismantling the reactors and cleaning up radiation at the plant would take at least another five years.

Toshiba's team includes engineers from Westinghouse, whose majority owner is Toshiba, and the Babcock & Wilcox Company, an energy technology and services company that handles the disposal of hazardous materials. The two companies helped shut down the damaged reactor at Three Mile Island.

A Hitachi spokesman in Tokyo, Yuichi Izumisawa, said that the 10-year scenario was overly optimistic. He said that Hitachi's engineers expect that it will take that long just to remove the nuclear fuel rods from the plant and place them in casks to transport to a safe storage facility.

Only then can dismantling the plant's structures begin, he said, followed by cleaning up remaining radiation.

Hitachi, the country's second-biggest supplier of reactors, has a team of 50 experts working on its dismantling plan. It has a joint nuclear venture with General Electric and is also working with the American nuclear operator, Exelon, and Bechtel, the engineering firm.

"You basically need to dismantle the plant from the inside, and the inside is still very radioactive," he said. "At Hitachi, we are baffled over what kind of technology would allow everything to be finished in 10 years."

Tetsuo Matsumoto, a professor in nuclear engineering at Tokyo City University, said that how long the decommissioning process would take depended heavily on the state of the nuclear fuel.

"Will it still be shaped like rods? Or will it have melted and collapsed into a big mass?" he said. "It could be 10 years or it could be 30. You just won't know until you open up the reactor."

Ken Ijichi contributed reporting.

Japan Orders Utility To Pay Evacuees (WSJ)

In Bow to Critics, Tokyo Will Also Provide Report on Dumped Water; Sea Radioactivity Levels Fall

By Mitsuru Obe And Mari Iwata

Wall Street Journal, April 15, 2011

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

Burial Of Japan Reactors Trickier Than Chernobyl: Pump Firm (REU)

By Josie Cox

Reuters, April 15, 2011

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

Tokyo Power To Compensate 50,000 Evacuees (NYT)

By Keith Bradsher

New York Times, April 15, 2011

TOKYO — The Tokyo Electric Power Company announced plans on Friday to distribute 50 billion yen, or \$600 million, in initial payments to 50,000 people evacuated because of the accident at its Fukushima Daiichi nuclear power plant, as technicians continued to struggle to repair cooling and electrical systems at the damaged reactors.

Masatake Shimizu, the company's president, said that single-person households would receive about \$9,000 and larger households would receive about \$12,000. Only people who live in a radius of 19 miles of the damaged power plant that was initially evacuated will be eligible for the payments.

The government ordered on Monday the evacuation in the coming month of five more communities that lie farther from the stricken power plant but received higher levels of radiation than elsewhere because of wind and rain patterns. Once residents of these communities have been certified by the government as also qualifying as victims of a nuclear disaster, Tokyo Electric Power will also make the same payments to them, Mr. Shimizu said; power company officials had no immediate statistic for how many more people might qualify from these communities.

The government said that Tokyo Electric Power acted after a request from Banri Kaieda, the minister of economy, trade and industry. The utility's full liability for the nuclear accident has not yet been established and will depend heavily on whether the government characterizes the earthquake and tsunami on March 11 as an exceptional event that could not have been readily anticipated.

No decision has been made yet on possible compensation to farmers and fishermen who may have lost their livelihoods at least temporarily because of the nuclear accident.

Repair efforts continued slowly at the Fukushima Daiichi plant. An announcement late Thursday of sharply rising temperatures at the base of Reactor No. 3 had provoked brief concern, but regulators said on Friday morning that the readings appeared to have come from a malfunctioning thermometer.

In another sign of a return to normality, Tokyo Disneyland reopened with limited hours on Friday, after closing a month ago to conduct repairs and conserve electricity. Large throngs showed up outside the amusement park's gates before opening time as thousands vied to be among the first to return to the site.

Moshe Komata and Kantaro Suzuki contributed reporting.

Japan Orders Nuclear Plant Operator To Pay Compensation; Evacuees Say Amount Isn't Enough (AP)

Associated Press, April 15, 2011

Japan's government ordered the operator of a tsunami-damaged nuclear plant Friday to pay \$12,000 to each household forced to evacuate because of leaking radiation, but some of the displaced slammed the handout as too little.

Tens of thousands of residents unable to return to their homes near the nuclear plant are bereft of their livelihoods and possessions, unsure of when, if ever, they will be able to return home. Some have traveled hundreds of kilometers (miles) to Tokyo Electric Power Co.'s headquarters in Tokyo to press their demands for compensation.

TEPCO will start paying compensation April 28, with families forced to evacuate getting 1 million yen (about \$12,000) and individuals getting 750,000 yen (about \$9,000), Trade Ministry spokesman Hiroaki Wada said.

"There are around 150 evacuation centers alone. It will take some time until everyone gets money. But we want the company to quickly do this to support people's lives," Trade Minister Banri Kaieda said at a news conference.

The arrangement is a provisional one, with more compensation expected, Wada said. Roughly 48,000 households living within about 19 miles (30 kilometers) of the crippled Fukushima Dai-ichi nuclear plant would be eligible for the payments.

"I'm not satisfied," said Kazuko Suzuki, a 49-year-old single mother of two teenagers from the town of Futaba, adjacent to the plant. She has lived at a shelter at a high school north of Tokyo for the last month.

Her family has had to buy clothes, food, shampoo and other basics because they fled the area on government orders without taking time to pack. She has lost her job as a welfare worker, and a job prospect for her 18-year-old fell through because of the effects of the disaster.

"We've had to spend money on so many extra things and we don't know how long this could go on," she said.

Akemi Osumi, a 48-year-old mother of three also from Futaba, said the money was a "small step" but that it didn't fairly compensate larger families. Her family is living at the same shelter but also must rent an apartment for her eldest son to go to a vocational school.

"One million yen doesn't go very far," she said. "I'm not convinced at just 1 million yen per family. If it was dependent on the size of the family I'd understand, but it's not."

TEPCO's president, Masataka Shimizu, formally announced the plan, saying he wanted the payments to be made "fairly and quickly."

TEPCO expects to pay 50 billion yen (about \$600 million) in government-ordered compensation. But Shimizu said 2 trillion yen (\$24 billion) was needed to resolve the continuing problems with the plant and to restart conventional power stations to make up for power shortages.

The company is still struggling to stabilize the nuclear plant, which saw its cooling systems fail after a magnitude 9.0 earthquake on March 11 triggered a massive tsunami that wrecked emergency backup systems as well as much of the plant's regular equipment.

Radiation leaks from the crisis have contaminated crops and left fishermen in the region unable to sell their catches, a huge blow to an area heavily dependent on fishing and farming.

The governor of Fukushima, Yuhei Sato, has vigorously criticized both TEPCO and the government for their handling of the disaster, demanding faster action.

"This is just a beginning. The accident has not ended. We will continue to ask the government and TEPCO to fully compensate evacuees."

Nearly 140,000 people are still living in shelters after losing their homes or being advised to evacuate because of concerns about radiation.

Seeking to console evacuees, Japan's emperor visited the country's disaster zone for the first time Thursday.

In Asahi, where 13 people were killed and some 3,000 homes damaged, Emperor Akihito, 77, and Empress Michiko got their first look at the devastation, somberly gazing at a plot of land where a home once stood and also commiserating with evacuees at two shelters.

The royal couple knelt on mats to speak quietly with the survivors, who bowed in gratitude and wiped away tears. One evacuee with Down syndrome, who has trouble speaking, wrote "I will keep striving" in a small notebook that he showed to the emperor and empress. Asahi is about 55 miles (85 kilometers) east of Tokyo.

Even as the month-old emergency dragged on, radiation levels dropped enough for police sealed in white protective suits, goggles and blue gloves to begin searching for bodies amid the muddy debris inside a six-mile (10-kilometer) radius around the Fukushima Dai-ichi plant that had been off-limits.

Authorities believe up to 1,000 bodies are lodged in the debris. A police spokesman, who gave only the surname Sato, said searchers were working Friday to recover three of the 10 bodies they located on Thursday that were trapped in cars or debris.

Overall, the bodies of only about 13,500 of the more than 26,000 people believed killed in the March 11 disaster have been recovered. Many of the remaining victims are believed to have been washed out to sea.

Japan Nuclear Plant Operator Promises Compensation (AFP)

AFP, April 15, 2011

The embattled operator of Japan's crippled nuclear power plant on Friday promised an initial one million yen (\$12,000) in compensation to each family living close to the facility.

"We have decided to offer necessary payment as provisional compensation so that we can provide as much support as possible," Masataka Shimizu, president of Tokyo Electric Power (TEPCO), told a news conference.

Tens of thousands of people living in a 20-kilometre (13-mile) zone around the plant were ordered to leave due to radiation fears, and people within 30 km were first told to stay indoors and later encouraged to also evacuate.

"We will pay the provisional payment to families who lived in areas where people were ordered to evacuate or stay inside their houses," Shimizu said.

Japan's economy suffered a big blow in the triple earthquake, tsunami and nuclear disaster, but the country should have no problem financing reconstruction, the central bank chief said in a speech at the Council on Foreign Relations in New York.

Bank of Japan Governor Masaaki Shirakawa conceded problems in the economic supply chain, power generation, tourism and other important sectors.

But he said the financial system could cope.

"As long as Japan continues to work tirelessly towards rebuilding it is unlikely that financing problems will arise," he said.

Shirakawa said the three-pronged disaster struck "at a time when Japan's economy was gradually returning" to strength. He said the disruption meant "it is inevitable" that production and supply will suffer.

And given the global nature of economy, closely linked countries such as China and the United States could also be affected. "The impact on supply chain could spread internationally," he said.

However, Shirakawa insisted that Japan has the resources to bounce back.

"Japanese society has shown resilience. The work of rebuilding has started to get underway gradually but steadily," he said.

"The first challenge is ensuring the necessary financing for rebuilding. In this regard, Japan has had an excess of saving over investment for a protracted period. From a macro-economic perspective, this financing will not be difficult," he said.

"Japan's capacity for foreign currency funding is extremely strong, given that the country is the biggest creditor nation in the world."

"Private financial institutions are fully able to meet an increase in financing demand for rebuilding. Meanwhile, Japanese government bonds have been issued quite smoothly," he said.

"Most private economists believe that Japan's GDP growth rate will turn positive again from the third quarter of 2011."

Power cuts are now the greatest threat to Japan's economic recovery, the Asian Development Bank's top economist said Thursday, as the pain from the disaster showed few signs of relenting.

After initial concerns that the disaster would wreck Japanese and global manufacturing supply chains, Changyong Rhee said the main fear had become a prolonged power cuts and brownouts.

Power cuts "can hurt not just the affected area, but the whole of Japan," Rhee said, pointing to disruptions that could hobble the economy for months to come.

"Initially, we thought that power supply would be normalized by the end of April; it looks like it is going to be a bit longer than that."

Power shortages have plagued the country since the quake, which caused 11 of Japan's 55 nuclear reactors to be at least temporarily closed.

The government has already imposed electricity-saving targets to reduce consumption by up to 25 percent, even as it battles to contain leaks at the ailing Fukushima plant.

More than a month after a devastating 9.0-magnitude earthquake hit the country, Rhee and other economists are still trying to understand the long-term impact on the world's third largest economy and its neighbors.

The biggest question mark might now be the fate of those 11 nuclear power plants, which account for around six percent of the country's electricity production.

Tepco Plans Initial \$600 Million Payment To Evacuees Of Nuclear Disaster (BLOOM)

By Michio Nakayama And Pavel Alpeyev

Bloomberg News, April 15, 2011

Tokyo Electric Power Co. said it expects to make initial payments of about 50 billion yen (\$600 million) to compensate evacuees from the area near the damaged Fukushima Dai-ichi nuclear power plant.

The company plans to offer 1 million yen per household and 750,000 yen for single-person households within 30 kilometers of the plant, President Masataka Shimizu said at a briefing in Tokyo today. About 50,000 families who were ordered to leave their homes or to remain indoors will receive the financial aid, he said.

Tokyo Electric has tumbled more than 70 percent, the worst performer on the MSCI World (MXWO) Index, since the March 11 earthquake and tsunami knocked out cooling systems at the plant and caused the worst nuclear disaster since Chernobyl. The company, known as Tepco, may face claims of as much as 11 trillion yen, which may lead to nationalization, Bank of America Corp.'s Merrill Lynch said last month.

Chief Cabinet Secretary Yukio Edano said today the government ordered Tepco to start paying evacuees of the accident by the end of the month. The goal is to get the initial compensation payments out before Japan's Golden Week holidays, which begin April 29, Edano said.

Toshiba Rises After President Says Profit May Beat Forecast (BLOOM)

By Mariko Yasu, Maki Shiraki

Bloomberg News, April 15, 2011

Toshiba Corp. (6502), Japan's biggest maker of nuclear reactors, rose to the highest level in 10 days in Tokyo trading after President Norio Sasaki said the company may beat its profit forecast.

Net income for the year ended March 31 may exceed Toshiba's January estimate, he told reporters today in Tokyo, declining to elaborate. The stock reversed losses earlier in the day to close trading at 404 yen, a jump of 2 percent. The benchmark Nikkei 225 (NKY) Average Index gained 0.1 percent.

The March 11 earthquake and tsunami in Japan, which forced manufacturers including Toshiba to shutter factories, will have a limited impact on earnings for the fiscal year just ended, Sasaki said. The company, which helped build reactors at the Fukushima Dai-ichi nuclear station that was damaged by the disaster, is sticking with its goal of winning 39 reactor orders by 2015, he said.

"Damages from the Fukushima disaster are probably not as bad as people had expected," said David Rubenstein, a Tokyo-based analyst at MF Global FXA Securities Ltd., who rates the stock "buy."

Toshiba said in January it expected full-year net income of 100 billion yen (\$1.2 billion), compared with a loss of 19.7 billion yen a year earlier. Revenue and operating profit may fall short of Toshiba's January estimates, Sasaki said today.

Toshiba is expected to report net income of 94.2 billion yen for the year ended March 31, according to estimates compiled by Bloomberg. The company is set to announce its earnings outlook for the fiscal year 2011 on May 9.

Clients Toshiba approached haven't canceled their plans to build nuclear reactors, the president said.

"There are possibilities that regulation, or design, will change in each nation. Even if we are to secure 39 contracts, there can still be delays in groundbreaking," he said.

Toshiba may delay its target of generating 1 trillion yen in annual revenue from nuclear power plant sales by 2015, Sasaki said. The company had aimed to clear the sales target as early as 2014, he said.

"We need more time to figure out whether we can clear the target in 2015 or 2016, or it needs to be rescheduled further."

The reactor maker may find it harder to win new contracts after Japan's record earthquake and tsunami crippled the Dai-ichi plant. Blasts and radiation leaks at the power station, located about 220 kilometers (135 miles) north of Tokyo, led to the evacuation of hundreds of thousands of inhabitants.

The 40-year-old power plant, equipped with six reactors, had its power and back-up generators knocked out by the tsunami that followed the 9-magnitude earthquake. A lack of power to cool reactors led to explosions and radiation leaks.

Rules for nuclear power stations need to be modified to require stronger protection against tsunamis, Sasaki said today.

The world's second-largest maker of flash-memory chips is facing shortages of parts that may affect earnings during the six months to Sept. 30, Sasaki said. Negotiations with alternative suppliers "have progressed significantly" and Toshiba won't likely have a big procurement problem, he said.

To contact the reporter on this story: Mariko Yasu in Tokyo at myasu@bloomberg.net. Maki Shiraki in Tokyo at mshiraki1@bloomberg.net

To contact the editor responsible for this story: Young-Sam Cho at ycho2@bloomberg.net

Toshiba To Revise Nuclear Power Business Plan (JapanToday)

Japan Today, April 15, 2011

Toshiba Corp President Norio Sasaki said Thursday the company may be forced to revise its plan to win orders to build 39 nuclear reactors around the world by fiscal 2015 following the nuclear power plant accident in Fukushima Prefecture.

The major electronics company, the parent of leading US nuclear power company Westinghouse Electric Co, could also change its aim to book 1 trillion in sales in the nuclear power business in fiscal 2015 as the accident, triggered by a natural disaster, has had a significant impact on its core nuclear power business.

"At this point, no one has told us about dropping (plans to build new nuclear plants), but they may be delayed even if we win orders," Sasaki said, showing a view that the company may face difficulty in achieving the targeted orders.

On the sales target, Sasaki said it is now unlikely for the company to realize its earlier prospects of being able to achieve the goal ahead of schedule in fiscal 2014, adding that he will withhold saying whether it can reach the 1 trillion yen target in fiscal 2015.

But he emphasized that nuclear power will remain as "an important alternative" in seeking to resolve energy and environment issues.

Toshiba rival Hitachi Ltd has also said it plans to review its goal of winning orders for 38 nuclear power generation projects by fiscal 2030 and revise downward its goal of posting sales of 380 billion yen in fiscal 2020 in the nuclear power business.

The troubled No. 1 to 3 reactors at the Fukushima Daiichi nuclear power plant run by Tokyo Electric Power Co were manufactured by General Electric Co and Toshiba. Hitachi is a supplier of the No. 4 reactor, which was undergoing regular inspection and not operating when the massive earthquake and tsunami struck the site on March 11.

Regarding its response to the accident at the plant, Sasaki said, "Decommissioning of nuclear reactors can be done in 10 years at earliest."

He said Toshiba will work to decommission the nuclear reactors based on the experiences of US companies involved in dismantling the Three Mile Island nuclear power plant in the United States as well as using newly developed technology such as robots, according to its proposal submitted to TEPCO.

Sasaki said the impact of the disaster on its overall business performance was limited, saying its group net profit for the year ended March 31 could surpass its projection of 100 billion yen, which was already revised upward in January from an earlier forecast of 70 billion yen.

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Toshiba Counts Cost Of Fukushima Disaster (FT)

By Jonathan Soble, Tokyo

Financial Times, April 14, 2011

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

Toshiba Expects Quake To Have 'Limited' Effect On Profit (WSJ)

Japanese firm expects quake's impact on earnings to be 'limited'

By Juro Osawa, Mari Iwata

Wall Street Journal, April 15, 2011

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

Nuclear Will Remain Core Business At Toshiba: President (NIKKEI)

Nikkei, April 15, 2011

TOKYO (Nikkei)—Nuclear power will continue to be an important operation, but Toshiba Corp. (6502) will also bolster fossil fuel, solar and other power generation systems, President Norio Sasaki said Thursday in an interview with The Nikkei and others.

Because the nuclear accident at the Fukushima Daiichi plant will likely prompt governments around the world to freeze or review their nuclear power projects, "there is a possibility that the goal of generating 1 trillion yen in sales from the nuclear power business in fiscal 2015 may be delayed," Sasaki said.

The nuclear power business brought Toshiba roughly 570 billion yen in sales in fiscal 2009, which ended March 2010. The 1 trillion yen target for fiscal 2015 calls for the company to secure orders for 39 reactors by that year.

"We haven't heard anything that suggests any of the projects that we are targeting will be canceled," the president said. "But construction starts for some of them will likely be delayed due to the introduction of tougher disaster-prevention and plant-design regulations."

A joint-venture nuclear power project in Texas "will not be canceled, with the process toward getting approval progressing," Sasaki said.

Tokyo Electric Power Co. (9501), which was to invest in the Texas project, looks certain to leave the plan after the Fukushima nuclear accident. But "overseas electric utilities have approached us with proposals to team up" for the project, the president continued.

Any downgrading of earnings projections for the nuclear power business "can be offset by the expansion of the digital consumer electronics business, as well as the infrastructure business stemming from reconstruction demand," Sasaki said. Toshiba also sees growth in its fossil fuel, hydro and solar power businesses.

For the year ended last month, Toshiba likely "missed its estimates of 6.6 trillion yen in sales and 250 billion yen in operating profit by small margins, but topped its 100 billion yen net profit forecast," he said.

"Full-out efforts have been made to resolve the accident at the Fukushima Daiichi nuclear plant," Sasaki said. Toshiba "will team up with US firms to provide medium- to long-term support" in such areas as planning for the decommissioning of the nuclear plant, he said.

(The Nikkei April 15 morning edition)

Toshiba CEO Plans To Overcome Supply Chain Woes In H2 (REU)

Reuters, April 15, 2011

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

Experts: Store Blood Cells From Japan Nuke Workers (AP)

Associated Press, April 15, 2011

Workers at Japan's troubled nuclear plant should store blood cells now in case they need them later as treatment for radiation overdose, some Japanese experts suggest.

Plant workers are struggling to control radiation leakage from the Fukushima Dai-ichi complex, which was severely damaged by the March 11 earthquake and tsunami. Radiation levels are dangerously high in some areas of the plant, and the experts note that the work there will take years, posing a risk of accidental exposure.

High doses of radiation can destroy the blood-making cells of the bone marrow, a potentially fatal outcome that can be treated with transplants of blood stem cells. Such transplants are standard therapy now for blood diseases like leukemia. Getting those cells from a donor takes time, and potential incompatibility between the donated cells and the recipient can lead to severe complications, the experts noted.

So they suggest that the plant's workers have their own blood stem cells banked now. That involves getting injections for several days to get stem cells from the marrow to enter the bloodstream. Then blood would be drawn from one arm, processed to extract the stem cells, and returned into the other arm. That takes several hours.

Once the stem cells were stored, any workers who later got accidentally exposed to a large radiation dose could get infusions of their own cells.

The experts, from institutions including Toranomon Hospital and the Japanese Foundation for Cancer Research in Tokyo, discuss the idea in a letter published online Thursday by the journal *Lancet*.

They noted that reaction to the idea has been mixed since they first raised it last month. Some medical groups have supported it, while other experts have said it would pose an undue physical and psychological burden on nuclear workers, they wrote. In any case, some transplant teams are ready to collect and store the cells, they said.

In a telephone interview with The Associated Press, a US stem cell transplant expert said the idea might have some limited use.

Dr. Nelson Chao of Duke University said the proposal would be reasonable for workers who enter high-radiation zones to clean up the nuclear complex.

But its usefulness would be limited to workers who end up getting radiation doses within a rather narrow range, he said. If they get less than that, they'll recover anyway. If they get more, they'd also sustain lethal and untreatable damage to the gut and other organs including the lung. Stem cell transplants could not help with that, he said.

Japanese Nuclear Workers' Blood Should Be Saved To Help In Exposure Cure (BLOOM)

By Kristen Hallam

Bloomberg News, April 15, 2011

Stem cells should be collected from the blood of workers at the damaged Fukushima Dai-ichi nuclear plant in case of accidental exposure to radiation, five Japanese scientists wrote in the medical journal *The Lancet*.

Rapidly dividing cells such as intestinal tract and those essential for fertility are the most vulnerable to radiation, said the researchers, including Tetsuya Tanimoto of the Japanese Foundation for Cancer Research and Shuichi Taniguchi of Tokyo's Toranomon Hospital, in a letter published today by the journal. Damage to bone marrow can be remedied with cell transplants, they said.

Storing the workers' blood would make transplants easier because the body will recognize and accept its own cells. That eliminates the needs for drugs that suppress the immune system, which might make a patient vulnerable to infections, the scientists said.

"Such an approach would be the industry's best defense" in the event of a major accident, Tanimoto and colleagues said. "The most important mission is to save the nuclear workers' lives and to protect local communities."

About 107 transplant teams are standing by to handle the cells, the scientists wrote, citing a March 29 statement from the Japanese Society for Haematopoietic Cell Transplantation. More than 50 hospitals in Europe have agreed to assist if needed, Tanimoto and colleagues wrote.

The approach can only help those with damaged bone marrow, and wouldn't help radiation victims with injured gastrointestinal tracts or lungs, the scientists said.

Tokyo Electric Power Co. estimates the fight to stabilize its crippled Fukushima reactors will last through June, leaving them vulnerable to more aftershocks and radiation leaks, a person briefed on the utility's plan said. The person asked not to be identified because he isn't authorized to speak to the media.

Workers can't start the process of decommissioning the plant's four crippled reactors until temperatures and pressure have been brought down. Cleaning up the disaster, which has forced the evacuation of hundreds of thousands of people living within 20 kilometers (12 miles) of the plant, could take decades and cost more than 1 trillion yen (\$12 billion).

"The danger of a future accidental radiation exposure is not passed," the Japanese researchers wrote in *The Lancet*.

Banking Stem Cells Could Save Japan Nuclear Workers (REU)

By Julie Steenhuysen

Reuters, April 15, 2011

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

Countries At Nuclear Safety Meeting Pledge To Learn Lessons From Japanese Nuke Crisis (AP)

By Veronika Oleksyn

Associated Press, April 15, 2011

Countries attending a nuclear safety conference pledged Thursday to act on lessons learned from the Japanese reactor crisis triggered by last month's devastating earthquake but stressed they needed more specifics to do so.

The roughly 60 countries are all party to the Convention on Nuclear Safety that came into being after the 1979 Three Mile Island and the 1985 Chernobyl nuclear accidents and commits members to submit reports on the security of their power plants. The idea is that questioning and peer pressure at gatherings every three years will keep countries on their toes. All states with operating nuclear power plants are parties to the treaty.

The countries said in a statement released at the end of a 10-day meeting at the Vienna-based International Atomic Energy Agency that they are "committed to draw and act upon the lessons of" the March 11 disaster at Japan's Dai-ichi power plant and that they will be holding a special session in August 2012 on the matter.

"The international community recognizes the significance of the Fukushima nuclear accident, which highlights the need to consider new challenges and underlines the paramount importance of safety in the use of nuclear energy," the statement said.

But a vice-president of the gathering, Bill Borchardt of the United States, said more information was needed in order to know how best to respond and proceed in the aftermath of the Fukushima accident that has raised fears over radioactive fallout and questions about the safety of nuclear power.

"There's much more to be learned before we can even understand what the full range of follow-up actions would be for both the regulators in each of the nations and for the operators of the nuclear power plants around the world," Borchardt told reporters. "Many of us are taking actions now based upon the best information we have available today but we realize that information is not complete at this time."

Details that would be important to have include specifics about the conditions inside the reactors at the Fukushima site and what caused the failure of various pieces of equipment, Borchardt said.

According to the statement, which also referenced the need for more information, Japan has committed to providing missing information "as soon as possible."

Li Ganjie of China's National Nuclear Safety Administration who presided over the meeting, said the need to boost the ability of nuclear power plants to resist natural disasters such as earthquakes attracted substantial debate during the conference, most of which was closed to the media.

"At present, natural disasters have (a) wide range of impacts upon nuclear power plants — the Fukushima accident is a typical example," Li said through a translator.

Nuclear Regulators Delay Study Of Fukushima Lessons Until 2012 (BLOOM)

By Jonathan Tirone

Bloomberg News, April 15, 2011

Nuclear powers ended a closed-door meeting by delaying for 16 months consideration of the failures that triggered the meltdown at Japan's Fukushima Dai-Ichi plant.

The 72-nation Convention on Nuclear Safety pledged to hold an extraordinary meeting in August 2012 to review the breakdown of safety systems at Fukushima, according to a seven-paragraph statement released today in Vienna.

"It is understood that the lessons-learned process cannot be completed until sufficient additional information is known and fully analyzed," according to the statement. "Japan has committed to provide this information as soon as possible."

Backup generators and cooling systems at the Fukushima Dai-Ichi station were knocked out by a 15-meter (49-foot) tsunami following a magnitude-9 earthquake on March 11, triggering the worst nuclear disaster since Chernobyl in 1986. Hydrogen explosions occurred as water in the reactors and spent-fuel ponds boiled away and radiation leaked into the air and sea.

Japan's representative to the meeting, Ichiro Ogasawara, thanked the regulators and industry participants for their "solidarity in the course of the review meeting" during "this crucial juncture in the history of the convention."

Signatories to the treaty, drafted after the 1986 Chernobyl meltdown in Ukraine, will also evaluate whether the convention does enough to promote nuclear safety when they meet next year.

"Nuclear safety is the very lifeline of nuclear power development," China's Li Ganjie, who presided at the meeting that began April 4 and ended today, said at a briefing. "It is a global issue. Members of the public have anxiety about nuclear safety issues."

Nuclear Forum Backs Safety Push After Japan Crisis (REU)

By Sylvia Westall

Reuters, April 15, 2011

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

Siemens Rethinks Nuclear Ambitions (WSJ)

By Vanessa Fuhrmans

Wall Street Journal, April 15, 2011

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

Why Anne Lauvergeon Stayed At Areva (BSWK)

Sarkozy wanted the nuclear power executive to be Finance Minister, but she felt her duty was with the company

By As Told To Diane Brady

BusinessWeek, April 15, 2011

Fukushima confirms that when it comes to safety, you can't negotiate. The nuclear industry's responsibility is to be transparent. Given the catastrophe, this requirement will grow even more.

I've always advocated the most rigorous standards and secure technology. When I became CEO of Cogema in 1999, people told me it was professional suicide to join the nuclear industry. The French mainstream believed nuclear had no future. Oil prices were low, but we still needed domestic sources of energy. I pushed for Cogema to merge with Framatome. My friends told me to forget about trying to bring these companies together and to worry about my own career. But I felt we could be stronger as one company. In 2001 we became Areva.

Years later, when Nicolas Sarkozy asked me to be Finance Minister, I was flattered but also very embarrassed. Mine can be a political job; we are mostly state-owned and deal with multiple levels of government. But you don't want to refuse the President. Sarkozy is a lawyer by training, and he's very charming. The discussions lasted three days, and it didn't help that the public knew he wanted me in the job. Even so, I didn't want to negotiate.

It wasn't easy saying no. Did I worry about the impact on the company? Of course. Still, I felt my value was here. I'm very attached to Areva. My term is up in June, and I would like to stay on. That's not my decision, but right now my mind is on this business every second.

I think nuclear power will continue to play an important role by reducing the dependence on imported energy, lowering carbon emissions, and ensuring security of supply. In the past, critics have said that Areva's new reactors are too expensive. But we build them to withstand the crash of a wide-body aircraft or any type of serious accident, including a core meltdown. There is a cost. We lost a major bid last year to a cheaper competitor. But I believe that low-cost reactors are not and should not be the future.

Merkel Faces Nuclear Exit Bill As German States Exert Pressure (BLOOM)

By Tony Czuczka And Nicholas Comfort

Bloomberg News, April 15, 2011

Chancellor Angela Merkel faces a bid by members of the upper house of parliament to force her to abandon nuclear power as she tries to rally German state leaders behind an overhaul of energy policy by the middle of May.

The main opposition Social Democratic Party will put a bill to the upper house in Berlin today calling for the immediate closure of eight reactors and all 17 nuclear plants to be shut within about a decade. The opposition holds a majority in the upper house, the Bundesrat, where states are represented.

The bill steps up the pressure on Merkel to speed the exit from atomic power as she works on an unprecedented shift in the energy mix driving Europe's biggest economy. She is due to hold talks on energy policy with Germany's 16 state prime ministers today after last month ordering a 90-day reassessment of nuclear power as workers fought a meltdown at Japan's Fukushima plant.

"The government has to show that they can switch the country's energy supply and there just aren't that many options," said Bernhard Jeggle, an analyst with Landesbank Baden-Wuerttemberg in Stuttgart. "They'll be placing the focus on renewable energy sources, an expansion of the electricity grid, energy savings and flexible fossil power plants."

E.ON AG (EOAN) and RWE AG (RWE), Germany's two biggest utilities that both operate nuclear plants, are among the worst performers this year on the 30-member benchmark DAX index. (DAX) E.ON dropped 0.3 percent to 22.44 euros yesterday at the close of Frankfurt trading, while RWE fell 1.1 percent to 46.66 euros.

Carbon dioxide emission permits for December rose 1 percent to 16.81 euros a metric ton on the ICE Futures Europe exchange in London as of 4:59 p.m. local time yesterday. They have risen about 17 percent this year.

Anti-nuclear activists have called a demonstration outside the Chancellery as Merkel, Economy Minister Rainer Bruederle and Environment Minister Norbert Roettgen meet with the state heads. A press conference is scheduled for 2:30 p.m. Berlin time.

The coalition plans to expand offshore wind parks and build more gas plants to plug a potential gap in power generation that would follow a retreat from nuclear, according to a government paper. Merkel's Cabinet backed plans two days ago to allow utilities to pump greenhouse gases underground via technology known as carbon capture and storage.

Merkel, whose government last year pushed through plans to prolong the running time of reactors by an average of 12 years, imposed a moratorium on the extension on March 14 and ordered the seven oldest plants idled pending industry-wide safety checks. Polls suggest the public want her to go further.

Nineteen percent of 1,000 respondents to a poll for N24 television yesterday said that nuclear plants should operate beyond 2020, while 76 percent said they should shut earlier. Of those, 31 percent wanted reactors closed down immediately.

The Social Democrats, who introduced a law to close all reactors by about 2022 when in coalition government with the anti-nuclear Greens, are urging a return to that schedule. The Bundesrat bill, submitted by six SPD-led states including Berlin and Hamburg, calls for the seven oldest plants as well as the Krümmel reactor to remain closed. If passed, it would go to the lower house, where Merkel has a majority.

To contact the reporters on this story: Tony Czuczka in Berlin at aczuczka@bloomberg.net; Nicholas Comfort at ncomfort1@bloomberg.net

To contact the editors responsible for this story: James Hertling at jhertling@bloomberg.net; Will Kennedy at wkennedy3@bloomberg.net

Malfunction Forces Czech Nuclear Reactor Shut Down (AP)

Associated Press, April 14, 2011

PRAGUE (AP) — An official says a Czech nuclear power plant is shutting down one of its four reactors for the second time this month due to a malfunction that poses no safety threat.

Petr Spilka, spokesman for the Dukovany nuclear plant says the problem occurred on one of the reactor's 12 fittings that regulates the flow of water. Spilka says the hot irradiated water is not leaking but the flow is higher than usual.

He said Thursday it would take several days to fix the problem, which last occurred in the plant in 1985.

The plant had to shut down the same reactor April 1 for several days due to a pipe leaking irradiated water.

A Country Searching For Engineers To Serve Its Nuclear Needs (NYT)

By Heather Timmons

New York Times, April 15, 2011

NEW DELHI — Besides political protests, India's nuclear energy ambitions face another big roadblock, critics say: a shortfall of trained people to run, repair and regulate power plants.

If it proceeds with plans to build 44 nuclear plants over the next decade, India needs to add 10,000 to 19,000 skilled people to the nuclear industry, according to PricewaterhouseCoopers. That is about 1,000 to 1,900 people a year.

But India's top universities are graduating only about 50 nuclear specialists a year. Meanwhile, special graduate programs approved by the Department of Atomic Energy to address the shortage will add only about 100 master's-level graduates this year.

"There is a significant gap" between the manpower India's nuclear industry needs and the work force it is getting, said Kameswara Rao, the executive director of energy, utilities and mining at PricewaterhouseCoopers in India. "If this program is going to take off," he said, "you need to have engineers trained in the basics."

Worldwide, personnel shortages in the nuclear power industry and other science-related careers are a challenge, thanks to the lure of big money from finance jobs and start-ups.

The dearth is particularly severe in India.

As this still-developing nation builds seaports, roads and other big infrastructure projects, companies are paying top dollar for engineering students from the best schools. At the same time, the continued growth of the outsourcing industry is attracting good English speakers, with its possibility of international careers and competitive pay. Entrepreneurial types, meanwhile, are being drawn to emerging industries like telecommunications and retail.

Still, the challenge to building a nuclear work force is not primarily money. Starting salaries in the nuclear industry are about 30,000 rupees (\$678) a month, comparable with other white-collar, entry-level jobs in India. And the positions can come with perks like subsidized housing.

The tough part seems to be persuading top students to study nuclear power in the first place — and, if they do, to keep them in India.

"We find that all the bright students who go to elite schools, after engineering they do not do science," said R. B. Grover, the director of Homi Bhabha National Institute, a special university set up by the government to train students in the industry.

The few that do are often poached immediately by nuclear programs in the rest of the world. Of the dozen graduates from Delhi University's doctorate nuclear program this year, eight got job offers from European companies, Mr. Grover said.

Homi Bhabha National Institute has 1,100 students enrolled now, mostly from smaller towns and second-tier schools, who hold bachelor degrees in engineering. The Institute provides a one-year training course in nuclear sciences, and then the students do on-the-job training and are certified by the government before they can work in a plant.

Indian nuclear experts say that number needs to jump significantly, or India will need to scale down its nuclear plans.

China Needs Nuclear Power—and Regulations (BSWK)

The Fukushima disaster is not slowing down the Chinese industry, which plans to build 10 reactors a year

By Dexter Roberts

BusinessWeek, April 15, 2011

As the Ninth China International Exhibition on Nuclear Power Industry opened in Shenzhen on Apr. 6, drawing 300 companies from around the globe, the near-meltdown at Japan's Fukushima Dai-Ichi plant was on everyone's mind. "Three Mile Island and Chernobyl shocked the world. But they didn't stop people from continuing to develop the peaceful use of nuclear power," said Zhang Huazhu, chairman of the China Nuclear Energy Assn., at the opening ceremony. "We have grounds to believe that the accident at Fukushima Dai-Ichi does not suggest any end to the nuclear renaissance. It may be a catalyst to continuing the safe development of the industry." Attending were industry leaders Areva and Hitachi, as well as mainland companies that may someday challenge them: China Guangdong Nuclear Power, China National Nuclear Power, and China Power Investment.

China still seems committed to boosting its nuclear power from 10.8 gigawatts, or 2 percent of its energy mix today, to up to 80 gigawatts and 5 percent by 2020. To get there, China has to bring 10 new reactors online every year. The accident in Japan "will not affect China's overall strategy," Zhang Guobao, the former director of China's National Energy Administration, told the audience at the Shenzhen conference.

The challenge is to develop safely. As an industry that China has targeted for heavy investment and fast growth, nuclear reactor construction not only benefits from state subsidies and low-interest loans, it also gets expedited approvals from regulators in Beijing. That has encouraged some local governments to launch projects even before getting all the approvals needed. Building a nuclear reactor creates lots of jobs and adds as much as \$300 million annually to a local economy, estimates Bo Kong, a professor at Johns Hopkins University School of Advanced International Studies in Washington. "There is an inherent conflict between development and safety in China," he says, citing reactor projects in Rushan and Jiujiang as examples of cities that jumped the gun on approvals. While China's nuclear industry has had no serious accidents, Bo, a specialist in energy and resources policy, credits that to its relative youth.

China is taking steps to strengthen oversight. On Mar. 16 the government announced a freeze on approvals for new reactors as regulators carry out an examination of safety procedures. The State Oceanic Administration announced on Apr. 7 that China will limit future building on the coast. China's 13 operating reactors, as well as 28 more under construction, are near the Pacific and could be vulnerable to tsunamis.

The National Nuclear Safety Administration, a department under the Environmental Protection Ministry, will expand its staff of inspectors and other personnel from around 300 today to more than 1,000. By contrast, the US Nuclear Regulatory Commission has nearly 4,000 people overseeing 104 reactors, according to the NRC website. "Nuclear safety is back again as a global concern. We should put it at the core of things," Wang Yiren, secretary general of the mainland's second main regulatory agency, the China Atomic Energy Authority, said in Shenzhen.

Despite more than 20 years of deliberation, China still lacks a comprehensive nuclear industry law. Regulators are far weaker than the powerful National Development and Reform Commission, the body in charge of expanding nuclear energy. At least 10 government organizations have overlapping responsibilities for nuclear safety, according to Bo. Those include the Health Ministry, the Public Security Ministry, and the State-owned Assets Supervision and Administration Commission, which oversees major personnel changes in top enterprises. "If there is an accident, who is in charge?" asks Jeff Briner, PricewaterhouseCoopers's nuclear specialist.

China's three largest nuclear enterprises have joined the World Association of Nuclear Operators, the London-based group charged with improving nuclear performance and safety. And they've opened their doors to inspectors sent by the association to run reviews of China's reactors. "China companies are very, very involved," says Laurent Stricker, chairman of the association.

Stricker, however, says much of what goes on inside the regulators is opaque. Repeated phone calls requesting an interview with the National Nuclear Emergency Coordination Committee were answered with staff telling one reporter, "You have the wrong number" or "We're busy." The media department of the Environmental Protection Ministry—which oversees the nuclear safety administration—answered calls yet could not arrange an interview.

The bottom line: China will have to monitor its safety procedures closely as it builds 10 reactors a year to satisfy its hunger for affordable energy.

China May Approve Building Of Shandong Nuclear Plant, Business News Says (BLOOM)

Bloomberg News, April 15, 2011

China may approve construction of a nuclear plant in the eastern Chinese province of Shandong's Rongcheng city in "near future", the China Business News reported, citing an unidentified person familiar with the situation.

To contact the editor responsible for this story: Bloomberg News at jliu42@bloomberg.net

From: Brenner, Eliot
To: Hayden, Elizabeth; "bhayden52@aol.com"
Subject: FW: AP story you should see
Date: Wednesday, April 20, 2011 8:50:30 PM

From: Brenner, Eliot
Sent: Wednesday, April 20, 2011 8:45 PM
To: Jaczko, Gregory
Subject: AP story you should see

As a heads up, here's the guts of an AP story on Chernobyl with UN chief predicting more nuclear disasters.

KIEV, Ukraine (AP) — The world must prepare for more nuclear accidents on the scale of Chernobyl and Japan's Fukushima Dai-ichi plant, the U.N. chief warned Wednesday, saying that grim reality will demand sharp improvements in international cooperation.

U.N. Secretary-General Ban Ki-moon and others portrayed the growth of nuclear power plants as inevitable in an energy-hungry world as they spoke at a Kiev conference commemorating the explosion of a reactor at Ukraine's Chernobyl nuclear reactor 25 years ago.

"To many, nuclear energy looks to be a relatively clean and logical choice in an era of increasing resource scarcity. Yet the record requires us to ask painful questions: have we correctly calculated its risks and costs? Are we doing all we can to keep the world's people safe?" Ban said. "The unfortunate truth is that we are likely to see more such disasters."

During a brief visit to the explosion site 60 miles (100 kilometers) north of the Ukrainian capital earlier in the day, Ban proposed a strategy for improving nuclear energy security worldwide, including strengthening the International Atomic Energy Agency and devoting more attention to "the new nexus between natural disasters and nuclear safety."

The ongoing crisis at Japan's Fukushima Dai-ichi nuclear power plant was triggered by last month's huge earthquake and the ensuing tsunami that flooded the plant.

"Climate change means more incidents of freak weather," Ban said in Kiev. "Our vulnerability will only grow."

IAEA head Yukiya Amano, who accompanied Ban on the trip to Chernobyl, echoed those sentiments.

"Many countries will continue to find nuclear power an important option in the future, and that is why we have to do our utmost to ensure safety," he said, speaking a few hundred yards (meters) from the exploded reactor, which is now covered by a

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hastily erected sarcophagus.

It goes on to say Ban and others said the Chernobyl and Japan accidents highlighted the need for improved communication between countries about their nuclear programs. And Thorbjorn Jagland, secretary-general of the Council of Europe, drew a political lesson from the crises.

"The more complex technologies become, the more complex societies become, the more important it is to involve civil societies, to have democratic institutions, a free press," he said.

Soviet authorities kept the Chernobyl disaster unreported for several days, and Japanese authorities have been criticized for initially providing insufficient information.

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To: [Hayden, Elizabeth](#)
Subject: Google Alert - Nuclear Regulatory Commission
Date: Friday, April 15, 2011 2:07:30 AM

News

1 new result for **Nuclear Regulatory Commission**

Anti **nuclear** movement gears up

San Francisco Bay Guardian

In the wake of the disaster at Japan's Fukushima nuclear facility, activists around the country are calling on the California Public Utilities Commission and the US **Nuclear Regulatory**

Commission to cease issuing license renewals. ...

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News

1 new result for Nuclear Regulatory Commission

Nuclear Inspectors' May be Limited on US Review, Markey Says

Bloomberg

The US **Nuclear Regulatory Commission** is reviewing how the reactors would cope if struck by a natural disaster. The 90-day review was triggered when Tokyo Electric Power Co.'s Fukushima Dai-ichi plant in Japan was crippled by fires, explosions and ...

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11/11/2014

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To: Barkley, Richard; Bonaccorso, Amy; Cai, June; Croston, Sean; Culp, Lisa; Ellmers, Glenn; Farnholtz, Thomas; Gold, Meg; Goldberg, Francine; Hayden, Elizabeth; Heck, Jared; Jasinski, Robert; Joosten, Sandy; Landau, Mindy; Loyd, Susan; Medina, Veronika; Montes, David; Mroz (Sahm), Sara; Pedersen, Renee; Rakovan, Lance; Rihm, Roger; Ryan, Michelle; Sall, Basia; Salter, Susan; Shane, Raeann; Steger (Tucci), Christine; Virgilio, Rosetta; Woodruff, Gena; Wright, Lisa (Gibney); Robbins, Emily
Subject: April Communications Council Meeting

When: Wednesday, April 20, 2011 10:00 AM-11:00 AM (GMT-05:00) Eastern Time (US & Canada).
Where: O17B4

Note: The GMT offset above does not reflect daylight saving time adjustments.

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Please let me know if you have any agenda topics.

-Lance

11/11/2015

Nuclear News Flashes

Friday, Apr 15, 2011

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- ** Modules storing damaged TMI-2 fuel are cracking, says NRC
- ** US Senate confirms Peter Lyons as head of DOE nuclear office

*** Renewed water intrusion at Fukushima I units delays stabilization efforts

Plans to restore reactor cooling systems at two Fukushima I reactors are being stymied by Tokyo Electric Power Co.'s inability to remove radioactively contaminated water inside tunnels and turbine buildings, company officials said at a media briefing April 15, according to the Japan Atomic Industrial Forum.

About 600 tons of water were transferred April 13 from a tunnel adjacent to unit 2 to a condenser in a turbine building, but the tunnel appeared to re-fill the next day, JAIF said.

Tepco said in an April 15 statement that tests of water in drain pits beneath units 1 and 2 conducted April 13 found that levels of iodine-131 and cesium-134 had increased several-fold from tests done a week earlier.

Tepco officials will continue to evaluate the two units for possible leaks. The utility said it plans to remove around 50,000 tons of contaminated water from damaged units at the plant, storing it in a waste-processing facility, temporary on-site tanks and in floating tanks, JAIF said.

*** Areva reviewing financial guidance for 2011 and 2012

Areva is reviewing the impact of the March 11 Fukushima I nuclear power plant accident on its businesses and will revise its financial guidance for the coming two years, an Areva spokeswoman said April 15.

The ongoing accident at the Japanese plant has "altered the environment" for Areva's businesses and

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rendered its earlier financial forecasts for 2011 and 2012 "irrelevant," the company said in an April 15 statement announcing the launch of an offer to exchange non-voting investment certificates for ordinary shares.

Areva spokeswoman Pauline Briand said the company hopes to be able to give new guidance by the time of the release of its first-half 2011 results, scheduled for July 27.

In a forecast accompanying the March 3 release of its 2010 financial results, Areva said it expected rising revenue in 2011 with an operating margin of greater than 5%. It projected Eur12 billion in revenue and a double-digit profit margin in 2012. Revenue in 2010 was Eur9.1 billion, with an operating loss of Eur423 million.

Briand said Areva is reviewing whether "business might go down or go up and in which business sectors" as a result of the Japanese accident, which is the worst nuclear power plant accident since Chernobyl in 1986.

***** Areva launches offer for exchange of investment certificates**

Areva said April 15 it is launching a "simplified public exchange offer" under which holders of its non-voting certificates of investment can trade them one-for-one for ordinary shares with voting rights.

The exchange offer will begin April 19 and end May 11.

Holders of non-voting Areva preferred shares will also be able to exchange them for ordinary shares, Areva said. The shares, like the certificates, will be traded on NYSE Euronext, the Paris stock exchange.

Areva said that if the investment certificates outstanding at the close of the offer represent at most 1% of Areva's share capital, those certificates will be mandatorily recombined into ordinary shares.

In accordance with Areva bylaws, all non-voting preferred shares would also be converted into ordinary shares at the same time, it said.

The Areva ordinary shares will be listed for trading on Euronext Paris on May 30.

***** Restricting nuclear cooperation will harm US suppliers: NEI**

A bill awaiting a floor vote in the US House of Representatives that would mandate countries seeking civilian nuclear cooperation agreements with the US forgo uranium enrichment and reprocessing activities would, if enacted, persuade these nations to buy power reactors from countries that do not have such restrictions, a nuclear industry official said April 14.

"With the sole exception of [the] United Arab Emirates, US requests that potential trading partners forswear enrichment and reprocessing activities have been publicly rejected as an infringement of their sovereign rights," Alex Flint, the Nuclear Energy Institute's government affairs vice president, said in a statement.

The House Committee on Foreign Affairs that day reported to the full House for a vote H.R. 1280, legislation that would amend section 123 of the Atomic Energy Act, which regulates US nuclear trade, to require the

nonproliferation safeguards in the UAE accord for all subsequent nuclear cooperation agreements.

President Barack Obama's administration has said it would seek to include these provisions in future civilian nuclear trade agreements.

Flint said the bill "will restrict US participation in a \$50 billion annual global market, which will equate to sacrificing thousands of high-paying American jobs."

No date has been set for full House consideration and there is no Senate companion bill.

Edwin Lyman, senior scientist in the Union of Concerned Scientists' Global Security Program, said in an April 15 interview that the US should insist on enrichment and reprocessing prohibitions as conditions of concluding 123 agreements with other nations. "We don't believe as a matter of principle the US needs to adhere to a least common denominator, but it should work to establish high standards and encourage other nations to do the same," Lyman said.

*** Markey challenges NRC's safety inspections

Safety inspections being conducted at US nuclear power plants by the NRC in the wake of the ongoing accident at Fukushima I have "significant limits" and agency inspectors have "been directed to keep many of the most serious vulnerabilities secret," the office of Representative Ed Markey said April 15.

Markey, a Massachusetts Democrat, said in an April 15 letter to NRC Chairman Gregory Jaczko that the agency "is only allowing its inspectors 40 hours" for inspections at single-unit plants, or 50-60 hours at multiple-unit plants. Guidance on the scope of inspections was broadened to include beyond-design-basis events, in response to complaints from "several NRC inspectors," but they were told not to record their beyond-design-basis observations or findings in documents to be made public, he said.

The design basis is a compilation of accidents and reactor states that are required to be taken into consideration in the original design of a power reactor.

Markey asked Jaczko to respond by April 29 to questions that include the possible "vulnerability" of US reactors to 19 accident scenarios.

A Markey aide said April 15 that Markey's staff has been in contact with sources familiar with NRC's inspection processes.

NRC spokesman Scott Burnell said in an e-mail April 15 that the agency "always documents any inspection findings of importance, although reports dealing with security-related information are not made public."

Of the NRC's Fukushima reviews, Burnell said "the overall review effort, including the 90-day examination of potential actions for reactors and spent fuel pools, will include regular public meetings and its results will be publicly available."

*** Modules storing damaged TMI-2 fuel are cracking, says NRC

NRC is concerned about crumbling of concrete casks holding canisters with melted fuel from the Three Mile Island-2 reactor, the agency said in a letter made public April 15.

The DOE facility at the Idaho National Laboratory holds the damaged fuel from Three Mile Island-2 in Pennsylvania. The unit's partial core meltdown in 1979 is the worst accident at a US nuclear power plant. The so-called spent fuel rubble is now in canisters stored in concrete storage modules located at an independent spent fuel storage installation.

The concrete modules are "showing significant cracking and degradation" even though they were built in 1999 to last for 50 years, NRC said in the letter, dated April 7.

DOE has analyzed the structural integrity of the modules, which have two-foot-thick walls, and determined that the problem is getting progressively worse, NRC said.

It is not clear whether DOE has approved or scheduled measures to stabilize the degradation, NRC said. It asked DOE to provide NRC with information about corrective measures, a schedule for their implementation and a plan for monitoring the effectiveness of actions taken.

The degradation of the modules was likely due to "water intrusion and the annual thawing and freezing cycle," NRC said in an inspection report attached to the letter.

The NRC inspectors concluded that the storage facility continues to meet standards, but the degradation of the modules is "a concern that will be tracked in the future," agency spokesman David McIntyre said in an e-mail April 15.

*** US Senate confirms Peter Lyons as head of DOE nuclear office

The US Senate on April 14 confirmed Peter Lyons as assistant secretary in DOE's Office of Nuclear Energy.

Lyons has been acting assistant secretary since Warren "Pete" Miller left the agency in November.

Lyons joined DOE as principal deputy assistant secretary for nuclear energy in September 2009 and helped develop a DOE research and development road map that included support for small modular reactors. He has also often represented the department in briefings to Congress on the ongoing crisis at the Fukushima 1 nuclear power plant in Japan.

Lyons was an NRC commissioner from January 2005 to June 2009. Prior to that, he worked in several leadership positions at DOE's Los Alamos National Laboratory and was science adviser to former Senator Pete Domenici, a New Mexico Republican.

Contact Us:

| To reach Platts |
| E-mail: support@platts.com |

| North America |
| Tel: 800-PLATTS-8 (toll-free) |
| +1-212-904-3070 (direct) |

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| Tel: + 54-11-4804-1890 |

| Europe & Middle East |
| Tel: +44-20-7176-6111 |

| Asia Pacific |
| Tel: +65-6530-6430 |

DISTRICT OFFICES:

5 HIGH STREET, SUITE 101
MEDFORD, MA 02155
(781) 396-2900

188 CONCORD STREET, SUITE 102
FRAMINGHAM, MA 01702
(508) 875-2900

<http://markey.house.gov>

Congress of the United States
House of Representatives
Washington, DC 20515-2107

April 15, 2011

The Honorable Greg Jaczko
Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Chairman Jaczko:

I write to express my concern regarding the post-Fukushima meltdown inspections currently being conducted by Nuclear Regulatory Commission (NRC) personnel at U.S. nuclear power plants. According to reports I have received, the NRC has decided to keep the results of most of these investigations secret, and their scope and depth may be severely constrained. As such, they may not provide the sort of information needed to adequately assess, let alone remedy, the safety of U.S. nuclear facilities.

As you know, on March 23 the Commission voted to require a multi-phase review¹ of U.S. nuclear reactor safety in the wake of the Japanese meltdown. The near-term review portion of these efforts called for the establishment of a task force to:

“Evaluate currently available technical and operational information from the events that have occurred at the Fukushima Daiichi nuclear complex in Japan to identify potential or preliminary near term/immediate operational or regulatory issues affecting domestic operating reactors of all designs, including their spent fuel pools, in areas such as protection against earthquake, tsunami, flooding, hurricanes; station blackout and a degraded ability to restore power; severe accident mitigation; emergency preparedness; and combustible gas control.”

The task force was additionally directed to develop near-term recommendations for regulatory and other changes, and is also required to inform its efforts using stakeholder input. The longer (90 day) review is supposed to include more extensive stakeholder input, and the task force was directed in this phase to “evaluate all technical and policy issues related to the event to identify potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that should be conducted by NRC.” All of the results of these efforts were supposed to be made public.

¹ Tasking Memorandum – COMBJ-11-0002 – NRC Actions Following The Events In Japan

HHHH/207

I have recently learned that the NRC has initiated inspections at operating nuclear power plants for purposes of assessing the operational or regulatory issues that may have arisen as a result of the Fukushima meltdown, and that the results of these inspections, which are intended to inform the 90 day review, must be completed by April 29. I have also learned of the following constraints that have been placed on these inspections:

- The NRC is only allowing its inspectors 40 hours in which to perform each inspection for nuclear power plants that contain one nuclear reactor. For nuclear power plants with more than one unit, inspectors are being provided with only 50-60 hours total in which to complete their work.
- The NRC inspectors were initially told to limit their inspections to the adequacy of safety measures needed to respond to Design Basis Events. This meant that inspectors would be assessing licensees' ability to withstand and respond only to events that have already been contemplated and analyzed by the NRC and for which regulatory requirements have been implemented, but not events such as the ones that occurred in Japan, which were previously believed to be impossible.
- After several NRC inspectors complained that it made no sense to limit the scope of the inspections to Design Basis Events, the guidance was changed to enable inspectors to look beyond them; however, they were explicitly told not to record any of their beyond Design Basis observations or findings in documents that would be made public as part of the Commission's review or public report(s). Instead, these findings would be entered into a private NRC database and kept secret.

These limitations, if true, severely undermines my confidence in the Commission's interests in conducting a full and transparent assessment of the ability of U.S. nuclear power plants to be kept safe in the event of an incident that exceeds the current design basis assumptions regarding earthquakes or electricity outages -- such as the ones that occurred in Japan. This also seems entirely at odds with the Commission-approved direction to study the implications of the Fukushima meltdown on U.S. facilities and report publicly on the findings of the study. This is unacceptable, and must immediately be remedied. We should stand prepared to learn from the catastrophe in Japan and plan ahead to address what was unforeseen but occurred anyway, rather than attempting to hide our vulnerabilities from public view and, potentially, use the fact that the information will be kept secret to avoid taking all necessary regulatory action. In order to better understand what the NRC is doing here, I request that you please respond to the following questions and requests for information:

1. Who at the Commission made the decisions to a) initially direct its inspectors to limit the scope of the inspections to Design Basis Events and b) subsequently direct its inspectors not to record findings or observations of any beyond Design Basis Events in a manner that would result in the public disclosure of any identified vulnerabilities? Please provide me with a copy of all documents (including reports, emails, correspondence, memos, phone or meeting minutes or other materials) related to both the

decisions regarding the scope of the inspections as well as the manner in which inspection findings and observations would be recorded and reported.

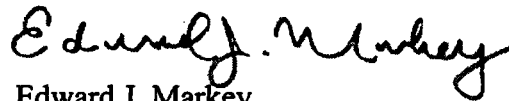
2. Will you immediately reverse the current direction to NRC inspectors to keep all findings and observations of vulnerabilities of U.S. reactors to beyond Design Basis events secret and excluded from all public reports on the Commission's Fukushima review? If not, why not?
3. The NRC review is supposed to evaluate the currently available information from the events that occurred in Japan to identify changes that might be needed at U.S. nuclear power plants of all designs. For each of the following events that are known to have occurred in Japan, please indicate a) whether the event in question is considered to be a "design-basis event" by the NRC, b) whether NRC inspectors will be required to evaluate whether the U.S. nuclear power plants they are inspecting are capable of preventing or mitigating such an event, c) if not, why not, since the Commission clearly stated that all such events were supposed to be analyzed, d) if not, how regulatory or other recommendations will be developed that ensure that U.S. nuclear power plants are capable of preventing or mitigating such an event, e) whether the findings and observations associated with the inspections designed to evaluate U.S. ability to prevent or mitigate such an event will be made public as part of the NRC's 30, 60 and 90 day reports (and if not, why not), and f) whether the NRC intends to address U.S. vulnerability to the event at all through regulatory or other requirements.
 - i) An earthquake that is more severe than the one the nuclear power plant was designed to withstand.
 - ii) For coastally-located nuclear power plants, a tsunami that is more severe than the one the nuclear power plant was designed to withstand.
 - iii) A loss of operating power that is longer than current regulations are required to address.
 - iv) A total station blackout (i.e. loss of operating power and failure of emergency diesel generators) that is longer than current regulations are required to address.
 - v) A hydrogen explosion that occurs due to the buildup of hydrogen in the core or other areas of a nuclear reactor due to the failure of mitigation technologies such as hardened vents or hydrogen re-combiners, and the causes of such failures.
 - vi) A hydrogen explosion that occurs due to the buildup of hydrogen in the spent fuel storage area of a nuclear reactor due to the absence of mitigation technologies such as hardened vents or hydrogen re-combiners.

- vii) A breach in the containment vessel of a nuclear reactor core caused by a hydrogen explosion.
 - viii) A breach in the structure of a spent nuclear fuel storage area due to an earthquake or hydrogen explosion.
 - ix) The failure of the recirculation pump seals within the reactor pressure vessel which may prevent cooling water from fully filling the pressure vessel and thus covering and cooling the nuclear fuel rods contained therein.
 - x) The failure of one or more safety relief valves within the primary containment area that could enable the transfer of radioactive core material between the drywell and the torus.
 - xi) The potential melting of core material through the pressure vessel and into the drywell or torus of the nuclear reactor.
 - xii) The failure of the isolation condenser and/or reactor core isolation cooling systems and subsequent inability to provide cooling function to the nuclear reactor cores.
 - xiii) The failure of the primary containment vessel spray cooling and core spray systems.
 - xiv) The failure of systems used to cool spent nuclear fuel storage areas, including areas that contain varying amounts of spent nuclear fuel of varying ages.
 - xv) The failure of diagnostic equipment to accurately monitor temperature, water levels, hydrogen/oxygen concentrations, pressures and radiation onsite, both during a total station blackout and after basic electricity function is restored (such as if the devices have been damaged by water, radiation or other events).
 - xvi) The absence of a source of fresh cooling water with which to cool the reactor core and spent nuclear fuel storage areas.
 - xvii) The absence of a means by which to store large quantities of highly radioactive water that has leaked or spilled after being used to cool the core and spent nuclear fuel storage areas.
 - xviii) Repeated earthquake aftershocks that further threaten the integrity of the already-compromised reactor core, spent nuclear fuel storage areas, and emergency operations.
 - xix) The ability to manually repair or restore function associated with any of the above failures or events when faced with extremely high levels of radiation that may threaten the health and safety of those both on and offsite.
4. The Commission directed its staff to obtain external stakeholder input as part of both its near-term and longer-term work. Please fully describe all plans to solicit such input. Specifically, will any licensee or other nuclear industry personnel be accompanying inspectors during these inspections at nuclear power plants? If so, will NRC also ensure that appropriate non-industry individuals that possess the appropriate expertise and security clearances are also provided such an opportunity?

5. Why have inspectors only been provided with 40 hours (or 50-60, in the case of a multi-unit nuclear power plant) with which to complete their work? Why does the Commission have confidence that the necessary knowledge with which to inform our own safety efforts can be obtained in such a short period of time?

Thank you very much for your attention to this important matter. Please provide your response no later than Friday April 29, 2011. If you have any questions or concerns, please have your staff contact Dr. Michal Freedhoff of my staff at 202-225-2836.

Sincerely,


Edward J. Markey

From: Google Alerts
To: Hayden, Elizabeth
Subject: Google Alert - Nuclear Regulatory Commission
Date: Friday, April 15, 2011 9:40:56 AM

News

2 new results for Nuclear Regulatory Commission

Hold off on new **nuclear** plants, NC **regulatory** staff says

Charlotte Business Journal

Robert Gruber, executive director of the Public Staff of the NC Utilities Commission, says new design regulations and safety requirements are likely to be imposed by the US **Nuclear Regulatory Commission** once officials determine what happened at the ...

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Japan's **Nuclear** Crisis Prompts Petition for US Inquiry, Licensing Suspension

Environment News Service

WASHINGTON, DC, April 14, 2011 (ENS) - In view of the month-long and ongoing nuclear crisis at Japan's Fukushima Daiichi nuclear power plant, 45 groups and individuals from across the nation today formally asked the US **Nuclear Regulatory Commission** to ...

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[Inside This Issue:]

** Renewed water intrusion at Fukushima I units delays stabilization efforts

** Areva reviewing financial guidance for 2011 and 2012

** Areva launches offer for exchange of investment certificates

** Restricting nuclear cooperation will harm US suppliers: NEI

** Markey challenges NRC's safety inspections

** Modules storing damaged TMI-2 fuel are cracking, says NRC

** US Senate confirms Peter Lyons as head of DOE nuclear office

*** Renewed water intrusion at Fukushima I units delays stabilization efforts

11111/209

Plans to restore reactor cooling systems at two Fukushima I reactors are being stymied by Tokyo Electric Power Co.'s inability to remove radioactively contaminated water inside tunnels and turbine buildings, company officials said at a media briefing April 15, according to the Japan Atomic Industrial Forum.

About 600 tons of water were transferred April 13 from a tunnel adjacent to unit 2 to a condenser in a turbine building, but the tunnel appeared to re-fill the next day, JAIF said.

Tepco said in an April 15 statement that tests of water in drain pits beneath units 1 and 2 conducted April 13 found that levels of iodine-131 and cesium-134 had increased several-fold from tests done a week earlier.

Tepco officials will continue to evaluate the two units for possible leaks. The utility said it plans to remove around 50,000 tons of contaminated water from damaged units at the plant, storing it in a waste-processing facility, temporary on-site tanks and in floating tanks, JAIF said.

*** Areva reviewing financial guidance for 2011 and 2012

Areva is reviewing the impact of the March 11 Fukushima I nuclear power plant accident on its businesses and will revise its financial guidance for the coming two years, an Areva spokeswoman said April 15.

The ongoing accident at the Japanese plant has "altered the environment" for Areva's businesses and rendered its earlier financial forecasts for 2011 and 2012 "irrelevant," the company said in an April 15 statement announcing the launch of an offer to exchange non-voting investment certificates for ordinary shares.

Areva spokeswoman Pauline Briand said the company hopes to be able to give new guidance by the time of the release of its first-half 2011 results, scheduled for July 27.

In a forecast accompanying the March 3 release of its 2010 financial results, Areva said it expected rising revenue in 2011 with an operating margin of greater than 5%. It projected Eur12 billion in revenue and a double-digit profit margin in 2012. Revenue in 2010 was Eur9.1 billion, with an operating loss of Eur423 million.

Briand said Areva is reviewing whether "business might go down or go up and in which business sectors" as a result of the Japanese accident, which is the worst nuclear power plant accident since Chernobyl in 1986.

*** Areva launches offer for exchange of investment certificates

Areva said April 15 it is launching a "simplified public exchange offer" under which holders of its non-voting certificates of investment can trade them one-for-one for ordinary shares with voting rights.

The exchange offer will begin April 19 and end May 11.

Holders of non-voting Areva preferred shares will also be able to exchange them for ordinary shares, Areva said. The shares, like the certificates, will be traded on NYSE Euronext, the Paris stock exchange.

Areva said that if the investment certificates outstanding at the close of the offer represent at most 1% of Areva's share capital, those certificates will be mandatorily recombined into ordinary shares.

In accordance with Areva bylaws, all non-voting preferred shares would also be converted into ordinary shares at the same time, it said.

The Areva ordinary shares will be listed for trading on Euronext Paris on May 30.

*** Restricting nuclear cooperation will harm US suppliers: NEI

A bill awaiting a floor vote in the US House of Representatives that would mandate countries seeking civilian nuclear cooperation agreements with the US forgo uranium enrichment and reprocessing activities would, if enacted, persuade these nations to buy power reactors from countries that do not have such restrictions, a nuclear industry official said April 14.

"With the sole exception of [the] United Arab Emirates, US requests that potential trading partners foreswear enrichment and reprocessing activities have been publicly rejected as an infringement of their sovereign rights," Alex Flint, the Nuclear Energy Institute's government affairs vice president, said in a statement.

The House Committee on Foreign Affairs that day reported to the full House for a vote H.R. 1280, legislation that would amend section 123 of the Atomic Energy Act, which regulates US nuclear trade, to require the nonproliferation safeguards in the UAE accord for all subsequent nuclear cooperation agreements.

President Barack Obama's administration has said it would seek to include these provisions in future civilian nuclear trade agreements.

Flint said the bill "will restrict US participation in a \$50 billion annual global market, which will equate to sacrificing thousands of high-paying American jobs."

No date has been set for full House consideration and there is no Senate companion bill.

Edwin Lyman, senior scientist in the Union of Concerned Scientists' Global Security Program, said in an April 15 interview that the US should insist on enrichment and reprocessing prohibitions as conditions of concluding 123 agreements with other nations. "We don't believe as a matter of principle the US needs to adhere to a least common denominator, but it should work to establish high standards and encourage other nations to do the same," Lyman said.

*** Markey challenges NRC's safety inspections

Safety inspections being conducted at US nuclear power plants by the NRC in the wake of the ongoing

accident at Fukushima I have "significant limits" and agency inspectors have "been directed to keep many of the most serious vulnerabilities secret," the office of Representative Ed Markey said April 15.

Markey, a Massachusetts Democrat, said in an April 15 letter to NRC Chairman Gregory Jaczko that the agency "is only allowing its inspectors 40 hours" for inspections at single-unit plants, or 50-60 hours at multiple-unit plants. Guidance on the scope of inspections was broadened to include beyond-design-basis events, in response to complaints from "several NRC inspectors," but they were told not to record their beyond-design-basis observations or findings in documents to be made public, he said.

The design basis is a compilation of accidents and reactor states that are required to be taken into consideration in the original design of a power reactor.

Markey asked Jaczko to respond by April 29 to questions that include the possible "vulnerability" of US reactors to 19 accident scenarios.

A Markey aide said April 15 that Markey's staff has been in contact with sources familiar with NRC's inspection processes.

NRC spokesman Scott Burnell said in an e-mail April 15 that the agency "always documents any inspection findings of importance, although reports dealing with security-related information are not made public."

Of the NRC's Fukushima reviews, Burnell said "the overall review effort, including the 90-day examination of potential actions for reactors and spent fuel pools, will include regular public meetings and its results will be publicly available."

*** Modules storing damaged TMI-2 fuel are cracking, says NRC

NRC is concerned about crumbling of concrete casks holding canisters with melted fuel from the Three Mile Island-2 reactor, the agency said in a letter made public April 15.

The DOE facility at the Idaho National Laboratory holds the damaged fuel from Three Mile Island-2 in Pennsylvania. The unit's partial core meltdown in 1979 is the worst accident at a US nuclear power plant. The so-called spent fuel rubble is now in canisters stored in concrete storage modules located at an independent spent fuel storage installation.

The concrete modules are "showing significant cracking and degradation" even though they were built in 1999 to last for 50 years, NRC said in the letter, dated April 7.

DOE has analyzed the structural integrity of the modules, which have two-foot-thick walls, and determined that the problem is getting progressively worse, NRC said.

It is not clear whether DOE has approved or scheduled measures to stabilize the degradation, NRC said. It asked DOE to provide NRC with information about corrective measures, a schedule for their implementation and a plan for monitoring the effectiveness of actions taken.

The degradation of the modules was likely due to "water intrusion and the annual thawing and freezing cycle," NRC said in an inspection report attached to the letter.

The NRC inspectors concluded that the storage facility continues to meet standards, but the degradation of the modules is "a concern that will be tracked in the future," agency spokesman David McIntyre said in an e-mail April 15.

*** US Senate confirms Peter Lyons as head of DOE nuclear office

The US Senate on April 14 confirmed Peter Lyons as assistant secretary in DOE's Office of Nuclear Energy.

Lyons has been acting assistant secretary since Warren "Pete" Miller left the agency in November.

Lyons joined DOE as principal deputy assistant secretary for nuclear energy in September 2009 and helped develop a DOE research and development road map that included support for small modular reactors. He has also often represented the department in briefings to Congress on the ongoing crisis at the Fukushima 1 nuclear power plant in Japan.

Lyons was an NRC commissioner from January 2005 to June 2009. Prior to that, he worked in several leadership positions at DOE's Los Alamos National Laboratory and was science adviser to former Senator Pete Domenici, a New Mexico Republican.

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April 18, 2011 Headlines

DOE Rejects Firm Radiation Release Limit For Its Sites

Despite heightened safety concerns about earthquake impacts on nuclear facilities—and new questions about its seismic analyses—the Energy Department has rejected a recommendation by a federal safety oversight board that the department establish clear requirements for its site operating contractors to prevent potential offsite radiation doses from worst-case accidents from exceeding 25 rems, the level now set by a non-binding DOE guideline. The decision by Energy Secretary Steven Chu to reject the recommendation by the Defense Nuclear Facilities Safety Board (DNFSB) represents the first time DOE has refused to accept formal safety guidance provided by the DNFSB since the board was established by Congress in 1998 to provide independent oversight of DOE's self-regulated nuclear operations to "ensure adequate protection of public health and safety." Chu's decision also is notable in that it follows the earthquake-triggered accident at Japan's Fukushima Daiichi nuclear power...

Southern Exec Seeks Two-Year Extension On Utility Toxics Rule

In the first public indication of what the utility industry may be seeking in GOP legislation to delay implementation of Environmental Protection Agency rules to limit utility hazardous air pollution, Southern Co.'s chief executive told a House subcommittee Friday utilities likely would need at least an additional two years beyond the four-year maximum deadline mandated by the Clean Air Act for meeting proposed new federal standards on mercury and other toxic emissions from power plants. At a hearing held by the House Energy and Power Subcommittee, Southern Chairman, President and Chief Executive Officer Thomas Fanning told lawmakers that the mandatory compliance time frame established in the Clean Air Act—compliance in three years with a possible one-year extension—is insufficient given the complexity of EPA's March 15 proposal to sharply restrict utility emissions of mercury and other hazardous air pollution (HAP). Fanning said "to account for an orderly way to run your system

Senate Panel Floats Bipartisan Draft Bill On Grid Cyber-Security

Leaders of the Senate Energy and Natural Resources Committee Friday floated a bipartisan staff draft proposal that would direct the Federal Energy Regulatory Commission to determine whether current electricity reliability rules are adequate to protect the U.S. grid from cyber-security threats and to order

11/11/210

new rules if they are not. Further, the staff draft empowers FERC to impose an interim cyber-security rule if the nation's grid reliability watchdog—the North American Electric Reliability Corp...

Edison International CEO To Chair EPRI

The Electric Power Research Institute board of directors announced Thursday it has elected Theodore Craver, the chairman, president and chief executive officer of Edison International, as board chairman...

Greenhouse Gas Case Blurs Separation Of Powers

COMMENTARY Volatile issues of global climate change, energy-sector jobs, judicial activism and the roles of federal government branches will collide April 19. That's when the United States Supreme Court hears arguments in a case with a potential to affect indirectly all Americans who use electricity. The case is American Electric Power Co. Inc. v. Connecticut. At issue is whether states and private plaintiffs can sue utility companies for producing greenhouse gases that contribute to global climate change. The state I represent in court, Indiana, is not a party in this lawsuit. Nonetheless, as Indiana's attorney general, my duty is to alert the Supreme Court to Indiana's legal concerns. To raise our arguments, we authored a 28-page amicus brief that 22 other states signed and filed it with the nation's highest court. The facts of the AEP v. Connecticut case and its procedural history are complicated and the underlying science is technical. But at its core is a concept that dates to the...

BLM May Cut Acreage For Oil Shale, Tar Sands Leasing

The Interior Department's Bureau of Land Management, moving forward on a new environmental review of its oil shale and tar sands leasing program, last week indicated it may reduce the amount of acreage available to industry as it reviews lands' wilderness characteristics and suitability as habitat for the threatened sage grouse. In a notice of intent issued Thursday on its programmatic environmental impact study, BLM noted that commercial U.S. oil shale and tar sands development is years away due to...

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Subject: EDO Update
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EDO Update



Friday, April 15, 2011



I imagine that you will be as pleased to receive some good news through an EDO Update as I am to deliver it: yesterday, Congress passed the Fiscal Year 2011 budget. The President is expected to sign the budget today. This is an especially positive development for the NRC because we will be receiving our full budget request—allowing us to carry on with the activities that we had planned for this fiscal year. Many other agencies received significant reductions in their funding, so this outcome reflects positively on the agency and the high regard for the work that you do and your performance in accomplishing our mission. We are subject to a small across-the-board cut, but we do not expect this to have a significant effect on our daily work.

Because this budget is effective through September 30 (the end of the Fiscal Year), I am also happy to report that I won't be writing to you any more about potential furloughs.

I realize that between the budget uncertainties and the increased agency-wide demands on your time and attention brought on by events in Japan, this has been a trying time. On behalf of the entire leadership of the NRC I want to thank you for your patience and continued dedication to the mission.

As a final note, let me mention that we will be having a special guest at NRC headquarters on Monday. Senator Barbara Mikulski will be visiting the White Flint complex to meet with the Chairman, tour the Operations Center, receive a briefing from some of the staff who have served in Japan, and learn more about the agency's response to the events at Fukushima. If you encounter the Senator in the hallways, please make her feel welcome.



Bill Borchardt, EDO

HHH/211

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News

1 new result for **Nuclear Regulatory Commission**

Two **nuclear** power plants within 50 miles of RI

Providence Journal

Harold Denton, a retired official at the US **Nuclear Regulatory Commission** who led the response to the partial meltdown at Pennsylvania's Three Mile Island in 1979, said the disaster in Japan demonstrates that nuclear plants must have plenty of back-up ...

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More than 100 people protest Diablo Canyon Nuclear Power Plant

KSBY San Luis Obispo News

A local activist group hit the beach Saturday, demanding the **Nuclear Regulatory Commission** suspend the licensing operations for all 104 nuclear power plants in the US until it has better studied the Fukushima crisis. The group Mothers for Peace hosted ...

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Prairie Island makes improvements

Republican Eagle

Prairie Island nuclear plant is operating safely and has made improvements, though there are still some areas of concern, US **Nuclear Regulatory Commission** officials said Thursday. Prairie Island nuclear plant is operating safely and has made ...

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New York City's Deadly Game of **Nuclear** Roulette

Forbes (blog)



A month before the 9.0 magnitude earthquake in Japan triggered the crisis at the Fukushima nuclear power reactors, New York Attorney General Eric Schneiderman sued the federal **Nuclear Regulatory Commission (NRC)** for approving a regulation that would ...

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"Post-Fukushima" **Nuclear** Report Due on Chernobyl Anniversary

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The Fukushima Daiichi nuclear plant in Japan suffered a partial meltdown following a March 11, 2011 earthquake and tsunami. Radiation build-up around the plant prompted the US **Nuclear Regulatory Commission (NRC)** to warn all Americans within 50 miles of ...

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1 new result for **Nuclear Regulatory Commission**

Ed Markey blasts **nuclear** watchdog

Boston Herald

Edward Markey, D-Mass., is questioning the response of the **Nuclear Regulatory Commission** to the ongoing nuclear crisis in Japan, including claims that the agency is keeping important information about potential safety issues secret. ...

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If time permits Monday, I have some thoughts re costs. Problem is I am not sure where our costs should be logged, other than the FTEs beign assessed against the commission or chairman.

From: Virgilio, Martin

Sent: Saturday, April 16, 2011 4:21 PM

To: Borchardt, Bill; Weber, Michael; Ash, Darren; Muessele, Mary; Andersen, James; Landau, Mindy; Leeds, Eric; Boger, Bruce; Ruland, William; Sheron, Brian; Uhle, Jennifer; Wiggins, Jim; Evans, Michele; Holahan, Patricia; Johnson, Michael; Zimmerman, Roy; Moore, Scott; Haney, Catherine; Casto, Chuck; Reynolds, Steven; Burns, Stephen; Dean, Bill; McCree, Victor; Satorius, Mark; Collins, Elmo; Coggins, Angela; Dyer, Jim; Golder, Jennifer; Givvines, Mary; Monninger, John; Boyce, Thomas (OIS); Stewart, Sharon; Doane, Margaret; Mamish, Nader; OST01 HOC; McDermott, Brian; Merzke, Daniel; Miller, Charles; Sanfilippo, Nathan; Cubbage, Amy; Brenner, Eliot; Schmidt, Rebecca; Batkin, Joshua; Powell, Amy

Subject: Estimating Fukushima Costs

All

As a follow up to the March 31st hearing we have been asked by OCFO to estimate the costs going forward associated with our response to the events in Japan

As a first step we need to agree on the assumptions around the work. I have taken a shot at a set of assumptions and would value your comments. Once we agree on the assumptions we can assign resource estimates.

Please make a conscience decision that you are likely starting a conversation if you elect to respond to all.

Marty

-
-
-

Assumptions

-

Site Team remains at full strength until the following conditions are met (assume until June 1st)

- Site conditions are stable
- reliable diverse makeup with independent power
- flooded containment

Prompt reduction in size of Site Team when stability is achieved and releases are minimal (assume June 1st)

- downsize to 3 NRC personnel in Japan
- Experts travel to Japan as needed to support site team (assume 2 per week - June through August)

Site team transition from 3 to 1 SLS Attaché (assume September 1st)

- Attaché remains in Japan throughout 2012

11/11/11/2/17

Ops center manned 24/7 at current level until site team is reduced (assume June 1st)

HQ Line organization support continues at current levels until site team is reduced (assume June 1st)

Task Force Continues until it completes its 90 day assessment and transitions work to line (assume August 1st)

HQ Line organization develops regulatory products to support implementation of the Task Force recommendations (assume work starts in 2011 and continues through 2012)

- Assume multiple orders are developed and issued to reactors and fuel cycle facilities
- Assume work begins and continues through 2011 on 6 rules -- external events, SBO, severe accident measures, B5b, spent fuel storage and emergency preparedness.

Regions inspect implementation of orders (assume 1 inspection per facility in 2012)

HQ Line organization and OIP support domestic and international meetings/conferences (Starts April 2011 and continues throughout 2012 at the rate of 2/month).

HQ Line organization, OPA and OCA support special congressional interactions (Starts April 2011 and continues throughout 2012 at the rate of 1/week)

HQ Line organizations and OPA support special interactions with States, local officials and members of the public ((Starts April 2011 and continues throughout 2012 at the rate of 1/week)

Corporate and overhead costs will be incurred in scheduling and hosting meetings, arranging travel, responding to FOIA requests and more.

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News

2 new results for **Nuclear Regulatory Commission**

[Progress Energy emerges as one of most troubled **nuclear** plant operators in US](#)
Winston-Salem Journal

The **Nuclear Regulatory Commission** is widely expected to impose stricter safety standards in the wake of the Japanese crisis. The changes would make nuclear plants more costly to operate in this country. Progress executives acknowledge they are facing ...

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[Japan crisis raises doubts about **nuclear** fuels plant at SRS](#)

Greenville News

Environmental groups opposed to the MOX factory at SRS likely will use the accident to request more studies from the US **Nuclear Regulatory Commission**, which must license the plant and the use of the fuel, an official with one of the groups said. ...

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Plan Set for Crippled Japanese **Nuclear** Plant

New York Times

Experts from the United States **Nuclear Regulatory Commission** have been in Japan advising Tokyo Electric and the government. In the days after the crisis began, the **NRC** said that radiation levels at the Daiichi plant were higher than those reported by ...

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News

1 new result for **Nuclear Regulatory Commission**

Nuclear disaster: Who's at risk in York County the day after an event?

York Daily Record

York, PA - Despite the crisis that has unfolded at the Fukushima Dai-ichi Nuclear Power Station in Japan, the US **Nuclear Regulatory Commission** will continue to mandate that the emergency planning zone around a plant will hold to 10 miles, said Darrell ...

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April 19, 2011 Headlines

Entergy Asks U.S. Court To Keep Vermont Nuke Plant Running

Dramatically escalating a fight with Vermont officials over the fate of the Vermont Yankee nuclear plant, Entergy Corp. asked a federal court Monday to block state officials' from closing the 650-megawatt unit next March on the grounds that the state's shutdown efforts encroach on federal jurisdiction over commercial nuclear plants and wholesale power markets in the region. In a lawsuit filed with the U.S. District Court for the District of Vermont, Entergy also for the first time offered an explanation for why it should not be held to a 2002 agreement, signed in conjunction with buying the plant, to abide by a Vermont Public Service Board (PSB) decision on whether to let Vermont Yankee run past March 2012. Entergy said it was no longer bound by that deal because Vermont violated it in 2006, by passing a law effectively taking the decision from the PSB and giving it instead to state lawmakers. The 2006 law bars the PSB from re-certifying Vermont Yankee without approval from Vermont's...

House Democrats Raise Heat On 'Fracking' Fluids

Amid a renewed push by some congressional Democrats to increase regulation of shale gas development, Democrats on the House Energy and Commerce Committee Saturday released a new report showing that 14 oil and gas services firms between 2005 and 2009 used massive amounts of drilling fluids containing 29 chemicals including possible or known human carcinogens or hazardous pollutants. The report, which stems from a committee probe launched during the last Congress into the practice of hydraulic fracturing in the United States, summarizes data provided to the committee by Halliburton Co., BJ Services Co. and other drilling services companies showing they injected more than 2,500 "fracking" products containing 750 substances underground to fracture rock formations and more easily extract natural gas. The Democrats' report says most of the components used by the companies, such as salt and citric acid, are largely benign and pose no threat to human health or the environment. However, the report..

Report Sees Big Benefits From Growing Texas CHP

In eye-opening findings, a new report by an Energy Department regional agency concludes that boosting combined heat and power generation's share of total Texas electricity generation from the current 20 percent to 35 percent by 2025 would yield substantial reductions in carbon dioxide and sulfur dioxide emissions while lifting natural gas consumption by 533 billion cubic feet per year, boosting gas producer revenues by \$2.3 billion at current gas prices.

HHHHH/221

While Texas boasts the largest amount of wind capacity in the nation, the report by DOE's Gulf Coast Clean Energy Application Center (GCCEAC)—released March 31—notes that the roughly 80 million kilowatt-hours (kwh) produced by combined heat and power (CHP) systems in the states is four times the amount of Texas electricity produced by wind power. Texas currently has 125 CHP plants in operation, with most located at industrial facilities with significant heating needs, such as chemical plants and oil refineries. A number of the state's...

NY AG Threatens To Sue Feds Over 'Fracking'

Saying the federally chartered panel has been too lax on the hot-button issue, New York Attorney General Eric Schneiderman Monday pledged to sue the Obama administration unless it agreed to commit within 30 days to conduct a full environmental review of rules proposed by the Delaware River Basin Commission that would allow for natural gas drilling in the drainage basin of the Delaware River and...

U.S. Greenhouse Gas Emissions Fell 6.1 Percent In 2009—EPA

Total U.S. greenhouse gas emissions in 2009 fell by 6.1 percent compared to 2008, the Environmental Protection Agency announced Monday in the 16th annual U.S. greenhouse gas inventory. EPA said...

Duke Plans 36 MW Battery Storage System For Texas Wind Farm

In what the utility is touting as one of the world's largest battery-powered electricity storage systems, Duke Energy announced Thursday week it will store electricity produced at its 153 megawatt Notrees Windpower Project in west Texas using an energy storage and power management system developed by Austin, Texas-based Xtreme Power. Duke in November announced plans to match a \$22 million...

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Southern Exec Seeks Two-Year Extension On Utility Toxics Rule

BY CHRIS HOLLY

In the first public indication of what the utility industry may be seeking in GOP legislation to delay implementation of Environmental Protection Agency rules to limit utility hazardous air pollution, Southern Co.'s chief executive told a House subcommittee Friday utilities likely would need at least an additional two years beyond the four-year maximum deadline mandated by the Clean Air Act for meeting proposed new federal standards on mercury and other toxic emissions from power plants.

At a hearing held by the House Energy and Power Subcommittee, Southern Chairman, President and Chief Executive Officer Thomas Fanning told lawmakers that the mandatory compliance time frame established in the Clean Air Act—compliance in three years with a possible one-year extension—is insufficient given the complexity of EPA's March 15 proposal to sharply restrict utility emissions of mercury and other hazardous air pollution (HAP).

(Continued on p. 2)

DOE Rejects Firm Radiation Release Limit For Its Sites

BY GEORGE LOBSENZ

Despite heightened safety concerns about earthquake impacts on nuclear facilities—and new questions about its seismic analyses—the Energy Department has rejected a recommendation by a federal safety oversight board that the department establish clear requirements for its site operating contractors to prevent potential offsite radiation doses from worst-case accidents from exceeding 25 rems, the level now set by a non-binding DOE guideline.

The decision by Energy Secretary Steven Chu to reject the recommendation by the Defense Nuclear Facilities Safety Board (DNFSB) represents the first time DOE has refused to accept formal safety guidance provided by the DNFSB since the board was established by Congress in 1998 to provide independent oversight of DOE's self-regulated nuclear operations to "ensure adequate protection of public health and safety."

Chu's decision also is notable in that it follows the earthquake-triggered accident at Japan's Fukushima Daiichi nuclear power

(Continued on p. 3)

Senate Panel Floats Bipartisan Draft Bill On Grid Cyber-Security

Leaders of the Senate Energy and Natural Resources Committee Friday floated a bipartisan staff draft proposal that would direct the Federal Energy Regulatory Commission to determine whether current electricity reliability rules are adequate to protect the U.S. grid from cyber-security threats and to order new rules if they are not.

Further, the staff draft empowers FERC to impose an interim cyber-security rule if the nation's grid reliability watchdog—the North American Electric Reliability Corp. (NERC)—does not take timely action to address any cyber-security vulnerabilities.

Under the draft bill, FERC could impose its interim rule on an emergency basis, if necessary, and such a rule could remain in place until NERC submitted rule changes deemed effective by FERC in addressing cyber-security threats.

The staff draft would give similar emergency powers to the secretary of the Energy Department to protect "critical electric infrastructure" from a cyber-security threat. Any such secretarial order could remain in effect for up to 90 days unless the secretary allows public comment on his action and affirms or amends his order.

FERC would be responsible for establishing cost recovery mechanisms en-

abling utilities to recover any prudently incurred costs required to implement the secretary's order.

Senate Energy and Natural Resources Committee Chairman Jeff Bingaman (D-N.M.) and Sen. Lisa Murkowski (Alaska), ranking Republican on the committee, said the staff draft was being issued as "the basis for discussion" among lawmakers and interested groups in advance of a planned May hearing by the committee on the issue.

The staff draft is the latest indication of congressional impatience with NERC on the issue of cyber-security, with some lawmakers concerned that the nation's designated reliability watchdog has not taken adequate action to protect the grid from computer-based attacks or other intrusions by hackers.

HHH/222

Edison International CEO To Chair EPRI

The Electric Power Research Institute board of directors announced Thursday it has elected Theodore Craver, the chairman, president and chief executive officer of Edison International, as board chairman.

EPRI President and CEO Michael

Howard said Craver's "strong belief that technology can best address the challenges faced by the industry make him ideally suited to lead our board."

Craver became chairman and CEO of Edison International in 2008, and from 2005 to 2008 served as chairman

and CEO of Edison Mission Group, the company's merchant generation subsidiary. Edison's other main unit is Southern California Edison.

Industry-funded EPRI conducts research and development relating to the generation, delivery and use of electricity.

Southern Exec Seeks Extension On Toxics Rule... (Continued from p. 1)

Fanning said "to account for an orderly way to run your system ... and to ensure you have reasonable participation by vendors and required craft workers to undertake this billions-of-dollars investment, you would need a 6-year time frame" for compliance with a maximum achievable control technology (MACT) standard for HAP emissions such as EPA has proposed.

Fanning's comments came one day after subcommittee Chairman Ed Whitfield (R-W. Va.) said that he and other Republicans will introduce legislation in early May to delay implementation of the HAP rules.

While Whitfield made no mention of the proposed legislation Friday, he said that he would invite a senior EPA official to testify about the regulations in May.

A Whitfield aide told *The Energy Daily* Friday that "[d]etails of the draft bill...are still in discussion and have yet to be finalized. The timeline for formal introduction will depend on the final text of the legislation and has not been set in stone."

At the hearing, Fanning and DTE Energy Executive Chairman Anthony Early told lawmakers that the HAP rule would be impossible to achieve in a four-year compliance timeframe, would lead to far more retirements of coal plants than EPA has projected and could lead to sharp increases in power prices that would cripple the nation's economic recovery.

EPA's HAP rule would require coal- and oil-fired power plants either to install expensive controls to capture emissions of mercury and other HAPs or shut down. EPA has acknowledged that about 10 gigawatts (GW) of U.S. coal-fired generation capacity—overwhelmingly older, smaller units for which the installation of controls would be uneconomic—would be retired from operation if the rule is finalized.

Early, however, said he believed that as much as 75 GW of capacity could face retirement due to the rule, while Fanning said as much as 85 GW would be forced to retire. Wall Street research firms have pegged the amount of likely retirements at between 50 and 56 GW.

Fanning said the complexity of the HAP rule, and the technological challenge it poses to industry, make the three- to four-year compliance deadline unrealistic.

"While facilities in other MACT industrial categories have been required to install control devices in previous EPA rulemakings, these rulemaking did not require the installation of two or more large-scale control devices at potentially hundreds of facili-

ties, each with an installation time measured in years, and costing hundreds of millions of dollars," Fanning said. "Moreover, we have to remember that these facilities are part of an interconnected grid where work at one plant can affect energy supplies across an entire region."

Fanning added that the rule could hike electricity rates by as much 25 percent in the Southeast. EPA has said the rule would cost industry nearly \$11 billion in annual costs by 2016, while producing health benefits of \$59 billion to \$140 billion, measured in 2007 dollars. Other witnesses noted that utilities will be able to depreciate the costs of the required controls, thus the costs would not fall on ratepayers in a single year but rather be imposed over decades.

Michael Bradley, executive director of the Clean Energy Group, a coalition of nine low-emitting utilities, downplayed Fanning's and Early's concerns, saying the proposed standards "are not as burdensome as some in the electric sector had anticipated" and that most utilities would be able to comply with the MACT standard in the three or four years authorized by the Clean Air Act.

Bradley noted that roughly half of the coal-fired plants that have submitted data to EPA already are achieving the mercury standard, while about 70 percent already are achieving a particulate matter standard that EPA is proposing to use as a surrogate indicator for non-mercury metals.

Further, Bradley said many power companies already have installed major components of the pollution control systems needed to comply with the proposed standards. Some 60 percent of the nation's coal-fired generation capacity already has installed sulfur dioxide scrubbers, and more than 70 percent of the nation's largest coal plants has scrubbers installed, he said.

Bradley added that EPA has proposed to allow emissions "averaging" among generation units at a power plant, which would allow companies to "over-control" emissions at some units—while delaying full compliance at other units—at a power plant. Roughly 20 percent of U.S. coal-fired capacity that currently lacks scrubbers is located alongside units that do have scrubbers installed, he said.

In addition, many coal plants already have installed advanced mercury controls, high-efficiency particulate controls and other systems that will facilitate compliance, he said.

"Thus, the generating fleet as a whole is well on its way to being in a position to meet the requirements of the utility toxics rule," Bradley said. "We are not starting from scratch."

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DOE Rejects Firm Radiation Release Limit... (Continued from p. 1)

plant—and recent revelations about the large-scale radiation releases that might occur if a major temblor hit some of DOE's older nuclear facilities, many of which date to the Cold War and are not built to modern seismic safety standards.

The earthquake issue was further sharpened earlier this month when the DNFSB revealed that DOE had recently learned of "significant technical and software quality assurance issues" with a computer program used to assess "soil-structure interaction effects" between buildings and the ground they sit upon during earthquakes. The program, which is used extensively by DOE to evaluate earthquake risks at its nuclear facilities, was found to produce "unrealistic seismic responses" by analysts at Los Alamos National Laboratory, the DNFSB told DOE in an April 8 letter in which the board asked the department to explain what it was doing about the problem.

In general, DOE addresses radiation release risks from earthquakes and other severe accident scenarios through a guideline under which its contractors are supposed to take safety measures to ensure that releases from worst-case nuclear facility accidents will not exceed 25 rems at the boundary of the DOE sites they operate.

The department for years has publicly committed to keeping any potential releases below 25 rems, which can threaten human health but which is well below radiation levels in some contaminated water discharges from the Fukushima plant.

However, the DNFSB last October questioned DOE's commitment to meeting the 25-rem guideline at several aging nuclear facilities at Los Alamos, saying the department appeared to be "drifting away" from longstanding policies for timely compliance with the guideline.

At issue are costly fixes or operational changes that would have to be made by DOE to meet the 25-rem standard at some of its facilities that are nearing shutdown. DOE officials have been reluctant to spend millions of dollars on those obsolete facilities at the same time they are building expensive new replacement facilities.

But while acknowledging those cost concerns, the board has made known its growing unease over DOE's broader efforts under Chu to streamline and "improve" its nuclear safety rules and regulations. Although DOE officials have contended that their efforts are designed to improve safety by getting rid of redundant or unnecessary safety rules, the board has increasingly expressed skepticism about some elements of DOE's initiative—and the department's willingness to face inconvenient but real safety issues.

Tensions between the department and the board heated up earlier this year when DOE officials unsuccessfully sought to squelch a DNFSB investigation into allegations by a senior whistleblower at the department's Hanford site that safety issues were being swept under the rug in the construction of a massive radioactive waste processing facility.

The dispute over the 25-rem safety guideline appears to present an even more fundamental clash over safety philosophy between the DNFSB and DOE.

While both sides have sought to find common ground on the matter, Chu told the board in a February 28 letter that he would not accept parts of an Oct. 29, 2010, recommendation by the board in which it called on DOE to convert the 25-rem guideline to a formal requirement for its site contractors.

Chu told the DNFSB that the department planned to review the 25-rem "evaluation guideline" established by DOE's longstanding Standard 3009, which says contractors should take additional safety measures where analyses show worst-case accidents could result in offsite radiation releases exceeding 25 rems.

However, the secretary added, "we cannot commit to the exact language prescribed in the [DNFSB] recommendation—that is placing Standard 3009 in the body of [the DOE safety] rule."

Further, Chu made it clear that the department would not necessarily require full compliance with all elements of Standard 3009.

"As part of our review, we will update DOE Standard 3009, clearly identifying those provisions that are mandatory," Chu told the DNFSB. "When DOE Standard 3009 is not applied, appropriate means for reviewing and approving alternative [safety and radiation management] methodologies will be established. This will assure implementation of DOE Standard 3009, where appropriate, while maintaining the flexibility to improve the standard, as needed."

However, the board in its October recommendation to DOE said it was just such waffling by the department on meeting the 25-rem guideline that prompted the DNFSB to call for the 25-rem guideline to be made a requirement.

"DOE has chosen over the past several years to drift away from the principles that underlay the [guideline] as originally intended," the DNFSB said in its recommendation.

"DOE's standards-based regulatory system needs a clear and unambiguous set of nuclear safety requirements to ensure that adequate protection of the public, workers and the environment is provided," the board told Chu.

"Further, it is imperative that DOE provide clear direction to its safety... authorities to ensure that, if nuclear safety requirements cannot be met prior to approval of a [facility's safety posture], DOE imposes clear conditions of approval for compensatory measures for the short term and facility modifications for the longer term to achieve the required safety posture."

The DNFSB added: "The board does not recommend lightly a change to DOE's nuclear safety regulations.... The board has chosen to recommend a rule change because this action would tend, in the long run, to prevent future shifts in DOE safety policy that would once again have to be challenged and argued against."

The board issued its recommendation after learning that safety analyses for five facilities at Los Alamos National Laboratory—including two vital but aging plutonium facilities—showed that the public might be exposed to accident-related doses far exceeding the 25-rem guideline.

In addition, DOE's Office of Environmental Management acknowledged to the DNFSB that safety analyses for its high-level radioactive waste storage tanks at the department's Savannah River Site in South Carolina show earthquake accident scenarios could lead to offsite radiation doses to a "maximally exposed" member of the public above 25 rems.

The board's recommendation specifically stemmed from its objection to a December 2008 decision by the National Nuclear Security Administration (NNSA), DOE's semi-autonomous weapons agency, to approve a safety assessment for Los Alamos' PF-4 plutonium facility even though calculations for various earthquake accident scenarios showed exceedances of the 25-rem guideline.

DOE subsequently took action to address those exceedances, but a June 2010 analysis by the department still found doses from an earthquake-induced fire scenario at 110 rems.

The department promised further actions to reduce that exceedance at PF-4, but said it planned no similar action at other Los Alamos facilities where projected doses were above 25 rems because those facilities were expected to shut down soon, making costly modifications a poor use of taxpayer dollars.

For example, NNSA told the DNFSB in a June 30, 2010, memo that despite a possible 302-rem worst-case offsite exposure from a fire in a waste storage dome at Los Alamos' Area G—and a 1,795-rem estimate for an airplane crash into a dome—"Area G is a limited-life facility and major facility upgrades to mitigate these scenarios are not anticipated."

Greenhouse Gas Case Blurs Separation Of Powers

COMMENTARY

BY GREG ZOLLER

Volatile issues of global climate change, energy-sector jobs, judicial activism and the roles of federal government branches will collide April 19. That's when the United States Supreme Court hears arguments in a case with a potential to affect indirectly all Americans who use electricity.

The case is *American Electric Power Co. Inc. v. Connecticut*. At issue is whether states and private plaintiffs can sue utility companies for producing greenhouse gases that contribute to global climate change.

The state I represent in court, Indiana, is not a party in this lawsuit. Nonetheless, as Indiana's attorney general, my duty is to alert the Supreme Court to Indiana's legal concerns. To raise our arguments, we authored a 28-page amicus brief that 22 other states signed and filed it with the nation's highest court.

The facts of the *AEP v. Connecticut* case and its procedural history are complicated and the underlying science is technical. But at its core is a concept that dates to the very founding of our Constitution: the separation of powers of our three branches of government.

In our brief we contend federal district courts are not the venues to decide inherently political questions that belong instead within the legislative and executive branches.

Consider how this case began: Connecticut filed suit against six utility companies alleging their carbon di-

oxide (CO₂) emissions from coal-fired electric generating plants contribute to global climate change. Connecticut, five other states and New York City alleged a "public nuisance" under common law and asked the federal court to determine and impose limits on the amounts of CO₂ emitted from utility smokestacks.

As much as we respect the federal courts, it is neither appropriate nor practical for an appointed trial court judge to devise under common law complicated regulations for a utility industry already subject to considerable regulation as well as marketplace fluctuations and rapidly-changing technology.

That duty—legislating—belongs instead to the people's elected representatives in Congress. Answerable to their constituents, congressional legislators must balance competing interests—weighing the climatic impact of additional carbon emissions against the economic impact of higher energy costs passed on to consumers and businesses through a patchwork of regulations on coal-fired utilities.

Congress also balances interests by delegating some, though not all, of its legislative authority in this area to an executive branch agency, the U.S. Environmental Protection Agency, to implement broad policy that state governments then interpret and enforce.

We have seen in recent congressional debates over EPA regulation and federal budget priorities the push-pull between the legislative and executive branches over greenhouse gas emissions. That's where this intense discussion belongs: between the legislative and executive.

Regrettably, when the U.S. 2nd Circuit Court of Appeals heard this case, it found that Connecticut and other plaintiffs had legal standing to sue the six utilities for allegedly contributing to global climate change and would allow federal judges to set limits on greenhouse gases under common law.

Indiana and 22 other states oppose the 2nd Circuit's ruling, and in our brief we asked the U.S. Supreme Court to overturn it. There is no point in having a separation of powers in our federal government if the lines of separation are blurred and faint. Our system of checks and balances is eroded if any of the three branches overreaches and strays beyond its authority.

Although we are mindful of concerns about atmospheric pollution and energy-cost impact on jobs, the underlying legal issue for Indiana and 22 other states in filing our brief is to urge the Supreme Court to remind lower courts of their proper role. The Constitution's separation of powers has served us well for 224 years; let's not bend it to serve today's narrow interests.

—Greg Zoeller is the attorney general of Indiana.

BLM May Cut Acreage For Oil Shale, Tar Sands Leasing

The Interior Department's Bureau of Land Management, moving forward on a new environmental review of its oil shale and tar sands leasing program, last week indicated it may reduce the amount of acreage available to industry as it reviews lands' wilderness characteristics and suitability as habitat for the threatened sage grouse.

In a notice of intent issued Thursday on its programmatic environmental impact study, BLM noted that commercial U.S. oil shale and tar sands development is years away due to slow-going technology development.

As a result, the agency said it "in-

tends to take a hard look at whether it is appropriate for approximately 2 million acres to remain available for potential development of oil shale, and approximately 431,224 acres of public land to remain available for potential development of tar sands."

BLM added that its study would analyze a programmatic alternative that would remove from oil shale and tar sands leasing "all areas that the BLM has identified or may identify as a result of inventories conducted during this planning process, as lands containing wilderness characteristics... [and] core or priority sage grouse habitat...."

Responding to legal challenges brought by conservationists, BLM in February announced plans to revisit the oil shale leasing program launched in the final days of the Bush administration, indicating changes were likely to its land-use provisions and royalty rates. The January 2009 lawsuits alleged the Bush administration ignored environmental concerns in opening up 2 million acres of public lands in Colorado, Wyoming and Utah.

BLM issued its first six oil shale leases in 2007 for the purpose of letting industry conduct research, demonstration and development (RD&D) of the technically immature and costly extraction technology. The Obama administration followed up three more RD&D leases in October, requiring leaseholders to submit to data on impacts to water and climate.

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US **nuclear** regulator a policeman or salesman?

CNET

by Reuters The **Nuclear Regulatory Commission** exists to police, not promote, the domestic nuclear industry--but diplomatic cables show that it is sometimes used as a sales tool to help push American technology to foreign governments. ...

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CNET

Committee to review whether proximity to **nuclear** power plants boosts cancer risk

Superior Telegram

A national committee looking at cancer risks near nuclear power plants will hold a public meeting in the Midwest today. The **Nuclear Regulatory Commission (NRC)** recently asked the National Academy of Sciences to look at the possibility that living near ...

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Entergy Sues To Keep Vermont **Nuclear** Plant Running

Wall Street Journal

The complaint, filed in US District Court, escalates a dispute between state officials and the second-largest US nuclear-power company over the future of the 39-year-old reactor. Entergy has won approval from the US **Nuclear Regulatory Commission** to ...

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Alexander visits Tennessee **nuclear** plant, says US plants are safe

Chattanooga Times Free Press

by Pam Sohn Victor McCree, and Bill Ostendorff of the **Nuclear Regulatory Commission (NRC)** along with Sen. Lamar Alexander (R-Tenn.) and TVA's COO Bill McCollum, from left, visit the Watts Bar nuclear plant to discuss reactor and nuclear material safety ...

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What about that 50-mile zone around the **nuclear** power accident in Japan?

The Keene Sentinel

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Nuclear News Flashes
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 - ** Surry-1, -2 down after tornado strike in switchyard
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*** Robots survey conditions inside Fukushima I

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HHHH/224

The same day plant operator Tokyo Electric Power Co. released radiation data and photos the US-made robots took during an April 17-18 survey of the plant.

Tepco said the robots surveyed the first floor of unit 1 for about 50 minutes and detected maximum radiation readings of 49 millisieverts per hour. A person in that environment for five hours would be exposed to 250 mSv of radiation, the legal limit for nuclear workers in emergency situations, NHK reported.

Robots were inside unit 3 for about two hours. Tepco said the robots had difficulty moving around because of debris. The maximum radiation reading was 57 mSv per hour.

On April 17, Tepco announced its plan for a steady reduction of radiation at the site and said it could have the release of radioactive materials under control in six to nine months. NHK reported Japan's Chief Cabinet Secretary Yukio Edano April 18 said displaced residents will not be able to return to homes around the plant for at least six months. He said Tepco's timetable was feasible.

Tepco said April 17 it will use a chemical hardening agent at the site to prevent the migration of radioactive dust and soil. The utility said it will begin spraying a polymer emulsion on top of debris near the reactor buildings April 26. It has been test-spraying the emulsion since April 1.

To prevent debris from scattering, Tepco has been coating it with an emulsion used at construction sites to settle dust. Tepco said the polymer has hardened over the debris and that radiation levels at the plant have remained relatively low, NHK reported.

Tepco said it hoped to finish spraying around the reactor buildings by the end of May and around the rest of the site by late June.

Separately, Prime Minister Naoto Kan told an Upper House Budget Committee April 18 the government had underestimated the potential impact of a large tsunami on Japanese nuclear power plants, NHK reported. The government had believed reactor cooling systems would not be affected by a major earthquake because emergency diesel generators would restore power, Kan said. He apologized for the government's failure to check the systems and said there was no excuse for not preparing for a worst-case scenario.

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Kirienko spoke at a press briefing in Kiev ahead of an international conference this week to mark the 25th anniversary of the Chernobyl accident. His comments were posted on Rosatom's web site the same day.

Reactors of Russian design would have withstood a 9.0-magnitude earthquake and a tsunami height of 14 meters, Kirienko said.

In addition, a release of radiation would not have occurred from a Russian

reactor even if personnel had left the station, he said, without elaborating.

"We took on board all the European and American proposals [on security requirements for nuclear power plants], formed our own requirements, and fully transferred and expanded the requirements of our partners," he said.

Kirienko said there was a need for more transparent discussion about nuclear power at a global level and that there should be mandatory international standards on nuclear power plant safety.

*** Rolls-Royce names general manager-Canada

Neil Alexander has been appointed general manager, civil nuclear-Canada, by Rolls-Royce, the company said April 18.

Alexander will be responsible for "extending our product and service offerings by drawing on the broad nuclear capabilities of Rolls-Royce globally" in the North American market, the company said.

Rolls-Royce holds an American Society of Mechanical Engineers N stamp, which attests to the company's ability to manufacture nuclear-grade equipment. NRC requires that US nuclear power plants install only nuclear-grade equipment. The company employs about 100 people at its Peterborough, Ontario office near Toronto.

*** Surry-1, -2 down after tornado strike in switchyard

A tornado apparently touched down in the switchyard at Dominion's Surry nuclear plant, cutting offsite power to the station, but the reactors are stable after an automatic shutdown, the utility said April 17.

The tornado touched down the evening of April 16, and the company informed the NRC and state and local officials.

Dominion declared an unusual event, the lowest of four NRC emergency classifications for nuclear power plants. The emergency will remain in effect until redundant sources of offsite power are restored for both units, Dominion spokesman Richard Zuercher said April 18. Each reactor now has one offsite power source and emergency diesel generators are available if needed, Zuercher said.

Surry-1 and -2 each have 847-MW capacity.

"Both reactors at the station shut down automatically as designed and back-up diesel generators started immediately to provide electricity necessary to maintain both units in a safe and stable condition," Dominion said in a statement April 17.

"No release of radioactive material has occurred beyond those minor releases associated with normal station operations. These minor releases are below federally approved operating limits, and pose no threat to station workers or the public," the utility said.

The reactors, housed inside steel reinforced concrete containment buildings, were not affected by the tornado, no one was injured and personnel were working to restore the main power connection to the grid, Dominion said.

*** NPPD board OKs \$18.4 million turbine contract

The Nebraska Public Power District board of directors has approved an \$18.4 million contract with Siemens Energy for a high-pressure turbine to be installed during Cooper's 2016 fall refueling outage. The new turbine would position the 830-MW reactor for a 145-MW boost in output in 2018 if NPPD decides to pursue a 20% power uprate, NPPD spokesman Mark Becker said April 15 in an email response to questions.

Approval of the contract came during the board's regularly scheduled meeting April 14-15.

Cooper began commercial operation in 1974. The plant's existing high-pressure turbine has a 30-year design life, according to Becker's email.

Becker said that while a 2009 inspection found no immediate problems with the current turbine, reliability issues could arise if it is not replaced. A new high-pressure turbine would ensure reliable operation through Cooper's renewed license, which expires in 2034, he said.

*** US reactor report

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FirstEnergy Nuclear Operating Co.'s Perry shut for a scheduled refueling and maintenance outage early April 18, the company said in a statement. It did not say how long the outage will last.

FirstEnergy Nuclear Operating Co.'s Beaver Valley-1 returned to service April 16, company spokesman Todd Schneider said in an April 18 email. He said the unit "will remain at 82 percent power for the next several days for condenser cleaning." The unit was shut April 14 to replace a sensor that monitors the reactor power level.

Progress Energy's Brunswick-2 was taken offline April 17, one day after the unit returned to service from a refueling outage, company spokeswoman Jessica Lamberty said April 18. She said workers found that the reactor's drywell needed "additional repairs" after it was connected to the grid early April 16. Lamberty said she does not have details of the drywell's condition and declined to say how long this outage might last. Brunswick-2 had been shut March 5 for refueling.

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Nuclear News Flashes

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NRC NEWS:

Nuclear Inspectors' May Be Limited On US Review, Markey Says (BLOOM)

By Simon Lomax

Bloomberg News, April 15, 2011

US nuclear inspectors examining domestic power plants amid a reactor crisis in Japan may keep some findings secret, which might undermine confidence in the agency's work, Representative Edward Markey said.

The US Nuclear Regulatory Commission is reviewing how the reactors would cope if struck by a natural disaster. The 90-day review was triggered when Tokyo Electric Power Co.'s Fukushima Dai-ichi plant in Japan was crippled by fires, explosions and radiation leaks after a magnitude-9 earthquake and tsunami on March 11.

NRC inspectors are examining US reactors' ability to withstand disasters that "have already been contemplated" as well as those that are worse than expected, Markey said today in a letter to agency Chairman Gregory Jaczko.

The inspectors have been told to limit their public findings to assessing safety measures for anticipated events, Markey said, without identifying the source for the information. The potential impact of disasters that exceed a reactor's design "would be entered into a private NRC database and kept secret," Markey said.

"These limitations, if true, severely undermine my confidence" in the NRC's safety review, Markey said.

The agency "always documents any inspection findings of importance, although reports dealing with security-related information are not made public," Scott Bumell, an NRC spokesman, said in an e-mail. The agency's review will include open meetings "and its results will be publicly available," he said.

Markey Blasts Nuclear Watchdog (CAPECOD)

By Patrick Cassidy

Cape Code Times, April 18, 2011

US Rep. Edward Markey, D-Mass., is questioning the response of the Nuclear Regulatory Commission to the ongoing nuclear crisis in Japan, including claims that the agency is keeping important information about potential safety issues secret.

In a letter sent Friday to Greg Jaczko, the nuclear watchdog agency's chairman, Markey wrote he was concerned about parameters for inspections of US nuclear reactors that are being undertaken in the aftermath of Japan's disaster. The Fukushima Dai-ichi nuclear plant lost power and released radioactive material after an earthquake-fueled tsunami struck on March 11.

In his five-page letter, Markey, who is the ranking minority member on the Natural Resources Committee and a senior member of the Energy and Commerce Committee, questioned limits on the amount of time NRC inspectors are allowed to spend at each power plant.

In addition, inspectors were initially told to limit inspections to so-called "Design Basis Events," according to Markey.

"This meant that inspectors would be assessing licensees' ability to withstand and respond only to events that have already been contemplated and analyzed by the NRC and for which regulatory requirements have been implemented, but not events such as the ones that occurred in Japan, which were previously believed to be impossible," Markey wrote.

Although complaints by inspectors prompted the NRC to instruct them to expand their inspections, they were allegedly told not to report any related findings in public reports, Markey wrote.

"Instead, these findings would be entered into a private NRC database and kept secret," he wrote.

In an email to the Times, NRC spokesman Neil Sheehan wrote that the agency would be responding to Markey's questions in a timely manner.

"In terms of any inspection findings that may come out of our reviews being done in response to the Japanese reactor events, findings that relate to security would not be disclosed," Sheehan wrote.

"This is our long standing approach, and it is based on the simple fact that we withhold from public release any information which could in any way compromise plant security."

Otherwise the results of inspections will be available to the public, Sheehan wrote.

"That disclosure would include discussions of the results at public meetings of the five-member Commission that oversees the NRC," he wrote.

The Japanese nuclear reactor crisis has prompted a closer look at the safety of US nuclear facilities, including the Pilgrim Nuclear Power Station in Plymouth, which is awaiting a decision on whether its operating license will be extended.

In a letter sent Friday to Entergy Corp., the company that operates Pilgrim, NRC officials wrote that a March 4 inspection of the plant revealed no major problems at the facility.

On Thursday, a group of 45 organizations and individuals from across the country filed a petition demanding that the NRC cease all licensing activities until a "Three Mile Island style" review of the problems at the Fukushima plant is conducted.

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Ed Markey Blasts Nuclear Watchdog (BOSH)

By Patrick Cassidy

Boston Herald, April 18, 2011

US Rep. Edward Markey, D-Mass., is questioning the response of the Nuclear Regulatory Commission to the ongoing nuclear crisis in Japan, including claims that the agency is keeping important information about potential safety issues secret.

In a letter sent Friday to Greg Jaczko, the nuclear watchdog agency's chairman, Markey wrote he was concerned about parameters for inspections of US nuclear reactors that are being undertaken in the aftermath of Japan's disaster. The Fukushima Dai-ichi nuclear plant lost power and released radioactive material after an earthquake-fueled tsunami struck on March 11.

In his five-page letter, Markey, who is the ranking minority member on the Natural Resources Committee and a senior member of the Energy and Commerce Committee, questioned limits on the amount of time NRC inspectors are allowed to spend at each power plant.

Markey Criticizes NRC Safety Review As Limited, Secret (GWIRE)

By Hannah Northey

Greenwire, April 15, 2011

The Nuclear Regulatory Commission's nationwide safety review of US nuclear reactors is limited in scope and hidden under a veil of secrecy, Rep. Ed Markey (D-Mass.) said today.

The House Natural Resources Committee's ranking Democrat said in a letter to NRC Chairman Gregory Jaczko that he has received reports showing the agency is curbing the time and scope of its review and refusing to publicly release some of the results.

NRC launched the review last month in response to the March 11 earthquake and tsunami that damaged the Fukushima Daiichi nuclear plant in Japan, raising questions about how US power plants would cope with such an event.

The agency's two-tiered review is slated to start with a short-term 90-day "snapshot" of NRC requirements, programs and processes, on which a task force would report to the full commission in May, June and July. NRC said it also will launch a longer-term review when more information is known about the situation in Japan.

But Markey said he received reports -- without specifying where they came from -- that show the investigations are "secret" and that their "scope and depth may be severely constrained" and could fail to provide sufficient information to assess or remedy any outstanding safety issues in the country's nuclear fleet.

Specifically, Markey said he learned that inspections for the 90-day review must be completed by April 29 and that a number of constraints have been placed upon the inspections.

NRC is only allowing its inspectors 40 hours to perform each inspection for the plants that contain one nuclear reactor, and 50 to 60 hours for plants with more than one unit, Markey said.

Inspectors were also told to limit inspections to the adequacy of safety measures needed to respond to "design basis events," meaning they would only analyze events the agency already contemplated in its regulatory requirements, he said.

Several inspectors complained that it made no sense to limit inspections to "design basis events" and that NRC guidance was changed to allow inspectors to broaden their inspection scope. But Markey said those individuals were told not to record their observations or findings past the "design basis events" and that those findings would be "entered into a private NRC database and kept secret."

Markey posed a series of questions regarding what the commission should review and asked for a response by April 29.

[Click here to read the letter.](#)

Blog: Political Intelligence: Markey Criticizes Nuclear Inspections In Letter (BOS)

By Theo Emery

Boston Globe, April 15, 2011

WASHINGTON — US Representative Edward J. Markey accused the Nuclear Regulatory Commission today of concealing inspection results at US nuclear power plants and limiting the scope and length of reactor inspections.

In a letter to commission Chairman Greg Jaczko, the Malden Democrat protested what he said were limits on inspectors checking US nuclear reactors in the aftermath of the earthquake and tsunami that badly damaged the Fukushima Daiichi plant in Japan.

"We should stand prepared to learn from the catastrophe in Japan and plan ahead to address what was unforeseen but occurred anyway, rather than attempting to hide our vulnerabilities from public view," he wrote.

Commission spokeswoman Prenia Chandrathil said the ongoing review of safety at US plants goes "far beyond" physical inspections at plants, and is looking for problems other than just design flaws. Moreover, she said, a report on safety at US plants will be made public at the end of a lengthy review process.

While some findings at plants are generally not made public because of post-Sept. 11 security measures, she said the commission always takes action when warranted.

"In response to the events in Japan, the Nuclear Regulatory Commission will take any regulatory action deemed necessary, she said.

After last month's disaster, the commission announced increased inspections of all US nuclear plants to ensure their safety. It has also sent inspectors to aid Japanese authorities.

Markey alleged that the commission's review of domestic plants is inadequate, and conceals vital information from the public. Inspectors are limited to 40 hours for single-reactor plants and 50-60 hours for multi-reactor plants, according to Markey, which is not enough to full inspect plants.

In addition, inspectors were initially not allowed to look for safety vulnerabilities to unanticipated catastrophic events, he claimed. An outcry from inspectors allowed them to do so, but they were not permitted to note them in writing, putting them instead in a secret database and shielding them from public scrutiny, he said.

"The fact that they plan to keep the most serious vulnerabilities secret raises questions about whether the Nuclear Regulatory Commission is more interested in public relations than public safety," Markey said.

Markey, who has held his seat since 1976, cast his 20,000 vote yesterday on the House floor.

NRC: MSNBC's Review Of Seismic Threat To Nuke Plants Questionable (CCDLN)

MSNBC's review of seismic threat to nuke plants questionable

By Joe Buonanno

Chester County Daily Local News, April 16, 2011

The Nuclear Regulatory Commission is disputing an MSNBC analysis that ranked US nuclear power plants in terms of the likelihood their reactor cores would be damaged by an earthquake.

The MSNBC rankings, compiled by Bill Dedman, were based on statistics taken from an NRC seismic risk assessment published in September, which examined the vulnerability of reactor cores at nuclear power plants in the East and Midwest regions of the nation to seismic activity.

According to NRC spokesman Neil Sheehan, that assessment was conducted in response to a study done by the US Geological Survey, which showed that while the risks of a strong earthquake occurring in the midwestern and eastern portions of the country are still quite low, they are greater than previously thought.

Using data from the NRC assessment, MSNBC ranked 104 nuclear power plants operating in the United States from No. 1, the plant with the reactor core most likely to sustain damage as a result of a seismic event over a one-year period, to No. 104, the plant with the reactor core that was least likely to be damaged by an earthquake over the same period of time.

According to the MSNBC rankings, many of the plants most likely to sustain core damage from an earthquake are in the eastern United States. For example, Indian Point reactor No. 3, 24 miles north of New York, is ranked No. 1 by MSNBC, and the two reactors at the Limerick facility are tied for third. Beaver Valley reactor one, near Shippingport, Pa., and Three Mile Island reactor one, in Middletown, Pa., ranked seventh and 17th on the MSNBC list, respectively.

While it seems counterintuitive that many of the nation's most vulnerable reactor cores are in the seismically inactive eastern and midwestern parts of the country, the MSNBC report states that because the cores of nuclear plants on the West Coast were designed to withstand the strong quakes that frequently rumble through that region, they are not as susceptible to seismic damage.

Conversely, the cores of plants in the midwestern and eastern United States, built to withstand less powerful earthquakes, are now assumed to be at greater risk of seismic damage, due to the USGS assessment that stronger earthquakes may be more likely to occur in those sections of the nation than previously thought.

Though alarming in light of recent events in Japan, the MSNBC report has been criticized on several grounds.

First, Sheehan stated during a telephone interview last week the NRC did not rank the plants in order of likelihood that their cores would be damaged by an earthquake in their September assessment; MSNBC used data from the report to generate its own rankings. According to an e-mail from the NRC that was published in a DailyTech.com editorial by Jason Mick, the NRC did not use the probabilities of seismic induced core damage generated in their report to create rankings because their assessment is part of an ongoing evaluation of earthquake vulnerability at plants in the midwestern and eastern portions of the country.

According to the NRC, because data are still being gathered from the plants, it does not make sense to rank them in terms of seismic vulnerability.

Second, Joseph Szafran, a spokesman for Exelon Corp. (which owns the plant in Limerick) said Thursday the NRC study did not evaluate all of the 104 nuclear plants included in the MSNBC analysis. Instead, it examined the level of seismic risk that exists for plants in the midwestern and eastern portions of the nation. Thus, Mr. Dedman's analysis ranked data gathered at different times and places according to different criteria. Consequently, the rankings should be considered invalid.

Third, as Mick points out, the statistic MSNBC choose to rank the nuclear cores in terms of their seismic vulnerability is highly questionable. Of the three probability models used by the NRC in its September report to assess the risk of seismic damage at each individual plant, MSNBC chose to use the so-called "weakest link" model, which uses the highest probability of core damage for the four seismic frequencies (1hz, 5hz, 10hz, and peak ground acceleration) analyzed in the study.

An equally useful (if not more useful) probability would have been the NRC's weighted average, which takes into account how different structures in a reactor core vibrate at 1hz, 5hz, and 10hz, and yields a more conservative estimate of the probability a seismic event will damage the core.

Fourth, even if one grants for the sake of argument the use of the weakest link data, Dedman implies in his report that damage to a reactor core necessarily results in a loss of containment, which would expose the public to radiation. But according to the NRC Web site, core damage does not imply a release of radiation. As the NRC states on its Web site:

"Seismic core damage frequency is the probability of damage to the core resulting from a seismic initiating event. It does not imply either a meltdown or the loss of containment, which would be required for radiological release to occur. The likelihood of radiation release is far lower."

In other words, the probability of seismic core damage listed by Dedman for each nuclear power plant is far greater than the probability of radiological release.

Indeed, for earthquake damage to a reactor core to result in a release of radiation, a series of worst-case scenarios would have to unfold. For example, if the water cooling system of a reactor were disabled, the core would overheat. This could result in a meltdown, which may result in the release of radiation. Yet for this to occur, the grid from which the reactor water pumps draw their power would have to be destroyed, the onsite backup diesel generators would have to fail, and finally a set of batteries that could power the pumps would have to be exhausted. While such a scenario is not impossible (and is indeed unfolding in Japan), no data is available to calculate the risk of it occurring.

While no doubt flawed, the MSNBC analysis correctly pointed out the risk of earthquake-induced core damage has increased at nuclear power plants in the midwestern and eastern portions of the country.

As a result of the increased risk, Sheehan says, the NRC is taking a look at some midwestern and eastern plants to see if they require additional adjustments. He said there was no word on whether the plants in Limerick would be retrofitted in light of the new USGS survey.

According to Szafran, in the event power from the grid becomes unavailable at Limerick, eight diesel generators on site can power the water cooling system for up to 14 days. Should the back-up generators themselves become disabled, DC batteries there could be used to power the pumps.

Szafran was unable to provide an exact magnitude of earthquake that the plants at Limerick were built to withstand. He said the plants are constructed to withstand the strongest earthquake that has been recorded in their region and that an extra margin of protection is added to the building code as a precaution.

According to Charles K. Scharnberger, professor emeritus of geology at Millersville University, the largest earthquake ever recorded in Pennsylvania was a magnitude 5.2, which occurred in the northwest region of the state. Closer to this area, a magnitude 4.0 was recorded in Lancaster County in 1984, and in 1994 Berks County was rattled by a magnitude 4.6 earthquake.

Scharnberger said earthquakes of magnitude 3 have been recorded in Montgomery County, where the Limerick plants are located.

Scharnberger says that in his view, the earthquake hazard in southeast Pennsylvania remains small, and while he could not definitively rule out the possibility that a strong earthquake (magnitude 6.0 or greater) would occur in this region, the probability of such a quake occurring in this area is "very, very small."

Scharnberger does not necessarily agree with the criticisms of the MSNBC analysis made in this report.

Alaska, Federal Health Officials Say North Pacific Fish Not Contaminated By Japan Radiation (AP)

Associated Press, April 18, 2011

ANCHORAGE, Alaska — North Pacific fish are so unlikely to be contaminated by radioactive material from the crippled nuclear plant in Japan that there's no reason to test them, according to federal and state of Alaska health officials.

Dangerous levels of radiation have been reported off the coast from the Fukushima reactor complex. However, a spokeswoman for the federal Food and Drug Administration told the Anchorage Daily News that the ocean is so huge, and Alaska fisheries so far away, that there is no realistic threat.

Alaska's food safety program manager, Ron Klein of the Department of Environmental Conservation, said the FDA and the National Oceanic and Atmospheric Administration have demonstrated that Alaskans have no cause for worry.

"Based on the work they're doing, no sampling or monitoring of our fish is necessary," he said.

A little more than a month into the nuclear crisis, Japanese officials believe they have plugged the major leak that allowed tons of water containing highly radioactive isotopes of iodine and cesium to flow into the sea.

The reactors and spent-fuel-rod pools remain unstable, according to Congressional testimony Tuesday by the chairman of the US Nuclear Regulatory Commission. A Japanese official said recently the crisis will continue for "a long time."

Alaska is the nearest US state to Japan. Fish caught by US fishermen in the 200-mile economic zone swim even closer. That has prompted some fears, particularly in Europe, that Alaska fish could be contaminated.

Tyson Fick, spokesman for the Alaska Seafood Marketing Institute, said he's urging fishermen and consumers to look at the science conducted by federal agencies. In Germany and Austria, he said, Alaska fish may have gotten caught up in anti-nuclear politics.

The Green Party in Germany, campaigning in regional elections, used the nuclear issue late last month to take over the state government in prosperous Baden-Wurttemberg, where conservatives had ruled for more than 50 years. Alaska pollock is sold as fish sticks throughout Germany, Fick said, and fear of them could be trouble.

In Anchorage, Dannon Southall of 10th and M Seafoods said customers have expressed concern, but not enough to stop buying fish. Almost all fish the store is selling now was caught and frozen before the March 11 earthquake, he said.

As new supplies replace the old, he expects imported fish especially to be tested if they come from waters close to Japan.

As for the sea in the region near Fukushima, only octopus and eel from there had been imported to Alaska in the past, and that was mainly for sushi, he said. DeLancey, the FDA spokeswoman, said those Japanese fishermen were disrupted by the tsunami and are no longer fishing anyway.

The FDA has not been testing US fish.

"We've been working with NOAA to keep an eye on US waters, to see if there is any cause for alarm, and we do have the capability to begin testing if that does occur," she said.

NOAA fisheries spokeswoman Kate Naughton declined to answer questions and referred a reporter back to DeLancey and the EPA.

DeLancey said that so far, there's no reason for concern about Fukushima. The radioactive materials in the water near Fukushima quickly become diluted in the massive volume of the Pacific, she said. Fallout that lands on the surface tends to stay there, giving the most unstable ones isotopes, such as iodine, time to decay before reaching fish, she said.

Some imported fish are tested, she said, but those also appear safe.

FDA Claims No Need To Test Pacific Fish For Radioactivity: Environment (ANCHDN)

JAPAN MELTDOWN: Ocean too huge, distance too far for concern

By Richard Mauer

Anchorage Daily News, April 18, 2011

North Pacific fish are so unlikely to be contaminated by radioactive material from the crippled nuclear plant in Japan that there's no reason to test them, state and federal officials said this week.

Even with dangerous levels of radiation reported recently just off the coast from the Fukushima reactor complex, the ocean is so huge and Alaska fisheries so far away that there is no realistic threat, said FDA spokeswoman Siobhan DeLancey. The Food and Drug Administration has oversight of the nation's food supplies.

The state's food safety program manager, Ron Klein of the Department of Environmental Conservation, said the FDA and the National Oceanic and Atmospheric Administration have demonstrated that Alaskans have no cause for worry.

"Based on the work they're doing, no sampling or monitoring of our fish is necessary," he said.

It's now a little more than a month into the nuclear crisis, and Japanese officials believe they have plugged the major leak that allowed tons of water containing highly radioactive isotopes of iodine and cesium to flow into the sea. Radiation levels went down after the alarming reports last week that they had risen to millions of times the legal limits, though on Saturday officials said the levels were rising again.

The reactors and spent-fuel-rod pools remain unstable, according to Congressional testimony Tuesday by the chairman of the US Nuclear Regulatory Commission. A Japanese official said recently the crisis will continue for "a long time."

Meanwhile, the most recent results of monitoring of atmospheric fallout in Alaska show large declines since the first weeks of the crisis.

A portable radiation monitor on emergency deployment to Dutch Harbor by the EPA recorded the highest levels of iodine-131 of any of the 100-plus monitors in the EPA's RadNet system. Those readings were taken March 19, of 2.42 picocuries per cubic meter of air, and March 20, of 2.8 picocuries. Among 14 samples collected through April 2, no I-131 was detected three times, and there never was more than a tenth the level of the two elevated samples.

Similarly, the deployable monitor in Nome recorded the highest reading in the United States of cesium-131, 0.13 picocuries per cubic meter of air, on March 24. Thirteen samples since then, through April 5, detected none.

Only one air filter from the EPA monitor in Anchorage has been analyzed by the EPA lab in Montgomery, Ala. That was a sample collected March 21, and showed so little total radioactivity – 0.006 picocuries per cubic meter of air – that it wasn't analyzed further to learn which radioactive isotopes were present, the EPA said this week.

In addition to the filters, which in the case of the Anchorage monitor are collected and sent to Alabama two times a week, the monitors continually check for raw beta and gamma radiation and reports it to the RadNet system by satellite. In Anchorage, those readings have been consistently within the background range established before the March 11 earthquake.

Still, the city said this week it intends to sample its reservoir at Eklutna for radioactive isotopes when the ice goes out, which typically happens in mid-May.

Eklutna is critical to Anchorage's fresh water supply. Over the course of a year, the city will get about 92 percent of its water from there, with the remainder from wells, said Chris Kosinski, spokesman for the Anchorage Water and Wastewater Utility.

Iodine-131 has a half-life of about eight days, meaning that after eight days, half of a given amount will have undergone decay, producing radiation and a new stable element, xenon. Given that half-life, nearly all the iodine that would have fallen on Eklutna will have safely decayed by the time the ice melts.

But two other radioactive isotopes typically found in reactors, cesium-137 and strontium-90, have half-lives of about 30 years.

"This is brand-new stuff, but we're figuring out what we have to do," Kosinski said. "It makes sense to us to wait for the ice to melt."

In an emergency, the city could rely on well water for more than half its needs, he said. But state health officials said the levels of radiation from Fukushima are so tiny here, there is virtually no risk.

Alaska is the nearest US state to Japan, and fish caught by US fishermen in the 200-mile economic zone swim even closer. That has prompted some fears, particularly in Europe, that Alaska fish could be contaminated.

Tyson Fick, spokesman for the Alaska Seafood Marketing Institute, said he's urging fishermen and consumers "to settle down a bit" and look at the science conducted by federal agencies.

Fick said he believed Alaska fish, in particular in Germany and Austria, have got caught up in anti-nuclear politics. In fact, the Green Party in Germany, campaigning in regional elections, used the nuclear issue late last month to take over the state government in prosperous Baden-Wurttemberg, where conservatives had ruled for more than 50 years. There's a lot of Alaska pollock sold as fish sticks throughout Germany, and fear of them could be trouble, Fick said.

Closer to home, Dannon Southall of 10th and M Seafoods, said customers have expressed some concern, but not enough to stop buying fish. Virtually all of what he sells now – from Alaska waters or imported – was caught and frozen before the March 11 earthquake, he said. As new supplies replace the old, he expects imported fish especially to be tested if they come from waters close to Japan.

As for the sea in the region near Fukushima, only octopus and eel from there had been imported to Alaska in the past, and that was mainly for sushi, he said.

DeLancey, the FDA spokeswoman, said those Japanese fishermen were disrupted by the tsunami and are no longer fishing anyway.

As for US fish, she said, "We have not been doing any testing. We've been working with NOAA to keep an eye on US waters, to see if there is any cause for alarm, and we do have the capability to begin testing if that does occur."

Asked to explain what kind of monitoring was taking place in the ocean, DeLancey said, "You would have to talk directly to NOAA ... I don't really want to speak for another agency."

But NOAA fisheries spokeswoman Kate Naughton declined to answer questions and referred a reporter back to DeLancey and the EPA.

DeLancey said that so far, there's no reason for concern about Fukushima. The radioactive materials in the water near Fukushima quickly become diluted in the massive volume of the Pacific, she said. Additionally, radioactive fallout that lands on the surface tends to stay there, giving the most unstable ones isotopes like iodine time to decay before reaching fish, she said.

Some imported fish are tested, she said, but those also appear safe.

Democrats Warm To Nuclear, Domestic Drilling Capitol Report (MRKWTWCH)

By Jeffry Bartash

Marketwatch, April 18, 2011

WASHINGTON (MarketWatch) — At a hearing this week, Democratic Sen. Tom Carper of Delaware asked one of the nation's top regulators how many Americans have been killed by nuclear power.

"There are no known fatalities in the US from the use of nuclear energy," replied Gregory Jaczko, chairman of the Nuclear Regulatory Commission.

Carper then turned to Lisa Jackson, administrator of the Environmental Protection Agency. He asked her how many people have been killed or had their lives shortened by the use of pollution-emitting fossil fuels. Tens of thousands, she said.

The senator sat back in his chair and nodded. "All sources of energy involve risks," he said.

Carper, a longtime supporter of nuclear power, is not the only Democrat who's weighing every option available on how to fuel the massive US economy. Many other members of his party are as well — no doubt egged on by soaring gas prices and public discontent. And while Democrats aren't chanting "drill, baby, drill," they appear to be concluding that nuclear power and more domestic drilling, once anathema, are vital to America's energy future.

At several hearings this week, nary a word was said about abolishing nuclear power despite the recent disaster in Japan. And Democrats say they are open to drilling for more natural gas in the continental US despite growing concerns over an extraction practice called "fracking." Against the wind

The change in Democratic thinking owes to greater recognition of economic and environmental reality: Nuclear and natural gas are the best options if the goal is to reduce reliance on foreign suppliers and produce enough clean energy to meet future needs of the world's biggest economy.

Consider nuclear energy. The nation's 104 nuclear plants — a fraction of 5,400 power plants operating in the US — still account for 20% of all electricity generated even though no new reactors have opened in 20 years.

By contrast, wind and solar generate less than 2% of the nation's electricity, and despite rapid growth, and they'll remain a small part of the energy mix for the next two decades, according to government forecasts.

The problem with renewables such as wind and solar is that they are not always on: The wind doesn't always blow, the sun doesn't always shine. There are other problems. Wind and solar farms require huge tracts of land, have to be located far from population centers and require large subsidies because of high production costs, to name a few.

Nuclear plants have many advantages. They don't emit anything, produce huge amounts of energy, take up very little real estate and can be placed closer to population centers where the power is needed. What's more, there have been massive advances in the safety of nuclear technology since the last generation of US reactors were built.

While the crisis in Japan has revived fears of nuclear power, Obama and other Democrats haven't retreated. They say regulators and the industry must redouble efforts to improve safety and reassure a worried public.

"Nuclear energy will almost certainly continue to be part of America's energy mix," said Sen. Tom Udall, D-New Mexico, "but it will be hard to build new reactors if the American public lives in fear of them."

Still, fewer Democrats these days are openly against nuclear. Rep. Lois Capps of California, for example, made it clear in one hearing that she has no intention of seeking the closure of a coastal nuclear plant in her district despite her concerns about its safety procedures.

All (natural) gasged up

Natural gas, for its part, is likely to play a much larger role than nuclear in moving the US toward cleaner sources of energy over the next decade. It's increasingly abundant, much cleaner than other fossil fuels such as coal or oil, and relatively cheap.

Indeed, higher production of natural gas has pushed prices sharply lower and made it harder for renewables such as wind to compete economically even with big government handouts.

Already, natural gas accounts for one-quarter of all energy used in the US, and it generates about 22% of the nation's electricity. Both numbers are expected to rise given the huge and growing reserves of natural gas now being discovered.

In some ways, the US (and Canada) is like the Saudi Arabia of natural gas. The federal Energy Information Administration recently boosted its estimate of potential gas reserves to 2,552 trillion cubic feet — or enough to supply the economy at current levels for more than a century.

The increase in estimated reserves stems largely from advances in technology that allow drillers to recover natural gas from large shale rock formations that lay underneath much of the continental United States.

"The development of shale gas plays has become a 'game changer' for the US natural gas market," the EIA said in a report last week. The recovery of natural gas from shale has jumped more than 12 fold in just the past decade alone.

One of these huge formations known as the Marcellus Shale runs from upstate New York to West Virginia. Recovering the natural gas in this formation could create several hundred thousand jobs and billions in government royalties — a big lure to any politician in a time of high unemployment and large state budget deficits.

Yet some critics have raised concerns about the extraction process. Fracking involves the injection of fluids at high pressure into rock formations thousands of feet underground to free up the natural gas.

The process requires huge amounts of water and companies often use chemicals such as diesel as part of the mix of fluids, triggering concerns about polluted water supplies that could affect several states.

"Water doesn't respect state boundaries," said Sen. Frank Lautenberg, D-N.J.

Nonetheless, most Democrats appear to be receptive to drilling for shale oil so long as tighter safeguards are put in place. Their main goal is to eliminate a loophole that limits the EPA's ability to regulate fracking, a chore now left to the states.

"We want to be able to tap into the natural gas reserves of this nation," said Sen. Ben Cardin, D-Maryland, "and we want to do it in a safe and environmentally sound manner."

Whatever ideas Democrats come up with, however, will have to pass muster with skeptical Republicans to win congressional approval. They'll block any bills if they believe the rules will stymie new energy projects.

"We cannot reach a clean energy future without natural gas and nuclear," said Sen. John Barasso, a Republican from Wyoming.

Jeffrey Bartash is a reporter for MarketWatch in Washington.

Groups Petition NRC To Suspend Nuclear Projects (INDUWEEK)

By Jonathan Katz

IndustryWeek, April 15, 2011

A coalition of 45 groups and individuals has petitioned the US Nuclear Regulatory Commission to suspend all activities planned for 21 proposed nuclear reactor projects in 15 states, the coalition said April 14.

The coalition has requested a moratorium on licensing and other activities until the NRC completes a thorough risk assessment following the Fukushima reactor crisis in Japan. The group has also asked the NRC to supplement its investigation with an independent commission.

Among the groups represented are the National Parks Conservation Association, the Sierra Club's Michigan and South Carolina chapters and the Nuclear Information and Resource Service.

The group's request includes the suspension of six existing reactor license renewal decisions, construction and licensing of 13 new reactor projects. In addition, the petition asks the NRC to halt approval of standardized AP1000 reactor design by Westinghouse Electric Co. and the Economic Simplified Boiling-Water Reactor design by GE-Hitachi Nuclear Energy.

The NRC has received the petition and is in the process of reviewing it, said NRC spokesman Scott Burnell.

The petition was unusual because it does not fall into any of the categories people typically use to ask the commission to take a particular action, Burnell said. There is no timetable at the moment for when the NRC will issue a response, Burnell said.

The petition explains that the action is needed to review safety and environmental implications of the accident at the Fukushima Daiichi Nuclear Power Station in Okuma, Japan.

An attorney for the petitioners accused the NRC of violating the law by relicensing the Vermont Yankee reactor at the same time it launched an investigation into the strength of US safety and environmental standards following the Fukushima disaster.

"The National Environmental Policy Act requires the NRC to learn and apply the lessons of Fukushima before it allows another reactor to operate," said Diane Curran of Harmon, Curran, Spielberg & Eisenberg LLP. "By establishing a task force and ordering the investigation of the regulatory implications of the Fukushima accident for US reactors, the NRC has obligated itself to consider those implications in all prospective licensing decisions. We demand that the NRC establish a credible process for studying and applying the lessons learned from the Fukushima accident, in keeping with the precedent created after Three Mile Island."

But NRC's Burnell said the agency completed its review of the Vermont Yankee reactor long before the Fukushima incident occurred.

"To connect the two and our post-earthquake review is an interesting logical exercise," Burnell said.

The Fukushima accident highlights major risks in nuclear plants, including inadequate backup power arrangements and the unavailability of freshwater for cooling functions, said Arjun Makhijani, president, Institute for Energy and Environmental Research.

"Continuing business as usual in licensing and reactor certification in the face of the unprecedented, hugely complicated, and ongoing Fukushima accident would be rash and contrary to the mandate of the NRC to ensure safety and protect public health," Makhijani said.

Groups Ask NRC To Halt Nuclear Licensing Pending Investigation Of Fukushima (AMERINDEP)

By Eartha Jane Melzer

American Independent, April 18, 2011

Dozens of groups and individuals are asking the US Nuclear Regulatory Commission to suspend licensing and other activities at 21 nuclear plants until the agency completes an investigation of the Fukushima nuclear crisis.

At a press conference Thursday the groups Beyond Nuclear, Citizens for Alternatives to Chemical Contamination, Citizens Environment Alliance, Don't Waste Michigan, Green Party of Ohio and Sierra Club Michigan Chapter asked that an independent commission be established to study the implications of the ongoing Fukushima disaster.

There is precedent for this type of action. After the Three Mile island partial meltdown in 1979, President Jimmy Carter created an independent task force — the Kemeny Commission — to investigate the event and halted all Nuclear Regulatory Commission decisions until the commission's report was complete.

Dr. Arjun Makhijani, president, Institute for Energy and Environmental Research (IEER), said that the still-unfolding Fukushima Daiichi plant situation is rewriting the book on nuclear accidents.

"There are multiple major sources of emissions from the same site at the same time, including more than one reactor and more than one spent fuel pool. For the first time, major portions of three reactor buildings have been blown away by hydrogen explosions. Backup power arrangements have been shown to be grossly inadequate. Freshwater was not available for essential

cooling functions for an extended period. The situation is far from being under control more than one month after the start of the accident. Continuing business as usual in licensing and reactor certification in the face of the unprecedented, hugely complicated, and ongoing Fukushima accident would be rash and contrary to the mandate of the NRC to ensure safety and protect public health."

In a petition filed with the NRC on Thursday, the groups officially asked that the agency stop license renewal decisions for reactors in Columbia Wash., Davis-Besse, Ohio, Diablo Canyon, Calif., Indian Point, N.Y., Pilgrim Mass., and Seabrook N.H.

They also asked that the NRC halt combined construction permit and operating license decisions for Bellefonte Units 3 and 4, Bell Bend, Callaway, Calvert Cliffs, Comanche Peak, Fermi, Levy County, North Anna, Shearon Harris, South Texas, Turkey Point, Vogtle and William States Lee; a construction permit decision for Bellefonte Units 1 and 2; and an operating license decision for Watts Bar.

The group also asked that proceedings to approve two new reactor designs be put on hold.

In March, President Obama asked the NRC to conduct a "comprehensive review" of the 104 nuclear power plants that provide 20 percent of the US electricity supply.

But critics say that the Nuclear Regulatory Commission is not sufficiently independent from the industry it is charged with regulating.

According to a

report by the Union of Concerned Scientists inadequate training, faulty maintenance, poor design and failure to investigate problems thoroughly brought US nuclear plants to the verge of trouble 14 times last year.

The US has 23 General Electric Mark 1 boiling water reactors like those at the Fukushima Daiichi complex. On March 22, the NRC granted a 20-year license renewal for one of them. The NRC approval came over the objections Vermont's legislature and governor.

Diane Curran, an attorney for the petitioners, said that NRC violated the law by approving the Vermont reactor renewal amid the unfolding nuclear disaster.

"The National Environmental Policy Act requires the NRC to learn and apply the lessons of Fukushima before it allows another reactor to operate," she said. "By establishing a Task Force and ordering the investigation of the regulatory implications of the Fukushima accident for US reactors, the NRC has obligated itself to consider those implications in all prospective licensing decisions."

Mary Lampert, director of the group Pilgrim Watch in Duxbury, Mass., said that she wants more focus on evacuation plans before the NRC decides whether to relicense the Pilgrim plant, which also shares a design with the Fukushima plants.

"The major cause of the Fukushima disaster was the loss of off-site power; but it doesn't take a tsunami to cause that," she said, "The US Nuclear Regulatory Commission told all Americans within 50 miles of Fukushima to evacuate; several million people live within a 50 mile radius of Pilgrim."

NRC spokeswoman Viktoria Mytling said the agency will respond to the groups petition once it has had time to review it.

Anti-nuclear Rally At Avila Beach (SLOT)

Japan cited, Diablo faulted

By Julia Hickey

San Luis Obispo Tribune, April 17, 2011

More than 300 people gathered Saturday for a rally on the sand at Avila Beach calling for the closure of Diablo Canyon nuclear power plant and a halt to its relicensing application process.

The event, organized by San Luis Obispo-based anti-nuclear group Mothers for Peace, was in response to the disaster at the Fukushima Dai-ichi power plant in Japan after last month's 9.0-magnitude earthquake and tsunami there.

Plant owner PG&E has asked the federal Nuclear Regulatory Commission to delay its final decision about relicensing until studies of earthquake faults offshore of the plant are complete, although it wants the processing of its renewal application to continue.

Many at Saturday's gathering were also at protests held during the 1970s and 80s, while the plant was under construction. Diablo Canyon's Unit 1 reactor went online in 1984.

For many of the demonstrators, the issues have not changed.

Elizabeth Apfelberg, one of the original members of Mothers for Peace, said there are three main reasons for why the plant should be shut down: uncertainty about nuclear waste, seismic dangers and the age of the plant.

Apfelberg was twice arrested in the 80s for attempts — not directly organized by Mothers for Peace — to blockade the power plant gate.

The tone of Saturday's gathering was far from the heated civil disobedience associated with the early protests.

Saturday's demonstrators cheered the final kiss of a nearby beach wedding — inadvertently permitted for the same time — and danced to upbeat drum music.

But their signs — bearing such messages as: "Fault-y idea, Shut down or melt down"; "I'm scared"; and "Want to get nuclear wasted?" — indicated their frustrations.

The gathering reached a high pitch when a woman led the group in loud chants of "Shut it down!"

Some of the loudest shouts came from Atascadero High School junior Rainey Forzetting, who was there with three friends. Forzetting just finished studying earthquake faults in a geology class, and she is concerned about the placement of a nuclear power plant so close to where earthquakes originate, she said.

Attendees also included out-of-towners such as Beth Barnes of Long Beach, who drove up because she is scared that her daughter, who will attend Cal Poly in the fall, will live in "the shadow of a nuclear power plant," she said.

Umi Hagitani, of Oakland, who grew up in Japan and whose mother lives in a region near Fukushima Dai-ichi, was at the rally because she said she believes there are social parallels between the populations that live near Diablo Canyon and near Fukushima Dai-ichi.

The gathering mostly irritated Bob Kokenda, of Los Angeles, who was one of the throngs of beachgoers just yards from the rally.

"I have nothing against the cause," he said, "but whether they are here for two hours or three ... I don't think it will make a difference."

Nuclear Power Protest Draws Hundreds (SANTAMAR)

Santa Maria (CA) Times, April 17, 2011

An energetic and colorful protest Saturday at Avila Beach united members of the anti-nuclear power organization Mothers For Peace with others in a gathering to encourage the closure of Diablo Canyon Nuclear Power Plant.

Several hundred took part in the demonstration, many waving signs bearing phrases including "Diablo on shaky ground", "children not Chernobyl" and "no nukes." Demonstrators also sang and pounded on drums while beach-goers nearby soaked up sun.

The three-hour protest, which was prompted by the recent Japanese nuclear disaster following a major earthquake and tsunami, was reminiscent of similar demonstrations decades ago at the power plant.

Jane Swanson, a member of Mothers For Peace, said Saturday's protest went well.

"I thought the signs were just wonderful and everybody was so supportive," she added.

Shut Down Diablo Canyon Nuclear Reactor! Protest On The Beach : Indymbay (INDYMEDIA)

Bay Area (CA) Indymedia, April 18, 2011

Eric Veium of the San Luis Obispo Renewable Energy Secure Community Project spoke yesterday at a rally of protesters who are calling on the Nuclear Regulatory Commission to shut down the Diablo Canyon nuclear power plant. Veium said, "We're surrounded by an abundance of renewable energy," referring to alternative methods to nuclear power that are safe and sustainable.

Fred Collins of the Chumash Nation opened the rally, welcoming people who lined the beach with protest signs; Jane Swanson of Mothers for Peace spoke of the fight for a nuclear-free San Luis Obispo County that her group has waged since the 1970's.

Buddy Princeton grabbed some buddies to headline the musical portion of an energetic rally on Avila Beach, in San Luis Obispo County today. The picturesque beach area is in close proximity to the Diablo Canyon nuclear plant.

Lady Tie-Dye upped the color quotient as she emcee'd a lineup that included chanting and drumming by Timo Beckwith and friends. Several performers sang songs written especially for the occasion calling for the shut down of the nuclear reactor. Singer Sherry Lewis kept her cool under a cowboy hat as other performers stripped down to go shirtless under blazing beach sunshine. Your Royal Funkyness got up on stage and helped everybody get dancing.

The Fukushima disaster was at the forefront of everyone's thoughts. Speakers encouraged casual beach-goers and rally participants alike to get busy and get vocal on the Diablo Canyon issue. Signs said No More Fukushima and "Don't Fukushima SLO".

Jane Swanson, speaking on behalf of Mothers for Peace, said, "Our group made it clear in 1973 that a workable evacuation plan is not possible at Diablo Canyon. Now it is 2011 and this is still true. It is time to shut it down." The crowd joined in chorus shouting, "Shut it Down!"

The Raging Grannies led a sing-along to the tune of She'll Be Comin' Round the Mountain. The Grannies called on the Nuclear Regulatory Commission to "get real" about Diablo Canyon plant with these lyrics:

We know tons of facts regarding nuclear waste.
We must work hard now to stop it—in great haste
Regulators must wake up now
Corp'rate owners can't have POW-er
Join with anti-nuke environmentalists!

Activists Protest At Local Nuclear Plant (KEYT)

KEYT-TV Santa Barbara, CA, April 17, 2011

Avila Beach - Making their voices heard, a group of local activists demonstrated at Avila Beach. The group called on the Nuclear Regulatory Commission to suspend the licensing operations for all 104 nuclear power plants in the US

The gathering was put together by the group, Mothers for Peace, who have for years maintained that the Diablo Canyon Nuclear Power Plant is not safe. They say all nuclear facilities should be put on hold, especially in light of what took place at the Fukushima plant in Japan following the earthquake.

Organizers spent the day getting petitions signed. They contend not enough is being done to make the nuclear facilities safe, and fear a possible catastrophe one day at Diablo.

As for Pacific Gas and Electric, they maintain safety is a top priority, and that includes seismic retrofits. Plant officials have said that the facility was built to withstand 7.5 magnitude quake. Just this past week, PG&E asked the Nuclear Regulatory Commission to delay its final action on Diablo Canyon's license renewal application until current 3-D seismic studies are complete.

Hundreds Protest California Power Plant (KGPE)

By April 17, 2011

KGPE-TV Fresno, CA, April 18, 2011

Hundreds came out to Avila Beach to send a strong message to PG&E. They want a nuclear power plant in Avila Beach to shut down. A group called Mothers for Peace is trying to close the Diablo Canyon Nuclear Power Plant since Japan's earthquake and tsunami. The group held a protest at the Avila Beach Pier on Saturday. Protestors say the Diablo Nuclear Power Plant is still not safe in the event of an earthquake. A Mothers for Peace group member named Jane Swanson says, "Fukushima has given us a huge warning and there's no moral and no legal excuse to continue business as usual with nuclear plants in the United States." A PG&E spokesperson, Paul Flake says, "Every single day the men and women at Diablo Canyon go to work with seismic safety and safety operations at the top of our priority. The Nuclear Regulatory Commission shuts down Diablo Canyon if ever it determines that it's not safe to operate."

The licensing process is ongoing. PG&E has asked for a delay in the final renewal procedures until seismic studies are done. The San Luis Obispo County Board of Supervisors drafted a letter asking the nuclear regulatory commission to stop the re-licensing of Diablo all together.

More Than 100 People Protest Diablo Canyon Nuclear Power Plant (KSBYTV)

By Danielle Lerner

KSBY-TV San Luis Obispo, CA, April 16, 2011

A local activist group hit the beach Saturday, demanding the Nuclear Regulatory Commission suspend the licensing operations for all 104 nuclear power plants in the US until it has better studied the Fukushima crisis.

The group Mothers for Peace hosted a protest in Avila Beach Saturday afternoon. It maintains Diablo Canyon Nuclear Power Plant is not safe, and its license should not be renewed until further seismic studies can be done.

A spokesperson for PG&E says seismic safety is a top priority at the plant, but that did not stop Saturday's demonstration.

Armed with signs, and petitions, more than 100 people packed a portion of Avila Beach Saturday to speak out against Diablo Canyon Nuclear Power Plant.

"The Fukushima crisis is our greatest warning and the NRC's attitude is business as usual," said Jane Swanson of Mothers for Peace.

Demonstrators say living near Diablo, and other nuclear power plants like it, could come with catastrophic consequences.

"Those of us who live in the shadow of the Diablo Canyon Nuclear Power Plant are potential victims, everyone in the US who lives downwind from a nuclear power plant is a potential victim," said Swanson.

"We understand the concerns in light of what happened in Japan," said Paul Flake of PG&E.

PG&E insists seismic safety is an ongoing priority at Diablo Canyon. It says the plant was built to withstand up to a magnitude 7.5 quake, and experts say the biggest quake one of the four nearby faults can produce is about a 6, to a 6.5. The company also started 3-D seismic mapping near the plant last October.

"Every single day we dedicate our activities and our operations at the plant to making sure that nuclear safety is at the top of our agenda each and every day," said Flake.

PG&E recently asked the Nuclear Regulatory Commission to delay its final action on Diablo Canyon's license renewal application until current 3-D seismic studies are complete.

San Onofre Passes Disaster Drill, Inspectors Say (SJCP)

By Adam Townsend

San Juan Capistrano Patch, April 18, 2011

It was only a test, but workers at the San Onofre Nuclear Generating Station responded well to this week's emergency drill, according to preliminary reports released Friday.

At a post-mortem held in San Juan Capistrano, officials from the Federal Emergency Management Agency and the US Nuclear Regulatory Commission said everything appeared to go smoothly during the biennial drill.

"The performance we observed gives us continuing confidence that the site could implement the emergency procedures had the [simulated] events been real," said Paul Elkmann, a senior emergency inspector with the NRC.

During the drill, plant workers responded to various mock emergency incidents, including an on-site fire, a reactor leak and a cracked cooling pump.

A number of local and county organizations continued the drill on Thursday, simulating their responses to a cloud of radioactive material released in the area 10 miles around the plant.

In an interview with Patch after Friday's presentation, Elkmann said the plant's communication process could be "streamlined" in some areas, but he emphasized that residents should feel "absolutely" safe living nearby.

"That's our No. 1 goal as inspectors and auditors," Elkmann said.

Craig Fiore, acting chairman of the regional assistance committee for FEMA, said the 400-plus drill participants—including the cities of San Clemente, San Juan Capistrano and Dana Point—were well-coordinated and responsive during the exercises.

The observations are preliminary, and inspectors will release an official report on the drill in about 90 days, according to Fiore.

During Friday's presentation, which took place at Capistrano Unified School District headquarters, residents asked questions about reactor safety, evacuation plans and plant readiness for situations like the one at the Fukushima reactor in Japan.

Laguna Woods resident Gale Kernahan said he feared the western side of the plant wasn't sufficiently protected from potential tsunamis. "You're telling us we have to have faith that a 30-foot wall is going to be enough," he said.

Fiore said Tuesday's drill, one of several held each year at the plant, was designed to simulate possible on-site problems, not to an earthquake or tsunami.

Penny Maynard of Dana Point said she was worried the city's current evacuation plan cannot accommodate the large number of people who would flee the area during a disaster.

"I came here because the evacuation plan here is no good," Maynard said. "I will only feel safe when there's a new plan."

Residents should get ready for any type of disaster, large or small, and should have enough supplies to stay in their homes for at least 72 hours, according to Harry Sherwood, FEMA technological hazards branch chief.

Officials Give Nuclear Plant Drill Positive Marks (NCT)

By Paul Sisson

North County Times (CA), April 15, 2011

Federal agencies said Friday that the 400 people who participated in a nuclear emergency drill for San Onofre Nuclear Generating Station this week did a good job in responding to the incident that simulated the release of radioactive steam into the environment.

However, many members of the public wanted to know why the drill, which simulated the malfunction of plant equipment, did not feature some sort of natural disaster like the massive earthquake that severely damaged the Fukushima Dai-ichi plant in Japan in March.

Gary Headrick, president of San Clemente Green, a grass-roots organization that has recently voiced concern about safety at the plant, wanted to know whether the Federal Emergency Management Agency and the Nuclear Regulatory Commission, which conducted this week's three-day drill, thought the existing 10-mile evacuation zone around the plant was adequate, given that US officials recently recommended a much larger 50-mile zone for Americans currently in Japan.

Harry Sherwood, FEMA's technological hazards branch chief, said both agencies are and will examine all of the information surrounding the Fukushima accident to determine whether things like evacuation zones are large enough.

"It's an ongoing learning experience," Sherwood said.

This week's drill involved the simulated malfunction of a critical water pump inside one of the plant's two concrete containment domes. While the event did involve tracking and reacting to the release of radioactive steam, the simulation did not involve the kind of multiple hazards that rained down on the Fukushima plant, which was hit with an earthquake and tsunami that knocked out the plant's backup power generators and infrastructure for miles around.

Headrick and others wanted to know why the NRC and FEMA weren't throwing such a "multiple hazard" scenario at San Onofre and the emergency personnel in the community responsible for protecting the public.

Sherwood said that, while previous biennial drill scenarios have traditionally focused on malfunctions at the plant, future drills will go further in simulating disasters.

"That is something we've been putting in place for the last two years," Sherwood said in an interview after the meeting concluded.

Several officials from the NRC also told the public that on-site inspectors assigned to San Onofre have already begun taking action where they can to learn from Japan.

Greg Warnick, chief resident inspector at San Onofre, said, for example, that Southern California Edison created a 15-foot emergency zone around a mobile water pump that could be critical in responding to an accident that knocks out cooling systems at the plant. He said discussions are also under way about further strengthening the concrete bunkers that protect the plant's backup diesel generators.

"There haven't been any huge issues that have been discovered, but it is something that the plant is looking at and that we're validating," Warnick said.

Friday's meeting was light on details on this week's emergency drill, but FEMA will publish a full report on the drill's results within the next 90 days. The report will be made available to the public.

'Life Is Good' In Shadow Of California Atomic Plant (AFP)

By Paula Bustamante

AFP, April 18, 2011

SAN CLEMENTE, California — Year-round sunshine, beautiful beaches, a dream lifestyle: for residents near California's San Onofre atomic power plant, Japan's nuclear crisis seems a world away.

Even though the area combines all the factors behind the Fukushima meltdown — on a low-lying coast, near a major seismic faultline, and in the shadow of a water-cooled nuclear power plant — locals here say they are not worried.

"I've lived here for 22 years and there's never been a problem," said Al Parker, sunbathing on the beach in San Clemente, some 60 miles (100 km) south of Los Angeles, and six miles (10 km) from the San Onofre power plant.

"There's too many things to worry about in this world. I have no concerns. This is the USA, not Japan, not Russia," he added, referring to Fukushima and 1986 Chernobyl disaster in Soviet-era Ukraine.

The operators of the San Onofre plant, Southern California Edison, held a three-day drill this week to test the ability of the facility and local, state and federal agencies to respond to a radiological emergency.

The simulation was long scheduled, and is required every two years, but drew more attention following the March 11 earthquake and tsunami in Japan which triggered the Fukushima nuclear crisis.

"My single biggest hope out of the day is it will be reassuring to the public in the aftermath of the tragic earthquake and tsunami in Japan," said the power company's spokesman Gil Alexander afterwards.

Since the late 1970s California — which has two nuclear plants, San Onofre and another one at Diablo Canyon, on the coast north of Los Angeles — has banned new nuclear reactors due to concerns over radioactive waste disposal.

San Onofre's operators say the plant — the same water-cooled design as Fukushima — was built to withstand an earthquake of up to 7.0 in magnitude — far less than the killer 9.0 temblor which hit Japan.

San Onofre had its critics: in June 1980, some 15,000 people attended a protest near the plant, which now provides power to 1.4 million people in the southern Californian area.

But on the ground in San Clemente, it is difficult to find anyone who disagreed with the reassuring message about San Onofre, which has been producing power since 1984.

"I have lived here for 40 years, raised my children here and spend time with my eight grandchildren," said Mary Jo Conrad, co owner of Conrad and associates realtors

"It is a beautiful place with great beaches, nice weather, friendly people ... We have no problem with the nuclear plant. We are in the United States, a country that is great."

San Clemente is in Orange County, one of the richest areas of the US, where the average asking price for a house is over \$1 dollars. President Richard Nixon bought his 'western White House' here in 1968.

In Oceanside, some 15 miles (25 km) from San Onofre and near the Camp Pendleton military base, the message is the same.

"I'm very religious, so it's all in God's will," said Kimberlee Brown. "I'll go when it's my time. You know, it's just nature and life. It's here for a reason. It's here to do its promising works. I'm not worried at all."

Eric Nesbitt, an electrician who helped build the plant between 1979-1984, added: "I've never built something as good as that place. I like nuclear. I think that if nuclear is built properly and on a good spot, there is no risk.

"And there is risk in everything. You know, this is life! That's why life is so exciting," he added.

Back in San Clemente, some locals voice frustration at the number of journalists who have come here since the Japanese disaster, including for this week's emergency drill.

"Honestly the nuclear plant or the risk to live here because of the possibilities of a tsunami or earthquake," said restaurateur Scott Perry, 41, with his young son playing in the sand at San Clemente beach.

"I think is not an issue for our a community, its not something that is present in our lives," he added.

And he adds: "How many nuclear accidents have occurred in the last 30 years? The Three Mile Island accident (in 1979); Chernobyl, and now in Japan, just three, so I think is not something that we can say is unsafe".

"I like this area ... If something like Japan happens we'll be going to Vegas, we have a place to stay there."

NRC To Hold Meeting On SONGS Performance (DPT)

By Jonathan Volzke And Andrea Swayne

Dana Point Times, April 18, 2011

On April 28 the Nuclear Regulatory Commission staff will meet with Southern California Edison representatives to discuss the NRC's 2010 safety performance assessment of the San Onofre Nuclear Generating Station.

The meeting is set to begin at 6 p.m. in the board room of the Capistrano Unified School District building at 33122 Valle Road in San Juan Capistrano.

The meeting will be open to the public and a question and answer session will be held following the safety assessment presentation. NRC staff will answer questions regarding SONGS and the role the NRC plays in ensuring safe operation of the power plant.

The meeting discussion will be based on a letter sent from the NRC Region IV office to plant officials addressing the facility's 2010 performance. The licensee addressed longstanding concerns in the area of problem identification and resolution, but has not been fully successful in addressing several longstanding human performance issues, said NRC officials.

Additional focused inspections in the human performance area and in the safety conscious work environment area to verify that corrective actions are effective and sustainable, the NRC said.

The NRC Region IV letter to SONGS is available on the NRC web site at: http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/LETTERS/sano_2010q4.pdf

Current performance information for San Onofre Unit 3 is available at: http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/SANO3/sano3_chart.html

Nuclear Protest In Bowling Green (TOLB)

Toledo Blade, April 18, 2011

Nuclear protest in Bowling Green

Michael Leonardi of Toledo and about two dozen others take part in an anti-nuclear protest at Thurstin and Wooster streets in Bowling Green. Organizers said Friday 's rally, 'Speak Truth to Nuclear Power,' was a response to both the disaster in Japan and FirstEnergy's plan to extend operations at its Davis-Besse nuclear plant in Ottawa County for 20 years beyond its designed operating life.

BG Protesters Link Davis Besse With Fukushima (WNWO)

By Laura Rice

WNWO-TV Toledo, OH, April 18, 2011

BOWLING GREEN, OHIO – The risks of nuclear power are on the minds of many as the dangerous situation at the Fukushima Dai-ichi nuclear plant in Japan continues to unfold.

Back in Northwest Ohio, protesters took to the streets in Bowling Green. The protestors say Davis Besse has had too many close calls and that it should not be licensed to operate for an additional 20 years as is on the table right now.

"We feel that it is time to retire it, it is time to deal with all of the waste that it has already generated and we cannot do another 20 years of First Energy's mismanagement of the Davis Besse nuclear power plant," said Anita Rios, Co-Chair of the Ohio Green Party.

Even if the Nuclear Regulatory Commission decides not to renew the license for Davis Besse it will continue to operate through 2017.

Are you concerned about the safety of Davis Besse?

5 Die In Apparent Murder-suicide In Ottawa County (TOLB)

By Taylor Dungen

Toledo Blade, April 18, 2011

Alan and Dawn Atwater were married in November 2005. PROVIDED TO THE BLADE Enlarge | Photo Reprints OAK HARBOR — Sitting at her computer early Saturday morning, Joan Atwater heard an unusual call come over the police scanner. A man was going to kill himself. He had already killed his children, the dispatcher said.

Then she heard the address, 964 Leutz Rd. Her grandson's home just next door.

She panicked.

She called her grandson, Alan Atwater, 31, 20 to 30 times, she estimated, but he never picked up. Ms. Atwater, 66, opened the blinds, looking across the lawn to the Salem Township home she and her husband rented to her grandson and his wife, Dawn M. Atwater, 30.

Atwater turned on the outside light momentarily and then turned it off. That's when, she said, he must have turned a gun — the one he apparently used to kill Dawn and their three young children just moments earlier — on himself.

The 911 call came into the Ottawa County Sheriff's Office at 12:11 a.m.

"There's been a terrible -accident at my house," Atwater told the dispatcher. His voice was calm and steady. "My wife and three children are dead."

AUDIO: Listen to 9-1-1 call

He then told the dispatcher they died from gunshot wounds. He was getting ready to kill himself.

"Did you kill them?" the dispatcher asked.

Ashley Atwater, 4, left, and her brothers Isaac, 2, kissing baby Brady, 1, were found dead inside their rural Oak Harbor home, along with the bodies of their mother and father, in an apparent murder-suicide. PROVIDED TO THE BLADE Enlarge | Photo Reprints "Yes," he responded before hanging up.

Sheriff deputies were at the home setting up a perimeter within minutes. There was no activity inside the home. They never heard a final gunshot.

Deputies used a loudspeaker, calling out to Atwater by name, and tried to reach him by telephone. There was no response.

At 2:52 a.m., almost three hours after the initial call, police broke into the white two-story farmhouse through the front door. They found Dawn; Ashley Atwater, 4; Isaac Atwater, 2; Brady Atwater, 1, and Alan Atwater dead in an upstairs bedroom. Brady was in a bed, the rest of the family on the floor, Sheriff's Capt. Olen Martin said.

Ashley's birthday was just two weeks earlier.

"Obviously this is a tragedy," Captain Martin said. "Three young, innocent lives taken. And [Dawn] Atwater."

The family dog, Duke, a golden retriever, was spared, Ms. Atwater said. The dog is staying with a family member.

Sheriff Bob Bratton said the situation was "extremely critical" and the deputies and special response and command team had to be sure the call wasn't a hostage situation or a set-up for an ambush before forcing entry.

Authorities said there is no indication anyone else was involved. They could not say if a note was left.

A hint of trouble

Captain Martin could not say if the family members were killed in the same room or if the bodies were moved after the fact.

Alan Atwater, an only child, told his grandfather, Neil Atwater, 75, whom he called "Chief," on Friday that he and his wife "had to get things straightened out."

Neil Atwater understood that to mean the couple were having a disagreement.

Ottawa County sheriff's deputies remained on scene mid-morning Saturday at the home on Leutz Road, northeast of Oak Harbor in Salem Township. THE BLADE/LISA DUTTON Enlarge | Photo Reprints Whatever problems the couple, who married Nov. 4, 2005, were having, they didn't appear to be serious, Ms. Atwater said.

Neil Atwater last spoke to his grandson about 6 p.m. Friday. Alan was taking some of the children to Tiffin to pick up a chair the family was having redone.

"They came back, they unloaded the chair, and I never knew [anything] was going on," Neil Atwater said. "We never thought anything like this was going to happen, no way."

Dawn Atwater posted on Facebook a photo of herself, Alan Atwater, and her stepdaughter, Mandie Atwater, 12, from the day of their wedding. She commented that the newlyweds were not smiling because they fought on their wedding day.

Mandie was not at the Leutz Road home yesterday; she spent the previous weekend with her father. Yesterday, she was at her mother's home somewhere in rural Lucas County, Sheriff Bratton said. The girl's parents, who were never married, shared custody, the sheriff said.

A happy man

Family and Oak Harbor residents who knew Alan Atwater said he was a kind, happy man. He had a smile that would light up the room.

"I'm going to miss his smile," Ms. Atwater said. "He was always a happy-go-lucky kid."

Alan Atwater worked part time on the family farm where corn and beans are grown on their 100 acres, Ms. Atwater said.

Alan Atwater's full-time position was at the Davis-Besse Nuclear Power Station, where he worked in the maintenance department as an instrument and control technician, said Todd Schneider, the plant's spokesman. Mr. Schneider would not say how long Atwater worked at the plant, but Ms. Atwater said it was at least five years.

One week ago, Atwater returned from a five-week job at another nuclear plant, Sheriff Bratton said.

Atwater earned his associate's degree in engineering from Terra Community College, Ms. Atwater said.

Amy Middleton, who works at Happy Hour Pizza in downtown Oak Harbor, said Atwater used to come into the bar and pizza shop every Tuesday for their pool league.

This map shows the location of the home on Leutz Road, northeast of Oak Harbor, where five family members were found dead in an apparent murder-suicide. Enlarge "He was always really nice and friendly," she said. "He was very smart."

Ms. Middleton said she hasn't seen Atwater in years.

A mother and wife

Dawn was quiet, a stay-at-home mother who also baby-sat her nieces and nephews, Ms. Atwater said.

Attempts to reach Dawn's family were unsuccessful. Her Facebook page says she was a 1998 graduate of Oak Harbor High School.

The family were members of St. Paul's United Church of Christ but did not attend regularly, said the Rev. David Voll. He said Atwater had been in several weddings there for his friends from high school.

A comment from Erin Greener Walleman on a Facebook photo of a smiling Atwater holding Brady reads, "This is the Alan I remember ... he loved his kids."

Neil Atwater said "something drastic had to happen" from the time the family returned from picking up the chair until violence erupted inside the home.

Ms. Atwater said she was unaware that her grandson had a gun, but two men who worked at the plant with Atwater told Ms. Atwater that he did.

A clean record

Joan Atwater, Alan Atwater's grandmother, says she heard on the police scanner that a man killed his wife and children and was about to kill himself. The dispatcher then identified her grandson's address. THE BLADE/LISA DUTTON Enlarge | Photo Reprints Sheriff Bratton said Alan Atwater did not have a conceal-carry permit, but because of his clean record, he would have qualified.

A murder weapon has not been identified, the sheriff said.

Atwater did not have a criminal record other than a few traffic violations, which were not drug or alcohol related, authorities said.

A sheriff's deputy was parked in the driveway, keeping watch over the home, which will be under watch until the autopsies are scheduled to be completed tomorrow by the Lucas County coroner.

Last summer, the family installed a new wooden play set in the yard. The three brightly colored swings, caught in yesterday's strong winds, stood out against the gloomy gray sky.

The children

Ms. Atwater said her great-grandchildren were quiet, although Ashley was becoming more talkative and Isaac was very excited whenever she came to visit.

"I was so proud of those kids," she said, clinging to their photographs and wiping tears from her eyes.

Ms. Atwater's husband was out looking for burial plots yesterday morning, she said.

This is the second time within six months that the Ottawa County Sheriff's Office has dealt with the killings of multiple family members.

William J. Liske, 25, is awaiting trial on charges of aggravated murder stemming from the Oct. 31, 2010, deaths of his father, stepmother, and stepbrother in their home on State Rt. 2 just east of the Lucas-Ottawa county line.

William E. Liske, Jr., 53, and wife Susan Liske, 46, were found with gunshot wounds in the head. Her son Derek Griffin, 23, had been beaten to death.

Ottawa County Sheriff Bob Bratton, left, and Olen Martin tell of the scene at 964 Leutz Rd. "I just don't have an answer to all this," Sheriff Bratton said. THE BLADE/LISA DUTTON Enlarge | Photo Reprints Mr. Liske pleaded not guilty to all charges, for which he could face the death penalty if convicted.

"These are the things you're starting to see," Sheriff Bratton said. "For some reason, this is how people are dealing with their problems."

Seeking answers

The investigation is ongoing, the sheriff said. They want to be able to tell the family why this "shocking and unexplainable tragedy" happened.

Cell phones and other evidence collected from the family home were taken to the crime lab for analysis. Cell phones will be looked at for any phone calls or text messages that might shed light on the circumstances.

"I just don't have an answer to all this," the sheriff said.

Murder-suicide Eludes Answers - Toledo Blade (TOLB)

By Erica Blake

Toledo Blade, April 18, 2011

OAK HARBOR, Ohio — Investigators have questioned friends and relatives of the man who killed his family before turning the gun on himself early Saturday and they have scoured the rural home where the deaths took place.

But still they are eluded by answers to the question, 'Why?'

"Why he did what he did is still a mystery," Ottawa County Sheriff Bob Bratton said of the actions of shooter Alan Atwater. "What pushed him to do what he did, what was so bad? I don't know. I'm not sure we're ever going to find that out."

Sheriff's deputies sped to the home at 964 Leutz Rd. shortly after midnight after receiving a 911 call from Atwater. He calmly told the dispatcher that his family had been killed and that he intended to take his own life.

When asked if he was the shooter, he said he was.

Inside the home, responders found five bodies, two guns, and few answers.

The bodies of Atwater, 31, his wife, Dawn, 30, and their three children, Ashley, 4, Isaac, 2, and Brady, 1, were found shot to death in one room.

Sunday, the sheriff said a handgun and shotgun were taken from the home. He said one, "if not both," were used.

"I'm just hoping that we can find something," Sheriff Bratton said. "Maybe someone will come forward, a friend of either Alan or Dawn. ... Maybe there is something that will open something up for us."

According to interviews with friends and family, the couple had "marital issues," the sheriff said.

But he said nothing had been substantiated and there were never domestic issues at the home that required his office to respond.

Investigators from the Bureau of Criminal Identification and Investigation of the Ohio Attorney General's Office were at the home Saturday to analyze and process the scene. The sheriff said they are waiting for toxicology test results to determine if Atwater had been drinking alcohol or using drugs.

Investigators will talk to a police psychologist in an effort to determine what happened, Sheriff Bratton said.

All that has been learned so far, according to the sheriff, was that the couple had "an up-and-down financial situation."

Atwater was employed full time at the Davis-Besse Nuclear Power Station and his wife was a stay-at-home mother.

Family members of Mrs. Atwater could not be reached for comment Sunday.

Alan Atwater's mother declined to comment to The Blade.

Atwater's step-grandmother, Joan Atwater, said the families had come together to discuss funeral arrangements, but the arrangements had not been finalized.

"Our family is doing pretty well," she said. "It's something we have to accept. We don't want to, but we have to."

The sheriff said he had been in touch with both families. And while Saturday brought on the initial shock, yesterday was a day to try to understand what happened.

The home that the night before was swarming with sheriff's cars was quiet Sunday afternoon. The couple's two vehicles still stood in the driveway and a lone cat sat on the back porch.

The only evidence of a brutal crime were two strips of red evidence tape on the front and back doors, sealing them.

Sheriff Bratton said autopsies scheduled for Monday may help investigators determine how each person was shot.

As for why, he said he's not sure those are answers investigators will be able to pinpoint.

"I wish I had the answers," he said. "All we can do is try to piece it together."

Palo Verde Contractor Detained After Alleged Bomb Comment (AR)

By Karen Schmidt

Arizona Republic, April 15, 2011

A contractor working at the Palo Verde Nuclear Generating Station was taken into custody early Friday morning after he apparently said that he might have a bomb in his vehicle, authorities said.

The contractor's vehicle had been stopped by security for a routine inspection when he commented that he possibly had a bomb in his vehicle, said Sgt. Jesse Spurgin of the Maricopa County Sheriff's Office.

Authorities said they couldn't immediately determine whether the contractor was making a serious threat or joking.

The bomb squad with the Sheriff's Office was called to the nuclear generating station to inspect the vehicle, Spurgin said.

The bomb squad didn't find any explosive devices, Spurgin said.

The contractor was taken into custody at about 12:45 a.m. Friday and could face felony charges in connection with the comment about the bomb, Spurgin said.

The Palo Verde Nuclear Generating Station is located in Tonopah, about 50 miles west of Phoenix.

The security gates at Palo Verde are more than a quarter mile from the nuclear reactors. All employees and visitors must pass through an area where guards armed with automatic weapons check identities and search vehicles for explosives or other contraband prohibited at the plant.

In November 2007, a contract worker was stopped at the security gate when a pipe bomb was discovered in the bed of his pickup truck. The worker was taken into custody but later released after Sheriff's Office officials searched his home and determined he was unaware of the device in his vehicle.

Arizona Republic reporter Ryan Randazzo contributed to this report.

Man Arrested In Bomb Scare At Nuclear Plant (REU)

By David Schwartz

Reuters, April 15, 2011

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

Maricopa County Sheriff's Office Investigating Bomb Threat At Palo Verde Nuclear Generating Station (KNXV)

By Katrina Schaefer

KNXV-TV Phoenix, AZ, April 18, 2011

WINTERSBURG, AZ - A man working at the Palo Verde Nuclear Generating Station was taken into custody early Friday after allegedly saying he might have a bomb in his vehicle.

Sgt. Jesse Spurgin with the Maricopa County Sheriff's Office said the vehicle had been stopped by security for a routine vehicle inspection around 12:45 a.m. when the man, a contractor employed at Palo Verde, made the comment.

The MCSO bomb squad inspected the vehicle and no explosive devices were found.

Spurgin said there was no sign of any threat and the vehicle was towed.

The man was taken into custody. MCSO said it is unknown why he made the comment.

It is unclear what charges the man could face and his name was not released.

Ariz. Nuke Worker's Joke Brings Out Bomb Squad (AP)

Associated Press, April 18, 2011

WINTERSBURG, Ariz. - A contractor working at an Arizona nuclear power plant was taken into custody and had his vehicle searched by a bomb squad after saying he may have a bomb in his vehicle.

Sgt. Jesse Spurgin of the Maricopa County Sheriff's Office says the man apparently made the comment "kind of in jest" during a routine vehicle inspection at about 12:45 a.m. Friday at the Palo Verde Nuclear Generating Station.

Spurgin says officials took the comment seriously as a precaution. He says a bomb squad scoured the vehicle and found no explosives.

The man's name hasn't been released. Authorities say he could be charged with a felony.

The nuclear plant is in Wintersburg, about 50 miles west of downtown Phoenix.

According to the The Arizona Republic, the Palo Verde Nuclear Generating Station is planning for a worst-case scenario at the plant's three reactors.

Nuclear power plants across the nation have exhaustive emergency precautions in case power goes out.

They're designed to shut down if an earthquake or other disaster strikes.

Joke Leads To Bomb Scare At Palo Verde Nuclear Generating Station (KTVK)

By Catherine Holland

KTVK-TV Phoenix, AZ, April 18, 2011

WINTERSBURG, Ariz. - A man is facing felony charges after an early morning bomb scare at Palo Verde Nuclear Generating Station in Wintersburg, west of Phoenix.

It happened shortly before 1 a.m.

Sgt. Jesse Spurgin with the Maricopa County Sheriff's Office said a contracted employee was reporting for work when he was stopped at the first security checkpoint for a routine vehicle sweep. Spurgin said the man made a crack about possibly having a bomb in his vehicle.

The inspection was immediately stopped, the man was taken into custody and the Maricopa County sheriff's bomb squad was called out to the scene. Crews went over the vehicle from bumper to bumper and did not find any explosives. The vehicle has been towed from the scene.

While the bomb squad was checking the vehicle, nobody was allowed into or out of the facility.

Spurgin said investigators are questioning the man about why he would say he might have a bomb in his vehicle. Investigators believe the comment was made in jest, but Palo Verde's security team took it very seriously.

That contractor, whose name has not been released, could be facing a Class 4 felony.

Some 200 employees who had been waiting in the parking lot of a nearby Shell station were finally allowed into the facility at about 6 a.m.

Palo Verde is the largest nuclear generation facility in the country. Capable of generating nearly 4,000 megawatts of electricity, it has been the largest power producer of any kind in the US since 1992.

Palo Verde is located about 55 miles west of Phoenix.

Bomb Threat At Palo Verde Nuclear Plant (KSAZ)

KSAZ-TV Phoenix, AZ, April 15, 2011

WINTERSBURG, Ariz. - The Palo Verde nuclear plant takes threats very seriously.

That's why no one was laughing Friday morning when a worker said he had one in his car.

At about 12:45 a.m., a contractor employed at the nuclear plant was taken into custody by the Maricopa County Sheriff's Office, according to Sgt. Jesse Spurgin.

His vehicle had been stopped by Palo Verde security for a routine vehicle inspection when he commented about a possible bomb, Spurgin said.

Workers were evacuated to a nearby gas station until the all-clear was given.

The MCSO bomb squad inspected the vehicle and did not find any explosives.

"You can't make offhand remarks about that. We just recently did a drill...a multi-agency drill preparing for things of this nature, obviously with the nuclear power stations, you have to take things very seriously," said Maricopa County Sheriff's Sgt. Jesse Spurgin.

The employee could end up being charged with a Class 4 felony for what he said was merely a joke.

The man's name has not been released, and authorities are continuing to investigate.

Palo Verde Creates An Expert Team To Plan For A Disaster (AR)

By Ryan Randazzo

Arizona Republic, April 15, 2011

Deep inside the Palo Verde Nuclear Generating Station, 10 experts from across the power plant are gathered in a room, trying to imagine the unthinkable.

In the wake of the March 11 earthquake and tsunami in Japan that knocked out power to a six-reactor nuclear facility, they are preparing for a worst-case scenario at Palo Verde's three reactors.

When an earthquake or other disaster strikes, nuclear-power plants are designed to go into automatic shutdown. But the nuclear fuel in the reactors still needs a continual supply of cooling water, as does the "spent," or used, fuel that is stored in large pools. And they need power to move that water.

Nuclear-power plants across America, including Palo Verde, already have exhaustive emergency precautions in case they lose power. But despite confidence in Palo Verde's ability to withstand natural disasters or terrorist attacks, the specially assembled response team is reviewing the best options in the highly unlikely event that every available power source at the plant is damaged.

They review the backup systems that will kick in. Then, they consider what would happen if those systems failed, as they did at Japan's Fukushima Dai-ichi power plant.

The backup-power systems for Palo Verde, just 50 miles west of downtown Phoenix, are extensive.

If power was lost, emergency diesel generators would fire up at each reactor. If the generators didn't work - as happened in Japan - they each would have their own backup generator, with seven days' worth of fuel.

Each reactor also has sets of batteries designed to run the plant for several hours. Plant officials said that by shutting off non-essential equipment, they could stretch the batteries out for three days. However, the batteries are not powerful enough to run the large water pumps for the reactors.

The last line of on-site defense at Palo Verde is two natural-gas-fired generators. They have enough stored fuel to run one generator for four to six days or both generators for two to three days.

Plant officials believe the fallback system is extensive enough to protect the nuclear fuel in any type of natural disaster, fire or terrorist attack they have foreseen.

Now, in what has been dubbed the "Japan Room," planners are trying to figure out what they haven't foreseen.

Deprived of all power, could they call on nearby Luke Air Force Base to fly in a backup generator using a heavy-lift helicopter?

Would local fire departments have enough pumper trucks to spray water on the hot reactors, as they did in Japan?

Could they string a new power line to one of the nearby natural-gas-burning power plants in time to stop a disaster?

"Part of what we are looking at is: OK, we don't know how you would get in this situation," said Bob Bement, senior vice president of operations at the plant. "But, if you did, how would you handle it?" Worst-case review

The team has been assembled by Arizona Public Service Co., which runs Palo Verde and is the largest of the seven owners of the plant.

The experts will be assigned to the Japan Room for several months, Bement said.

The room is lined with maps and flow charts. Some show safety reviews for different departments. Others show suggested safety measures.

Along one wall is a table stacked with dozens of technical papers, including some from nuclear-watchdog groups that frequently criticize the industry.

At the head of the Japan Room is engineer Mike Powell, director of nuclear-fuel management.

"We had to check our readiness were something to happen," Powell said. "We want to learn: What can we do to make the industry better, and what can we do to make ourselves better."

The industry conducted a similar worst-case review of its safety precautions after the terrorist attacks of 9/11, which ushered in stricter safety standards, Bement said.

The Japanese event gives the industry another opportunity to ensure its safety measures are robust enough to prevent disasters, he said.

The largest concern is losing off-site electricity.

When Palo Verde's reactors are shut down for refueling, which happens every 18 months, 378,000 gallons of water submerge the core more than 24 feet underwater while the operators swap out the fuel.

Unlike most nuclear facilities in the world, Palo Verde is not near a major river, ocean or other body of water. But with 13 to 17 days' worth of water stored on-site, power to move water is a more vital concern than water itself, officials said.

Palo Verde officials believe the Japanese tsunami flooded the area at the plant where new off-site power lines could have been connected, Bement said. Unlike the Japanese plant, the emergency systems at Palo Verde are all separated and less likely to be taken out in a single event, he said.

Another difference at Palo Verde, besides the design of the reactors and the safety equipment, is the pools where spent fuel is kept.

In Japan, those pools were 140 feet off the ground in the same building as the reactors. Spent radioactive fuel needs to be kept underwater, but without power some of the Japanese plant's rods overheated and released radiation into the atmosphere.

At Palo Verde, the spent fuel is about 40 feet high and kept in an adjacent, hardened building, where it would be much easier to keep cool because water wouldn't have to be pumped so high, assuming the plant had a power source.

With no other options, Japan's plant operators relied on firefighting pumper trucks and helicopters dumping water on the reactors and spent-fuel pools.

Still, in a similar worst-case scenario, Palo Verde officials want to know where they could turn.

On one wall in the new emergency room is a map of every military base, power plant or other industrial facility within several hundred miles.

Powell and his group are contacting each one to determine what generators or other equipment they have that could help the power plant in the event of a catastrophe, and whether they have heavy-lift helicopters that could deliver it fast.

They also are gathering information on every nearby firefighting department.

"We are leading some of the short-term and long-term corrective actions for the industry here," Powell said. "We are determining what we can do as an industry to react and plan."

The control-room operators at Palo Verde practice tasks in simulators so they know how to handle problems when they arise.

They don't routinely practice putting the plant into a "meltdown"; but, every six years, the operators must rehearse their emergency procedures in the event the plant releases a radioactive plume. The latest test was conducted just days before the Japanese earthquake.

If radiation were released from Palo Verde, the Departments of Defense or Energy would conduct routine flights over the plant to take radiation readings and map the plume of radiation to help direct evacuation orders, if they were needed, Bement said.

Mobile teams also would be sent into the desert around the plant to measure radiation and coordinate evacuations. NRC task force

The government's Nuclear Regulatory Commission has appointed a task force to review US plant procedures in light of the Japanese event.

The US has 104 nuclear reactors at 65 sites, run by 26 companies.

"While we are confident about the safety of US nuclear-power plants, our regulatory agency has a responsibility to the American people to undertake a systematic and methodical review of the safety," NRC Chairman Gregory Jaczko said in a recent speech. "Examining all of the available information is an essential part of that effort."

At Palo Verde, Bement said, the Japanese event shows that current reactor designs used in Japan and the US are robust because they survived the earthquake and the tsunami, although the issue of backup power is now key.

Preventing accidents, he said, is important not just for the area around a plant but for the image of the whole industry.

"Japan will show that, even in the worst event, today's reactors will be fine," Bement said. "The psychological harm will be worse than the radiological damage."

Palo Verde Creates Team To Do Disaster Planning (AP)

Associated Press, April 15, 2011

PHOENIX — The Palo Verde Nuclear Generating Station near Phoenix is planning for a worst-case scenario at its three reactors.

The nuclear power plant and others across the nation have exhaustive emergency precautions in case they lose power. But a special 10-member response team is taking another look at Palo Verde after the March 11 earthquake and tsunami that damaged a Japanese nuclear power plant — despite confidence in its ability to withstand natural disasters or terrorist attacks.

The team was assembled by Arizona Public Service Co., which runs Palo Verde and is the largest of the seven owners of the plant.

A similar review of safety precautions was conducted after the terrorist attacks of 9/11 and led to stricter safety standards, said Bob Bement, senior vice president of operations at the plant.

Nuclear power plants are designed to shut down if an earthquake or other disaster strikes. However, the reactors' nuclear fuel still needs a continual supply of cooling water, as does used fuel stored in large pools. And it's electricity that moves that water.

Palo Verde plant officials believe the backup system is extensive enough to protect the nuclear fuel in any natural disaster, fire or terrorist attack they've foreseen.

But the 10-person team is reviewing options for the unlikely event every power source is damaged at the plant 50 miles west of downtown Phoenix, The Arizona Republic reported Friday.

"Part of what we are looking at is: OK, we don't know how you would get in this situation," Bement said. "But if you did, how would you handle it?"

If the plant lost all power, could it call on nearby Luke Air Force Base to fly in a backup generator using a heavy-lift helicopter? Could local fire departments spray water on the hot reactors? Could a new power line be strung to one of the nearby natural gas-burning power plants in time to stop a disaster?

The team will be working to answer those questions and others for several months, Bement said.

Palo Verde supplies electricity to about 4 million customers in Arizona, New Mexico, Texas and California.

Drills At Three Mile Island Nuclear Plant Unconnected To Japan Nuclear Disaster (PATNEWS)

By David Wenner

Harrisburg (PA) Patriot-News, April 18, 2011

Fallout from Japan's nuclear disaster has rained questions and comparisons on Three Mile Island. But federal and state officials say the Japan situation had no bearing on emergency drills carried out at TMI this week. The plant, located just south of Harrisburg, is home to the worst US nuclear accident.

"It's really too soon to tell," said Steve Barr of the federal Nuclear Regulatory Commission, referring to the impact of the Japan disaster on the drills or regulators' views about vulnerabilities at TMI.

Barr noted TMI doesn't have the same geographic and geological vulnerabilities as the Japan plant, which was severely damaged by an earthquake and tsunami last month. But he said the Japan incident will be studied for years, and the results could impact TMI and other US plants.

The local drills involved emergency officials and volunteers in the five counties surrounding TMI, including municipalities and school districts. It included 73 federal evaluators and focused on things including evacuation, medical care, radiation monitoring, and how the TMI owner deals handles matters including informing the public.

It was a drill that occurs every two years. At a public meeting Friday, federal and state officials wouldn't discuss specific findings related to the drill. In general, everyone involved was well-equipped and responded adequately, they said. Official reports from several agencies will be released to the public within a few months.

Officials Describe TMI Drill As Adequate (WPMT-TV)

By Sarah Arbogast

WPMT-TV Harrisburg (PA), April 15, 2011

DAUPHIN COUNTY—

Three Mile Island appears to have earned a passing grade this week. The nuclear power plant in Dauphin County was tested on its emergency response plans Tuesday night.

"This was a really big deal, literally over 500 people participated in this exercise and the results were very positive," said Ralph DeSantis, Communications Manager at Three Mile Island.

The preliminary results are good news for Three Mile Island, as well as emergency management leaders and first responders all over the area. People from eight counties surrounding the plant were involved in the drill that lasted several hours.

FEMA will further evaluate the results of the test and release a final report in 90 days. It will be made available to the public in about 4 months.

At a meeting in Harrisburg Friday morning, federal and state leaders wouldn't talk specifics, but outlined general findings from the drill. They say everyone involved was well-equipped and responded adequately.

"We're very confident in everyone's ability to do what they have to do to protect the health and safety of the public," said DeSantis.

FEMA: TMI, Responders Performed Adequately In Drill (WHTM)

WHTM-TV Harrisburg (PA), April 15, 2011

The Federal Emergency Management Agency said Three Mile Island and emergency responders performed adequately during an emergency drill this week.

FEMA released its preliminary findings of an exercise Tuesday night that evaluated TMI's ability to respond to an emergency, and the response of state and local emergency agencies within the 10-mile emergency-planning zone of the nuclear power plant.

The drill is required by the federal government every two years.

"The organizations demonstrated a dedicated staff, plans, procedures and equipment and demonstrated a capability to coordinate the emergency responses within the emergency planning zone," said Darrell Hammons, Chief of the Radiological Emergency Preparedness Program for FEMA Region III.

Within 90 days, FEMA will send its evaluation to the Nuclear Regulatory Commission for use in licensing decisions. A final report will be available to the public in July.

FEMA did not provide information regarding the nature of the emergency scenario.

Feds Release Three Mile Island Findings (WFMZ)

By Joscelyn Moes

WFMZ-TV Allentown (PA), April 16, 2011

The nuclear crisis in Japan is raising concerns about our readiness to respond to a disaster here at home.

Federal officials are required to evaluate emergency preparedness at every power plant in the US

This week they focused on Three Mile Island.

"The purpose is to be able to show a coordinated response to an emergency at a nuclear power plant between the on-site resources provided by the utility, plus the off-site resources at the federal, state, and local levels," said Exelon Nuclear spokesperson Vince Cwietniewicz.

Drills like this are held every other year at every power plant across the country.

The Nuclear Regulatory Commission and the Federal Emergency Management Agency presented their findings Friday in Harrisburg.

"Anybody's who's followed what's happening in Japan obviously knows that emergency planning is of the highest essence," said NRC spokesperson Neil Sheehan.

Preliminary results from the exercise indicate there are no major problems at Three Mile Island, and the plant can adequately protect the public in the event of an emergency.

"We still have to analyze the information that we have, but overall, there was no significant issues noted," said FEMA spokesperson Darrell Hammons.

Right now, there are five nuclear power plants in Pennsylvania.

That's the second most in the US

Within 90 days FEMA will send its full evaluation to the NRC for use in licensing decisions.

The final report will be available to the public in about 120 days.

The next full scale emergency preparedness exercise in Pennsylvania will be held in November at the Limerick Nuclear Power Plant in Montgomery County.

Three Mile Island Fuel Modules At DOE Facility Cracking (PLATTS)

By William Freebaim

Platts, April 15, 2011

The US Department of Energy facility storing melted fuel from the Three Mile Island nuclear plant has not done enough to address crumbling concrete modules encasing the radioactive material, the US Nuclear Regulatory Commission said in a letter made public Friday. The DOE facility at the Idaho National Laboratory holds the damaged fuel from unit 2 of the Three Mile Island Plant, which, in 1979, suffered a partial meltdown of the core, leading to the US' worst nuclear accident. The so

The US Department of Energy facility storing melted fuel from the Three Mile Island nuclear plant has not done enough to address crumbling concrete modules encasing the radioactive material, the US Nuclear Regulatory Commission said in a letter made public Friday.

The DOE facility at the Idaho National Laboratory holds the damaged fuel from unit 2 of the Three Mile Island Plant, which, in 1979, suffered a partial meltdown of the core, leading to the US' worst nuclear accident.

The so-called spent fuel rubble is now contained in concrete storage modules located at an independent storage installation owned by DOE.

Article continues below...

The concrete modules are "showing significant cracking and degradation," even though they were built in 1999 to last for 50 years, NRC said in the letter, which is dated April 7.

DOE has analyzed the structural integrity of the modules, which have walls two feet thick, and determined that the problem is getting progressively worse, NRC said.

Since the NRC inspection, DOE has identified funding to pay for repairs and will begin the work this construction season, meaning from the spring to the fall, spokeswoman Katinka Podmaniczky said in an email Friday.

"These cracks have no impact on the storage modules' ability to safely store spent nuclear fuel," she said.

At the time of the inspection, it was not clear whether DOE had approved or scheduled measures to stabilize the degradation, NRC said in the letter. It asked DOE to provide the regulator with information about corrective measures, a schedule for their implementation and a plan for monitoring the effectiveness of actions taken.

The degradation of the modules was likely due to "water intrusion and the annual thawing and freezing cycle," NRC said in an inspection report attached to the letter. Chunks of concrete have fallen from areas of the modules and there are signs they are no longer water-tight, NRC said.

Cracking was first recognized in 2000 but considered to be "cosmetic," NRC said. In 2008, DOE recognized that continued cracking called into question the ability of the modules to protect the fuel canisters inside from natural phenomena and shield people from the radiation of the fuel.

A recent study determined that protective caps should be installed, damaged concrete replaced and a sealant applied, but those actions have not yet been taken, the NRC inspection report said.

NRC licensed DOE's Idaho Operations office in 1999 to store the damaged fuel in dry shielded stainless steel canisters, which are loaded inside the reinforced concrete modules.

The 30 dry shielded canisters at the site contain melted fuel from the Three Mile Island-2 reactor core. That unit, located in Pennsylvania, experienced the melting of about half the fuel in the core during an accident. The adjacent Three Mile Island-1 continues to operate.

The NRC inspectors concluded that the storage facility continues to meet standards, but the degradation of the modules is "a concern that will be tracked in the future," agency spokesman David McIntyre said in an email.

NRC also cited DOE in the inspection report for a "deviation from a[n] NRC commitment" because it deleted certain material from an emergency plan.

NRC ordered the energy agency to respond within 30 days. The deviation was minor, Podmaniczky said.

Dominion Virginia Says Tornado Forces Automatic Reactor Shutdown (BLOOM)

By Mike Harrison

Bloomberg News, April 17, 2011

Dominion Resources Inc. said an apparent tornado resulted in a power cut at the Surry Power Station, which caused both reactors at the station to shut down automatically.

"No release of radioactive material has occurred beyond those minor releases associated with normal station operations," the company said in a statement today. "The apparent tornado did not strike the two nuclear units, which are designed to withstand natural events such as tornados, hurricanes and earthquakes."

There were no injuries at the site and the company is working to complete restoration of electrical service to the station, it said.

The US Nuclear Regulatory Commission has been notified "of this unusual situation," according to the statement.

Tornado Touchdown Causes Shutdown At Surry Nuclear Power Plant (NWPRTNWZ)

Hampton Roads Daily Press, April 18, 2011

SURRY —The Surry Power Station was running at diminished capacity Sunday after the effects of Saturday's severe weather.

Dominion officials said Sunday that a tornado apparently touched down on the switchyard supporting the nuclear power station and the facility's access road, cutting off the electrical feed from the grid to the station. A backup generator kept power running to both reactors.

One of the two main reactors has been reconnected to the plant's grid.

"We are trying to restore the second feed," said Dominion spokesperson Dan Genest. That process will take several days, he said.

Once the second feed is restored, then the power station will return to full power, Genest said.

There were no injuries at the site, Genest said. Power company personnel are working to complete restoration of electrical service to the station, he added.

No release of radioactive material has occurred beyond those minor releases associated with normal station operations.

The tornado did not strike the two nuclear units, which are designed to withstand natural events such as tornadoes, hurricanes and earthquakes.

Dominion notified the US Nuclear Regulatory Commission of the situation, as well as state and county officials.

Tornado Cuts Power To Surry Nuclear Plant (WILYDAILY)

By Kim Lenz

Williamsburg Yorktown Daily, April 18, 2011

The US Nuclear Regulatory Commission staff is monitoring the situation at the Surry nuclear power plant after the site lost offsite power early Saturday evening due to a tornado affecting an electrical switchyard next to the plant.

The NRC is monitoring the event through the NRC resident inspectors at the site and in the Atlanta regional office. The plant is operated by Dominion.

The two units at the Surry plant automatically shut down after losing offsite power. Four of the plant's diesel generators started to power the units' emergency loads, an NRC spokesman said in a press release. Plant operators have partially restored offsite power to both plants, and safety systems have operated as needed.

Dominion notified the NRC of the situation soon after it happened and the agency dispatched its resident inspectors to the Surry plant site as well as staffed its incident response center in Atlanta. Dominion declared an "unusual event," the lowest of the four NRC emergency classification levels, around 7 p.m. Saturday.

Apparent Tornado Causes Surry Nuclear Reactors To Shut Down (RICHTD)

Richmond (VA) Times-Dispatch, April 17, 2011

RICHMOND, Va. — An apparent tornado touched down at Dominion Virginia Power's Surry Power Station Saturday, cutting power and causing the two nuclear reactors to shut down, the utility said in a release early this morning.

"Both reactors at the station shut down automatically as designed and back-up diesel generators started immediately to provide electricity necessary to maintain both units in a safe and stable condition, Richmond-based energy company said in the statement.

The apparent tornado touched down in the station's switchyard and access road. The utility said an off-site power source has been restored to both units.

"No release of radioactive material has occurred beyond those minor releases associated with normal station operations," Virginia Power said. "These minor releases are below federally approved operating limits, and pose no threat to station workers or the public,

The apparent tornado did not strike the two nuclear units, which are designed to withstand natural events such as tornadoes, hurricanes and earthquakes," the utility said.

No injuries were reported at the station and crews were working to restore full electrical service to the station.

Dominion reported the incident to the US Nuclear Regulatory Commission and state and local officials.

Surry Power Station is located on the James River across from Jamestown.

Surry Units Shut Down After Power Station Damaged (VAGAZ)

Virginia Gazette, April 17, 2011

SURRY — The US Nuclear Regulatory Commission is monitoring the Surry nuclear power plant after the site lost offsite power around 7 p.m. Saturday.

In a press release issued Sunday morning, the NRC said a tornado affected an electrical switchyard next to the plant. The NRC is monitoring the event through resident inspectors at the site and in the Atlanta regional office.

The two units at the Surry plant automatically shut down after losing offsite power. Four diesel generators kicked in to power the units' emergency loads. Plant operators have partially restored offsite power to both plants. Safety systems have operated as needed. Dominion notified the NRC soon after it happened and the agency dispatched inspectors to the site as well as staffed its incident response center in Atlanta.

Japan Horror Sparks East End Fears Over Aging Millstone Plant In Connecticut (EHMPTC)

By Erin Schultz

Easthampton (NY) Patch, April 15, 2011

Horrified by daily news reports from Japan about deadly radiation contamination after leaks from the compromised Fukushima Daiichi nuclear plant leaves scores fearful for their safety, elected officials on the East End are calling for change.

With the aging Millstone II nuclear power plant in Waterford, Connecticut within a 50 mile radius of the East End – and much closer to East Hampton and Southold Towns – local officials are calling on the federal government to extend the current radius for emergency evacuation planning.

At a work session this week in Southold Town, Supervisor Scott Russell, during a discussion on wind energy, said he has spoken to Legislators Ed Romaine and Jay Schneiderman, who are calling for a resolution to “immediately close Millstone.”

Russell said he believes the notion of closing Millstone is “probably unrealistic,” based on power needs, but the tsunami has opened eyes. And he would like to host a meeting with representatives of the Nuclear Regulatory Commission as well as federal and state representatives in Southold to discuss an emergency plan.

Councilwoman Louisa Evans asked that the meeting could be videoconferenced so that Fisher’s Island could participate.

Councilman Bill Ruland said shutting down Millstone would have “unanticipated consequences” but said energy alternatives such as wind power are critical.

Ruland mentioned Indian Point and said it would be impossible to evacuate all of New York City.

Suffolk County Legis. Jay Schneiderman kicked off efforts last month, when he sent a letter to US Rep. Tim Bishop and others, urging an expansion of the current federally required 10-mile radius from nuclear facilities for developing evacuation plans. Schneiderman believes the radius should be a minimum of 25 miles, based on recent events. The United States government, he added, urged US citizens within a 50 mile radius to evacuate the area in Japan – and said similar mandates should exist on United State soil.

“If one lesson can be clearly learned from the nuclear incident at the Fukushima Daiichi plant in Japan, it is that the current US requirement of evacuation planning within 10 miles of a nuclear facility is woefully inadequate,” Schneiderman wrote in his letter to federal officials. “A 25 mile radius from the Millstone facility would include the entire Town of East Hampton, Shelter Island, Southold, the Village of Sag Harbor, North Haven, Greenport and large areas of Southampton Town. Currently, no evacuation plans exist for these areas in the event of a nuclear disaster be it accidental, through a natural disaster, or from an act of terrorism.”

To that end, Assemblyman Fred Thiele and New York State Sen. Ken Lavelle have sponsored legislation requiring the state to review existing disaster preparedness plans for all nuclear plants in the state and within 50 miles of the state.

The legislation would call for a feasibility determination of evacuation around Millstone and Indian Point.

“For years, elected officials on the East End of Long Island have complained that disaster preparedness plans for the Millstone Nuclear Power Station did not adequately protect the public safety of the East End because evacuation plans were only required for areas within 10 miles of the plant,” Thiele said. “After the experience with the Fukushima nuclear power plants in Japan, it is clear that greater emergency planning is required. If evacuation plans are inadequate they must be improved and if evacuation is not feasible they should be closed.”

In East Hampton Town, Supervisor Bill Wilkinson said this week that based on the Fukushima tragedy, “all our nuclear plants have come under a different light.”

Questions to be posed, the supervisor believes, involve issues dealing with evacuation routes. “Are people even aware that Millstone exists?” he said.

Millstone, he said, “is an old plant,” and has sparked concerns over its impacts on the Long Island Sound.

“A lot of people have already questioned the effect on our fisheries, especially with the collapse of the flounder industry here and in Connecticut,” Wilkinson said. “Because of what’s happened in Fukushima, we have to look at things with a sense of urgency – how we’re dealing with things currently, and how we should deal with them in light of the recent disaster in Japan.”

Wilkinson said he believes all East End elected officials should convene at a summit to discuss the issue.

Southampton resident Tip Brolin, who heads up the town’s green sustainability committee, and is an expert on nuclear issues, said he is not threatened. “If something like what happened in Japan happened here, there would be a potential problem due to the radiation. But I actually don’t think Millstone poses a significant threat to the population. I think what we’re faced with is if a nuclear plant is operated properly then they don’t pose a risk to the public.”

He added he doesn’t believe there is a need to expand evacuation zones “but if local government want to do so, they can.”

Not everyone agrees. Locally, activists have been mobilizing for change, with celebrities including Christie Brinkley and Alec Baldwin putting a public face on what they perceive as a very real threat posed by Millstone.

Karl Grossman, an author who has written extensively on the threat of nuclear disaster and who has given lectures locally on the subject, said if the US government is telling residents to evacuate 50 miles away from Fukushima, the same warning should apply locally.

"If you look at Millstone, a 50 mile radius would take in all the East End of Long Island and a portion of Brookhaven."

Today, he said, "Reality is staring us in the face because of Japan."

Millstone, he said, could well be the site of "a catastrophic accident. That's an accident waiting to happen. Millstone is a troubled nuclear plant."

Grossman said the NRC gave Millstone an extension of its operating license to 60 years— such plants are only supposed to operate for 40 years, with metals getting brittle, and because radioactivity damages components, he said.

"Imagine driving a car that was 60 years old – you wouldn't feel very confident. And now the NRC is talking about 80 years. It's unbelievable."

And, Grossman added, "A catastrophic Millstone accident can happen here. And if it happened, Eastern Long Island would be enveloped."

But, Ken Holt, manager of nuclear communications at Millstone Power Station, said the plant, which is operated by Dominion, said such fears are unfounded. Holt explained with the plants were originally designed, they were created with "worst case scenarios" in mind.

"They looked at historically the worst hurricanes, earthquakes, tornadoes – and designed the plants to meet not only the historically worst case scenarios but to go even beyond that."

Improvements have been made at the plant after learning from other disasters such as Three Mile Island, Holt said. "Watching Japan, there will be improvements made to reactors. We are watching and we are trying to learn what we can from an event so we can make whatever improvement we need to maintain public health and safety at Millstone."

A team is in place to review emergency procedures and equipment, he added, and to be sure the facility "can meet its requirements, not only in an emergency, but beyond."

And, Holt added, plants were never meant to have merely 40 year lifespans. In order to extend the license of a plant, an extensive review is required, with proof needed that "reactors aren't getting brittle and that improvements have been made," Holt said. "It's not like going to DMV and getting your license renewed. It's an intensive process with a lot of engineering and analysis work" that takes many years before approval is granted by the NRC.

"It's not like some rubber stamp," Holt added.

And, Holt pointed out, Millstone is integral in energy production. "We produce the equivalent of 50 percent of the energy Connecticut needs and we do that in a carbon free manner. We don't release any greenhouse gases and are environmentally safe."

East End residents argue that no energy benefits are seen in New York – but the dangers are real. Montauk resident Priscilla Star has organized the Standing for Truth About Radiation Coalition to get various groups together under a single umbrella to galvanize for an extended evacuation zone.

"I'm trying to form a coalition where all the groups already involved with trying to help our situation collectively can be a part of one demographic voice. That is my mission," Star said, adding that the 50 mile evacuation zone is critical. Should disaster strike, Star said, "We are downwind of Millstone. We have no way out."

Is Browns Ferry Nuclear Plant Strong Enough? Quake Expert Has Doubts (HUNTMS)

By Paul Gattis

Huntsville (AL) Times, April 18, 2011

HUNTSVILLE, Alabama – Five weeks since the earthquake and tsunami in Japan set off a nuclear disaster that's been compared to the world-worst Chernobyl meltdown in 1986, nuclear safety is undergoing renewed scrutiny.

Ultimately, the issue centers on one question: Could that happen here?

The Tennessee Valley Authority operates Browns Ferry Nuclear Plant at a remote Limestone County site about 25 miles west of downtown Huntsville on the north side of the Tennessee River. It's one of three TVA nuclear plants and the only one in Alabama.

TVA officials say the three reactors are built to withstand an earthquake that would measure 6.0 on the Richter scale.

"I would feel much more comfortable if nuclear power plants were built to withstand larger earthquakes than 6.0," said Christine Powell, a professor in the Center of Earthquake Research and Information at the University of Memphis.

"That's my opinion. Of course, everyone will have a different opinion. Personally, I think the 6 is a little bit too small."

That's counter to TVA's insistence that not only would Browns Ferry handle a 6.0 without issue, but such a quake is 10 times stronger than any on record in Alabama. Powell's response is that such data offer only a snapshot in geological time and not enough is known about earthquake potential.

The Nuclear Regulatory Commission, the federal agency that oversees America's nuclear industry, has enacted a 90-day "quick look" at nuclear plants to inventory any possible issues. And TVA is giving its worst-case scenarios a second look.

"This is a good time" to analyze nuclear safety, Powell said. "Japan's disaster has opened up everyone's eyes."

Is strong strong enough? And if there is any doubt, should strong be made even stronger?

Consider this: In the event of a radiation release at Browns Ferry, Huntsville is within the "general emergency area," the highest classification. Within a 10-mile radius of the plant, residents would be evacuated.

In Huntsville's situation, in a radius 10 to 50 miles from the plant, everyone would be asked to stay inside and avoid certain potentially contaminated foods.

But what are the chances of an earthquake of any significance in Huntsville?

Consider that the state's second-largest metro area sits between the two most active seismic areas in the eastern United States. Consider also that the US Geological Survey estimates the chance for a devastating quake in Huntsville as about the longest of longshots.

According to the USGS probability chart in 2009, the chances of a 6.0 earthquake at Browns Ferry and Huntsville is between zero and 1 percent over the next 100 years. Stretch the window to 500 years and the chances rise to 2 to 3 percent in Huntsville and 1 to 2 percent at Browns Ferry.

The quandary is how much trust can be put in those numbers or any earthquake-prediction estimates.

"In this region, we just don't have the kind of long-term historical record to really give you a good feeling about what will or will not happen here based on what has happened," Powell said.

Geologists have identified the seismic hot spots. The New Madrid Seismic Zone tracks along the Mississippi River between St. Louis and Memphis. This zone is the cause for greatest quake concern in Huntsville.

The East Tennessee Seismic Zone has a long history of producing quakes frequently too slight to feel even in the area around the Great Smoky Mountains National Park.

"People don't really feel enough earthquakes around here to understand that the threat really exists," Powell said. "It just doesn't enter people's minds."

Fault near Bellefonte?

Along the western border of the East Tennessee zone is the New York-Alabama Lineament, which recently was found to loosely follow the Tennessee River into Alabama between Huntsville and Guntersville.

Mark Steltenpohl, interim chair of the geology and geography department at Auburn University, led the research on an article that studied the southern portion of the lineament.

While Steltenpohl compared it to the more famous San Andreas Fault in California, the lineament is buried beneath 500 million years of sediment.

"We can rest comfortably that it's not going to rupture and create tremendous havoc," Steltenpohl said.

Still, its proximity to the Tennessee River inevitably turns thoughts to Bellefonte - the yet-to-be-completed TVA nuclear plant just north of Scottsboro.

Bill McCollum, chief operating officer at TVA, said last month that engineering studies needed before Bellefonte could be completed included analysis of seismic issues. And Bellefonte has subsequently been put on hold even though it was perhaps a decade and many millions of dollars away from being operational.

The New Madrid Seismic Zone, however, is the area of most concern for Browns Ferry and Huntsville.

New Madrid became a geological staple after a series of strong quakes occurred during the winter of 1811-1812 near the town of New Madrid in the southeastern tip of Missouri. Measuring the strength of those quakes "is a big controversy," Powell said.

Robert Williams, a USGS geophysicist, said the USGS believes the strongest of the quakes ranged from 7.5 to 7.7 on the Richter scale. A presentation last week at the Seismological Society of America suggested the quakes were perhaps no greater than a 7.0.

Anecdotally, though, "it rang church bells in Boston," Steltenpohl said.

'The Big One' awaits

Research of those quakes included Huntsville in an outer ring of damage. According to the primitive Mercalli scale, Huntsville was classified in Zone VII: "Everyone runs outdoors, slight to moderate damage to ordinary structures."

"It looks like it would wake people up; you'd definitely feel it," Williams said of people in north central Alabama.

"You're kind of on that fringe of danger from a New Madrid repeat."

And just as it's cliché to await "The Big One" in California, the same can be said for New Madrid.

"That's the way it looks," Williams said.

Said Steltenpohl, "That's kind of the big one we're waiting for in the mid-continent along the New Madrid. It would be very devastating if there is an event as large as that one" in 1811-12.

Nuclear safety revisited

The nuclear issues in Japan, however, have plunged the nuclear industry into a pit of questions answered with a new-found skepticism.

Since that quake, TVA has convened a team of experts to reconsider its disaster scenarios, and improvements have been made at its three nuclear plants, such as adding small portable generators for lighting and satellite telephones for emergency responders.

At its board meeting Thursday, McCollum said adding diesel generators and transferring spent fuel from pools to dry cask storage are long-term fixes.

But Japan presumably prepared for worst-case scenarios, too.

"I know that in my career, there has been the Japan quake larger than the Japanese scientists thought would happen," Williams said. "The Earth can be surprising, so that's something that you always have to consider. It's a low probability of being surprised. But it's something to keep in mind."

Shake up the world about the dangers of mixing earthquakes and nuclear plants before an earthquake does it for you, Powell said. Be heard by political leaders - who wield the influence to make a difference.

"You can look back at Japan and think, Oh, my goodness, how could they be that crazy to build something like that right up against the ocean where their seawalls are too low?" Powell said. "At the time they did their analysis, they thought they were just fine."

"We're at a perfect time right now to just re-think. There's too much at stake. It's ridiculous not to do that."

Congress might be a captive audience. Rep. Dianne DeGette, D-Colo., a ranking member of the Subcommittee on Oversight and Investigations, said at a hearing on nuclear concerns earlier this month, "It is sadly clear that we still have much to evaluate before we can know the true threats to our nation from a disaster like what we've seen in Japan."

A more chilling assessment perhaps came from Japan. Tetsuo Iguchi is a professor in the department of quantum engineering at Nagoya University.

"The fact that we have now confirmed the world's second-ever level 7 accident (on par with Chernobyl) will have huge consequences for the global nuclear industry," Iguchi told The New York Times. "It shows that current safety standards are woefully inadequate."

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TVA Board Discusses Changes To Nuclear Reactors (CHTNGA)

By Dave Flessner and Pam Sohn

Chattanooga Times Free Press, April 18, 2011

TVA immediately will add satellite telephones and small portable generators at its three operating nuclear plants, and could within months strengthen power and water supplies to spent fuel pools and speed up the transfer of nuclear waste from pools to dry cask storage.

Chief Operating Officer Bill McCollum told board members Thursday at a meeting in Chattanooga that reviews after the Japanese nuclear crisis confirm that the utility's six reactors and five spent fuel pools are safe.

They already had been "retrofitted with safety measures to assure defense-in-depth," he said. "But we are working to assure that we're ready for the unexpected."

TVA board Chairman Dennis Bortorff said the board has hired consultants to help assess the utility's nuclear program.

While TVA reassesses its existing plants, the board delayed a decision on whether to complete a reactor at the 30-year-old Bellefonte Nuclear Plant in Hollywood, Ala.

"We continue to view nuclear power as a viable option for the future," Bortorff said. "But we also think it's a good time to take a pause."

During the board's public listening session in Chattanooga, most of the 14 speakers asked the board to review or even phase out its commitment to nuclear power.

"The real cause of the Fukushima nuclear crisis is human error," said Sandra Kurtz, a member of the Bellefonte Efficiency & Sustainability Team, referring to a Japanese decision to put diesel tanks at a level where a tsunami could wash them away. "Human error can happen here, too."

But Jackson County, Ala., Chamber of Commerce President Rick Roden and Economic Development Board President Goodrich A. "Dus" Rogers urged TVA directors to finish the long-delayed Bellefonte reactor.

"We trust TVA to do the right thing," Roden said. "Take what you learned from Japan to make Bellefonte the most reliable and safe plant in our backyard."

Lessons learned

Shortly after a 9.0 earthquake and tsunami triggered the Japan crisis, TVA established a centralized response center to monitor conditions at the Fukushima Dai-ichi plant and coordinate with the Institute of Nuclear Power Operations and the World Association of Nuclear Operators.

Since then, TVA has reviewed local plant requirements and response plans to a slate of disasters, single or multiple.

One example would be damage from a tornado or earthquake combined with flooding from a dam failure, with emergencies involving one or more reactor.

That look prompted a 90-day plan to add satellite phones and portable generators. It also has prompted a recommendation for the following changes within 12 months:

- Move additional nuclear fuel from spent-fuel pools into dry cask storage
- Harden cooling-water supply pipes to spent-fuel pools
- Add a fifth generator for backup power at Sequoyah and Watts Bar nuclear plants.
- Harden electrical switchyards to better withstand seismic impacts.

TVA Considers Safety Improvements To Six Nuclear Reactors (POWGENWLD)

Power-Gen Worldwide, April 18, 2011

The Tennessee Valley Authority is considering making millions of dollars of improvements to protect its six nuclear reactors from earthquakes and floods, according to the New York Times.

The paper said TVA was considering reducing the amount of fuel in its spent fuel pools by transferring older fuel to passively-cooled dry casks, adding additional backup diesel generators at Sequoyah and Watts Bar and reinforcing pipes that provide cooling water to spent fuel pools. TVA said it will also add satellite telephones and small portable generators at the plants.

Of the six reactors operated by TVA, three are boiling water reactors similar to the ones at the Fukushima Daiichi plant in Japan damaged in an earthquake and tsunami in March. TVA said none of its reactors are in areas where earthquake risks are high. It said it is looking at potential disaster situations such as damage from a tornado or earthquake combined with flooding or a dam failure.

The newspaper said TVA is among the first US reactor operators to announce safety changes since the Japan crisis began in March. Other operators have said publicly they might have to make changes, but have not yet said what those may be.

While TVA discussed nuclear safety plans, the company's board delayed a decision to complete a reactor at the Bellefonte nuclear power plant in Alabama, according to the Chattanooga Times Free Press.

"We continue to view nuclear power as a viable option for the future, but we also think it's a good time to take a pause," board Chairman Dennis Bortorff was quoted as saying in the article.

Subscribe to Nuclear Power International

TVA Ready For Disaster (RHEAHER)

By Reed Johnson

Rhea County (TN) Herald News, April 16, 2011

Tennessee Valley Authority (TVA) employees at Watts Bar Nuclear Plant will begin utilizing satellite phones and establish disaster response centers in light of the events at the Fukushima Daiichi nuclear power plant in Japan, according to TVA officials.

TVA Senior Vice President of Nuclear Generation Development and Construction Ashok Bhatnagar spoke Tuesday to the Rhea County Commission on the changes instituted by TVA and construction progress at Watts Bar Unit 2.

TVA Reports Higher Profits (CHTNGA)

Chattanooga Times Free Press, April 18, 2011

The Tennessee Valley Authority is beating its budget forecasts for the first half of the fiscal year, earning \$202 million in the six months ended March 31 and allowing the utility to cut its debt and its power prices this month and next.

The Tennessee Valley Authority is beating its budget forecasts for the first half of the fiscal year, earning \$202 million in the six months ended March 31 and allowing the utility to cut its debt and its power prices this month and next.

But both officials and critics of TVA cautioned this week that power rates may be headed higher as TVA shutters aging coal plants and upgrades its nuclear plants in the wake of the accident at Japan's earthquake-crippled Fukushima nuclear plant.

TVA Chief Financial Officer John Thomas said preliminary earnings results for the first half of fiscal 2011 show the utility earned \$202 million on nearly \$5.8 billion of electricity sales. In its budget plan for the year, TVA had expected to earn only \$18 million in the first six months of this year on \$5.6 billion of sales.

"We've had strong performance year to date," Thomas said. "When we have earnings, we reinvest them back in the system and the goal is to use our earnings to offset future rate increases."

But TVA President Tom Kilgore said fuel costs are likely to still push up monthly price adjustments over the summer months and TVA officials said they are also looking at making what could cost millions of dollars in nuclear plant improvements in response to the Japanese nuclear disaster.

Spike seen from ruling

Some Republican members of Congress also warned this week that TVA's decision to shut down 18 of its 59 coal-fired units could prove costly. On Thursday, TVA reached a settlement with the US Environmental Protection Agency along with five states and three environmental groups to resolve lingering disputes over air pollution from TVA's fossil plants.

TVA will idle 2,700 megawatts of coal generation by 2017, invest up to \$5 billion in other pollution controls and pay a \$10 million penalty. Kilgore said the decision is best for air quality and ratepayers.

But TVA board member Mike Duncan, who voted against the agreement, said he expects the settlement "is going to be very expensive.

"It takes away some flexibility for us in capacity," he said. "We don't know what's going to happen in the future."

US Rep. John Duncan, R-Tenn., said "EPA has gone power mad" and forced TVA to make costly plant shutdowns.

"This settlement will drive up utility bills for people in Tennessee and the surrounding states and hurt poor and lower-income people the most," he said in a statement.

US Rep. Ed Whitfield, R-Ky., chairman of the House Energy and Commerce Committee's energy and power panel, said the agreement "is a prime example of what is wrong with national environmental policy in the US

"It's being determined by privately settled lawsuits and monetary payoffs with absolutely no input from elected representatives," he said in a statement. "We intend for this to stop."

No Retreat On Nuclear Power (CHTNGA)

Chattanooga Times Free Press, April 18, 2011

It is sensible for the Tennessee Valley Authority to gather information about the tsunami-related problems at a nuclear plant in Japan before TVA decides whether to complete a nuclear reactor at its Bellefonte plant in Northeast Alabama. But the events in Japan are no reason for US nuclear power projects to be delayed beyond what commonsense caution demands.

It is sensible for the Tennessee Valley Authority to gather information about the tsunami-related problems at a nuclear plant in Japan before TVA decides whether to complete a nuclear reactor at its Bellefonte plant in Northeast Alabama. But the events in Japan are no reason for US nuclear power projects to be delayed beyond what commonsense caution demands.

A catastrophic earthquake and tsunami damaged the nuclear facility in Japan, releasing some radiation. But while the quake and tsunami killed thousands, no one has died from the radiation release in Japan. And the United States' own worst nuclear power-related incident, at Three Mile Island in 1979, neither killed nor seriously injured anyone.

In fact, the United States has a remarkably strong record of nuclear safety. And of local importance, reactors at plants in the TVA region have rigorous, multi-layered safety protocols. Those factors should be key considerations in future nuclear power projects in this area.

Still, out of an abundance of caution, TVA has delayed its decision on completing a reactor at Bellefonte, while it studies the situation in Japan to determine whether there are lessons that can be applied here.

That is appropriate, so long as reasonable postponement does not become unreasonable retreat. Nuclear power is, after all, a vital part of our ability to meet our energy needs.

Consider the unhappy result when, in response to the incident in Japan, Germany hastily took some of its nuclear power plants off-line. Germany suddenly became a net importer rather than a net exporter of energy. From the first half of March to the

second half, Germany doubled its imports of electricity from France, while German power exports to the Netherlands and Switzerland stopped almost completely, according to news accounts.

That's simple cause and effect. Germany, the United States or any country can choose to restrict or eliminate the use of nuclear energy, but that does not make the need for energy disappear. And when you curtail one type of energy production, you boost demand for other types of energy and increase their cost.

Caution on nuclear energy is understandable. But the use of nuclear power should be based on facts and experience, not on alarmism.

Officials Review Plan For Changes At MOX Facility (AUGC)

By Rob Pavey

Augusta Chronicle, April 18, 2011

The US Department of Energy wants to redesign its partially built mixed oxide fuel plant to make nuclear fuel for a wider variety of reactors.

The facility under construction at Savannah River Site is designed to make fuel rods for pressurized water reactors in use at many commercial power plants.

Under proposed changes outlined in an April 1 "interim action determination," however, the redesign would enable the plant to also make fuel for boiling-water reactors and the next generation of light-water reactors.

The changes are necessary to ensure that clients can be found to use the MOX fuel, which is made by blending small amounts of plutonium from dismantled nuclear bombs with uranium.

The process renders the weapons-grade plutonium permanently unusable for nuclear weapons.

The National Nuclear Security Administration, which manages the nation's nuclear weapons stockpile, has faced challenges finding clients willing to use the fuel assemblies.

Tennessee Valley Authority and a small utility in Richland, Wash., are evaluating the idea, but no formal user agreements have been completed.

Operators of nearby nuclear power plants, including Southern Nuclear, which operates Plant Vogtle in Waynesboro, Ga., have said they do not plan to use the fuel.

Altering the plant's design to accommodate other reactor designs could broaden the potential client pool and help the MOX program succeed in its nonproliferation mission.

"To help ensure the use of MOX fuel in power reactors, which will render the plutonium unusable for nuclear weapons, DOE and Shaw-Areva MOX Services need the capability to manufacture fuel suitable for the variety of reactor technologies that exist in the current US fleet and to provide the flexibility to manufacture fuel for the next generation of power reactors," the proposal said.

The modifications would require physical and operational changes – and alter the size and scope of storage facilities – but are not expected to affect environmental and safety conclusions already reached in past evaluations, the proposal said, adding that the changes could be implemented before the completion of the project's final Environmental Impact Statement in early 2012.

Critics of the MOX program say the plan could further inflate the cost of the \$4.86 billion facility and underscores the government's inability to secure clients willing to use the fuel after the site goes into commercial production in 2018.

"Redesign of the MOX plant at SRS in order to provide a wider variety of reactors to use the controversial MOX fuel is presented as a step forward but actually confirms that no progress in this troubled program has been made," said Tom Clements, the Southeastern Nuclear's campaign coordinator for Friends of the Earth.

The plant's cost was estimated at \$1.6 billion in 2004, Clements said, and it is about 36 percent complete, with more than \$3 billion spent.

Joshua McConaha, a spokesman for the National Nuclear Security Administration, called the proposed modifications minor and said they would not cause a large increase in the price-tag. He did not give a cost estimate for the proposed changes, however.

"We are considering making minor modifications to the MOX Fuel Fabrication Facility that would allow us to produce fuel assemblies for use in boiling water reactors as well as pressurized water reactors," he said.

"This work would have a minimal effect on both cost and schedule. This will allow the facility to produce fuel for a broader set of potential customers and keep pace with changes in industry standards."

Reach Rob Pavey at (706) 868-1222, ext. 119, or rob.pavey@augustachronicle.com.

Japan Crisis Raises Doubts About Nuclear Fuels Plant At SRS (GRNVN)

Greenville News, April 18, 2011

The continuing crisis at a Japanese nuclear reactor may affect the future of a \$5 billion South Carolina plant designed to turn nuclear weapons material into reactor fuel for electricity.

The huge construction project at the Savannah River Site is an ambitious attempt to get rid of dangerous nuclear weapons plutonium by turning it into something called mixed-oxide fuel, or MOX, as part of a nonproliferation agreement with Russia.

One of the stricken nuclear reactors in Japan contains MOX, and the crippled plant has raised fears that it could release dangerous plutonium into the atmosphere, which could escalate the crisis.

US nuclear officials have told GreenvilleOnline.com they want to study what's happening in Japan before committing to using the MOX fuel that would be produced here, though MOX isn't being blamed for the problems in Japan and there is no evidence that it has caused any health issues.

The Tennessee Valley Authority, which has agreed to consider using MOX fuel in up to five of its reactors in Tennessee and Alabama, wants to study what happened with the MOX used in the Japanese reactor before committing to using it in its reactors, a spokesman said.

"We're still investigating the potential use," said TVA spokesman Ray Golden. "We are very interested in the ongoing events in Japan and there likely will be lessons learned."

But he said that doesn't mean the utility has decided not to use MOX or that it will delay its decision on the issue past next year.

Ken Bromberg, head of fissile materials disposition for the National Nuclear Security Administration, said the TVA is conducting an independent safety study on the use of MOX fuel as a result of the Japanese crisis, a step he said is "prudent and what I would do if I were in their position."

TVA agreed to consider using MOX after Duke Energy's interest cooled following a test of the fuel in its Catawba reactor in Rock Hill. Duke ended testing in 2008 after about three years when an examination found some excessive growth in the fuel assemblies, according to the company.

TVA hasn't agreed to use MOX, only to consider using it and hadn't planned to make a decision until next year. That is still the case, said Golden.

"We continue to evaluate the situation," Bromberg said. "But right now, we don't see any evidence that MOX played any role in that unfortunate situation in Japan." MOX opposition

Environmental groups opposed to the MOX factory at SRS likely will use the accident to request more studies from the US Nuclear Regulatory Commission, which must license the plant and the use of the fuel, an official with one of the groups said.

Bromberg said there has been no evidence the MOX used in Japan caused the problems there.

"The administration's top priority is the safety of the energy and fuel sources we produce, and as the president has made clear, as a result of Japan we will continue to evaluate any lessons learned and review all aspects of nuclear technology used in the US, which includes MOX," Bromberg said.

The Japanese crisis is the latest in a string of hiccups for the MOX program, which is designed to convert 34 metric tons of weapons-grade plutonium into nuclear reactor fuel and may convert an additional nine tons.

The presence of MOX in one of the Japanese reactors has fueled opposition to the US MOX program, which is scheduled to begin producing fuel in 2018 but has yet to sign a utility to use the fuel.

Critics of MOX have raised questions ranging from its safety to the risks of it falling into the hands of terrorists.

Supporters say MOX has been used safely elsewhere on the globe for many years and will allow the government to shrink its nuclear arsenal.

Construction on the \$4.8 billion MOX complex at SRS began in 2007 and is expected to be completed in 2016.

When completed, the mammoth plant will contain 170,000 cubic yards of concrete, 35,000 tons of steel rebar, 80 miles of piping and three million feet of power and control cable, according to Shaw AREVA MOX Services, which is building the plant. Federal review

A three-judge panel of the NRC has agreed to hear contentions by opponents of the MOX factory that Shaw AREVA MOX Services has failed to adequately address accounting and security controls to prevent plutonium theft at the plant.

Two of the judges said in their ruling that they consider the issues to be so serious they would have raised the issues themselves had they ruled the request untimely.

The crisis in Japan was triggered when an earthquake and tsunami knocked out power to the plant's six reactors. One of the three damaged reactors was loaded with about 6 percent of MOX fuel last September.

MOX is a combination of plutonium oxide and uranium oxide. Most commercial fuel is made from uranium. Plutonium occurs as a natural byproduct when uranium fuel is used in a reactor.

European facilities have recycled spent fuel into MOX for years, and MOX is now used in about 35 reactors around the globe, but none in the United States.

The MOX to be created at SRS would be different because it would use plutonium from nuclear weapons, not from spent commercial reactor fuel.

Scientists say the concern about plutonium in reactor fuel is that its release could increase cancer risks in comparison to uranium.

A committee of the American Nuclear Society reported last month that MOX has been used safely for decades in other countries and the accident in Japan likely will not show any serious consequences as a result of such fuel.

Other scientists and those opposed to the MOX plant want the Japanese crisis studied more before allowing MOX use in the United States.

Ed Lyman, senior scientist for the Union of Concerned Scientists, said the amount of plutonium used in the Japanese reactor is small enough that it likely will make no significant difference in the amount that will escape into the environment.

However, he said the issue is with larger amounts used in other MOX fuel assemblies or when MOX has been in the reactor a long time.

Bromberg said weapons-grade MOX has fewer of the plutonium isotopes than MOX made from recycled spent fuel.

Environmental groups are planning to ask the NRC to reopen the environmental impact statement process on MOX to consider the impacts of the Japanese reactor problems and also potential problems with having MOX in spent nuclear fuel pools, said Tom Clements, who studies nuclear issues for the group Friends of the Earth.

Glenn Carroll, coordinator for Nuclear Watch South, a group opposed to the plant and one of those that asked the NRC to consider the accounting and security control protections, said she believes the Japanese nuclear crisis will have an impact on MOX.

US Needs Nuclear Storage Site (POLITCO)

By Rep. John Shimkus

Politico, April 18, 2011

The March 11 earthquake in Japan led to a tsunami that crippled the Fukushima Daiichi nuclear power plant. While this double tragedy is unlikely at any US nuclear plant, we must take a hard look at our country's lack of a central storage facility for nuclear waste.

Back in 1982, the Nuclear Waste Policy Act made the federal government responsible for collecting nuclear waste. Since then, \$14.5 billion in taxpayer and electricity ratepayer funds have been spent on the project.

In 1987, Yucca Mountain in Nevada was named the sole US site for a permanent repository of nuclear waste. The Department of Energy confirmed the science behind this decision in 1994. In 2002, Congress and then-President George W. Bush approved Yucca Mountain again. In 2008, DOE filed a license application with the Nuclear Regulatory Commission to build at Yucca Mountain.

Then President Barack Obama named a former staffer of Senate Majority Leader Harry Reid to head the NRC. The agency stopped its analysis of the pending application, and DOE closed the underground mountain site. Was science the determining factor?

Obviously, the decision to move forward with a national nuclear waste repository has been supported by Republican- and Democratic-controlled Congresses and Republican and Democratic presidents throughout these years.

The storage site would be below ground, in a remote desert location owned by the federal government. Earthquakes have had little effect on this area and even less of an effect underground.

Today, we store nuclear waste at 121 nuclear plant sites in 39 states. About one-quarter of this waste is stored in dry casks. The remainder is stored in wet pools — like at Japan's Fukushima site. Such pools are within 50 miles of New York, Chicago and San Diego. Is that really where we want to store nuclear waste?

Just this week, the Senate majority leader himself is quoted as saying about nuclear fuel rods, "The ones that haven't been safe are the ones in the pools, sloshing around, causing all kinds of problems."

On March 30, the president called for an increase in nuclear power as part of a clean energy standard. While I may not agree with a mandated standard like that, I know that nuclear power is likely to remain vital to our nation's electricity portfolio.

I can see three to five new nuclear plants moving forward, given the current regulatory environment. I cannot see, though I would like to, a larger increase in nuclear power until we establish a design standard for new plants — and deal with the long-term storage of nuclear waste.

Unfortunately, the president and his administration have unilaterally halted work on Yucca Mountain. They would rather see nuclear waste stored all over the country. But if we cannot store nuclear waste 1,000 feet underground in a desert mountain, where can we store it?

The administration is failing to carry out federal law. To find out exactly why the Obama administration halted work on Yucca Mountain, under our oversight, House Energy and Commerce Committee Chairman Fred Upton (R-Mich.) and I opened an investigation.

On March 31, we sent letters to Energy Secretary Steven Chu and the chairman of the Nuclear Regulatory Commission.

As part of our official responsibility, I will lead a legislative delegation to tour Yucca Mountain later this month. I have been criticized for this trip — with opponents claiming it is unnecessary and an excessive cost.

DOE estimates included \$175,000 to open the Yucca underground site. Unfortunately, much of that extreme cost is a direct result of the administration's unilateral decision to shut down all functions at the Yucca Mountain facility — which I believe is in violation of the law.

Unsolicited, DOE also had suggested using helicopters to travel — at a minimum cost of \$25,000. Without question, the decision was made to eliminate the underground portion of the trip, and the delegation will travel to the site via ground transportation, as planned all along.

We are basing our trip on practices followed by the Government Accountability Office when it visited Yucca Mountain last November, without fanfare or complaint from DOE — and consistent with site visits conducted routinely to federal facilities. We are simply asking for similar accommodations.

DOE and Yucca opponents want to cast this trip as unnecessary. What do they have to hide?

Past Congresses and administrations have approved Yucca Mountain. While it has taken too long to become reality, this administration should not make unilateral decisions without the consent of Congress.

To expand nuclear power use in the United States, Yucca Mountain must become a reality.

Rep. John Shimkus is chairman of the House Energy and Commerce Subcommittee on Environment and the Economy, which has jurisdiction over federal nuclear waste policy.

It's Time For A Realistic Approach To Yucca Mountain (RGJ)

By Tyrus W. Cobb

Reno (NV) Gazette-Journal, April 18, 2011

There can no longer be any doubt that the licensing process for the Yucca repository will be restarted. The only question is whether Nevada will seize this moment to demand that its concerns be addressed and that the state be appropriately compensated.

Two years ago, the Obama administration, fulfilling a campaign commitment to US Senate Majority Leader Harry Reid, D-Nev., closed down the repository. That was done in spite of the law of the land, the Nuclear Waste Policy Act of 1982/87, that stipulated — and still does — that Yucca be the nation's nuclear spent fuel site. Much has changed recently.

First, several states have sued to force the government to comply with the law, and they will surely win in the courts.

Second, a panel of the Nuclear Regulatory Commission, the agency that oversees nuclear energy and waste activities, also ruled that the halting of the Yucca licensing process was illegal. The whole NRC has yet to vote, primarily because Reid's former staffer Greg Jaczko heads that body. However, his delaying tactics have caused a revolt by the other commissioners, who are demanding a vote.

Finally, the Japanese tsunami that caused such damage to nuclear reactors has called into question the wisdom of leaving spent nuclear fuel at reactor sites any longer than is necessary.

To most observers, the choice of where this spent fuel should be stored is obvious — it must be placed in an already prepared, deep underground facility, on a secure military reservation more than 100 miles from any populated center.

Currently, the waste is stored at about 104 reactor and defense production sites, many located in earthquake-prone and tsunami-vulnerable zones. The spent fuel is then kept above ground at sites weakly defended against terrorist attacks and within 75 miles of 165 million people.

The state of Nevada has fought Yucca so hard that it has squandered both its money and its extensive political capital. Nevada gets less back from the federal government than virtually any other state because its officials have chosen to make

halting Yucca its highest, if not the sole, priority. Further, stopping Yucca has cost us \$300 million a year in direct aid and more than 3,000 top-paying jobs.

(Page 2 of 2)

This must change. We have precious little time to exert our leverage before the repository is forced on the state. If we negotiate now, we can ensure that our transport and storage concerns are met. We also can demand significant financial compensation, as Alaska does with its trust fund for oil extraction.

A group of independent business leaders has proposed that Nevada also insist that the government create a "Nevada Energy Park" at the site. The spent fuel would be stored only for an interim period, then ultimately utilize emerging recycling technology for reuse and resale. The NEP would be home to a major center for research on alternative energies. The group believes the park would bring \$4 billion to the state, generate \$1 billion a year for education and infrastructure, yield annual dividend payments to our citizens, create more than 10,000 high-paying jobs and make Nevada the leader in energy development strategies.

Sure sounds better than our current policy, doesn't it?

Tyrus W. Cobb of Reno served as special assistant to the president for national security affairs in the Reagan White House.

Guy W. Farmer: Japan's Nuclear Disaster And Yucca Mountain (NVA)

Nevada Appeal, April 18, 2011

My friend and fellow columnist Ty Cobb Sr. seems to think that the Japanese nuclear disaster makes the proposed Yucca Mountain nuclear waste dump inevitable. I beg to differ, however, because I think the Japanese crisis sounds the final death knell for Yucca Mountain.

"Despite strenuous efforts by Nevada's congressional delegation and the Obama administration, the Yucca repository will soon be reopened," Cobb wrote in a recent Appeal column, but I think he's dead wrong. If anything, the potential meltdown at Japan's Fukushima nuclear power plant is a huge blow to nuclear power advocates with public confidence in atomic energy at an all-time low. As CNN reported last week, "The ongoing drama at the Fukushima power plant ... has erased the momentum the nuclear energy industry has seen in recent years."

CNN called it "the nuclear renaissance that wasn't" while the respected Christian Science Monitor urged the Obama administration to plan for the safe storage of spent nuclear fuel and to adopt emergency backup plans to guard against a Japan-type accident. And President Obama has directed the Nuclear Regulatory Commission to comprehensively review nuclear plant safety in the US

Obama, Energy Secretary Steven Chu and Senate Majority Leader Harry Reid (D-Nev.) delivered a crippling blow to Yucca Mountain last month when they cut off funding for the all-but-moribund project. And despite Republican efforts to revive the project, Reid announced last week that a "rider" barring the NRC from completing the closeout of Yucca Mountain was knocked out of a stop-gap spending measure approved by Congress.

Those GOP efforts don't include Gov. Brian Sandoval and Northern Nevada Congressman Dean Heller, both of whom oppose the highly toxic project. I congratulate them for holding the line against fellow Republicans who think changing the proposed dump's name to "Nevada Energy Park" will make it more palatable to Nevadans. That's just wishful thinking.

In recent weeks the Appeal has published a literate and enlightening debate between Cobb and former Gov. and Sen. Richard Bryan, who chairs the Nevada Nuclear Projects Commission. Cobb opened the debate by arguing that "a combination of legal actions and the Japanese tsunami" will force the Obama administration to reopen Yucca Mountain. But last Tuesday Bryan called Cobb's thesis "entirely wrong and misleading."

"There could be 100 Yucca Mountains up and operating, and the risks involved with spent fuel pools at reactor sites would still be there," Bryan wrote, urging nuclear energy companies to opt for so-called "dry storage" of spent fuel at locations where the waste is generated, none of which is in Nevada. He added that "dry storage virtually eliminates risks of the type we're seeing in Japan," and concluded as follows:

"Instead of disingenuously using the disaster in Japan to stampede Congress into restarting the failed Yucca project, the nuclear industry should be using its considerable influence to require utility companies to make maximum use of dry storage technologies." Amen!

• Guy W. Farmer, of Carson City, is a longtime opponent of the proposed Yucca Mountain nuclear waste dump.

DOE Plans Support Projects For Hanford Vit Plant (TRICITYH)

By Annette Cary

Tri-City Herald (WA), April 18, 2011

Major construction projects are being planned in central Hanford as the Department of Energy prepares to treat 53 million gallons of radioactive waste for disposal.

Construction has been under way on the \$12.2 billion vitrification plant, or Waste Treatment Plant, since 2002. But now planning is starting for the facilities needed to support the plant, including a complex to store its product of containers of glassified high-level radioactive waste until the nation has a repository for it.

Hanford officials also are making plans for how to get waste to the vitrification plant and how to treat the secondary waste that it creates for disposal.

"These are projects that need to be available for the WTP full operations," said Chris Burrows, the vit plant support project manager for Washington River Protection Solutions.

The Hanford tank farm contractor, now Washington River Protection Solutions, traditionally has been focused on safe operations and retrieving waste from aging and leak-prone older underground tanks. But now, the contractor, in addition, is starting to focus on construction and its role in waste treatment.

"We have got to be totally integrated with the WTP," said Chuck Spencer, president of Washington River Protection Solutions.

Much of the work will need to be done before 2019, when the vitrification plant is scheduled to start treating high-level radioactive waste.

"We need to start now," said Tom Fletcher, DOE acting assistant manager of the tank farms.

That includes looking at the pros and cons and long-term costs of four possible options for storing treated high-level radioactive waste. The vitrification plant will produce glass-filled stainless steel canisters that weigh about four tons each and measure almost 15 feet long and 2 feet in diameter.

The treated waste was expected to go to the Yucca Mountain, Nev., repository for radioactive waste, but DOE shut down that project and the Obama administration is considering other options for storing or disposing of the waste.

In the meantime, the waste will be stored at Hanford. Planning is being done to accommodate the first 4,000 canisters of high-level waste, which would support 10 years of vitrification plant operations. Low-activity waste also will be treated at the plant, but is planned to be disposed of at a Hanford landfill.

Options for the high-level waste include outdoor storage on a pad. Although construction costs would be low, casks would have to be continually manufactured to hold the treated waste.

If the waste is stored inside, the Canister Storage Building may be retrofitted. But an earlier look at options suggested that constructing a new building may be less expensive.

If new construction is picked as the best option, a building with underground vaults could be constructed or a building with a limited system of open rack storage.

Preliminary planning puts possible construction costs in the range of \$90 million to \$240 million.

Washington River Protection Solutions also is preparing to treat the secondary solid and liquid waste produced at the vit plant as it glassifies tank waste, which will require two more construction projects.

Now contaminated liquid waste at Hanford -- such as the liquid collected at the bottom of the site's low-level radioactive waste landfill -- is taken to the Effluent Treatment Facility. But the amount of liquid waste at the site will double when the vit plant begins operating, and the plant's liquid waste will have corrosive chemicals the liquid treatment facility is not designed to handle now.

Upgrades and expansion of the plant could cost \$100 million to \$200 million, although those figures are preliminary.

No cost estimate has been made for the solid waste treatment center that will be needed to prepare contaminated waste from the vit plant for disposal. Secondary solid waste produced by the plant could range from melter equipment with a six-week life to the melters themselves, which have a five-year life.

The fourth construction project planned by Washington River Protection Solutions would improve infrastructure at the tank farm to mix waste, blend it, sample it and deliver it to the vitrification plant, also in central Hanford. Costs could range from \$400 million to \$500 million, according to preliminary information.

While those four construction projects are needed to support operations of the vitrification plant in 2019, DOE also is looking at two more. If DOE decides to start treating low-activity waste before it is ready to treat high-level waste in 2019, it will need a system to prepare the waste for treatment in the tank farms. Once the vit plant is operating, that will be done at its Pretreatment Facility.

In addition, the vitrification plant was not planned to be large enough to treat all tank waste by the legal deadline of 2047. DOE is looking at options, which could include building a second Low Activity Waste Facility at the vitrification plant.

All the construction projects are "things we support them doing and are all high priority," said Suzanne Dahl, the Washington State Department of Ecology's tank treatment section manager. The state is the regulator for Hanford's tank waste treatment.

"Ecology, quite frankly, is very encouraged they are looking at these things now," said Dan McDonald, the state's project manager of tank waste disposal.

Read more: <http://www.tri-cityherald.com/2011/04/17/1454063/doe-plans-support-projects-for.html#ixzz1Jrs6EoPF>

Hearing Set In Challenge To Los Alamos Building (AP)

Associated Press, April 18, 2011

ALBUQUERQUE, N.M. (AP) – A watchdog group is going to court in its attempt to halt a multibillion-dollar plutonium building at Los Alamos National Laboratory until the government does an environmental study.

The Los Alamos Study Group wants a preliminary injunction to prohibit all further funding of the Chemical and Metallurgy Research Replacement Nuclear Facility.

US District Judge Judith Herrera will hear arguments from the organization and the US Department of Energy on April 27 in Albuquerque.

The group's lawsuit, filed last August, alleges the Energy Department and its National Nuclear Security Administration violated the National Environmental Policy Act by preparing to build the facility without a new environmental impact statement.

The project consists of two buildings. The first, a radiological laboratory and office building, is finished. Construction has not begun on the nuclear facility.

The DOE says the new building is necessary because the current 60-year-old structure is outmoded. Lawyers for the agencies have argued the lawsuit should be dismissed. That motion is pending.

The study group, however, contends the building's design was changed without notice, and that the nuclear facility now bears little resemblance to the initial proposal.

There's no exact cost figure for the nuclear facility, but a 2008 Senate report estimated it at \$2.6 billion, more than five times the initial estimate. A final design is being worked out.

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Associated Press, April 15, 2011

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Y-12 Material Used In Test Of Mock Bomb (KNOXNS)

B61 Mod 11 mimics strategic weapon's design, performance

By Frank Munger

Knoxville News Sentinel (TN), April 18, 2011

OAK RIDGE - The government recently announced a successful testing of a mock B61 bomb - called a Joint Test Assembly - and the Y-12 nuclear weapons plant in Oak Ridge played a role.

The National Nuclear Security Administration and the US Air Force Global Strike Command collaborated on a flight test using a Joint Test Assembly of the B61 Mod 11 Strategic Bomb.

The test device is a detailed mock-up of a nuclear bomb, designed to be as much like the real thing without using the strategic nuclear materials - highly enriched uranium and/or plutonium.

A B-2A Spirit Stealth Bomber delivered and released the Joint Test Assembly at the Tonopah Test Range in Nevada, federal officials said.

The actual date of the test was not revealed.

According to information provided by the government, "A JTA contains instrumentation and sensors that monitor the performance of numerous weapon components during the flight test to determine if the weapon functions as designed. This JTA also included a flight recorder that stored the bomb performance data for the entire test. The data is used in a reliability model, developed by Sandia National Laboratories, to evaluate the reliability of the bomb."

Steven Wyatt, a federal spokesman at the Y-12 National Security Complex, confirmed that the Oak Ridge plant manufactured hardware for the test. Y-12 specializes in so-called secondaries - the second stage of thermonuclear weapons.

"Y-12 typically provides hardware (for test operations) that is similar to components we manufacture for the nuclear stockpile," Wyatt said. "However, the special nuclear materials are replaced by surrogate or mock materials. JTAs can have a variety of configurations depending on the test being performed."

Senior writer Frank Munger may be reached at 865-342-6329.

White House Draft Bill Would Put DHS In Charge Of Civilian Computer Networks (HILL)

By Gautham Nagesh, The Hill

The Hill, April 15, 2011

The White House is circulating a piece of draft legislation that would give the Department of Homeland Security oversight over cybersecurity at civilian agencies, according to a report from FedNewsRadio.

The proposed legislation combines the comprehensive cybersecurity bill introduced last year by the Senate Homeland Security Committee with the administration's memo from July 2010 to expand DHS's responsibilities over non-military networks, according to the report.

Like the Homeland Security bill sponsored by Sens. Joe Lieberman (I-Conn.), Susan Collins (R-Maine) and Thomas Carper (D-Del.), the bill would create a White House cybersecurity office that reports to the Secretary of DHS on day-to-day matters.

But the legislation also goes beyond the Homeland Security bill by giving DHS authority over .gov domains that is similar to the authority enjoyed by US CyberCommand, the military's cybersecurity unit, over the .gov domain.

The bill would put DHS in charge of enforcing the Federal Information Security Management Act instead of the Office of Management and Budget, which currently oversees the law. The bill would give DHS the authority to hire four senior level cyber executives and create a scholarship program for students interested in pursuing cybersecurity.

The 100-page document is currently under review; DHS sent it to agencies last Friday and is expecting comments Monday. White House officials indicated at a hearing this week that the administration is currently finalizing a series of draft cybersecurity proposals.

A committee spokesperson told FedNewsRadio that the Senate Commerce and Homeland Security Committees settled their turf battle over cybersecurity last month after being mired in a standoff since last August. Lieberman said if the White House bill aligns with his committee's effort, he expects to see a bill passed by the Senate before the end of the year.

But Republicans in both the Senate and the House have expressed resistance to putting more on the plate of DHS, with Sen. John McCain (R-Ariz.) repeatedly arguing the agency is unable to fulfill its existing mission.

The only Republicans thus far who appear to be backing the effort are Collins and her centrist colleague Olympia Snowe (R-Maine). House Republicans have shown support for putting the military or the National Security Agency in charge of protecting all government networks.

The bill also reportedly contains what the report referred to as a "Google provision" that says the government can't force a business to locate a data center in a particular state as a condition of a procurement.

IN THE BLOGS:

Blog: Yeah, Sure. Write Your Own Nuclear Energy Regulations. (CLOAF)

US Nuclear Regulator Lets Industry Help With the Fine Print

By John Sullivan

Creative Loafing, April 15, 2011

Check out this nuclear news from our friends at ProPublica.org, right after this reminder: Charlotte is sandwiched by two nuclear power plants — one on Lake Norman and another on Lake Wylie.

In the fall of 2001, inspectors with the Nuclear Regulatory Commission were so concerned about possible corrosion at Ohio's Davis Besse Nuclear Power Station that they prepared an emergency order to shut it down for inspection. But, according to a report from the NRC inspector general, senior officials at the agency held off — in part because they did not want to hurt the plant's bottom line.

When workers finally checked the reactor in February of 2002, they made an astonishing finding: Corrosive fluid from overhead pipes had eaten a football-sized hole in the reactor vessel's steel side. The only thing preventing a leak of radioactive coolant was a pencil-thin layer of stainless steel.

The Davis Besse incident has resurfaced in the wake of the ongoing nuclear crisis at Japan's Fukushima Daiichi plant. Stories recounting close ties between Japanese nuclear regulators and utilities there have reinvigorated critics who say the NRC has not been an aggressive enough US watchdog.

The NRC says that is not the case, and commission Chairman Gregory Jaczko defended the agency's independence and professionalism. "I have a great staff who are dedicated to public health and safety, and people who interact with this agency, they know that and they see that," he said in an interview.

Critics of the NRC say the problem at Davis Besse, 20 miles southeast of Toledo, is a prime example of the agency's deference to industry. The inspector general concluded that a conflict between the NRC's twin goals of inspecting the plant to protect public safety and a desire to "reduce unnecessary regulatory burden" on the owner led to the delay in finding the gaping hole.

In 2003, then NRC's Chairman Richard Meserve disputed the inspector general's report, which found that the agency's decision on Davis Besse "was driven in large part by a desire to lessen the financial impact" on the plant's owner. Meserve said the NRC had adequate technical grounds for the delay.

The agency insists that it vigilantly watches operations at 104 commercial reactors and frequently issues violations to nuclear companies that step out of line. Since 2001, the agency has averaged about 120 significant enforcement actions a year at power plants and other nuclear facilities it oversees.

While the Davis Besse case focuses on singular allegations of influence, critics say the industry routinely exercises its muscle in a more pervasive way: through contributions to NRC regulatory guides that advise nuclear companies about how to best follow the agency's rules.

Large parts of the guides, issued by NRC, incorporate or endorse material written by the industry's trade group, the Nuclear Energy Institute. The guides — containing detailed technical procedures and reference materials — are a key part of NRC's oversight. They provide the nuts and bolts advice that nuclear operators follow to stay in compliance but often refer to even more detailed industry guides.

The NRC's guide on fatigue, for example, details how many hours employees in key jobs can work, how to respond when a worker is too tired, and how many days off employees in certain jobs need. It officially incorporates, with a few exceptions, another 60-page guide compiled by the industry group.

In an e-mail, Thomas Kauffman, a spokesman for NEI, passed along responses to ProPublica's questions from the trade group's director of engineering, John Butler. "NRC endorsement, with or without exceptions, of industry guidance is a common practice," Butler said.

Some examples from a list the trade group provided to ProPublica:

- » How to apply for an operating license extension. Many aging plants are seeking to extend their original 40-year licenses. The 10-page NRC document endorses a 245-page NEI guide that tells applicants how to identify critical equipment and inspect it to be sure it meets relicensing standards.

- » How to protect plants from fires. The NRC's regulatory guide cites an NEI document that "provides the majority of the guidance applicable" for analyzing fire risk at plants, with some specific exceptions.

- » How to upgrade plant control rooms. The NRC regulatory guide says that "when possible, this guide has incorporated (NEI's) 'Control Room Habitability Guide,' " again with some limits.

The NEI said its role in contributing to NRC's guides does not mean the nuclear industry has too much influence. Kauffman said the NRC has final say on what NEI adds and frequently makes changes.

"They review them completely," Kauffman said. "It is one thing to draft something and put it out there; it is quite another for the NRC to decide to accept it."

NRC spokesman Eliot Brenner said in an e-mail that the NEI is not the sole source of information in agency regulatory guides and that NRC accepts comment from a broad array of sources.

"If any stakeholder – company, industry organization, individual or public group – backs up a request with appropriate information, the NRC will consider it," Brenner said. "The NRC regularly denies industry requests that lack proper support, and we've taken properly supported rulemaking requests from non-industry sources on many occasions."

"The NRC is the final arbiter of what becomes a regulation," he said, "with safety the total focus of our effort."

But others said the reliance on the industry creates a potential conflict of interest.

Jim Riccio, who follows nuclear issues for Greenpeace, said that allowing the NEI to play such a large role means the industry can shape much of what nuclear companies are required to do.

Riccio said NRC's precursor agency, the Atomic Energy Commission, was disbanded after Congress concluded it had become too concerned with promoting nuclear power instead of regulating safety.

In a 1974 overhaul, development of nuclear energy was transferred elsewhere and protection of the public was given to the NRC, a five-member body whose members are appointed by the president.

Riccio asserted that over the years, NRC has become more accommodating to the industry.

"The problem with inviting the industry in is that they tend to dominate the process," he said. "The NRC has a problem distinguishing between the public they serve and the industry they regulate."

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INTERNATIONAL NUCLEAR NEWS:

Tokyo Utility Lays Out Plan For Its Reactors (NYT)

By Ken Belson And Steven Lee Myers

New York Times, April 18, 2011

TOKYO — The Tokyo Electric Power Company laid out an ambitious plan on Sunday for bringing the reactors at its hobbled Fukushima Daiichi nuclear power plant into a stable state known as cold shutdown within the next nine months and for trying to reduce the levels of radioactive materials being released in the meantime.

The blueprint for action represents Tokyo Electric's most concrete timetable yet for controlling the reactors and improving safety at the plant, which was damaged by a massive earthquake and tsunami nearly six weeks ago.

The first part of the plan, expected to take three months, would include building new cooling systems, critical to preventing catastrophic releases of radioactive materials. The company then hopes to cover three badly damaged reactor buildings and install filters to reduce contamination being released into the air.

By announcing the construction of new cooling systems, the company implicitly acknowledged what outside experts had been warning for weeks: that the company's earlier plan to repair the existing system was unlikely to work because the equipment was too badly damaged. The change in approach means that the country must resign itself to several more months of radioactive emissions — into the air and possibly into the Pacific — even though the plant appears to be less volatile than it was.

For weeks, workers have been consumed with reacting to a cascade of problems created not only by the original disasters but also by makeshift fixes for bringing the plant under control. By making its announcement on Sunday, Tokyo Electric was trying to show that conditions had apparently improved enough in recent days that it was now able to turn some of its attention to planning for the future.

"The company has been doing its utmost to prevent a worsening of the situation," Tokyo Electric's chairman, Tsunehisa Katsumata, told a news conference.

"We have put together a road map," he said, adding, "We will put our full efforts into achieving these goals."

On Sunday, meanwhile, the government said that evacuees who were forced to leave their homes near the Daiichi plant will be able to start returning in six to nine months, after the land is decontaminated. The announcement seemed to suggest that few places would be put off limits, as they were after the more devastating 1986 Chernobyl disaster in Ukraine. But Japanese officials did not provide specifics about how contaminated the land was within several miles of the plant.

In any case, the statements were the clearest indication yet that the tens of thousands of people evacuated from the area and living in shelters will not soon be able to return to their homes, or to towns that were destroyed by the tsunami. It also means that the badly shaken government will have to continue to provide for the displaced people even as it struggles to rebuild from the quake and stabilize the economy.

One government official and a nuclear power expert said they thought Tokyo Electric's plan could work, although one said the company should try for a cold shutdown sooner. A cold shutdown means that the temperature of the water in a reactor is below the boiling point. Although cooling must continue, the water will not boil away quickly, even at atmospheric pressure. Boiling must be avoided because fuel rods have to be kept under water to avoid meltdown.

The Japanese government and the company, known as Tepco, have been overly optimistic in the past. Several weeks ago, for instance, the company said it hoped that its success in bringing live power lines back to the plant would enable workers to quickly restart the existing cooling systems even though the equipment would have had to survive not just the natural disasters, but the explosions that rocked the plant in the following days.

The announcement on Sunday that new cooling systems would be built was the first admission that efforts to restart the old system had failed.

Hidehiko Nishiyama, deputy director general of the Nuclear and Industrial Safety Agency, said that although it was not yet possible to know for sure, "there is a possibility that normal cooling systems cannot be revived."

In a show of support, Secretary of State Hillary Rodham Clinton flew to Japan on Sunday from Seoul, South Korea, becoming the most senior American official to visit since the disaster. She told Japan's foreign minister, Takeaki Matsumoto, that her visit reflected "our very strong bonds of friendship that go very deep into the hearts of our people."

Mrs. Clinton said that the United States was "doing everything we can to support Japan, and we have very good cooperation." The United States military has participated in rescue efforts in Japan, even after some personnel were exposed to radiation, and Americans quietly helped reopen the airport in Sendai.

While it remains difficult to answer some important questions about the safety of the Fukushima Daiichi plant, in part because it is too contaminated now for workers to get close to the reactors, the State Department said last week that the situation at and around the plant had become less perilous.

Since the cooling systems at the plant failed, Tokyo Electric has been cooling the reactors and the pools that hold used, but still hot, fuel rods by pouring tons of water on them. But as the water boils in the reactors, pressure rises too high to pump in more water, so workers have to vent to the atmosphere and feed in more water, a procedure known as "feed and bleed."

That means the plant is consistently spewing radioactive materials into the air. And although much of the water that is used evaporates, tons of runoff have also been created.

The jury-rigged system has become more efficient in recent weeks.

Immediately after the quake, helicopters dropped water on the reactor buildings and workers sprayed water into them with fire hoses. The company has since set up large pumping trucks at the reactors. At some reactors, the arms of the trucks that deliver the water have been placed over the damaged walls of the buildings, enabling water to be shot more directly at the reactors and pools and reducing runoff.

The long-term solution announced Sunday, to build new cooling systems, would eliminate the runoff because it would be a closed loop, like the systems previously used at the plant. Such systems cool the steam that comes off the reactors, creating water, which is pumped back into the reactors. The systems would also stop venting, if they worked correctly.

Until the new system can be built, Tokyo Electric intends to set up a water processing unit that removes radioactive particles and salt, and store it in tanks. But in a sign of how much improvisation has gone into the plan, company officials said that they would turn a concrete-walled waste treatment building into a large storage tank to hold up to 30,000 tons of contaminated water.

The company plans to place temporary covers over three of the six reactor buildings at the plant and install air filters to help reduce the venting, the company said. Engineers will also start designing structures with concrete roofs and sides.

Officials said the temporary covers would be made of material similar to the tough fabric used to wrap buildings under construction. The company warned that the covers could be damaged in a typhoon.

Goshi Hosono, a special adviser to Prime Minister Naoto Kan, identified two risks to the company's plans: that the new cooling systems would be too hard to build quickly and that a serious aftershock or tsunami could lead to further damage at the site before changes could be made.

Hironobu Unesaki, a professor at the Research Reactor Institute at Kyoto University, said the long-term plan seemed mostly sound. But he said the company should try to achieve cold shutdown of the reactors sooner than six to nine months, to reduce the risk of a large-scale radiation release.

Mrs. Clinton's visit followed several weeks in which the United States indirectly criticized Japan's response to the nuclear disaster, saying it was worse than Japanese officials were acknowledging and declaring a broader evacuation zone around the plant for Americans in Japan.

Asked Sunday if the Japanese government had acted transparently enough, Mrs. Clinton said: "We have been very supportive of what Japan is doing to take the appropriate steps."

Mrs. Clinton also met with Emperor Akihito and Empress Michiko at the Imperial Palace. The emperor shook her hand, and Mrs. Clinton kissed Michiko on both cheeks. "I'm so, so sorry for everything your country is going through," she told them, before they entered the palace for tea.

Tepco Expects To Resolve Fukushima Crisis In 6 To 9 Months (BLOOM)

By Yuji Okada

Bloomberg News, April 18, 2011

Tokyo Electric Power Co. expects to resolve the crisis at its tsunami-hit Fukushima Dai-Ichi nuclear plant within six to nine months under a two-phase plan.

The utility known as Tepco expects a sustained reduction in radiation levels at the plant within three months, the company said in a statement handed out to reporters at a conference in Tokyo today. Following that, the utility expects to achieve a cold shutdown of the reactors, where the temperature inside the core drops below 100 degrees Celsius (212 degrees Fahrenheit), within three to six months, according to the statement.

Engineers battled to cool reactors by spraying water from helicopters, water cannons and fire engines after a magnitude-9 earthquake and subsequent tsunami struck the Fukushima Dai-Ichi station on March 11 and knocked out its cooling system. Radiation levels in the sea near the plant rose after highly radioactive water leaked into the ocean.

To contact the reporter on this story: Yuji Okada in Tokyo at yokada6@bloomberg.net.

To contact the editor responsible for this story: Paul Tighe at ptighe@bloomberg.net.

Japan Nuclear Operator Aims For Cold Shutdown In 6-9 Months (REU)

By Taiga Uranaka

Reuters, April 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.

TEPCO Announces Plan To End Japan Nuclear Crisis (AP)

By Yuri Kageyama And Shino Yuasa, Associated Press

Associated Press, April 18, 2011

TOKYO – The operator of the crippled nuclear power plant leaking radiation in northern Japan announced a plan Sunday to bring the crisis under control within six to nine months and allow some evacuated residents to return to their homes.

The roadmap for ending the crisis at the Fukushima Dai-ichi nuclear power plant, presented by Tokyo Electric Power Co. Chairman Tsunehisa Katsumata at a news conference, included plans to cover the damaged reactor buildings to contain the radiation and eventually remove the nuclear fuel.

"We sincerely apologize for causing troubles," Katsumata said. "We are doing our utmost to prevent the crisis from further worsening."

Frustrations have been mounting over TEPCO's failure to resolve the nuclear crisis more than a month after a catastrophic earthquake and tsunami hit Japan on March 11, knocking out power and cooling systems at the Fukushima Dai-ichi complex.

Katsumata, who was hammered by questions over his management responsibility, told reporters he was considering stepping down because of the crisis.

"I feel very responsible," he said.

Katsumata said he was not sure when the tens of thousands who had been forced to flee their homes because of the crisis could go back, but Trade Minister Banri Kaieda said some could return home within six to nine months.

"Of course, some people will be unable to return home, but we will keep everyone informed," he said, adding that the government hoped TEPCO could contain the radiation sooner than the schedule announced Sunday.

The company is focusing on cooling the reactors and spent fuel pools, decontaminating water that has become radioactive, reducing the amount of radiation released into the atmosphere and soil, and lowering radiation levels in the evacuation area, he said.

During the first three months of the plan, the company hopes to steadily reduce the level of leaking radiation, Katsumata said. Three to six months after that, it hopes to get the release of radioactive materials firmly under control, achieve a cold shutdown of the reactors and temporarily cover the reactor buildings.

"I believe we will succeed in containing the crisis," Katsumata said.

The company also outlined plans for permanently covering the buildings and closing down the reactors, but that will take years, officials said.

Kaieda, the trade minister, said he hoped to see the process quickly "shift from the first aid phase to a systematic and stable phase."

In a show of support for a staunch American ally, US Secretary of State Hillary Rodham Clinton expressed admiration and sympathy for the Japanese as she visited Tokyo on Sunday.

"We pledge our steadfast support for you and your future recovery. We are very confident that Japan will demonstrate the resilience that we have seen during this crisis in the months ahead," Clinton told reporters after meeting with Foreign Minister Takeaki Matsumoto.

Clinton said Matsumoto told her that Japan hoped for US feedback on TEPCO's plan.

Prime Minister Naoto Kan, fighting criticism of his administration's handling of the disaster, said in a weekend commentary in the International Herald Tribune that "Bringing the situation under control at the earliest possible date is my top priority."

As Japan has begun planning for reconstruction and mulling how to pay for it, Kan's political opponents have resumed calls for his resignation after refraining from criticism in the immediate aftermath of the disaster.

Thanking the international community for its support, Kan vowed to rebuild a country "highly resistant to national disasters."

"I pledge that the Japanese government will promptly and thoroughly verify the cause of this incident, as well as share information and the lessons learned with the rest of the world to help prevent such accidents in the future," he said in the commentary, which also appeared in the New York Times and Washington Post.

Government officials fanned out across the affected areas during the weekend seeking to explain evacuation decisions and calm nerves. Chief Cabinet Secretary Yukio Edano met Sunday with the governor of Fukushima, who has vigorously protested the predicament the nuclear crisis poses for his prefecture.

"The safety of residents is our foremost priority," Edano said. "I told the governor that the government will do everything it can to prevent the crisis from worsening."

Explosions, fires and other malfunctions have hindered efforts to repair the stricken plant and stem radiation leaks.

TEPCO Vice President Sakae Muto said Sunday the Unit 2 containment vessel at the plant was leaky and likely to have been damaged, but added that the spent fuel rods in the cooling pool in Unit 4 were confirmed not to have been damaged, which could have greatly complicated containment efforts.

Officials reported late Saturday that radioactivity had again risen sharply in seawater near the plant, signaling the possibility of new leaks. Workers have been spraying massive amounts of water into the overheated reactors and spent fuel storage pools. Some of that water, contaminated with radiation, has leaked into the Pacific.

Plant officials said they plugged that leak on April 5 and radiation levels in the sea initially dropped. Authorities have insisted the radioactivity will dissipate in the ocean and poses no immediate threat to sea creatures or people who might eat them. Most experts agree.

Regardless, plant workers on Saturday began dumping sandbags filled with sand and zeolite, a mineral that absorbs radioactive cesium, into the sea to combat the radiation leaks.

TEPCO said it plans to establish a system to recycle cooling water that will remove radioactivity as well as salt left behind by seawater that was earlier used as an emergency cooling measure. Salt corrodes the reactors and interferes with the cooling system.

Utility Lays Out Plan For A Shutdown (WSJ)

Tokyo Electric Outlines Steps Aimed to Tame Nuclear Plant in Nine Months

By George Nishiyama And Kosaku Narioka

Wall Street Journal, April 18, 2011

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

Japan Reactor Shutdown To Take Months (FT)

By Jonathan Soble

Financial Times, April 18, 2011

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

Radioactivity Rises In Sea Off Japan Nuclear Plant (AP)

By Mari Yamaguchi, Associated Press

Associated Press, April 18, 2011

TOKYO – Levels of radioactivity have risen sharply in seawater near a tsunami-crippled nuclear plant in northern Japan, signaling the possibility of new leaks at the facility, the government said Saturday.

The announcement came after a magnitude-5.9 earthquake jolted Japan on Saturday morning, hours after the country's nuclear safety agency ordered plant operators to beef up their quake preparedness systems to prevent a recurrence of the nuclear crisis.

There were no reports of damage from the earthquake, and there was no risk of a tsunami similar to the one that struck the Fukushima Dai-ichi plant March 11 after a magnitude-9.0 earthquake, causing Japan's worst-ever nuclear plant disaster.

Since the tsunami knocked out the plant's cooling systems, workers have been spraying massive amounts of water on the overheated reactors. Some of that water, contaminated with radiation, leaked into the Pacific. Plant officials said they plugged that leak on April 5 and radiation levels in the sea dropped.

But the government said Saturday that radioactivity in the seawater has risen again in recent days. The level of radioactive iodine-131 spiked to 6,500 times the legal limit, according to samples taken Friday, up from 1,100 times the limit in samples taken the day before. Levels of cesium-134 and cesium-137 rose nearly fourfold. The increased levels are still far below those recorded earlier this month before the initial leak was plugged.

The new rise in radioactivity could have been caused by the installation Friday of steel panels intended to contain radiation that may have temporarily stirred up stagnant waste in the area, Hidehiko Nishiyama of the Nuclear and Industrial Safety Agency told reporters. However, the increase in iodine-131, which has a relatively short eight-day half life, could signal the possibility of a new leak, he said.

"We want to determine the origin and contain the leak, but I must admit that tracking it down is difficult," he said.

Authorities have insisted the radioactivity will dissipate and poses no immediate threat to sea creatures or people who might eat them. Most experts agree.

Regardless, plant workers on Saturday began dumping sandbags filled with zeolite, a mineral that absorbs radioactive cesium, into the sea to combat the radiation leaks.

Meanwhile, the newspaper Asahi Shimbun reported, without citing its sources, that a secret plan to dismantle Tokyo Electric Power Co., which runs the radiation-leaking Fukushima plant, was circulating within the government. The proposal calls for putting TEPCO, the world's largest private electricity company, under close government supervision before putting it into bankruptcy and thoroughly restructuring its assets. Most government offices were closed Saturday, and the report could not be immediately confirmed.

In the wake of the nuclear crisis, the government ordered 13 nuclear plant operators to check and improve outside power links to avoid earthquake-related outages that could cause safety systems to fail as they did at the Fukushima plant, Nishiyama told reporters late Friday. The operators, including TEPCO, are to report back by May 16.

Power outages during a strong aftershock on April 7 drove home the need to ensure that plants are able to continue to operate crucial cooling systems and other equipment despite earthquakes, tsunamis and other disasters, Nishiyama said.

Utility companies were ordered to reinforce the quake resistance of power lines connected to each reactor or to rebuild them. They also must store all electrical equipment in watertight structures. Earlier, the nuclear agency ordered plant operators to store at least two emergency backup generators per reactor and to install fire pumps and power supply vehicles as further precautions.

The massive 46-foot (14-meter) wave that swamped Fukushima Dai-ichi last month knocked out emergency generators meant to power cooling systems. Since then, explosions, fires and other malfunctions have compounded efforts by TEPCO to repair the plant and stem radiation leaks.

TEPCO said Saturday it had moved power sources for some of the reactors at the stricken plant to higher ground by Friday evening in order to avoid another disastrous failure in the event of a tsunami.

Goshi Hosono, an adviser to the prime minister and member of the nuclear crisis management task force, said the damaged reactors were much more stable than they had been earlier in the crisis and TEPCO was preparing to unveil a plan for restoring cooling capacity to the ailing reactors "soon."

"Problems are still piled up and we are far from the end of crisis," he told a TV news program, citing radioactive water as one of the biggest headaches. "I expect there will be more mountains that we have to climb over."

The crisis at the Fukushima plant has forced tens of thousands of people to evacuate the area, while radiation leaks have contaminated crops and left fishermen unable to sell their catches, adding to the suffering of communities already devastated by earthquake and tsunami damage.

Government officials fanned out across the affected areas to explain their decisions and calm nerves.

Deputy Chief Cabinet Secretary Tetsuro Fukuyama apologized for the uncertainty and confusion to residents in Iitate village, parts of which the government recommended be evacuated because of the nuclear crisis.

"Everyone in the village must be extremely troubled, uncertain and worried," he said, promising to provide temporary housing and financial support for the residents, many of them farmers.

In the city of Inawashiro, Hiroshima University Professor Kenji Kamiya, who has been appointed a health risk adviser to Fukushima prefecture, met with about 250 education officials to explain that radiation levels in the area do not pose an immediate or significant threat to the public.

"I hope people understand that the levels we are seeing are fairly low. Even in the most impacted areas, we have screened more than 1,000 children for radiation abnormalities in their thyroids and have found none at all," he said.

Kamiya has been giving almost daily lectures in an effort to prevent people from overreacting to the possible danger.

"People fear things that they don't understand. We were even afraid before of the rain, because we just didn't know if it was safe," said Takaaki Kobayashi, a father of two grade school children. "I feel more comfortable now about sending kids to school. It helps to understand."

Associated Press writers Eric Talmadge in Inawashiro and Elaine Kurtenbach and Noriko Kitano in Tokyo contributed to this report.

Japan Sends Robots To Check Radiation Levels Inside Buildings At Stricken Nuclear Plant (WP/AP)

Associated Press, April 18, 2011

TOKYO — Nuclear safety officials say the first radiation measurements taken inside two reactor buildings at Japan's crisis-stricken nuclear plant show a harsh environment but not one that will be impossible for humans to work in.

Nuclear safety agency official Hidehiko Nishiyama said Monday the measurements taken by two robots sent in to units 1 and 3 of the tsunami-wrecked Fukushima Dai-ichi nuclear plant mean that workers trying to restore plant systems will only be able to stay for short intervals inside the reactor buildings.

He said the radiation would not delay progress toward achieving a cold shutdown of the plant within nine months.

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Where Humans Fear To Tread (WSJ)

By Nathan Hodge

Wall Street Journal, April 18, 2011

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

Illinois To Send Radiation Detectors To Japan (AP)

By Monique Garcia

Chicago Tribune, April 18, 2011

Illinois is donating 2,000 personal radiation detectors to Japan for use by emergency workers as they sort through debris and begin cleanup operations in the wake of the devastating March earthquake and tsunami that spawned a nuclear catastrophe.

The detectors, which are about the size of a pager, can be clipped to clothing and will alert workers about spiking radiation levels so they can more effectively limit exposure. The devices were originally purchased using a \$1.3 million federal homeland security grant, and 3,000 additional detectors will remain in Illinois for use by local law enforcement officials. The gadgets should be shipped within a week, and freight costs will be picked up by Peoria-based Caterpillar.

The earthquake and tsunami killed thousands and destroyed entire towns, damaging the Fukushima Daiichi Nuclear Power Plant and causing radiation leaks in what has been classified as the worst nuclear disaster since Chernobyl.

Gov. Pat Quinn said it was Illinois' responsibility to help Japan given its great need and cozy relationship with the state. Japan is one of Illinois' largest trade partners and purchasers of corn and soybeans.

"When someone has a need, the people of Illinois respond," Quinn said.

The state is also working to develop a plan to donate food and agricultural products closer to harvest season.

"Words cannot express how deeply Japan appreciates the major donation by the state of Illinois," said Consul General of Japan George Hisaeda. "Illinois is a true friend of Japan."

Illinois Steps In To Help Japan Recovery Effort (CHIT)

Associated Press, April 18, 2011

The state of Illinois

is sending help to Japan

as that country tries to recover from a devastating earthquake

and tsunami that crippled a nuclear power plant.

Illinois is donating 2,000 radiation detectors that recovery workers can use. The state also announced Friday it was working on a long-term plan with the agricultural community to send resources and products to Japan.

A subsidiary of Peoria-based Caterpillar is paying to ship the radiation detection devices.

The state says it used \$1.3 million in federal grants to buy the radiation detectors that are now being donated. But sending the devices to Japan won't affect disaster preparedness at home. The state says it still has about 3,000 detectors.

Illinois has six nuclear plants with a total of 11 reactors.

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Japan May Need To Restructure Nuclear Regulatory Agencies, Lawmaker Says (BLOOM)

By Kana Nishizawa And Takashi Hirokawa

Bloomberg News, April 18, 2011

Japan should consider restructuring oversight of its nuclear energy infrastructure after the crisis in Fukushima revealed difficulties coordinating different agencies, lawmaker Goshi Hosono said today.

"It's fine when things are normal, but coordination becomes extremely difficult in an emergency," Hosono, a member of the ruling Democratic Party of Japan, said on a TV Tokyo weekly news program. There are too many nuclear-related organizations, he said.

Japan may merge two agencies to create a body similar in authority to the US Nuclear Regulatory Commission, the Mainichi newspaper reported last week, without saying where it obtained the information.

The Nuclear and Industrial Safety Agency, which dispatches officials to power plants to oversee operations, and the Nuclear Safety Commission of Japan, which advises the government when accidents occur, may be combined, the newspaper said.

"Operations of the Nuclear and Industrial Safety Agency and the Nuclear Safety Commission of Japan overlap in many areas," Hosono said earlier on a TV Asahi broadcast. "We need to think about how to restructure them."

The Nuclear Safety Commission has caused public confusion because it releases information in several different ways, Hosono also said on TV Asahi. This variety can be useful when things are normal, but in emergencies information must be disclosed in a timely and appropriate manner, he said.

The March 11 magnitude-9 earthquake and tsunami crippled Tokyo Electric Power Co.'s Fukushima Dai-ichi nuclear station, causing radiation leaks. The Nuclear and Industrial Safety Agency on April 12 raised the severity level of the accident to 7, the highest level on the global scale, matching the 1986 Chernobyl disaster.

Assessing Nuclear Power's Safety (NPR)

By Ira Flatow

NPR, April 15, 2011

Japan raised the threat level at its malfunctioning nuclear plant to seven this week, the highest level. Physicist Tom Cochran discusses the ongoing situation at the reactors, and explains why he says it's time for an independent commission to review US nuclear safety.

IRA FLATOW, host:

This is SCIENCE FRIDAY. I'm Ira Flatow.

Earlier this week, Japan raised the danger level rating at its Fukushima Dai-ichi nuclear power plant to the highest level possible, a seven, up from five. That puts the crisis in Japan at the same level as the worst civilian nuclear accident on record, Chernobyl.

The change in status is a result of new data on the amount of radiation released early on in the crisis, says Japan's nuclear and industrial safety agency. However, many experts are not ready to equate the Fukushima and Chernobyl disasters quite yet.

One of them is Tom Cochran. He is a senior scientist in the nuclear program and the Wade Greene Chair for Nuclear Policy at the Natural Resources Defense Council in Washington.

This week he compared the two nuclear accidents and also told the Senate Environment and Public Works Committee that it's time for an independent review of US nuclear safety, reactor safety, and he joins us here to talk more about it. Welcome to SCIENCE FRIDAY, Tom.

Dr. THOMAS COCHRAN (Natural Resources Defense Council): Good afternoon.

FLATOW: Tell us your impression of why the level was raised to seven.

Dr. COCHRAN: Well, I'm not sure why it was raised to seven. I believe it was raised to seven because there was substantial offsite deposition of radioactive materials from the cores of these reactors.

But the - they also pointed out that for a couple of principal isotopes, radioactive isotopes, the amount that was emitted appeared to be on - about 10 times less than that from the Chernobyl accident. But the health effects, I think, are substantially less than Chernobyl.

FLATOW: Well, why would they both be - don't we need another rating system if they're both rated as seven, but as you say, they're not close in health effects yet?

Dr. COCHRAN: Well, you could have a more refined system, but you know, Homeland Security has a system for rating the risk of terrorist events, and there are only three levels, and you can imagine at the highest level there could be substantial differences in risk and consequences.

FLATOW: What do we know about what's happening at the reactors now? Are we still basically - just don't really know what's going on inside there?

Dr. COCHRAN: We think that things are more or less stable, but not to the point that you couldn't get in a worse situation if you had some additional aftershocks, or something happened and you lost more coolant.

So things look better now, but I think people are still crossing their fingers.

FLATOW: You testified before the Senate this week on the subject of nuclear safety. What was the basic point you were trying to get across to them?

Dr. COCHRAN: Well, one thing they asked was what were the lessons from Fukushima with respect to the safety of the US reactors. And that's a rather long list. There's more than a dozen issues that come to mind, including the safety of some of these older boiling-water reactors that we have that are similar to the Fukushima reactors.

There are about 23 boiling-water reactors with the Mark I containment, which would be identical to the three reactors that had core melts, and another eight with Mark II containments that are similar. So that's about 30 percent of our entire fleet of reactors.

So there's some substantial safety implications there. And there are implications with respect to capability to evacuate around a small number of reactors in the US that have large populations within 20, 30 kilometers, or even 50 miles of the reactor.

Then there's the issue of: Have we - do we have adequate protection against earthquakes? And Diablo Canyon on the coast of California comes to mind because there was some pencil sharpening done to sort of ensure the license-ability of that plant several decades ago.

And there are other issues. Those are not the full...

FLATOW: So you're saying we should re-study, re-look, re-think or re-examine these...

Dr. COCHRAN: All of the above, but most importantly I think we need an independent review of really good technical experts, as we had with respect - after the Three Mile Island accident in the US. You may recall the Kemeny(ph) commission...

FLATOW: Oh, I remember.

Dr. COCHRAN: ...that was established to review that accident and made recommendations.

To date the Obama administration and the Department of Energy have refused to call for or appoint a similar commission, and they've really turned it over to the Nuclear Regulatory Commission and in effect asked the NRC to review its own past failings, in my judgment.

FLATOW: We have numerous times invited the NRC to come on and talk about it, and so far they have not taken us up on our offer to discuss it.

One of the points you did make was talking about - and you just brought it up a little bit, about reactor siting. You mention Indian Point here, right outside of New York City, which has 17 million people within a 50-mile radius and whose license - I think there's two licenses that expire in a few years from now.

Dr. COCHRAN: That's correct, and - but probably more importantly, worldwide there are many - not many, but I mean there are a dozen or more reactors that have substantially greater population densities around them than even at Indian Point.

If you are going out to 50 miles, Indian Point's probably the worst, has the highest population density of the US reactors.

FLATOW: You also said in your testimony that the NRC is overdue in requiring that spent fuel be removed from those wet pools and put into those hardened dry casks as soon as the spent fuel has cooled sufficiently. Why not do that? It just seems logical.

Dr. COCHRAN: Well, it is logical, and you have to wonder why they don't order that. And I think it's because it will cost some billions - a few billion dollars, and the industry doesn't want to pay for it.

And the current Nuclear Regulatory Commission is made up of a majority of commissioners I would say strongly supportive of nuclear power, and if the companies don't want them to do something that would add substantially to the cost of operation, they'll - the majority will go along with it. And so that's why you haven't seen this.

If you think about spent fuel, it's probably in its most dangerous state, at least in terms of the radioactive content, when it's in the reactor. But when it's in the reactor, it's surrounded by a thick steel reactor vessel, which is inside of an additional secondary containment.

And after it's taken out of the reactor after it's used, it's put in a wet pool with essentially no steel containment. And then after it's cooled about five years, you can move this fuel to dry cask storage, where it's passively cooled, and again in a thick steel containment vessel.

So the wet pools are the only part of that sequence where the fuel is not really in a thick steel containment that represents an additional substantial barrier against release of the material to the environment.

FLATOW: You talked about reliving Three Mile Island 32 years ago. Do you think this is going to have the same effect on the nuclear industry as Three Mile Island did, putting - basically shutting it all down and making it you know (unintelligible) the insurance companies thought it was too expensive, they wouldn't insure any nuclear power plants?

Dr. COCHRAN: I think we're going to have to let that play out. I'm not sure. There are some similarities. For example, when the Three Mile accident - Three Mile Island accident occurred, the industry had already started canceling reactors it previously ordered following the energy crisis in 1972 and '3. And costs were going up.

And so, you know, Three Mile Island didn't sort of stop a flurry of activity. The new orders had already stopped years before. In fact, the last plant that was ordered and subsequently built was ordered in about 1973. Construction began in about '73.

So that's the same situation today that - now that we have more information about the cost of these new reactors that are being contemplated and under construction, it looks like they're not economically competitive and a lot of the utilities and energy companies that had stepped up to the plate to get federal subsidies for reactor construction have dropped a lot of their programs, or at least delayed them for indefinite periods. So it may be a very similar situation to Three Mile Island.

FLATOW: Any guesstimates on your - in your direction about where we're going to wind up with the Japanese plants here?

Dr. COCHRAN: What's going to happen?

FLATOW: Yeah. Are they going to be entombed, recovered? Will we get - will it get under control? What do you think?

Dr. COCHRAN: Well, one thing we do know is it's going to be a multi-billion-dollar cleanup, and it's going to take decades. This is not going to be an easy task. And the facilities are extremely radioactive now. And getting in there and removing the materials and disposing of all those materials is going to be a real nightmare.

FLATOW: All right, Tom, thank you very much for taking time to be with us today.

Dr. COCHRAN: You're quite welcome.

FLATOW: Thomas Cochran, senior scientist in the nuclear program and the Wade Greene Chair for Nuclear Policy at the Natural Resources Defense Council in Washington.

We're going to take a break. When we come back, we're going to talk about the aftermath of the BP oil spill. "A Sea In Flames" - Carl Safina is here to talk about his new book, "Deepwater Horizon Oil Blowout." And believe it or not, it's already been a year. Hard to believe that time is going by since that blowout.

We'll come back. 1-800-989-8255. You can tweet us, @scifri, @S-C-I-F-R-I, with your questions about "A Sea In Flames" with Carl Safina. We'll be right back after this break.

In Japan, Clinton Offers Sympathy And Support (WP)

By William Wan

Washington Post, April 18, 2011

TOKYO — Secretary of State Hillary Rodham Clinton, the highest-ranking US official to visit Japan since its devastating earthquake and tsunami last month, Sunday expressed sympathy and support in meetings with the country's prime minister and various officials as well its emperor and empress in a rare audience over afternoon tea.

Arriving at the imperial palace residence, Clinton shook the emperor's hand and kissed the empress on both cheeks. "I'm so, so sorry for everything your country is going through. If there's anything we can do for you . . .," Clinton said as she held the empress's hands.

The effusive statements of support and appreciation from both sides during the visit reflect a high-water mark in the relationship — spurred on by strong US support since the March 11 earthquake with funding, disaster relief and nuclear expertise.

Clinton's visit also came as Tokyo Electric Power Co., which operates the damaged Fukushima Daiichi nuclear plant, detailed plans Sunday for stopping radiation leaks and stabilizing the facility's damaged reactors in six to nine months.

Clinton and Japanese Foreign Minister Takeaki Matsumoto discussed Tepco's timeline at a news conference in Tokyo.

In response to a question about Japanese transparency on the country's struggles to deal with its nuclear problem — an apparent cause for concern in the United States during the initial days of the nuclear crisis — Matsumoto said Japan's government is trying its best and "continues to make improvements." He also asked Clinton to have US nuclear experts review Tepco's timeline and plans and weigh in with their advice.

Clinton also used the visit to announce a new public-private partnership for reconstruction in Japan. She was accompanied during the trip by US Chamber of Commerce President Tom Donohue and Tom Nides, a former businessman turned deputy secretary of state.

US To Aid Japanese, Push Deal On Korea (WSJ)

By Chester Dawson And Evan Ramstad

Wall Street Journal, April 18, 2011

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

Clinton Vows Full Support For Disaster-Hit Japan (AFP)

By Shaun Tandon

AFP, April 18, 2011

TOKYO (AFP) — US Secretary of State Hillary Clinton pledged full support for quake-hit Japan on Sunday as the operator of its stricken nuclear plant said it expects to achieve "cold shutdown" in six to nine months.

Japan's embattled Tokyo Electric Power Company (TEPCO) offered the timeline more than five weeks after a giant quake and tsunami hit the Fukushima Daiichi plant, which has since leaked radiation into the air, soil and sea.

Clinton, on a brief, largely symbolic stop in Tokyo, voiced solidarity and vowed that the United States would "do everything we can to support you as you come through this time of trial".

"And we know you will emerge even stronger than before," she said after meeting Foreign Minister Takeaki Matsumoto.

Since the March 11 disaster, US forces stationed in Japan and beyond have launched a round-the-clock relief effort bringing supplies to the battered coast — dubbed Operation Tomodachi, which means "friend" in Japanese.

Prime Minister Naoto Kan later told Clinton: "We will never forget, and we will keep an enduring memory of the very robust support the United States has provided."

Clinton also highlighted the support of American business leaders and had tea with Emperor Akihito at the Imperial Palace — an unusual invitation from the monarch to a non-head of state.

Clinton and Matsumoto said they were launching a business partnership to support Japan's reconstruction on its northeastern coast, where 13,778 people have been confirmed dead and more than 14,000 are still missing.

While details were vague, the heads of the US Chamber of Commerce and Japan's business lobby Nippon Keidanren said they would meet on ways that foreign companies can take part in the massive rebuilding.

Washington hopes that the large-scale response can help reshape attitudes in Japan, which has been a staunch US ally for decades, but where many citizens bristle at what they see as American domination.

The United States stations 47,000 troops in Japan under a post-World War II security treaty, often leading to friction with host communities for the military bases, especially on the southern island of Okinawa.

Matsumoto said America's help had enabled Japanese people to "feel secure with the Japan-US alliance, including the US military in Japan".

US helicopters have flown aid missions from an aircraft carrier, marines helped clear the tsunami-ravaged Sendai airport which reopened last week, and thousands of personnel joined a search of the coastline for bodies.

American nuclear experts have also helped with advice on stabilising the tsunami-hit Fukushima plant, where the US military has flown in coolants and deployed freshwater barges and fire engines to help douse hot reactors.

TEPCO's chairman Tsunehisa Katsumata said at a press conference that the utility aims to cool reactors and start reducing radiation from the facility within three months.

Within six to nine months, TEPCO said, it expects to achieve "cold shutdowns" of all the six reactors, a stable condition in which temperatures drop and radiation leaks fall dramatically.

TEPCO also said that an initial focus would be on preventing new hydrogen explosions in reactors by injecting nitrogen, and on avoiding further releases of radioactive water into the environment.

Kan called the plan "a small step forward", Kyodo News reported.

Trade and industry minister Banri Kaieda said that the roadmap would help move the nuclear crisis from the emergency phase into a stabilisation phase, but he also prodded TEPCO to move faster than the roadmap suggests.

In the short term, TEPCO said earlier, it would send two US-made remote controlled robots into a reactor building damaged by a hydrogen explosion to gauge radiation and temperature levels.

Further north, in the tsunami-shattered town of Rikuzentakata, survivors celebrated a rite of spring as they seek to move on from the catastrophe that shattered so many lives.

About 200 residents cracked open sake, held barbecues and sang songs at a traditional "hanami" party held under blossoming cherry trees, a symbol in Japan of the fleeting beauty and fragility of life.

Clinton Visits Tokyo In Show Of Support For Japan (AP)

By Matthew Lee

Associated Press, April 18, 2011

TOKYO – US Secretary of State Hillary Rodham Clinton said Sunday that America would stand by Japan, saying she was confident the country will fully recover from its tsunami and nuclear disasters.

"We are very confident that Japan will recover and will be a very strong economic and global player for years and decades to come," Clinton told Prime Minister Naoto Kan during a brief visit to Tokyo intended as a morale boost to the crucial US ally.

Kan thanked Clinton for US help with the crises triggered by a magnitude-9.0 earthquake on March 11 that unleashed a massive tsunami, wrecking cooling and power systems at a nuclear plant that has been leaking radiation ever since.

"We will never forget and we will keep in our memory that the US has provided such robust support," said Kan, in comments suggesting the aid has helped soothe friction over an American military base in Okinawa that forced his predecessor, Yukio Hatoyama, to resign last year.

Relief operations mounted by American soldiers after the earthquake and tsunami helped show a new and welcome face for troops the Japanese have hosted — sometimes grudgingly — for decades.

Roughly 20,000 US troops were mobilized in "Operation Tomodachi," or "Friend," the biggest bilateral humanitarian mission the US has conducted in Japan. The US is also helping Japan cope with its nuclear crisis.

Kan has pledged to beef up disaster preparedness and make his top priority resolving the crisis at the tsunami-wrecked Fukushima Dai-ichi nuclear plant.

Tokyo Electric Power Co., the operator of the plant, announced Sunday a plan to bring the crisis under control within six to nine months, aiming to end radiation leaks that have forced the evacuation of tens of thousands of people.

"We would like to see evacuees return to their homes as early as possible," said TEPCO Chairman Tsunehisa Katsumata.

Clinton said Foreign Minister Takeaki Matsumoto, who she met with earlier, told her that Japan hoped for US feedback on the plan.

"The constant efforts to respond to the situation at Fukushima have required intense analysis by Japanese, American and international experts, and we have been very supportive of what Japan is doing to take the appropriate steps," she said.

Clinton and Matsumoto announced the formation of a public-private partnership to encourage investment in the recovery effort. The aim is to keep American businesses interested in Japan by demonstrating its ability to bounce back from daunting natural disasters.

"There has been a great outpouring of concern, sympathy and admiration for the great resilience and spirit the Japanese people have shown throughout this very difficult experience," Clinton said.

Clinton, who called Japan's well-being a "bedrock priority," also met with the Japanese emperor and empress. She was due to return to the US later Sunday.

"I am so, so sorry for everything your country is going through. If there is anything we can do ..." Clinton said to Emperor Akihito and Empress Michiko, who have been visiting evacuation centers near Tokyo and plan visits to areas hardest hit by the disasters in coming weeks.

Clinton Visits Japan As US Disaster Relief Warms Ties (AFP)

By Frank Zeller

AFP, April 17, 2011

TOKYO (AFP) – US Secretary of State Hillary Clinton visits Japan Sunday, reconfirming a key alliance that has been strained by a lingering military base dispute but boosted by a strong American disaster relief effort.

Since Japan's massive quake and tsunami struck on March 11, sparking an ongoing nuclear crisis, US forces have launched a muscular search, rescue and relief effort with 20,000 troops and scores of ships and aircraft.

Helicopters have flown aid missions from a US aircraft carrier, marines helped clear the tsunami-ravaged Sendai airport which reopened last week, and thousands joined a three-day search of the battered coastline for bodies.

US nuclear experts have offered advice on stabilising the tsunami-hit Fukushima atomic power plant, where the US military has flown in coolants and deployed two freshwater barges and fire engines to help douse hot reactors.

The Yomiuri Shimbun daily in an editorial last week reflected a view voiced by many survivors of the tsunami disaster, which devastated a vast swathe of Japan's Pacific coast and left over 13,000 people dead and 14,000 missing.

"We have nothing but the highest praise for the assistance provided by US personnel, which also will be an important contribution toward strengthening the bilateral alliance," said the mass-circulation newspaper.

Pointing out that security ally the US is not treaty-bound to help Japan in natural disasters, it said "the massive relief efforts by the United States reflect the mutual trust both countries have forged over many years."

The large-scale aid effort, dubbed "Operation Tomodachi" (Friend), has helped warm attitudes toward the nearly 50,000 US forces stationed in Japan on bases that are a legacy of the post-World War II American occupation era.

Military bases on the southern island of Okinawa especially have long been a flashpoint and sent relations into a nosedive when the current centre-left government took power in 2009 and vowed to move one of them off the island.

Its first premier, Yukio Hatoyama, sought to appease local anger over aircraft noise, the risk of accidents and crime associated with bases, but dithered for months and finally backed off, a flip-flop that cost him his job.

His successor, current Prime Minister Naoto Kan, has vowed to stick with the original pact to relocate the marine airbase within Okinawa, but faces strong local opposition that spells a continued political and diplomatic headache.

Just before the megaquake struck, Japan voiced its anger at a senior US diplomat who had reportedly called Okinawans lazy and manipulative in an off-the-record speech, and who was later demoted and is now retiring.

Given the recent strains, the US aid effort has been "a good opportunity for the United States and its military to prove that they are ready to support Japan as they have promised," said politics professor Koji Nakakita.

"This may improve the Japanese people's image of the US military," said Nakakita of Hitotsubashi University in Tokyo.

"It does not resolve their pending issues, notably Okinawa, but it will have a positive impact on once-soured relations between the two countries."

Some observers point out that not all has been rosy and that, beneath the renewed vows of friendship at a time of crisis, some distrust lingers, as domestic criticism has grown of Kan's handling of the nuclear disaster.

Amid the high-stakes battle to stabilise Fukushima, some US officials have reportedly voiced dissatisfaction with the information shared by Japan and the plant's embattled operator, Tokyo Electric Power Company (TEPCO).

Tetsuro Kato, professor of politics at Waseda University, said ahead of Clinton's arrival that "the purpose of her visit to Japan is clearly to see whether the Kan government is really capable of handling this crisis, and I think the conclusion will be that it is not."

"First of all, Tokyo has not sufficiently shared information with Washington. The United States had offered more extensive help, which Japan has declined. It's been said for some time that the United States has been dubious about the information given by the government and TEPCO.

"The Tomodachi operation is OK, helping Japan cope with the earthquake and the tsunami. But the Kan government has been slow in taking actions to control the Fukushima nuclear crisis."

US Downgrades Japan Nuclear Evacuation Advice (AFP)

AFP, April 16, 2011

The US has downgraded advice that had sent diplomats' families fleeing Japan in the wake of a nuclear emergency, allowing them to return to the country, a statement said Friday.

"The Department of State has lifted voluntary authorised departure, allowing dependants of the US government employees to return to Japan," said a statement issued in Washington.

The statement said the risk from the crippled Fukushima Daiichi nuclear plant, where workers are battling to cool overheating reactors, had lessened.

It said its advice was "based on the much reduced rate of heat generation in the reactor fuel after one month of cooling and the corresponding decay of short-lived radioactive isotopes"

Washington continues to recommend its citizens stay outside a 50-mile (80 kilometre) radius of the plant, far larger than the 20-kilometre exclusion zone mandated by the Japanese government.

The authorisation to return to Japan applies to around 600 family members of diplomats in the US embassy in Tokyo, the consulate in Nagoya and a language school in Yokohama.

Tokyo Power To Compensate 50,000 Evacuees (NYT)

By Keith Bradsher

New York Times, April 15, 2011

TOKYO — The Tokyo Electric Power Company announced plans on Friday to distribute 50 billion yen, or \$600 million, in initial payments to 50,000 people evacuated because of the accident at its Fukushima Daiichi nuclear power plant, as technicians continued to struggle to repair cooling and electrical systems at the damaged reactors.

Masatake Shimizu, the company's president, said that single-person households would receive about \$9,000 and larger households would receive about \$12,000. Only people who live in a radius of 19 miles of the damaged power plant that was initially evacuated will be eligible for the payments.

The government ordered on Monday the evacuation in the coming month of five more communities that lie farther from the stricken power plant but received higher levels of radiation than elsewhere because of wind and rain patterns. Once residents of these communities have been certified by the government as also qualifying as victims of a nuclear disaster, Tokyo Electric Power will also make the same payments to them, Mr. Shimizu said; power company officials had no immediate statistic for how many more people might qualify from these communities.

The government said that Tokyo Electric Power acted after a request from Banri Kaieda, the minister of economy, trade and industry. The utility's full liability for the nuclear accident has not yet been established and will depend heavily on whether the government characterizes the earthquake and tsunami on March 11 as an exceptional event that could not have been readily anticipated.

No decision has been made yet on possible compensation to farmers and fishermen who may have lost their livelihoods at least temporarily because of the nuclear accident.

Repair efforts continued slowly at the Fukushima Daiichi plant. An announcement late Thursday of sharply rising temperatures at the base of Reactor No. 3 had provoked brief concern, but regulators said on Friday morning that the readings appeared to have come from a malfunctioning thermometer.

In another sign of a return to normality, Tokyo Disneyland reopened with limited hours on Friday, after closing a month ago to conduct repairs and conserve electricity. Large throngs showed up outside the amusement park's gates before opening time as thousands vied to be among the first to return to the site.

Moshe Komata and Kantaro Suzuki contributed reporting.

Japan Discloses Data On Radioactive Water Release (WSJ)

By Mitsuru Obe

Wall Street Journal, April 16, 2011

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

Japan, China, S. Korea To Hold Tokyo Summit (AFP)

AFP, April 16, 2011

The leaders of Japan, China and South Korea will hold a two-day summit in Tokyo from May 21 to discuss nuclear safety, disaster preparedness and other issues, Japan's government said Friday.

Japan's centre-left Prime Minister Naoto Kan will meet Chinese Premier Wen Jiabao and South Korean President Lee Myung-Bak in the annual three-way meeting, Japan's top government spokesman Yukio Edano told reporters.

"The summit aims to boost cooperation and dialogue in various fields between the leaders of the three countries that have a big responsibility for the stability and prosperity of the Asia-Pacific region," Edano said.

"During the upcoming summit, they will also discuss ways to strengthen cooperation in disaster prevention and nuclear safety in the wake of the Great East Japan Disaster," he said at a press conference.

The Northeast Asian three-way meetings on regional and global issues started in their current format in 2008. South Korea hosted the meeting last year.

This year's talks will come more than two months after the massive March 11 earthquake and tsunami brought Japan's worst post-war disaster and triggered an ongoing nuclear emergency that has sparked global concern.

Beijing and Seoul have sent quake rescue teams and offered other support to Japan, a country with which both have at times had testy relations because of their colonial and wartime history and ongoing territorial disputes.

Both China and South Korea have voiced concern after Japan dumped 10,000 tonnes of low-level radioactive runoff water into the Pacific Ocean as part of emergency operations at its tsunami-crippled Fukushima nuclear plant.

Last month, Japan's new Foreign Minister Takeaki Matsumoto held talks with his Chinese and South Korean counterparts in Kyoto, western Japan, and briefed them on how Tokyo was handling the aftermath of the disaster.

The trio also voiced concern over North Korea's uranium enrichment programme and started to lay the groundwork for the three-way summit.

Japan's Road To Recovery And Rebirth (WP)

By Naoto Kan

Washington Post, April 16, 2011

On March 11, Japan was hit by one of the most powerful earthquakes in recorded history. We are making all-out efforts to restore livelihoods and recover from the series of tragedies that followed the Great East Japan Earthquake. The disaster left more than 28,000 people, including foreign citizens, dead or missing.

Since March 11, Japan has been strongly supported by our friends around the world. On behalf of the Japanese people, I would like to express my sincerest gratitude for the outpouring of support and solidarity we have received from more than 130 countries, nearly 40 international organizations, numerous nongovernmental organizations and countless individuals from all parts of the world. The Japanese people deeply appreciate the *kizuna* ("bonds of friendship") shown to us. Through this hardship, we have come to truly understand that a friend in need is a friend indeed.

Immediately after the earthquake, the United States, our most important friend and ally, provided swift cooperation. President Obama kindly called me to convey his strong commitment that the United States stood ready to provide all-out support to the Japanese people during this time of great difficulty. He reaffirmed that the relationship between our nations is unshakable. So many Japanese citizens, including myself, were enormously encouraged by these remarks. From an early stage in the response efforts, US forces have diligently performed relief activities on multiple fronts as part of Operation Tomodachi (Japanese for "friendship"). The attitude that Americans have demonstrated during this operation has deeply touched the hearts and minds of the Japanese. Support has come from not only the government but also NGOs and countless individuals, in various forms of humanitarian assistance, search-and-rescue missions, charity events and fundraising. We have also received full US support in responding to the accidents at the Fukushima Daiichi nuclear power plant, from providing equipment and other material assistance such as fire trucks and special protective suits, to dispatching nuclear experts and radiation-control teams.

I take very seriously, and deeply regret, the nuclear accidents we have had at the Fukushima Daiichi plant. Bringing the situation under control at the earliest possible date is my top priority. Leading a unified effort by the government, I have mobilized all available resources to combat the risks posed by the plant, based on three principles: First, give the highest priority to the safety and health of all citizens, in particular those residents living close to the plant; second, conduct thorough risk management; and, third, plan for all possible scenarios so that we are fully prepared to respond to any future situations. For example, we continue to make the utmost efforts to address the issue of outflow of radioactive water from the plant into the ocean. In addition, the government has taken every possible measure to ensure the safety of all food and other products, based on strict scientific criteria. We have taken great precautions to ensure the safety of all Japanese food and products that have reached and will continue to reach markets. To ensure domestic and foreign consumer confidence in the safety of Japanese food and products, my administration will redouble its efforts to maintain transparency and keep everyone informed of our progress in the complex and evolving circumstances at the Fukushima Daiichi plant.

I pledge that the Japanese government will promptly and thoroughly verify the cause of this incident as well as share information and the lessons learned with the rest of the world to help prevent such accidents in the future. Through such a process, we will proactively contribute to global debate to enhance the safety of nuclear power generation. Meanwhile, regarding

a comprehensive energy policy, we must squarely tackle a two-pronged challenge: responding to rising global energy demand and striving to reduce greenhouse gas emissions to combat global warming. Going forward, I would like to present a clear vision to the world — which includes the aggressive promotion of clean energy — that may contribute to solving global energy issues.

The Great East Japan Earthquake and the resulting tsunami are the worst natural disasters that Japan has faced since the end of the Second World War. Reconstruction of the devastated Tohoku region will not be easy. I believe, however, that this difficult period will provide us with a precious window of opportunity to secure the "Rebirth of Japan." The government will dedicate itself to demonstrating to the world its ability to establish the most sophisticated reconstruction plans for East Japan, based on three principles: first, create a regional society that is highly resistant to natural disasters; second, establish a social system that allows people to live in harmony with the global environment; and third, build a compassionate society that cares about people, in particular, the vulnerable.

The Japanese people rose from the ashes of the Second World War using our fundamental strength to secure a remarkable recovery and the country's present prosperity. I have not a single doubt that Japan will overcome this crisis, recover from the aftermath of the disaster, emerge stronger than ever, and establish a more vibrant and better Japan for future generations.

I believe that the best way for Japan to reciprocate the strong kizuna and cordial friendship extended to us is to continue our contribution to the development of the international community. To that end, I will work to the best of my ability to realize a forward-looking reconstruction that gives people bright hopes for the future. I would wholeheartedly appreciate your continued support and cooperation. Arigatou.

The writer is prime minister of Japan.

Iran Will Not Hinder Plans For A Nuclear-free World (FT)

By Tom Donilon

Financial Times, April 18, 2011

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

US, Israel 'Behind Stuxnet' Virus: Iran Officer (AFP)

AFP, April 17, 2011

TEHRAN (AFP) – The United States and Israel are behind the computer worm Stuxnet designed to hurt Iran's controversial nuclear programme, state news agency IRNA reported Saturday quoting a military officer.

"Investigations and studies show that the source of Stuxnet originates from America and the Zionist regime," the commander of the Iranian civil defence organisation, Gholam Reza Jalali, said.

Jalali was the first Iranian official to accuse Tehran's two arch-foes over the Stuxnet virus. German computer experts and some Western media reports had indicated that the United States and Israel were behind it.

Stuxnet was publically identified last June and it reportedly mutated and wreaked havoc on computerised industrial equipment in Iran in the following months.

The worm was reportedly targeting Bushehr nuclear power plant, where several technical problems have been blamed for delays in getting the facility fully operational.

Jalali said once the worm mounts on a system, it begins to gather information and then sends reports from the infected machines to designated Internet addresses.

"After following up the reports that were sent, it became clear that the final destinations (of these reports) were the Zionist regime and the American state of Texas," he was quoted as saying by IRNA.

In March, a German computer security expert Ralph Langer said he believes the United States and Israel's Mossad had unleashed the Stuxnet worm on Iran's nuclear programme.

But it was the New York Times which reported first in January that US and Israeli intelligence services collaborated to develop the computer worm to sabotage Iran's efforts to make a nuclear bomb.

In November 2010, Iranian President Mahmoud Ahmadinejad admitted that uranium enrichment – the most controversial part of Tehran's nuclear programme - had suffered problems caused by the malware but added the issues had been resolved.

Iran's nuclear ambitions are at the heart of a conflict between Tehran and the West, which accuse the Islamic republic of seeking to develop a weapons capability under the cover of a civilian nuclear drive.

Tehran vehemently denies the charges.

Iran: Computer Worm Could Have Caused Huge Damage (AP)

By Ali Akbar Dareini, Associated Press

Associated Press, April 17, 2011

TEHRAN, Iran – A senior Iranian military official involved in investigating a mysterious computer worm targeting Iranian nuclear facilities and other industrial sites said Saturday the malware could have caused large-scale accidents and loss of life.

It first emerged in September that Iran was battling a powerful computer worm known as Stuxnet, which has the ability to send centrifuges — used in nuclear fuel production — spinning out of control. Its appearance and the suspicion that Israel and the US might have been involved raised the prospect of covert attempts to thwart a nuclear program that the West fears is aimed at weapons production.

Iran has acknowledged the code infected laptops belonging to employees at its first nuclear power plant, whose launch has been repeatedly delayed. It is also believed to have temporarily crippled Iran's uranium enrichment program last year.

On Saturday, Gholam Reza Jalali, head of a military unit in charge of combating sabotage, said Iranian experts have determined that the United States and Israel were behind Stuxnet, which can take over the control systems of industrial sites like power plants.

Jalali said disastrous accidents and loss of life were averted by Iranian experts fighting the computer code. He gave no specific examples.

In recent months, Iranian state media have reported dozens of explosions at industrial sites, particularly oil and petrochemical facilities, that have killed at least 10 people. But there were no official explanations for the blasts.

"Enemies have attacked industrial infrastructure and undermined industrial production through cyber attacks. This was a hostile action against our country," the official IRNA news agency quoted Jalali as saying. "If it had not been confronted on time, much material damage and human loss could have been inflicted."

Jalali heads a military unit called Passive Defense that primarily deals with countering sabotage. The unit was set up on an order from Iran's Supreme Leader Ayatollah Ali Khamenei.

Jalali said Iranian experts have traced the Stuxnet virus back to the US state of Texas and Israel, IRNA reported. Western experts say only a number of powerful countries could have developed Stuxnet.

Jalali also blamed the German engineering conglomerate Siemens, whose equipment and software is used at the Bushehr nuclear power plant, where technical issues have halted its planned startup.

"Siemens should explain why and how it provided the enemies with the codes of the SCADA software and paved the way for a cyber attack against us," IRNA quoted him as saying.

Iran has acknowledged Stuxnet affected a limited number of centrifuges at its main uranium enrichment facility in Natanz, central Iran, but has said its scientists discovered and neutralized the malware before it could cause serious damage.

The Natanz enrichment plant is of key concern to those nations who fear Iran is intent on weapons production because the technology can produce either fuel for power plants or material for bombs.

Iran insists its nuclear work is entirely peaceful.

Iran has confirmed that Stuxnet was found on several laptops belonging to employees at the Russian-built Bushehr power plant but has said it didn't affect the facility's control systems. Western intelligence reports have suggested that Stuxnet has infected the control systems there.

Bushehr is not a proliferation concern because of international safeguards on its spent fuel. But Iran has celebrated the plant extensively as a major technological achievement and a sign of its determination to master all aspects of nuclear technology.

Iran Accuses Siemens Over Stuxnet Virus Attack (REU)

Reuters, April 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.



NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

MONDAY, APRIL 18, 2011 7:00 AM EDT

WWW.BULLETINNEWS.COM/NRC

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NRC NEWS:

Markey Criticizes NRC Review Of Plant Vulnerabilities.

Bloomberg News (4/15, Lomax) reported that Rep. Edward Markey suggested that NRC "inspectors examining domestic power plants amid a reactor crisis in Japan may keep some findings secret, which might undermine confidence in the agency's work." In a letter NRC Chairman Gregory Jaczko, Markey said inspectors are examining disasters "that 'have already been contemplated' as well as those that are worse than expected," but have been "told to limit their public findings to assessing safety measures for anticipated events, Markey said, without identifying the source for the information." Agency spokesman Scott Burnell said the NRC "always documents any inspection findings of importance, although reports

dealing with security-related information are not made public." He added that the NRC's review will include open meetings with results publicly available.

The Cape Code (MA) Times (4/16, Cassidy) reported Rep. Markey, questioned the "response of the Nuclear Regulatory Commission to the ongoing nuclear crisis in Japan," and wrote that he "was concerned about parameters for inspections of US nuclear reactors" in his five-page letter. Markey questioned limits on the amount of time NRC inspectors are allowed to spend at each power plant and said NRC "inspectors were initially told to limit inspections to so-called 'Design Basis Events.'" The limitation would keep them from considering "events such as the ones that occurred in Japan, which were previously believed to be impossible," Markey wrote." The Boston Herald (4/18, Cassidy, 117K) ran an excerpt of this piece.

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According to Greenwire (4/15, Northey), Markey said he has "received reports showing the agency is curbing the time and scope of its review and refusing to publicly release some of the results." Without specifying from where he obtained them, Markey said his reports "show the investigations are 'secret' and that their 'scope and depth may be severely constrained' and could fail to provide sufficient information to assess or remedy any outstanding safety issues in the country's nuclear fleet." Markey said the inspections for the 90-day review must be completed by April 29 and that the NRC is "only allowing its inspectors 40 hours to perform each inspection for the plants that contain one nuclear reactor, and 50 to 60 hours for plants with more than one unit."

The Boston Globe (4/15, Emery, 244K) added that Markey protested "what he said were limits on inspectors" and wrote that the NRC should "stand prepared to learn from the catastrophe in Japan and plan ahead to address what was unforeseen but occurred anyway, rather than attempting to hide our vulnerabilities from public view." NRC spokeswoman "Prema Chandrathil said the ongoing review of safety at US plants goes 'far beyond' physical inspections at plants, and is looking for problems other than just design flaws."

MSNBC Seismic Vulnerability Ranking Criticized.

The Chester County (PA) Daily Local News (4/16, Buonanno, 28K, 27K) reported the NRC "is disputing an MSNBC analysis that ranked US nuclear power plants in terms of the likelihood their reactor cores would be damaged by an earthquake." The rankings were compiled by Bill Dedman, who based them "on statistics taken from an NRC seismic risk assessment published in September," but according to agency spokesman Neil Sheehan, "that assessment was conducted in response to a study done by the US Geological Survey, which showed that while the risks of a strong earthquake occurring in the midwestern and eastern portions of the country are still quite low, they are greater than previously thought." The MSNBC report suggested that plants in the seismically inactive eastern and midwestern parts of the country were more vulnerable to seismic damage than those in the west and has been criticized on several grounds.

FDA, Alaska Officials Say North Pacific Fish Unlikely To Be Radioactive.

The AP (4/18) reports that the FDA and Alaska officials said fish in the North Pacific are "so unlikely to be contaminated by radioactive material" from Japan's crisis "that there's no reason to test them." Ron Klein, food safety program manager for Alaska, "said the FDA and National Oceanic and Atmospheric Administration have demonstrated that Alaskans have no cause for worry." He said the conclusion was "based on the work they're doing." Imported fish is not a concern, according to an FDA

spokeswoman, because "only octopus and eel from there had been imported to Alaska in the past," and the fishermen who supplied it "are no longer fishing anyway."

The Anchorage Daily News (4/18, Mauer, 48K) reports that according to FDA spokeswoman Siobhan DeLancey, the "ocean is so huge and Alaska fisheries so far away that there is no realistic threat." The Daily News adds, "DeLancey said that so far, there's no reason for concern about Fukushima. The radioactive materials in the water near Fukushima quickly become diluted in the massive volume of the Pacific," and any "fallout that lands on the surface tends to stay there, giving the most unstable ones isotopes like iodine time to decay before reaching fish, she said."

Many Democrats Said To Be Warming Up To Nuclear Power.

MarketWatch (4/15, Bartash) reported, "At a hearing this week, Democratic Sen. Tom Carper of Delaware asked one of the nation's top regulators how many Americans have been killed by nuclear power." NRC Chairman Gregory Jaczko said, "There are no known fatalities in the US from the use of nuclear energy." Carper then asked EPA administrator Lisa Jackson "how many people have been killed or had their lives shortened by the use of pollution-emitting fossil fuels. Tens of thousands, she said." MarketWatch adds Carper is not the only Democrat examining all forms of electricity generation and while they "aren't chanting 'drill, baby, drill,' they appear to be concluding that nuclear power and more domestic drilling, once anathema, are vital to America's energy future."

Groups Want NRC To Halt Reviews Of Nuclear Projects.

IndustryWeek (4/15, Katz) reports on the coalition of 45 groups and individuals that petitioned the NRC "to suspend all activities planned for 21 proposed nuclear reactor projects in 15 states," noting that the groups requested the moratorium "until the NRC completes a thorough risk assessment following the Fukushima reactor crisis in Japan." The groups also want the NRC to supplement its investigation with an "independent commission" and specifically asks the NRC to suspend "six existing reactor license renewal decisions, construction and licensing of 13 new reactor projects" and to "halt approval of standardized AP1000 reactor design by Westinghouse Electric Co. and the Economic Simplified Boiling-Water Reactor design by GE-Hitachi Nuclear Energy."

The progressive-leaning outlet, American Independent (4/18, Melzer) adds the groups asked the NRC to "stop license renewal decisions for reactors in Columbia Wash., Davis-Besse, Ohio, Diablo Canyon, Calif., Indian Point, N.Y., Pilgrim Mass., and Seabrook N.H.," and stop "combined construction permit and operating license decisions for Bellefonte Units 3 and 4, Bell Bend, Callaway, Calvert Cliffs,

Comanche Peak, Fermi, Levy County, North Anna, Shearon Harris, South Texas, Turkey Point, Vogtle and William States Lee; a construction permit decision for Bellefonte Units 1 and 2; and an operating license decision for Watts Bar." NRC spokeswoman "Viktoria Mytling said the agency will respond to the groups petition once it has had time to review it."

Protestors Rally Against Diablo Canyon. The San Luis Obispo Tribune (4/17, Hickey, 34K) reports on the anti-nuclear rally Saturday at Avila Beach, during which 300 people gathered and called for the "closure of Diablo Canyon nuclear power plant and a halt to its relicensing application process." Organized by the San Luis Obispo Mothers for Peace, the event came in response to the Fukushima Dai-ichi plant crisis. "Elizabeth Apfelberg, one of the original members of Mothers for Peace, said there are three main reasons for why the plant should be shut down: uncertainty about nuclear waste, seismic dangers and the age of the plant."

The Santa Maria (CA) Times (4/17, 16K) notes that many the "several hundred" who "took part in the demonstration" waved "signs bearing phrases including 'Diablo on shaky ground', 'children not Chernobyl' and 'no nukes.'" Mothers For Peace member Jane Swanson, "said Saturday's protest went well. 'I thought the signs were just wonderful and everybody was so supportive,' she added."

Bay Area (CA) Indymedia (4/18) runs an pictorial account of some of the protestors and their comments.

KEYT-TV Santa Barbara, California (4/17) noted that the Mothers for Peace, "say all nuclear facilities should be put on hold, especially in light of what took place at the Fukushima plant in Japan following the earthquake."

On its website, KGPE-TV Fresno, California (4/18, 17, 2011) reported, "Protestors say the Diablo Nuclear Power Plant is still not safe in the event of an earthquake. A Mothers for Peace group member named Jane Swanson says, 'Fukushima has given us a huge warning and there's no moral and no legal excuse to continue business as usual with nuclear plants in the United States.' A PG&E spokesperson, Paul Flake says, 'Every single day the men and women at Diablo Canyon go to work with seismic safety and safety operations at the top of our priority. The Nuclear Regulatory Commission shuts down Diablo Canyon if ever it determines that it's not safe to operate.'"

On its website, KSBY-TV San Luis Obispo, California (4/16, Lerner) added Swanson said, "Those of us who live in the shadow of the Diablo Canyon Nuclear Power Plant are potential victims, everyone in the US who lives downwind from a nuclear power plant is a potential victim."

Lawmakers Want Tougher Scrutiny. NBC affiliate KSBY-TV Santa Barbara, CA (4/15, 5:03 a.m. PDT) reported that state lawmakers are "pushing for tougher scrutiny of

earthquake risks at Diablo Canyon. During a legislative hearing yesterday, lawmakers questioned a Nuclear Regulatory Commission official about why the agency has not suspended work on re-licensing the Diablo Canyon plant until new studies are completed. They want more scrutiny of an off-shore fault discovered in 2008. State Senator Sam Blakeslee says the commission sees earthquake risk through 'rose-colored glasses.'" ABC affiliate KFSN-TV Fresno, CA (4/15, 5:04 a.m. PDT) adds that the NRC official "says the agency would act immediately on fresh evidence about earthquake risk even if the license is renewed."

On NPR's Science Friday (4/15, Flatow, 4:09 p.m. EDT), Tom Feeney of the Natural Resources Defense Council discussed his recent testimony before a Senate committee on nuclear safety. He said that of the "more than a dozen issues" raised by the Fukushima accident were the safety of older boiling water reactors, evacuation plans and seismic safety, singling out for mention the Diablo Canyon plant. He stressed that the US needed an "independent review" of US nuclear energy safety, similar to the commission created after the Three Mile Island incident. Feeney voiced his view that the Obama administration's reluctance to appoint such a review body stemmed from its having "really turned it over to the Nuclear Regulatory Commission," asking it to "review its own past failings." The host noted that the NRC had often been invited to appear on the program, but had never done so.

NRC, FEMA Say San Onofre Responded Well During Emergency Drill.

The San Juan Capistrano Patch (4/16, Crandall) reported, "It was only a test, but workers at the San Onofre Nuclear Generating Station responded well to this week's emergency drill, according to preliminary reports released Friday." FEMA and NRC officials "said everything appeared to go smoothly during the biennial drill. 'The performance we observed gives us continuing confidence that the site could implement the emergency procedures had the [simulated] events been real,' said Paul Elkmann, a senior emergency inspector with the NRC." Following a presentation Friday, Elkmann said the plant's "communication process could be 'streamlined' in some areas," though he insisted residents "should feel 'absolutely' safe living nearby."

Some Remain Skeptical Following Three-Day Emergency Response Exercise. The North County (CA) Times (4/15) reported, "Federal agencies said Friday that the 400 people who participated in a nuclear emergency drill for San Onofre Nuclear Generating Station this week did a good job in responding to the incident that simulated the release of radioactive steam into the environment." But "many members of the public wanted to know why the drill" did not "feature some sort of natural disaster like the massive earthquake that

severely damaged the Fukushima Dai-ichi plant in Japan in March." Gary Headrick of San Clemente Green, wanted to know whether FEMA and the NRC thought the existing 10-mile evacuation zone around the plant was adequate, and why the agencies were not "throwing such a 'multiple hazard' scenario at San Onofre and the emergency personnel in the community responsible for protecting the public."

Many San Onofre Station Neighbors Not Worried About Plant. AFP (4/18, Bustamante) reports that for many residents living near California's San Onofre station, Japan's Fukushima nuclear crisis "seems a world away." Though in appearances the plants are similarly located on "a low-lying coast, near a major seismic faultline, and in the shadow of a water-cooled nuclear power plant -- locals here say they are not worried." Sunbather Al Parker said he's "lived here for 22 years and there's never been a problem." Even so, the recent three-day drill at the plant, "drew more attention following the March 11 earthquake and [tsunami] in Japan which triggered the Fukushima nuclear crisis." SCE spokesman Gil Alexander said he hoped the drills helped reassure the public.

NRC To Discuss San Onofre Performance April 28. The Dana Point (CA) Times (4/15, Volzke Swayne) reported the NRC will meet with Southern California Edison representatives April 28 to discuss 2010 safety performance at San Onofre Station. "The meeting will be open to the public and a question and answer session will be held following the safety assessment presentation. NRC staff will answer questions regarding SONGS and the role the NRC plays in ensuring safe operation of the power plant."

Protestors Rally Against Davis-Besse And Nuclear Power. In a caption accompanying a photo of protestors rallying against nuclear power, the Toledo Blade (4/16, 118K) reported, "Michael Leonardi of Toledo and about two dozen others take part in an anti-nuclear protest at Thurstin and Wooster streets in Bowling Green. Organizers said Friday's rally, 'Speak Truth to Nuclear Power,' was a response to both the disaster in Japan and FirstEnergy's plan to extend operations at its Davis-Besse nuclear plant in Ottawa County for 20 years beyond its designed operating life."

On its website, under the headline, "BG Protesters Link Davis Besse With Fukushima," WNWO-TV Toledo, Ohio (4/15, Rice) reported, the protestors in Bowling Green "say Davis Besse has had too many close calls and that it should not be licensed to operate for an additional 20 years as is on the table right now. 'We feel that it is time to retire it, it is time to deal with all of the waste that it has already generated and we cannot do another 20 years of First Energy's mismanagement of the Davis Besse nuclear power plant,' said Anita Rios, Co-Chair of the Ohio Green Party."

Davis-Besse Employee Kills Family, Self. The Toledo Blade (4/18, Dungjen, 118K) reports on the brutal murder suicide deaths of Alan Atwater, 31, his wife Dawn, 30, and their three small children. Atwater called 911 dispatchers early Saturday morning and told them he had killed his family and was going to turn the gun on himself. The Blade reports, "Atwater's full-time position was at the Davis-Besse Nuclear Power Station, where he worked in the maintenance department as an instrument and control technician, said Todd Schneider, the plant's spokesman. Mr. Schneider would not say how long Atwater worked at the plant, but Ms. Atwater said it was at least five years. One week ago, Atwater returned from a five-week job at another nuclear plant, Sheriff Bratton said." Another Toledo Blade (4/18, Blake, 118K) article covered the story.

Palo Verde Station Contractor Arrested After Bomb Comment. The Arizona Republic (4/15, Schmidt, 335K) reported, "A contractor working at the Palo Verde Nuclear Generating Station was taken into custody early Friday morning after he apparently said that he might have a bomb in his vehicle, authorities said." A Maricopa County Sheriff's Office spokesman said the "contractor's vehicle had been stopped by security for a routine inspection when he commented that he possibly had a bomb in his vehicle." When authorities "couldn't immediately determine whether the contractor was making a serious threat or joking," the Sheriff's Office bomb squad was called to the plant to inspect the vehicle, but did not find any explosive device. The contractor was arrested Friday and could face felony charges. Reuters (4/15, McCune) also reported on the arrest.

On its website, KNXV-TV Phoenix (4/15, Schaefer) reported, "The man was taken into custody. MCSO said it is unknown why he made the comment."

The AP (4/18) reports, "Sgt. Jesse Spurgin of the Maricopa County Sheriff's Office says the man apparently made the comment 'kind of in jest' during the routine vehicle inspection at Palo Verde Station, adding "officials took the comment seriously as a precaution. He says a bomb squad scoured the vehicle and found no explosives."

KTVK-TV Phoenix (4/16) added on its website, "Spurgin said investigators are questioning the man about why he would say he might have a bomb in his vehicle. Investigators believe the comment was made in jest, but Palo Verde's security team took it very seriously. ... Some 200 employees who had been waiting in the parking lot of a nearby Shell station were finally allowed into the facility at about 6 a.m."

KSAZ-TV Phoenix (4/16) reported Spurgin said, "You can't make offhand remarks about that. We just recently did a drill...a multi-agency drill preparing for things of this nature, obviously with the nuclear power stations, you have to take things very seriously."

Special Response Team At Palo Verde Aims To Plan For Every Contingency. The Arizona Republic (4/15, Randazzo, 335K) reported that Palo Verde station, in the wake of the March 11 earthquake and tsunami in Japan and the ensuing crisis at the Fukushima plant assembled a team of 10 experts from across the power plant "to imagine the unthinkable." The Republic adds, "Nuclear-power plants across America, including Palo Verde, already have exhaustive emergency precautions in case they lose power," but the special response team is "reviewing the best options in the highly unlikely event that every available power source at the plant is damaged." If power was lost, "emergency diesel generators would fire up at each reactor," each of which has a backup, "with seven days' worth of fuel." Additionally, the reactors have batteries designed to run the plants for several hours, and as a "last line of on-site defense," Palo Verde has two "natural-gas-fired generators," with enough stored fuel to run for several days.

Drawing coverage from the Arizona Republic, the AP (4/15) reported, "Palo Verde plant officials believe the backup system is extensive enough to protect the nuclear fuel in any natural disaster, fire or terrorist attack they've foreseen. ... 'Part of what we are looking at is: OK, we don't know how you would get in this situation,'" said senior VP of operations, Bob Bement. "But if you did, how would you handle it?" The team "will be working to answer those questions and others for several months, Bement said."

Emergency Drills At Three Mile Island And Japan Disaster Not Connected, Officials Say.

The Harrisburg (PA) Patriot-News (4/15, Wenner, 77K) reported, "Fallout from Japan's nuclear disaster has rained questions and comparisons on Three Mile Island. But federal and state officials say the Japan situation had no bearing on emergency drills carried out at TMI this week." NRC's Steve Barr said it was "really too soon to tell" what the impact of the Japan disaster would be on the "drills or regulators' views about vulnerabilities at TMI. Barr noted TMI doesn't have the same geographic and geological vulnerabilities as the Japan plant," though he said the Japan incident will be "studied for years, and the results could impact TMI and other US plants."

WPMT-TV Harrisburg, Pennsylvania (4/15, Arbogast) noted on its website, "Three Mile Island appears to have earned a passing grade this week" during emergency response drills last Tuesday. "This was a really big deal, literally over 500 people participated in this exercise and the results were very positive," said Ralph DeSantis, Communications Manager at Three Mile Island." The early results are "good news for Three Mile Island, as well as emergency management leaders and first responders all over the area."

On its website, WHTM-TV Harrisburg, Pennsylvania (4/15) reported, "Within 90 days, FEMA will send its evaluation to the Nuclear Regulatory Commission for use in licensing decisions. A final report will be available to the public in July." FEMA "did not provide information regarding the nature of the emergency scenario." WFMZ-TV Allentown, Pennsylvania (4/15) also covered the drill.

NRC Observes TMI Drills. CBS affiliate WHP-TV Harrisburg, PA (4/15, Morgan, 5:03 p.m. EDT) reports on readiness drills around Three Mile Island, watched by NRC evaluators. It showed one member of TMI Alert walking angrily out a public information session, saying that his question had not been answered, and another claiming that she had evidence of plant mutations in the area. The NRC's Neil Sheehan appeared on camera to explain the agency's review process for evaluating the exercise.

NRC Says Modules Storing Damaged TMI Fuel At INL Are Cracking.

On its website, Platts (4/15, Freebairn) reported the NRC announced that it had determined that the Idaho National Laboratory facility "storing melted fuel from the Three Mile Island nuclear plant has not done enough to address crumbling concrete modules encasing the radioactive material." The DOE facility "holds the damaged fuel" from TMI unit 2, which "suffered a partial meltdown of the core, leading to the US' worst nuclear accident." The "concrete modules are 'showing significant cracking and degradation,' even though they were built in 1999 to last for 50 years, NRC said in the letter, which is dated April 7. DOE has analyzed the structural integrity of the modules, which have walls two feet thick, and determined that the problem is getting progressively worse, NRC said."

Dominion: Apparent Tornado At Surry Power Station Forced Shutdown.

Bloomberg News (4/17, Harrison) reported on a statement from Dominion Sunday that "an apparent tornado resulted in a power cut at the Surry Power Station, which caused both reactors at the station to shut down automatically." The Statement noted that no radioactive material had been released "beyond those minor releases associated with normal station operations," and said the "apparent tornado did not strike the two nuclear units, which are designed to withstand natural events such as tornados, hurricanes and earthquakes." Dominion added that there had been "no injuries at the site and the company is working to complete restoration of electrical service to the station."

The Hampton Roads Daily Press (4/18, Gillard) quotes Dominion spokesperson Dan Genest as saying that the company was "trying to restore the second feed." He said the "process will take several days." After "the second feed is

restored, then the power station will return to full power, Genest said."

The Williamsburg Yorktown Daily (4/18, Lenz) reports NRC officials are "monitoring the situation at the Surry nuclear power plant after the site lost offsite power early Saturday evening due to a tornado affecting an electrical switchyard next to the plant." The Daily adds that "Dominion notified the NRC of the situation soon after it happened and the agency dispatched its resident inspectors to the Surry plant site as well as staffed its incident response center in Atlanta. Dominion declared an 'unusual event,' the lowest of the four NRC emergency classification levels, around 7 p.m. Saturday."

The Richmond (VA) Times-Dispatch (4/17, 127K) and Virginia Gazette (4/17) each run brief reports on the situation.

Situation In Japan Sparks Fears Over Millstone Plant.

The East Hampton (NY) Patch (4/16, Schultz) reported the situation at Japan's Fukushima Daiichi nuclear plant has elected officials on Long Island's East End "calling for change. With the aging Millstone II nuclear power plant in Waterford, Connecticut within a 50 mile radius of the East End - and much closer to East Hampton and Southold Towns - local officials are calling on the federal government to extend the current radius for emergency evacuation planning." The Patch added later that "Ken Holt, manager of nuclear communications at Millstone Power Station...said such fears" about the Dominion-operated plant "are unfounded," explaining that when "the plants were originally designed, they were created with 'worst case scenarios' in mind."

Quake Expert Questions Browns Ferry Plant's Durability.

The Huntsville Times (4/17, Gattis) reported that in the wake of the Japan nuclear disaster, Browns Ferry plant is "one of three TVA nuclear plants and the only one in Alabama." TVA "officials say the three reactors are built to withstand an earthquake that would measure 6.0 on the Richter scale." But Christine Powell, a professor in the Center of Earthquake Research and Information at the University of Memphis, said he "would feel much more comfortable if nuclear power plants were built to withstand larger earthquakes than 6.0."

TVA Board Agrees To Upgrade Nuclear Reactors.

The Chattanooga Times Free Press (4/15, Flessner, Sohn, 78K) reported, "TVA immediately will add satellite telephones and small portable generators at its three operating nuclear plants, and could within months strengthen power and water supplies to spent fuel pools and speed up the transfer of nuclear waste from pools to dry cask storage." TVA Chief Operating Officer Bill McCollum told board

members last Thursday "that reviews after the Japanese nuclear crisis confirm that the utility's six reactors and five spent fuel pools are safe." Notably, TVA board Chairman Dennis Bottorff "said the board has hired consultants to help assess the utility's nuclear program," the paper added.

The Power-Gen Worldwide (4/15), citing a New York Times story, said the TVA is planning to make "millions of dollars of improvements to protect its six nuclear reactors from earthquakes and floods." The utility is "considering reducing the amount of fuel in its spent fuel pools by transferring older fuel to passively-cooled dry casks, adding additional backup diesel generators at Sequoyah and Watts Bar and reinforcing pipes that provide cooling water to spent fuel pools," the article said. The Rhea County (TN) Herald News (4/16, Johnson, 6K) also covered the news.

TVA Reports Higher Profits. The Chattanooga Times Free Press (4/16, Flessner, 78K) reported, "The Tennessee Valley Authority is beating its budget forecasts for the first half of the fiscal year, earning \$202 million in the six months ended March 31 and allowing the utility to cut its debt and its power prices this month and next." Still, critics and officials of the utility warned "that power rates may be headed higher as TVA shutters aging coal plants and upgrades its nuclear plants in the wake of the accident at Japan's earthquake-crippled Fukushima nuclear plant."

No Retreat On Nuclear Power. The Chattanooga Times Free Press (4/17, 78K) editorialized that "it is sensible for the" TVA "to gather information about the tsunami-related problems" at a Japanese nuclear plant "before TVA decides whether to complete a nuclear reactor at its Bellefonte plant in Northeast Alabama." Still, "the events in Japan are no reason for US nuclear power projects to be delayed beyond what commonsense caution demands," the paper wrote. The editorial noted that "while the quake and tsunami killed thousands, no one has died from the radiation release in Japan."

Wisconsin Nuclear Plants Will Get Less Oversight.

ABC affiliate WXOW-TV La Crosse, WI (4/15, 6:55 a.m. CDT) reports that Wisconsin's two nuclear power plants will be under less scrutiny from federal regulators because of improved safety grades. The reactors in Point Beach and Kewaunee drew extra attention from regulators earlier in the decade because of spotty safety records. But now, under new ownership, those plants have improved their safety grades. The Nuclear Regulatory Commission will review the plants' safety during the next six months." It also notes that the plants "generate nearly one-fifth of Wisconsin's electricity."

DOE Considers Redesign Of MOX Plant To Accommodate More Reactors.

The Augusta (GA)

Chronicle (4/16, Pavey) reported that the DOE "wants to redesign its partially built mixed oxide fuel plant to make nuclear fuel for a wider variety of reactors." The current design for the MOX plant at the Savannah River Site would make fuel rods for pressurized water reactors, but "under proposed changes outlined in an April 1 'interim action determination,' however, the redesign would enable the plant to also make fuel for boiling-water reactors and the next generation of light-water reactors. The changes are necessary to ensure that clients can be found to use the MOX fuel, which is made by blending small amounts of plutonium from dismantled nuclear bombs with uranium." So far, the National Nuclear Security Administration has had difficulty finding clients for the fuel, although the Tennessee Valley Authority is among the utilities evaluating the idea.

Officials, Potential Clients To Study Japan Crisis Before Committing To MOX Use. Meanwhile, the Greenville (SC) News (4/18, Smith) reports that the ongoing nuclear crisis in Japan may affect the plant's future, as "one of the stricken nuclear reactors in Japan contains MOX, and the crippled plant has raised fears that it could release dangerous plutonium into the atmosphere, which could escalate the crisis." US officials have said "they want to study what's happening in Japan before committing to using the MOX fuel that would be produced here, though MOX isn't being blamed for the problems in Japan and there is no evidence that it has caused any health issues." A TVA spokesman said that the utility "wants to study what happened with the MOX used in the Japanese reactor before committing to using it in its reactors."

Various Viewpoints Offered On Viability, Need For Yucca. In an op-ed for Politico (4/16, 25K), Rep. John Shimkus (R-IL) said that in light of the ongoing nuclear crisis in Japan, "we must take a hard look at our country's lack of a central storage facility for nuclear waste." He later adds, "I cannot see, though I would like to, a larger increase in nuclear power until we establish a design standard for new plants — and deal with the long-term storage of nuclear waste." Shimkus concludes by arguing that nuclear energy cannot be expanded until the Yucca Mountain nuclear waste repository becomes a reality. "Past Congresses and administrations have approved Yucca Mountain...this administration should not make unilateral decisions without the consent of Congress."

Tyrus W. Cobb, former special assistant to the president for national security affairs during the Reagan Administration, writes in an op-ed for the Reno (NV) Gazette-Journal (4/18, 44K) that "there can no longer be any doubt that the licensing process for the Yucca repository will be restarted. The only question is whether Nevada will seize this moment to demand that its concerns be addressed and that

the state be appropriately compensated." According to Cobb, one or more of the following will lead to the ultimate creation of the Yucca repository: the states that have sued the federal government in an attempt to force compliance with the Nuclear Waste Policy Act will succeed, the NRC will vote to approve the site, or the Japanese crisis will bring to light the need for such a site. For these reasons, Nevada should conserve what little political capital it has left after fighting Yucca for so many years, and use it to fight for more reasonable concessions.

Long-time Yucca opponent Guy W. Farmer writes in an op-ed for the Nevada Appeal (4/18, 16K) that while Cobb believes the Japanese crisis provides an impetus for the Yucca project, he thinks "the Japanese crisis sounds the final death knell for Yucca Mountain." Farmer cites, former Nevada Gov. and Sen. Richard Bryan, chair of the Nevada Nuclear Projects Commission, who said, "There could be 100 Yucca Mountains up and operating, and the risks involved with spent fuel pools at reactor sites would still be there." Instead, Farmer adds, Bryan makes the argument for dry cask storage, which he says "virtually eliminates risks of the type we're seeing in Japan."

Politics Seen Driving Failure To Develop Yucca Mountain. CNN's In the Arena (4/15, Griffin, 8:48 p.m. EDT) continues reporting on Yucca Mountain, stating that "This was, and is, all about politics. Politics at the very highest levels." Rather than leave spent fuel around the nation in 65 different sites, the decision not to proceed is now drawing criticism; the segment showed clips of Sen. Dianne Feinstein (D-CA) and former Sen. and Energy Secretary Lamar Alexander (R-TN). Also criticizing the inaction was a Washington attorney representing many utility companies. The segment placed the onus for the inaction on Senate Majority Leader Harry Reid (D-NV) and his election concerns. The segment also noted that NRC chairman Jaczko is a former Reid aide, and showed him declining to be interviewed.

Planning For Hanford Vit Plant Support Projects Begins. The Tri-City (WA) Herald (4/18, Cary) reports that "major construction projects are being planned in central Hanford as the Department of Energy prepares to treat 53 million gallons of radioactive waste for disposal." While construction on the Waste Treatment Plant has been ongoing since 2002, "now planning is starting for the facilities needed to support the plant, including a complex to store its product of containers of glassified high-level radioactive waste until the nation has a repository for it. Hanford officials also are making plans for how to get waste to the vitrification plant and how to treat the secondary waste that it creates for disposal."

Hearing Set In Case Against LANL Plutonium Building.

The AP (4/16, Holmes) reported the Los Alamos Study Group, a watchdog organization, "is going to court in its attempt to halt a multibillion-dollar plutonium building at Los Alamos National Laboratory until the government does an environmental study." They are seeking a preliminary injunction to block all further funding of the Chemical and Metallurgy Research Replacement Nuclear Facility. The group's lawsuit alleges that the DOE and NNSA "violated the National Environmental Policy Act by preparing to build the facility without a new environmental impact statement." The DOE has said in response that "the new building is necessary because the current 60-year-old structure is outmoded." The hearing has been set for April 27.

New Mexico Watchdog Group Files Lawsuit Against Potential LANL Building. The AP (4/15) reported that in a lawsuit filed last August, the Los Alamos Study Group "alleges the Energy Department and its National Nuclear Security Administration violated the National Environmental Policy Act by preparing to build the facility without a new environmental impact statement." The AP adds that "US District Judge Judith Herrera will hear arguments from the organization and the US Department of Energy on April 27 in Albuquerque."

Y-12 Plays A Role In Successful Mock B61 Bomb Test. The Knoxville (TN) News Sentinel (4/18, Munger) reports, "The government recently announced a successful testing of a mock B61 bomb - called a Joint Test Assembly - and the Y-12 nuclear weapons plant in Oak Ridge played a role. The National Nuclear Security Administration and the US Air Force Global Strike Command collaborated on a flight test using a Joint Test Assembly of the B61 Mod 11 Strategic Bomb." Steven Wyatt, a spokesman at the Y-12 National Security Complex, "confirmed that the Oak Ridge plant manufactured hardware for the test."

Draft Bill Would Put DHS In Charge Of Civilian Agency Cybersecurity. The Hill (4/15, Nagesh, 21K) reported, "The White House is circulating a piece of draft legislation that would give the Department of Homeland Security oversight over cybersecurity at civilian agencies." The "proposed legislation combines the comprehensive cybersecurity bill introduced last year by the Senate Homeland Security Committee with the administration's memo from July 2010 to expand DHS's responsibilities over non-military networks, according to the report."

IN THE BLOGS:

Blog: NRC Said To Allow Industry To Assist In Writing Operator Guides. On its "Clog" blog, Creative Loafing (4/15, Sullivan) reruns the ProPublica piece on allegations that the NRC allows industry to contribute to "NRC regulatory guides that advise nuclear companies about how to best follow the agency's rules. Large parts of the guides, issued by NRC, incorporate or endorse material written by the industry's trade group, the Nuclear Energy Institute. The guides - containing detailed technical procedures and reference materials - are a key part of NRC's oversight." The guide are said to "provide the nuts and bolts advice that nuclear operators follow to stay in compliance but often refer to even more detailed industry guides."

INTERNATIONAL NUCLEAR NEWS:

TEPCO Lays Out Plans For Nuclear Plant Stabilization. In a front-page story, the New York Times (4/18, A1, Belson, Myers, Subscription Publication) reports, "The Tokyo Electric Power Company laid out an ambitious plan on Sunday for bringing the reactors at its hobbled Fukushima Daiichi nuclear power plant into a stable state known as cold shutdown within the next nine months and for trying to reduce the levels of radioactive materials being released in the meantime." According to the Times, the plan represents TEPCO's "most concrete timetable yet for controlling the reactors and improving safety at the plant, which was damaged by a massive earthquake and tsunami nearly six weeks ago." Their plan is also an implicit acknowledgement of "what outside experts had been warning for weeks: that the company's earlier plan to repair the existing system was unlikely to work because the equipment was too badly damaged."

Bloomberg News (4/18, Okada) explains that under two-phase plan, after a sustained reduction in radiation levels is achieved "the utility expects to achieve a cold shutdown of the reactors, where the temperature inside the core drops below 100 degrees Celsius (212 degrees Fahrenheit), within three to six months."

Reuters (4/18, Uranaka) says that TEPCO plans to later cover the reactor buildings. TEPCO Chairman Tsunehisa Katsumata said the company did not know how much it would cost to ultimately bring the plants under control.

During a news conference to announce the plans, the AP (4/18, Kageyama, Yuasa) adds Katsumata said, "We sincerely apologize for causing troubles," adding, "We are doing our utmost to prevent the crisis from further worsening."

He also "told reporters he was considering stepping down because of the crisis." Katsumata said, "I feel very responsible."

The Wall Street Journal (4/18, A9, Nishiyama, Narioka, Subscription Publication) adds that Katsumata also told the nationally televised news conference, "We will do our utmost to ensure that people who have been forced to evacuate will be able to return to their homes and the Japanese people can live without worry."

However, the Financial Times (4/17, Soble, Subscription Publication, 448K) reports that government officials said the evacuees will have to wait until after the cold shutdown is complete until they can return to their homes. But those from the most contaminated areas may have to wait years before they can return.

Radioactivity In Seawater Rises. The AP (4/18, Yamaguchi) reports the Japanese government said Saturday that "levels of radioactivity have risen sharply in seawater near a tsunami-crippled nuclear plant in northern Japan, signaling the possibility of new leaks at the facility." Samples taken Friday showed that "the level of radioactive iodine-131 spiked to 6,500 times the legal limit...up from 1,100 times the limit in samples taken the day before. Levels of cesium-134 and cesium-137 rose nearly fourfold." Those levels are lower, though, than those recorded earlier this month. The announcement followed "a magnitude-5.9 earthquake jolted Japan on Saturday morning, hours after the country's nuclear safety agency ordered plant operators to beef up their quake preparedness systems to prevent a recurrence of the nuclear crisis."

Robots Take First Radiation Measurements Inside Stricken Plant. The AP (4/18) reports that Japanese nuclear safety officials "say the first radiation measurements taken inside two reactor buildings at Japan's crisis-stricken nuclear plant show a harsh environment but not one that will be impossible for humans to work in." Nuclear safety agency official Hidehiko Nishiyama said Monday "the measurements taken by two robots sent in to units 1 and 3 of the tsunami-wrecked Fukushima Dai-ichi nuclear plant mean that workers trying to restore plant systems will only be able to stay for short intervals inside the reactor buildings." He also said "the radiation would not delay progress toward achieving a cold shutdown of the plant within nine months."

Meanwhile, on the front page of its Marketplace section, the Wall Street Journal (4/18, B1, Hodge, Subscription Publication, 2.02M) discusses how iRobot Corp., which is probably best known for its Roomba vacuum cleaners, also makes robots that are capable of exploring the Fukushima Daiichi nuclear plant. On Sunday, TEPCO said the PackBot would enter the plant to monitor radiation and oxygen levels at the plant.

Illinois Sending Personal Radiation Detectors To Japan. The Chicago Tribune (4/18, Garcia, 475K) reports, "Illinois is donating 2,000 personal radiation detectors to Japan for use by emergency workers as they sort through debris and begin cleanup operations in the wake of the devastating March earthquake and tsunami that spawned a nuclear catastrophe." The detectors "can be clipped to clothing and will alert workers about spiking radiation levels so they can more effectively limit exposure," and "were originally purchased using a \$1.3 million federal homeland security grant, and 3,000 additional detectors will remain in Illinois for use by local law enforcement officials." Illinois Gov. Pat Quinn said of the donation, "When someone has a need, the people of Illinois respond."

The AP (4/18) adds that "sending the devices to Japan won't affect disaster preparedness at home. The state says it still has about 3,000 detectors."

Japanese Lawmakers Eyeing Plan To Merge Nuclear Oversight Agencies. Bloomberg News (4/18, Nishizawa, Hirokawa) reports, "Japan should consider restructuring oversight of its nuclear energy infrastructure after the crisis in Fukushima revealed difficulties coordinating different agencies, lawmaker Goshi Hosono said today." Hosono of the ruling Democratic Party of Japan said there are "too many nuclear-related organizations" and "coordination becomes extremely difficult in an emergency." Japan may "merge two agencies to create a body similar in authority to the US Nuclear Regulatory Commission, the Mainichi newspaper reported last week, without saying where it obtained the information."

Cochran Sees "Substantially Less" Health Effects From Fukushima Than Chernobyl. Interviewed on NPR's (4/15, Flatow) "Science Friday" program, Physicist Tom Cochran with the Natural Resources Defense Council discussed the ongoing situation at Fukushima, and why the event was raised to a level seven, up from five. Cochran said he believed "it was raised to seven because there was substantial offsite deposition of radioactive materials from the cores of these reactors." But "they also pointed out that for a couple of principal isotopes...the amount that was emitted appeared to be on -- about 10 times less than that from the Chernobyl accident." The health effects, he added, would likely be "substantially less than Chernobyl."

Clinton Offers Support, Sympathy For Japan. Secretary of State Hillary Clinton's visit Sunday to Japan is receiving some attention on print media, but was not mentioned on the two network news broadcasts that aired last night. Most reports note her announcement of an initiative to assist the ailing Japanese economy, but few details of the plan were released. Clinton, the Washington Post (4/18, Wan, 572K) reports, "expressed sympathy and support" in meetings with

Prime Minister Naoto Kan and "various officials as well its emperor and empress in a rare audience over afternoon tea." The Post observes that the "effusive statements of support and appreciation from both sides during the visit reflect a high-water mark in the relationship -- spurred on by strong US support since the March 11 earthquake with funding, disaster relief and nuclear expertise." Clinton -- accompanied by Chamber of Commerce President Tom Donohue -- "also used the visit to announce a new public-private partnership for reconstruction in Japan."

The Wall Street Journal (4/18, A9, Dawson, Ramstad, Subscription Publication) says Clinton sounded optimistic about Japan's ability to recover and, along with Foreign Minister Takeaki Matsumoto, pledged to support the Japanese economy, but no details about the partnership were revealed. AFP (4/18, Tandon) too says the "details were vague," but Donohue and the head of Japan's business lobby Nippon Keidanren "said they would meet on ways that foreign companies can take part in the massive rebuilding."

The AP (4/18, Lee) reported only that the aim of the initiative "is to keep American businesses interested in Japan by demonstrating its ability to bounce back from daunting natural disasters."

Sunday: Clinton Visits Grateful Japan Warmed By Relief Effort. AFP (4/17, Zeller) reported that Secretary of State Clinton's trip to Japan is "reconfirming a key alliance" that has experienced its pluses and minuses -- including a "lingering military base dispute" and "muscular" US relief after the devastating earthquake and tsunami. AFP says "the Yomiuri Shimbun daily in an editorial last week reflected a view voiced by many survivors" and said, "We have nothing but the highest praise for the assistance provided by US personnel, which also will be an important contribution toward strengthening the bilateral alliance." The editorial noted that "the US is not treaty-bound to help Japan in natural disasters," but it did, and that "has helped warm attitudes" toward US forces based in Japan.

Higher Level Of Radioactivity Measured In Water Off Japan's Coast. ABC World News (4/16, story 8, 1:30, Muir, 8.2M) reported there was "another earthquake" in Japan Saturday, "and higher levels of radioactivity measured in the water off that troubled plant." ABC (Woodruff) added that in one town, "abandoned more than a month ago because of radiation...now only dogs and cows roam these streets. ... Police carefully ventured in for the first time to search for bodies."

Saturday: State Department Downgrades Risk For Diplomats' Families In Japan. AFP (4/16) reported that "the US has downgraded advice that had sent diplomats' families fleeing Japan in the wake of a nuclear emergency, allowing them to return to the country, a statement said Friday." The State Department "said the risk from the crippled Fukushima

Daiichi nuclear plant, where workers are battling to cool overheating reactors, had lessened," although it "Washington continues to recommend its citizens stay outside a 50-mile (80 kilometre) radius of the plant, far larger than the 20-kilometre exclusion zone mandated by the Japanese government." The advice affects some 600 members of diplomats' families.

Tokyo Power To Compensate Evacuees. The New York Times (4/15, Bradsher, Subscription Publication, 950K) reported "the Tokyo Electric Power Company announced plans on Friday to distribute 50 billion yen, or \$600 million, in initial payments to 50,000 people evacuated because of the accident at its Fukushima Daiichi nuclear power plant." Also Friday, "technicians continued to struggle to repair cooling and electrical systems at the damaged reactors."

Report Says Discharged Water Not Highly Contaminated. The Wall Street Journal (4/16, Obe, Subscription Publication, 2.02M) reported that Japan released a report Friday that said the water it discharged from a crippled nuclear plant into the Pacific was not highly contaminated by radiation. The total radiation in some samples reached 150 billion becquerels, or 100 times the legal limit, in some 1,300 tons of groundwater and 9,000 tons of seawater. The radiation likely came from hydrogen explosions, the report said.

Japan, China, South Korea Will Discuss Nuclear Safety At Annual Summit. AFP (4/16) reported Japan's government said Friday that "the leaders of Japan, China and South Korea will hold a two-day summit in Tokyo" in May "to discuss nuclear safety, disaster preparedness and other issues." Tokyo's Prime Minister Naoto Kan "will meet Chinese Premier Wen Jiabao and South Korean President Lee Myung-Bak in the annual three-way meeting." AFP points out that "Beijing and Seoul have sent quake rescue teams and offered other support to Japan," although both "have voiced concern after Japan dumped 10,000 tonnes of low-level radioactive runoff water into the Pacific Ocean."

Japanese Prime Minister Expresses Gratitude For Global Help. In an opinion piece for the Washington Post (4/16, 572K), Japan's Prime Minister Naoto Kan wrote of Japan's gratitude for help after its earthquake and tsunami from "our friends around the world," including "the United States, our most important friend and ally," as well as "more than 130 countries, nearly 40 international organizations, numerous nongovernmental organizations and countless individuals from all parts of the world." Of the US, Kan says "US forces have diligently performed relief activities on multiple fronts as part of Operation Tomodachi" in a manner that "has deeply touched the hearts and minds of the Japanese." Kan also promises that Japan will "share information and the lessons learned with the rest of the world to help prevent such accidents in the future."

Donilon Touts Administration's Anti-Proliferation Work.

National Security Adviser Tom Donilon touts the Administration's efforts to reduce the number of nuclear weapons in today's Financial Times (4/18, Subscription Publication, 448K). Noting the President's 2009 speech in Prague, in which he called for "a world without nuclear weapons," Donilon cites a series of steps which, he argues, have effectively laid the groundwork for further action. Among others, he mentions the START treaty and sanctions on Iran and North Korea. Donilon calls for the implementation of the Comprehensive Test Ban treaty, negotiations for the Fissile Material Cutoff treaty, and steps to reduce the US tactical arsenal and help Russia reduce its own.

Iranian Defense Official Says US, Israel Created Stuxnet.

AFP (4/17) reported that Iran's state news agency cited the military in a report that "the United States and Israel are behind the computer worm Stuxnet" that may have affected Iran's nuclear program. Gholam Reza Jalali, head of Iran's civil defense, "was the first Iranian official to accuse Tehran's two arch-foes over the Stuxnet virus," although speculation has previously suggested the US and Israel were responsible. Jalali said the worm "begins to gather information and then sends reports from the infected machines to designated Internet addresses," and one was in "the American state of Texas."

The AP (4/17, Dareini) reported Jalali "said Saturday the malware could have caused large-scale accidents and loss of life" by sending "centrifuges...spinning out of control." He also "said disastrous accidents and loss of life were averted by Iranian experts fighting the computer code. He gave no specific examples." Reuters (4/17, Hack) also reported the story.

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Baca, Bernadette

From: Willoughby, Leonard
Sent: Tuesday, April 19, 2011 11:50 AM
To: Baca, Bernadette
Subject: RESP: FOIA 2011-184 and 2011-189
Attachments: 04-08 All Hands Meeting and earthquakes

Bernadette,

Attached is the an e-mail, I sent Art on APR 12, 2011, that shows earthquake activity near the San Onofre and Diablo Canyon nuclear plants and the Fukushima Daiichi nuclear plant. The images were obtained using Google Earth that shows earthquake activity. Google obtains the data from USGS.

I recommend the first paragraph of the e-mail be redacted since it pertains to an all hands meeting that discussed the possible government shutdown.

FOIA No.	Title/Topic	Searching Time*	Pages found	Review Time**
2011-184	Information regarding the <u>nuclear crisis</u> in Japan for March 10 and March 25-April 11, 2011, only.	0.25	1	0.25
2011-189	Information regarding the <u>nuclear crisis</u> in Japan from March 11, 2011	0.25	1	0.25

Total time spent is 1.0 hours.

Leonard

HHHHH/228

Written Testimony
Of
Cynthia Pederson
Deputy Regional Administrator, Region III, Lisle, IL
On behalf of the
US Nuclear Regulatory Commission

Senator Durbin and Senator Kirk, I'm honored to appear before you today on behalf of the U.S. Nuclear Regulatory Commission to address the continuing safety of the nuclear power plants in Illinois.

I would first like to offer my condolences to all those affected by the earthquake and tsunami in Japan. Our hearts go out to all those who have been dealing with the aftermath of these natural disasters, and we are mindful of the long and difficult road they will face in recovery. We know that the people of Japan are resilient and strong, and we have every confidence that they will come through this difficult time and move forward, with resolve, to rebuild their vibrant country. As an NRC employee, I am especially proud of the efforts of my colleagues who are providing technical assistance to Japan, to aid in their efforts to control a very challenging situation at the Fukushima plants. Since Friday, March 11, when the earthquake and tsunami struck, the NRC's headquarters' operations center has been substantially augmented in order to monitor and analyze events and to provide expert assistance and review. At the request of the Japanese government, and through the United States Agency for International Development (USAID), the NRC sent a team of more than 12 experts to provide on-the-ground support. Within the United States, the NRC has been working closely with other Federal agencies as part of our government's response to the situation.

Background to the NRC

The NRC is an independent federal agency, with approximately 4000 staff. We play a critical role in protecting public health and safety of the American people. We have inspectors who carry out duties full-time at every commercial operating nuclear power plant in the United States, and we have world-class scientists, engineers, and professionals who work together to assure that the nuclear material and nuclear power plants in our country are safe and secure. From the NRC resident inspectors, who work at and live near the reactors, to the dozens of region-based specialists, who visit the plants regularly to

assess emergency planning, security, maintenance, or engineering, there are about 225 people in NRC's Region III office in Lisle, Illinois; we are absolutely dedicated to making sure that the 24 reactors in the Midwest are safe.

The NRC carries out rigorous reviews to confirm that our nuclear plants are built and operated safely. All commercial U.S. nuclear power plants are designed and built to withstand site-specific environmental hazards, including earthquakes, tornados, floods, and tsunamis. Even those plants located outside of areas with high seismic activity are designed for safety in the event of such a natural disaster.

The NRC requires that safety-significant structures, systems and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC requires an additional safety margin to provide added robustness. This basically means that U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake, floods, tornadoes, and tsunamis.

Nuclear power plants in the U.S. are subject to strong safety oversight:

- Every reactor in this country is required by NRC regulation to be designed for natural events based upon the specific site where that reactor is located;
- There are multiple barriers to the release of radioactivity at every reactor;
- There are a wide range of diverse and redundant safety features in order to provide assurance of public health and safety;
- The NRC has a long regulatory history of conservative decision-making. We use sound risk insights to help inform our regulatory process, and have continued to require improvements to the plant design and operation as we learn from operating experience over the more than 35 years of civilian nuclear power in this country;
- Our regulatory process has been informed by lessons learned from previous significant events, such as Three Mile Island, Davis-Besse, and September 11th, 2001;
- We also have severe accident management guidelines, emergency operating procedures, and procedures and processes for mitigating scenarios such as large fires and explosions, regardless of the cause;
- Further, we have a station blackout rule which ensures an appropriate response to loss of power at a plant, and a hydrogen rule for reactors to prevent explosions within containment.

Reactor Safety

I would like to focus on the factors that go into assuring the NRC that domestic reactors are safe, including the nuclear reactors here in Illinois. The NRC has, since the beginning of the regulatory program in the United States, used a philosophy of Defense-in-Depth, which recognizes that nuclear operations require the highest standards of design, construction, oversight, and operation. But even with these high standards, the NRC will not rely on any one level of protection for maintaining public health and safety. So, the design for every single reactor in this country, after accounting for site-specific threats – such as earthquakes, tornadoes, hurricanes, floods, or tsunamis – also has multiple physical barriers to prevent radiation release. On top of this, there are diverse and redundant safety systems. NRC regulations require these safety systems be maintained in a state of readiness and frequently tested. It is my job, and that of the NRC, to ensure that they are. My inspectors and I are determined, exacting, and thorough in this pursuit. Should a very unlikely significant event occur, each plant has emergency preparedness plans which would be put into action. These plans are developed in cooperation with the NRC, FEMA, and State and local officials.

The NRC has always sought to learn from previous operating experience to review and amend our requirements as necessary – and we will continue to do so. The most significant nuclear event in this country was the Three Mile Island accident in 1979. As a result of lessons-learned from that event, changes were introduced across the spectrum of NRC's regulations. The NRC significantly revised emergency planning and emergency operating procedures. Many rules for control room operators were enhanced. We created requirements for enhanced indication of the status of pumps and valves. To further reduce the likelihood of any explosions inside of reactor containments, the NRC added new requirements for hydrogen control. The NRC introduced requirements for a post-accident sampling system that monitors for potential radioactive material release and possible fuel degradation.

One of the significant changes after Three Mile Island was the establishment of the Resident Inspector Program, which provides for the posting of at least two full-time NRC inspectors at each plant. These inspectors have unfettered access to all licensees' activities 24 hours a day, seven days a week; they also live in the community and have a direct stake in the safety of the facility.

Also as a result of operating experience and ongoing research programs, the NRC has developed requirements for severe accident management guidelines. These are programs that perform the “what if” scenario. What if all of this careful design work, all of these important procedures and practices and instrumentation all failed? What procedures, policies, training, and equipment should be in place to deal with the extremely unlikely scenario of a severe accident? These programs have been in effect for many years and are evaluated by the NRC.

As a result of the events of September 11, 2001, we further enhanced our requirements, and identified mitigation strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with the explosions or fire. These enhancements and strategies are directly applicable to the kinds of very significant events that are taking place in Japan.

The NRC also has requirements related to what is termed “station blackout;” every plant in the country has to maintain a response for loss of power. A plant could respond by using batteries for a while, but must also have procedures and arrangements in place in order to restore power to the site and to provide cooling to the core. As I mentioned earlier, there's a hydrogen rule to mitigate the impacts of hydrogen generated as a result of beyond-design basis events and core damage. There are equipment qualification rules that require indication equipment, pumps, and valves, to remain operable under the kinds of environmental temperature and radiation conditions that you would see under a design basis accident.

I also mentioned earlier very important emergency preparedness and planning requirements. In coordination with our federal partner, FEMA, and with state and local governments, these emergency preparedness programs are evaluated and tested on a yearly basis.

Local Concerns from events in Japan

Speaking directly to the containment design at Fukushima, which has received considerable attention in the press, the NRC has had a Mark I Containment Improvement Program since the very late 1980s. This initiative required the installation of fission-product scrubbing equipment, enhanced reliability of the automatic depressurization system, and new hardened vent systems for the containment cooling for all BWR Mark Is—including 4 units here in Illinois.

Another local issue I specifically want to address is regarding the spent fuel pools at Zion nuclear power plant and GE Morris facility. Both maintain cooling systems and closely monitor water levels and temperatures. The spent fuel at these facilities has been cooling in the pools for many years, allowing for the residual heat to dissipate significantly. At this point, there is not enough heat being generated in the GE spent fuel pool for the water to boil. At Zion, the fuel has also significantly cooled.

Learning from Fukushima

Despite our confidence in the safety of U.S. reactors, more will be done. The Nuclear Regulatory Commission has issued an Information Notice to all currently operating U.S. nuclear power plants, describing the effects of the March 11 earthquake and tsunami on Japanese nuclear power plants. The notice provides a brief overview of how the earthquake and tsunami are understood to have disabled several key cooling systems at the Fukushima Daiichi nuclear power station, and also hampered efforts to return those systems to service. Based on the NRC's current understanding of the damage to the reactors and associated spent fuel pools as of Friday, March 18, 2011, the notice reflects the current belief that the combined effects of the March 11 earthquake and tsunami exceeded the Fukushima Daiichi plant's design limits. The notice also recounts the NRC's efforts, post-9/11, to enhance U.S. plants' abilities to cope with severe events, such as the loss of large areas of a site, including safety systems and power supplies. The NRC expects U.S. nuclear power plants will review the entire notice to determine how it applies to their facilities and consider actions, as appropriate.

Over the near term, the NRC will be enhancing our activities through additional inspection, utilizing the resident inspectors and the region-based inspectors in our four Regional offices to verify the readiness of licensees to deal with both design basis accidents and beyond-design basis accidents.

These additional inspections will focus on the capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems. NRC inspectors will be re-verifying the capability to mitigate a total loss of electric power to the nuclear plant. They will also re-verify the capability to mitigate problems associated with flooding, and the impact of floods on systems both inside and outside of the plant. And they will verify the equipment that is needed for the potential loss of equipment due to seismic events.

In the longer term, the NRC will be developing lessons-learned from the earthquake and tsunami in Japan. The Commission has directed the NRC staff to establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system and make recommendations to the Commission for its policy direction. This review will encompass domestic operating reactors of all designs, including their spent fuel pools, in areas such as protection against earthquake, tsunami, flooding, hurricanes; station blackout and a degraded ability to restore power; severe accident mitigation; emergency preparedness; and combustible gas control. The NRC will evaluate technical and policy issues to identify additional research, generic communications, changes to our reactor oversight program, potential new rulemakings, and adjustments to the regulatory framework that may warrant action by the NRC. This evaluation will then consider inter-agency issues and applicability of these lessons learned to other, non-reactor facilities. This will be a very substantial and lengthy undertaking, but in order to fully learn and appropriately respond to the lessons of the recent events in Japan, we must proceed methodically and systematically.

In conclusion, the NRC has full confidence that the current fleet of reactors and materials licensees are operated in a manner that protects the public health and safety and the environment. There are a number of immediate, short-term, and long-term evaluations that we are embarking upon with an aim to ensure the continued safety of U.S. facilities. After we have been able to thoroughly study and understand the events in Japan, we will apply the lessons learned to our domestic fleet of nuclear reactors and facilities. We are strongly committed to protecting public health and safety, and will take any additional actions needed to do so.

Thank you.



NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

TUESDAY, APRIL 19, 2011 7:00 AM EDT

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NRC NEWS:

Commissioner Ostendorff Tours Browns Ferry With Sen. Alexander. The Chattanooga Times Free Press (4/19, Sohn, 78K) reports, "In a building off to the side of Watts Bar Nuclear Plant, TVA's nuclear operators have been playing 'what if' for the last month." According to the Times, "On Monday, as reporters waited to hear Sen. Lamar Alexander, R-Tenn., report on what he and Nuclear Regulatory Commissioner Bill Ostendorff saw on a tour of the plant that morning, three operators in a control room simulator responded to a mock earthquake and electric power loss for

cooling to the reactor." The report mentions that "after his tour, Alexander gave the plant and nuclear power glowing praise, adding that he and Ostendorff saw a 'whole variety of backup ways' to deal with any loss of power and cooling such as what plagued the Japan plant."

Similarly, WATE-TV Knoxville, TN (4/18, D'Arcy) reported "government officials were in Spring City Monday to tour the" TVA's "Watts Bar Nuclear Plant The goal was to research what would happen if there was an emergency." WATE-TV said part of the tour that involved Alexander "included an emergency simulation from a control room used for training." Bill Ostendorff, a member of President Barak Obama's Nuclear Regulatory Commission, accompanied

11111/229

Alexander in the tour. TVA Chief Operating Officer Bill McCollum said the TVA "began an internal review of all emergency protocol at its plants after problems at Fukushima." WATE-TV Knoxville, Tennessee (4/18, 11:08 p.m., EDT) broadcast the story.

WTVG-TV Chattanooga, TN (4/18, Jenereski) also covered Alexander's visit to Watts Bar Nuclear Plant Monday, noting: "Sen. Alexander said he was impressed by his tour." The Senator said, "The management supervision and maintenance that's going on today with several thousands workers on site, that's a big effort, and that's a hard effort." WTVG-TV Chattanooga, Tennessee (4/18, 11:06 p.m., EDT) also broadcast this story.

WBIR-TV Knoxville, TN (4/18, Butera) quoted TVA operation training manager John Dalton, who said: "For Fukushima, the problems they had was they didn't have enough water, didn't have enough electricity to pump water." Dalton added, "For a while they had enough water by pumping steam into their reactor." Officials reassured that "Watts Bar has ways of pumping water into the system to cool down reactors, whether power goes out or not." WRCB-TV Chattanooga, TN (4/18, Harris) and WDEF-TV Chattanooga, TN (4/18, Mitchell) also covered the news of Alexander's visit to the atomic power plant.

Browns Ferry Road Needs Improvement. The Decatur (AL) Daily (4/19) reports, "Nuclear Plant Road, which runs from US 31 in Limestone County to Browns Ferry Nuclear Plant, is an essential part of the evacuation route for hundreds of residents whose close proximity to the plant puts them at the greatest risk." According to the report, "Athens and Limestone officials are reasonable in their request that federal dollars assist in improving Nuclear Plant Road." The Daily adds that "assistance from TVA also would make sense, since it has the ability to pass the cost of the repairs to all those who benefit from the plant."

Entergy Sues Vermont To Keep Yankee Plant Operating. The AP (4/19, Curran) reports, Vermont Yankee owner Energy Corp., sued "state officials Monday to stop them from closing the plant next year, setting up a court fight about who has jurisdiction — state or federal nuclear regulators." The "civil suit, filed in US District Court in Burlington by subsidiaries Entergy Nuclear Vermont Yankee and Entergy Nuclear Operations, lists the defendants as state Attorney General William Sorrell, Gov. Peter Shumlin and the members of the state Public Service Board." The AP notes that Vermont is the only state that insists "it has authority to block a nuclear plant re-licensing, historically the purview of the US Nuclear Regulatory Commission." According to the suit, state lawmakers reneged on a 2002 memorandum of understanding, in which Entergy agreed to continue operating only with the approval of the state Public Service Board, but

lawmaker passed a law which said the PSB could not issue that approval without the Legislature's permission.

In an above the fold, page one piece, the Boston Globe (4/19, A1, Daley) expects the legal action to "to force a legal showdown over whether state governments can claim a role in the oversight of nuclear power plants, which are regulated by the federal government. What the courts ultimately decide is likely to have significance for some of the nation's 103 other operating reactors, especially those in states that have similar concerns about their safety." The Globe adds if the "Supreme Court were to reject Entergy's suit, other states could be empowered to pass legislation, as Vermont did in 2006, granting lawmakers the authority to approve or deny a plant's license extension, according to legal scholars." The Boston Globe's (4/19, Daley) "Green Blog" offered similar coverage.

The New York Times (4/19, A16, Wald) notes that when Entergy "When they bought the plant from local utilities in 2002, they signed an agreement with Vermont's regulatory agency, the Public Service Board, agreeing that when the plant's 40-year federal operating license expired in March 2012, its 'certificate of public good,' would also need to be renewed. The state requires such certificates of all big power plants."

The Burlington (VT) Free Press (4/19, Hallenbeck) adds that Vermont Attorney General William Sorrell said three attorneys from his office have been preparing for the lawsuit for months. Entergy is asking "for a temporary injunction against any Vermont efforts 'to shut down or make preparations to shut down' Vermont Yankee while the case is pending. The lawsuit also seeks a ruling permanently prohibiting the state from shuttering the plant." Entergy Wholesale president Richard Smith, said the "2006 state law took the decision about Vermont Yankee's future away from the Public Service Board, a quasi-judicial expert decision-maker, independent of legislative control," and instead "placed Vermont Yankee's fate in the hands of political decision-makers."

The Brattleboro (VT) Reformer (4/19, Audette) adds, "Smith said no company likes to take legal action, particularly in a state where it operates." Smith said Entergy made the decision because "We believe the General Assembly changed the rules and left us with no other choice." Smith said that those opposed to continued operation will say Entergy is "going back on its word and is breaking the deal it made in the 2002 memorandum of understanding." But he insisted that is not true.

Bloomberg News (4/19, Jeffrey) adds that Entergy Wholesale Commodities president Richard Smith, said "We believe the state of Vermont changed the rules on us," adding, "We feel we have made every effort to find a resolution without resorting to litigation, but we were not successful."

The Wall Street Journal (4/19, Day, Peters, Subscription Publication) notes that the NRC has said it would not interfere with Vermont's decisions and the agency had no comment on the lawsuit. In a statement, Gov. Peter Shumlin said, "Vermont has a proper role in granting or denying state approval for Vermont Yankee," and added, "We are confident that the court will recognize that role and we are ready to defend Vermont in this lawsuit."

On its website, CBS News (4/18) reported Entergy's lawsuit "says US Supreme Court precedent has found that states have no authority over nuclear plant licensing. It also says Vermont might be interfering with federal authority to regulate the wholesale power market."

The Dow Jones Newswires (4/19, Day) reports, Gov. Shumlin said his administration would resist Entergy's lawsuit and said the company "must follow our laws" on the state's decision to let the plant close next year.

In a statement appearing on the Burlington (VT) Free Press (4/19), Gov. Shumlin said "Entergy's executives" are "breaking their agreement and their word once again. Vermont has a proper role in granting or denying state approval for Vermont Yankee. We are confident that the Court will recognize that role and we are ready to defend Vermont in this lawsuit."

Also covering the lawsuit are the Keene (NH) Sentinel (4/19, Jarvis), AP (4/19), Brattleboro (VT) Reformer (4/18), New Hampshire Public Radio (4/18, Grant), WWLP-TV Springfield, Massachusetts (4/19, Caron), Dow Jones Newswires (4/19, FitzGerald), E&ENews PM (4/18, Northey), and the Mississippi Business Journal (4/19)

WWLP-TV Springfield, Massachusetts (4/18, 5:32 p.m., EDT) broadcast, "The Vermont Yankee Nuclear Power Plant filed a Federal lawsuit today to prevent the state of Vermont from shutting them down. ... Vermont Yankee spokesperson Larry Smith told 22 News the plant passed an exhaustive five year safety and environmental review and that the plant is completely safe. The broadcast also showed local residents on camera expressing fear about the nuclear plant as well as recognizing the economic benefits to having the plant." WVNY-TV Burlington, Vermont (4/18, 11:01 p.m., EDT) and WCAX-TV Burlington, Vermont (4/18, 12:00 p.m., EDT) also broadcast this story.

Vernon In Discussions With Yankee On Tax Deal. The Brattleboro (VT) Reformer (4/19, Garofalo) reports, "The Vernon tax stabilization committee is taking a wait-and-see approach to its preliminary negotiations with Vermont Yankee nuclear power plant as the facility's owner has filed litigation against the state this week." Members of the committee said they were in discussions with plant owner Entergy on a new agreement for the town. Committee member Patricia O'Donnell of the Vernon Selectboard said "Things are just going to go on the way they are right now as the lawsuit

unfolds." Keeping the plant operational is a "major concern" for Vernon residents, since the Yankee plant "pays \$1.3 million in municipal taxes, or about 50 percent of the total levy for the town, not including the school district."

VPIRG Head Blasts Entergy Move. In a news release (4/18), James Moore of the VPIRG said that in "filing this lawsuit, Entergy is reneging on a promise made to the people of Vermont," and is "another indication that this company cannot be trusted to run the plant one day past the expiration of its license."

Evacuation Would Be Difficult If Vermont Yankee Melted Down. In an editorial, the Keene (NH) Sentinel (4/18) called attention to the NRC recommendation in the days after the March 11 earthquake and tsunami hit Japan, that US residents stay at least 50 miles away from the stricken Fukushima reactors. The NRC's recommendation "came as a shock to many Americans," who are used to 10 mile zones around US nuclear plants. In the US, "100 million people live within a 50 mile radius of a nuclear plant," and "if an accident or sabotage were to spread radiation from the Vermont Yankee reactor or breach its spent-fuel storage containers," evacuees "would have to find shelter" beyond "Claremont (41 miles to the north), Milford (43 miles to the east), Springfield, Massachusetts, (45 miles to the south) and Hoosick Falls, New York, (43 miles to the west)."

Chairman Jaczko To Speak At Johns Hopkins Carey Business School. Johns Hopkins' JHU Gazette (4/18, Blumberg) reports, "Gregory B. Jaczko, chairman of the US Nuclear Regulatory Commission, is the featured speaker at the Johns Hopkins Carey Business School's Leaders + Legends lecture series on April 21." Jaczko will speak at the Legg Mason Tower in Harbor East, on the "Past, Present and Future of Nuclear Power: A Regulator's Perspective." In his position, "Jaczko has focused on the NRC being a strong and decisive safety regulator possessing the confidence of the public, and has worked to have the agency clearly communicate with the public and its licensees."

US Embassies Said To Reference NRC In Promoting Nuclear Technology. In a 1,300-word article, Reuters (4/18, Berkowitz, Rampton) reports that while the NRC is supposed to oversee, not advocate for, the US nuclear industry, diplomatic cables obtained via WikiLeaks suggest that the agency is sometimes employed as a selling point to help push US nuclear technology to foreign buyers. The cables, which Reuters says it obtained third-hand, purport to show how American embassies have drawn upon the NRC when they pitch equipment manufactured by Westinghouse, General Electric and other American manufacturers. Reuters says it is uncommon for US regulators to act in any commercial capacity and the issue

comes at sensitive time for the agency, with attention focused on its oversight because of the Fukushima nuclear plant crisis. Reuters says the cables illustrate how in promoting its regulatory model abroad, the NRC is sometimes seen as an advocate for US nuclear technology.

US Nuclear Reactors Squeezed To Produce More Power. The Los Angeles Times (4/18, Zarembo, Welsh, 657K) reports, "The US nuclear industry is turning up the power on old reactors, spurring quiet debate over the safety of pushing aging equipment beyond its original specifications. The little-publicized practice, known as uprating, has expanded the country's nuclear capacity without the financial risks, public anxiety and political obstacles that have halted the construction of new plants for the last 15 years." According to the Times, "Tiny uprates have long been common," but "nuclear watchdogs and the US Nuclear Regulatory Commission's own safety advisory panel have expressed concern over larger boosts -- some by up to 20% - - that the NRC began approving in 1998."

Fukushima Crisis To Weigh Heavy On Future Of Nuclear Power. In a lengthy article, Reuters (4/19, Boselli, De Clercq) reports on the future of nuclear power abroad, zeroing in on Czech power company CEZ, which is planning to build two additional nuclear units at the Temelin plant along with other units in Slovakia and elsewhere and is considering proposals from Westinghouse, an alliance of Czech firm Skoda JS and Russia's Atomstroyexport, and France's Areva. All that could be changed by the Fukushima plant crisis. According to James Acton, of the Carnegie Endowment for International Peace, every nuclear reactor needs "external intervention" at some point. Acton expects that the Fukushima calamity will damage the whole industry "and presumably General Electric will be damaged the most." Reuters says GE-Hitachi is keeping a closed mouth about its future commercial opportunities with the disaster still unfolding. "Now is not the time to speculate on future sales," said GE Hitachi spokesman Michael Tetuan.

Threats To Safety Seen In Reactor Uprates. An article on the safety and health website, FairWarning (4/18, Corcoran) reports the US nuclear industry -- "hemmed in by safety concerns along with political and financial risks" -- has not built a new reactor in 15 years, though the industry has managed, through power uprates to increase generating capacity. "But the boost in power comes with increased risk: the stress on the reactor's components is greater, which could cause a faster rate of deterioration." Smaller uprates have been common since the NRC approved the process in 1998, but newer sharper increases in recent years, by as much 20 percent in some cases, have left critics concerned.

John Large, a former researcher for the British atomic energy agency, said "It's beyond the wit of mankind to identify all challenges to a nuclear plant."

NRC Considering Allowing Employee Use Of Personal Devices. On its website, FierceGovernmentIT (4/18, Walker) reports the NRC is considering proposals to allow "the use of a single, employee-provided device for both personal and work environments." NRC's chief information officer Darren Ash said he sees the employees "throughout the agency--the employees with the iPads, the iPhones whatever, a myriad of devices. They're there, and potentially using them for things they need to do. They're not connecting to our network because we won't allow it, but we know those devices exist." Ash said NRC needs to "focus on the business capability" of the given device, though there are "lingering issues" of security and ethical use that must be sorted out.

Nuclear Plants Rapidly Running Out Of Room To Store Spent Fuel. The Springfield (MA) Republican (4/18, Cummings) reported, "In an effort to preserve profits, nuclear power-plant operators in New England are stuffing more and more spent nuclear fuel rods into already crowded storage pools that many believe are more dangerous than the reactors." Such pools "now hold up to five times more fuel than they were initially designed to handle." The NRC has approved the change "partly because a national disposal site for nuclear waste has not been established." The piece says that NRC estimates show that in three years, many spent fuel pools will run out room to re-rack assemblies and plant owners will have to either shut down or place spent fuel in dry casks. While the NRC says the "practice is safe, stuffing pools to their limit is inherently dangerous, many scientists and engineers say," and warn that "the sheer volume of radioactivity in the pools," could turn an accident or natural disaster into a catastrophe.

Some Fear Threat Of Terror Attack. The Springfield (MA) Republican (4/18, Cummings) examined the prospects of a "nuclear disaster in New England" and says one "would truly be the sum of all fears" with studies projecting that "thousands would be killed and huge areas rendered uninhabitable, potentially displacing one-sixth of the nation's population." Some scientists like National Resource Defense Council nuclear physicist Thomas Cochran fear that "the high concentration of spent fuel" in the spent fuel storage pools "dramatically increases the risk" of such an incident.

Sixteen Casks Are All That Remain Of Yankee Rowe. The Springfield (MA) Republican (4/18, Contrada) profiled dry cask technology, reporting that they sit on concrete pads, each weighing more than 100 tons and sporting "21 inches of reinforced concrete surrounding a 3½-

inch steel liner." The "casks, which contain 533 spent fuel assemblies, are all that's left of Yankee Rowe," and after the plant shut down in 1992, "questions about the safety of nuclear power had clouded" early optimism. "Years after they were removed from the reactor, the rods continue to give off heat comparable to a warm oven" and inside the "steel and concrete, an inert gas prevents the nuclear material from exploding."

NRC Accused Of Weakening Rules. Under the headline, "US Nuclear Regulatory Commission Oversight Called Too Lenient," the Springfield (MA) Republican (4/18, Totten) reports, "Internal government watchdogs and outside experts alike say the US Nuclear Regulatory Commission is too lenient on the industry it is charged with regulating, often making decisions based on the industry's profit margins rather than safety." An investigation "by the New England Center for Investigative Reporting and Hearst Connecticut Media Group found the NRC has routinely allowed operators to pack spent fuel rods into cooling pools far beyond the pools' original licensed capacity and design basis, rather than forcing the plant owners to move the fuel into safer but more costly dry casks," but it also found that the NRC "has weakened a key, decades-old safety standard," allowing some nuclear operators to use their "containment vessel as a way to help cool a reactor before turning to emergency cooling water pumps."

Nuclear Waste Funds Said Wasted On Yucca. The Springfield (MA) Republican (4/18, Mulvihill, Totten, Porter) reports on the lack of a long-term spent fuel repository and how "New England's electricity consumers and nuclear plant owners have poured close to \$1 billion into a federal waste fund for the past three decades," largely without result. Instead, the DOE has spent \$11 billion on Yucca Mountain, a "hole in a Nevada mountainside, a broken promise from the US government to remove the radioactive waste and mounting bills that could still saddle New England with at least five mothballed plants and dozens of dry spent fuel casks, turning communities into mini nuclear waste dumps for decades, if not forever."

Surry Station Remains Offline Following Storm Outage. The Washington Times (4/18, Weber) reports, "An unconfirmed tornado landed outside the Surry Nuclear Plant in Virginia on Saturday and automatically shutdown the site's two reactors, according to the Nuclear Regulatory Commission. The apparent tornado affected an electrical switchyard next to the plant, cutting off the electrical feed to the station, in Surry County, about 17 miles northwest of Newport News." Each of the "reactors shut down automatically at about 7 p.m. and backup diesel generators kept power going." The Guardian (UK) (4/19, MacAskill)

reports, "The regulator said no radiation was released and staff were working to restore electricity to the plant."

The Richmond Times-Dispatch (4/19, Bacque) reports, "Dominion Virginia Power's Surry nuclear power plant could be out of service for several days until workers repair the station's tornado-damaged electrical switchyard." NRC spokesman Joey Ledford said, "The plant functioned exactly as designed during the event." DVP "did not have an estimate Monday of the cost to repair the tornado damage at its Surry station, about 50 miles southeast of Richmond."

The Virginia Business Magazine (4/18, Squires) reports that by yesterday afternoon, "Dominion Virginia Power said crews had restored power, although the NRC was reporting that power had been partially restored."

The Hampton Roads Virginian-Pilot (4/19), the Newport News Daily Press (4/19), WWBT-TV Richmond (4/19), WTVR-TV Richmond (4/19), WAMU-FM Washington DC (4/19), WVEC-TV Norfolk (4/19, Rau), ABC News Radio (4/19), the Xinhua News Agency (4/19) and Reuters (4/19) each reported on the Surry Nuclear Plant.

Editorials by the Hampton Roads Virginian-Pilot (4/19) and the Newport News (VA) Daily Press (4/19) note that a tornado took out the power supply of the nuclear power plant.

Bloomberg News (4/19, McClelland) reports that because of the incident at Surry "US nuclear-power output fell to the lowest level in almost 4 years."

Dominion Official Touts Benefits Of Virginia Nuclear Plants. Dominion's Leslie N. Hartz writes in a piece supportive of nuclear power in the Richmond Times-Dispatch (4/19), "Our two Virginia stations, North Anna and Surry, provide 40 percent of the electricity used by our customers. Their operation requires a profound respect from everyone involved." She concludes, "I remain confident that our stations and those in the United States are safe and that the tragic events in Japan will be our catalysts for enhanced safety."

Report Says Michigan 'Fairly' Prepared For Radiation Emergency. The Detroit News (4/17, Kozlowski, 135K) reports, "As Japan's nuclear crisis unfolds, Michigan is 'fairly,' but not fully, prepared to protect public health if a similar radiation emergency were to happen here." Published in last month's Journal of the American Medical Association, the report "surveyed 38 states last year and concluded there are numerous gaps in radiation preparedness, including in Michigan — home to four nuclear power plants." David Wade, director of the environmental health division at the Michigan Department of Community Health, remarked, "We are fairly well-prepared just given that we have an overall response plan in place."

Progress Energy Contemplates Closing Crystal River Plant.

WKMG-TV Orlando, Florida (4/18, 7:17 p.m., EDT) reports on the Crystal River Plant in Florida. "There are reports tonight a troubled Progress Energy Nuclear Plant may be shut down for good. ... It's been shut down for 17 months because of several safety problems and violations. Progress Energy confirms to Local 6 it is weighing the cost of preparing the reactor or shutting it down permanently. Progress Energy will keep pushing for two new nuclear reactors in Levi County. That could take 15 years."

Activists Protest Diablo Canyon Nuclear Plant.

KESQ-TV Palm Springs, California (4/18, 3:22 p.m., EDT) broadcast, "One of our state's nuclear power plants will soon see its license to operate expire and now some activists want to see it shut down. Hundreds of protesters gathered near Diablo Canyon Nuclear Power Plant in San Luis Obispo County yesterday. ... They say Diablo is not safe in the event of a massive earthquake like the one in Japan. ... Paul Flake, PG&E: "Every single day the men and women at Diablo Canyon go to work with seismic safety and safety operations of the plant at the top of our priority. The Nuclear Regulatory Commission has the authority to shut down Diablo Canyon if ever it determines that it's not safe to operate." KESQ-TV continues, "The company has applied to renew licenses to operate the plant, but some state lawmakers want to delay the process until new seismic maps are completed. KLAS-TV Las Vegas, Nevada (4/18, 2:15 a.m., EDT) and KNVN-TV Chico, California (4/18, 2:01 a.m., EDT) also broadcast this story."

Local TV Editorial on Nuclear Safety. KSBW-TV Monterey, California (4/18, 9:25 a.m., EDT) in an editorial KSBW general manager Joseph W. Heston expressed the station's approval of California state senator Sam Blakeslee's appearance before a Senate committee regarding the safety of the Diablo Canyon Nuclear Plant and its proximity to earthquake faults. The station particularly agrees with Mr. Blakeslee's position that there should be 3-D seismic studies carried out on the fault lines prior to PG&E receiving relicensure.

Lawmakers Visit Southern Florida Nuclear Plant.

WSVN-TV Miami (4/19) reports on its website, "In the wake of the nuclear disaster in Japan, four members of the South Florida Congressional delegation visited the Turkey Point Nuclear Power Plant in South Miami-Dade, Monday." According to the report, "Democratic Representative Frederica Wilson and Republican Representatives Mario Diaz-Balart, David Rivera and Ileana Ros-Lehtinen toured the power plant during a recess from Congress." The lawmakers "wanted to make sure that if a natural disaster, like a major

hurricane, were to hit South Florida, the Turkey Point Nuclear Power Plant would be well-equipped to handle it."

Nuclear Experts Gather in Florida. WKMG-TV Orlando, Florida (4/18, 7:15 p.m., EDT) reports on a gathering of nuclear experts in Central Florida. "The United States Nuclear Regulatory Commission has a high-level task force looking for lessons that could be learned from the disaster in Japan right now. It's in the early stages but NRC representatives say no immediate changes are on the way." Mark Thaggard, NRC: "So far we've seen nothing from the incident over in Japan to indicate that anything that's happening over here is unsafe." The conference covered topics such as technology in detecting radiation and how to train emergency professionals on preventing and preparing for meltdowns.

Lawmaker Discusses Nuclear Power In Massachusetts.

The Salem (MA) News (4/19, Brnger, 26K) reports, "Salem Rep. John Keenan is the new chairman for the Joint Committee on Telecommunications, Utilities and Energy, a job that has taken on greater significance with the nuclear disaster in Japan." Keenan spoke to the Salem News about nuclear power in Massachusetts. In response to the paper's inquiry regarding the safety of the nuclear plants within the state, Keenan says, "I think that was part of our goal for having the hearing last week at the Statehouse — to bring in the two companies, Entergy, who owns both Pilgrim and Yankee Vermont, and then NextEra, which owns Seabrook." Keenan said, "I was certainly comfortable with their responses and their talking about their preparedness for any sort of natural disaster or sabotage or those sorts of things, and talking about their backup systems."

EPA To Test Pennsylvania Water Wells For Nuclear Plant, Dump Contamination.

The AP (4/18) reports, "The federal Environmental Protection Agency plans to test the water wells in a tiny southwestern Pennsylvania village to see if they've been tainted by nuclear waste dumped nearby from a defunct plutonium fuel plant." According to the article, "Officials tell the Valley News Dispatch in Tarentum that the testing is planned later this year in the village of Kiskimere, which is in Parks Township, about 35 miles northeast of Pittsburgh." The report notes that "the village has about 50 homes near the former Nuclear Materials and Equipment Corp. plant and a waste dump along Route 66."

Committee To Review Cancer Risk From Proximity To Nuclear Power Plants.

The Superior (WI) Telegram (4/19, Quirnbach) reports, "The Nuclear Regulatory Commission (NRC) recently asked the National Academy of Sciences to look at the possibility that living near

a nuclear power plant boosts the risk of getting cancer." Paul DeLuca, UW-Madison provost and medical physicist, is on the study committee. DeLuca says "cancer rates vary across the US and the scientists are looking into whether having a nuclear power plant close by might raise local cancer rates or lower them." He adds that "if there's a local nuclear power plant, it's less likely a big polluter like a coal-fired power plant will be nearby."

Malloy Says Controversial "Millstone Tax" Won't Be Approved. The Hartford Courant (4/19) reports, "Gov. Dannel P. Malloy predicted Monday that the highly controversial 'Millstone tax' on the state's nuclear power plants will not be approved." Malloy said instead "a key legislative committee this week would approve an electricity generation tax that is closer to his idea than the Millstone tax that would charge the two nuclear plants about \$330 million a year." On Monday, Malloy said, "I don't see that there is the political desire to tax one purveyor of energy by \$300-plus million."

Tax would affect Attleboro. The Attleboro Sun Chronicle (4/19, DeMelia) reports, "The Connecticut Legislature is considering enacting a tax on electric generation that would cost North Attleboro Electric Department up to \$339,643 per year because it receives electricity from Connecticut's Millstone nuclear plant." North Attleboro Electric's James Moynihan said, "It's definitely a concern because it's an added cost that is not included our budget." The Sun Chronicle notes, "The \$339,643 figure is an estimate of the impact provided by the Massachusetts Municipal Wholesale Electric Company, which owns 4.8 percent of Millstone Unit 3, a nuclear power plant in Connecticut." The Providence Business News (4/19) is also covering this story.

Editorial Concerned About Long Island's Proximity To Millstone Station. An editorial in the Sag Harbor Express (4/19) writes on the how a nuclear disaster at Millstone Nuclear Power Station could impact the East End of Long Island. The Express continues, "It's a frightening scenario, but one Millstone has never had to envision, since the NRC requires them to only put evacuation plans into place for an area within a 10 mile radius of the reactor— which conveniently avoids the East End all together, but just barely." State Assemblyman Fred Thiele and State Senator Ken LaValle "are introducing legislation that would require New York's State Emergency Management Office to conduct a review of disaster plans for all nukes in the state or those within 50 miles of state borders — which would include Millstone." The Express opines, "We say it's about time and hope this legislation has legs."

San Luis Obispo Supervisors Call On PG&E To Withdraw Diablo Canyon Relicensing Application. California's Adobe Press (4/19) reports, "The San Luis Obispo County Board of Supervisors believes Pacific Gas and Electric Co. should stop relicensing efforts" at Diablo Canyon plant, and last Tuesday, agreed unanimously "to send a letter to PG&E requesting the company voluntarily withdraw its relicensing application" for the plant. Supervisor Jim Patterson said that with 13 or 14 years before the licenses expire, "There's no real hurry here. If PG&E wants to regain the public's trust, they need to withdraw the application." Monday, "PG&E announced it would undertake the 3-D seismic studies and has asked the NRC to delay issuing new licenses, if approved, for Diablo Canyon until the studies are completed and reviewed by company scientists."

Japanese Crisis Raises Doubts For Proposed MOX Plant In South Carolina. The New York Times (4/19, Becker, Broad, 950K) reports on the construction of a nuclear project in South Carolina that aims to safeguard weapons-grade plutonium by turning into a new fuel called mox, or mixed oxide. Noting that one of the troubled Japanese reactors uses the mox fuel, the Times says that "against that backdrop, the South Carolina project has been thrown on the defensive, with would-be buyers distancing themselves and critics questioning its health risks and its ability to keep the plutonium out of terrorists' hands." The report adds, "the most likely customer, the Tennessee Valley Authority, has been in discussions with the federal Department of Energy about using mox to replace a third of the regular uranium fuel in several reactors - a far greater concentration than at the stricken Japanese reactor, Fukushima Daiichi's Unit No. 3, where 6 percent of the core is made out of mox."

Argument Made That Coal Poses More Danger Than Japan Radiation. In a story that attempts to dispel fears that Japan's nuclear crisis poses an immediate threat to Americans, the Orange County (CA) Register (4/19, Zender) mentions that "most of us consider acceptable the much higher doses we receive as 'background radiation' from natural and benign man-made sources." The article adds that "these pervasive sources include cosmic rays, radon seepage from uranium decay in Earth's interior, and highly dispersed uranium and thorium from coal combustion." According to the Register, "Watt-for-watt, a coal-fired electricity plant emits into the environment fly ash particles that carry about one hundred times more radioactivity than emitted by a nuclear plant."

ORNL Shuts Down Internet Access, Email After Cyber Attack.

The Knoxville (TN) News Sentinel (4/19, Munger) reports, "A highly sophisticated cyber attack -- known as Advanced Persistent Threat -- forced Oak Ridge National Laboratory to shut down all Internet access and email systems over the weekend." ORNL Director Thom Mason said that "those restrictions will remain in place until lab officials and others investigating the attack are sure the situation is well controlled and manageable." He explained that "the lab's cyber specialists had been monitoring the attack and recommended further action after it looked like efforts were under way to remove data from ORNL systems." Mason said that the lab had not detected any large-scale exfiltrations of data, and shut down access in order to prevent anything similar to a 2007 cyber attack on the lab in which large amounts of data were stolen.

INTERNATIONAL NUCLEAR NEWS:

High Radioactivity Levels Could Complicate Plans For Japanese Plant.

The New York Times (4/19, A6, Tabuchi, Subscription Publication) reports, "Robots deployed inside two reactors at the Japanese nuclear plant overrun by last month's devastating tsunami have detected radiation levels too high for workers to enter, posing immediate challenges for a new plan to bring the ravaged complex under control by year's end." Workers have not been able to enter the reactors at the Fukushima Daiichi Nuclear Power Plant, but on Sunday, two robots were able to enter two of the reactors to take temperature, pressure and radioactivity readings, which, "released Monday, showed continued high radiation levels." Hidehiko Nishiyama, deputy director general at the Nuclear and Industrial Safety Agency, said the levels "would require the plant's operator, the Tokyo Electric Power Company, to be 'creative' in bringing the plant to a stable state known as a cold shutdown within six to nine months, as the company laid out in a timetable on Sunday."

Nevertheless, the AP (4/19) reports, "officials remained hopeful they can stick to their freshly minted 'roadmap' for cleaning up the radiation leak and stabilizing the Fukushima Dai-ichi plant by year's end so they can begin returning tens of thousands of evacuees to their homes." Chief Cabinet Secretary Yukio Edano said, "Even I had expected high radioactivity in those areas. I'm sure (plant operator Tokyo Electric Power Co.) and other experts have factored in those figures when they compiled the roadmap."

Bloomberg News (4/19, Okada) explains that "measurements show one hour inside the No. 3 reactor building would expose humans to more than one-fifth of the

radiation Japan has said is the most workers can endure in a year, the atomic safety agency said yesterday."

In addition to high levels of radioactivity, the Christian Science Monitor (4/19) reports, there are other obstacles to TEPCO's plans to get its nuclear reactors under control. Nuclear engineer David Lochbaum says that "adding water to the reactor vessels to further cool the damaged uranium fuel rods could have negative consequences...First, it could allow a nuclear reaction to take place again. Second, it would add more water to a structure already carrying a huge load of water in the basement."

Reuters (4/19, Negishi) adds that TEPCO's plans could be further complicated by other unknown factors, such as another powerful earthquake.

TEPCO Begins Pumping Radioactive Water From Unit 2 Building.

The AP (4/19) reports TEPCO "began pumping highly radioactive water Tuesday from the basement of one of its buildings to a makeshift storage area in a crucial step toward easing the nuclear crisis. Removing the 25,000 tons of contaminated water that has collected in the basement of a turbine building at Unit 2 of the Fukushima Dai-ichi plant will help allow access for workers trying to restore vital cooling systems that were knocked out in the March 11 tsunami." Hidehiko Nishiyama of Japan's Nuclear and Industrial Safety Agency said that TEPCO "is trying to develop a system to decontaminate the incoming water so that it can be reused to cool the plant's reactors." AFP (4/19) also reports this story.

In Country Known For Technological Savvy, US

Robots Deployed. In a separate story, the AP (4/19) points out that "in this country of break-dancing androids and artificially intelligent pets, nuclear cleanup crews on the tsunami-ravaged northern coast are depending on US-made robots to enter damaged reactor units where it is still too dangerous for humans to tread." Robots from iRobot Corp. called PackBot have been deployed in the reactors. "TEPCO spokesman Shogo Fukuda said the company has only now begun using the robots because it took several weeks for crews to learn how to operate the complex devices. Although Japan has a sophisticated robotics capability, most of its development is in household applications rather than disaster recovery." The AP also notes that the PackBot has been deployed in other disaster zones, such as the rubble of the collapsed World Trade Center following the Sept. 11, 2001 terrorist attacks.

Asian Nuclear Renaissance Occurring In Areas At Risk For Tsunamis.

The AP (4/19, McDowell, Mason) reports that "at least 32 plants in operation or under construction in Asia are at risk of one day being hit by a tsunami, nuclear experts and geologists warn." The continent, which is also "the world's most seismically charged

region, is undergoing a nuclear renaissance as it struggles to harness enough power for its huge populations and booming economies. But China, Taiwan, India and several other countries frantically building coastal facilities have made little use of new science to determine whether these areas are safe." And even when seismic studies have been done, in many cases the results have not been shared with the UN's International Atomic Energy Agency.

State Department Calls Talks Between Koreans

"Essential First Step." AFP (4/19) reports, "Restarting a dialogue between North Korea and South Korea is an 'essential first step' to returning to multinational talks on ending North Korea's nuclear program, State Department spokesman Mark Toner said on Monday." Said Toner, "A successful rapprochement between North and South Korea is an essential first step before we can consider getting involved diplomatically again or even talk about six-party talks."

Iran: Lift Sanctions Or Face Oil Prices At

\$150/Barrel. The Washington Times (4/19, Birnbaum, Lake) reports, "The head of Iran's central bank warned that oil prices will rise above \$150 a barrel if economic sanctions against the Islamic theocracy are not lifted soon." Mahmoud Bahmani told the WTimes, "Iran can have an effect on world energy and fuel. Fuel prices will go up dramatically. ... If sanctions are not removed, particularly sanctions against banks and other economic sanctions, the price of oil will go above \$150 a barrel."

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Subject: NRC News Summary for Tuesday, April 19, 2011
Date: Tuesday, April 19, 2011 7:08:10 AM
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Subject: COMMISSION E-READER....TUESDAY, APRIL 19, 2011
Date: Tuesday, April 19, 2011 10:26:56 AM
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Tab B 04-15-11 Markey .pdf
Tab C 04-15-11 Griest 11-0230.pdf
Tab D 04-11-11 Washington -CFCNCA 11-0231.pdf
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READING FILE

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- **Tab "B" 04/15/11 -- Letter from Rep. Edward Markey, expresses concern regarding the post-Fukushima meltdown inspections currently being conducted by NRC personnel at U.S. nuclear power plants.**

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TUESDAY, APRIL 19, 2011 7:00 AM EDT

WWW.BULLETINNEWS.COM/NRC

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NRC NEWS:

'What Ifs' And Japan Lessons Make Nuclear Safer, Sen. Lamar Alexander Says (CHTNGA)

By Pam Sohn

Chattanooga Times Free Press, April 19, 2011

SPRING CITY, Tenn. — In a building off to the side of Watts Bar Nuclear Plant, TVA's nuclear operators have been playing "what if" for the last month.

What if a very large earthquake occurred? What if the quake caused a dam break? What if more than one reactor lost cooling power?

On Monday, as reporters waited to hear Sen. Lamar Alexander, R-Tenn., report on what he and Nuclear Regulatory Commissioner Bill Ostendorff saw on a tour of the plant that morning, three operators in a control room simulator responded to a mock earthquake and electric power loss for cooling to the reactor.

Bells and alarms sounded, light flashed, and the trio of operators jumped to action.

Even before an 9.0 earthquake in March dismantled the electrical power system to the six Japanese reactors and a tsunami swept away the fuel for the plant's back-up diesel generators, US nuclear plant operators drilled for 240 hours a year in this and similar training rooms across the US

But since the accident at the Fukushima Dai-ichi plant in Japan, the US simulators also have become testing grounds of "stacked" disasters.

"The trainers are like Satans. They just keep on injecting failures upon failures on these poor operators," said Ray Golden, TVA's nuclear spokesman.

After his tour, Alexander gave the plant and nuclear power glowing praise, adding that he and Ostendorff saw a "whole variety of backup ways" to deal with any loss of power and cooling such as what plagued the Japan plant.

He also used his time with reporters to tout the safety of storing spent nuclear fuel at the plant sites and to talk about what he sees as an opportunity to recycle the spent fuel.

"I favor investing in new research which is being done in Oak Ridge and other places to find ways to recycle and reuse nuclear fuel in a way that will reduce the mass and permit it to be reused over and over and over again," Alexander said.

Recycling nuclear fuel, sometimes called reprocessing, already is done in France and some other countries but is not allowed in the US Critics say it is a nuclear proliferation risk and creates more waste.

"I'm here today because it's very important, especially for those of us who believe nuclear power is important part of our region's and country's future, to make sure our plants are being operated as safely as possible, especially after the Japan incident," Alexander said.

Ostendorff, a former nuclear submarine commander, used the word "impressive" to describe the Watts Bar maintenance work he saw Monday during a refueling outage.

He and Alexander said nuclear power has an enviable record. There has never been a fatality in connection with any of the 104 reactors in America, or with the many nuclear reactors on US Navy ships.

"Three Mile Island was our most celebrated nuclear accident in the United States, and no one was hurt," Alexander said.

Nuclear power is about 30 percent of TVA's power generation mix, and it is about 80 percent of what Alexander termed "clean" electricity.

"By 'clean' I mean no air pollution from sulfur, nitrogen or mercury," he said. "That's important to our health. It helps attract tourists. It's important to Volkswagen as it tries to attract suppliers to East Tennessee.

As for the "what ifs" rehearsed in the simulator control rooms of Watts Bar and other TVA nuclear operators, the exercise already is prompting change, said John Dalton, TVA's Watts Bar operations training manager.

The utility will be toughening up the electrical power "switchyard" to Watts Bar to further protect it against seismic events. TVA officials told the utility's board of directors of the plan last week, along with new plans to add additional diesel generators, portable generators and satellite phones.

Sen. Alexander, NRC Check Safety Of TVA Watts Bar Nuclear Plant (WATE)

WATE, April 19, 2011

Sen. Alexander, NRC check safety of TVA Watts Bar Nuclear Plant

Sen. Alexander, NRC check safety of TVA's Watts Bar Nuclear Plant

Government officials were in Spring City Monday to tour the Tennessee Valley Authority's Watts Bar Nuclear Plant. The goal was to research what would happen if there was an emergency.

Monday, April 18, 2011 12:00 AM

By DENAE D'ARCY

6 News Anchor/Reporter

SPRING CITY (WATE) - Government officials were in Spring City Monday to tour the Tennessee Valley Authority's Watts Bar Nuclear Plant.

The goal was to research what would happen if there was an emergency.

Tennessee Republican Sen. Lamar Alexander as well as Bill Ostendorff, a member of President Barak Obama's Nuclear Regulatory Commission, got a tour of the plant.

Part of that tour included an emergency simulation from a control room used for training.

While members of the media looked on, a loud alarm went off and a worker called saying, "I'm outside doing my routine and I felt the ground shake. I think we're having an earthquake."

By the time the call came in, three licensed operators were already reacting to seismic disruptions. The operators train once every month and must pass protocol tests to keep their licenses.

John Dalton, the operations training manager at Watts Bar, described how the training center is set up. "We have all of this fitted with microphones and recording devices. There are also video cameras so we can watch everything the operators do and play it back for them and critique it. This helps evaluate all of their moves."

Beyond critiquing the training, Alexander and Ostendorff were critiquing safety in light of the disaster at the Fukushima nuclear plant in Japan.

"The important thing for the people of Tennessee to know is that most of the problems in Japan came from a simple problem. There wasn't electricity to put water in to cool the fuel rods," Alexander said.

The NRC established 30, 60 and 90-day task forces to study the problems at Fukushima.

When asked about areas of concentration in the first 30 days of research, Ostendorff said, "Response of a plant to an external event such as a hurricane, tornado, flooding, or an earthquake. We look at how our plants are built and how we deal with a station blackout. We also look into specific back-up modes."

Alexander and Ostendorff toured back-up facilities at Watts Bar including diesel generators which are 50 feet above the flood plain, on a man-made berm encased in concrete buildings.

TVA Chief Operating Officer Bill McCollum also talked to reporters on Monday. He says the utility began an internal review of all emergency protocol at its plants after problems at Fukushima.

Sen. Alexander On Watts Bar Nuclear Safety (WTVC-TV)

By Natalie Jenereski

WTVC-TV Chattanooga, TN, April 19, 2011

There has never been a death at a U-S nuclear reactor. And in light of the recent disaster in Japan, authorities here are making sure that doesn't change.

Tennessee Senator Lamar Alexander paid a visit to Watts Bar Nuclear Plant Monday. Officials at the Tennessee Valley Authority say they are confident that a nuclear disaster, like the one in Japan, won't be happening there. But that doesn't mean they haven't been taking some extra precautions:

John Dalton, TVA Training Manager said, "I don't know that we've made any changes yet, but we've done a lot of communications, a lot of lessons learned."

Sen. Alexander said he was impressed by his tour.

"The management supervision and maintenance that's going on today with several thousands workers on site, that's a big effort, and that's a hard effort," said the senator.

NRC Commissioner Bill Ostendorff said, "We have a lot of systems that we saw here today, which would provide this reactor with plenty of water, plenty of electricity in the event of a big problem."

They say employees are the backbone of what they call this "indestructible operation."

180 of them are currently training for everything from a minor glitch to a major disaster. Trainees go through a rigorous regimen on a simulator... and psychological exams. TVA says it is a proactive approach, so that, if needed, workers can effectively react.

According to TVA's website, 30 percent of the Tennessee Valley's electricity is produced by nuclear plants like Watts Bar.

Sen. Alexander, Officials, Tour Watts Bar Nuclear Plant (WBIR)

By Steve Butera

WBIR-TV Knoxville, TN, April 19, 2011

Following the March disaster at the Fukushima Nuclear plant in Japan, there's been ongoing concern about energy safety in East TN.

Senator Lamar Alexander, along with Nuclear Regulatory Commission's Bill Ostendorff and TVA officials toured the Watts Bar Plant in Rhea County Monday to see how the nuclear site stacks up.

"Nuclear power is important to the Tennessee Valley, because it is 80% of our clean electricity today," said Sen. Alexander.

They said there are significant differences between what happened over in Japan, and what could ever happen in Rhea County. This includes geography and the design of the plant.

"For Fukushima, the problems they had was they didn't have enough water, didn't have enough electricity to pump water," said TVA operation training manager John Dalton. "For a while they had enough water by pumping steam into their reactor."

Meanwhile, officials report that Watts Bar has ways of pumping water into the system to cool down reactors, whether power goes out or not.

"Over the rest of the year, 2011, we're going to take a hard look at our existing plant safety and if there are lessons learned in Fukushima," NRC Commissioner Bill Ostendorff added. "If there's a need for changes, I'm confident we will do so."

Sen. Alexander will report to Washington about his findings at Watts Bar.

Currently, the plant is on a temporary refueling outage. It's a standard procedure for maintenance work, TVA officials added.

Watts Bar Nuclear Plant Touts Safety (WRCB)

By Antwan Harris

WRCB-TV Chattanooga, TN, April 19, 2011

RHEA COUNTY, TN (WRCB) – The key word of Monday's tour was safety. Republican Senator Lamar Alexander (TN) says he was pleased with what he saw.

Engineers put on a demonstration of what happens if the worst were to come.

Sirens sounded as seismic activity is detected at Watts Bar, knocking a reactor off line.

Engineers work diligently to put out fires one by one in this disaster simulation training.

The team of three, worked for 5 minutes through an earthquake to secure personnel, avoid further issues, and get a rattled reactor operational.

It's all part of the government's plan to reduce the risk of plant failures and ensure safety.

Watts Bar Operations Manager, John Dalton, said, "We are looking hard at how our disaster response is set up and what we can put in place to address those."

Sen. Alexander said United States nuclear plants go above and beyond strict safety regulations, thus making them the safest on the planet.

Sen. Alexander said, "There are 104 reactors in America. There has never been a fatality at one of them."

A Japanese rescue crews are still sifting thru the rubble of the Fukushima Plant just over a month after the devastation.

Nuclear Regulatory Commissioner Bill Ostendorff said the NRC formed a safety committee of top government engineers after the events of Fukushima.

"The task force is going to look at the Fukushima incident and address anything that is appropriate and any changes that need to be made," Ostendorff said.

Sen. Alexander Tours Watts Bar, Says Nuclear Still The Best Way To Produce Electricity (WDEF)

By Bill Mitchell

WDEF-TV Chattanooga, TN, April 19, 2011

The American nuclear power industry has learned much from the tragedy now unfolding in Japan.

US Senator Lamar Alexander and the Commissioner of the Nuclear Regulatory Industry gave their assessment during an inspection of the Watts Bar Nuclear Plant Monday morning.

The nuclear plant disaster in Japan has brought all U-S plants under close scrutiny in the last four weeks.

Watts Bar, which has one operating reactor and is building Unit 2, is actually shut down for regular maintenance as Sen. Lamar Alexander and NRC Commission Bill Ostendorff come for an inspection.

As they toured the plant, one of the specialized teams who operate the reactor ran through an emergency in a training simulator. In this case, it was a make-believe earthquake, which was handled correctly according to inspectors.

The senator got down to business quickly.

SEN. LAMAR ALEXANDER, (R) TENNESSEE "We continue to have an enviable safety record for nuclear power, not just in Tennessee but in the country. No fatalities in connection with our 104 reactors or any of the navy reactors and we want to keep it that way."

NRC Commissioner Bill Ostendorff is an Obama administration appointee who is a former commander of a nuclear attack submarine. It was his second visit to Watts Bar in a year.

BILL OSTENDORFF, NRC COMMISSIONER "We're taking a hard look at our existing plant safety, and if there are lessons learned from Fukushima, that suggest we need to make changes, I'm confident we'll do so."

Safety is still the main issue as far as the public is concerned, according to TVA chief operating officer Bill McCollum.

BILL MCCOLLUM, TVA CHIEF OPERATING OFFICER "Although we have many systems in place and diverse means of assuring protection of the core and the fuel here at Watts Bar and our other plants, we not resting on those preparations...we're learning all the lessons that we can."

SEN. LAMAR ALEXANDER "My report in Washington will be that the more the people of Tennessee and this country, know about nuclear the better."

Sen Alexander points out that nuclear power produces 80% of the Tennessee Valley's clean, reliable and emission free electricity.

Nuclear Plant Road Needs Improvement (DECD)

Decatur (AL) Daily, April 19, 2011

One of the many lessons from the nuclear crisis in Japan is that the same natural disaster that damages a nuclear plant also can play havoc with the roads. The earthquake and flooding in Japan hampered evacuation efforts and limited the ability of government and nuclear workers to get equipment to the plant.

Nuclear Plant Road, which runs from US 31 in Limestone County to Browns Ferry Nuclear Plant, is an essential part of the evacuation route for hundreds of residents whose close proximity to the plant puts them at the greatest risk. Most of the road is only 19 feet wide, with no shoulder. It has sharp curves, a rail crossing with no gates, poor striping and a weight-restricted bridge.

The main Browns Ferry evacuation routes need to be robust. Even without a disaster, Nuclear Plant Road is in poor shape. Add an earthquake and panicked residents, and the only eastward evacuation route from the plant likely would be useless.

Limestone County has accepted most of the risk for the regional benefit provided by Browns Ferry's power production. Athens and Limestone officials are reasonable in their request that federal dollars assist in improving Nuclear Plant Road. Assistance from TVA also would make sense, since it has the ability to pass the cost of the repairs to all those who benefit from the plant.

Entergy Sues To Keep Vermont Nuclear Plant Open (AP)

By John Curran, Associated Press

Associated Press, April 19, 2011

MONTPELIER, Vt. — The owners of Vermont's troubled nuclear plant sued state officials Monday to stop them from closing the plant next year, setting up a court fight about who has jurisdiction — state or federal nuclear regulators.

New Orleans-based Entergy Corp., which recently won a new 20-year license for Vermont Yankee but has fought with state officials since the discovery of radioactive tritium at the plant, says the state doesn't have the authority to prevent continued operation of Vermont Yankee.

"The question presented by this case is whether the state of Vermont ... may effectively veto the federal government's authorization to operate the Vermont Yankee Station through March 21, 2032," the lawsuit says. "The answer is no."

The civil suit, filed in US District Court in Burlington by subsidiaries Entergy Nuclear Vermont Yankee and Entergy Nuclear Operations, lists the defendants as state Attorney General William Sorrell, Gov. Peter Shumlin and the members of the state Public Service Board.

"The battle is joined," Sorrell said.

Vermont is alone among the states in asserting that it has authority to block a nuclear plant re-licensing, historically the purview of the US Nuclear Regulatory Commission.

In 2006, it enacted a measure giving the Legislature the authority to say no to a license renewal for Vermont Yankee, a generating facility on the banks of the Connecticut River that's had somewhat of a love-hate relationship with the state since opening in 1972.

Lately, it's been more hate than love: Last year, the state Senate voted 26-4 to block the plant from operating past March 2012, when its state permit expires. That followed revelations that the plant in Vernon had leaked radioactive tritium into groundwater and soil around and admissions by its owners that they had misspoken when they told Vermont regulators and lawmakers that the plant didn't have the kind of underground piping that carries radioactive material.

Entergy argues that Vermont's law violates the Atomic Energy Act, which the company says gives jurisdiction to the federal government. The company also says the state unfairly impeded commerce when its officials said they would not grant a new state permit unless Entergy entered into power-purchase agreements with below-market rates favoring Vermont utilities over others.

In a conference call, Entergy Corp. executive Richard Smith said the company didn't want to resort to litigation.

"We believe we have made every reasonable effort to accommodate the state of Vermont and its officials while allowing for the continued operation Vermont Yankee, an outcome that benefits all stakeholders, including Vermont consumers and the approximately 650 men and women who work at the plant," he said.

The suit says Vermont officials changed the rules — set out in a 2002 memorandum of understanding when Entergy bought the plant — by passing a law four years later that said Yankee couldn't operate past 2012 without the Legislature's approval.

Under the original agreement, Yankee's owners needed the approval of the state Public Service Board, which the suit said is a "quasi-judicial expert decision-maker, independent of legislative control."

Giving lawmakers the say-so instead opened the door to politicians who could say no to re-licensing for arbitrary reasons, according to the suit.

Shumlin has called for the plant's closure, and environmental groups describe it as an aging facility that should be mothballed.

Shumlin, who says Entergy agreed to the terms of the law it is now challenging, stood shoulder-to-shoulder with Sorrell at a news conference Monday and read from a 2006 news clipping that quoted a Vermont Yankee spokesman welcoming it and commending lawmakers for passing it.

"Entergy is now attempting to rewrite history, breaking its own promises and its own support of Vermont law," Shumlin said. "Instead of following Vermont law, Entergy seeks to subject the taxpayers of Vermont to an expensive legal proceeding."

Shumlin said he met with Entergy representatives March 30 and that they told him then that they planned to keep operating the facility but not to sue the state.

"The point of the matter is that Entergy does not do business the way we do business in Vermont. We tell the truth. We follow the laws of the state," the governor said. "How can you complain about a law that you supported when it passed and was signed into law by (former) Gov. James Douglas? It just puzzles me."

Asked about the company's claim that state officials were holding up the permit in hopes of getting bargain prices on power, Sorrell said: "Let them prove that in court."

Environmental advocates said Entergy should follow the state's wishes.

"You need two permission slips," said James Moore, clean energy program director for the Vermont Public Interest Research Group, which has long sought Yankee's closure. "It can't be Dad told you one thing, Mom told you another. It doesn't work that way. You need permission from the state you operate in and from federal regulators."

Sandra Levine, senior staff attorney for the Conservation Law Foundation, a New England environmental advocacy group, said: "They're disobeying the law and they're asking the court to sanction their illegal activity."

Entergy had little choice but to sue, said William Driscoll, vice president of Associated Industries of Vermont, a 500-member group that represents manufacturers and related businesses.

"If the governor and legislative leaders do not now take responsibility for finding some sort of positive resolution of this issue with Vermont Yankee, they will ultimately be responsible for the harmful economic consequences that will result from the plant either shutting down or continuing to operate without favorable power contracts with our utilities," Driscoll said.

Nuclear Plant Sues Vt. To Stay Open (BOS)

Federal court case may echo across US

By Beth Daley

Boston Globe, April 19, 2011

Owners of the Vermont Yankee nuclear power plant filed a federal lawsuit yesterday to prevent state lawmakers from shutting the plant down when its 40-year license expires next year.

The Entergy Corp. lawsuit, filed in US District Court in Burlington, Vt., is expected to force a legal showdown over whether state governments can claim a role in the oversight of nuclear power plants, which are regulated by the federal government. What the courts ultimately decide is likely to have significance for some of the nation's 103 other operating reactors, especially those in states that have similar concerns about their safety.

If the Supreme Court were to reject Entergy's suit, other states could be empowered to pass legislation, as Vermont did in 2006, granting lawmakers the authority to approve or deny a plant's license extension, according to legal scholars. Vermont is the only state in the country that has such veto power, and last year the Senate voted overwhelmingly to shutter the plant in Vernon near the Massachusetts line.

"Despite the fact that Vermont Yankee is important to the reliability of the New England electric transmission grid, emits virtually no greenhouse gases, and provides more than \$100 million in annual economic benefits to the state of Vermont, it has been made clear that state officials are singularly focused on shutting down the plant," said Richard Smith, president of Entergy Wholesale Commodities. "That has left us with no other choice but to seek relief in the court system."

The move comes just weeks after the Nuclear Regulatory Commission granted Vermont Yankee approval to operate through March 2032 and in the midst of controversy about its age and design. The plant has the same basic design as the crippled Fukushima Daiichi nuclear facility in Japan that has had widespread radiation releases following a massive earthquake and tsunami there last month.

The Entergy lawsuit argues in large part that federal, not state, law governs licensing and operation of nuclear power plants, as well as radiological safety.

Vermont officials said they were legally justified in passing the 2006 law and argued that while the federal government oversees some portions of nuclear power plants, states also have a role to play. They contend the plant is too dangerous and old to continue operating and that Entergy did not object to the law that gave the Vermont House and Senate a final say in the plant's future operation.

"Entergy's lobbyists, executives, and lawyers all participated in that process," Governor Peter Shumlin said. "Indeed, Entergy expressed its support of that law at the time. Entergy is now attempting to rewrite history, breaking its own promises and its own support of Vermont law."

When Entergy purchased Vermont Yankee in 2002, the company agreed it would seek approval for a license extension from the Vermont Public Service Board. In 2006, the Legislature took that a step further, requiring a second level of state approval.

Since then, Entergy has had several problems with the plant on the banks of the Connecticut River. In 2007, a cooling tower partially collapsed. The plant's safety was not compromised, but the events stoked public concerns about the adequacy of plant maintenance.

Then last year, Entergy discovered elevated levels of tritium, a radioactive isotope of hydrogen, leaking from underground pipes that company officials initially said probably did not exist. Citing these events, the Senate voted 26 to 4 last year to close the plant next March when its license expires.

Legal scholars say the Vermont case could be important in defining state and federal oversight of nuclear issues. In a well known case in 1983, the US Supreme Court upheld California's right to ban construction of new plants until nuclear waste issues were resolved. The ruling acknowledged that states had some rights in nuclear issues.

The Vermont Yankee case could address an even broader question of federal oversight.

"That is, does the federal government have complete power over nuclear issues," said Boris N. Mamlyuk, who teaches administrative law at Ohio Northern University College of Law. Mamlyuk is researching the Vermont Yankee case. He says if federal courts uphold Vermont's right to intercede, then "Nevada, California, and other states will probably renew efforts to curtail the operation of nuclear power plants."

The Nuclear Energy Institute, an industry group, declined comment on the suit. But spokesman Tom Kauffman said: "We do believe it is important for the public to know that Vermont Yankee operates safely and very reliably."

But Michael Dworkin, director of the Vermont Law School Institute for Energy and the Environment and former chairman of the Vermont Public Service Board, questioned why Entergy had waited five years to complain about the law.

"They are a little late out of the gate," Dworkin said. "If Entergy believed [the law was wrong] they should have said it then."

Beth Daley can be reached at bdaley@globe.com.

Vermont Yankee Nuclear Plant Owners File Suit To Stay Operating (BOS)

By Beth Daley

Boston Globe, April 19, 2011

Owners of the Vermont Yankee nuclear power plant filed a federal lawsuit this morning to prevent Vermont lawmakers from shutting the plant down when its 40-year license expires next year.

Vermont is the only state in the country that requires a nuclear plant to get legislative approval for a license extension. Last year, the state Senate voted 26-4 to close the Vernon plant, near the Massachusetts border.

The move comes just weeks after Vermont Yankee, owned by Entergy Corp. received approval to operate another 20 years from the Nuclear Regulatory Commission – and in the midst of a maelstrom of controversy about its age and design. Vermont Yankee has the same design as the crippled Fukushima Daiichi nuclear facility in Japan that has caused widespread radiation releases following a massive earthquake and tsunami there.

"We have made every reasonable effort to accommodate the state of Vermont and its officials while allowing the continued operation of Vermont Yankee – an outcome that benefits all stakeholders, including Vermont consumers and the approximately 650 men and women who work at the plant," said Richard Smith, president of Entergy Wholesale Commodities.

Vermont Gov. Peter Shumlin is a critic of the plant and has pledged to shut it down.

The legal action, while expected, will be a showdown between state and federal authority. Entergy is arguing, in part, that the state has no authority over nuclear power plant licensing and operations or its radiological safety.

Yet Vermont lawmakers disagree. Long-simmering anti-nuclear sentiment in the state accelerated after the plant received NRC permission to increase its power output by 20 percent in 2006.

The next year, a cooling tower partially collapsed. The plant's safety was not compromised, but the events stoked public concerns about the adequacy of plant maintenance. Then last year, Entergy discovered elevated levels of tritium, a radioactive isotope of hydrogen, leaking from underground pipes after company officials told state officials the pipes did not likely exist.

Other nuclear plants have been able to overcome local opposition because the NRC, not local legislators, has final say in whether the plants can be relicensed. In 2006, the Vermont Legislature passed a law requiring the Yankee plant to get its approval to continue operating after next year.

Plant Owner Sues Vermont Over License For Reactor (NYT)

By Matthew L. Wald

New York Times, April 19, 2011

The owners of the Vermont Yankee nuclear power plant filed a federal lawsuit against state officials on Monday challenging the constitutionality of a state law giving the Vermont legislature veto power over operation of the reactor when its current license expires next March.

The federal Nuclear Regulatory Commission had granted the 39-year-old reactor a 20-year operating extension last month, setting up a court battle over who will decide whether the plant can operate.

The parties bringing the suit are two subsidiaries of the Entergy Corporation, which is based in New Orleans and sells power on the open market. When they bought the plant from local utilities in 2002, they signed an agreement with Vermont's regulatory agency, the Public Service Board, agreeing that when the plant's 40-year federal operating license expired in March 2012, its "certificate of public good," would also need to be renewed. The state requires such certificates of all big power plants.

Vermont added another layer when it enacted a law forbidding the Public Service Board from granting such a certificate without the legislature's approval.

In February 2010, the State Senate voted, 26 to 4, to refuse to grant such a certificate to Vermont Yankee, partly at the urging of the governor, Peter Shumlin, who was then a state senator. The House did not vote.

Richard Smith, an Entergy executive, said the legislature had improperly taken the decision out of the hands of experts at the Nuclear Regulatory Commission and given it to "political decision makers." Only the Nuclear Regulatory Commission can make decisions about safety, he said.

But Mr. Shumlin, a Democrat, said the state legislators thought the plant was too old to operate reliably.

"I don't talk about safety; it's not my concern," Mr. Shumlin said in a news conference in Montpelier after the suit was filed.

Underlying the struggle is that the plant has had embarrassing operational lapses in recent years, and is the same vintage and design of No. 1 reactor at the Fukushima Daiichi plant in Japan, which was damaged in the March 11 earthquake and tsunami.

Mr. Smith said in a telephone conference call: "You will hear that Entergy is going back on its word and breaking the deal it made in the 2002 Memorandum of Understanding. This is not true. We believe the general assembly changed the rules, and left us with no other choice."

The suit, filed in Federal District Court in Burlington, argues that the federal government has exclusive jurisdiction on nuclear safety questions. But it also says that the state is trying to interfere with the interstate electricity market.

It accuses state officials of having suggested that they would grant a new operating certificate to Vermont Yankee if Entergy offered utility price breaks to Vermont residents. That would violate the federal authority's exclusive right to regulate interstate commerce, the lawsuit says, because it would result in consumers in New Hampshire and Massachusetts paying higher rates.

The civil suit, filed by the subsidiaries Entergy Nuclear Vermont Yankee and Entergy Nuclear Operations, names the governor, State Attorney General William Sorrell and the members of the Public Service Board as defendants.

Mr. Smith said the plant should be allowed to keep running partly because it had received good ratings from an industry group, but the company refused to release the report.

The plant has had operational problems. A wooden cooling tower collapsed in August 2007. Also, plant officials appearing before two state panels were asked whether the reactor could leak tritium, as other reactors have. They answered that it had no buried pipes, but a few months later, a tritium leak was discovered from an underground pipe.

Entergy officials said the company tried to sell the troubled reactor, but no buyers stepped forward. The company must decide by July whether to order fuel to run the reactor beyond this fall.

Gov. Shumlin Says State Will Fight Entergy's Vermont Yankee Lawsuit (BURFP)

By Terri Hallenbeck

Burlington (VT) Free Press, April 19, 2011

MONTPELIER — Vermont Yankee owner Entergy Corp. turned to federal court Monday to try to keep Vermont from shutting down the Vernon nuclear power plant, setting the stage for a final fight with the state regarding the plant's future.

In a lawsuit filed in US District Court in Vermont, the company argued the state has no right to stop the plant from operating.

"It's been made clear that the governor and many in the General Assembly have concluded that the plant should be shut down. This has left us with no other choice but to seek relief in the court system," Richard Smith, president of Entergy Wholesale Commodities, said in a Monday conference call.

Gov. Peter Shumlin and Attorney General William Sorrell said the state will fight the lawsuit. "We have been ready for this," Shumlin said.

Sorrell said three attorneys from his office and Public Service Department lawyers have been preparing for a lawsuit for months.

Entergy's lawsuit asks for a temporary injunction against any Vermont efforts "to shut down or make preparations to shut down" Vermont Yankee while the case is pending. The lawsuit also seeks a ruling permanently prohibiting the state from shuttering the plant. The company is demanding, too, that Vermont pay Entergy's attorney fees and costs.

The US Nuclear Regulatory Commission last month granted the 39-year-old Vermont Yankee plant a 20-year extension of its operating license. The plant has failed to win state permission to keep operating, however, amid concerns involving tritium leaks and misinformation the company supplied to the state related to the leaks.

Previous agreement

In a 2002 agreement with the state when Entergy bought the plant, the company agreed to follow state review for renewed operation of the plant. In its lawsuit, however, Entergy claims a 2006 law that made Vermont the only state where the Legislature has a say in the future of a nuclear power plant changed the ground rules. The law required the Legislature's approval before the Public Service Board could consider granting the plant a certificate of public good.

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"The 2006 state law took the decision about Vermont Yankee's future away from the Public Service Board, a quasi-judicial expert decision-maker, independent of legislative control," Smith said. "It instead placed Vermont Yankee's fate in the hands of political decision-makers."

The state Senate in 2010, under then-President Pro Tempore Shumlin, voted 26-4 against allowing the Public Service Board to rule.

"This is not what we signed up for in 2002," Smith said.

"Vermont law is clear," Sorrell countered. "They signed agreements to abide by Vermont law."

The 2006 law passed the Legislature easily and was signed by Republican Gov. Jim Douglas without complaint from Entergy. In 2009, Vermont Yankee spokesman Rob Williams told the Burlington Free Press, "We did not oppose the Legislature's involvement because we felt then, as we do now, that open discussion on the state's long-term energy supply is in everyone's best interest."

Michael Dworkin, who was state Public Service Board chairman in 2002 when Entergy bought the plant, said Entergy is renegeing on the 2002 agreement.

"When Entergy agreed to submit to the board's jurisdiction, it was agreeing to a board that was a creation of the Legislature," he said. Overall, Dworkin called Entergy's lawsuit "very, very weak."

Federal or state control?

Entergy argues in its lawsuit that a state has no authority regarding the licensing of nuclear power plants, highlighting a 1983 US Supreme Court decision that determined only the federal government has jurisdiction over radiological safety.

"Vermont has asserted that it can shut down a federally licensed and operating nuclear power plant, and that it can regulate the plant based upon Vermont's safety concerns," Entergy stated in a news release Monday. The lawsuit cites instances in which Shumlin has referred to tritium leaks at the plant and other safety issues as reasons for shutting down the plant.

Dworkin said Entergy's argument failed to note the decision allows states jurisdiction over energy planning and other aspects of a plant.

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The US Nuclear Regulatory Commission has indicated states have a role in decision-making regarding nuclear power plants. NRC spokesman Neil Sheehan would not comment Monday other than providing this statement: "Entergy's legal challenge is a matter between the company and the state. The NRC has already granted a license extension after a comprehensive and thorough review that took more than five years."

Sorrell said he thinks other states will be watching closely for the outcome of Entergy's lawsuit and its impact on a state's role. "This is a case of potentially national significance," he said.

Sorrell, Shumlin and the three members of the Public Service Board are named as defendants in Entergy's lawsuit.

The lawsuit has been assigned to US District Judge J. Garvan Murtha, who presides in federal court in Brattleboro. The 34-page claim asks Murtha to rule on the issues, rather than having a jury decide. Among the other claims Entergy raises is that

Vermont should not be allowed to require state legislative or regulatory approval for Vermont Yankee to deliver power to the grid or store spent fuel at the site after March 21, 2012.

The lawsuit also says Vermont's regulation of the plant also represents an improper interference in interstate commerce by requiring Vermont Yankee "to provide below-market wholesale electricity rates to Vermont customers."

Reaction

The lawsuit was hailed by supporters of Vermont Yankee and denounced by opponents.

"It has been a failure of leadership and responsibility on the part of the (Shumlin) administration and legislative leaders that this issue has come to this point," said William Driscoll, vice president of Associated Industries of Vermont, which represents manufacturers with an interest in the cost of electricity and contends Vermont Yankee's offer to sell Vermonters power for 4.9 cents per kilowatt hour should not be passed up.

"By filing this lawsuit, Entergy is renegeing on a promise made to the people of Vermont," said James Moore, energy program director with Vermont Public Interest Research Group, which wants the plant shut down.

Vermont's three-member congressional delegation spoke in support of Shumlin's position.

"They're obviously going to mount a propaganda campaign and mount their lawsuit. They're will say what they want," Sen. Bernie Sanders, I-Vt., said Monday. "But I think the state Legislature did the right thing. It's what the people of Vermont wanted them to do, and I think that it's certainly lawful."

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Entergy Sues Vt (BR)

By Bob Audette

Brattleboro Reformer, April 19, 2011

BRATTLEBORO – The decision to file suit against Vermont was its "least favored approach," said Richard Smith, president of Entergy Wholesale Commodities, but the Legislature's refusal to allow the Public Service Commission to issue a certificate of public good for Vermont Yankee's continued operation "has left us with no other choice but to seek relief in court."

Early Monday morning, Entergy issued a press release announcing its decision to file suit in US District Court in the state of Vermont, seeking a declaratory judgment to prevent the state from shutting down the nuclear power plant in Vernon.

"It is clear our disagreement with the state of Vermont on the scope of its authority over Vermont Yankee cannot be resolved between the two parties," said Smith, during a teleconference. "Putting this dispute before a federal judge is the appropriate and responsible way to resolve this disagreement."

Last month, the Nuclear Regulatory Commission approved Entergy's relicensing application for Yankee, which authorized the plant to keep operating 20 years past its original license expiration date of March 21, 2012.

But in 2006, the Vermont Legislature passed Act 160, which gave it the power to prevent the PSB from issuing the certificate, which Yankee needs to continue operation. When Entergy bought the plant in 2002, it agreed in its memorandum of understanding to abide by the PSB's decision.

But Smith said the Legislature's passage of Act 160 "placed Vermont Yankee's fate in the hands of political decision-makers (depriving Entergy) of the opportunity to operate the Vermont Yankee plant ... for unsupported or arbitrary reasons."

Smith said no company likes to take legal action, particularly in a state where it operates.

"We made this decision after much consultation and examination of all possible options," he said. "We believe the General Assembly changed the rules and left us with no other choice."

Smith said the public will hear from those opposed to Yankee's continued operation that Yankee is going back on its word and is breaking the deal it made in the 2002 memorandum of understanding.

"This is not true," he said.

He said that Entergy disagreed with Act 160, but had made "considerable effort to achieve state approvals to allow the continued operation of Vermont Yankee without resorting to litigation."

Those efforts included offering Vermont utilities a 20-year power purchase agreement at a fixed price of \$49 per megawatt hour for the first contract year, followed by a market-adjusted pricing structure that ensured the utilities and their customers would benefit from low power market prices, which was well below comparable offers from other electricity providers.

Entergy also offered to negotiate with the Vermont Department of Public Service the establishment of a "date certain" for the commencement of decommissioning activities at Vermont Yankee earlier than the 60-year SAFSTOR period permitted by NRC regulations.

In addition, Entergy explored the potential sale of Vermont Yankee.

"Despite interest from some potential buyers, based largely on the superior operational record of the plant, Entergy was unable to reach commercial terms with any party due to the political uncertainty in Vermont; more specifically, due to the stated intent of Vermont officials to shut down the plant," said Smith.

"We believe we have made every reasonable effort to accommodate the state of Vermont ..." he said. "After exhausting all avenues, we reluctantly decided to seek relief in the federal court system."

The state also needs to consider Yankee's importance to the New England grid, the fact that it emits virtually no greenhouse gases, that its operation contributes \$100 million in economic benefits to the state and that it employs 650 people.

Because of the hard work of those employees, said Smith, Yankee has been one of the top performing nuclear power plants in the country and operated for 532 days straight between the last two refueling outages.

He also said that recent polling revealed more Vermonters want the plant to stay open than see it shut down.

Entergy's lawsuit is partially based on a 1983 Supreme Court decision, which ruled states have no authority over nuclear power plant licensing and their operation of radiological safety.

Smith also noted that statements from Vermont officials that it would not allow continued operation if Entergy didn't offer a purchase agreement the state would consider agreeable violated the Commerce Clause of the US Constitution, which prohibits the state from conditioning post-March 2012 operation of the Vermont Yankee Station on the plant's agreement to provide power to Vermont utilities at preferential wholesale rates.

"The Federal Power Act preempts any state interference with the Federal Energy Regulatory Commission's exclusive regulation of rates in the wholesale power market (and) The Commerce Clause of the US Constitution bars a state from discriminatory regulation of private markets that favors in-state over out-of-state residents," stated Entergy's court filing.

Entergy Files Suit To Stop Vermont From Closing Nuclear Plant Next Year (BLOOM)

By Don Jeffrey

Bloomberg News, April 19, 2011

Entergy Corp. (ETR), the second-largest operator of nuclear power plants in the US, sued the state of Vermont to prevent it from shutting down the Vermont Yankee plant next year.

Two Entergy subsidiaries asked for an order from the US District Court in Burlington, Vermont to prevent the forced closing of the plant in March, the New Orleans-based company said today.

Vermont breached an agreement with Entergy when it announced it wouldn't agree to the plant's remaining open after March 2012, the company said in the lawsuit. Vermont passed a law in 2006 that transferred authority to approve the operation of the nuclear plant to its General Assembly.

"We believe the state of Vermont changed the rules on us," Richard Smith, president of Entergy Wholesale Commodities, said today in a conference call. "We feel we have made every effort to find a resolution without resorting to litigation, but we were not successful."

The US Nuclear Regulatory Commission renewed Yankee's license this year to operate through March 2032, according to the complaint. Entergy said in the suit that a state may not interfere with the federal government's "exclusive authority over the operation of a nuclear power plant."

The suit names as defendants Governor Peter Shumlin, Attorney General William Sorrell and three Vermont Public Service Board members. The board oversees public utilities.

"We think this is an example of a company that doesn't want to follow the law," Shumlin said today in a telephone press conference. "The NRC does not believe Vermont doesn't have authority over the future of its nuclear power plants."

"We're going to fight very hard to stop operations in March 2012," Sorrell said at the press conference. "We hope to have a decision favorable to us from the District Court."

Entergy entered into a memorandum of understanding with the Public Service Board in 2002 when it acquired the plant, making concessions on energy rates in exchange for approval of the purchase. Entergy said the board has breached that agreement.

The company said it attempted to find a buyer for the plant last year. Smith said on the conference call that the company was unable to reach a deal with interested parties "because of political uncertainty in Vermont, specifically Vermont officials' stated intent to shut down the plant."

Vermont Yankee, operating since 1972 as the only nuclear power plant in the state, provides about one-third of Vermont's electricity, according to Entergy. It also supplies power to wholesale energy markets in New Hampshire and Massachusetts, Smith said.

The nuclear plant "emits virtually no greenhouse gases, and provides more than \$100 million in annual economic benefits to the state of Vermont," Entergy said today in a statement. It employs about 650 people.

Entergy is also a supplier of electrical power to Arkansas, Louisiana, Mississippi and Texas.

The company's shares fell 55 cents, or 0.8 percent, to \$65.97 at 4:03 p.m. in New York Stock Exchange composite trading. The stock has dropped 6.9 percent this year.

Exelon Corp. (EXC) is the largest US nuclear power plant operator.

The case is Entergy Corp. v. Shumlin, 1:11-cv-00099, US District Court, District of Vermont (Burlington).

Suit Seeks To Save A Nuclear Plant (WSJ)

By Matt Day And Mark Peters

Wall Street Journal, April 19, 2011

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

Vermont Nuke Plant Owner Sues To Keep Doors Open (CBS)

CBS News, April 19, 2011

Entergy Corp. has filed a lawsuit in Vermont to keep the Vermont Yankee nuclear power plant open past 2012.

The New Orleans-based company has federal approval to keep the plant running until 2032, but it so far has been unable to secure state approval.

The lawsuit was filed Monday in federal court in Vermont.

It says US Supreme Court precedent has found that states have no authority over nuclear plant licensing. It also says Vermont might be interfering with federal authority to regulate the wholesale power market.

Federal regulators last month gave the Vermont Yankee nuclear plant a 20-year license renewal, despite calls for reconsideration following the nuclear disaster in Japan.

Issuance of the license was a foregone conclusion after the NRC voted to approve it on March 10, one day before an earthquake and tsunami triggered the still unfolding crisis at the Fukushima reactors in northeastern Japan, which are of the same design and about the same age as Vermont Yankee.

Vermont Yankee spokesman Larry Smith said they were pleased to have the license in hand. But he added, "It's not a cause right now for any celebration in light of world events."

"I think the NRC has done their job," Smith added. "This has been a five-year review. There's been ample opportunity for people to weigh in."

The license renewal was granted a year to the day before Vermont Yankee's initial 40-year license was to expire. The plant still must be relicensed by the state, but the Senate last year rejected the idea, leaving its future uncertain.

The renewal was the first granted by the NRC since events in Japan began to unfold 10 days earlier.

Sen. Bernie Sanders, I-Vt., had issued a statement Sunday calling for a moratorium on new licenses or license renewals for US reactors in the wake of the Japanese crisis.

"It's hard to understand how the NRC could move forward for a license extension for Vermont Yankee at exactly the same time as a nuclear reactor of similar design is in partial meltdown in Japan," Sanders told The Associated Press. "The idea of keeping Vermont Yankee open ... until it is 60 years of age defies comprehension."

Vermont Yankee, which operations in 1972, is located in Vernon, in Vermont's southeast corner, within sight of New Hampshire across the Connecticut River and about three miles from the Massachusetts line. It's a General Electric Mark 1 boiling water reactor, as are the Fukushima reactors.

Entergy bought Vermont Yankee in 2002 from the group of New England utilities that had owned it and boosted its power output in 2005.

Vermont Yankee announced in January of 2010 that test wells had turned up evidence that radioactive tritium had leaked from underground pipes at the plant into surrounding soil and groundwater. Within days it was revealed that plant executives had misled state lawmakers and regulators — the latter under oath — by saying the plant did not have the type of underground pipes that carried radioactive substances.

Entergy 'Must Follow Our Laws,' Shut Nuclear Plant (DJNews)

By Matt Day

Dow Jones Newswires, April 19, 2011

Vermont's governor said Monday that his administration will resist a lawsuit brought by Entergy Corp. (ETR) challenging the state's authority to shut the Vermont Yankee nuclear plant.

Entergy "must follow our laws" and abide by the state's decision to let the plant close next year, Gov. Peter Shumlin said at a news conference.

The New Orleans-based company Monday filed a lawsuit in US District Court in Vermont to prevent its nuclear power plant there from having to shut down. Its current operating license expires in March 2012.

Entergy, the second-largest US nuclear plant operator, has won approval from federal regulators to operate the plant for another 20 years. But Vermont legislators have blocked the company from receiving a state certificate, which is needed to extend the reactor's life.

Entergy agreed to give state regulators a say in extending the plant's operating license when it bought Vermont Yankee in 2002. The state legislature revised the process in 2006, requiring approval from the Vermont House of Representatives and Senate before the public service board could proceed. Entergy contends in the suit filed Monday that the 2006 law invalidates the agreement, and the plant's fate should rest with federal regulators alone.

The state Senate last year overwhelmingly rejected a measure to extend the life of the plant.

Gov. Peter Shumlin Statement On Entergy's Vermont Yankee Lawsuit (BURFP)

Burlington (VT) Free Press, April 19, 2011

Today Entergy sued the State of Vermont in US District Court in Vermont. Entergy's lawsuit claims that Vermont should have no role in approving Vermont Yankee's continued operation after March 2012.

As Governor, I have taken an oath to uphold and protect the laws of our state and I want to reassure Vermonters that I will keep that promise. Fortunately, we are ready for this event. The Attorney General's Office and other state agencies have been working hard to prepare a defense and protect our state's laws.

In 1972, Vermont Yankee began to operate after our Legislature voted to allow a nuclear plant to be built in our state under a 40-year license, until 2012. In 2006, mindful of its proper role in the process, the Legislature passed a law, signed by my predecessor Governor James Douglas, that clearly outlined the requirements for the continued operation of a nuclear power plant in our state. Entergy's lobbyists, executives and lawyers all participated in that process – indeed, Entergy expressed its support of that law at the time.

Entergy is now attempting to rewrite history, breaking its own promises and its own support of Vermont law. Instead of following Vermont law, Entergy seeks to subject the taxpayers of Vermont to an expensive legal proceeding. I am deeply concerned about this action because it flies in the face of commitments made by Entergy. When it purchased Vermont Yankee, Entergy clearly agreed that it must obtain a new state license to operate beyond March 2012, and that it would not attempt to claim preemption regarding the state's licensing decision. The Public Service Board relied upon that promise when it allowed Entergy to purchase the plant. Later, Entergy supported the law passed by the legislature and signed by my predecessor giving the legislature a role in the state licensing process.

Yet now, as March 2012 approaches and the state license is not in hand, we see Entergy's executives breaking their agreement and their word once again. Vermont has a proper role in granting or denying state approval for Vermont Yankee. We are confident that the Court will recognize that role and we are ready to defend Vermont in this lawsuit.

Entergy Files Lawsuit (KSENT)

Says Vermont oversteps power

By Kyle Jarvis

Keene Sentinel, April 19, 2011

VERNON Vt. — Officials from the parent company of Vermont Yankee nuclear power plant filed a lawsuit against the state of Vermont today in the ongoing battle over whether the plant should be allowed to operate past March 21, 2012.

Last month, the federal Nuclear Regulatory Commission renewed Entergy's operating license, allowing the plant to remain online through March 21, 2032.

In 2002, Entergy officials signed an agreement with Vermont officials that said Entergy would seek approval from the Vermont Public Service Board if it sought to operate the plant beyond March 21, 2012.

Entergy officials said doing so was in accordance with the process and standards for securing the state certificate in effect at that time.

But, Entergy argues, the Vermont General Assembly invalidated that provision in 2006, therefore breaking the signed agreement from 2002.

Entergy says it has done everything in its power to appease the state, including filing a petition for a "certificate of public good" in 2008 (required by Vermont for all new gas and electric purchases, investments, and facilities including transmission upgrades), offering Vermont utilities a 20-year power purchase agreement at reduced rates, offering to establish a "date certain" for the commencement of decommissioning the plant, and trying to sell the property.

Entergy said it was unable to sell the property due to the uncertain political climate in Vermont and, more specifically, "due to the stated intent of Vermont officials to shut down the plant."

Entergy said the lawsuit filed today was based in part on legal principles relating to federal law.

Under the Atomic Energy Act Preemption, "a state has no authority over ... nuclear power plant licensing and operations or ... the radiological safety of a nuclear power plant," Entergy argued. "Vermont has asserted that it can shut down a federally licensed and operating nuclear power plant, and that it can regulate the plant based upon Vermont's safety concerns."

Entergy also claims that the Federal Power Act Preemption and the commerce clause of the US Constitution prevents states from interfering in regulation of rates in the wholesale power market.

It also said the law bars states from discriminatory regulation of private markets that favors in-state over out-of-state residents.

Entergy Files Complaint In Court Against State Of Vermont (AP)

Associated Press, April 19, 2011

Entergy Corporation filed a complaint Monday against the state of Vermont in US District Court. The company is seeking a judgment to prevent the state from forcing Vermont Yankee to shutdown in May 2012.

"We have made every reasonable effort to accommodate the state of Vermont and its officials while allowing the continued operation of Vermont Yankee," said Richard Smith, president of Entergy Wholesale Commodities, in a press release.

Monday's request for declaratory and injunctive relief follows on the heels on the Nuclear Regulatory Commission's renewal of the plant's license. The NRC renewed the plant's licenses after a safety and environmental review of the plant.

"It has been made clear that state officials are singularly focused on shutting down the plant," said Smith. "That has left us with no other choice but to seek relief in the court system."

Entergy Files Suit To Keep VY Open (BRATBORO)

Brattleboro Reformer (VT), April 19, 2011

Early today, Entergy filed a complaint in US District Court to keep Vermont Yankee nuclear power plant in Vernon open despite Vermont's refusal to issue a certificate of public good for the plant's continued operation.

Entergy is seeking a judgment to prevent the state of Vermont from forcing the Vermont Yankee nuclear power plant to cease operation on March 21, 2012.

Today's request for declaratory and injunctive relief follows the federal Nuclear Regulatory Commission's March 21, 2011, renewal of Vermont Yankee's operating license authorizing the plant's operation through March 21, 2032.

The NRC's action came after a thorough and exhaustive five-year safety and environmental review of the plant.

"We have made every reasonable effort to accommodate the state of Vermont and its officials while allowing the continued operation of Vermont Yankee - an outcome that benefits all stakeholders, including Vermont consumers and the approximately 650 men and women who work at the plant," said Richard Smith, president of Entergy Wholesale Commodities. "Despite the fact that Vermont Yankee is important to the reliability of the New England electric transmission grid, emits virtually no greenhouse gases, and provides more than \$100 million in annual economic benefits to the state of Vermont, it has been made clear that state officials are singularly focused on shutting down the plant. That has left us with no other choice but to seek relief in the court system."

Vermont Yankee Owners Fight Nuke Plant Shutdown (NHPR)

By Elaine Grant

New Hampshire Public Radio, April 18, 2011

The plant's 20-year license expires on March 21, 2012, and the Nuclear Regulatory Commission recently voted to relicense it for another two decades.

But Vermont has authority over the plant, and the state senate voted overwhelmingly last year to shut it down.

Vermont Senate President Pro-Tem John Campbell contends that in return for permission to operate and to store nuclear waste near the Connecticut River, Entergy had agreed to the state's involvement in the relicensing decision. "It's quite troubling when a nuclear power plant such as Entergy of Louisiana is unwilling to keep its word," he said. "I guess in Louisiana they don't honor their word as we do here in the Northeast."

Entergy's lawsuit claims that states have no legal authority over nuclear power plants. Vermont is the only state in the US with such a law.

Vt. Yankee Files Lawsuit To Stay Open (WWLP)

By Matt Caron

WWLP-TV Springfield, MA, April 19, 2011

BERNARDSTON, Mass. (WWLP) - The owners of the Vermont Yankee Nuclear power plant filed a lawsuit Monday in US District Court to prevent the State of Vermont from shutting the plant down.

Vermont Yankee's current operations license will expire on March 21, 2012. The nuclear regulatory commission has already granted them an extension to operate until 2032; the problem is that state law requires the plant to get approval from the Vermont legislature.

The lawsuit comes after the Governor of Vermont said that he wants to shut the plant down—citing maintenance issues like the collapse of a cooling tower and a leak of radioactive tritium into the groundwater.

Vermont Yankee spokesperson Larry Smith told 22News that the plant passed an exhaustive five-year safety and environmental review, and that the plant is completely safe.

22News talked to Franklin County residents who live on the Vermont state line to see what they thought about Vermont Yankee.

"I fall, as a member of Bernardston, just right in the blast zone. Every Wednesday at 6:00 P.M., they test the siren here in town, and it's just another reminder that we've got a nuclear power plant right across the border. Especially with what's happened in Japan and the trouble that they're having just containing it it makes me a little nervous," Tommy Byrnes of Bernardston said.

"I think it creates a lot of good jobs for people, but I'd feel safer probably if it wasn't there," Timothy Dirth of Winchester, New Hampshire said.

Entergy Seeks Court Injunction To Keep Vermont Yankee Running (DJNews)

By Drew FitzGerald

Dow Jones Newswires, April 19, 2011

Entergy Corp. (ETR) said Monday it will go to court to seek an injunction to prevent Vermont officials from forcing it to shut down its nuclear power plant there.

The complaint filed in Vermont's US District Court aims to prevent the state from forcing Entergy's Vermont Yankee plant to cease operations next year. The second-largest US power generation company wants to renew the plant's 20-year license, which expires March 20, 2012.

"It has been made clear that state officials are singularly focused on shutting down the plant," Entergy Wholesale Commodities President Richard Smith said. "That has left us with no other choice but to seek relief in the court system."

Entergy last month decided to keep the aging power plant after it failed to find a buyer for it. The company cited political uncertainty for the lack of a sale.

Opposition to the plant grew after the New Orleans-based company reported several leaks of radioactive material from underground pipes. State officials said Entergy had told them the piping didn't transport radioactive materials.

The complaint disclosed Monday hinges on a provision of a 2002 memorandum of understanding that state officials signed with Entergy's two subsidiaries when the company bought the facility. Vermont's General Assembly passed a law in 2006 that invalidated the provision and breached the memorandum of understanding, Entergy contends.

Shares closed at \$66.52 and were mostly inactive premarket. The stock has fallen 17% over the past year.

Entergy Sues To Keep Vermont Yankee Running (EETPM)

By Hannah Northey

E&ENews PM, April 19, 2011

Entergy Corp. filed a lawsuit today against the state of Vermont to keep the company's 650-megawatt Vermont Yankee nuclear power plant operating after its current operating license expires next year.

Two Entergy subsidiaries -- Entergy Nuclear Vermont Yankee LLC and Entergy Nuclear Operations Inc. -- filed the complaint in the US District Court for the District of Vermont in a bid to stop the state from halting plant operations next year.

On the federal level, the Nuclear Regulatory Commission already renewed the plant's operating license on March 21 after a five-year review, allowing the reactor to operate for 20 additional years (E&ENews PM, March 21).

But Entergy still needs Vermont's General Assembly to approve a so-called certificate of public good for the 39-year-old plant that would allow the power plant to continue operating beyond 2012. The plant is in Vernon, Windham County, in the state's southeastern tip.

The state passed a law in 2006 that grants the state's Legislature power to approve the certificate.

Entergy argues that it bought the Vermont Yankee plant in 2002 under an agreement with the state that stipulated the Vermont Public Service Board, not the state's Legislature, would grant the plant's certificate.

The 2006 law "took the decision about Vermont Yankee's future away from the Public Service Board, a quasi-judicial expert decision-maker, independent of legislative control" and placed it into the "hands of political" individuals, Richard Smith, president of Entergy Wholesale Commodities, said in a statement.

Entergy says Vermont cannot interfere with the federal government's exclusive authority over the operation of the nuclear plant under the Atomic Energy Act.

Vermont also told the company it would consider approving the license if Entergy sold power from the nuclear plant at "preferential rates" compared to non-Vermont utilities, according to the lawsuit. Such an agreement would favor in-state residents over out-of-state residents and violates the US Commerce Clause, Entergy said.

Vermont Gov. Peter Shumlin (D) said during a press conference today that the state is prepared to defend itself and that Entergy must follow state law. The state is expecting a decision from the court by late fall.

Entergy Files Suit Over Vermont Nuclear Plant (MSBJ)

Mississippi Business Journal, April 19, 2011

Entergy Corporation announced that two of its subsidiaries, Entergy Nuclear Vermont Yankee, LLC (ENVY) and Entergy Nuclear Operations Inc. (ENOI), have filed a complaint in US District Court for the District of Vermont seeking a judgment to prevent the State of Vermont from forcing the Vermont Yankee nuclear power plant to cease operation March 21, 2012.

The request for declaratory and injunctive relief follows the federal Nuclear Regulatory Commission's March 21 renewal of Vermont Yankee's operating license authorizing the plant's operation through March 21, 2032.

"We have made every reasonable effort to accommodate the State of Vermont and its officials while allowing the continued operation of Vermont Yankee, an outcome that benefits all stakeholders, including Vermont consumers and the approximately 650 men and women who work at the plant," said Richard Smith, president of Entergy Wholesale Commodities. "Despite the fact that Vermont Yankee is important to the reliability of the New England electric transmission grid, emits virtually no greenhouse gases, and provides more than \$100 million in annual economic benefits to the State of Vermont, it has been made clear that state officials are singularly focused on shutting down the plant. That has left us with no other choice but to seek relief in the court system."

"Litigation is by far the least preferred approach. But it is clear our disagreement with the State of Vermont on the scope of its authority over Vermont Yankee cannot be resolved between the two parties. Putting this dispute before a federal judge is the appropriate and responsible way to resolve this disagreement."

Vernon In Early Stages Of Yankee Deal (BR)

By Chris Garofolo

Brattleboro Reformer, April 19, 2011

VERNON – The Vernon tax stabilization committee is taking a wait-and-see approach to its preliminary negotiations with Vermont Yankee nuclear power plant as the facility's owner has filed litigation against the state this week.

During a brief Monday evening meeting, the committee members said they remain in the preliminary stages of working with the plant owner, Entergy Corp., on a new agreement for the town.

The committee was re-established in December 2010 to begin negotiations with Entergy as the current operating contract expires next year.

The committee also was set to review options for receiving a taxable value from the plant in the event Yankee closes in 2012.

"Things are just going to go on the way they are right now as the lawsuit unfolds," said Patricia O'Donnell of the Vernon Selectboard and a member of the committee.

"We're starting the tax committee early so we have time to sift through all the information and make a decision," she said. "Vermont Yankee and Entergy have been really good neighbors to the people of Vernon and nobody in Vernon wants to rush this and make quick decisions. We want to be fair and involve Vermont Yankee and Entergy in the process, and that's what we're going to do as time goes by."

The committee met on Monday with George "Skip" Sansoucy, a New Hampshire-based consultant and engineer specializing in the valuation of utility properties such as power plants, during a nonpublic session. He referred all questions to the committee.

Keeping Yankee operational is a major concern among Vernon residents. The plant pays \$1.3 million in municipal taxes, or about 50 percent of the total levy for the town, not including the school district.

The 39-year-old plant is located on the banks of the Connecticut River and was scheduled to shut down in March 2012.

But a pending legal battle is now set up after the Vermont Senate voted 26-4 in February 2010 to block the site's continued operations, followed by the US Nuclear Regulatory Commission's decision to renew Yankee's license until March 21, 2032, last month.

The NRC decision to renew came after its extensive safety and environmental review of the application submitted in January 2006 by Entergy. More recently, Entergy announced two of its subsidiaries, Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc., filed a complaint in US District Court for Vermont seeking a judgement to prevent the state from forcing Yankee to cease operations next year.

"We have made every reasonable effort to accommodate the state of Vermont and its officials while allowing the continued operation of Vermont Yankee," according to a statement from Richard Smith, president of Entergy Wholesale Commodities. The company was left not choice but to seek relief in the court system, he continued.

The Yankee lawsuit hinges upon the fact that under the current Atomic Energy Act, only the federal government has jurisdiction over the relicensing of nuclear plant licensing and operations, and the conditioning state approval (which was not granted) violates the commerce clause of the US Constitution (barring states from regulating private markets in a way that gives preferential treatment to in-state businesses).

Yet opponents of Yankee argue that lawmakers gave themselves the authority to prohibit the Vermont Public Service Good from issuing a certificate of public good to the plant. The legislation was signed by then-Gov. James Douglas.

"It appears that Entergy has developed a bad case of corporate amnesia in refusing to honor an agreement it signed with the state in 2002," said Vermont's congressional delegation in a press statement.

"Entergy agreed to waive any claim that federal law preempts the jurisdiction of Vermont. The company also agreed to comply with the terms of the agreement and Vermont laws. The Vermont laws are clear; Entergy must be approved by both the state Legislature and the Vermont Public Service Board to receive a certificate of public good to continue to operate the Vermont Yankee nuclear power plant beyond March of 2012," according to the release from Sens. Patrick Leahy and Bernie Sanders and Rep. Peter Welch. Chris Garofolo can be reached at cgarofolo@reformer.com or 802-254-2311 ext. 275.

Press Release: Entergy Reneges On Its Promise; Sues Vermont : VTDigger (VTD)

By James Moore

VTDigger, April 19, 2011

Entergy Corporation of Louisiana announced this morning that two of its corporate subsidiaries had filed a lawsuit against the state of Vermont in a desperate move to continue operating its troubled nuclear plant for another 20 years after its license expires in March of next year.

Vermont Yankee, which is the same age and design as the crippled nuclear reactors in Fukushima, Japan, has suffered through its own remarkable string of accidents, malfunctions, and failures in recent years. "The accidents in Japan prove that there is nothing reliable about this reactor design" noted James Moore, Energy Program Director with VPIRG. An abbreviated sampling of Vermont Yankee's record of unreliability includes the following:

Failed pipes that carried radioactive materials leaked from Vermont Yankee into the waters of Vermont in 2009-2010. The initial leak was found to be coming from pipes that Entergy officials swore only months before did not exist;

Additional plumes were discovered early in 2011 and the leaks have not yet been located;

Failed pipes and valves have caused numerous decreases in power production or threatened full shutdown in 2007, 2009, and 2011;

Timber supporting water pipe gave way triggering catastrophic cooling tower section collapse in 2007;

Significant leaks and damaged brackets discovered one year later in areas that were inspected and rebuilt after the collapse;

A defective pump prompted ENVY to reduce power in June 2008;

Condenser tube leak triggered plant shutdown in April, 2008;

Stop valve malfunction triggers shutdown in August, 2007; and

Dozens of cracks in steam dryer have been discovered in recent years.

"This nuclear plant is already limping toward the finish line," said Moore. "Given its age and design flaws, the idea that Entergy essentially wants to patch it up now and send it out for another marathon run is dangerously irresponsible."

An overwhelming and tri-partisan majority of Vermont state senators voted against continued operation of the nuclear plant in February of last year. The myriad problems plaguing the plant's operation and the extraordinary untrustworthiness of Entergy officials ensured Vermont Yankee's fate in the eyes of many legislators.

Today's lawsuit will do nothing to improve Entergy's record of untrustworthiness. When Entergy purchased Vermont Yankee in 2002 the company agreed in a formal memorandum of understanding to waive any claim that federal law preempts the jurisdiction of the state in these matters.

"By filing this lawsuit, Entergy is reneging on a promise made to the people of Vermont," said Moore. "This may not be a shock given the corporation's track record of giving false statements under oath and incompetence in managing the facility, but it's another indication that this company cannot be trusted to run the plant one day past the expiration of its license."

Entergy makes much of the fact that the Nuclear Regulatory Commission gave its approval of the plant's continued operation last month. However, at that time according to the Associated Press, NRC Chairman Gregory Jaczko noted that there are "a variety of permits and requirements for this facility to operate," and that, "I would defer any of those actions (aside from the NRC's approval) to the state or other authorities."

"It seems clear that even the nation's biggest cheerleader for nuclear power, the NRC itself, disagrees with Entergy over the proper role of the state in these matters," added Moore.

What About That 50-mile Zone Around The Nuclear Power Accident In Japan? (KSENT)

Keene Sentinel, April 19, 2011

Less than a week after the March 11 tsunami hit Japan, causing the ongoing crisis at the Fukushima nuclear power plant, the US Nuclear Regulatory Commission recommended: "Under the guidelines for public safety that would be used in the United States under similar circumstances, the NRC believes it is appropriate for US residents within 50 miles of the Fukushima reactors to evacuate."

Japanese officials may be agreeing, but slowly.

First, they ordered everyone living within a six-mile radius of the place to evacuate. Then, as radiation began to spread, they expanded the evacuation zone to 12 miles. Late last week, they extended it to 18 miles, noting the danger to children, pregnant women and people in hospitals. A Japanese government spokesman said that decision was based on data related to cumulative radiation exposure. And engineers have not been able to repair the reactors or seal leaks of radioactive water.

The NRC says it still stands by its 50-mile recommendation, which came as a shock to many Americans. Physical evacuation zones around this country's nuclear plants are only about 10 miles. In the United States, 100 million people live within a 50 mile radius of a nuclear plant — 20 million within range of the Indian Point reactors in New York. New York Governor Andrew Cuomo says the NRC has promised to make Indian Point its "first and top priority" in a review of seismic risk at 27 American nuclear plants.

Closer to home — indeed, right here at home — is the Vermont Yankee plant in Vernon. It is operated by Entergy Corporation, the company that runs Indian Point, and Vermont Yankee is not on the NRC seismic checkup list.

The 10-mile evacuation zone for the Vermont Yankee plant includes all or part of Chesterfield, Hinsdale, Richmond, Swanzey and Winchester in New Hampshire; Bernardston, Colrain, Gill, Leyden and Northfield in Massachusetts; and Brattleboro, Dummerston, Gilford and Vernon in Vermont.

That's a pretty big circle.

But if an accident or sabotage were to spread radiation from the Vermont Yankee reactor or breach its spent-fuel storage containers, and if the NRC were to apply its newly announced 50-mile safety standard, all the Vermont Yankee emergency reception centers for displaced people would be useless, as they are too close to the plant. Instead, evacuees would have to find shelter and, eventually perhaps, new homes and livelihoods beyond Claremont (41 miles to the north), Milford (43 miles to the east), Springfield, Massachusetts, (45 miles to the south) and Hoosick Falls, New York, (43 miles to the west).

After great disasters strike, whether natural or man-made, survivors traditionally move back into the affected area begin rebuilding. Such determination may not be possible in places where nuclear energy goes wild. The operator of the Fukushima plant announced last week that each household in its evacuation zones would be paid \$12,000, and that it hoped to have the plants stabilized in six to nine months, allowing some refugees to go home. But an unknown number of the mostly middle-class families who lived near the Fukushima complex will never be able to go home. The US Environmental Protection Agency estimates that radioactive elements of spent nuclear fuel will remain deadly to humans for 10,000 years.

Japanese authorities now say the Fukushima damage, while still continuing, has reached the severity level of the 1986 Chernobyl accident in Ukraine. Let us note that a permanently contaminated 19-mile circle around that hastily abandoned community is now officially known as the Chernobyl Zone of Alienation.

Nuclear Regulatory Commission Head To Speak At Leaders + Legends (JHU Gazette)

By Andrew Blumberg

The JHU Gazette, April 18, 2011

Gregory B. Jaczko, chairman of the US Nuclear Regulatory Commission, is the featured speaker at the Johns Hopkins Carey Business School's Leaders + Legends lecture series on April 21. The event will take place at 7:30 a.m. in the Legg Mason Tower in Harbor East. The title of his remarks is "The Past, Present and Future of Nuclear Power: A Regulator's Perspective."

Jaczko was first sworn in as a commissioner of the NRC on Jan. 21, 2005, and he was designated chairman by President Barack Obama on May 13, 2009. His current term runs through June 2013.

In his position, Jaczko has focused on the NRC being a strong and decisive safety regulator possessing the confidence of the public, and has worked to have the agency clearly communicate with the public and its licensees. He is committed to the safety of existing nuclear reactors and radioactive materials sites, an effective and efficient safety review process for license applications, thorough environmental reviews, and strong enforcement and accountability.

Jaczko previously served as science policy adviser and appropriations director for US Sen. Harry Reid and as a congressional science fellow in the office of Rep. Edward Markey. He also has been an adjunct professor at Georgetown University, teaching in the areas of science and public policy.

Jaczko holds a bachelor's degree in physics and philosophy from Cornell University and a doctorate in physics from the University of Wisconsin, Madison.

The Leaders + Legends monthly breakfast series, which features today's most influential business and public policy leaders addressing topics of global interest and importance, is designed to engage business and community professionals in an examination of the most compelling issues and challenges facing society today.

Admission to the lecture, which includes breakfast, is \$35. To register and for more information, go to carey.jhu.edu/leadersandlegends.

Exclusive: US Nuclear Regulator A Policeman Or Salesman? (REU)

By Ben Berkowitz And Roberta Rampton

Reuters, April 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.

US Is Increasing Nuclear Power Through Upgrading (LAT)

Turning up the power is a little-publicized way of getting more electricity from existing nuclear plants. But scrutiny is likely to increase in the wake of Japan's nuclear crisis.

By Alan Zarembo And Ben Welsh

Los Angeles Times, April 18, 2011

The US nuclear industry is turning up the power on old reactors, spurring quiet debate over the safety of pushing aging equipment beyond its original specifications.

The little-publicized practice, known as upgrading, has expanded the country's nuclear capacity without the financial risks, public anxiety and political obstacles that have halted the construction of new plants for the last 15 years.

The power boosts come from more potent fuel rods in the reactor core and, sometimes, more highly enriched uranium. As a result, the nuclear reactions generate more heat, which boils more water into steam to drive the turbines that make electricity.

Tiny upgrades have long been common. But nuclear watchdogs and the US Nuclear Regulatory Commission's own safety advisory panel have expressed concern over larger boosts — some by up to 20% — that the NRC began approving in 1998. Twenty of the nation's 104 reactors have undergone these "extended power upgrades."

The safety discussions have largely escaped public attention, but they could become more prominent as the Japanese nuclear crisis focuses more scrutiny on US reactors.

In an upgraded reactor, more neutrons bombard the core, increasing stress on its steel shell. Core temperatures are higher, lengthening the time to cool it during a shutdown. Water and steam flow at higher pressures, increasing corrosion of pipes, valves and other parts.

"This trend is, in principle, detrimental to the stability characteristics of the reactor, inasmuch as it increases the probability of instability events and increases the severity of such events, if they were to occur," the Advisory Committee on Reactor Safeguards, which is mandated by Congress to advise the NRC, has warned.

Still, the committee has endorsed upgrades, based on assurances that any increased risk falls within federal safety standards and is countered by additional safety measures such as plant modifications and more frequent inspections.

"You can always make a plant safer," said William Shack, a materials engineer and member of the safety committee. "The question is, when do I say I've made it safe enough?"

Computer models used to analyze risk suggest that a properly uprated reactor is no more vulnerable than one operating at its original capacity.

But critics of uprates point out that such analyses may fail to account for unforeseen accident scenarios.

"It's beyond the wit of mankind to identify all challenges to a nuclear plant," said John Large, a former researcher for the British atomic energy agency who runs a consulting company in London specializing in nuclear safety.

A case in point involved three uprated reactors in Illinois.

In 2002, both reactors at the Quad Cities Nuclear Plant were restarted after having their capacity boosted by 17.8%. Pipes began to shake, and cracks formed in a steam separator, which removes moisture from the steam before it enters the turbines. In one case, a 9-by-6-inch metal chunk broke off and disappeared.

Similar problems were discovered at the Dresden Nuclear Power Plant, about 60 miles southwest of Chicago, which had undergone a 17% uprate.

Broken parts were replaced, but the problem continued. Exelon Corp., which owns the three plants, and the NRC were mystified.

"The greatest concern is loose parts that you can't find," John Sieber, a nuclear engineer on the NRC advisory committee, said during a 2004 meeting. "Are they in the bottom of the reactor vessel? Is it floating around where it can damage internal parts of the core?"

Eventually the problem was uncovered: acoustic waves caused by the geometry of the steam pipes. The pipes were acting like a musical instrument. Their geometry was modified to "detune" them.

Plans to boost the power by 14.3% at three reactors in Athens, Ala., and 12.9% at a plant in Monticello, Minn., have been held up, in part, by NRC concerns over the steam separators.

Nuclear industry officials and regulators say that safety calculations are conservative and that even the biggest uprates fall far short of the power loads the reactors could actually handle.

Craig Nesbit, an Exelon spokesman, said that uprates "do not cut into the safety margins of these plants."

He and other industry officials note that uprates often require replacing turbines, transformers and other major equipment to accommodate higher water and steam flows.

But some things do not change, including the suppression pool, which is designed to soak up heat from the reactor core during some kinds of accidents, and the heat removal pumps, which deliver water from the pool into the core to prevent the fuel from melting down.

David Lochbaum, a nuclear engineer with the environmental group Union of Concerned Scientists, has argued that in some uprated reactors the pool may be too small and could become so hot that its contents could begin to vaporize, causing the pumps to lose suction.

Such a scenario is extremely unlikely, because the accident itself would create a pressure buildup in the surrounding containment vessel that would ensure that the pumps kept working. The system would risk failure only if the containment vessel itself were breached, allowing outside air to rush in.

The NRC allows companies to include that containment vessel pressure in their safety calculations. It has been used in 17 uprate approvals, according to NRC spokesman Scott Burnell.

But factoring in the pressure buildup "represents a decrease in the safety margin available to deal with a phenomenon subject to large uncertainties," the agency's safety advisory committee wrote in a March 18, 2009, letter to the agency. Forcing regulators to show that the safety system would work without the pressure buildup would offer an extra layer of protection against "potential melting of the core," the letter said.

The alternative would be requiring plant modifications so costly that companies say it would no longer make economic sense to uprate.

For the US nuclear industry, which supplies a fifth of the nation's electricity, uprating is attractive because it is one of the cheapest ways to add power to the grid.

The 1979 partial meltdown at Three Mile Island eroded public confidence in nuclear power. Construction proceeded on many reactors that had already been approved — the last one went into operation in 1996 — but the industry was forced to look for ways to get more out of existing plants.

The biggest gains have been achieved by running reactors more efficiently — less downtime for fuel changes, for example.

But uprates have played an important role, adding the equivalent output of nearly five average-sized reactors since 1996. Regulators say they expect to approve boosts totaling 3 1/2 more reactors over the next four years.

Exelon, the nation's top nuclear provider, plans to spend \$3.65 billion on power boosts equivalent to one new nuclear reactor over the next eight years, according to its filings for investors.

"They would come at half the cost of a new plant and with less risk because of the opportunity to defer expansion if power prices do not support it," its annual report says.

alan.zarembo@latimes.com

ben.welsh@latimes.com

Special Report: The Nuclear Industry's Trillion Dollar Question (REU)

By Muriel Boselli And Geert De Clercq

Reuters, April 19, 2011

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

Nuclear 'Uprates' Increase Power Generation With Little Scrutiny (FairWarning)

By Patrick Corcoran

FairWarning, April 18, 2011

Hemmed in by safety concerns along with political and financial risks, the US nuclear industry hasn't built a new power plant in 15 years.

But, as the Los Angeles Times reports, companies have still managed to generate more power through a little-known process called "uprating."

Uprating refers to using more potent fuel rods and, sometimes, more highly enriched uranium. The materials enable plants to boil reactor water more quickly, sending more steam through the turbines and generating more power.

But the boost in power comes with increased risk: the stress on the reactor's components is greater, which could cause a faster rate of deterioration.

Since being approved by the Nuclear Regulatory Commission in 1998, small uprates have long been common, but what is newer are the sharper increases in power output in the past several years. Some plants have experienced 20 percent increases in power, and 20 of the 104 American power plants have undergone "extended power uprates."

Federal authorities have raised red flags about uprating. "This trend is, in principle, detrimental to the stability characteristics of the reactor, inasmuch as it increases the probability of instability events and increases the severity of such events, if they were to occur," the Advisory Committee on Reactor Safeguards, a Congressionally mandated advisory group to the Nuclear Regulatory Commission, warned in a January letter.

Some defenders of the process argue that computer models show that when done properly, there is no increased risk to an uprated nuclear plant. Indeed, the advisory committee gives the practice a thumbs-up, despite its concerns.

However, others suggest that nuclear plants are far too complicated for either the smartest expert or a computer model to plan for all of the contingencies.

"It's beyond the wit of mankind to identify all challenges to a nuclear plant," John Large, a former researcher for the British atomic energy agency and the director of a nuclear consulting firm, told the Times.

In fact, three reactors in Illinois that were uprated in the past decade began showing increased wear and tear, including cracks in equipment, despite the calculations by the reactors' operators that there was no greater risk.

Nuclear Regulatory Commission May Adopt A Bring-your-own-device Mobile Strategy (FGHIT)

By Molly Bernhart Walker

FierceGovernmentIT, April 18, 2011

Allowing the use of a single, employee-provided device for both personal and work environments is "on the table" at the Nuclear Regulatory Commission.

"It's actually getting to a point where I couldn't care less what device you've got," said Darren Ash, chief information officer at the NRC, while speaking an April 14 AFFIRM mobility event in Washington, D.C.

"The genie's out of the bottle," he said. "I know that we've got employees—I see them throughout the agency—the employees with the iPads, the iPhones whatever, a myriad of devices. They're there, and potentially using them for things they need to do. They're not connecting to our network because we won't allow it, but we know those devices exist."

Many NRC employees work at fuel and power plants in rural locations, using laptops and docking stations. Ash said NRC's exploration of consumer-provided devices isn't that much of a jump considering its remote workforce. As a CIO, Ash said he "shouldn't focus on the brand or device, I need to focus on the business capability."

The lingering issues with allowing devices that can toggle between work and personal needs aren't necessarily technical or security-oriented, they're primarily cultural and contractual, said Carl Froehlich, associate CIO, end user equipment and services at the Internal Revenue Service.

"With the smartphone, when you're in the sandbox doing work, you're protected. If you're using the same phone and you're not in the sandbox, you're in the wild wild west," said Froehlich.

"If it's an IRS-provided device, and we allow them to use it for personal use, because our ethics say if it doesn't increase cost to government incremental use of IT facilities are okay," said Froehlich. "Now, if they go to a site on an IRS-provided phone, even if it's on the personal side of the phone, is it an ethics violation? We don't have an answer to that."

This issue has to be negotiated because "rules of behavior" have major considerations for union employees' contracts, said Ash.

"In all the pilots I'm doing with smartphones and iPads, not a single person is a union member," added Froehlich.

In February Federal CIO Vivek Kundra revealed that he was looking into a move to "employee-owned" mobile devices which would disintermediate centralized IT departments. Government employees could virtualize a mobile operating environment for work on their personal mobile device. As a result, security concerns would shift and CIOs would be less focused on inventory and device management and more focused on the HTTPS environment, a scalable approach, said Kundra.

Kundra's proposal was met with less than universal approval, however. One federal official said it would require a change in congressional appropriations law.

Storage Of Spent Fuel Rods At New England Nuclear Power Plants Generates Fear (SPREP)

Editor's note: This series is a collaboration between the Hearst Connecticut Media Group and the New England Center for Investigative Reporting (www.necir-bu.org), a nonprofit investigative newsroom based at Boston University

By Bill Cummings

Springfield (MA) Republican, April 19, 2011

In an effort to preserve profits, nuclear power-plant operators in New England are stuffing more and more spent nuclear fuel rods into already crowded storage pools that many believe are more dangerous than the reactors.

The spent-fuel pools at New England's oldest plants now hold up to five times more fuel than they were initially designed to handle.

The dramatic increases in the number of rods per pool have been approved by the federal Nuclear Regulatory Commission, partly because a national disposal site for nuclear waste has not been established.

Experts say this federally sanctioned "re-racking" has allowed plant operators to avoid millions of dollars in costs by delaying when the nuclear fuel rods have to be moved to safer but expensive dry cask storage, which involves sealing the material in giant concrete urns.

Now, though, the operators are running out of time. The NRC estimates that by 2015 many of the nation's spent fuel pools, particularly in older plants like many in this region, will run out of room. Then, operators will face an unpleasant choice: Move waste into dry casks to free up space in the pools, or shut down their plants.

While the NRC insists the practice is safe, stuffing pools to their limit is inherently dangerous, many scientists and engineers say. They warn that the sheer volume of radioactivity in the pools, often far more than what is in a reactor, could turn an accident or natural disaster into a cataclysm. Also, they worry that the storage pools make tempting targets for terrorists.

"The New England plants are older and the issues with older reactors are mostly ignored. These plants are like the canary in the coal mine. They never intended to put lifetime storage into the plans," said David Lochbaum, a former nuclear plant operator and a member of the Union of Concerned Scientists, a group that has sounded the alarm over nuclear safety.

The still-unfolding Japanese nuclear disaster - spent fuel rods in pools at the Fukushima Daiichi reactors were exposed to the air and released large amounts of radiation after a tsunami knocked out the cooling system - is a graphic example of the risks inherent in onsite spent-fuel storage. And the Japanese pools that caught fire held much less waste than many of the New England pools.

A 1997 study by the Brookhaven National Laboratory on Long Island concluded that a pool fire at a plant like Millstone Nuclear Power Station in Waterford, Conn., or Pilgrim Nuclear Generating Station in Plymouth could kill 100 people instantly and another 138,000 people eventually. Some \$546 billion in damage would result, the study said, and 2,170 square miles of land could be contaminated.

Waste piles up

Nationally, the nation's 104 nuclear power plants are now storing some 63,000 metric tons of spent fuel rods, according to 2010 numbers compiled by the Nuclear Energy Institute.

In New England, the four operating nuclear power plants are storing at least 2,900 metric tons of spent fuel, according to current figures provided by two plants and 2002 data available for two others, which is the most recent available. The Indian Point Energy Center nearby in New York state is storing at least 903 metric tons of spent fuel.

New England's plants have re-racked their spent-fuel storage pools many times over the past few decades. In many cases, the stored spent-fuel rods are now packed closer together than ever before - nearly as close as they were positioned inside the reactor.

The storage pool at Vermont Yankee Nuclear Power Station in Vernon, Vt., was originally licensed to hold 600 spent fuel assemblies. There are now 2,935 assemblies in the pool, or 932 metric tons of radioactive waste.

At Millstone, the pool at the Unit 3 reactor was originally licensed to hold 756 assemblies. It now holds 1,040 assemblies, or 449 metric tons of waste, and is licensed to handle up to 1,860 assemblies.

Millstone's Unit 2 reactor was originally licensed to hold 677 spent fuel assemblies. It now holds 909 assemblies, or 304 metric tons, and is licensed to hold 1,346 assemblies. The Pilgrim Nuclear Power Generating Station currently holds 2,918 fuel assemblies. Its original license allowed 880 fuel assemblies, according to NRC documents. The license was later updated to allow for 3,859 assemblies.

The spent fuel pool at Seabrook Nuclear Power Station in New Hampshire, the newest of New England plants - Seabrook came online in 1990 - was originally licensed to handle 1,236 fuel assemblies and now has 936 assemblies in its pool. There are also 192 fuel assemblies in dry cask storage.

A failed plan

New England's nuclear power plants, most of which were built in the 1970s, came online with a promise: the government would take the spent fuel rods that result from nuclear fission and safely store the waste at a national site. In 1982, Congress made that promise into law, and the national repository was scheduled to open in 1998.

That plan officially fell apart last year when the Obama administration, under considerable political pressure from opponents, canceled plans for a nuclear disposal facility in Yucca Mountain in Nevada, which was to be hollowed out to create a repository [» Editorial: Obama administration wisely canceled plans to bury nuclear waste beneath Yucca Mountain in Nevada"]. That decision came despite the fact that electric ratepayers have contributed \$18 billion toward building the national repository through a special assessment included in their monthly bills, according to a 2010 accounting.

Spent fuel pools were originally intended to be temporary storage and as a result were not given the same level of protection as reactors. As the volume of spent fuel grew over the years, scientists began warning the pools could be more dangerous than the reactor because they now held more radioactive material. Without a national storage site, plant operators, with the blessing of the Nuclear Regulatory Commission, packed more and more spent fuel rods into the pools.

"There used to be space between them. The assemblies were so far apart they could not go to critical mass. Then they took out the racks. The walls of the pool now have material that prevents a reaction. It's the same size pool with many more rods," Lochbaum said.

Lochbaum said storage pools were reconfigured to handle more fuel rods by redesigning how the rods are placed in the pool, moving them closer together, and adding substances like boron, which restricts nuclear fission.

That closer proximity, however, means rods could heat up much faster if there is a major loss of cooling water, Lochbaum and other experts said.

The alternative to pool storage is a dry cask, which typically is a concrete bunker approximately 20 feet high, 10 feet wide and 20 feet deep, with walls and roof areas up to 5 feet thick. Spent fuel rods are placed in a steel canister typically capable of holding 32 fuel assemblies and the lid is welded in place. The canisters weigh up to 40 tons fully loaded. The loading procedure occurs under water.

"The New England plants are older and the issues with older reactors are mostly ignored. These plants are like the canary in the coal mine. They never intended to put lifetime storage into the plans."

- David Lochbaum, former nuclear plant operator and member of the Union of Concerned Scientists

In the summer of 2010, Lochbaum testified before the Blue Ribbon Commission on America's Nuclear Future, formed by the Obama administration after the Yucca Mountain project was canceled, and said all nuclear waste represents a risk but stressed early transfer to dry casks is the best course.

"From the time it is removed from reactor vessels until the time it is shipped offsite, interim storage of spent fuel at nuclear plant sites represents a risk to public and worker safety. The risk from onsite storage is highest during wet pool storage. The risk drops significantly when the spent fuel is transferred to dry-cask storage onsite," Lochbaum said.

A 2010 statement signed by 170 environmental and activist groups declared that "as the amount of waste generated has increased beyond the designed capacity, the pools have been reorganized so that the concentration of fuel in the pools is nearly the same as that in operating reactor cores."

"If water is lost from a densely packed pool as the result of an attack or an accident, cooling by ambient air would likely be insufficient to prevent a fire, resulting in the release of large quantities of radioactivity to the environment," the statement continued.

Such conclusions are actually nothing new.

In a 2002 report, Robert Alvarez, a former top official at the federal Department of Energy and a senior scholar at the Institute for Policy Studies, wrote in the Bulletin of Atomic Scientists that if a fire broke out at the Millstone Reactor Unit 3 spent-fuel pool in Connecticut it would result in a three-fold increase in background exposures [» "What About The Spent Fuel?" – pdf]. That would trigger the NRC's evacuation requirement and could render about 29,000 square miles of land uninhabitable, severely affecting Connecticut, much of Long Island and even New York City.

"On average, spent fuel ponds hold five to 10 times more long-lived radioactivity than a reactor core," Alvarez wrote in his report.

"Particularly worrisome is the large amount of cesium 137 in fuel ponds, which contain anywhere from 20 to 50 million curies of this dangerous isotope. With a half-life of 30 years, cesium 137 gives off highly penetrating radiation and is absorbed in the food chain as if it were potassium. According to the NRC, as much as 100 percent of a pool's cesium 137 would be released into the environment in a fire," Alvarez wrote.

Cesium-137 is known to cause liver cancer and circulates within the body for years. Other isotopes, the byproducts of nuclear fission, are also extremely dangerous: Iodine-131, strontium-90 and plutonium-239. Iodine-131 can cause thyroid cancer. Strontium-90 gets incorporated into bones and teeth and stays there, irradiating the body and causing leukemia. Plutonium-239 is the worst of all; it can be inhaled and cause lung cancer.

NRC: Pools are safe

The NRC's official position, however, is there is nothing dangerous about more densely packed storage pools.

"Let me begin by saying public health and safety is protected by the safety and security features associated with storage of spent fuel in either pools or casks," said Diane Screnci, an NRC spokeswoman.

"The NRC, after careful study of the safety and security issues, concluded that fuel is safely stored in wet pools or dry storage casks. There is no justification, from a safety or security viewpoint, for removing fuel from pools and loading it into casks in order to return to low density racking," Screnci said.

The details of the NRC's studies on storage pools are not available to the public due to national security concerns.

A nuclear reactor is surrounded by 6 to 9 inches of steel, and sits within a containment dome some 3 to 4 feet thick. But a spent fuel storage pool at a pressurized water reactor, like Millstone in Connecticut and Seabrook in New Hampshire, is located outside the containment dome and housed in a traditional steel industrial building.

At a boiling water reactor, like Fukushima Daiichi in Japan, the Vermont Yankee Nuclear Power Plant and the Pilgrim Nuclear Generating Station in Massachusetts, the pool is several stories above ground level, within the containment dome.

In testimony last year before Obama's Blue Ribbon commission, Lochbaum told the panel that "better management of the wet-pool risk is particularly crucial at boiling water reactors with pools located inside secondary containment. A reactor accident at such plants can initiate a wet pool accident and vice-versa."

Nuclear power plants create electricity by placing nuclear fuel rods consisting of uranium pellets close together within a water-filled reactor vessel. A controlled atomic fission is created as the uranium atoms split and their mass is converted to energy. The resulting heat is used to turn liquid water into steam, which then turns turbines connected to electric generators to make electricity.

About every 18 months, one third of the reactor core is spent and the fuel rods are removed and placed in a nearby storage pool. Although no longer efficient for heating water within the reactor, the rods remain highly radioactive and very hot. Over time, they cool while resting in the pool and the radioactivity lessens.

The cost factor

Clay Turnbull, director of the New England Coalition on Nuclear Power, said it costs plant owners about \$1 million per dry cask, and that's why the fuel remains in pools. Other estimates place the price tag per cask at about \$1.5 million.

"It's a lot of money to move them around. If you need 50 casks, that's \$50 million at least," Turnbull said, adding that nuclear plants operate on a tight profit margin so any additional costs are a disincentive.

"The plants are resisting this, going to dry casks," Lochbaum said. "When the space in the pool is filled, then they go to dry cask. They move it only when needed. By doing this, the risk to the pool is as high as it can be."

Power plant officials disagreed and insisted that economics has nothing to do with fuel remaining in wet storage for so long.

"When we opened, the expectation was the fuel would be taken in 25 years and reprocessed," said Holt, the Millstone spokesman.

"We were not that big. We never thought we would have to contain fuel for the full life of the plant," Holt said.

Still, Holt acknowledged cost is an issue. "Both are safe. But there is a cost element to dry cask and it is a fairly heavy cost and a major factor in why we have not pulled fuel sooner. It's true that dry casks use a passive storage system that is not dependent on pumps and mechanical systems."

Larry Smith, a spokesman for Vermont Yankee, acknowledged there are hefty costs involved in moving fuel from pools to casks.

"We believe pools are perfectly safe. It was designed to be safe and there are redundant systems so there is never a loss of coolant," Smith said.

Tom Kaufman, spokesman for the pro-nuclear Nuclear Energy Institute, said operators would not put residents or workers at risk just to save money.

"No [operator] would jeopardize safety for cost, if that's what the implication is. That's wrong. All of the pools meet the requirements of the NRC and have to have the right procedures in place," Kaufman said.

"The individual operators have held up their end but the federal government has not come through with a disposal regime," Kaufman said. "The fact is it's a matter of science. There are materials that absorb the neutrons and control this. When they run out of storage space, they will have to move it to dry cask," Kaufman said.

At Maine Yankee, activists have recently called on the federal government to finally remove the dry casks stored there since the plant was shut down in 1996. The Blue Ribbon Commission on America's Nuclear Future, formed by the Obama Administration, is studying what to do with the nuclear waste and recently visited Maine Yankee to look over its cask storage.

Target For Terrorists: New England's Spent Nuclear Fuel (SPREP)

By Bill Cummings

Springfield (MA) Republican, April 19, 2011

Editor's note: This series is a collaboration between the Hearst Connecticut Media Group and the New England Center for Investigative Reporting (www.necir-bu.org), a nonprofit investigative newsroom based at Boston University.

A nuclear disaster in New England would truly be the sum of all fears. Studies project that thousands would be killed and huge areas rendered uninhabitable, potentially displacing one-sixth of the nation's population.

As such, it is the very definition of a terrorist objective.

Some scientists worry that the high concentration of spent fuel in the region's waste-storage pools dramatically increases the risk of such an outcome.

Thomas Cochran, a nuclear physicist with the National Resource Defense Council, said that after the 9/11 terrorist attacks a variety of groups began raising concerns about the safety of pools and whether they are vulnerable to a terrorist attack or pose a danger if their cooling systems failed. Those groups urged federal regulators to mandate that rods be taken out of the pools as soon as possible and placed in dry cask storage.

Such terrorist attacks, scientists, engineers and activists warn, could include flying an airplane into a pool, blowing up the intake ports where a nuclear plant sucks water for cooling the reactor and the pools, or firing some type of explosive device into the pool buildings. A number of academic reports assert that a standard commercial airliner could easily disable a spent-fuel pool.

"The plants should move the rods to dry cask storage sooner," said David Lochbaum, a former nuclear plant operator and a member of the Union of Concerned Scientists, a group that has sounded the alarm over nuclear safety. "You lessen the risk to a great extent. You can't take shampoo on an airplane, but we can have 400 metric tons of waste in a pool at a nuclear plant."

A 2009 report by the Congressional Research Service noted that the National Academy of Sciences in April 2005 found that "successful terrorist attacks on spent-fuel pools, though difficult, are possible," and said that "if an attack leads to a propagating zirconium cladding fire [pool fire], it could result in the release of large amounts of radioactive material." The report urged the NRC to conduct more analysis of the issue and consider moving the spent fuel rods to dry cask storage as soon as possible.

In a 2010 report, CRS noted that "reactor vulnerability to deliberate aircraft crashes has also been a major concern since 9/11. Most existing nuclear power plants were not specifically designed to withstand crashes from large jetliners, although analyses differ as to the damage that could result."

Kenneth Holt, a spokesman for Dominion, which owns Millstone in Connecticut, said a pilot would have to be very skilled to hit the storage pool building attached to reactors within Millstone's large waterfront campus.

"To pinpoint a crash like that would be difficult. And there are concrete buildings and steel reinforced buildings. Even if the cooling went wrong, we have the ability to put water back in," Holt said.

He said that despite what happened in Japan, Dominion does not officially acknowledge that a pool fire is a realistic possibility.

Nancy Burton, director of the Connecticut Coalition to Mothball Millstone, scoffed at Holt's response. She pointed out that air traffic controllers at the nearby Groton airport use Millstone's big red and white smokestack as a marker for planes approaching the airport.

"It's a big plant that's wide open right on Niantic Bay. There is nothing around it. We had a pilot fly all around the plant a few years ago and take pictures. Nobody said anything. It would be easy to hit one of those buildings," Burton said.

Casks Holding Spent Fuel Assemblies All That's Left Of Yankee Rowe (SPREP)

By Fred Contrada

Springfield (MA) Republican, April 19, 2011

ROWE – They sit on a 3-foot-thick concrete pad in Rowe where no one but security personnel can see them: 16 casks, each weighing more than 100 tons.

Each sports 21 inches of reinforced concrete surrounding a 3½-inch steel liner. Inside that protection is enough radioactive waste to turn Rowe and the surrounding area it into a no-man's land.

The casks, which contain 533 spent fuel assemblies, are all that's left of Yankee Rowe, the region's first nuclear power plants. When it began operation in 1961, nuclear power was America's hope for the future. When Yankee Rowe shut down in 1992, questions about the safety of nuclear power had clouded that optimism. By the time the facility was decommissioned and disassembled in 2007, the spent fuel had become a radioactive hot potato that no one, including the federal government, wanted to touch.

As Robert Capstick, a spokesman for Yankee Atomic Electric Co., explained it, the fuel assemblies consist of bundles of rods containing uranium and other elements that create the chain reaction that produces nuclear power. These rods last for a few years before they must be replaced. Even after they are no longer effective in the nuclear reaction process, however, the rods remain radioactive. When Yankee Rowe was up and running, the spent rods were put in pools of water for up to five years before being bundled.

Until the early 1970s, the spent fuel from Yankee Rowe was shipped to West Valley, N.Y., for reprocessing, Capstick said. During the Carter administration, however, there was growing concern that the waste, which contains plutonium, could be used to manufacture nuclear weapons. In 1982, Congress passed the Nuclear Waste Policy Act, which directed the Department of Energy to assume responsibility for the spent fuel. The plan was to build a repository for the waste at Yucca Mountain in Nevada, with utility companies financing the project by paying into a Nuclear Waste Fund.

Nearly 30 years later, the Yucca Mountain facility has yet to be built and the Department of Energy has yet to take possession of the fuel rods. In 2006, a federal court ruled in favor of three nuclear power plants that sued the government for failing to remove the waste. Yankee Rowe, one of the plaintiffs, was awarded \$32.9 million in damages. The Department of Energy has appealed that ruling, however, and as the matter continues to play out in the court, the nuclear waste at Yankee Rowe and other sites is awaiting a final destination.

According to Capstick, 15 of the 16 casks at Yankee Rowe contain spent nuclear fuel. The other holds other high-level waste. Years after they were removed from the reactor, the rods continue to give off heat comparable to a warm oven. Inside the steel and concrete, an inert gas prevents the nuclear material from exploding. It costs Yankee Atomic Electric Co. some \$8 million a year in security to keep the casks on site, Capstick said, although their weight alone makes theft unlikely. The casks are so sturdy that they can withstand the impact of a large aircraft like those that struck the World Trade Center towers, Capstick said.

The battle over the canisters is scheduled to return to court this year. In the meantime, the ones at Yankee Rowe are packaged and ready to go. Like the citizens who live near it, the utility companies will be relieved to see the nuclear waste go, Capstick said.

"We share the frustration with the federal government's failure to meet its obligations," he said.

US Nuclear Regulatory Commission Oversight Called Too Lenient (SPREP)

By Shay Totten

Springfield (MA) Republican, April 19, 2011

Editor's note: This series is a collaboration between the Hearst Connecticut Media Group and the New England Center for Investigative Reporting (www.necir-bu.org), a nonprofit investigative newsroom based at Boston University.

Internal government watchdogs and outside experts alike say the US Nuclear Regulatory Commission is too lenient on the industry it is charged with regulating, often making decisions based on the industry's profit margins rather than safety.

The charges are similar to complaints leveled against the Mine Health Safety Administration and the Minerals Management Service over the past year, after high-profile tragedies - the Upper Big Branch Mine collapse and the Deepwater Horizon spill - in the industries they are responsible for regulating.

In the wake of the events in Japan, there is a heightened sense of concern throughout the United States that a similar meltdown could occur, particularly in New England where reactors similar to those in Japan remain in operation.

Top nuclear industry officials maintain the public has nothing to fret about - that the NRC is a tough regulator that asks tough questions. NRC critics counter that the agency might ask tough questions, but is all too willing to accept easy answers.

Concerns about the NRC's oversight are nothing new. A clear illustration is a series of reports issued since 2002 by the NRC's internal inspector general and the US General Accountability Office related to a near-catastrophe at Davis-Besse, a nuclear reactor on the shores of Lake Erie.

From those reports:

- In 2002 the GAO found the NRC weighed the financial impacts of its safety-related decisions on the industry's bottom line - stalling a forced reactor shutdown at Davis-Besse because the NRC fretted about the impact on the plant owner's finances and the "black eye" an emergency shutdown might give the industry.

- In 2004 the GAO found that little had changed within the NRC's safety and inspection culture since Davis-Besse. An internal NRC task force failed to look at more agency-wide issues uncovered during their post-mortem review, the GAO found.

- In 2009, the inspector general found that key NRC staff couldn't name the four core areas of improvement the NRC had identified to better protect the public's health and safety after Davis-Besse incident. In fact, the inspector general discovered many NRC staff didn't know the "lessons learned" project existed.

A report issued last month by the nuclear watchdog group, the Union of Concerned Scientists, found 14 "near misses" at US nuclear reactors in 2010, with the NRC's response to some critical errors less than reassuring.

"If you still believe that the NRC is a nuclear watchdog, you are probably still sending your money to Bernie Madoff," said Arnie Gundersen, a former nuclear-industry executive turned whistleblower.

Key safety rule weakened

As detailed earlier in this series, an investigation by the New England Center for Investigative Reporting and Hearst Connecticut Media Group found the NRC has routinely allowed operators to pack spent fuel rods into cooling pools far beyond the pools' original licensed capacity and design basis, rather than forcing the plant owners to move the fuel into safer but more costly dry casks.

But the investigation also has found that the NRC has weakened a key, decades-old safety standard, potentially saving owners tens of millions of dollars by removing a key requirement that could avert a nuclear tragedy.

The failing reactors at Fukushima Daiichi in Japan are of the General Electric Mark 1 design. There are 23 such reactors in operation in the U.S., including Vermont Yankee in Vernon, Vt., and Pilgrim in Plymouth, Mass.

NRC Chairman Gregory Jazcko told a panel of US senators recently during a congressional hearing that the NRC had required upgrades of the Mark 1 model in the US that would prevent some of the failures seen in Japan.

Still, additional concerns with the Mark 1, as well as Mark 2 and Mark 3 boiling water reactors, have arisen thanks to the recent change in safety rules.

In 2005, both Gundersen and David Lochbaum, a former nuclear operator and now a member of the Union of Concerned Scientists, questioned the NRC's decision to allow some nuclear power operators the ability to use their containment vessel as a way to help cool a reactor before turning to emergency cooling water pumps.

If the containment vessel is allowed to absorb heat from reactor and spent fuel pool water, the overall pressure could add stress to the concrete containment shell, increasing the risk of a failure, Lochbaum and Gundersen contend.

While the analogy isn't perfect, said Lochbaum, think of a plastic bottle half filled with soda. If you stick a straw down into the soda, you can drink the soda. But, if you put your thumb over the top and shake it up vigorously, the bottle is filled with foam. If you stick a straw into the foam region, you don't get soda.

That, in a nutshell is what happens inside a boiling water reactor (BWR). Trying to use emergency pumps without containment pressure is like drinking foam from a soda bottle with a straw, added Gundersen.

"In the old days, we had protection, and nowadays, we're relying on one thing, the containment remaining intact. If that's gone, we lose our ability to cool the reactor cores, and we also open up a pathway for radiation to be released to the environment," said Lochbaum.

NRC staff and industry officials disagree. In multiple filings, including an allowance at Vermont Yankee, the NRC claims BWR containment vessels can absorb additional heat for short periods of time without causing a drop in the reactor pressure levels necessary to push water through emergency pumps.

"These credits were granted to some licensees on their original licenses, so this issue is not new," said Tony Pietrangelo, senior vice president and chief nuclear operator, of the Nuclear Energy Institute. The NEI is the industry's chief lobbying and trade association. "I know there is some disagreement, but the NRC has reviewed this issue extensively."

It's not just external critics who disagree with the NRC's position. The NRC's own internal Advisory Committee on Reactor Safeguards has objected to the policy and believes the new stance is a "serious compromise" of reactor safeguards.

Lochbaum contends the NRC is unnecessarily putting industry profits ahead of public safety.

"The NRC sold out the American public in order to boost profits of companies," said Lochbaum. "It's put millions of Americans at undue and elevated risk, and it was done simply for business purposes instead of safety. There's no excuse for doing that."

Lessons learned - or ignored?

NRC's blurring of lines between public safety and company profits isn't a concern only raised by outside agitators.

The closest the US has come to full-scale core reactor meltdown was in February 2002 when workers at the Davis-Besse reactor in Ohio found a pineapple-sized cavity in the reactor's vessel head - a cavity caused by leaking boric acid used, in part, to help cool the reactor.

Davis-Besse's owner, FirstEnergy Corp., had sought, and received, permission from the NRC to remain open 45 days beyond a required end-of-year inspection date.

The NRC allowed FirstEnergy to remain in operation beyond the end of 2001 to conduct a more thorough inspection of boric acid-related damage during a scheduled February 2002 refueling.

In 2002 the OIG found the NRC backed away from forcing FirstEnergy to shut down Davis-Besse prior to the refueling because the NRC fretted about the impact on FirstEnergy's finances and the "black eye" it might have on the industry as a whole.

It took two years, and millions of dollars in improvements, before Davis-Besse restarted in 2004.

The same year, a separate GAO report found that an internal NRC task force missed an opportunity to learn lessons from the Davis-Besse incident.

"Because the Davis-Besse task force did not address NRC's unwillingness to directly assess licensee safety culture, we are concerned that NRC's oversight will continue to be reactive rather than proactive. NRC's oversight can result in NRC making a determination that a licensee's performance is good one day, yet the next day NRC discovers the performance to be unacceptably risky to public health and safety. Such a situation does not occur overnight," the GAO concluded in 2004.

An NRC spokesman disagrees.

"The NRC is a learning organization and always strives to incorporate lessons learned from previous events and developments," said spokesman Neil Sheehan. "In the case of the reactor head corrosion identified at Davis-Besse in 2002, the NRC formed a Lessons Learned Task Force that produced more than 50 recommendations, 21 of which were considered high-priority."

A 2009 OIG report found otherwise: Key NRC staff responsible for disseminating information about the Lessons Learned Task Force couldn't name the four core areas of improvement the NRC had identified to better protect the public's health and safety, according to the OIG report.

NEI's Pietrangelo said it's not just luck that has kept the US safe from a serious accident since Three Mile Island in 1979.

"They are tough regulators who are devoted to their public health and safety mission and are not afraid to bring down a plant if it is not safe to operate," said Pietrangelo. "I say, don't look the reports, look at the record. We're operating now at record levels of safety for a decade and the proof is in the performance."

Lochbaum and the Union for Concerned Scientists think the NRC can be an effective regulator - if it forces the industry to live up to existing rules and regulations and not grant exemptions.

A UCS report of safety problems issued last month found 14 "near misses" at US nuclear power plants, a high number for what Lochbaum calls a "mature industry."

"This overview shows that many of these significant events occurred because reactor owners, and often the NRC, tolerated known safety problems," the report said.

The report highlighted both effective and ineffective responses by the NRC to safety problems, including an ineffective response at Vermont Yankee, where the agency allowed the release of radioactively contaminated air in ways that had forced shutdowns at other reactors.

"The chances of a disaster at a nuclear power plant are low and current events remind us how important it is to keep them that way," notes the report's executive summary. "The NRC is capable of functioning as a highly effective watchdog, but ... much work remains to be done before the agency can fulfill that role as consistently as the public has a right to expect."

Nuclear Power Plant Owners Paid Billions For Spent Fuel Facility That Never Opened (SPREP)

By MAGGIE MULVIHILL, SHAY TOTTON, MATT PORTER

Springfield (MA) Republican, April 19, 2011

New England's electricity consumers and nuclear plant owners have poured close to \$1 billion into a federal waste fund for the past three decades, honoring their end of a 1982 bargain with the government to finance the permanent storage of thousands of tons of spent fuel from the region's reactors.

The payoff?

A cavernous empty \$11 billion hole in a Nevada mountainside, a broken promise from the US government to remove the radioactive waste and mounting bills that could still saddle New England with at least five mothballed plants and dozens of dry spent fuel casks, turning communities into mini nuclear waste dumps for decades, if not forever.

"It's the most expensive dry hole we've ever built," said David Lochbaum, a nuclear engineer and director of the Union of Concerned Scientists Nuclear Safety Project. "Who would trust the government with a dollar after they've wasted billions? We've messed this up as bad as we possibly could."

As the nuclear calamity in Japan has resurrected debate about government and industry promises of the energy's cost effectiveness, a review of regional costs by the New England Center for Investigative Reporting and the Hearst Connecticut Media Group has found:

- New England plants, among the nation's oldest, have already generated over 4,200 tons of spent fuel, data from the Nuclear Energy Institute, an industry policy organization, shows, but the plants have no clear financial plan on how to pay for long-term storage. The spent fuel sits at or near the nine regional reactors in either pools of water or dry cement fortifications known as "dry casks," which cost between \$6 to 8 million annually per plant to secure.

- At least one New England plant is seeking US Nuclear Regulatory Commission approval to raid funds set aside to decommission, to cover mounting spent fuel costs, raising concerns about its plans to pay for the future dismantling and cleanup costs.

- New England's continuing federal bill for the waste generated to date tops \$2.1 billion, including interest, NEI data shows. Millions more will be needed to house the additional 20 metric tons plants are generating annually.

- Regional plants have a bleak history of underestimating decommissioning costs by hundreds of millions, shifting those unanticipated costs onto taxpayers and ratepayers far into the future.

- Operators or owners of some New England plants have a limited liability corporate structure, meaning taxpayers could be financially responsible for a plant disaster.

- Taxpayers in New England and the rest of the nation have paid out \$750 million in settlements or judgments for generator lawsuits against the federal government for defaulting on its promise to remove the spent fuel to Nevada. The US Department of Energy has estimated its potential liability at \$13.1 billion, a November 2010, DOE report shows.

The cost bleed is not unique to New England. Plant owners and the ratepayers they charge are grappling with intensifying spent fuel storage bills now that the Obama administration - even as it touts industry expansion - has tabled plans for a federal dump at Nevada's Yucca Mountain.

"The real story here is the failure of the government to remove the fuel," said David Tarantino, spokesman for the Pilgrim Nuclear Generating Station in Plymouth, whose pools will reach maximum capacity in 2014. "We don't want to store fuel, but we have to."

Political opposition has currently sunk the proposal that would have moved, beginning in 1998, up to 70,000 metric tons of waste to the Yucca site 90 miles from Las Vegas.

While safety, not finances, has been at the core of the intense debate about the industry following the Japan calamity in March, analysts, anti-nuclear activists, New England politicians and even plant operators said the cost issue sorely needs public attention.

"If a nuclear renaissance were to take place - if it were not just a figment of wishful thinking - we would need another Yucca Mountain every few years," said Ray Shadis, a Maine environmentalist and anti-nuclear activist. "When you grasp the scale of what is proposed, the cost is astronomically high and I don't know that in the public debate that is really being considered."

As the question of whether nuclear energy will ever be affordable is debated, the federal government continues to spend money to support it on a vast scale. To date, \$11 billion has been spent to excavate and prepare the now-abandoned Yucca site, leaving about \$20 billion in the fund, industry experts said.

It could cost \$10 billion to find another site and prepare it if Yucca is canceled, said Arnold Gundersen of Fairewinds Associates, an industry consultant and former licensed nuclear operator based in Vermont.

Beyond the unexpected storage costs, taxpayers and ratepayers could also be on the hook for billions in additional costs ranging from proposed federal subsidies and loans, as well as the possibility owners won't have enough money to decommission the plants and clean up the hazardous sites.

At least one New England plant is seeking an exemption from federal law that would allow it to use its decommissioning fund to pay for storage costs.

Vermont Yankee - whose fund is already short millions - wants the NRC to allow them to use the money to pay for fuel storage, according to a 2008 plan it filed with the agency.

In 2009, the NRC required Entergy Nuclear Operations Inc., which owns Vermont Yankee, a limited liability corporation, to put up a \$40 million loan guarantee because its decommissioning funds are off track, said NRC spokesman Neil Sheehan.

In its NRC proposal, Entergy estimated it would need about \$220 million - about half the current fund - to deal with spent fuel, seeking permission to draw from the decommissioning fund built up with ratepayer money.

"Entergy VT will periodically revisit the cash contribution required for the decommissioning fund to ensure that spent fuel management withdrawals would not inhibit the ability of the licensee to complete radiological decommissioning," the proposal states.

The NRC can't act on the proposal until decommissioning begins.

Because of the limited liability corporate structure of some New England plants, like Vermont Yankee, and Seabrook in New Hampshire, industry critics worry the public will have to pick up the tab to clean up sites if the firms go bankrupt.

"Decommissioning is a real problem in New England," said Gundersen.

NRC spokesman Neil Sheehan disagrees.

"The corporation would not be off the hook. We could always go after the parent company," Sheehan said.

Still, history is not on the side of New England plant operators when it comes to properly estimating decommissioning costs.

"The colossal failure of nuclear power is really seen in decommissioning," said Deborah Katz, who runs the Massachusetts-based Citizens Awareness Network, an anti-nuclear group.

"When you have to engage in cleanup, then this notion of being a clean, technologically advanced form of generating power is really put to the test. These are basically nuclear pigsties," Katz said.

A 2006 audit by the NRC's own internal financial watchdog found in a review of 13 nuclear plants that the actual on-site estimate to decommission was 16 percent higher than was what set aside in funds.

"What they have found at these sites again and again is there has been an underestimation by hundreds of millions of dollars of what it will cost," Katz said. "That is why the investment community won't get behind new reactors. They have no faith in what it is going to cost."

The estimated cost to decommission Yankee Rowe in Rowe was \$306 million in 1995 dollars. The actual costs were \$600 million, a company report states.

Decommissioning was completed in 2007.

Similar problems occurred in Maine and Connecticut.

Connecticut ratepayers will contribute to Yankee Connecticut's decommissioning costs until 2015 because the NRC and Yankee underestimated the cleanup costs by about \$300 million, plant critics said.

"It wound up costing a billion to decontaminate Connecticut Yankee," Gundersen said. "All of the ratepayers in Connecticut got nailed for 10 years to pay that off."

Yankee spokesman Bob Capstick put the decommissioning cost closer to \$800 million. He said plant owners will return funds to ratepayers if they are successful in their lawsuits against the government for the fuel storage bills.

Both the NRC and New England plant owners said they are on target to pay the decommissioning bills.

Ken Holt, a spokesman for Dominion Resources Inc., which owns the Connecticut plants, known as Millstone 2 and 3, said it has about half of what it expects it will need to dismantle the two plants in 2035 and 2045 respectively, when their licenses expire, and any shortfall won't fall on ratepayers.

"The company is responsible for making up any difference in the funds to decommission the unit," he said.

Sheehan said the NRC has changed the decommissioning formula to make sure owners are on track. Funds must gain 2 percent annually and be invested in conservative financial vehicles to ensure dependable growth.

Plants without the funds can "mothball" the plant for up to 60 years - a process known as SAFESTOR - to give them time to finance decommissioning, he said.

The public's contributions are far from reaping the promised benefit of affordable, clean energy to consumers, according to a February report by the Union of Concerned Scientists in Cambridge.

"Government subsidies to the nuclear power industry over the past 50 years have been so large in proportion to the value of the energy produced that in some cases it would have cost taxpayers less to simply buy kilowatts on the open market and give them away," the report summary states.

And after 40 years of operation, the plants still can't stand on their own financial footing, the Union of Concerned Scientist's report states.

"The financial story is that nuclear power is not viable without subsidies," said Ellen Vancko, who runs UCS's nuclear energy division. "The waste issue is just one example."

New England politicians continue to raise the fairness of the public tab. Last year, US Rep. Edward J. Markey, D-Mass., asked the General Accounting Office to review the NRC's oversight of plants, in part because of the industry's history of fiscal problems.

In a March 18 letter to President Obama, US Sen. Bernard Sanders, I-Vt., asked the administration to revisit both a federal law providing taxpayer subsidized insurance to the nuclear industry as well as giving federally backed loans to build new plants.

Congress has authorized \$18.5 billion in existing loan guarantees authority to new nuclear plants, and the Obama Administration, in its budget proposal, has asked for another \$36 billion to expand the nuclear power industry.

"Independent analysis suggests that new nuclear power is more expensive than nearly every other energy source, including solar, wind, biomass and geothermal energy," Sanders wrote. "Given that reality, I cannot understand why we would continue to pour massive taxpayer subsidies into nuclear power."

The Yucca debacle has opened up a financial chasm that will take decades to resolve, industry critics said.

"We are taxing our grandchildren. Capitalism kicks these liabilities down the road, so we are kicking the can down the road," Gundersen said. "We get the benefit while our grandchildren get the liability."

Storm Cut Offsite Power To Va. Nuclear Reactor (WT)

By Joseph Weber

Washington Times, April 19, 2011

An unconfirmed tornado landed outside the Surry Nuclear Plant in Virginia on Saturday and automatically shutdown the site's two reactors, according to the Nuclear Regulatory Commission.

The apparent tomado affected an electrical switchyard next to the plant, cutting off the electrical feed to the station, in Surry County, about 17 miles northwest of Newport News.

Both reactors shut down automatically at about 7 p.m. and backup diesel generators kept power going.

Plant operators have partially restored offsite power to both plants, said owner Dominion Virginia Power.

The radioactive material release is below federally approved limits and poses no threat to station workers or the public, the NRC said.

The power company notified the NRC of the situation soon after it happened, and the agency dispatched its resident inspectors to the plant and staffed its incident response center in Atlanta, officials said.

The power company reported no injuries and said its also notified state and local officials.

US Tornadoes Force Shutdown Of Two Nuclear Reactors In Virginia (GUARD)

By Ewen MacAskill

The Guardian (UK), April 18, 2011

US tornadoes were most destructive in North Carolina, where Deborah Dulow, above, was left to survey the damage to her father's house. Photograph: Jim R Bounds/AP

A US nuclear power company has disclosed that one of the tornadoes that hit the US at the weekend, killing at least 45 people and causing widespread damage, forced the shutdown of two of its reactors.

The series of tornadoes that began in Oklahoma late last week barrelled across the country, with North Carolina, where 22 people died, the worst-hit state.

The US nuclear safety regulator said on Monday it was monitoring the Surry nuclear power plant in Virginia. Dominion Virginia Power said the two reactors shut down automatically when a tornado cut off power to the plant. A backup diesel generator kicked in to cool the fuel. The regulator said no radiation was released and staff were working to restore electricity to the plant.

The tornadoes were among the worst in the US in the past two decades. Last year, 10 people died in a tornado in Mississippi, while 57 were killed in North and South Carolina in 1984 and 330 across the south in 1974.

Two of the survivors of this year's storms, Audrey McKoy and her husband Milton, who live near Raleigh, North Carolina, told the Associated Press they had seen the tornado bearing down on them over the tops of pine trees. At a nearby farm, winds were lifting pigs and other animals into the sky. "It looked just like The Wizard of Oz," McKoy said.

They took shelter in their laundry room. After they emerged, disorientated, they realised that the tornado had turned their mobile home around.

The national weather centre in Raleigh issued detailed descriptions of the tornadoes and their paths of destruction.

One of them, with winds greater than 100mph, destroyed trees, ripped off roofs and wrecked power lines. It hit Shaw University in Raleigh and then strengthened to 110mph. "Snapped trees crashed on to and through numerous homes all along the path. It is in this area where three fatalities were reported when two mobile homes were thrown 30 to 50ft [nine to 15 metres]. Nearly all of the mobile homes in the park sustained some type of damage," the weather report said.

Thousands of workers from the Federal Emergency Management Agency, the national disaster organisation, are being deployed in North Carolina to assess the damage.

The North Carolina governor, Bev Perdue, interviewed on the NBC Today programme, said the storms had ripped through homes as if they were made of paper.

Surry Nuclear Plant Could Be Out Of Service For Several Days (RICHTD)

By PETER BACQUÉ

Richmond (VA) Times-Dispatch, April 19, 2011

Dominion Virginia Power's Surry nuclear power plant could be out of service for several days until workers repair the station's tornado-damaged electrical switchyard.

"The plant functioned exactly as designed during the event," said Nuclear Regulatory Commission spokesman Joey Ledford. "The reactors tripped as designed and the generators fired up as designed."

The reactors at Surry Power Station's Units 1 and 2 shut down automatically at 6:49 p.m. Saturday when a tornado touching down in the station's switchyard interrupted its connections to off-site power from the electrical grid, according to the NRC.

The National Weather Service determined that the damage from the Surry twister was consistent with an EF-2 tornado. EF-2 tornadoes have estimated winds as fast as 111 to 135 mph.

Dominion Virginia Power, the state's largest electric utility, did not have an estimate Monday of the cost to repair the tornado damage at its Surry station, about 50 miles southeast of Richmond.

Both of Surry's reactors shut down — "tripped" — as designed when the tornado hit the switchyard, Dominion Virginia Power said. Switchyards are junctions linking power stations to the electrical transmission grid.

Backup diesel generators kicked in immediately to provide the electricity needed to keep the still-hot reactors safely cooled, the utility said.

"It's a non-event," said VCU nuclear engineering professor Sama Bilbao y León, "but it's good to make sure the public knows a non-event happened."

The tornado did not directly strike the two nuclear units, which are designed to withstand hits from tornados, hurricanes and earthquakes.

The reactors are housed inside steel-reinforced concrete containment buildings. Three of the plant's four backup diesel generators are in separate tornado-protected structures, the company said.

"A tornado striking close to the Surry plant has to give you pause," said Glen Besa, director of the Sierra Club's Virginia chapter.

"When it comes to nuclear power, as unlikely as an accident may be, when there is an accident it can have devastating consequences," the environmental group official said.

Loss of electric power to run the reactor cooling pumps at Japan's tsunami-damaged Fukushima Dai-ichi nuclear reactors caused nuclear fuel rods to overheat and leak radiation.

Surry Unit 2 had already been scheduled to shut down Saturday for a regular refueling outage. Unit 1 will come back online when the switchyard repairs are completed, Dominion Virginia Power said.

Nearly 40 percent of the electricity generated in Virginia comes from nuclear energy, according to the state energy plan.

Dominion declared an unusual event, the lowest of the four NRC emergency classification levels, around 7 p.m. Saturday. The NRC dispatched its resident inspectors to the Surry plant, and staffed its incident response center in Atlanta.

Local And State News From Virginia Business (VABIZ)

By Paula C. Squires

Virginia Business, April 19, 2011

The weekend storm that spawned deadly tornados over some parts of North Carolina and Virginia knocked out electrical power to two nuclear units at Dominion Virginia Power's Surry Power Station. The US Nuclear Regulatory Commission said Monday that it's monitoring the situation after Surry's offsite power was knocked out early Saturday evening by a tornado.

According to Dominion Virginia Power, an apparent tornado touched down on the switchyard supporting the power station near the facility's access road, cutting off the electrical feed from the grid to the station. The plant is located about 17 miles northwest of Newport News.

The NRC reported that Surry's two units automatically shut down after losing power, and four of the plant's diesel generators started to power the units' emergency loads. Dominion notified the NRC of the situation soon after it happened and declared an "unusual event," the lowest of the four NRC emergency classification levels, around 7 p.m.

Roger Hannah, a spokesman for the NRC in Atlanta, said the agency sent its two resident inspectors to Surry, and also is following the situation through an incident response center in Atlanta. "In a situation like this, we have a handful of technical experts on standby in Atlanta, so the resident inspectors can call and ask questions." He said the NRC assigns resident inspectors to every US nuclear plant, and that the typical number, as in the case with Surry, is two. Monitoring will continue, Hannah added, until "they restore the offsite power, and I think they are well on the way to doing that ... When they say they are no longer in the unusual event, we'll stop the monitoring, although we may do a follow up inspection."

By early afternoon today, Dominion Virginia Power said crews had restored power, although the NRC was reporting that power had been partially restored.

Dominion said in a press release that the tornado did not strike the two nuclear units, which are designed to withstand natural events such as tornados, hurricanes and earthquakes. The reactors are housed inside steel reinforced concrete containment buildings. In addition, the company reported no release of radioactive material beyond minor releases associated with normal station operations. Dominion said these minor releases are below federally approved operating limits, and pose no threat to station workers or the public.

There were no injuries at the site. In addition to the NRC, Dominion notified state and local officials about the power outage.

Asked about the frequency of tornados knocking out power to nuclear plants in this country, Hannah said it's not unheard of during bad storms. "I don't know of any that have completely lost offsite power, but it's not unusual with bad storms to lose power. It's unusual to have a switchyard problem, where you lose all power, but it's not unheard of."

Tornado Passed Surry Nuclear Power Plant, Dominion Says (VAPILOT)

Hampton Roads Virginian-Pilot, April 19, 2011

An apparent tornado passed near the nuclear power plant at Surry on Saturday night, knocking down power lines, Dominion Virginia Power said.

Dominion said backup sources including diesel generators kept electricity going to maintain both units at the Surry Power Station. The tornado didn't hit the two nuclear units, which are designed to withstand weather, earthquakes and hurricanes, the company said.

Tornado Touchdown Causes Shutdown At Surry Nuclear Power Plant (NWPRTNWZ)

Surry nuclear reactors remain shut down after tornado

By Eric Gillard

Newport News (VA) Daily Press, April 19, 2011

The Surry Power Station was running at diminished capacity Sunday after the effects of Saturday's severe weather.

Dominion officials said Sunday that a tornado apparently touched down on the switchyard supporting the nuclear power station and the facility's access road, cutting off the electrical feed from the grid to the station. A backup generator kept power running to both reactors.

One of the two main reactors has been reconnected to the plant's grid.

"We are trying to restore the second feed," said Dominion spokesperson Dan Genest. That process will take several days, he said.

Once the second feed is restored, then the power station will return to full power, Genest said. On Monday morning, the federal Nuclear Regulatory Commission's website still showed both reactors at zero capacity.

There were no injuries at the site, Genest said. Power company personnel are working to complete restoration of electrical service to the station, he added.

No release of radioactive material has occurred beyond those minor releases associated with normal station operations.

The tornado did not strike the two nuclear units, which are designed to withstand natural events such as tornados, hurricanes and earthquakes.

Dominion notified the US Nuclear Regulatory Commission of the situation, as well as state and county officials.

Surry Nuclear Plant Shuts Down After Tornado (WWBT)

By Phil Riggan

WWBT-TV Richmond, VA, April 19, 2011

RICHMOND, VA (WWBT) – The nuclear power plant in Surry County shut down after getting hit by a tornado. Dominion Virginia Power said the tornado shut down power to the plant.

That power is back on this afternoon.

The storm damaged a switchyard near nuclear unit but didn't hit the actual generators. Dominion says the units are safe and were safe during the storm.

Back-up diesel generators are being used to help with the electrical supply.

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Surry nuclear reactors remain shut down after tornado

Hampton Roads Daily Press

WTVR-TV Richmond, VA, April 19, 2011

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The tornado did not strike the two nuclear units, which are designed to withstand natural events such as tornados, hurricanes and earthquakes.

Dominion notified the US Nuclear Regulatory Commission of the situation, as well as state and county officials.

Va. Nuclear Plant Shuts Down After Storm (NBC4DC)

NBC Washington, DC, April 19, 2011

Dominion Virginia Power reports that an apparent tornado touched down on the switchyard supporting the Surry Power Station and the facility's access road Saturday. The storm cut off the electrical feed from the grid to the station, which is located in Surry County, Va.

Both reactors at the station shut down automatically as designed and backup diesel generators started immediately to provide the electricity necessary to maintain both units.

A spokesperson for the Nuclear Regulatory Commission says no release of radioactive material occurred beyond minor releases associated with normal station operations.

That release is below federally approved operating limits and poses no threat to station workers or the public, the NRC said in a statement released Sunday.

The apparent tornado did not strike the two nuclear units, which are designed to withstand natural events such as tornadoes, hurricanes and earthquakes.

Power company personnel and NRC staff are working to restore full electrical service to the station.

US Nuclear Regulatory Commission Monitoring Surry Plant (WVEC)

By Emily Rau

WVEC-TV Hampton Roads (VA), April 19, 2011

The US Nuclear Regulatory Commission was monitoring the Surry nuclear power plant Monday after it was affected by storm damage.

A twister swirled through and touched down on the electrical switchyard.

Power lines were knocked down, cutting electricity to the reactors.

After the nuclear disaster in Japan, many are paying close attention to the Surry plant.

Dominion said there is no need to worry.

The problem in Japan was triggered when emergency generators at the Fukushima plant failed to kick on after the earthquake. That was not the case in Surry County.

Monday night, both reactors remained at zero power.

"When the storm hit the switchyard, it took out offsite power. At that moment, at that second, the reactors sensed that there wasn't any electrical power coming into the station and shut down," said Dan Genest of Dominion.

Emergency generators kicked on to power plant operations.

"Those diesels started as they should and provided the power that we needed to keep the reactors in safe, stable conditions," said Genest.

The US Nuclear Regulatory Commission is monitoring the situation.

A spokesman with the commission said as the reactors shut down, they put off heat that must be removed in order to maintain safety.

"If we didn't have the emergency diesel generators, then you wouldn't have power to the station," said Genest. "They can't supply as much as the reactors but they can supply to those critical systems that are needed to keep the reactor safe."

The plant issued its lowest level alert to surrounding Surry County. Officials said their level of concern was low. Dominion said that's right where it should be.

"We have multiple backups and backups for the backups," he said. "The reactors are in a safe and stable condition right now and they will remain that way."

The tornado did not directly hit the reactors or the containment structures, even though Dominion said they are designed to withstand any tornado, hurricane or other natural disaster.

Officials said it will be several days before Dominion crews can finish their repairs and get the reactor back up and running.

Surry Power Station's two nuclear reactors create enough electricity to power 400,000 homes each year.

Tornado Hits Virginia Nuclear Plant (ABCRAID)

ABC News Radio, April 19, 2011

Electricity was lost at a Virginia nuclear power plant that was brushed by an apparent tornado, but officials say the situation is safe.

The twister hit the Surry Nuclear Plant's switchyard connecting it to off-site power, but the plant's two reactors were untouched.

"No one really knows what would happen if a very powerful tornado hit a nuclear power plant directly," said nuclear policy expert and ABC News consultant Joe Cirincione, and that's because it has never happened before.

Dominion Virginia Power says underground backup generators kicked in, ensuring a constant flow of coolant, and a safe shutdown.

"Unlike the reactors at Fukushima, many of the backup power systems at US reactors are shielded in one way or another," Cirincione said, but he warns that even the strongest plant couldn't withstand a direct hit.

US Federal Agency Monitors Nuclear Plant After Power Disruption (XIN)

Xinhua News Agency, April 19, 2011

The US nuclear safety regulator said on Monday that it was monitoring the situation at a Virginian nuclear power plant after a tornado cut its external power over the weekend.

"The US Nuclear Regulatory Commission (NRC) staff is monitoring the situation at the Surry nuclear power plant after the site lost offsite power early Saturday evening due to a tornado affecting an electrical switchyard next to the plant," the agency said in a statement posted on its website.

The plant is operated by Dominion Virginia Power near Surry, Virginia, about 17 miles northwest of Newport News.

The two units at the Surry plant automatically shut down after losing offsite power, and four of the plant's diesel generators started to power the units' emergency loads, according to the statement.

Plant operators have partially restored offsite power to both plants. Safety systems have operated as needed, the agency said.

Dominion, one of the nation's largest producers of energy, notified the NRC of the incident soon after it happened on Saturday evening, with no injuries reported.

"No release of radioactive material has occurred beyond those minor releases associated with normal station operations. These minor releases are below federally approved operating limits, and pose no threat to station workers or the public," the company said in a statement.

UPDATE 1-Dominion To Restart One Surry Unit In A Few Days (REU)

Reuters, April 19, 2011

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

Saturday's Terror From The Skies (VAPILOT)

Hampton Roads Virginian-Pilot, April 19, 2011

It's hard to comprehend a force that lifts buildings off their foundations, that rolls buses and shears trees and then disappears, leaving the skies clear and the stars shining. It's hard to make sense of a power that skips through neighborhoods, demolishing homes here and there but leaving the ones next door untouched.

Hundreds of tornadoes tore through six states Saturday, killing at least 44, including six Virginians. The National Weather Service is still trying to determine whether other reported deaths were caused by the twisters, but a tornado with winds of up to 135 mph killed at least two in Gloucester and injured 60 others.

The storm's tragic footprint in Hampton Roads was more than eight miles long. A tornado touched down first in Surry County, where it apparently hit the Surry nuclear power plant's switchyard and cut off electricity to the plant, requiring backup generators.

The twister then cut across two rivers and through Gloucester. It ripped off a middle school's roof and collapsed its walls. It filled neighborhoods with errant shingles, smashed vehicles and debris, and left dozens homeless.

As Gov. Bob McDonnell toured the devastation Monday, promising government help, the people closest to the devastation did what Southerners are known to do. They fixed plates of food for their neighbors. They used their chain-saws to clear roads. They foraged through their own closets for clothing and supplies for people who had lost everything. They opened their hearts and homes and wallets.

The scenes that played out Sunday and Monday - in Gloucester, in Raleigh and northeastern North Carolina, in Oklahoma and Arkansas, Alabama and Mississippi - showed not just the power of nature but the strength of community.

Suffolk knows that spirit. Almost exactly three years ago, a tornado tore through the city, injuring dozens of people and destroying houses and businesses. Given that the twister danced across the roof of an elementary school a little more than an hour after kids went home, it could've been so much worse. The April 28, 2008, tornado didn't kill anyone, and today its scars are hard to find.

But its memory was on the minds of everyone who feared this latest system of twisters would take a similar path. On Saturday afternoon, two miles from a neighborhood wrecked in the 2008 storms, parents worried as they watched their children play at the wind-whipped Suffolk Youth Athletic Association fields on Kings Fork Road.

As the clouds gathered and the skies darkened, they braced for a repeat.

Instead, the twisters wreaked calamity on the Middle Peninsula's historic community of Gloucester and northeastern North Carolina's rural Bertie County, where 11 people died.

As residents there pick up the remains of their lives, as schools and towns rush to bring normalcy back to communities that are anything but normal, the rest of us need reminding that hurricane season is fast approaching, that weather is haphazard and relentless and not always predictable, and that our best resources in times of trouble are each other.

Short Takes On Tornadoes In Virginia, Redistricting: The Aftermath (NWPRTNWZ)

Newport News (VA) Daily Press, April 19, 2011

'Blessed to be alive'

Hurricanes give us days of notice and time to prepare. Tornadoes and destructive thunderstorms barge in suddenly, catching us unawares.

And leaving destruction in their wake. We can only marvel at the fury of the storms that beat a path, Saturday evening, from Surry and Isle of Wight counties across the upper Peninsula, through Gloucester County and on to Deltaville. We see the roof ripped off a middle school in Gloucester and school buses overturned, homes reduced to rubble, big trees tossed about like twigs.

We swallow hard when we hear that a tornado skipped across the Surry nuclear plant and took out its power supply. With our sensitivity raised by the disaster that followed when a nuclear plant in Japan lost power, we are grateful that the back-up generators in Surry kicked in and danger was averted.

We are sobered by the confirmed deaths in Gloucester and the understanding that more fatalities may be attributed to the weather. Storms can tear apart families as well as structures.

In the aftermath, we re-sort our priorities. People whose possessions were trashed are feeling grateful, like the James City County woman who said that even though she has to start over, "I'm just blessed to be alive."

It took the storm a few hours to rip through our area. It will take a long time to fix it again. Gloucester has to figure out how to finish the school year, Zion Baptist Church in Deltaville has to repair its sanctuary, and people from Windsor to Deltaville have to replace roofs and walls.

As always in disasters, we find a bright spot: the people who quickly materialized, lugging chain saws, helping salvage belongings, offering a place to stay. The Red Cross, churches and civic groups will offer more ways to help —and confirm, again, that a community is more than its structures.

Unacceptable

Gov. Bob McDonnell may have saved Virginia considerable angst when he vetoed the General Assembly's redrawn state legislative districts. If critics are right, and the Senate plan in particular would have faced legal challenges, he may have averted expenses and delays that could complicate Virginia's ability to hold its November elections.

The plan drawn by the Republican Party that has the majority in the House of Delegates was partisan advantage-seeking, as redistricting always is in Virginia. But the plan drawn by the Democrats who call the shots in the Senate crossed a line, with a display of partisan exploitation that violated the basic principles that must be respected even in a process that has long been politically tinged. It sliced up communities that should be intact, like Williamsburg and Virginia Beach, and lumped together communities with little in common. Its map looked like a three year old had run amok with a crayon, not like the work of people who honor representative democracy.

If Virginia needs an reason to switch to a nonpartisan approach to redistricting, this will do. States that have adopted this method find that it produces districts that make sense, allowing communities to have meaningful representation and representatives to better serve their constituents. It results in elections that offer voters real choices, unlike the elections in many Virginia districts in which the outcome is a foregone conclusion.

The General Assembly needs to get back to work and draw districts that are not so tainted by political self-serving. Because now it knows: If it doesn't do a decent job on its assignment, the governor won't accept it. Thank goodness for that.

US Nuclear Power Output Hits Lowest In 4 Years After Tornado (BLOOM)

By Colin McClelland

Bloomberg News, April 19, 2011

US nuclear-power output fell to the lowest level in almost 4 ½ years after a tornado forced Surry Units 1 and 2 in Virginia to shut yesterday, the Nuclear Regulatory Commission said.

Power generation nationwide fell 3,730 megawatts, or 4.9 percent, from April 15 to 72,425 megawatts, or 71 percent of capacity, the smallest amount since Oct. 22, 2006, according to an NRC report today and data compiled by Bloomberg. Twenty-nine of the nation's 104 reactors were offline.

The Surry reactors, operated by Dominion Resources Inc. with a capacity of 799 megawatts each, automatically shut down when a tornado touched down in the switchyard and knocked out offsite power, the NRC said. The incident was declared an "unusual event," the lowest of four categories in the federal agency's emergency classification system. Unit 1 was operating at full power and Unit 2 at 98 percent of capacity on April 15.

"No release of radioactive material has occurred beyond those minor releases associated with normal station operations," Dominion said in a statement yesterday. "The apparent tornado did not strike the two nuclear units, which are designed to withstand natural events such as tornados, hurricanes and earthquakes."

There were no injuries at the plant, 17 miles (27 kilometers) northwest of Newport News, and the company said it is working to restore electrical service to the station.

Dominion notified authorities that about 100 gallons of oil leaked from an above-ground storage tank and 200 gallons of oil spilled from a damaged transformer, the NRC said.

Entergy Corp. (ETR) idled the 685-megawatt Pilgrim 1 reactor in Massachusetts after it was operating at 86 percent of capacity on April 15. The plant is 4 miles (6.4 kilometers) east of Plymouth. Scana Corp. (SCG) closed the 966-megawatt Virgil C. Summer reactor, which was operating at 40 percent of capacity on April 15. The plant is near Jenkinsville, South Carolina, about 26 miles northwest of Columbia.

Exelon Corp. (EXC) shut the 1,152-megawatt Braidwood 2 reactor in Illinois, operating at 91 percent of capacity on April 15. Another reactor on the site, the 1,178-megawatt Braidwood 1 unit, was operating at full power. The plant is about 54 miles southwest of Chicago.

FirstEnergy Corp. (FE) idled the 1,235-megawatt Perry nuclear reactor in Ohio for refueling. The plant, located on Lake Erie about 35 miles northeast of Cleveland, was operating at 86 percent of capacity on April 15.

FirstEnergy started the 940-megawatt Beaver Valley 1 reactor in Shippingport, Pennsylvania, about 26 miles northwest of Pittsburgh. It was operating at 82 percent of capacity today. Another 940-megawatt unit at the plant, Beaver Valley 2, is operating at full power.

The Tennessee Valley Authority boosted output from the 1,104-megawatt Browns Ferry 2 reactor in Alabama to full power from 92 percent of capacity on April 15.

Browns Ferry Units 1 and 3, which have respective capacities of 1,065 megawatts and 1,115 megawatts, are operating at full power. The plant is 84 miles north of Birmingham near the Tennessee line.

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

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

Hartz: US Nuclear Industry Strives For Safety (RICHTD)

By LESLIE N. HARTZ

Richmond (VA) Times-Dispatch, April 19, 2011

I live about 40 miles from the North Anna Power Station. I worked at North Anna in the 1980s, including in 1986 when my daughter was born, and I served as site vice president at one of our nuclear power stations.

I can tell you from firsthand, on-site experience that Dominion's nuclear facilities and the rest of those in the US nuclear industry are safe. They are robustly designed to withstand the severest of events and safely shut down.

Now we have a new severe event to study — the 9.0-magnitude earthquake and unstoppable tsunami at Fukushima Daiichi power station in Japan. Four days after it struck, the industry's Institute of Nuclear Power Operations issued a mandate for us to re-examine all safety systems, backup safety systems, procedures and training to ensure that they could function properly in an event of similar circumstances.

More than two dozen engineers and technicians are working on this full-time at Dominion, and several dozen more are supporting them. They are examining our practices and asking "what-if" questions to challenge current thinking. It will be months before we understand all that happened, but this industry has always had the willingness and expectation to share lessons learned and improve. We will get better and even safer.

What occurred in Japan is an unspeakable tragedy. We all have seen the video of entire towns being swept away by the tsunami. Between the earthquake and the tsunami, reactor control rods were inserted successfully and shut down the three operating units. The tsunami hit the station shortly after, knocking out backup generators at the site.

Without power for cooling systems, the operating reactors and spent fuel storage pools began to overheat until other systems and containment structures were affected. Some were ultimately damaged, which released radioactive material.

Operators are bravely doing everything in their power to bring the situation under control. The US and worldwide nuclear community have established an around-the-clock organization to assist Japan, including placing US utility individuals with critical expertise in Japan. Fortunately, as far as we know, the highest radiation levels that workers have been exposed to are about the same as what US nuclear workers could be exposed to in accordance with federal limits over the course of less than three years and below the limits for emergency situations.

This is not to make light of this accident or the release of radioactive material. The events at Fukushima Daiichi in 2011 have now entered history alongside Chernobyl in 1986 and Three Mile Island in 1979.

In a way, though, perhaps the most extraordinary aspect is that given the forces of nature involved — enough energy in the earthquake alone to move the island of Japan 8 feet closer to the United States — it is a testament to the design and construction of nuclear facilities that the station held up as it did. In the end, the station's problems stemmed mostly from the tsunami that knocked out the offsite and backup power systems.

In the United States, our station designs have additional backup power and backup pumps that were not available to the Fukushima operators. Additionally, US nuclear stations added equipment and procedures to provide additional means of dealing with a catastrophic terrorist attack following the events of Sept. 11, 2001. Those can be applied to deal with a large-scale natural disaster.

My heart goes out to the Japanese in this terrible crisis. There are multiple stories of the individuals at Fukushima Daiichi who have worked tirelessly to deal with the unfolding events, many with displaced families.

The production of nuclear power is an extremely important element of our country's energy profile. Our two Virginia stations, North Anna and Surry, provide 40 percent of the electricity used by our customers. Their operation requires a profound respect from everyone involved. We in the industry take that responsibility seriously and, as a result, we are driven to learn and improve every day. I remain confident that our stations and those in the United States are safe and that the tragic events in Japan will be our catalysts for enhanced safety.

Report: Michigan 'Fairly' Prepared For Possible Radiation Emergency (DETN)

By Kim Kozlowski

Detroit News, April 17, 2011

As Japan's nuclear crisis unfolds, Michigan is "fairly," but not fully, prepared to protect public health if a similar radiation emergency were to happen here.

State officials offered the assessment in response to a recent report that showed most states are poorly prepared.

The report, published in last month's Journal of the American Medical Association, surveyed 38 states last year and concluded there are numerous gaps in radiation preparedness, including in Michigan — home to four nuclear power plants.

The report did not rank the states or cite their responses to the survey.

Michigan officials acknowledged that there are gaps in the state's response plan in the event of a radiologic emergency, such as a lack of resources to test for radiation in water or food.

But officials said Michigan is further along in its emergency planning than other states with nuclear power plants.

"We are fairly well-prepared just given that we have an overall response plan in place," said David Wade, director of the environmental health division at the Michigan Department of Community Health. "Not only do we have it in place, but we have tested it a number of times. And we are one of a number of states that have gone a step further, where we have a potassium iodine distribution program."

Potassium iodine protects the thyroid from cancer in the event of a radiation release and is taken only if needed.

Michigan implemented a plan two years ago to get the tablets to the 78,000 people and 4,000 businesses within 10 miles of the state's four nuclear reactors. The power plants funded the \$65,000 program, and only 5 percent of eligible people used the coupons they were mailed for a free supply of the pills.

There are a number of reasons for the lack of emergency planning nationwide, said Martha Stanbury, a report co-author who is administrative manager in the environmental health division of Michigan's health department.

Radiation response planning for public health involves technical expertise that often stretches across several state departments, Stanbury said.

In Michigan, officials responsible for nuclear emergency planning are split between the state health department and the Department of Environmental Quality.

Additionally, she said, most states have been prepared to respond to communicable diseases, and began preparations for biological events after the Sept. 11, 2001, terrorist attacks.

"The states have since started dealing more with other kinds of public health emergencies, not just terrorism, but natural disasters and chemical events, and they are starting to think more about radiation," Stanbury said.

"It's been a process and we're moving on this, but we still have a ways to go."

Michigan has four nuclear reactors, including DTE Energy's Fermi 2 in Newport, near Monroe; two reactors at Michigan Indiana Power Co.'s Cook Nuclear Plant near Bridgman in Berrien County, and one at Entergy Corp.'s Palisades Power Plant in Covert, near South Haven in Van Buren County.

DTE has an application before the Nuclear Regulatory Commission to obtain a license to build another nuclear plant.

More than 40 years ago, a since-decommissioned nuclear plant caused a scare in Monroe County. About 40 pounds of nuclear fuel melted at Fermi 1 on Oct. 5, 1966, when a metal part in the reactor broke off, blocking the flow of sodium coolant.

A radiation emergency was declared in the plant's primary containment building and the reactor was shut down. Operators and inspectors found no risk to the public, according to The Detroit News archives, but the incident led to the plant's closure in 1972.

Japan is in the midst of a nuclear crisis following a massive earthquake and a tsunami a month ago that crippled the Fukushima Daiichi power plant. Work is under way to the stop leakage of radiation there that has contaminated vegetables and milk near the plant.

Japan's disaster is serving as a wake-up call in the United States, said Jack Herrmann, public health preparedness senior advisor for the National Association of County and City Health Officials in Washington, D.C.

"The incident that occurred in Japan has really galvanized the preparedness community on seriously looking at how we would respond from a local, state and federal level to a similar incident that could occur here domestically," Herrmann said.

The state has an all-hazards plan to address public health issues. It includes sections on communicable diseases and chemicals, but radiation is not included. Michigan is working to address that gap, officials said.

"It's a terrible tragedy over there," Wade said of the Japanese disaster. "But it has shown us a few things that we need to look at and make some improvements on here."

TV - Politicians Visit So. Fla. Nuclear Plant (WSVN)

Miami, Florida

WSVN-TV, April 19, 2011

SOUTH MIAMI-DADE, Fla. (WSVN) – Members of Congress are speaking after they got a firsthand look at a South Florida nuclear plant.

In the wake of the nuclear disaster in Japan, four members of the South Florida Congressional delegation visited the Turkey Point Nuclear Power Plant in South Miami-Dade, Monday.

Democratic Representative Frederica Wilson and Republican Representatives Mario Diaz-Balart, David Rivera and Ileana Ros-Lehtinen toured the power plant during a recess from Congress.

The politicians looked at the plant's two nuclear reactors and expressed concerns about nuclear safety in light of the earthquake and subsequent tsunami that devastated Japan. The natural disasters crippled a nuclear power plant on the island nation and radioactive water spewed into the ocean. As a result, concerns were raised about radioactivity in the water and food supplies in Japan.

The representatives wanted to make sure that if a natural disaster, like a major hurricane, were to hit South Florida, the Turkey Point Nuclear Power Plant would be well-equipped to handle it. "How is this similar or different from the plant in Japan? Could it happen here? How is this different or the same from Three Mile Island? What if there were, not a tsunami, but what if there were a hurricane?" Ros-Lehtinen asked.

Employees at the plant attempted to quell the politicians' concerns. Gregory Laughlin of Florida Power & Light said, "This plant is designed for way beyond anything expected for this area."

After the visit, three of the four representatives were assured by the safety standards at the plant. Diaz-Balart mentioned that in 1992, the plant was able to withstand Hurricane Andrew. "See, we don't have earthquakes, but we do have hurricanes. I'll remind you, though, that this plant was basically hit dead-on by a Category 5 Hurricane Andrew, and it withstood it with no damage whatsoever," said Diaz-Balart. "Having said so, one cannot just sit back and think that that's the worst that can happen."

Rivera said, "The authorities here, I believe, try their best to respond to what many feel are the risks associated with operating a nuclear power plant."

However, one representative still had some doubts. "I am concerned, there are three things, I guess you could say: the security of the plant. How people gain access to the plant," Representative Wilson said.

Wilson's other two concerns included: what can be done with nuclear waste and hurricanes.

Rep. Keenan Talks About Nuclear Power, Salem Coal Plant (SNEWS)

By Garrett Brnger

Salem (MA) News, April 19, 2011

SALEM — Salem Rep. John Keenan is the new chairman for the Joint Committee on Telecommunications, Utilities and Energy, a job that has taken on greater significance with the nuclear disaster in Japan.

The Salem Democrat shared his thoughts this week on nuclear power in Massachusetts.

Your committee is probably getting a lot more work right now after the incident in Japan.

Absolutely. I have to say, I was named chairman of this committee a few weeks before this incident happened. I would imagine, much like the legislators in our committee here in Massachusetts, many of the legislators in the 31 states that have nuclear reactors have probably responded thoroughly, in that they wanted to hold hearings and make sure communities prepare in the event that we have some sort of disaster, natural or other, that causes a problem.

This was not an issue that I felt was going to be a first issue to have for my committee, but it just so happens that was the case.

How safe should state residents feel with three nuclear power plants within or just outside our borders?

I think that was part of our goal for having the hearing last week at the Statehouse — to bring in the two companies, Entergy, who owns both Pilgrim and Yankee Vermont, and then NextEra, which owns Seabrook. ...

I was certainly comfortable with their responses and their talking about their preparedness for any sort of natural disaster or sabotage or those sorts of things, and talking about their backup systems. ...

So I just hope we did reveal that Massachusetts and Massachusetts Emergency Management (MEMA) is prepared in the event something like that does happen, but we also asked some important questions about how the communities communicate with each other.

I think overall the citizens can feel safe. Nuclear power plays a very important role in the region. I think it accounts for almost 30 percent of the baseload here in the New England ISO (independent system operator) region.

What steps are the utilities taking to make sure there won't be a repeat of the catastrophe in Japan?

I don't think you can ever say anything is 100 percent fail-proof, but having two or three systems ready to go and kept in working fashion is critical to the folks who live in the emergency evacuation zone. ...

As a result of the failed effort on behalf of the federal government to build the depository at Yucca Mountain, both companies have explained to us the process and capital planning they're doing to build dry storage facilities on-site. ... But we are encouraging, as did the governor, that the federal government either move forward with that project or another project.

They collected over \$25 billion from ratepayers in nuclear power companies over the last several decades to build this thing, and they haven't done it. So they need to do that, or send the money back to the various facilities so they can build appropriate dry storage on site.

The cost of electricity in Massachusetts is among the highest in the country. Why?

I think one of the reasons is we're sort of at the end of the energy line, if you will. We don't necessarily have natural resources here.

Most of our electricity is generated from fossil fuels, whether gas or coal that's brought into the area. It is getting a little better; the cost of natural gas is starting to go down a little bit and level out over the last year or so. The discovery of shale gas in Pennsylvania, I think, is going to provide ample gas going forward.

Nuclear power plants are very expensive to build, but they are ... a critical component. So I don't know how we could think about replacing the 650 megawatts at Pilgrim and another 650 megawatts at Vermont Yankee. It's a huge part of our energy here in New England.

What are you hearing about the future of the coal-burning plant, Salem Harbor Station?

I asked a sort of similar question because our power plant also has the capacity of about 750 megawatts, which is sort of equal to that of Pilgrim or Vermont Yankee, and has been critical to the reliability of this area for a long, long time.

There are no new plants that I'm aware of, of that magnitude, being planned or being built. The only thing that ISO has talked about is transmission into the region. But that is perhaps more costly than the improvements that need to be done at Salem Harbor, and quite some time before you actually get some study up in terms of transmission lines.

I am hopeful and confident that ISO will determine in May that the plant is still needed for reliability in the grid. In Massachusetts, coal follows nuclear as the biggest baseload. So it's an important piece.

Again, I think we have to diversify. I think nuclear is a part of the solution. Clean coal is perhaps part of the solution. Renewable, I certainly support its development in Massachusetts. So we have to continue to look at all facets, and I think the Salem power plant does play a role.

What steps could the state take to mitigate the tax loss to the city if the plant closes?

Sen. Berry (Fred Berry, D-Peabody) and I took some steps a few years ago in the Green Communities Act, and put a sort of backstop in there in terms of taxes, which is still in effect through Dec. 31. In the event that the tax proceeds go down from the power plant to the city of Salem, the funds from the Regional Greenhouse Gas Initiative auction would fill out that gap.

Right now, we receive about \$4.75 million in taxes from the plant. ... Sen. Berry and I have also filed legislation this term to extend that protection. We're hopeful we can move that along.

Is there anything else you'd like to add about the work you and the Telecommunications, Utilities and Energy Committee are doing right now?

We try to be prepared in the very unfortunate instance that something like this (Japan) were to happen. It made for a very interesting beginning of my tenure as chairman of this committee.

EPA To Test Western Pa. Water Wells For Contamination From Long-shuttered Nuclear Plant, Dump :: The Republic (AP)

Associated Press, April 18, 2011

VANDERGRIFT, Pa. — The federal Environmental Protection Agency plans to test the water wells in a tiny southwestern Pennsylvania village to see if they've been tainted by nuclear waste dumped nearby from a defunct plutonium fuel plant.

Officials tell the Valley News Dispatch in Tarentum that the testing is planned later this year in the village of Kiskimere, which is in Parks Township, about 35 miles northeast of Pittsburgh.

The village has about 50 homes near the former Nuclear Materials and Equipment Corp. plant and a waste dump along Route 66. The plant was torn down in 2002 as part of a cleanup mandated by the Nuclear Regulatory Commission and the Army Corps of Engineers has a contract to excavating the dump and removing waste from it.

Any future EPA cleanup of the surrounding area will depend, in part, on the well tests.

Committee To Review Whether Proximity To Nuclear Power Plants Boosts Cancer Risk (STEL)

By Chuck Quirnbach

Superior (WI) Telegram, April 19, 2011

A national committee looking at cancer risks near nuclear power plants will hold a public meeting in the Midwest today.

The Nuclear Regulatory Commission (NRC) recently asked the National Academy of Sciences to look at the possibility that living near a nuclear power plant boosts the risk of getting cancer. UW-Madison provost and medical physicist Paul DeLuca (DEE-lucah) is on the study committee. He says cancer rates vary across the US and the scientists are looking into whether having a nuclear power plant close by might raise local cancer rates or lower them.

DeLuca says if there's a local nuclear power plant, it's less likely a big polluter like a coal-fired power plant will be nearby. The study committee will hear testimony in suburban Chicago from scientific experts, including on the NRC's mission to keep radiation doses near nuke plants as low as reasonably achievable. The panel started its work before the Fukushima nuclear plant disaster in Japan. Professor DeLuca says he expects those problems to affect the federal study.

The panel will first try to complete a scoping study to identify scientifically sound approaches for carrying out an epidemiological study of cancer risks near nuclear plants. Then phase two will be an actual assessment of those risks.

Tags: news, energy, wisconsin, health, updates

Malloy Favors Compromise Electricity Bill (HARTC)

Controversial 'Millstone Tax' Will Not Be Approved

By Christopher Keating

Hartford Courant, April 19, 2011

Gov. Dannel P. Malloy predicted Monday that the highly controversial "Millstone tax" on the state's nuclear power plants will not be approved.

Instead, Malloy said a key legislative committee this week would approve an electricity generation tax that is closer to his idea than the Millstone tax that would charge the two nuclear plants about \$330 million a year.

Malloy's proposed tax for Millstone is much smaller, about \$33 million a year. The nuclear operators originally had been opposed to Malloy's plan when it was unveiled, but that was before the legislature's energy committee voted 12-9 to approve a tax that would be 10 times higher.

Malloy predicts that the legislature's tax-writing finance committee this week will approve a tax plan much closer to his original proposal.

"I don't see that there is the political desire to tax one purveyor of energy by \$300-plus million," Malloy told The Hartford Courant's editorial board Monday. "I think in the coming days, when the appropriate committees act, you're going to see something much closer to the tax that I've proposed than the tax that has been proposed by the energy folks [on the committee]."

In February, Malloy proposed an electric generation tax of two-tenths of a cent per kilowatt hour, which would have generated \$58.4 million in each of the next two years from all generators in the state, including Millstone.

"I think it's possible you'll see a slight uptick in that number as a compromise," Malloy said of his rate of two-tenths of a cent.

Regarding the Millstone tax, Malloy said, "I never supported that tax. That didn't come from me."

In a private conversation recently with Millstone officials at his state Capitol office, Malloy told the plant operators that they should open up their books to the general public.

"I'll tell you exactly what I said: 'You ran around here like your hair was on fire when I proposed a two-tenths of one cent tax,' " Malloy said of his talks with Millstone executives. "It somewhat undercut your argument when there was a much larger tax.' My advice to them was to become much more transparent in their dealings with the state."

The two influential Democratic co-chairs of the legislature's energy committee, Sen. John Fonfara of Hartford and Rep. Vickie Nardello of Prospect, both voted in favor of the Millstone tax. Rep. Terry Backer, a Stratford Democrat who is one of the most knowledgeable lawmakers on energy issues, and Sen. Kevin Witkos of Canton, the ranking Senate Republican on the committee, were among those who voted "no."

Nardello agreed that the final decision will be made in the context of the overall budget as legislators craft the two-year, \$40 billion package.

But she disputed statements by opponents that the increased taxes would either be passed along to consumers or that the Millstone operators would shut down the two nuclear plants along Long Island Sound.

"If you're going to pass it on, why would you be worried about it?" Nardello asked. "I wouldn't want to put the plant under. Why would I want to do that?"

Nardello said that Millstone "can't shut down" because it has made a commitment to supply power to ISO New England, which oversees electricity in the region.

Dominion, which operates the Millstone plants, says on its website that the tax would threaten the future of the nuclear plants, and the company urges customers to contact their legislators to block the bill.

"If this bill is passed and enacted into law, your monthly electric bill will increase," the company says. "As with every other tax, this ultimately will be passed on to consumers."

The company added; "Such an onerous tax would make it financially imprudent for Dominion to operate the station. A company representative has testified before the legislature that the company would cease operations at Millstone until economic conditions improve. This is not an easy decision or an idle threat. This proposed tax threatens the economic viability of the facility and the jobs of the 4000+ people the facility supports."

North Attleboro News (ATTLBORO)

By Amy DeMelia

Attleboro (MA) Sun Chronicle, April 19, 2011

A tax proposal in Connecticut could have ramifications in North Attleboro and Mansfield.

The Connecticut Legislature is considering enacting a tax on electric generation that would cost North Attleboro Electric Department up to \$339,643 per year because it receives electricity from Connecticut's Millstone nuclear plant.

"It's definitely a concern because it's an added cost that is not included our budget," said James Moynihan, general manager for North Attleboro Electric.

The \$339,643 figure is an estimate of the impact provided by the Massachusetts Municipal Wholesale Electric Company, which owns 4.8 percent of Millstone Unit 3, a nuclear power plant in Connecticut.

The wholesale electric company resells its share of electricity generated at Millstone to 27 municipal utilities, including the North Attleboro and Mansfield electric departments.

Information on the impact of the tax on Mansfield Electric was yet not available.

Through the 27 municipal utilities, Millstone provides electricity to 265,000 customers in Massachusetts. The wholesale company estimates it would cost those utilities a total of \$9.3 million a year.

Moynihan said a determination on how North Attleboro Electric would handle the tax and how it would affect customers has not yet been made. Its impact would depend on when the tax goes into effect.

The proposed tax, which is under consideration by the Connecticut General Assembly, would tax nuclear generation from Millstone at 2 cents per kilowatt hour, raising about \$330 million per year in tax revenue.

"Such a tax is at the very least unfair," said David Tuohey, director of communications and external affairs for the wholesale company. "Massachusetts public entities are not responsible for Connecticut's budget problems and they should not be responsible for paying to correct those problems."

Conn. Tax Proposal Could Cost North Attleboro, Mansfield (PBN)

Providence Business News, April 19, 2011

The Connecticut General Assembly is considering a 2 cent per kilowatt hour tax on nuclear generation from the Millstone power station, which could affect the 27 municipal utilities which receive its electricity, The Sun Chronicle reported on Monday.

The proposed tax would raise about \$330 million per year in revenue for the state but could cost the North Attleboro and Mansfield electric departments.

According to the Massachusetts Municipal Wholesale Electric Company, which owns 4.8 percent of Millstone Unit 3, the tax would cost the North Attleboro Electric Department up to \$339,643 per year; the impact on Mansfield Electric has not been determined.

"It's definitely a concern because it's an added cost that is not included our budget," said James Moynihan, general manager for North Attleboro Electric, to the Sun Chronicle.

"Such a tax is at the very least unfair," said David Tuohey, director of communications and external affairs for Massachusetts Municipal Wholesale Electric Company.

"Massachusetts public entities are not responsible for Connecticut's budget problems and they should not be responsible for paying to correct those problems," said Tuohey, according to The Sun Chronicle.

The wholesale company estimated it would cost the municipal utilities \$9.3 million per year

Expect The Unexpected (SAGHARBR)

Sag Harbor (NY) Express, April 19, 2011

In the wake of last month's earthquake and tsunami, few of us have to be reminded of the disastrous situation that's still going on over in Japan with the Fukushima Nuclear Power Plant. This week, Japan's Nuclear Safety Commission raised the level of the seriousness of the situation at the plant from 5 to 7. This is only the second time a nuclear event has been raised to that level — the highest possible. The first time was at Chernobyl in 1986.

But one time is still too many. And the news coming out of Japan has prompted many people here to take a look at another reactor — one that has long been operating much closer to home.

If you've arrived in this part of the world fairly recently, you probably don't even realize it's there. Not surprising. After all, it sits in an entirely different state, across several miles of open water off the East End. It's Millstone Nuclear Power Station in Waterford, Connecticut, and 10 years ago or more, it was the focus of a strong local effort to shut it down.

But those efforts never quite had the effect anti-nuke organizers hoped for. Today, Millstone continues to operate less than 20 miles from Sag Harbor, providing about half of Connecticut's total power needs and lots of jobs — for people living in Connecticut. And that has long been at the heart of the argument against Millstone. Given our proximity to the plant, we here on the East End assume much of the risk with none of the benefit.

On Monday, Millstone held a meeting in Waterford to assure 100 plus residents that the disaster now taking place at the nuclear facility in Japan cannot happen here. They say they have thought of everything and Millstone personnel assured the audience that they have taken into account a total loss of power, as well as tornados, earthquakes and hurricanes in their equations on how the plant would hold up if the back up systems needed to kick in.

Famous last words. Two months ago, we are fairly certain officials at the Fukushima plant would have said the same thing to their neighbors. If we've learned anything from this disaster, it's that there are always surprises. Here's one you may not know. The Nuclear Regulatory Commission has found that the Indian Point 3 reactor located on the Hudson River in Westchester

County, carries the highest risk of damage of all nuclear reactors in this country due to the fact that it sits atop a fairly good size fault — and the area is overdue for a significant earthquake.

Talk about the unexpected.

And here's the thing. While in Japan, the official evacuation area around the destroyed Fukushima plant is designated at 12 miles, the common consensus among many experts outside the country, given the scale of the disaster, is that it should be larger — much larger — no less than 50 miles.

Fifty miles from Millstone? That would encompass the entire East End. And that's what has us worried. We're at the end of a very long island. There are only a couple roads in and out of this place. We all know what it's like trying to head west from Sag Harbor at the end of a busy summer weekend. Imagine doing that along with every one of your neighbors in the immediate aftermath of a major accident at Millstone as radioactive gases drift our way over the sound.

It's a frightening scenario, but one Millstone has never had to envision, since the NRC requires them to only put evacuation plans into place for an area within a 10 mile radius of the reactor— which conveniently avoids the East End all together, but just barely.

A number of years ago state assemblyman Fred Thiele and state senator Keri LaValle put forth legislation that would have forced Millstone to expand the evacuation plans to include the East End, knowing full well it would be impossible to do so given the geography of the area. And then, maybe Millstone would be shut down.

But that legislation went nowhere.

Now, with nuclear concerns back on the front page because of Japan, Thiele and LaValle are again taking on the industry. This time, they are introducing legislation that would require New York's State Emergency Management Office to conduct a review of disaster plans for all nukes in the state or those within 50 miles of state borders — which would include Millstone. The feasibility of evacuating an area within 50 miles of a plant is among the items to be considered in the event of severe core damage. If the review shows evacuation is not feasible, the governor would be directed to petition the federal government to close the plant.

We say it's about time and hope this legislation has legs. It's been easy enough for the industry to sit back for years and draw an arbitrary 10 mile ring around their realm of responsibility. But Fukushima has put the issue back on the map and shown that if there's anything we can count on when it comes to nuclear energy, it's the unexpected.

PG&E Puts Off Diablo Licensing To Study Faults (ADOBEPR)

By April Charlton

Adobe Press, April 19, 2011

The San Luis Obispo County Board of Supervisors believes Pacific Gas and Electric Co. should stop relicensing efforts at its nuclear power plant near Avila Beach.

On Tuesday, the supervisors unanimously agreed to send a letter to PG&E requesting the company voluntarily withdraw its relicensing application for Diablo Canyon Power Plant, at least for now.

"It's 13 to 14 years away from the end of the licenses (for the plant)," said Supervisor Jim Patterson. "There's no real hurry here. If PG&E wants to regain the public's trust, they need to withdraw the application."

PG&E has applied to the Nuclear Regulatory Commission to extend the power plant's operating licenses for an additional 20 years. Diablo's two reactor licenses expire in 2024 and 2025.

The relicensing process takes about four years to complete, according to officials.

Diablo Canyon sits on a blufftop 85 feet above the ocean, between Avila Beach and Los Osos, and within three miles of two earthquake faults.

Lawmakers have been pushing the electric company to perform three-dimensional seismic studies of the ocean floor near the plant to assess earthquake risks before new licenses are granted.

On Monday, PG&E announced it would undertake the 3-D seismic studies and has asked the NRC to delay issuing new licenses, if approved, for Diablo Canyon until the studies are completed and reviewed by company scientists (see related story).

However, the Board of Supervisors thinks the utility can and should do more.

"I am not convinced this is the only thing that needs to be done," said Chairman Adam Hill, whose 3rd District includes the nuclear power plant.

Hill and other supervisors believe PG&E needs to go a step further by withdrawing its relicensing application and focusing solely on the seismic studies for the next few years. The studies are expected to take two to three years to complete.

"We still have a little way to go," Hill said. "I want our citizens to trust the (relicensing) process more than anything."

The supervisors also want to see findings of the proposed 3-D study reviewed by individuals not employed by the electric company.

"It's a half-step in the right direction," Supervisor Bruce Gibson said about PG&E's announcement to undertake the advanced seismic studies.

He said an independent peer review would be essential to validating any conclusions that may come from the research.

A PG&E official is expected to make a presentation at a future board meeting to explain what the electric company's request to the NRC means in relation to whether the relicensing process is stopping or will be ongoing.

Pacific Gas and Electric Co. has agreed to undertake advanced 3-D seismic studies of the ocean floor and earthquake faults near Diablo Canyon Power Plant, delaying the relicensing process until completion of those studies.

Officials made the announcement late Monday afternoon, less than 24 hours before the San Luis Obispo County Board of Supervisors held a public hearing on the issue.

Board Chairman Adam Hill, whose 3rd District includes the twin-reactor nuclear plant, said he believes PG&E should completely pull back from the relicensing process and focus all of its efforts on the safety of Diablo Canyon.

"I think it's a step in the right direction," Hill said Monday about PG&E's announcement. "But they could do more."

Supervisors agreed last month to hold a public hearing to discuss sending a letter to PG&E requesting the electric company stop the relicensing process until the 3-D seismic studies are complete (see related story).

PG&E has applied to the NRC to extend the power plant's current operating licenses for an additional 20 years. One reactor's license expires in 2024 and the other in 2025.

Hill said "focusing solely on the seismic studies" is the most credible way for PG&E to move forward in its quest to extend the life of Diablo Canyon and show the public it is committed to safety at the plant.

"It's still about the message that you are sending to your people," Hill said.

PG&E officials have said publicly they want to restore the public's trust in the company.

In a letter to the NRC dated Sunday, PG&E said it would be prudent to complete the studies prior to granting new licenses.

The company said it wanted the NRC to hold off issuing new licenses, even if they are approved by the agency, until the three-dimensional studies are finished.

"We recognize that many in the public have called for this research to be completed before the NRC renews the plant's licenses," John Conway, PG&E's senior vice president of energy supply and chief nuclear officer, said in a statement issued Monday.

"We are being responsive to this concern by seeking to expeditiously complete the 3-D seismic studies and provide those findings to the commission and other interested parties so that they may have added assurance of the plant's seismic integrity," he added.

The county is willing to work with PG&E to expedite the permitting process for the seismic studies, Hill said.

"We want them to move forward," he added.

State Sen. Sam Blakeslee, a Republican whose district includes Diablo Canyon, commended the decision and said in a statement that "it's our duty to learn and apply the lessons of Japan."

NRC spokeswoman Lara Uselding said the agency will consider PG&E's request to see what, if any, impact it would have on the agency's review schedule.

In its letter, the utility company said it wanted to complete the research no later than December 2015.

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

Preliminary research at the site found its twin reactors could withstand a potential earthquake generated by the recently identified Shoreline Fault, just off the coast.

Japanese Crisis Raises Doubts On Plan For Plutonium In S.C. (NYTIM)

By Jo Becker And William J. Broad

New York Times, April 19, 2011

On a tract of government land along the Savannah River in South Carolina, an army of workers is building one of the nation's most ambitious nuclear enterprises in decades: a plant that aims to safeguard at least 43 tons of weapons-grade plutonium by mixing it into fuel for commercial power reactors.

The project grew out of talks with the Russians to shrink nuclear arsenals after the cold war. The plant at the Savannah River Site, once devoted to making plutonium for weapons, would now turn America's lethal surplus to peaceful ends. Blended with uranium, the usual reactor fuel, the plutonium would be transformed into a new fuel called mixed oxide, or mox.

"We are literally turning swords into plowshares," one of the project's biggest boosters, Sen. Lindsey Graham of South Carolina, said at a hearing on Capitol Hill last week.

But 11 years after the government awarded a construction contract, the cost of the project has soared to nearly \$5 billion. The vast concrete and steel structure is a half-finished hulk, and the government has yet to find a single customer, despite offers of lucrative subsidies.

Now, the nuclear crisis in Japan has intensified a long-running conflict over the project's rationale.

One of the stricken Japanese reactors at the Fukushima Daiichi plant uses the *mox* fuel. And while there has been no evidence of dangerous radiation from plutonium in Japan, the situation there is volatile, and nuclear experts worry that a widespread release of radioactive material could increase cancer deaths.

Against that backdrop, the South Carolina project has been thrown on the defensive, with would-be buyers distancing themselves and critics questioning its health risks and its ability to keep the plutonium out of terrorists' hands.

The most likely customer, the Tennessee Valley Authority, has been in discussions with the federal Department of Energy about using *mox* to replace a third of the regular uranium fuel in several reactors - a far greater concentration than at the stricken Japanese reactor, Fukushima Daiichi's Unit No. 3, where 6 percent of the core is made out of *mox*. But the TVA now says it will delay any decision until officials can see how the *mox* performed at Fukushima Daiichi, including how hot the fuel became and how badly it was damaged.

Duke Energy tested the fuel at its Catawba nuclear plant in York County, S.C., for less than three years before removing the fuel in 2008. Duke's contract to buy the fuel for production use also expired that year.

At the same time, opponents of the S.C. project scored a regulatory victory this month when a federal atomic licensing panel, citing "significant public safety and national security issues," ordered new hearings on the plans for tracking and safeguarding the plutonium used at the plant.

Obama administration officials say that *mox* is safe, and they remain confident that the project will attract customers once it is further along and can guarantee a steady fuel supply. Anne Harrington, who oversees nuclear nonproliferation programs for the Energy Department, noted that six countries besides Japan had licensed the routine use of *mox* fuel. She accused critics of "an opportunistic attempt" to score political points by seizing on Japan's crisis.

"*Mox* is nothing new," she said.

Even so, the critics say there is an increasing likelihood that the South Carolina project will fail to go forward and will become what a leading opponent, Edwin Lyman of the Union of Concerned Scientists, calls a "plant to nowhere." That would leave the United States without a clear path for the disposal of its surplus plutonium.

A cheaper alternative, encasing it in glass, was canceled in 2002 by President George W. Bush's administration.

More Dangerous Than Japan Radiation (OCR)

By Charlie Zender

Orange County (CA) Register, April 19, 2011

West Coast inhabitants have learned by now that we live downwind from the crippled nuclear reactors in Fukushima, Japan. The plume of radioactive material poses a real threat near the source, where images include health workers wearing protective "moon suits," infants probed by Geiger counters, and contaminated smoke and steam spewing from the damaged reactor buildings. These emissions are carried our direction in the global wind belt called the prevailing westerlies.

Understandably, Americans worry that the plume crossing the Pacific may expose them to enough radioactivity to endanger our health and way of life. Our health is endangered by a pollution plume, but not the radioactive one from Asia. First, though, let's see why Japan's nuclear accident poses us no immediate threat.

To be sure, the Fukushima reactors have emitted lethal doses of radiation. The International Atomic Energy Agency reported on March 15 that radioactive doses of 400 millisieverts per hour, enough to guarantee incapacitation and death after one day, were measured between two reactors. Fortunately, especially for the brave reactor crew at the site, subsequent measurements are much lower, though still too dangerous for prolonged exposure near the plant itself. The constantly fluctuating readings unnerve residents of the US West Coast where some of the radioactivity may fall.

Instruments designed to enforce the Comprehensive Test Ban Treaty have already measured radioactivity from the plume here in California. What does this mean for public health? These measurements have no public health implications because they are millions of times lower than necessary to cause any measureable health effects. Such trace measurements of radiation make nuclear weapons tests difficult to conceal (and so support nuclear non-proliferation efforts), yet they fan the anxiety of a public who associate radioactivity, at any level, with mushroom clouds and mortal illness.

Nuclear safety and weather experts quickly reassured US residents that the radioactive fallout from Fukushima poses no threat to us. Weather disperses and scavenges the dangerous particles during their journey across the vast Pacific and dilutes the fearsome plume to safe levels before landfall. Most of us consider acceptable the much higher doses we receive as "background radiation" from natural and benign man-made sources. These pervasive sources include cosmic rays, radon seepage from uranium decay in Earth's interior, and highly dispersed uranium and thorium from coal combustion. Watt-for-watt, a coal-fired electricity plant emits into the environment fly ash particles that carry about one hundred times more radioactivity than emitted by a nuclear plant. A non-malfunctioning nuclear plant, that is.

Of course people are not enthusiastic to learn that background radiation exists, is unavoidable, and causes more cancer than nuclear power. Risk-averse people naturally want to minimize their exposure.

Since background radiation comes from all directions in amounts much greater than the Fukushima plume, it makes no sense to flee eastward, seal our windows, or ingest (non-radioactive) iodine pills. Indeed the greater sources of our annual radiation exposure are the granite beneath and concrete around us, jet travel, and diagnostic medical X-rays. While we cannot reduce our exposure beneath background levels, we can reduce our health risks from more menacing pollution than the Fukushima plume.

Soot particles, primarily emitted by diesel engines, open burning, and coal combustion, constitute a known, and increasingly preventable, public health threat. Plumes of soot (co-emitted with ozone, also harmful) flow downwind from shipping, transportation, and industrial centers such as freeways and ports. Our lungs trap some of the microscopic soot we inhale, much like cigarette smoke.

Over time, the accumulated soot in our bodies impairs cardiovascular, cognitive, and respiratory functioning. Living closer to freeways and ports (dominant soot sources in Southern California) increases our risk of heart attacks and heart disease. It reduces attention, memory, and ultimately lifespan. The California Air Resources Board estimates that diesel soot alone is associated with about 18,000 premature deaths statewide annually.

Our health risk from ongoing local soot emissions dwarfs our risk from radioactivity released in Japan. Fortunately, reducing exposure to soot is an effective means of protecting public health while maintaining our energy and transportation infrastructure. We can fit diesel exhausts with particulate traps, shift to cleaner burning fuels and battery-powered vehicles, and utilize shore-side electricity (rather than idling) for ships at port.

Recognizing the public health threat from soot, our national, state, and regional air resources agencies have been phasing-in policies to mitigate soot. As a result, soot emissions in the US have leveled-off in recent decades. Strengthening restrictions on soot would accrue benefits to all, especially those who live or work in and downwind of the (often economically disadvantaged) neighborhoods near heavy shipping, traffic, and industry.

Citizens informed about the health hazards of soot are likely to support maintaining and extending policies that mitigate it, and to resist rolling them back in short-sighted budgetary measures. Despite its attention in the media, the trace amount of radioactivity wafting here from the Fukushima plant poses us no threat compared to our chronic exposure to locally generated soot. Let's clear the air about that.

own home.

Lab Halts Web Access After Cyber Attack (KNOXNS)

By Frank Munger

Knoxville News Sentinel (TN), April 19, 2011

OAK RIDGE — A highly sophisticated cyber attack — known as Advanced Persistent Threat — forced Oak Ridge National Laboratory to shut down all Internet access and email systems over the weekend.

Those restrictions will remain in place until lab officials and others investigating the attack are sure the situation is well controlled and manageable, ORNL Director Thom Mason said Monday.

Mason said he expects that email functions may be restored today on a limited basis, with no attachments allowed and restrictions on length.

—We made the decision (at about midnight Friday) to close down the connection to the Internet to make sure there was no data exfiltrated from the lab while we got the system cleaned up,— he said.

The lab's cyber specialists had been monitoring the attack and recommended further action after it looked like efforts were under way to remove data from ORNL systems, Mason said.

Mason said the APT threat at ORNL is similar to attacks in recent times on Google, a security company known as RSA and other government institutions and corporations.

“In this case, it was initiated with phishing email, which led to the download of some software that took advantage of a zero day exploit, a vulnerability for which there is no patch yet issued,” he said. The vulnerability involved Internet Explorer, he said.

Mason said the lab has not, to this point, detected any large-scale exfiltration of data, and the decision to shut down Internet access was made to prevent that or anything similar to a 2007 cyber attack at ORNL in which large amounts of data were stolen. Following that event, the lab sent 12,000 letters to former lab visitors, informing them that their Social Security numbers may have been compromised (although there were no subsequent reports of identity thefts or major problems).

“We haven’t really completed the post-mortem on what happened, so it would be foolish to kind of speculate on where things were going,” Mason said, when asked about a report that the attack may have originated in China.

“There was no significant exfiltration of data that we detected,” he said. “There were attempts and small volumes of things that were suspicious in terms of Internet traffic.”

ORNL has solicited help from throughout government, including other Department of Energy labs. He confirmed that some outside experts had arrived in Oak Ridge to participate in the investigation.

In addition, he said virtually all of the lab’s information technology staff (about 200 people) was involved, either in the investigation or maintaining the functionality of internal systems.

Mason confirmed that some computers were confiscated and quarantined. He also confirmed that the phishing email messages in this case were disguised as coming from the lab’s human resource department.

He said that some lessons learned from the 2007 attack helped lab officials with the current situation, but he said this is a much more advanced attack than the event four years ago.

“Well, if you look at this APT, it is much more sophisticated than what was being used a few years ago,” he said. “Certainly what we’ve seen is very consistent with the RSA attack. Whoever is doing this attempts to get a foothold in the network system, works patiently and relatively quietly to try to expand that and is looking for specific types of information.”

Without email or Internet access, thousands of ORNL employees weren’t able to do business as usual on Monday.

“It hampered our normal communications,” said Mason, who was out of town and could not check his email. “It means we’re dusting off some fax machines.”

Senior writer Frank Munger may be reached at 865-342-6329.

INTERNATIONAL NUCLEAR NEWS:

Radiation Poses Barrier To Repair Work At Plant (NYT)

By Hiroko Tabuchi

New York Times, April 19, 2011

TOKYO — Robots deployed inside two reactors at the Japanese nuclear plant overrun by last month’s devastating tsunami have detected radiation levels too high for workers to enter, posing immediate challenges for a new plan to bring the ravaged complex under control by year’s end.

Workers have not been able to enter four of the reactors at the Fukushima Daiichi Nuclear Power Plant since the days immediately after the earthquake and tsunami struck on March 11. Vital cooling systems at the plant were knocked out, and the ensuing hydrogen explosions at four of the plant’s six reactors blew off their roofs and littered the site with radioactive debris.

On Sunday, two robots made their way into two of the reactor units, opening doors and navigating radioactive debris and puddles of water to return with temperature, pressure and radioactivity readings. The readings, released Monday, showed continued high radiation levels.

At Unit 1, robots detected up to 49 millisieverts per hour; at Unit 3, the reading was 57 millisieverts per hour. In recent weeks far higher readings have come from areas where contaminated water has accumulated, like the turbine building at Unit 2, where experts say the reactor pressure vessel may be cracked and leaking nuclear material.

Still, exposure for emergency workers in Japan is currently capped at 250 millisieverts of radiation annually. So the current levels effectively limit a worker to just a few hours of labor.

“It is a harsh environment for humans to work in,” said Hidehiko Nishiyama, deputy director general at the Nuclear and Industrial Safety Agency.

He said the levels would require the plant’s operator, the Tokyo Electric Power Company, to be “creative” in bringing the plant to a stable state known as a cold shutdown within six to nine months, as the company laid out in a timetable on Sunday.

The Japanese government continues to face severe challenges, both technical and political, in the aftermath of a multifaceted disaster that has left 13,800 people dead and 14,000 missing. At least 137,000 people remain in evacuation centers, some driven from their homes by radiation leaks from the Fukushima plant.

Japan's Finance Ministry has said the damage from the earthquake and tsunami alone could reach \$300 billion, making it the world's most costly natural disaster. The toll from the nuclear disaster — which has disrupted farming and fishing, curtailed power supplies across eastern Japan, and inflicted other wounds on the economy — is yet to be tallied.

Prime Minister Naoto Kan came under fire on Monday from opposition lawmakers who accused him of bungling the initial response to the nuclear crisis.

"Many Japanese feel that Prime Minister Kan has no leadership," Masashi Waki, a lawmaker of the main opposition, the Liberal Democratic Party, said at an unusually heated parliamentary session. Sadakazu Tanigaki, the leader of the Liberal Democratic Party, last week called on Mr. Kan to resign.

"I do not think that my response has been inadequate, as many say," a flustered-looking Mr. Kan said, amid heckling. "Nonsense!"

A poll released Monday by The Nikkei, Japan's largest business daily, appeared to back the opposition's claims. Sixty-nine percent of respondents said Mr. Kan should be replaced, while 70 percent said the government's response to the nuclear crisis was unacceptable. The Nikkei said it surveyed 983 people across the country from April 15 to 17, excluding some areas where phone lines remained down.

Tokyo Electric's ambitious plan for bringing the reactors to a cold shutdown has also been criticized. The plan, drawn up at the government's order, is meant to give residents evacuated from the area around the plant an idea of when they might be able to return home.

But experts question the viability of the plan, which calls for swiftly building critical new cooling systems. Tokyo Electric faces "substantial barriers" in following the timetable, said Haruki Madarame, chairman of the Nuclear Safety Commission, an independent panel of experts appointed by the government to oversee the nuclear industry.

Mr. Madarame, a former professor in nuclear engineering at Tokyo University, told reporters Monday that the presence of highly radioactive water at Unit 2 posed a particular challenge. There and at other units, workers have been cooling nuclear fuel at the reactor's core and in storage pools by pumping in hundreds of tons of water a day, producing dangerous amounts of runoff.

"We must make sure that the tight schedule does not lead to a neglect of safety," Mr. Madarame said.

Robots could help tackle some of the challenges. The remote-controlled PackBots used Sunday, built by the iRobot company of Bedford, Mass., are 60-pound contraptions with steel arms and caterpillar tracks. They can lift about 30 pounds, go up and down steps, send images back to an operator and carry a hazardous materials kit that senses radiation.

iRobot, which also makes the popular Roomba vacuum, has delivered over 3,800 PackBots, primarily to the government and military, according to Tim Trainer, an iRobot vice president.

After arriving in mid-March, the robots were programmed to open reactor doors and navigate narrow passageways, said Mr. Nishiyama of the nuclear safety agency.

Robots, along with remote-controlled hovering drone aircraft made by Honeywell called T-Hawks, have let engineers survey and take measurements at the plant while minimizing workers' exposure to harmful radiation. A PackBot entered a third reactor building late Sunday.

Radiation Near Japan Nuke Plants Too High For Workers (USAT/AP)

Associated Press, April 19, 2011

TOKYO (AP) — A pair of thin robots on treads sent to explore buildings inside Japan's crippled nuclear reactor came back Monday with disheartening news: Radiation levels are far too high for repair crews to go inside.

Nevertheless, officials remained hopeful they can stick to their freshly minted "roadmap" for cleaning up the radiation leak and stabilizing the Fukushima Dai-ichi plant by year's end so they can begin returning tens of thousands of evacuees to their homes.

"Even I had expected high radioactivity in those areas. I'm sure (plant operator Tokyo Electric Power Co.) and other experts have factored in those figures when they compiled the roadmap," Chief Cabinet Secretary Yukio Edano said.

Officials said Monday that radiation had spiked in a water tank in Unit 2 and contaminated water was discovered in other areas of the plant, underscoring the growing list of challenges facing TEPCO in cleaning up and containing the radiation. They also described in more detail the damage to fuel in three troubled reactors, saying pellets had melted.

Angry at the slow response to the nuclear crisis and to the catastrophic earthquake and tsunami that caused it, lawmakers tore into Prime Minister Naoto Kan.

"You should be bowing your head in apology. You clearly have no leadership at all," Masashi Waki, a lawmaker from the opposition Liberal Democratic Party, shouted at Kan.

"I am sincerely apologizing for what has happened," Kan said, stressing the government was doing all it could to handle the unprecedented disasters.

TEPCO's president, Masataka Shimizu, appeared ill at ease as lawmakers heckled and taunted him.

Workers have not been able to enter the reactor buildings at the stricken plant since the first days after the cooling systems were wrecked by the March 11 earthquake and tsunami that left more than 27,000 people dead or missing. Hydrogen explosions in both buildings in the first few days destroyed their roofs and scattered radioactive debris.

On Sunday, a plant worker opened an outer door to one of the buildings and two Packbots, which resemble drafting lamps on tank-like treads, entered. After the worker closed the door, one robot opened an inner door and both rolled inside to take readings for temperature, pressure and radioactivity. They later entered a second building.

The robots reported radioactivity readings of up to 49 millisieverts per hour inside Unit 1 and up to 57 inside Unit 3, levels too high for workers to realistically enter.

"It's a harsh environment for humans to work inside," said Hidehiko Nishiyama of Japan's Nuclear and Industrial Safety Agency.

Japanese authorities more than doubled the legal limit for nuclear workers since the crisis began to 250 millisieverts a year. Workers in the US nuclear industry are allowed an upper limit of 50 millisieverts per year. Doctors say radiation sickness sets in at 1,000 millisieverts and includes nausea and vomiting.

The robots, made by Bedford, Massachusetts, company iRobot, which also makes the Roomba vacuum cleaner, explored Unit 2 on Monday, but TEPCO officials had yet to analyze that data.

The radioactivity must be reduced, possibly with the removal of contaminated debris and stagnant water, before repair crews would be allowed inside, said NISA official Masataka Yoshizawa.

Sturdier robots can remove some of the debris, but workers are needed to test the integrity of the equipment and carry out electrical repairs needed to restore the cooling systems as called for in the road map, Yoshizawa said.

"What robots can do is limited, so eventually, people must enter the buildings," TEPCO official Takeshi Makigami said.

The robots, along with remote-controlled miniature drones, have enabled TEPCO to photograph and take measurements of conditions in and around the plant while minimizing workers' exposure to radiation and other hazards.

Separately, readings from a water tank attached to the spent fuel pool in Unit 2 showed a severe spike in radiation that NISA officials said might have been caused by the escape of radioactive vapor from a nearby containment vessel. They said, however, the possibility of damage to spent fuel rods could not be ruled out.

NISA also sent a report to the government watchdog Nuclear Safety Commission, saying that some fuel pellets and rods in the reactors in Units 1, 2 and 3 had become overheated and melted, the first time it had provided details of the damage to the fuel. Nishiyama, said the agency can only say "more than 3 percent" of the fuel rods have melted.

A pool of stagnant radioactive water was also discovered in the basement of Unit 4.

With evacuees' ordeal stretching into the long-term, some began moving out of school gymnasiums into temporary housing. Hundreds who have not found apartments or relatives to take them in began filling up inns at hot springs.

"The government has asked us to be ready to take in as many as 200 evacuees for the next four months at least," said Masaki Hata, whose family has run the Yoshikawaya Hot Springs Inn on the outskirts of Fukushima for seven generations.

Michiaki Niitsuma, a 27-year-old office worker, said he was glad to have a comfortable place to stay while he waited to go home.

"My kids got sick in the shelter. It was cold. It's much better here. It's a relief," he said.

Robots Find High Radiation As Tepco Lays Out Plan To End Crisis (BLOOM)

By Yuji Okada

Bloomberg News, April 19, 2011

Robots sent into two buildings at Japan's crippled Fukushima Dai-Ichi nuclear station detected radiation still too toxic for humans as the plant operator set out a plan to end the crisis in six to nine months.

Measurements show one hour inside the No. 3 reactor building would expose humans to more than one-fifth of the radiation Japan has said is the most workers can endure in a year, the atomic safety agency said yesterday. People haven't been

in the buildings since a 15-meter (49-foot) surge following a magnitude-9 quake on March 11 knocked out cooling equipment, sparking the worst disaster since Chernobyl in 1986.

A sustained drop in radiation at the tsunami-damaged plant could be achieved within three months, Tokyo Electric Power Co. said in a statement laying out its plans. Following that, a cold shutdown, where core reactor temperatures fall below 100 degrees Celsius (212 degrees Fahrenheit), may be achieved within six months, it said.

The six-to-nine month timeframe "seems mindbogglingly long given the urgency," said Michael Friedlander, a former US nuclear engineer based in Hong Kong. The utility should aim to have the crisis in hand in two to three months, he said. "They're managing expectations and don't want to make a commitment they can't deliver on."

In the next three months, Tepco, as the utility is known, plans to fill the reactor containment vessels at the No. 1 and No. 3 units with water, the company said in its April 17 statement. The utility will seal the vessel of the No. 2 reactor, which is likely damaged, before flooding it.

"If we flood the damaged vessel, the leak of contaminated water will increase," Tepco Vice President Sakae Muto told reporters in Tokyo April 17. "We will continue injecting water with care and monitor the volume of water leaked."

The water pumped so far has overflowed into basements and trenches, with some of it leaking into the ocean.

"It is vitally important that Tepco succeeds in shifting the cooling process to a closed loop system," said Philip White, international liaison officer at the Citizens' Nuclear Information Center in Tokyo. "In the current situation, where water poured in one end leaks out the other, there is the constant danger that highly radioactive water will run off into the sea."

Tepco completed preparations of a waste water treatment facility at the plant yesterday, NHK reported on its website. The company will begin moving highly contaminated water to the treatment unit from other areas of the plant after reporting the method and safety measures to nuclear regulators, the public broadcaster said.

Two iRobot Corp. (IRBT) robots sent April 17 to check whether humans can reenter the site found radiation levels as high as 49 millisieverts per hour in the No. 1 reactor building, and up to 57 millisieverts in the No. 3 building, the Nuclear and Industrial Safety Agency said.

The cumulative maximum level for nuclear workers was raised to 250 millisieverts from 100 millisieverts by Japan's health ministry on March 15. Exposure totaling 100 millisieverts over a year is the lowest level at which any increase in cancer is evident, according to the World Nuclear Association in London.

Another robot spent almost an hour in the main building of reactor No. 2 yesterday, NISA said in a press release. It didn't give readings for the building. Tepco officials are analyzing the data taken by the robot, spokesman Akitsuka Kobayashi said today.

Tepco shares fell as much as 5.4 percent to 442 yen in Tokyo today and traded at 446 yen at 9:57 a.m. The stock is down almost 80 percent since the quake and tsunami, which left about 28,000 people dead or missing.

Tepco plans to inject nitrogen into the containment vessels of the No. 2 and No. 3 reactors by the end of April, Muto said. The utility injected the inert gas into the No. 1 unit this month to prevent hydrogen explosions.

"Injecting nitrogen doesn't hurt, but it makes no sense – it just makes it look like you're doing something," said Friedlander, who spent 13 years working in nuclear plant management in the US "It's a question of resources and the people; those people could be better utilized."

Three to six months after the initial phase of its plan, Tepco will attempt a cold shutdown of reactors No. 1, 2 and 3, the company said. Reactors 4, 5 and 6 were shut at the time of the disaster. The utility will also cover the No. 1, 3 and 4 reactor buildings as a temporary measure to reduce radiation emissions after the structures were damaged by hydrogen blasts last month, according to the statement.

Japan's government plans to tell families evacuated from the area within ninth months whether they can return home, Trade Minister Banri Kaieda said in a briefing in Tokyo.

The government this month widened a 20-kilometer evacuation zone to include the towns of Iitate, Katsurao and Namie. Radiation no longer poses "significant" health risks beyond an 80-kilometer radius, the US State Department said.

Seventy percent of people in Japan disapprove of the way Prime Minister Naoto Kan's government has handled the nuclear crisis, the Nikkei newspaper said yesterday, citing a telephone survey it carried out with TV Tokyo Corp.

To contact the reporter on this story: Yuji Okada in Tokyo at yokada6@bloomberg.net

To contact the editor responsible for this story:

Robots Throw Doubt On 'Road Map' To Control Fukushima Crisis (CSM)

Christian Science Monitor, April 19, 2011

Robots prowling inside debris-strewn reactor buildings at the heavily damaged Fukushima Daiichi nuclear power plant detected levels of radiation that throw doubt on whether workers will be able to enter the plant for any extended period of time. Skip to next paragraph

The announcement came Monday, just one day after officials unveiled a six-month "road map" for bringing radioactivity under control. Many experts call the road map a necessary step, but optimistic.

Exploring the first floor of the No.1 reactor building for about an hour, a robot provided by a Massachusetts-based company rolled through doors it opened with

its manipulator arms, detecting radiation leaking at a rate of 49 millisieverts per hour. That means a worker could stay in the building for no more than five hours before reaching the lawful annual limit for nuclear workers of 250 millisieverts.

Later, in a two-hour prowl through the No. 3 reactor, one of the robots ran into debris roadblocks and recorded readings of 57 millisieverts per hour, Japanese broadcaster NHK World reported.

While the readings were not completely unexpected, they confirm the difficulty of the task ahead if the plant's operator is going to bring the damaged reactors, their spent fuel pools, and radioactive releases under control within six months. Two-pronged plan

The first part of that plan is to bring down radiation levels at the site, in part by restoring steady cooling for the reactors and setting up storage facilities for radioactive water. The second step would be to achieve a "cold shutdown" at the reactor site and vastly lower the amount of contaminated water on site by the six-to-nine-month mark.

At that point, Japan's industry minister Banri Kaieda said Sunday, the government might be able to tell evacuees when they can return home, NHK World reported.

But nuclear experts were wary. "The three-month target is a best-possible scenario," Kazuhiko Kudo, a nuclear expert at Kyushu University, told the Mainichi Daily News newspaper. "It is imperative to install an external system to recycle cooling water as soon as possible."

That's exactly what company officials are trying to do. But the high levels of radiation could delay efforts to set up an replacement for cooling system that shut after the 9.0 earthquake. So could the large quantity of radioactive water on site, which came both from leaks in the containment vessels and water that was sprayed from above when the crisis was at its height.

Officials said Monday that the water was more than 40 feet deep in the basement of the No. 4 reactor building and about 3 feet deep in several other buildings. Potential dangers of plan

There are other gaps in the plan as written, says nuclear engineer David Lochbaum.

Adding water to the reactor vessels to further cool the damaged uranium fuel rods could have negative consequences, says Dr. Lochbaum, who spent years working in power plants with the same design as the Daiichi plant's reactors. First, it could allow a nuclear reaction to take place again. Second, it would add more water to a structure already carrying a huge load of water in the basement.

To guard against a renewed nuclear reaction, adding boron – a chemical not mentioned in the road map – would be vital, he adds.

And engineers will have to revisit the seismic analysis to see how much water they can add safely.

"The containment was designed to withstand earthquake forces up to a certain level" but may not be able to deal with an aftershock or quake if too much water is added back, Lochbaum writes. "The added weight, coupled with the potential for sloshing during an earthquake, could compromise the structural integrity of the containment."

Analysis: Japan Nuclear Crisis Could Drag On Long Past Timetable (REU)

By Mayumi Negishi

Reuters, April 19, 2011

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

Japan Nuke Plants Starts Pumping Radioactive Water (AP)

Associated Press, April 19, 2011

TOKYO (AP) — The operator of Japan's crippled nuclear plant began pumping highly radioactive water Tuesday from the basement of one of its buildings to a makeshift storage area in a crucial step toward easing the nuclear crisis.

Removing the 25,000 tons of contaminated water that has collected in the basement of a turbine building at Unit 2 of the Fukushima Dai-ichi plant will help allow access for workers trying to restore vital cooling systems that were knocked out in the March 11 tsunami.

It is but one of many steps in a lengthy process to resolve the crisis. Tokyo Electric Power Co. projected in a road map released over the weekend that it would take up to nine months to reach a cold shutdown of the plant. But government officials acknowledge that setbacks could slow the timeline.

The water will be removed in stages, with the first third of it to be handled over the coming 20 days, said Hidehiko Nishiyama of Japan's Nuclear and Industrial Safety Agency. In all, there are 70,000 tons of contaminated water to be removed from the plant's reactor and turbine buildings and nearby trenches, and the entire process could take months.

TEPCO is bringing the water to a storage building that was flooded during the tsunami with lightly contaminated water that was later pumped into the ocean to make room for the highly contaminated water. The operator also is trying to develop a system to decontaminate the incoming water so that it can be reused to cool the plant's reactors, Nishiyama said.

"We hope to gradually reduce contaminated water through that process," he said, adding that it would take "several months" to ready this system.

Once the contaminated water in the plant buildings is safely removed and radioactivity levels decline, workers can begin repairing the cooling systems for the reactors of Units 1, 2 and 3, which were in operation at the time of the tsunami. Workers must also restore cooling functions at the plant's five spent fuel pools, one each for Units 1-4 and a joint pool for Units 5 and 6, which were in a cold shutdown on March 11.

Cold shutdown is when a reactor's core is stable at temperatures below 100 Celsius.

With Japan's nuclear crisis dragging on, some residents who were evacuated from around the Fukushima plant, about 140 miles (225 kilometers) northeast of Tokyo, began moving out of school gymnasiums into temporary housing. Hundreds who have not found apartments or relatives to take them in began filling up inns at hot springs.

"The government has asked us to be ready to take in as many as 200 evacuees for the next four months at least," said Masaki Hata, whose family has run the Yoshikawaya Hot Springs Inn on the outskirts of Fukushima for seven generations.

Michiaki Niitsuma, a 27-year-old office worker, said he was glad to have a comfortable place to stay while he waited to go home.

"My kids got sick in the shelter. It was cold. It's much better here. It's a relief," he said.

In TEPCO's blueprint for stabilizing the reactors, the utility aims to cool the reactors and spent fuel pools and reduce radiation leaks over the next three months. Within 6-9 months, the goal is achieve a cold shutdown of the reactors and cover the buildings, possibly with a form of industrial cloth, to further tamp down any possible radiation leaks.

Two remote-controlled robots sent into the reactor buildings of Unit 1 and Unit 3 on Sunday showed that radiation levels inside — up to 57 millisieverts per hour — were still too high for humans to realistically enter.

The US-made Packbots, which resemble drafting lamps on tank-like treads, also were briefly sent into Unit 2 on Monday, officials said, and the radiation level was found to be a much lower 4.1 millisieverts per hour.

But the high level of humidity inside the reactor building fogged up the robot's camera lens, making it difficult to see conditions inside. They were pulled out after less than an hour, officials said.

"We didn't want to lose sight of where the robot was and then not be able to retrieve it," TEPCO manager Hikaru Kuroda said.

The reason for the higher humidity wasn't clear, but it suggests that workers — if they were to go inside — also would have difficulty seeing through their masks, Kuroda said.

Associated Press writers Eric Talmadge in Fukushima and Noriko Kitano in Tokyo contributed to this report.

Workers At Japan Nuclear Plant Pump Out Toxic Water (AFP)

AFP, April 19, 2011

TOKYO — Workers at a quake-hit nuclear plant in Japan on Tuesday began removing highly radioactive water from a reactor turbine building, a key step towards restoring cooling systems, the government said.

The 9.0-magnitude earthquake and tsunami that hit the northeast coast of Japan on March 11 knocked out power systems at the Fukushima Daiichi plant, causing cooling systems to fail and triggering a series of explosions.

To prevent a nuclear catastrophe, crews have pumped thousands of tonnes of seawater and later freshwater into the reactors and pools, creating a massive amount of radioactive runoff, some of which has leaked into the ocean.

About 10,000 tonnes of highly radioactive water will be transferred from the turbine building of reactor no. 2 to a treatment facility inside the plant for processing, Japan's Nuclear and Industrial Safety Agency (NISA) said.

NISA spokesman Hidehiko Nishiyama said the operation would allow emergency crews battling to stabilise the plant to "pour more water into the reactor in order to gradually decrease the amount of water dousing".

"We expect to purify and remove salt from water transferred to the waste treatment facility so that it can be poured into the reactor core again."

The move is necessary in order to start work to restore cooling functions at the nuclear plant, where workers have found turbine buildings, trenches and shafts submerged in highly radioactive water.

Tens of thousands of people living near the 1970s-era plant have been forced to evacuate their homes as radiation has leaked into the air, soil and sea.

Embattled operator Tokyo Electric Power Company said Sunday it hopes to reduce radiation leaking from the plant in three months and to achieve "cold shutdowns" of all reactors within six to nine months.

US Robots Help Japanese Crews Monitor Radiation During Nuclear Reactor Cleanup (WP/AP)

Washington Post, April 19, 2011

TOKYO — In this country of break-dancing androids and artificially intelligent pets, nuclear cleanup crews on the tsunami-ravaged northern coast are depending on US-made robots to enter damaged reactor units where it is still too dangerous for humans to tread.

Utility workers seeking to regain control of the troubled Fukushima Daiichi nuclear power plant are deploying robots from Bedford, Mass.-based iRobot Corp. to measure radiation levels, temperatures and other conditions inside the reactors.

With its tractor-like base and wiry frame topped by cameras and sensors, the so-called PackBot robot vaguely resembles the metallic protagonist of the 1986 film "Short Circuit" — minus the wisecracks. An earlier version of the PackBot was used a decade ago in the aftermath of the 9-11 terrorist attacks.

Takeshi Makigami, an official with Tokyo Electric Power Co., which is the operator of the crippled nuclear plant, said humans must still do the sophisticated engineering needed to stem the radiation, but robots can go in first to monitor when it will be safe for people to enter.

"We have to check where to go and what to do," he said.

TEPCO spokesman Shogo Fukuda said the company has only now begun using the robots because it took several weeks for crews to learn how to operate the complex devices.

Although Japan has a sophisticated robotics capability, most of its development is in household applications rather than disaster recovery.

So far, just one of the two provided PackBots has been used, said Minoru Ogoda, an official with Japan's Nuclear and Industrial Safety Agency, which is monitoring TEPCO's remediation efforts.

The robot's foray this week into several damaged reactor units was the deepest entry yet by man or machine since the first of several explosions rocked the plant the day after the March 11 earthquake and tsunami.

The PackBot is already a veteran of several other disaster zones.

After the Sept. 11, 2001 terrorist attacks in New York City, the robot was sent to search through the rubble of the collapsed World Trade Center.

Another of the company's robots has disarmed roadside bombs and sussed out buildings and caves in Iraq and Afghanistan.

iRobot also helps out with disasters of a more domestic nature: it's the manufacturer of the disc-shaped Roomba vacuum cleaner robot.

TEPCO spokesman Shogo Fukuda said the company hadn't anticipated using robots in the power plant until they were offered by iRobot.

The company was lending the two PackBots for free, so Fukuda did not know how much the company charges for the use of the units.

A TEPCO employee in a different building with a remote controller was able to make the robot open a set of double-layered doors Sunday and move some 130 feet into a passageway in the complex's reactor Unit 1, officials said.

The robot attempted to enter reactor Unit 3, but was impeded by broken chunks of ceiling and walls blown off during hydrogen blasts, officials said.

The PackBot spent about an hour in Unit 2 on Monday, but officials had no immediate details about what it found there.

iRobot is offering up two additional robots of a heavier-duty type — the Warrior — which workers are being trained how to use.

British defense contractor QinetiQ Group PLC has also provided four robots, which are not yet being used, Fukuda said.

Applied physics professor Shuji Hashimoto, who directs the Humanoid Robotics Institute at Tokyo's Waseda University, said he was not surprised to see Japan depending on robots from abroad, despite the sophistication of his country's robotics research.

He said countries such as the United States have developed robots for use in disaster situations because their militaries fund the development of the devices for war zones. Japan's military is restricted by the country's post World War II constitution to self defense and activities such as U.N.-led peacekeeping missions.

In Japan, best known for robots such as Sony Corp.'s robotic Aibo dog and Honda Motor Co.'s chummy Asimo, development tends to foster domestic uses.

"In Japan, there are many people who think the market for robots are in the family or the house," he said. "Researchers do research to develop robots that can be used by children or the grandfather or grandmother."

Associated Press writers Noriko Kitano and Mari Yamaguchi contributed to this report.

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AP IMPACT: Asia Nuclear Reactors Face Tsunami Risk (AP)

By Robin McDowell And Margie Mason, Associated Press

Associated Press, April 19, 2011

JAKARTA, Indonesia – The skeleton of what will soon be one of the world's biggest nuclear plants is slowly taking shape along China's southeastern coast — right on the doorstep of Hong Kong's bustling metropolis. Three other facilities nearby are up and running or under construction.

Like Japan's Fukushima Dai-ichi plant they lie within a few hundred miles of the type of fault known to unleash the largest tsunami-spawning earthquakes.

Called subduction zones, these happen when one tectonic plate is lodged beneath another. And because the so-called Manila Trench hasn't been the source of a huge quake in at least 440 years, some experts say tremendous stresses are building, increasing the chances of a major rupture.

Should that happen, the four plants in southern China, and a fifth perched on Taiwan's southern tip, could be in the path of a towering wave like the one that struck Fukushima.

"We have to assume they'll be hit," said David Yuen, a University of Minnesota professor who has modeled seismic probabilities for the fault. "Maybe not in the next 10 years, but in 50 or 100 years."

Asia, the world's most seismically charged region, is undergoing a nuclear renaissance as it struggles to harness enough power for its huge populations and booming economies.

But China, Taiwan, India and several other countries frantically building coastal facilities have made little use of new science to determine whether these areas are safe. At least 32 plants in operation or under construction in Asia are at risk of one day being hit by a tsunami, nuclear experts and geologists warn.

And even when nations have conducted appropriate seismic hazard assessments, in many cases they have not shared the findings with the U.N. International Atomic Energy Agency, leaving experts frustrated and in the dark.

"It's pretty astonishing to a lot of us that so little priority is placed on the work we do," said Kerry Sieh of the Earth Observatory of Singapore, who has studied and written about the Manila Trench, where pressure has been building for millions of years.

He is among those who say it is only a matter of time before it snaps.

In assessing the tsunami risks to nuclear power stations, scientists focus on their proximity to subduction faults, volcanoes and areas frequently hit by underwater landslides — all of which can trigger seismic waves. Because giant tsunamis recur, they also look at historic and scientific records, going back up to 4,000 years if possible.

The greatest threat comes from the subduction faults crisscrossing the globe, some far from the minds of policymakers, nuclear industry officials and the public because it has been so long since they exploded.

In places where tectonic plates that form these faults are "coupled," or stuck together, the stresses are the biggest, especially if centuries have passed without a major energy-releasing earthquake.

When the strain eventually forces one plate to pop up or dive under the other, the resulting temblor can spawn mammoth waves like the one that struck off Japan's northeast coast on March 11, triggering the nuclear crisis that has carried on for more than a month.

While there is some "coupling" at the Manila Trench, there is debate about just how much. Scientists say more research needs to be done to determine if pressure is building and along which segments.

A computerized simulation by Yuen's students shows a magnitude-9.0 quake along the Manila Trench sending waves racing along the South China Sea, before slamming Taiwan's southern shore 15 minutes later. The tsunami reaches China's southeast coast in around two hours. It also strikes Hong Kong, which sits just 30 miles from the nearest nuclear plant — close enough to see increased radiation levels if a plant were to be damaged by a Fukushima-like event.

Scientists paint a worst-case scenario in which waves 15 to 24 feet high (5 to 8 meters) could strike the plants in China and Taiwan.

Science has come a long way since the first nuclear plant was built in the 1950s.

By carbon dating the ash, pollen or other organic material attached to tsunami sand deposits swept inland with the giant walls of water, geologists can determine to the decade, and sometimes even the year, when the wave hit and how big it was when it roared ashore.

That's important because some tsunamis only strike once a millennium.

"This is the smoking gun, the calling card of the tsunami, and when you find it, especially far inland, you know that this is an area that has been hit with a large tsunami in the past," said Bruce Jaffe, an oceanographer and tsunami expert at the US Geological Survey.

Such research is considered essential in deciding where to locate nuclear power stations because most are built along seashores, rivers and lakes to supply the massive amounts of water needed to keep their reactors from overheating. Even plants perched on hills or cliffs may be in danger because the pipes used to carry up water used for cooling could be damaged in a powerful tsunami.

Japan, which sits atop three highly active tectonic plates with 54 reactors dotting its coastlines, has probably done the most when it comes to looking back in history.

Even so, Tokyo Electric Power Co., which runs the hobbled Fukushima plant, did not factor geologic evidence of the giant Jogan tsunami of 869 A.D. into its preparedness. When the tsunami hit last month, it unleashed waves up to 42 feet (14 meters) high, swamping the backup generators needed for cooling.

The same region was also walloped twice before, once around 140 B.C. and again sometime between 600 B.C. and 900 B.C., scientific studies revealed.

Experts hope Japan has taught the world an important lesson: When it comes to nuclear safety, it's essential to imagine the unimaginable. Looking back 50 years, or even 500, is not enough.

"When you're talking about radioactivity and possibilities of explosions ... you have to look at what is within the realm of possibility," said Jody Bourgeois, a tsunami expert at the University of Washington who was doing research in Japan when the disaster struck. "You should be building it with factors of safety for the maximum possible events."

It's not the first time a tsunami has threatened nuclear reactors.

The 2004 earthquake off Indonesia's subduction fault spawned the monster tsunami that killed 230,000 people in a dozen nations.

It also sent waves slamming into a nuclear plant in the southern Indian township of Kalpakkam, the country's center of atomic research, nearly a thousand miles from the quake's epicenter.

Though the reactors automatically shut down and no radioactive material was released, it showed that even facilities far from dangerous faults need to prepare for the worst.

While the near miss in India raised awareness, it did not prompt major changes to the safety design at the Madras Atomic Power Station, said its director, K. Ramamurthy. Last week, however, a top government official said India would revamp the safety features at all its nuclear plants to try to prevent a Japan-style crisis.

The Madras plant is among the scores that have yet to ask the IAEA for an independent review to determine if their tsunami preparedness assessments meet international standards.

The same holds for Pakistan, which built a plant along a coastline near Karachi that was hit by a tsunami in 1945, as well as for China, Taiwan and the US.

Though the reports aren't mandatory, Antonio Godoy, the IAEA's recently retired top seismic safety expert, said many countries have held up efforts to build a comprehensive database identifying the plants vulnerable to tsunamis based on such reviews.

The Fukushima crisis does seem to have jolted some governments into action.

Tsunami expert Tso-Ren Wu of Taiwan's National Central University, warns that "we are long overdue" for a similar quake on the Manila Trench. He was recently commissioned by Taiwan to model worst-case scenarios for all three of the island's nuclear plants and a fourth under construction. His findings will be used to help redesign the facilities or raise their seawalls, if necessary.

His studies indicate two plates that form the subduction zone are pushing against each other at a relatively fast 8.7 centimeters (3.4 inches) per year, forcing extreme amounts of energy to build up. A fault slip from the two plates would be up to 38 meters, comparable to what occurred during the 1960 magnitude-9.5 Chile earthquake, the largest on record. By comparison, the slips in Indonesia and Japan were estimated at around 20 meters. The greater the slip, the more water is heaved up to create bigger tsunami waves.

It's not yet clear, however, if the Japan disaster was a wake-up call for energy-starved China, which has the world's most ambitious nuclear power expansion.

China's nuclear regulators declined to answer questions submitted by The Associated Press, but have said in the past that plants along their southeastern coast have been fitted with the most modern technology and are able to withstand huge storm surges from typhoons, which hit with far less force than tsunamis.

As for the likelihood of a mammoth tsunami, Li Zhong-Cheng of the National Energy Center told the state-run China Daily newspaper after last month's disaster that coastal areas are protected by a wide, shallow continental shelf that is not conducive to the formation of big seismically triggered waves.

Other scientists say there isn't enough research to make such a declaration.

Some historical records, though inconsistent, indicate a 30-foot (10-meter) tsunami in 1782 from the South China Sea killed as many as 40,000 people after hitting southern Taiwan. Records also point to a 27-foot wave in 1765 that swept as many as 10,000 people out to sea in the same province where the Chinese plants are located.

But experts say China needs to look much further back in time.

Unlike Japan, sand deposit studies have just begun there and have not yet yielded evidence of ancient tsunamis. More research is needed along the coast and in the Philippines — which would have been within reach of the same waves.

If that data, along with predictions about future earthquake-spawned tsunamis are not taken into account, some fear disaster could strike again some day.

Plants in the Mediterranean and along the Atlantic and Persian Gulf also need to be prepared.

The only candidate for a large tsunami in the continental US is the Cascadian subduction zone, more than 200 miles off the West coast. Experts say neither the Diablo Canyon nor San Onofre stations in California are considered in the path of destruction, though they may still be vulnerable to local tsunamis generated by other faults or submarine landslides. Both have recently promised to carry out more advanced seismic testing to guarantee safety.

"What happened in Japan was not a surprise," said Godoy, who remains an IAEA consultant and has spent much of the past 20 years warning governments to prepare for worst-case scenarios. "Maybe now they'll wake up, listen and act."

New North-South Dialogue Key Ahead Of Talks: US (AFP)

AFP, April 19, 2011

WASHINGTON (AFP) – Restarting a dialogue between North Korea and South Korea is an "essential first step" to returning to multinational talks on ending North Korea's nuclear program, State Department spokesman Mark Toner said on Monday.

"A successful rapprochement between North and South Korea is an essential first step before we can consider getting involved diplomatically again or even talk about six-party talks," Toner said.

Multinational talks on ending North Korea's nuclear programs have been stalled since December 2008. One month after the talks ended among the six countries – the two Koreas, the United States, Russia, China and Japan – North Korea launched a second nuclear test.

In March, 2010, North Korea was accused of sinking the South Korean navy ship, the Cheonan, and later that year, the bombardment of the South Korean island of Yeonpyeong.

"We've seen a steady pattern of belligerent behavior on the part of North Korea," noted Toner.

"So we need to see a clear and decisive move in the opposite direction. ... The other side of this coin is a pattern where we reward bad behavior on the part of North Korea and we hold talks that don't lead anywhere," Toner added. "And we've said very consistently that we're not going to have talks for talks' sake."

Iran Central Banker: Lift Sanctions Or Face Spike In Oil Prices (WT)

Nuclear News Flashes

Tuesday, Apr 19, 2011

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*** NRG pulls out of planned expansion of South Texas Project

NRG Energy said April 19 it will write down its investment in the development of two nuclear units at the South Texas Project and will not invest further in the expansion project.

In a statement, NRG President and CEO David Crane said the accident at the Fukushima I plant in Japan "has introduced multiple uncertainties around new nuclear development in the United States which have had the effect of dramatically reducing the probability that STP [units] 3 and 4 can be successfully developed in a timely fashion."

Crane said NRG continues "to believe both in the absolute necessity of a US nuclear renaissance and that STP 3 and 4 is the best new nuclear development project in the country bar none." But he said "the

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extraordinary challenges facing US nuclear development in the present circumstance and the very considerable financial resources expended by NRG on the project over the past five years make it impossible for us to justify to our shareholders any further financial participation in the development of the STP project."

NRG said it will cooperate with and support its current partners and any prospective future partners in attempting to develop the STP units.

NRG said it expects to record a first-quarter 2011 pretax charge of about \$481 million for the impairment of the net assets of the Nuclear Innovation North America joint venture, owned 88% by NRG and 12% by Toshiba. The writedown consists of \$331 million of NINA net assets funded by NRG, plus \$150 million of net investment by Toshiba, NRG said.

*** NGNP designer General Atomics says project is not economical

A key partner in the US government's Next Generation Nuclear Plant project has told DOE that completing the project would not make economic sense given the low natural gas prices.

John Parmentola, senior vice president of energy and electromagnetic systems at General Atomics, said the company submitted a business model to DOE earlier this year showing that an NGNP could be competitive only if natural gas prices reach \$9-\$10 per billion Btu, about twice the current market prices. His remarks came at the Nuclear Energy Insider's Small Modular Reactor Conference in Columbia, South Carolina and in an interview.

GA was contracted by DOE to come up with a conceptual design for NGNP "a congressionally mandated project to develop and build a demonstration plant for a high-temperature gas-cooled reactor. The NGNP is designed to generate electricity and process heat for industrial facilities such as oil refineries and petrochemical factories.

GA submitted its design for a 350-MW thermal reactor in December. The design is under review by DOE's Nuclear Energy Advisory Committee, which will advise Secretary of Energy Steven Chu on whether to proceed with the NGNP.

"It's going to be difficult to acquire an owner/operator for that reactor because it will be difficult for them to make money off that" due to cheap natural gas, Parmentola said. Instead, he said, GA is talking with potential customers in Japan and South Korea about building high-temperature gas-cooled reactors in those countries. "In Japan, they don't even talk about natural gas, because [its price] is off the charts," he said.

*** DOE aims to roll out small reactor initiative in May

DOE will ask Congress for permission to start a program supporting the development of small modular reactors, a department official said April 19.

If Congress approves, DOE will make an announcement "by the end of May" to invite companies to apply for the agency's funding support for commercialization of SMRs, which DOE defines as reactors of up to 300 MW, said John Kelly, DOE's deputy assistant secretary of nuclear reactor technologies. He spoke at the Nuclear Energy Insider's Small Modular Reactor Conference in Columbia, South Carolina.

President Barack Obama's administration requested \$67 million for fiscal 2012 for a DOE program that would split with private companies the costs of obtaining design certifications and combined construction permit-operating licenses for two light-water SMR projects. The budget document said the private partners would have to cover at least 50% of the costs.

Such a new initiative cannot automatically begin under the budget deal struck earlier this month, which funds existing programs through September 30 when the current fiscal year ends. But the government can obtain approval from the House and Senate appropriations committees to fund new programs.

Leslie Barbour, director of governmental affairs for the Nuclear Energy Institute said April 14 that appropriators have signaled support for the SMR program. Kelly said DOE will be able to adjust its budget to finance SMR development without cutting funding for any other initiative.

*** Due to Fukushima I accident, NRC delays SMR regulations

NRC staff has put off recommending alternative emergency planning regulations for small modular reactors, due to public anxiety over nuclear safety because of the Fukushima I accident, an agency official said April 19.

The "time is not right" to talk about reducing the emergency planning zone, given events in Japan, said Stewart Magruder, branch chief of the advanced reactor program in NRC's Office of New Reactor. He spoke at the Nuclear Energy Insider's Small Modular Reactor Conference in Columbia, South Carolina.

NRC staff had planned to submit a paper to the commission this summer to propose "conceptually, the idea of tying the distance" of the EPZ to the dose a person near a reactor could receive in a severe accident, he said.

NRC regulations require a 10-mile-radius EPZ around a light water reactor larger than about 80 MW. An SMR has a capacity rating of up to 300 MW, according to the IAEA.

Industry officials have proposed flexibility in determining the size of the EPZ around an SMR, saying the reactors would contain less radioactive material and have greater safety margins.

Magruder said NRC staff is "supportive" of such an alternative although it has yet to develop a model to calculate the appropriate size for such an EPZ. But the staff has put such consideration on hold after the Fukushima accident, he said, because "emergency planning is not just a technical issue. It is a public issue [and] political issue."

He said the staff does not have a schedule to resume work on alternative emergency regulations.

*** NRC staff completes environmental statement for proposed Summer units

There are no environmental impacts that would preclude issuing combined construction permit-operating licenses for two units at South Carolina Electric & Gas' Summer station, NRC said in an April 19 statement.

NRC also said the US Army Corps of Engineers has completed its environmental review for the planned units. The Corps will consider the information in NRC's environmental impact statement in deciding whether to issue a federal permit in accordance with the Clean Water Act and Rivers and Harbor Act of 1899, NRC

said.

NRC has said it plans to complete the safety review of the Summer COL application by June.

*** NRC reactor oversight process meets most performance metrics in 2010

NRC's reactor oversight process, or ROP, for the nation's 104 operating power reactors met all but two of its performance metrics in 2010, Rani Franovich, chief of the agency's program assessment branch, said in a memorandum released publicly April 19.

Franovich said NRC staff evaluated the ROP's performance indicator program, inspection program, significance determination process and assessment program. "The staff found that the ROP met 43 out of 45 performance metrics," she said.

Two metrics for the assessment program were not met due to an increase in "deviations" from the ROP Action Matrix and an increase in the average time between assessment letters and supplemental inspections. The staff will develop changes to address those issues, Franovich said.

The memorandum dated April 13, along with the ROP annual report providing the complete evaluation, is on NRC's Adams document system under accession number ML110740073.

*** US nuclear net generation declines in February

US nuclear net generation was about 63.8 million megawatt-hours in February, DOE's Energy Information Administration said in its monthly flash estimates of electric power data released April 18.

This represents a decline of 12.3% from January, and is 2.2% lower than nuclear net generation in February 2010, EIA said. It did not give a reason for the decline in nuclear generation. It said total US electric power generation declined 3% in February compared with February 2010.

*** Reactor report

â€” Nine Mile Point-1 was at 25% power after returning to the grid April 19 following a refueling outage that began March 21, Constellation spokeswoman Jill Lyon said. She said she could not say when the unit would reach 100% power.

*** IAEA to send fact-finding team to Japan

The IAEA plans to send an international team of experts on a fact-finding mission to Japan ahead of the agency's High-Level Ministerial Conference on Nuclear Safety to be held June 20- 24, an agency official said April 19 at a press briefing in Vienna.

Deniř Flory, IAEA deputy director general for nuclear safety and security, said in addition to looking at Tokyo Electric Power Co.'s Fukushima I, the agency will visit other nuclear power plants affected by the March 11 earthquake and tsunami to "assess whether they are in good condition."

The agency sent two such missions to Japan following an earthquake in 2007 that struck Tepco's Kashiwazaki-Kariwa nuclear power plant.

The IAEA mission will suggest to the Japanese government "the best way to improve the situation" at Fukushima I and meet the targets of Tepco's road map, announced April 17, to return radiation levels around the site to normal levels.

"We have had a request from the Japanese government for a mission, but what will be its precise focus and the date on which it will take place have yet to be discussed," he said.

*** IAEA sees 'decreasing trend' in radiation levels from Fukushima I

The overall situation at the Fukushima I nuclear power plant "remains very serious" but there are "some signs of recovery" as the latest data indicate decreasing levels of radiation on land and at sea, the IAEA's head of nuclear safety said April 19.

Denis Flory, deputy director general for nuclear safety and security, spoke during a press briefing on the latest developments at the plant and on the ongoing radiation monitoring work.

The presence of iodine-131 or cesium-137 in drinking water were detected "at very low levels in a few prefectures," Flory said.

Hartmut Nies, laboratory head of the IAEA Environment Laboratories, based in Monaco, said at the same briefing with Flory that the detected levels of I-131 and CS-137 at sea are showing a decreasing trend. The trend excludes the effects of Tokyo Electric Power Co.'s deliberate discharge of low level radioactive waste into the sea on April 5, which was diluted within a couple of days, Nies said.

"The highest levels are still of course being measured closer to the coast and the discharge points, but in general, the conclusion of the monitoring stations 30 km [about 19 miles] from the coast is there is a generally decreasing trend and we expect that if no additional discharge occurs, that this trend will continue," Nies said.

*** Tepco begins first phase of removing contaminated water from Fukushima I units

Tokyo Electric Power Co. said it began transferring radioactive water from the basement of a turbine building at unit 2 of the Fukushima I plant to a holding tank April 19.

The company said it expects it will take about 26 days to move 10,000 cubic meters of the water to a waste treatment facility near unit 4, filling the facility to capacity. Tepco said it expects to complete construction of a second waste treatment facility by June to receive another 15,000 cubic meters of contaminated water from unit 2 and an additional 45,000 cubic meters combined of contaminated water in turbine buildings of units 1 and 3.

Removal of contaminated water is necessary in order to prevent it from leaking through cracks into

the ocean, Tepco said. The utility also announced plans April 19 to begin construction by July of a closed-cycle water injection system to cool damaged reactor cores and spent fuel pools.

***** Areva to supply water treatment at Fukushima**

Areva said it will supply a decontamination process to Tokyo Electric Power Co. to aid in the treatment of radioactive water at the Fukushima I nuclear power plant.

The contaminated water is preventing Tepco from gaining access to areas of the plant to repair the power supply and cooling systems, Areva said in an April 19 statement.

Following a request from Tepco, Areva proposed a solution to treat most of the contaminated water, which the Japanese power company "has just accepted," Areva said.

Areva said the process uses special chemical reagents to separate and recover radioactive elements, which can then be treated. The process will reduce the radioactivity levels of the treated water, which could be reused in the power plant's cooling systems, Areva said.

Other processes might be used and could be supplemented by other medium- and long-term actions, Areva said.

***** EDF provides evidence for UK safety review**

EDF Energy said it submitted evidence to UK Chief Nuclear Inspector Mike Weightman for his report on the implications of the Fukushima I nuclear power plant accident for UK nuclear safety, the company said in a statement April 19.

A company spokeswoman declined to release a copy of the submittal, saying it would be made public May 15 when Weightman's interim report is to be published.

EDF said in a statement April 19 that its reviews of its nuclear plants "confirmed our belief that our plants conform to the highest possible standards."

Following the March 11 Japanese earthquake and tsunami, EDF said it completed several actions, including an immediate check of backup facilities, organizing refresher training for employees and reviewing emergency plans.

***** Areva starts production at Georges Besse II enrichment plant**

Areva said April 18 that its subsidiary, Societe d'Enrichissement du Tricastin, has launched production of the first separative work units, or SWU, at the new Georges Besse II centrifuge enrichment plant.

The first cylinder of uranium hexafluoride was introduced into the plant on December 6. After tests and an inspection on March 16, France's Nuclear Safety Authority issued permission April 11 for introduction of UF6 into the facility, Areva's Enrichment Business Unit said in a statement. Production began April

12, it said. .

It said SET's goal is to start up the eight cascades in the plant's first module by this summer.

The plant is scheduled to reach its initial nominal capacity of 7.5 million SWU in 2016, with a potential expansion to 11 million SWU. It represents an investment of Eur3 billion.

Francois-Xavier Rouxel, director of the enrichment business unit, said in the statement that Areva supplies about one-quarter of world enrichment services.

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From: [Sheryl Paul](#)
To: [Hayden, Elizabeth](#)
Subject: The nuclear industry set to gather in Prague this June – join today!
Date: Tuesday, April 19, 2011 5:19:27 AM

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5. The **European Commission**, represented by the Director for Nuclear Energy, **Peter Faross**, will provide an update on the current and future regulatory environment from Brussels
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HHHH/233

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I look forward to seeing you again in Prague in June.

Kind regards,

Sheryl Paul
Marketing Manager
Platts EMEA Conference Division
REF: PC172EM5

PS - Don't forget to register before 6th May to save \$200

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From: Google Alerts
To: Hayden, Elizabeth
Subject: Google Alert - Nuclear Regulatory Commission
Date: Wednesday, April 20, 2011 12:18:36 AM

News

3 new results for **Nuclear Regulatory Commission**

Residents quiz **nuclear** regulators on Oconee plant's safety

Anderson Independent Mail

By Anna Mitchell An annual safety meeting with federal regulators Tuesday night at the Oconee Nuclear Station drew 10 times more people from the public than a similar meeting a year ago.

Jonathan Bartley, the **Nuclear Regulatory Commission's** branch ...

[See all stories on this topic »](#)

Final Environmental Impact Statement issued for two **nuclear** reactors

Power-Gen Worldwide

The AP1000 is a 1100 MWe pressurized-water reactor design the **Nuclear Regulatory Commission** certified in 2006. The agency is reviewing Westinghouse's May 2007 application to amend the certified design. The **NRC** and the US Army Corps of Engineers, ...

[See all stories on this topic »](#)

Japan's **nuclear** crisis took toll on outlook for plant in Bay City area

Houston Chronicle

NINA will continue to seek an operating license from the **Nuclear Regulatory Commission**, Crane said, as well as federal loan guarantee from the Department of Energy. Crane said he can envision a time when the project, with a license and loan guarantee ...

[See all stories on this topic »](#)

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11/11/11/234

From: Marshall, Jane
Sent: Friday, March 11, 2011 8:33 PM
To: Alter, Peter
Cc: RST15 Hoc
Subject: RE: UPDATE

Importance: High

Follow Up Flag: Follow up
Flag Status: Flagged

Peter-

These Q's should probably be included with the Q&A's that the LT is doing. Once NRC has developed agency answers, we can share them with Julie.

Jane

From: Bentz, Julie A. [mailto:Julie_A._Bentz@nss.eop.gov]
Sent: Friday, March 11, 2011 7:54 PM
To: Alter, Peter
Cc: Layton, Michael; Marshall, Jane; RST15 Hoc
Subject: RE: UPDATE

Peter – you're great!

Very quickly and VERY broadly, what will be the consequences of a core melt down? Will the west coast of America get radioactive "fallout"? Will there be SNM spewing into the sea? Can you scope the "after melt down" effects? If possible, I need ASAP.

Thanks!

Julie Bentz

(b)(6)

From: Alter, Peter [mailto:Peter.Alter@nrc.gov]
Sent: Friday, March 11, 2011 5:08 PM
To: Bentz, Julie A.
Cc: Layton, Michael; Marshall, Jane; RST15 Hoc
Subject: Re: UPDATE

The following information is based on interpretation of the "facts" released by TEPCO and IAEA that has been received here at the NRC Operations Center.

At 2:46 pm (local time) three of the six units at Fukushima Daiichi Nuclear Plant tripped due to the earthquake, the other three units were already shutdown for maintenance.

All three running units completely shutdown (all control rods inserted) and lost offsite AC power. Initially the emergency diesel generators started, but they only ran for approximately one hour (3:41 pm local). AC Power was subsequently restored to Unit 3 (according to IAEA). However, Unit 1 and 2 remain in a "station blackout" [loss of all AC power].

Unit 1 initially removed the reactor core's decay heat using its isolation condenser. This is a heat exchanger that is connected to the reactor and can cope with a "station blackout" for up to eight hours.

Unit 2 initially removed the reactor core's decay heat using its reactor core isolation cooling system. This is a reactor steam-turbine-driven pump which feeds water back into the reactor to keep the core covered. The remainder of the core's decay heat is removed by relief valves that send their steam to a "suppression" pool of water inside the reactor containment. The reactor core isolation cooling system can also function during a "station blackout" for up to eight hours.

At Unit 1, the decay heat energy of the core results in boil-off of the water in the shell side of the tank that is the isolation condenser. Make up for this boiled-off water can come from the site fire-water system which has an independent diesel-driven fire pump. However, the reactor water inside the tubes of the isolation condenser cools off and begins to contract and if no water is added to the reactor the level in the reactor goes down and eventually exposes the core. Unit 1 has been in the "station blackout" for approximately 13 hours. At 3:30 pm (local time) there was 1.3 meters of water above the top of the core (according to IAEA).

At Unit 2, after eight hours the onsite batteries that provide DC power to operate the reactor core isolation cooling system are exhausted and the system stops operating properly (loss of DC system control power) and the system stops adding water to the reactor. This will eventually lead to a lowering water level in the reactor and exposure of the core. Unit 2 has also been in the "station blackout" for approximately 13 hours. At 3:30 pm (local time) there was 3.5 meters of water above the top of the core (according to IAEA).

The difference in water levels at 3:30 pm was because of the amount of time the diesel generators ran and the makeup of reactor water by the Unit 2 reactor core isolation cooling system.

Regardless, eventually the decay heat exposed the core at both units. This continued to maintain steam pressure in the reactors and eventually when Unit 1's isolation condenser and Unit 2's reactor core isolation cooling system stopped working the pressure (and energy) in the reactor vessel was relieved into the reactor containment buildings by automatic steam relief valves. The steam from inside the reactors increased the pressure in the containments and also carried radioactivity from the core into the containments.

Emergency procedures direct the operators to vent small amounts of steam pressure and radioactivity to the atmosphere. Thereby saving the containment to hold the rest of the steam and radioactivity. Some plants can filter this release through normal vent filtration system. This is what is being reported by the Japanese media.

----- Original Message -----

From: Layton, Michael <Michael.Layton@nrc.gov>

To: Bentz, Julie A.

Cc: Alter, Peter <Peter.Alter@nrc.gov>

Sent: Fri Mar 11 15:51:08 2011

Subject: Re: UPDATE

Julie,

Since you're only on e-mail, Pete Alter is going to follow up with you

MCL

Michael Layton

----- Original Message -----

From: Bentz, Julie A. <(b)(6)>

To: Layton, Michael

Sent: Fri Mar 11 15:48:29 2011

Subject: Fw: UPDATE

Mike,

I'm in a meeting, so only have bb access. I didn't realize that we vented outside (I had assumed it would be vented to containment). Implications?

Julie

----- Original Message -----

From: Connery, Joyce <Joyce.Connery@hq.doe.gov>

To: Reed, Richard A.; Kern, Dab; Bentz, Julie A.; Gallagher, Shawn P.; Holgate, Laura

Sent: Fri Mar 11 15:44:56 2011

Subject: FW: UPDATE

This just came from our folks on the ground.

If you want to give me a list of questions to have prepared answers to before the 5:30, let me know

-----Original Message-----

From: Cherry, Ron

Sent: Friday, March 11, 2011 3:43 PM

To: Connery, Joyce; Aoki, Steven; Lyons, Peter; Poneman, Daniel; DAgostino, Thomas; Mustin, Tracy; Carlson, Nicholas; Alldridge, David; Hoffman, Patricia; Koonin, Steven; Miller, Neile; Krol, Joseph; Johnson, Shane; Kelly, John E (NE); McGinnis, Edward

Cc: Duncan, Aleshia; OConnor, Rod; Bryan, William; Williams, Melvin; Hurlbut, Brandon; Anderson, Margot; Mueller, Stephanie; LaVera, Damien; Reynolds, Tom; Hunsaker, Christopher; Koontz, Thomas

Subject: RE: UPDATE

Joyce,

This is the latest Fukushima nuclear plant update:

(Source: Yahoo, re-reporting from Japanese newspaper Sankei Shimbun): At 0300, Minister of Economy and Industry Kaieda held a press conference and said Tokyo Electric has decided to release a "small" amount of vapor from reactor #1 due to above average pressure. As the wind is blowing oceanward, it's not expected to have any effect on citizens. Prime Minister Kan is expected to visit Saturday morning to inspect. Reactor #2 showed no abnormalities, but may change.

From the Embassy's emergency ops team.

Ron

Peter

Merzke, Daniel

From: Merzke, Daniel
Sent: Friday, March 11, 2011 1:03 PM
To: Marshall, Jane
Subject: RE: ACTION: Commissioner's Assistant Briefing Notification

Greg Bowman was covering the TA brief and was supposed to call in. I went up there a couple of minutes ago and saw him with the phone in his hand, so I assumed he was tying in.

From: Marshall, Jane
Sent: Friday, March 11, 2011 1:02 PM
To: Merzke, Daniel
Subject: Re: ACTION: Commissioner's Assistant Briefing Notification

Yeah. They were trying to combine the two. Are you on the line?
Sent from my NRC Blackberry

From: Merzke, Daniel
To: Marshall, Jane
Sent: Fri Mar 11 12:57:56 2011
Subject: RE: ACTION: Commissioner's Assistant Briefing Notification

Thanks. There's another briefing going on at the same time, so I got confused.

From: Marshall, Jane
Sent: Friday, March 11, 2011 12:55 PM
To: Merzke, Daniel
Subject: Fw: ACTION: Commissioner's Assistant Briefing Notification

Fyi - if you need to call in again.
Sent from my NRC Blackberry

From: ANS.HOC@nrc.gov <ANS.HOC@nrc.gov>
Sent: Fri Mar 11 12:53:34 2011
Subject: ACTION: Commissioner's Assistant Briefing Notification

There will be a Commissioner's Assistant Briefing given by Region4/HQ at 1300 concerning the event Tsunami from Japan. Call (b)(6) approximately 5 minutes before the scheduled start time. When prompted, enter security code (b)(6). You may call 301-816-5164 at this time and follow the voice prompts if you do not wish to receive this notification from our Automatic Notification System.

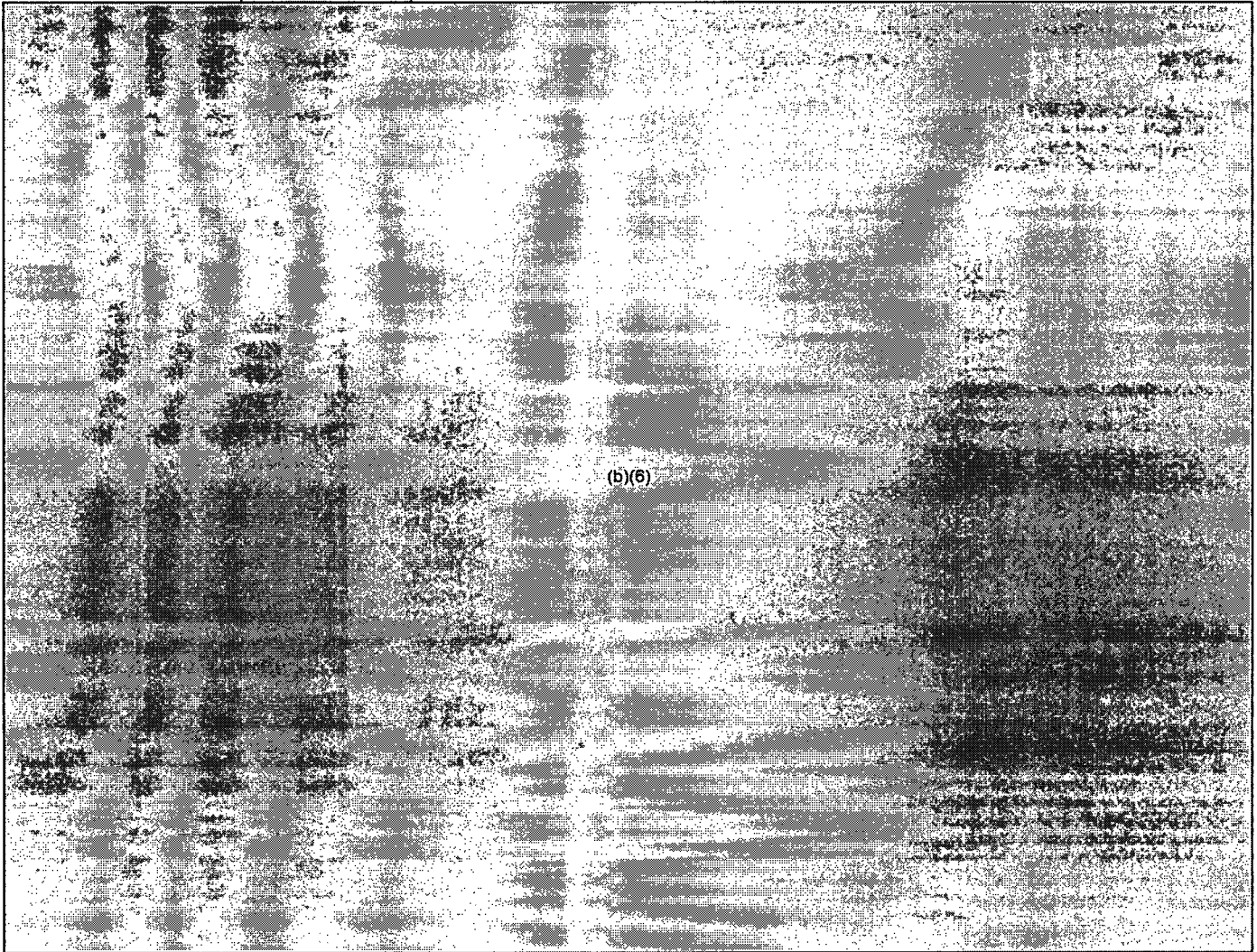
IIII/2

Hergenroder, Dan

From: Uselding, Lara
Sent: Saturday, March 12, 2011 7:42 AM
To: Collins, Elmo; Howell, Art; Caniano, Roy
Subject: Fw: NUCLEAR HAZARDS POSED BY EARTHQUAKES IN JAPAN

I've already shared with Kriss and Troy and the branch
Lara
Lara Uselding
NRC Region 4 Public Affairs
817-917-0321

From: Swanson Jane <(b)(6)>



Sent: Sat Mar 12 03:33:07 2011
Subject: NUCLEAR HAZARDS POSED BY EARTHQUAKES IN JAPAN

San Luis Obispo Mothers for Peace
P.O. Box 3608
San Luis Obispo, CA 93403
mothersforpeace.org

IIII/3

NEWS RELEASE

For Immediate Release
March 12, 2011

Contact:
Elizabeth Apfelberg
hankliz@charter.net
(805) 783-2383

San Luis Obispo Mothers for Peace is monitoring information about the earthquakes in Japan and the effects on nuclear power plants there. As information continues to develop, there are grave concerns about the possible consequences of radiation releases.

The evacuation zone around the Fukushima Daiichi plant has been expanded from 3 to 10 KM (6 1/4 miles). Fukushima I-2 has lost backup power and necessary cooling capability. Evacuation efforts have been increased because of the detection of radioactive cesium in the atmosphere, suggesting some of the fuel may have melted.

Eleven of Japan's 55 reactors are reportedly shut down due to the earthquake, leading to a severe shortage of electrical energy.

SLO Mothers for Peace joins the world in its concerns for the people of Japan affected by the ground motion, the tsunamis and the radiological hazards posed by this earthquake of unanticipated and unprecedented proportions.

From: ET07 Hoc
Sent: Saturday, March 12, 2011 1:04 PM
To: [REDACTED] (b)(6)
Subject: 40 GE Employees were at Fukushima Daiichi site

This is Alan at the OPS Center. We learned that 40 GE Employees were at Fukushima Daiichi site supporting the outage for Units 4-6. 4 of them have been contaminated in some way. DOS is working to evac all 40 ASAP.

Chairman attended WH Deputies meeting. We have 3 actions: 1)Share our Q&As with WH; 2)Set-up open communication line with IAEA which is in direct contact with Japanese regulator; 3) We are starting outreach to States.

1111/4

From: RST09 Hoc
Sent: Saturday, March 12, 2011 10:28 PM
To: [REDACTED] (b)(6)
Subject: me

Upper right

www.nrc.gov

IIII/5

Hergenroder, Dan

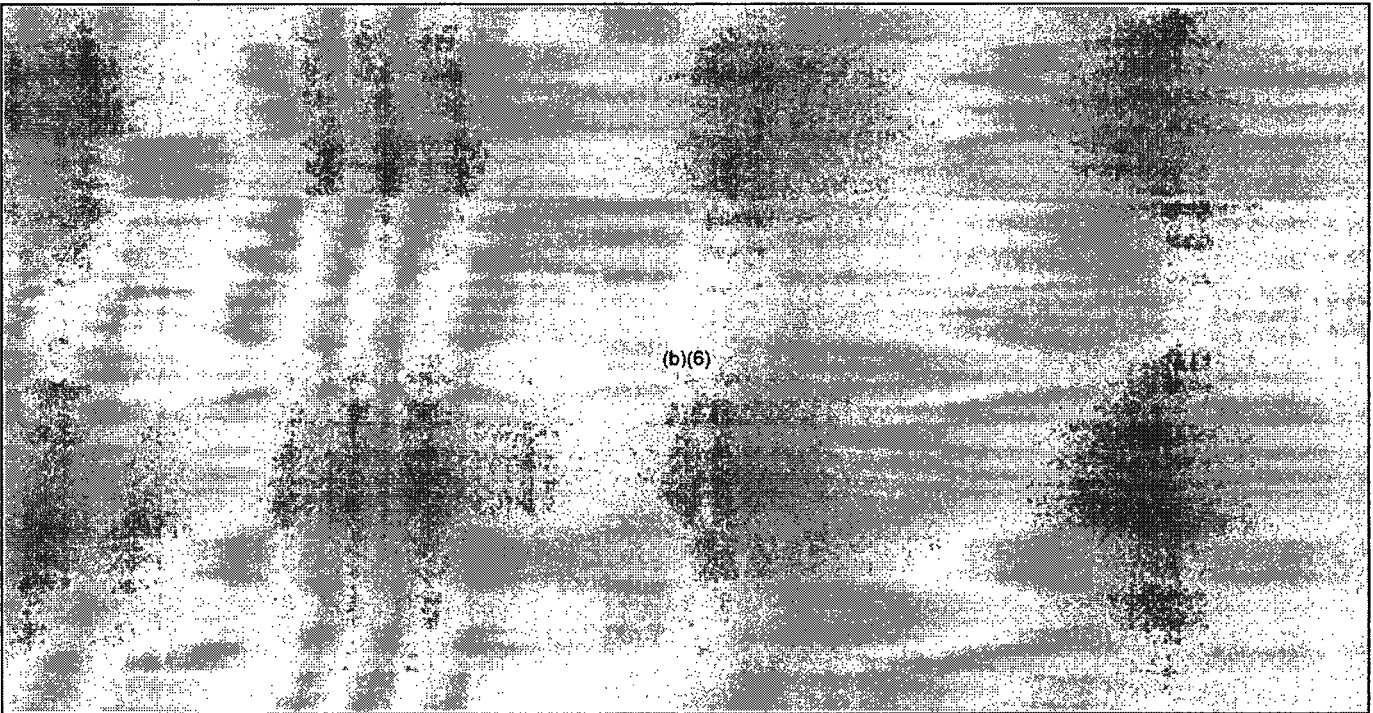
From: Collins, Elmo
Sent: Saturday, March 12, 2011 9:23 PM
To: Howell, Linda
Subject: Re: 1830 EST (March 12, 2011) USNRC Earthquake/Tsunami SitRep

Thanks!
Elmo

From: Howell, Linda
To: Collins, Elmo; Howell, Art; Kennedy, Kriss; Uselding, Lara; Pruett, Troy; Vogel, Anton
Sent: Sat Mar 12 21:13:08 2011
Subject: Fw: 1830 EST (March 12, 2011) USNRC Earthquake/Tsunami SitRep

FYI

From: LIA07 Hoc



Sent: Sat Mar 12 18:40:32 2011
Subject: 1830 EST (March 12, 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 1830 EST situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 12, 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.
-Sara

Sara K. Mroz
Communications and Outreach
Office of Nuclear Security and Incident Response

1111/6

US Nuclear Regulatory Commission
sara.mroz@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

Satorius, Mark

From: OST03 HOC
Sent: Sunday, March 13, 2011 2:09 PM
To: DOI; DTRA; chardin; rfraass@crcpd.org; james.d.lloyd@nasa.gov; PN_Distribution; FDA; State Dept; White House Sit Room; Bernie Beaudin; Canadian Nuclear Safety Commission (CNSC); eoc2@cnscccsn.gc.ca; DOEHQEOC@OEM.DOE.GOV; (b)(6); EOC.EPAHQ@EPAMAIL.EPA.GOV; Lawrence Koleff; SIOC; FEMA-operations-center@dhs.gov; Health Canada Operations Center; IAEA Emergency Response Unit; USDA; Screnci, Diane; Sheehan, Neil; Dricks, Victor; Clifford, James; Gamberoni, Marsha; Heater, Keith; Holian, Brian; Kay Gallagher; Kinneman, John; Lew, David; Nick, Joseph; ODaniell, Cynthia; Powell, Raymond; R1 IRC; Roberts, Darrell; Thompson, Margaret; Davenport, Patricia; McCallie, Karen; Miles, Patricia; Quinones-Navarro, Joylynn; R2 IRC; Rudisail, Steven; R3 IRC; Smith, Desiree; Alferink, Beth; Andrews, Tom; Howell, Linda; R4 IRC
Subject: NRC Press Release #1 through 5 - Japan Event Earthquake/Tsunami
Attachments: Press Release 1.pdf; Press Release 2.pdf; Press Release 3.pdf; Press Release 4.pdf; Press Release 5.pdf

*****Event Information is Attached*****

The NRC is responding to an event.

Please contact the NRC Executive Support Team if necessary at 301-816-5100 or reply to this e-mail.



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No. 11-042

March 11, 2011

NRC MONITORS NOTICE OF UNUSUAL EVENT AT DIABLO CANYON POWER PLANT, TSUNAMI ISSUES

The U.S. Nuclear Regulatory Commission, through its regional office in Arlington, Tex., is monitoring a notice of unusual event (NOUE) at the Diablo Canyon Power Plant, located near San Luis Obispo, Calif. Senior NRC officials are working at the agency's Rockville, Md., headquarters to coordinate NRC activities with respect to the Japanese earthquake and subsequent tsunami.

"The NRC is closely monitoring this situation as it unfolds with respect to nuclear facilities within the United States. NRC staff is working closely with its resident inspectors who are on site to ensure safe operations," said NRC Chairman Gregory Jaczko.

Pacific Gas and Electric Co. (PG&E), operator of the Diablo Canyon two-reactor plant, declared a precautionary NOUE Unusual Event at 4:23 a.m. EST today after receiving a tsunami warning from the West California Emergency Management Agency. The tsunami warning was generated after an estimated 8.9 magnitude earthquake occurred off the eastern Japanese coast.

The licensee reported the Diablo Canyon plant is stable and both units remain on line. The plant is well protected against tsunami conditions as required by NRC regulations. The NRC has staff at the plant keeping track of the plant's response.

Nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area.

In addition to the Diablo Canyon plant, the NRC is also monitoring the San Onofre nuclear power plant, the Humboldt Bay spent fuel storage site and NRC-regulated nuclear materials sites in Hawaii and Alaska to name a few. Site personnel have informed the NRC they are prepared for possible tsunami effects.

###

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No. 11-043

March 11, 2011

NRC CONTINUES TO TRACK EARTHQUAKE AND TSUNAMI ISSUES

Senior officials at U.S. Nuclear Regulatory Commission headquarters in Rockville, Md., are following events related to the Japanese earthquake and subsequent tsunami. In addition, the agency's regional office in Arlington, Texas, will continue to monitor the Diablo Canyon Power Plant's handling of a notice of unusual event (NOUE) at the site, near San Luis Obispo, Calif., for the duration of the event.

"We offer our condolences to all those in Japan affected by these tragedies," said NRC Chairman Gregory Jaczko. "The NRC is ready to provide whatever assistance we can to our Japanese counterparts, should there be a specific request. We're closely coordinating with other federal agencies."

Friday's tsunami warning, issued after an estimated 8.9 magnitude earthquake occurred off the eastern Japanese coast, prompted Pacific Gas and Electric Co. (PG&E), operator of the Diablo Canyon two-reactor plant, to declare a precautionary NOUE at 4:23 a.m. EST Friday. PG&E has reported both reactors have remained online throughout the event. While PG&E has reported only minor tsunami-related effects, the plant is well-protected against tsunami conditions as required by NRC regulations. NRC staff at the plant are keeping track of the plant's response during the event and remain in close contact with plant operators.

Nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area.

In addition to the Diablo Canyon plant, the NRC is following events at the San Onofre nuclear power plant, the Humboldt Bay spent fuel storage site and NRC-regulated nuclear materials sites in Hawaii and Alaska to name a few. Personnel at all those sites have informed the NRC conditions remain safe.

###

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No. 11-044

March 12, 2011

NRC IN COMMUNICATION WITH JAPANESE REGULATORS

Officials at Nuclear Regulatory Commission headquarters in Rockville, Md., have spoken with the agency's counterpart in Japan, offering the assistance of U.S. technical experts. Should the Japanese want to make use of this expertise, NRC staffers with extensive background in boiling-water reactors are available to assist ongoing efforts.

The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response. The NRC is examining all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States. The NRC's headquarters Operations Center is operating on a 24-hour basis.

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically estimated for the site and surrounding area.

For background information on generic operations at a boiling-water reactor, including an animated graphic, visit the NRC's website at www.nrc.gov.

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No. 11-045

March 12, 2011

NRC EXPERTS DEPLOY TO JAPAN AS PART OF U.S. GOVERNMENT RESPONSE

Two officials from the U.S. Nuclear Regulatory Commission with expertise in boiling water nuclear reactors have deployed to Japan as part of a U.S. International Agency for International Development (USAID) team. USAID is the federal government agency primarily responsible for providing assistance to countries recovering from disaster administering.

"We have some of the most expert people in this field in the world working for the NRC and we stand ready to assist in any way possible," said Chairman Gregory Jaczko.

The NRC has stood up its Maryland-based headquarters Operations Center since the beginning of the emergency in Japan, and is operating on a 24-hour basis.

The NRC will not provide information on the status of that country's nuclear power plants. Check the NRC web site or blog for the latest information on NRC actions. Other sources of information include:

USAID -- www.usaid.gov

U.S. Dept. of State -- www.state.gov

FEMA -- www.fema.gov

White House -- www.whitehouse.gov

Nuclear Energy Institute --- www.nei.org

International Atomic Energy Agency -- www.iaea.org/press/

For background information on generic operations at a boiling-water reactor, including an animated graphic, visit the NRC's website at www.nrc.gov.

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No. 11-046

March 13, 2011

NRC SEES NO RADIATION AT HARMFUL LEVELS REACHING U.S. FROM DAMAGED JAPANESE NUCLEAR POWER PLANTS

The Nuclear Regulatory Commission is coordinating with the Department of Energy and other federal agencies in providing whatever assistance the Japanese government requests as they respond to conditions at several nuclear power plant sites following the March 11 earthquake and tsunami. The NRC has sent two boiling-water reactor experts to Japan as part of a U.S. Agency for International Development team.

In response to nuclear emergencies, the NRC works with other U.S. agencies to monitor radioactive releases and predict their path. All the available information indicates weather conditions have taken the small releases from the Fukushima reactors out to sea away from the population. Given the thousands of miles between the two countries, Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity.

During a nuclear event the NRC has requirements to protect populations around reactors. For instance, the U.S. evacuation standard at 10 miles is roughly equivalent to the 20-kilometer distance recommended in some instances in Japan. The United States also uses sheltering in place and potassium iodide, protective measures also available in Japan.

The NRC will not comment on hour-to-hour developments at the Japanese reactors. This is an ongoing crisis for the Japanese who have primary responsibility.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

Clayton, Kathleen

From: Doane, Margaret
Sent: Sunday, March 13, 2011 10:20 AM
To: Jaczko, Gregory
Cc: Borchardt, Bill
Subject: OIP Most Recent Analysis

Chairman. Since Tony is now going to be in contact with MOFA and NISA anything we say or do will be much more important.

Japan responders have been averting possible greater and greater disasters by various extreme measures. If we interfere at all and some decision making is affected and something happens to change this course, the consequences are enormous.

History will judge whether they made all the right decisions, but at this time they have been routinely facing very dire circumstances and bringing them under some level of better control. They have demonstrated they have abundant technical expertise. We would be wise to let this guide any public statements.

It's complicated, but as far as I can tell they have no legal obligation to notify the US or other countries with specific info. until there is risk of transboundary movement. (DOS would have the final legal call on this). The technical staff has said at this time this clearly remains a Japanese and not a transboundary issue. In other words, the Japanese are inviting us to talk at this technical level, they have no obligation to do so. Again anything we do or say publicly should keep this in mind.

Finally our long-standing cooperation with the Japanese regulators would tell us that it would be far better to have only the NRC reps talk with NISA (not DOE and DOS), and only for "disaster relief" liaison activities since there are international teams on the ground; and not for giving any technical "assistance," since at this time there isn't strong basis for technical help and we don't want to interfere or distract them. It would also be the best way culturally to approach the issue.

Call if you'd like to discuss. I'm at home. (b)(6)

Sent from an NRC Blackberry
Margaret Doane

Satorius, Mark

From: OST03 HOC
Sent: Monday, March 14, 2011 8:33 PM
To: DOI; DTRA; chardin; rfraass@crpcd.org; james.d.lloyd@nasa.gov; PN_Distribution; FDA; State Dept; White House Sit Room; Bernie Beaudin; Canadian Nuclear Safety Commission (CNSC); eoc2@cnscc-ccsn.gc.ca; DOEHQEOC@OEM.DOE.GOV; (b)(6); EOC.EPAHQ@EPAMAIL.EPA.GOV; Lawrence Koleff; SIOC; FEMA-operations-center@dhs.gov; Health Canada Operations Center; IAEA Emergency Response Unit; USDA; Screnci, Diane; Sheehan, Neil; Dricks, Victor; Clifford, James; Gamberoni, Marsha; Heater, Keith; Holian, Brian; Kay Gallagher; Kinneman, John; Lew, David; Nick, Joseph; ODaniell, Cynthia; Powell, Raymond; R1 IRC; Roberts, Darrell; Thompson, Margaret; Davenport, Patricia; McCallie, Karen; Miles, Patricia; Quinones-Navarro, Joylynn; R2 IRC; Rudisail, Steven; R3 IRC; Smith, Desiree; Alferink, Beth; Andrews, Tom; Howell, Linda; R4 IRC
Subject: Real Event: NRC Press Release #7 - Japan Event Earthquake/Tsunami
Attachments: Press Release 7.pdf

*****Event Information is Attached*****

The NRC is responding to an event.

Please contact the NRC Executive Support Team if necessary at 301-816-5100 or reply to this e-mail.



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200

Washington, D.C. 20555-0001

E-mail: opa.resource@nrc.gov Site: www.nrc.gov

Blog: <http://public-blog.nrc-gateway.gov>

No. 11-047

March 14, 2011

JAPANESE GOVERNMENT ASKS FOR ASSISTANCE WITH REACTOR EVENTS; U.S. GOVERNMENT AND NRC PREPARING RESPONSE

The Japanese government has formally asked for assistance from the United States as it continues to respond to nuclear power plant cooling issues triggered by an earthquake and tsunami on March 11. As part of a larger U.S. government response, the NRC is considering possible replies to the request, which includes providing technical advice.

Included in a U.S. Agency for International Development (USAID) team dispatched earlier to Japan to assist with the disaster are two boiling-water reactor (BWR) experts from the NRC. They are currently in Tokyo offering technical assistance. USAID is the federal government agency primarily responsible for providing help to countries recovering from a disaster.

The NRC has been monitoring the Japanese reactor events via its Headquarters Operations Center in Rockville, Md., on a 24-hour-a-day basis.

The NRC will not comment on hour-to-hour developments at the Japanese reactors. This is an ongoing crisis for the Japanese who have primary responsibility.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

Wittick, Brian

From: Wittick, Brian
Sent: Monday, March 14, 2011 3:27 PM
To: LIA10 Hoc
Subject: RE: Your Ops Center Schedule

Good idea. Thanks

Brian Wittick
Executive Technical Assistant for Reactors
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
301-415-2496 (w); (b)(6) (c)

From: LIA10 Hoc
Sent: Monday, March 14, 2011 3:26 PM
To: Wittick, Brian
Subject: RE: Your Ops Center Schedule

You have Elizabeth Smirolodo on Thursday and Mugeh on Friday.

Bring a book to read...or your taxes to work on.

:)

Steve

From: Wittick, Brian
Sent: Monday, March 14, 2011 3:24 PM
To: LIA10 Hoc
Subject: RE: Your Ops Center Schedule

Thanks Steve....who am I on with?

Brian Wittick
Executive Technical Assistant for Reactors
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
301-415-2496 (w); (b)(6) (c)

From: LIA10 Hoc
Sent: Monday, March 14, 2011 3:19 PM
To: Wittick, Brian
Cc: Mamish, Nader
Subject: Your Ops Center Schedule

Brian:

You are scheduled to work in the OPS Center on the following shifts:

Wednesday March 16: 11:00 pm to 7:00 am

IIII/10

Thursday March 17: 11:00 pm to 7:00 am

Thank you.

Steve Baker

Rihm, Roger

From: Rihm, Roger
Sent: Monday, March 14, 2011 4:27 PM
To: Thomas, Eric; Hiland, Patrick
Cc: Hasselberg, Rick
Subject: RE: I've got OCA checking with Chmn staff for any addtl info on graphics to guide search EOM

Great! Michael Marshall was just literally in my office showing me this exact picture – BUT the Chairman wants it even simpler. I presume we don't have this in a manipulatable form and that I'm going to have to go to graphics to do that?

Pat I got some additional/different direction as well and will follow up in a few minutes – I think it still may involve you.

From: Thomas, Eric
Sent: Monday, March 14, 2011 4:19 PM
To: Hiland, Patrick
Cc: Hasselberg, Rick; Rihm, Roger
Subject: RE: I've got OCA checking with Chmn staff for any addtl info on graphics to guide search EOM

Here is the picture from the RTM showing BWR release pathways for Mark 1 containment. We can get Mark 2 and Mark 3 as well but I believe the Japanese plants are all Mark 1 design.

Eric Thomas

U.S. Nuclear Regulatory Commission
NRR/DIRS/IOEB
OWFN-7E24
eric.thomas@nrc.gov
301-415-6772 (office)
(b)(6) (mobile)

From: Hiland, Patrick
Sent: Monday, March 14, 2011 4:17 PM
To: Thomas, Eric
Subject: RE: I've got OCA checking with Chmn staff for any addtl info on graphics to guide search EOM

Contact Rick Hasselberg and see if he recalls anything. I believe David went down to Hill with Chairman on Sat.

From: Thomas, Eric
Sent: Monday, March 14, 2011 4:13 PM
To: Hiland, Patrick
Subject: RE: I've got OCA checking with Chmn staff for any addtl info on graphics to guide search EOM

I know the Ops Center has pictures of BWR containments and release pathways.

Eric Thomas

U.S. Nuclear Regulatory Commission
NRR/DIRS/IOEB
OWFN-7E24
eric.thomas@nrc.gov
301-415-6772 (office)
(b)(6) (mobile)

IIII/II

Wittick, Brian

From: Wittick, Brian
Sent: Thursday, April 14, 2011 8:51 PM
To: Virgilio, Martin
Cc: Reynolds, Steven; Casto, Chuck; ET02 Hoc; Hoc, PMT12; Henderson, Karen; Doane, Margaret; Foggie, Kirk; Mamish, Nader
Subject: FW: Communication Plan draft document
Attachments: Communication Plan for Fukushima Events.docx

Marty,

Attached is the draft of a communication plan we are in dialogues with NISA on developing. An early version of this was provided to NISA (did not have the DOE input) yesterday and we are hoping to get feedback from them today.

VR
Brian

From: Wittick, Brian
Sent: Thursday, April 14, 2011 7:09 PM
To: 'christopher.smith@nnsa.doe.gov'
Cc: Casto, Chuck; Reynolds, Steven
Subject: FW: Communication Plan draft document

Chris,

Thanks for the information last night. Attached is the document that incorporates what we have discussed. Please review and provide feedback soonest as I would like to be able to dialogue with NISA about the changes at our morning meeting.

Thanks
Brian

From: Wittick, Brian
Sent: Thursday, April 14, 2011 2:03 AM
To: 'nei.hisanori@meti.go.jp'
Cc: 'bannai-toshihiro@meti.go.jp'; 'oshima-toshiyuki@meti.go.jp'; Casto, Chuck
Subject: Communication Plan draft document

Dear Nei-san,

Attached please find the draft copy of the communication plan we discussed at today's meeting. Following our conversation I received a request from our Department of Energy to include inputs from a monitoring system they are developing; I will inform you if we have proposed changes to the draft document.

I thank you for your consideration of this communication plan request pertaining to the Fukushima Daiichi site and look forward to your comments.

Kind regards,
Brian Wittick

From: Wittick, Brian
Sent: Wednesday, April 13, 2011 4:04 AM
To: 'nei.hisanori@meti.go.jp'
Cc: Collins, Elmo
Subject: NRC Information Coordination Request

Dear Nei-san

At the Cabinet meeting last Friday Hosono-san had agreed to establish a system for notification should a further significant event occur at the Fukushima site, such as the large earthquake on Monday that resulted in a loss of the emergency cooling services. We would like to meet with whoever will be responsible for such notifications to establish the details of the notification process and appreciate your assistance to put me in communication for the discussions.

Thank you for your assistance.

Kind regards,
Brian Wittick
U.S. NRC Liaison Team
202-285-6128

DRAFT

Government of Japan and U.S. Embassy/U.S. Nuclear Regulatory Commission (NRC) Communication Plan

In Case of Follow-on Event at Fukushima Daiichi

Points of Contact:

U.S. Embassy (operator) – 03 3224 5000

U.S. NRC – 03 3224 5066 or +1 202 285 6128

Japan (MOFA....NISA?)

Event Criteria (based on site hazards that impact, or potentially impact, plant stability):

- Earth quakes of magnitude >7.0
- Events that result in loss of nuclear plant or spent fuel pool cooling
- Fires that last > 15 minutes at the site primary or secondary buildings, or affect temporary cooling systems
- On site explosions that affect the primary or secondary buildings, or temporary cooling systems
- Indication of uncontrolled rising temperatures in the reactor core or spent fuel pools
- Identification of new or increased releases of radioactivity from the site
- Site events that result in evacuation of the site for greater than one hour
- Other events that would result in the need for reevaluation of accident mitigation measures or personnel protective actions

Procedure:

It is requested that within one hour of identification of the above criteria to the government of Japan, reports should be made to the U.S. Embassy and NRC at the numbers provided above. When contacting the U.S. Embassy, call the number above and ask for the Duty Officer to make the report.

Reports should include:

- Time of the event
- Impacts to site equipment or personnel
- Plans for recovery

The U.S. Embassy Duty Officer will notify other government agencies as appropriate.

Additionally, the U.S. Department of Energy (DOE) is working with the Government of Japan to install a temporary radiation monitoring system near the Fukushima site that has automated call out capability when certain radiation thresholds are exceeded. DOE will set up the system to provide call outs to the following GOJ and U.S. entities:

- U.S. Embassy
- U.S. NRC
- GOJ MOFA
- GOJ JNES
- ????

From: JapanEmbassy.TaskForce
To: PMT01 Hoc; Hoc_PMT12; HQC Hoc
Subject: FW: 2400 SPEEDI Data (Unzipped)
Date: Tuesday, March 15, 2011 12:07:58 PM
Attachments: FUKUSHIMA1 air dose00-01h01.gif
FUKUSHIMA1 wind00h01.gif
FUKUSHIMA1 air concentration01-02h01.gif
FUKUSHIMA1 air concentration00-01h01.gif
FUKUSHIMA1 air dose01-02h01.gif

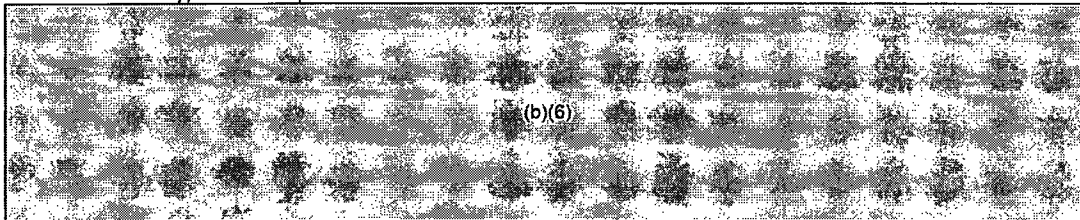
Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

SBU

This email is UNCLASSIFIED-----Original Message-----

From: JapanEmbassy, TaskForce

Sent: Wednesday, March 16, 2011 12:48 AM



Subject: 2400 SPEEDI Data (Unzipped)

Attached, please find 2400 SPEEDI data (unzipped).

SBU

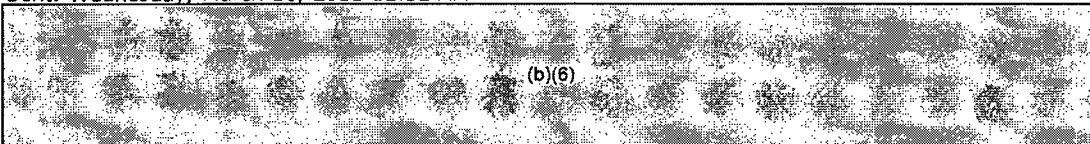
This email is UNCLASSIFIED

Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]

Sent: Wednesday, March 16, 2011 12:32 AM



IIII/13

(b)(6)

NITOPS@nnsa.doe.gov; JapanEmbassy, TaskForce
Subject: 00時SPEEDI単位量放出図形イメージの送付

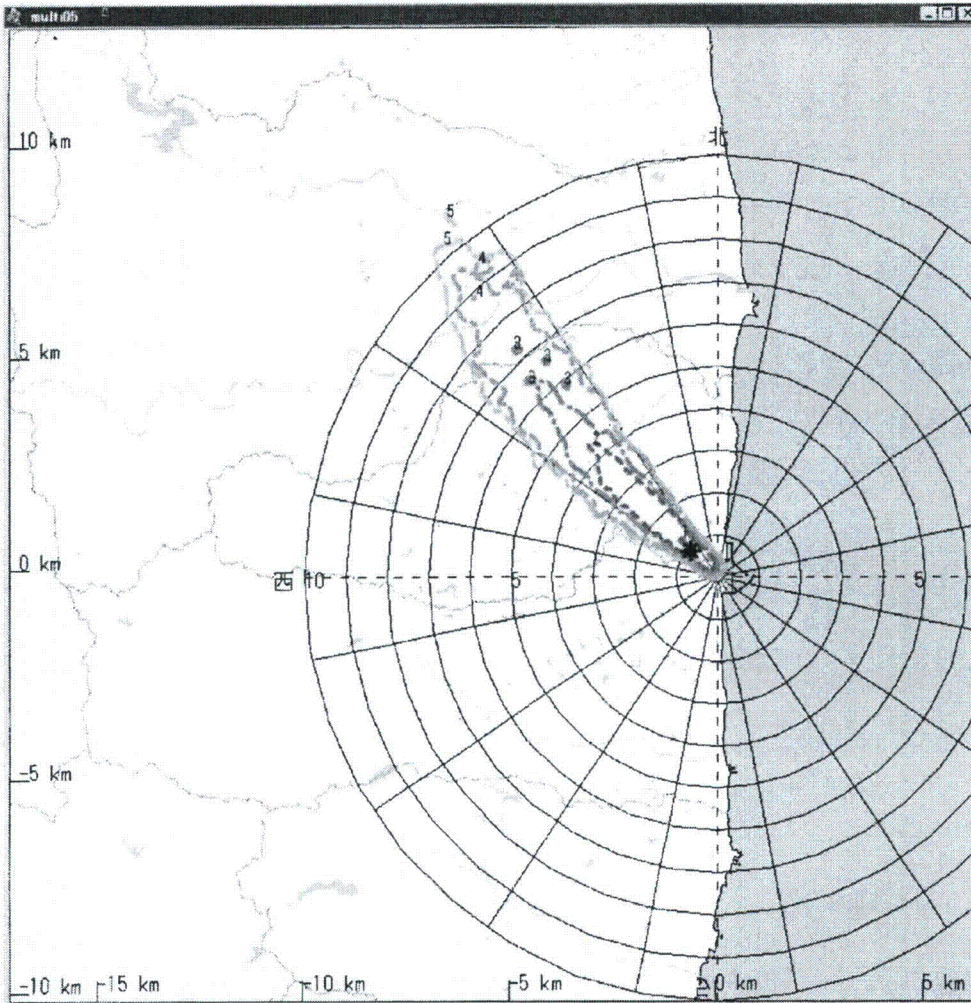
関係者各位

お世話になっております。

原子力安全技術センター 水野です。

3/16 00時のSPEEDI単位量放出図形のイメージデータを送付致します。

ご確認のほど、よろしくお願い致します。



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 00:00 -

2011/03/16 01:00

気象データ = G P V + 観測値

(2011/03/16 00:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 5.0×10^{-15}

2 = 1.0×10^{-15}

3 = 5.0×10^{-16}

4 = 1.0×10^{-16}

5 = 5.0×10^{-17}

最大線量率 = $6.363 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (-0.8, 0.4) km (* EP)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 00:00

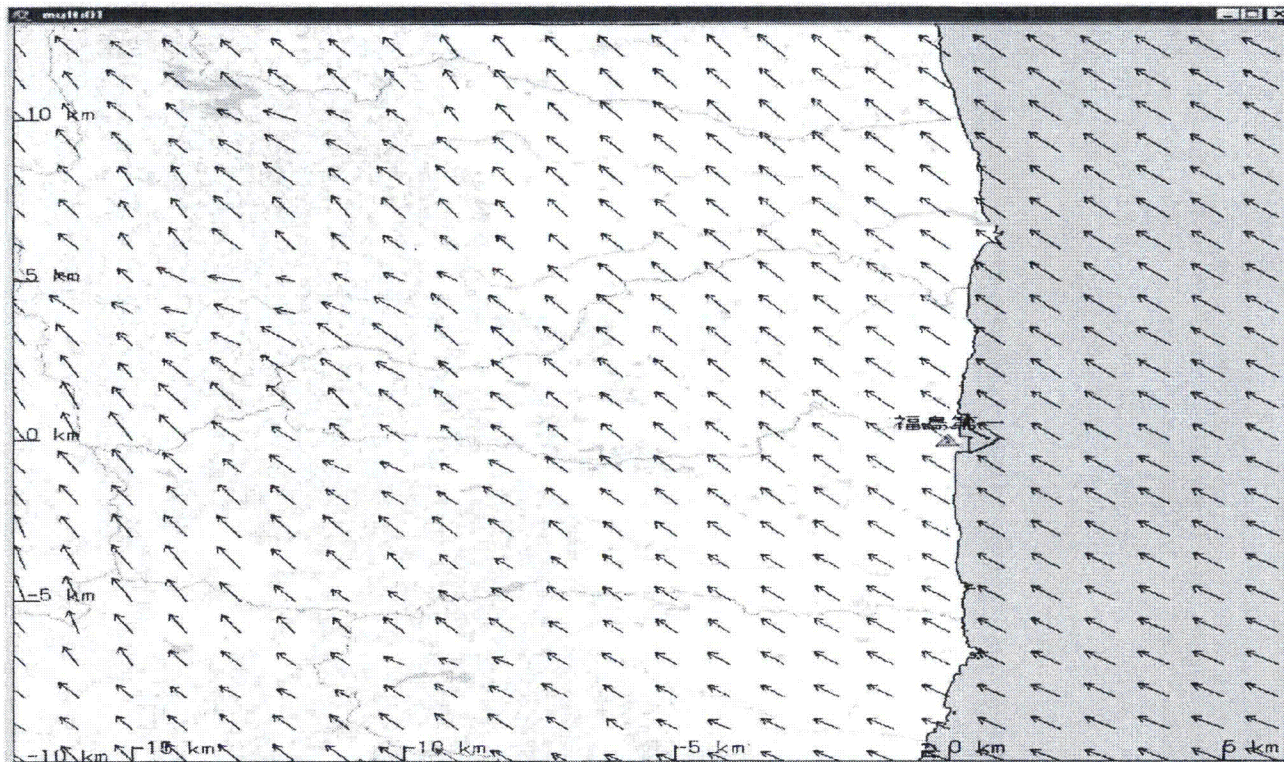
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

〇〇時定期福島1-2号炉

No. : S45177



風速場(地上高)

風速場 (地上高)

日時 = 2011/03/16 00:00

気象データ = G P V + 観測値

(2011/03/16 00:00) まで

福島第1 狭域図

サイト中心 : 141°02'10" - 37°25'12"

領域 : 23km X 23km

表示高度 = 120.00 m

サイト中心付近の風 : 南東 4.9 m/s

大気安定度 : D型

計算モデル名 = WIND21

計算メッシュ幅 水平方向 = 0.50 km

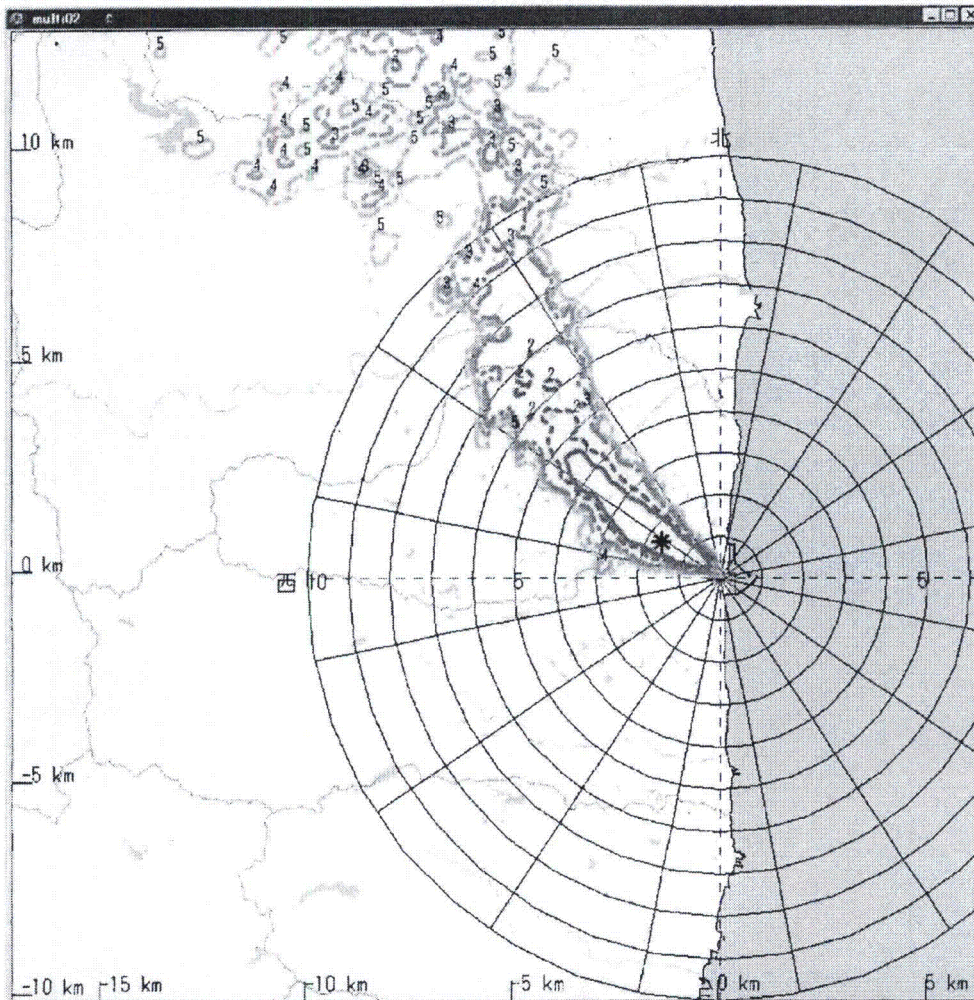
【凡例】

標準風速 (標準領域の場合の長さ)

→ = 5 m/s

〇〇時定期福島1-2号炉

No. : S45177



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素) (地上高)

日時 = 2011/03/16 01:00 -

2011/03/16 02:00

気象データ = G P V + 観測値

(2011/03/16 00:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Ba/m3)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 4.803×10^{-10} Ba/m3

放出地点から (-1.3, 0.7) km (* EPI)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 00:00

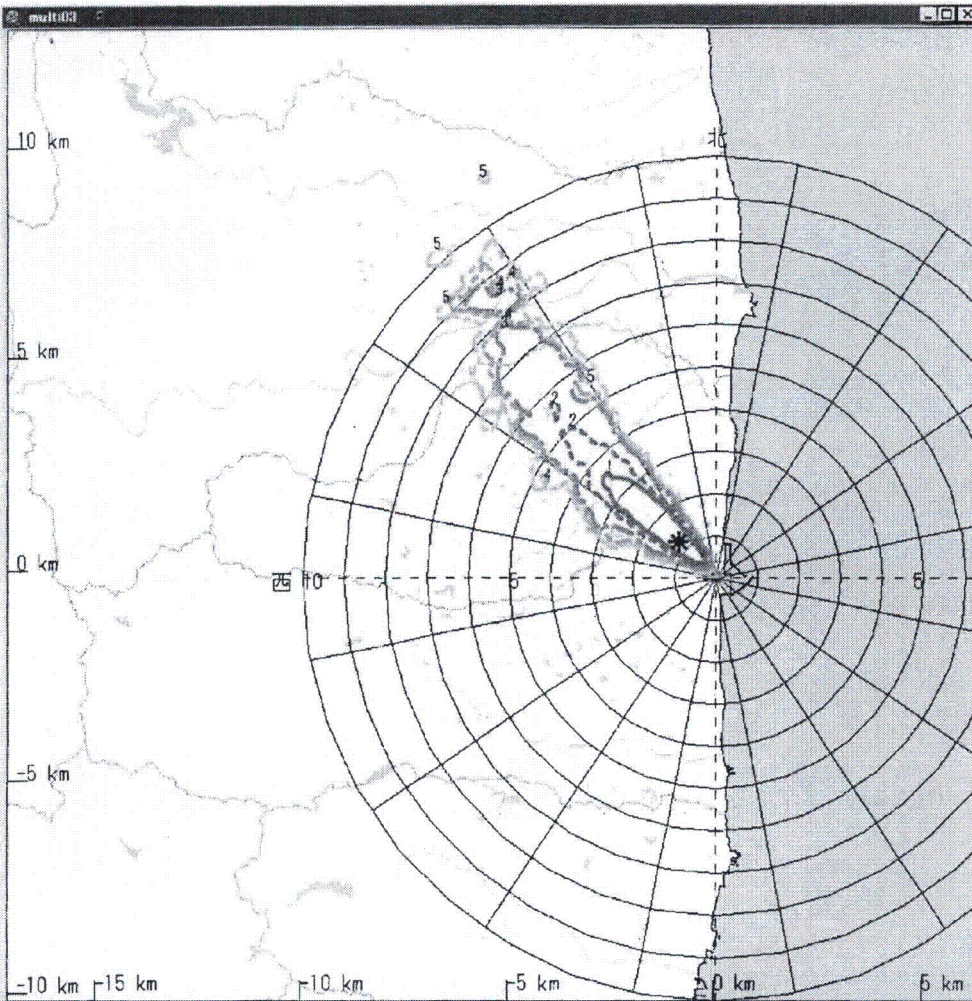
放出モード = 単位量放出

放出核種・放出率(推算): Ba/h (Ba)

ヨウ素 : 1.00×10^0 (1.00×10^0)

〇〇時定期福島1-2号炉

No.: S45177



大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 00:00 -

2011/03/16 01:00

気象データ = G P V + 観測値
(2011/03/16 00:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Ba/m³)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 3.647×10^{-10} Ba/m³

放出地点から (-0.8, 0.7) km (x 印)

計算モデル名 = PRNDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 00:00

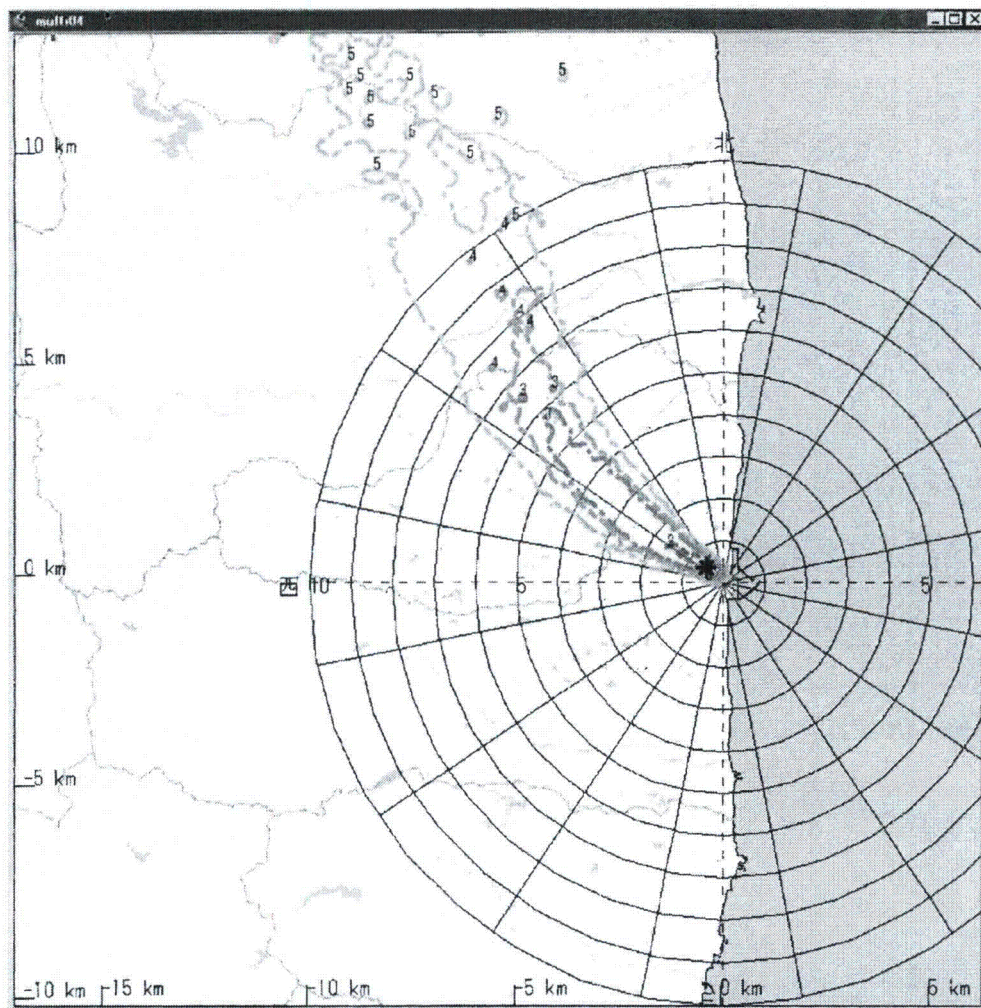
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

ヨウ素 : 1.00×10^0 (1.00×10^0)

〇〇時定期福島1-2号炉

No. : S45177



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 01:00 -

2011/03/16 02:00

気象データ = G P V + 観測値

(2011/03/16 00:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-14}

2 = 5.0×10^{-15}

3 = 1.0×10^{-15}

4 = 5.0×10^{-16}

5 = 1.0×10^{-16}

最大線量率 = $1.160 \times 10^{-14} \mu\text{Gy/h}$

放出地点から (-0.3, 0.2) km (* E P)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 00:00

放出モード = 単位量放出

放出核種・放出率(積算): Bq/h (Bq)

希ガス : 1.00×10^0 (1.00×10^0)

〇〇時定期福島1-2号炉

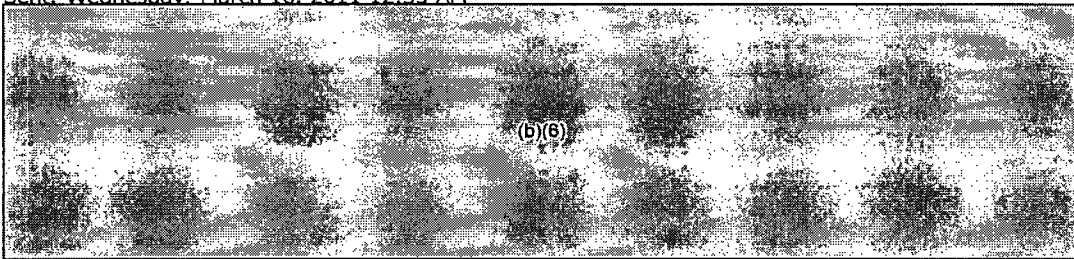
No. : S45177

From: JapanEmbassy_TaskForce
To: PMT01 Hoc; Hoc PMT12; HQO Hoc
Subject: FW: 2300 SPEEDI Data
Date: Tuesday, March 15, 2011 12:12:50 PM
Attachments: FUKUSHIMA1 air dose00-01hui.gif
FUKUSHIMA1 wind023hui.gif
FUKUSHIMA1 air concentration023-00hui.gif
FUKUSHIMA1 air concentration00-01hui.gif
FUKUSHIMA1 air dose023-00hui.gif

Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

This email is UNCLASSIFIED-----Original Message-----

From: JapanEmbassy, TaskForce
Sent: Wednesday, March 16, 2011 12:35 AM



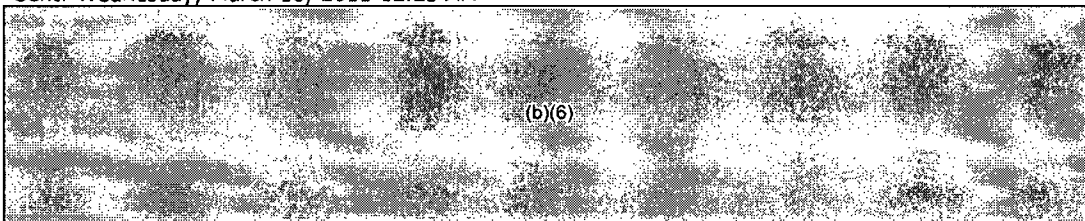
Subject: RE: 2300 SPEEDI Data

As requested, unzipped.

Tes Eustaquio
U.S. Embassy Tokyo
Political Section
Telephone: 3-3224-5332
Fax: 3-3224-5322
Email/Blackberry: EustaquioMV1@state.gov

-----Original Message-----

From: JapanEmbassy, TaskForce
Sent: Wednesday, March 16, 2011 12:25 AM



Subject: 2300 SPEEDI Data

IIII/14

Attached, please find the 2300 SPEEDI data.

SBU

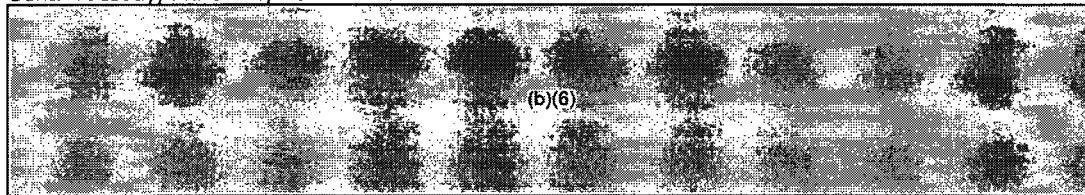
This email is UNCLASSIFIED

Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]

Sent: Tuesday, March 15, 2011 11:57 PM



Subject: 23時SPEEDI単位量放出図形イメージの送付

関係者各位

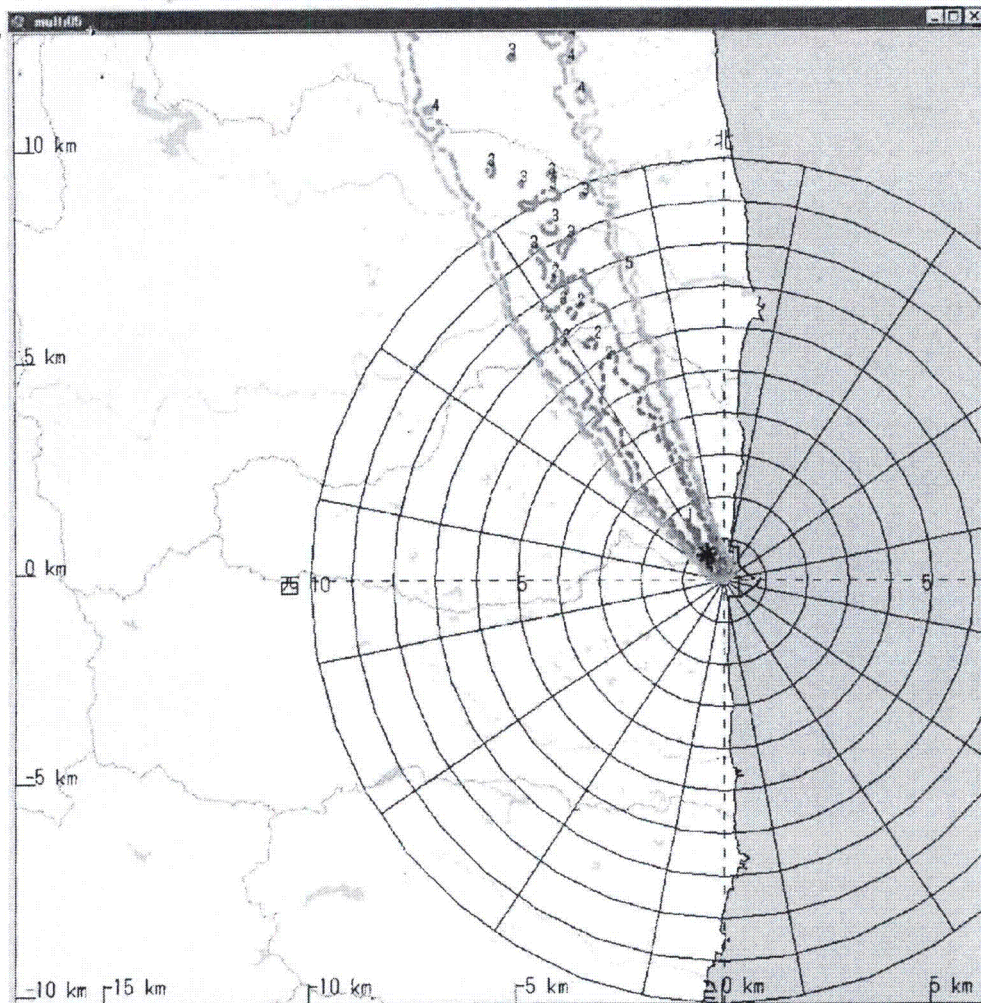
お世話になっております。

原子力安全技術センター 水野です。

3/15 23時のSPEEDI単位量放出図形のイメージデータを送付致します。

ご確認のほど、よろしくお願い致します。

This email is UNCLASSIFIED



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 00:00 -

2011/03/16 01:00

気象データ = G P V + 観測値

(2011/03/15 23:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 5.0×10^{-15}

2 = 1.0×10^{-15}

3 = 5.0×10^{-16}

4 = 1.0×10^{-16}

5 = 5.0×10^{-17}

最大線量率 = $7.582 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (-0.3, 0.4) km (*印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/15 23:00

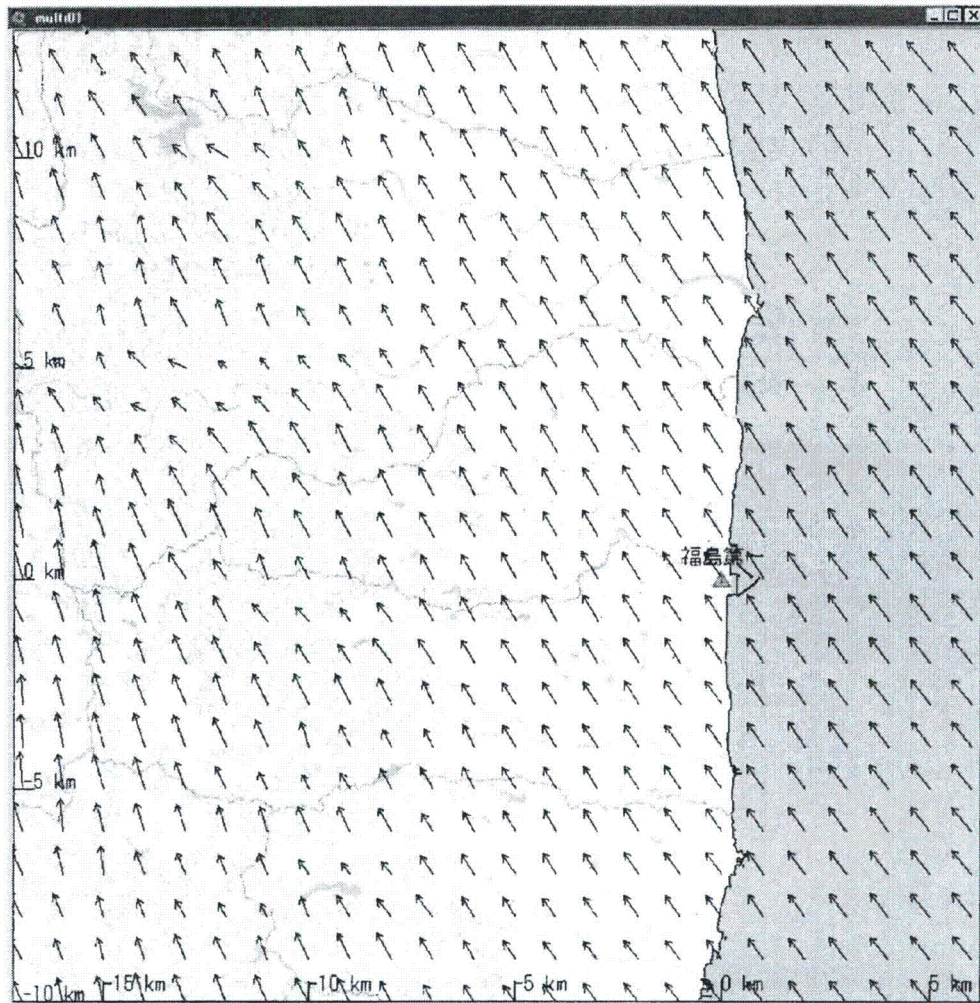
放出モード = 単位量放出

放出核種・放出率(積算): Bq/h (Bq)

希ガス : 1.00×10^0 (1.00×10^0)

23時定期福島1-2号炉

No. : S45178



風速場(地上高)

風速場 (地上高)

日時 = 2011/03/15 23:00

気象データ = G P V + 観測値

(2011/03/15 23:00) まで

福島第1 狭域図

サイト中心 : 141°02'10" - 37°25'12"

領域 : 23km X 23km

表示高度 = 120.00 m

サイト中心付近の風 : 南南東 5.4 m/s

大気安定度 : D型

計算モデル名 = WIND21

計算メッシュ幅 水平方向 = 0.50 km

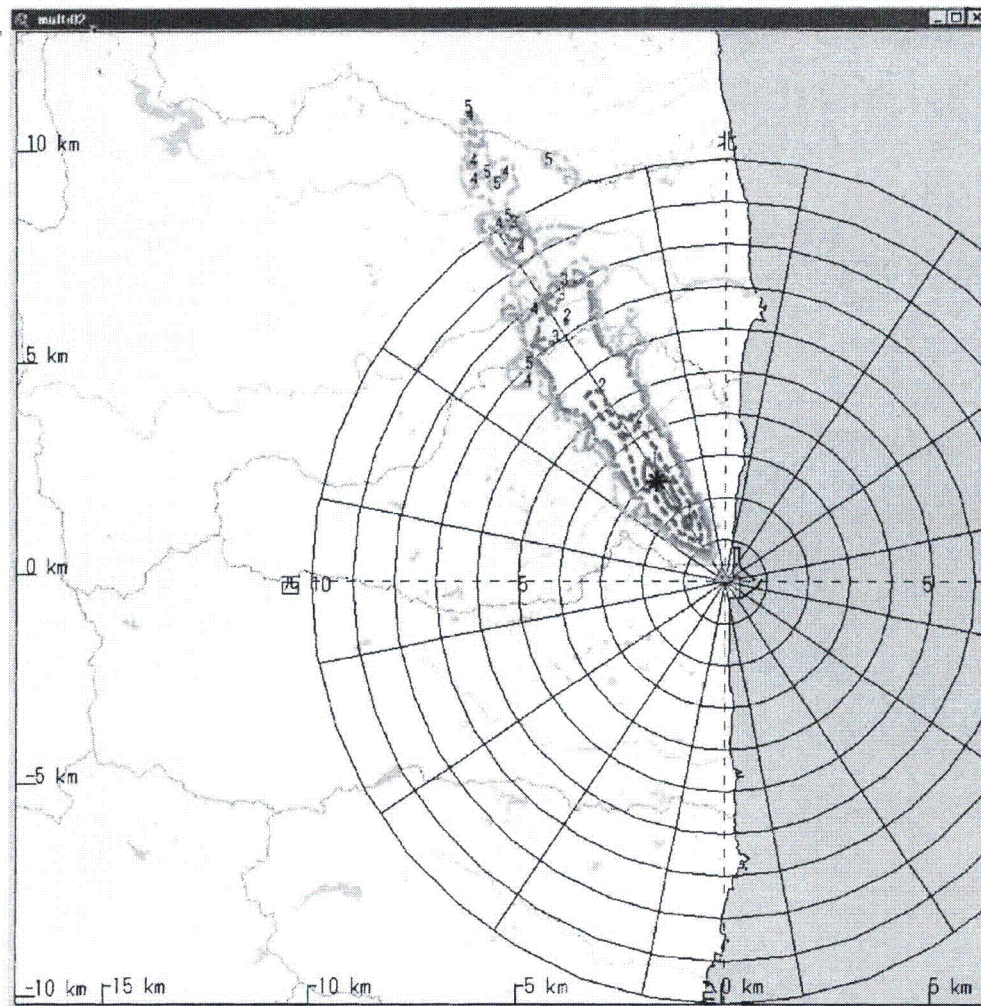
【凡例】

標準風速 (標準領域の場合の長さ)

→ = 5 m/s

23時定期福島1-2号炉

No. : S45178



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/15 23:00 -

2011/03/16 00:00

気象データ = G P V + 観測値

(2011/03/15 23:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Baq/m3)

1= 1.0×10^{-10}

2= 5.0×10^{-11}

3= 1.0×10^{-11}

4= 5.0×10^{-12}

5= 1.0×10^{-12}

最大濃度 = 1.346×10^{-10} Baq/m3

放出地点から (-1.6, 2.2) km (*印)

計算モデル名 = PRM0A21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/15 23:00

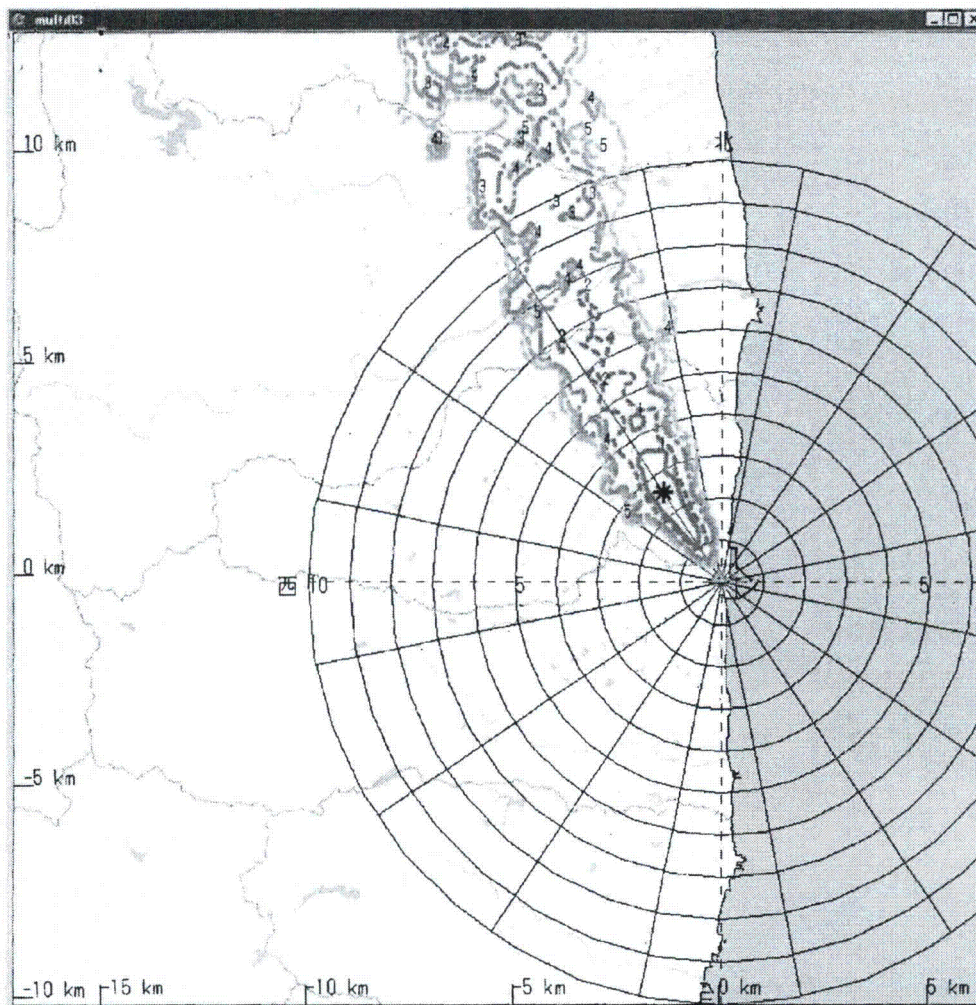
放出モード = 単位量放出

放出核種・放出率(積算): Baq/h (Baq)

ヨウ素 : 1.00×10^0 (1.00×10^0)

23時定期福島1-2号炉

No. : S45178



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 00:00 -

2011/03/16 01:00

気象データ = G P V + 観測値

(2011/03/15 23:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Ba/m³)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 2.253×10^{-10} Ba/m³

放出地点から (-1.3, 1.9) km (x 印)

計算モデル名 = PRWD42i

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/15 23:00

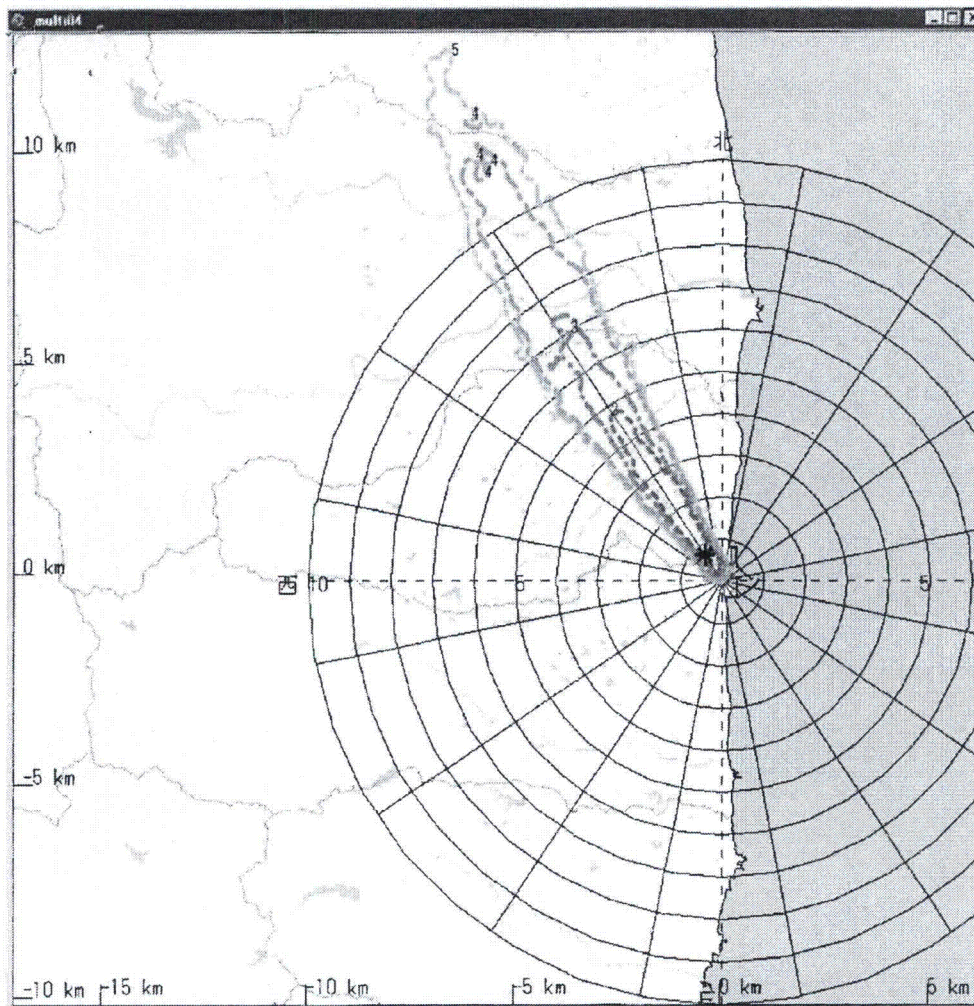
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

ヨウ素 : 1.00×10^0 (1.00×10^0)

23時定期福島1-2号炉

No. : S45176



空気吸収線量率

日時 = 2011/03/15 23:00 ~

2011/03/16 00:00

気象データ = G P V + 観測値

(2011/03/15 23:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 5.0×10^{-15}

2 = 1.0×10^{-15}

3 = 5.0×10^{-16}

4 = 1.0×10^{-16}

5 = 5.0×10^{-17}

最大線量率 = $5.115 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (-0.3, 0.4) km (*印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 13:00

放出開始時刻 = 2011/03/15 23:00

放出モード = 単位量放出

放出核種・放出率(積算) : Bq/h (3a)

希ガス : 1.00×10^0 (1.00×10^0)

23時定期福島1-2号炉

No. : S45173

From: JapanEmbassy.TaskForce
To: PMT01 Hoc; Hoc.PMT12; HQQ Hoc
Subject: FW: 19:00 SPEEDI Data attached
Date: Tuesday, March 15, 2011 12:15:09 PM
Attachments: 0315-19hSPEEDIimage.zip

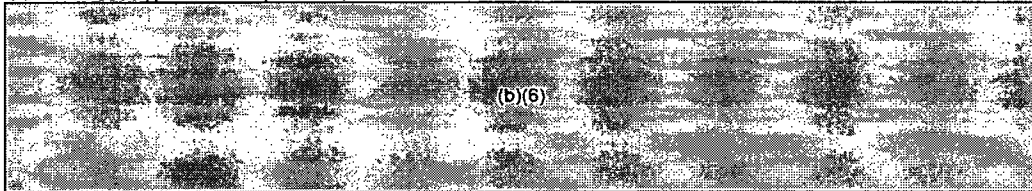
Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

SBU

This email is UNCLASSIFIED-----Original Message-----

From: JapanEmbassy, TaskForce

Sent: Tuesday, March 15, 2011 8:43 PM



Subject: 19:00 SPEEDI Data attached

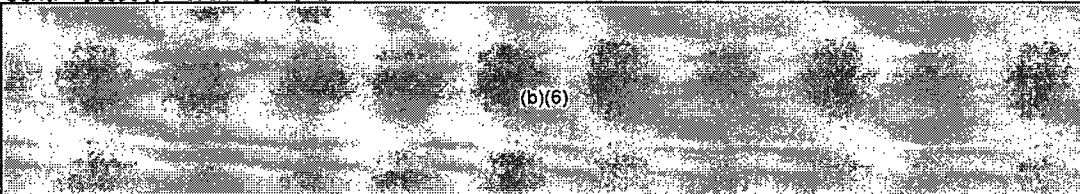
Naomi Walcott
Emergency Action Officer
Japan Emergency Command Center
U.S. Embassy Tokyo

SBU

This email is UNCLASSIFIED-----Original Message-----

From: nustec [<mailto:spd01@nustec.or.jp>]

Sent: Tuesday, March 15, 2011 7:42 PM



Subject: 19時SPEEDI単位量放出図形イメージの送付

関係者各位

お世話になっております。

IIII/15

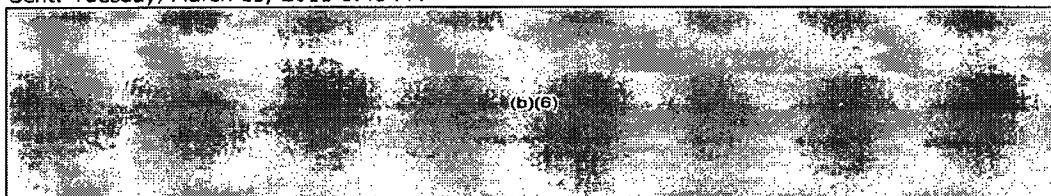
原子力安全技術センター 水野です。

3/15 19時のSPEEDI単位量放出図形のイメージデータを送付致します。
ご確認のほど、よろしくお願い致します。

From: JapanEmbassy.TaskForce
To: PMT01 Hoc; Hoc_PMT12; HQO Hoc
Subject: FW:20:00 SPEEDI Data
Date: Tuesday, March 15, 2011 12:17:00 PM
Attachments: 0315-20hSPEEDIimage.zip

Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

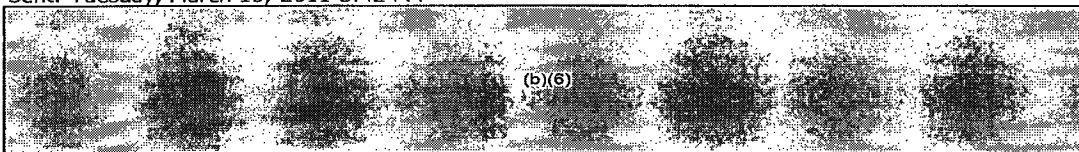
SBU
This email is UNCLASSIFIED-----Original Message-----
From: JapanEmbassy, TaskForce
Sent: Tuesday, March 15, 2011 8:46 PM



Subject: 20:00 SPEEDI Data

Naomi Walcott
Emergency Action Officer
Japan Emergency Command Center
U.S. Embassy Tokyo

SBU
This email is UNCLASSIFIED-----Original Message-----
From: nustec [mailto:spd01@nustec.or.jp]
Sent: Tuesday, March 15, 2011 8:42 PM



Subject: 20時SPEEDI単位量放出図形イメージの送付

関係者各位

IIII/16

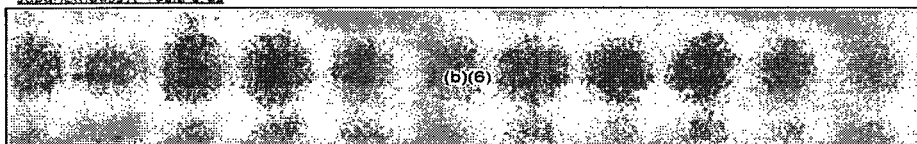
お世話になっております。

原子力安全技術センター 櫻井です。

3/15 20時のSPEEDI単位量放出図形のイメージデータを送付致します。

ご確認のほど、よろしくお願い致します。

From: JapanEmbassy.TaskForce
To:



Subject: RE: 01時SPEEDI単位量放出図形イメージの送付
Date: Tuesday, March 15, 2011 1:00:06 PM
Attachments: FUKUSHIMA1 air dose01-02h01.gif
FUKUSHIMA1 air dose02-03h01.gif
FUKUSHIMA1 wind01h01.gif
FUKUSHIMA1 air concentration01-02h01.gif
FUKUSHIMA1 air concentration02-03h01.gif

0100 SPEEDI data.

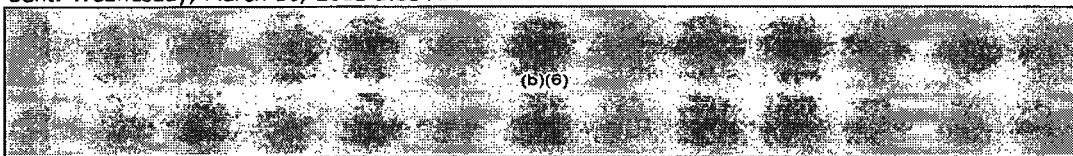
SBU

This email is UNCLASSIFIED

Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]
Sent: Wednesday, March 16, 2011 1:33 AM

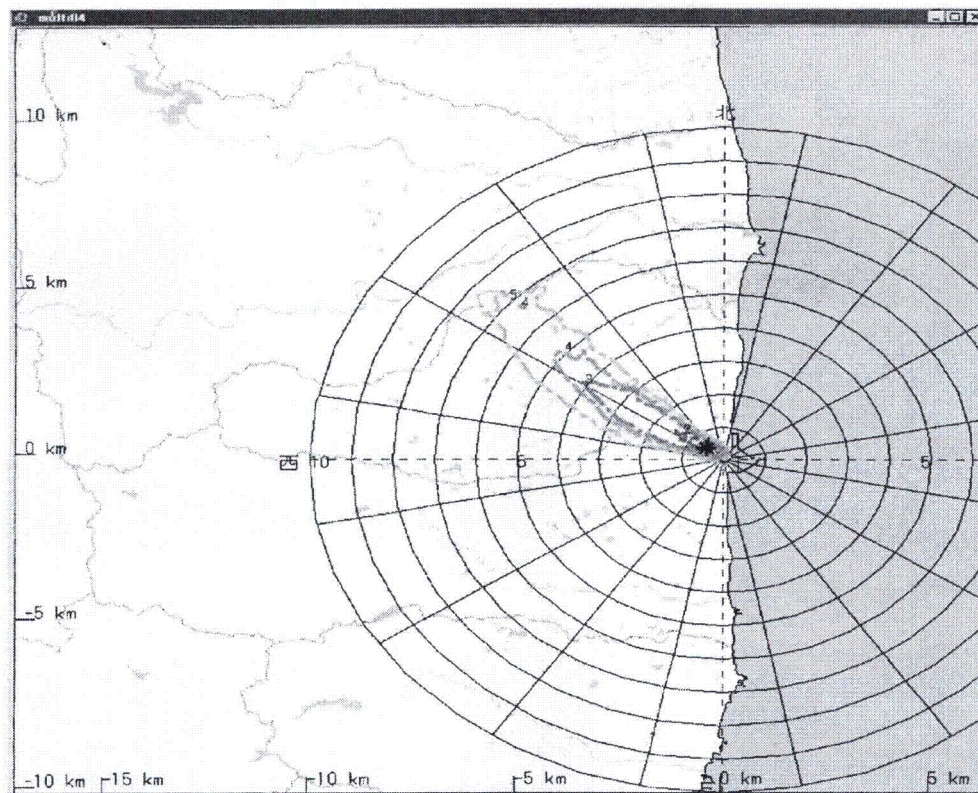


Subject: 01時SPEEDI単位量放出図形イメージの送付

関係者各位

お世話になっております。
原子力安全技術センター 水野です。
3/16 01時のSPEEDI単位量放出図形のイメージデータを送付致します。
ご確認のほど、よろしくお願い致します。

IIII/17



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 01:00 -
2011/03/16 02:00

気象データ = G P V + 観測値
(2011/03/16 01:00) まで

福島第1 2号炉 狭域図
放出地点 : 141°02'08" - 37°25'18"
領域 : 23km X 23km
核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-14}

2 = 5.0×10^{-15}

3 = 1.0×10^{-15}

4 = 5.0×10^{-16}

5 = 1.0×10^{-16}

最大線量率 = $1.161 \times 10^{-14} \mu\text{Gy/h}$

放出地点から (-0.3, 0.2) km (* EP)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 01:00

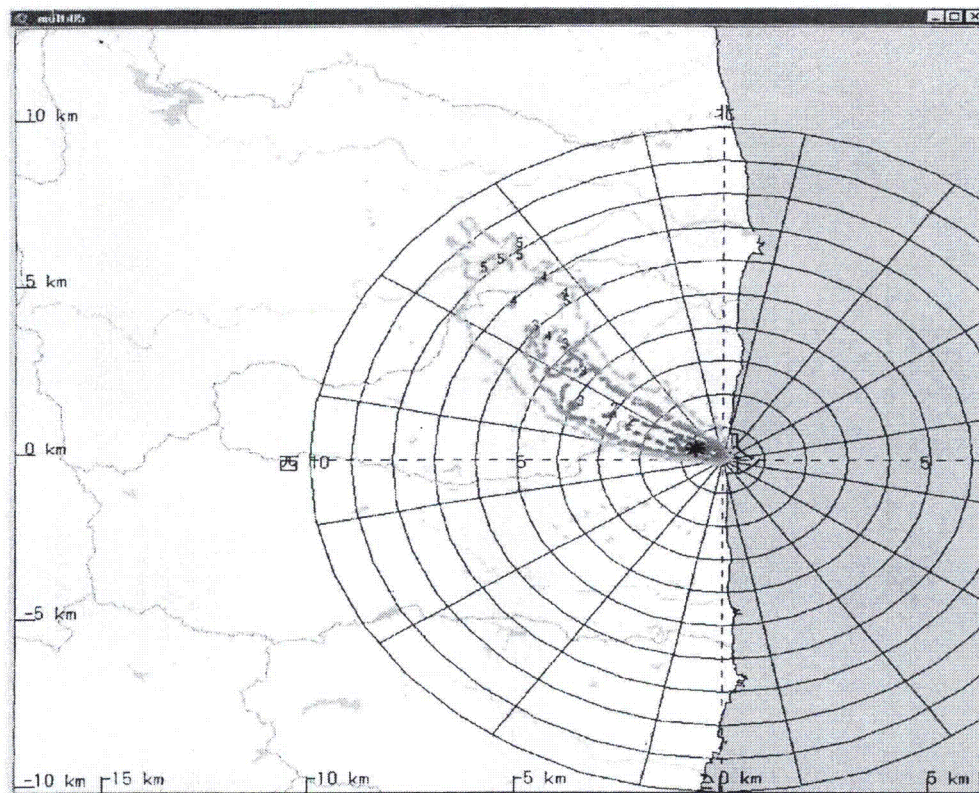
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

0 1 時定期福島1-2号炉

No. : S45178



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 02:00 -

2011/03/16 03:00

気象データ = G.P.V. + 観測値

(2011/03/16 01:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 (μGy/h)

1 = 1.0×10^{-14}

2 = 5.0×10^{-15}

3 = 1.0×10^{-15}

4 = 5.0×10^{-16}

5 = 1.0×10^{-16}

最大線量率 = 2.231×10^{-14} μGy/h

放出地点から (-0.6, 0.2) km (* EP)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 01:00

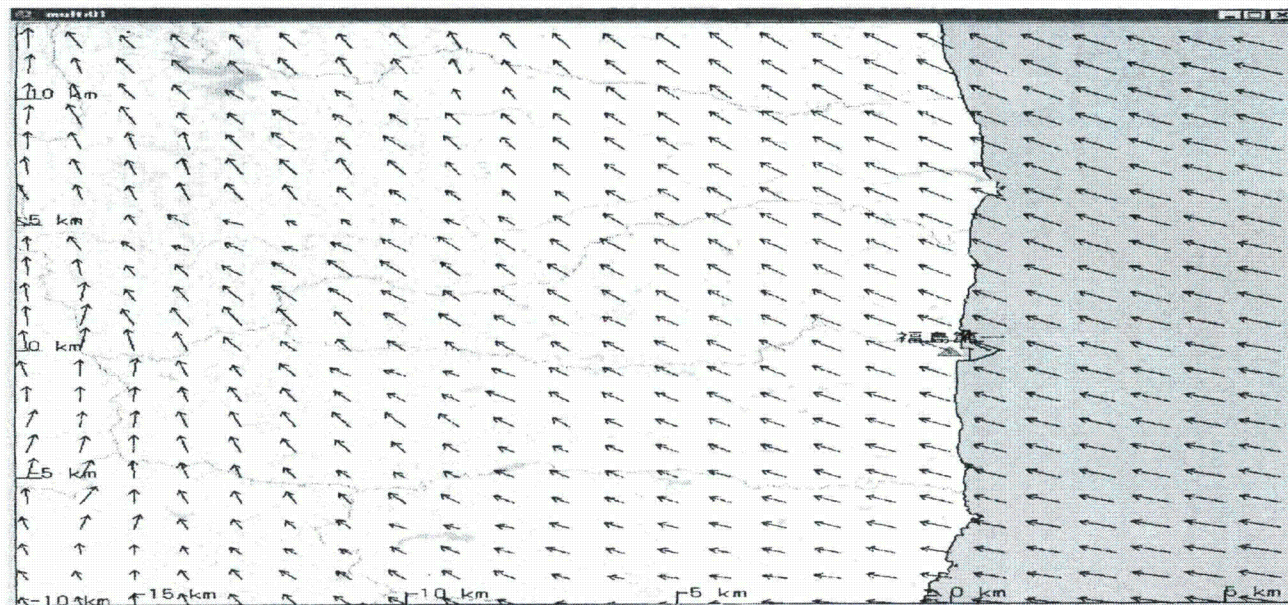
放出モード = 単位量放出

放出核種・放出率(積算) : Ba/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

○ 1 時定期福島1-2号炉

No. : S45178



風速場(地上高)

風速場(地上高)

日時 = 2011/03/18 01:00

気象データ = GPM + 観測値

(2011/03/18 01:00) まで

福島第1 狭域図

サイト中心 : 141°02'10" - 37°25'12"

領域 : 23km X 23km

表示高度 = 120.00 m

サイト中心付近の風 : 南東 3.9 m/s

大気安定度 : H型

計算モデル名 = WIND21

計算メッシュ幅 水平方向 = 0.50 km

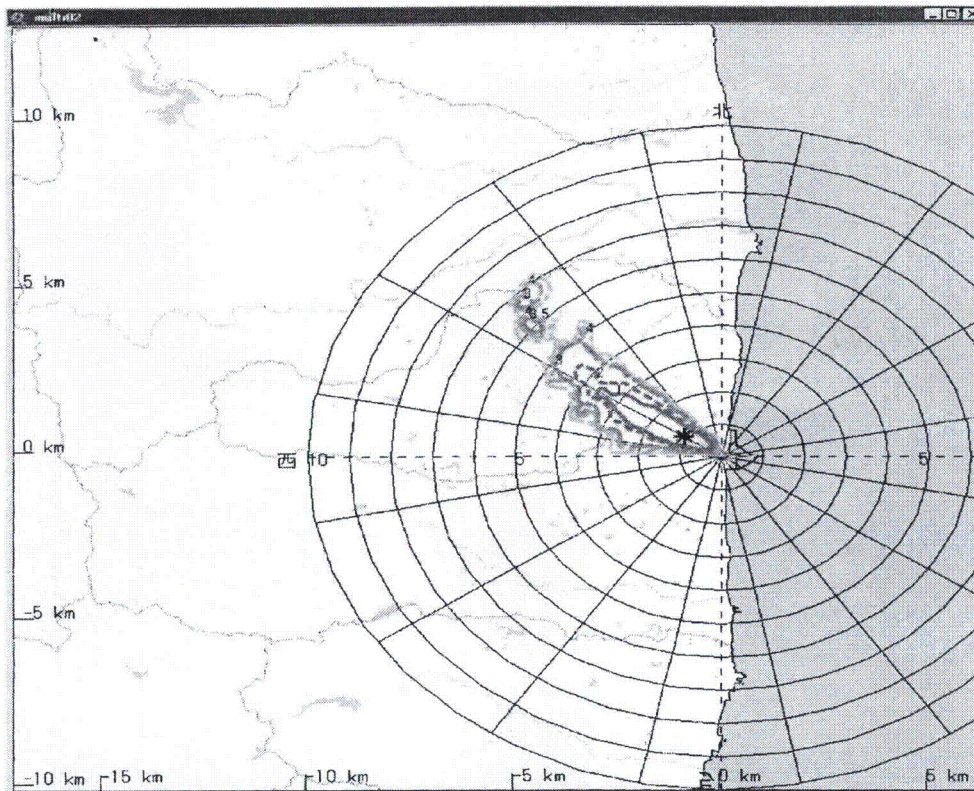
【凡例】

標準風速 (標準領域の場合の長さ)

→ = 5 m/s

0 1 時定期福島1-2号炉

No. : S45178



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 01:00 -
2011/03/16 02:00

気象データ = G P V + 観測値
(2011/03/16 01:00) まで

福島第1 2号炉 狭域図
放出地点 : 141°02'08" - 37°25'18"
領域 : 23km X 23km
表示高度 = 1.00 m

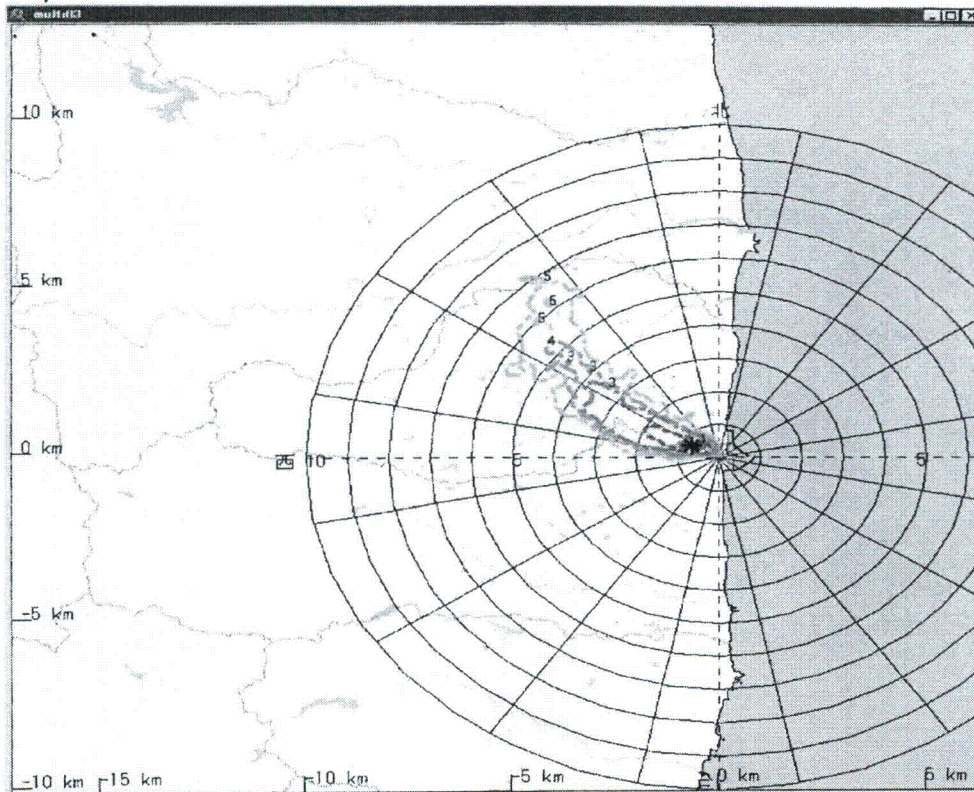
【凡例】
大気中濃度等値線 (Bq/m³)
1 = 1.0×10^{-10}
2 = 5.0×10^{-11}
3 = 1.0×10^{-11}
4 = 5.0×10^{-12}
5 = 1.0×10^{-12}

最大濃度 = 4.622×10^{-10} Bq/m³
放出地点から (-0.8, 0.4) km (* EP)

計算モデル名 = PRM0A21
使用モデル名 = 通常モデル
【計算条件】
計算メッシュ幅 水平方向 = 0.25 km
放出高 = 120.0m
燃焼度 = 20000 MWd/MTU
原子炉停止時刻 = 2011/03/11 16:00
放出開始時刻 = 2011/03/16 01:00
放出モード = 単位量放出
放出核種・放出率(種算) : Bq/h (Bq)
ヨウ素 : 1.00×10^0 (1.00×10^0)

0 1 時定期福島1-2号炉

No. : S45178



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素) (地上高)

日時 = 2011/03/16 02:00 -

2011/03/16 03:00

気象データ = G P V + 観測値

(2011/03/16 01:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'13"

鎮域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 1.0×10^{-9}

2 = 5.0×10^{-10}

3 = 1.0×10^{-10}

4 = 5.0×10^{-11}

5 = 1.0×10^{-11}

最大濃度 = 1.419×10^{-9} Bq/m³

放出地点から (-0.6, 0.2) km (* E印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWt/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 01:00

放出モード = 単位量放出

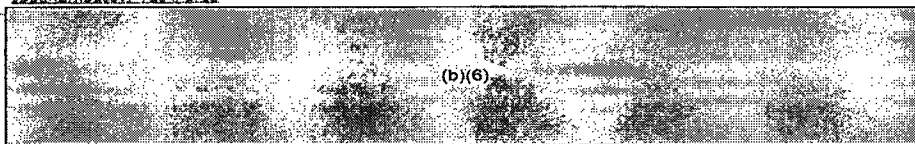
放出核種・放出率(積算) : Bq/h (Bq)

ヨウ素 : 1.00×10^0 (1.00×10^0)

○ 1 時定期福島1-2号炉

No. : S45178

From: JapanEmbassy.TaskForce
To:



Subject: 0200 SPEEDI Data
Date: Tuesday, March 15, 2011 1:41:32 PM
Attachments: FUKUSHIMA1 air dose02-03h01.gif
FUKUSHIMA1 wind02h01.gif
FUKUSHIMA1 air concentration02-04h01.gif
FUKUSHIMA1 air concentration02-03h01.gif
FUKUSHIMA1 air dose03-04h01.gif

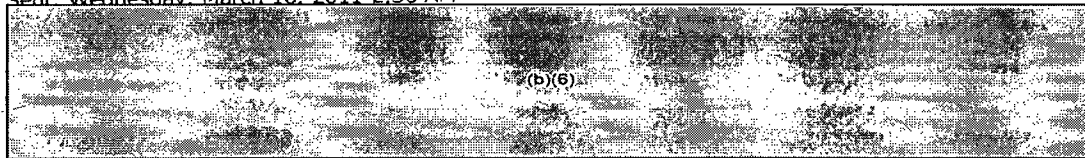
0200 SPEEDI data, unzipped.

SBU
This email is UNCLASSIFIED

Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]
Sent: Wednesday, March 16, 2011 2:36 AM

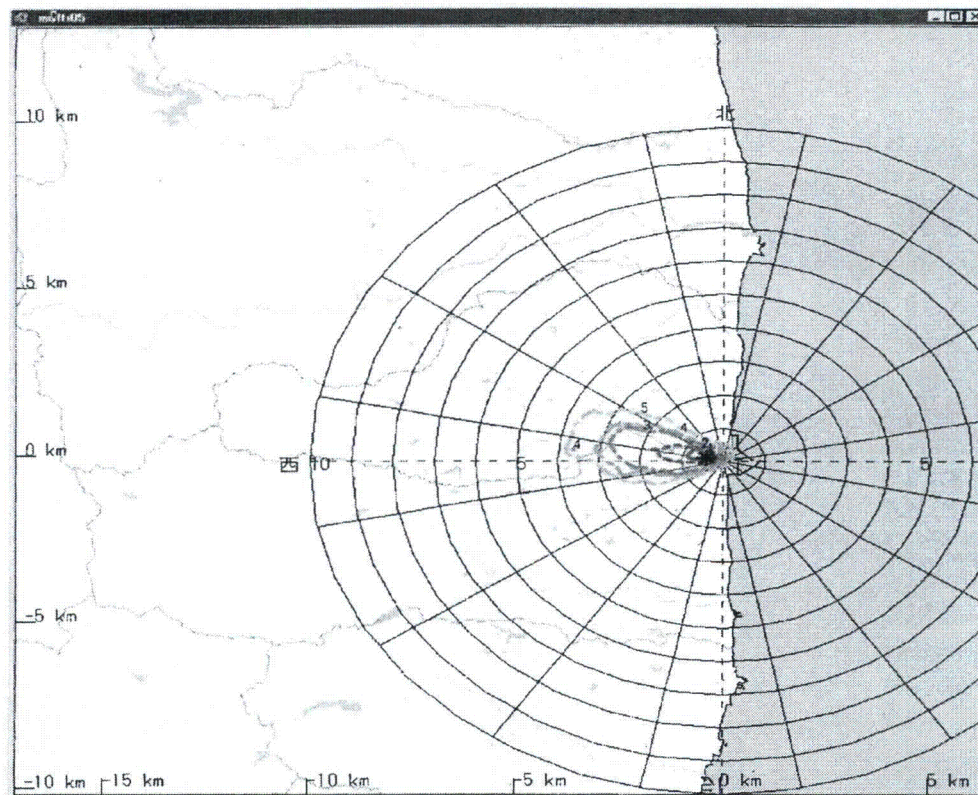


Subject: 02時SPEEDI単位量放出図形イメージの送付

関係者各位

お世話になっております。
原子力安全技術センター 水野です。
3/16 02時のSPEEDI単位量放出図形のイメージデータを送付致します。
ご確認のほど、よろしくお願い致します。

IIII/18



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 02:00 -

2011/03/16 03:00

気象データ = GPM + 観測値

(2011/03/16 02:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-14}

2 = 5.0×10^{-15}

3 = 1.0×10^{-15}

4 = 5.0×10^{-16}

5 = 1.0×10^{-16}

最大線量率 = $2.233 \times 10^{-14} \mu\text{Gy/h}$

放出地点から (-0.3, -0.1) km (* EP)

計算モデル名 = PRWDAZ1

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 02:00

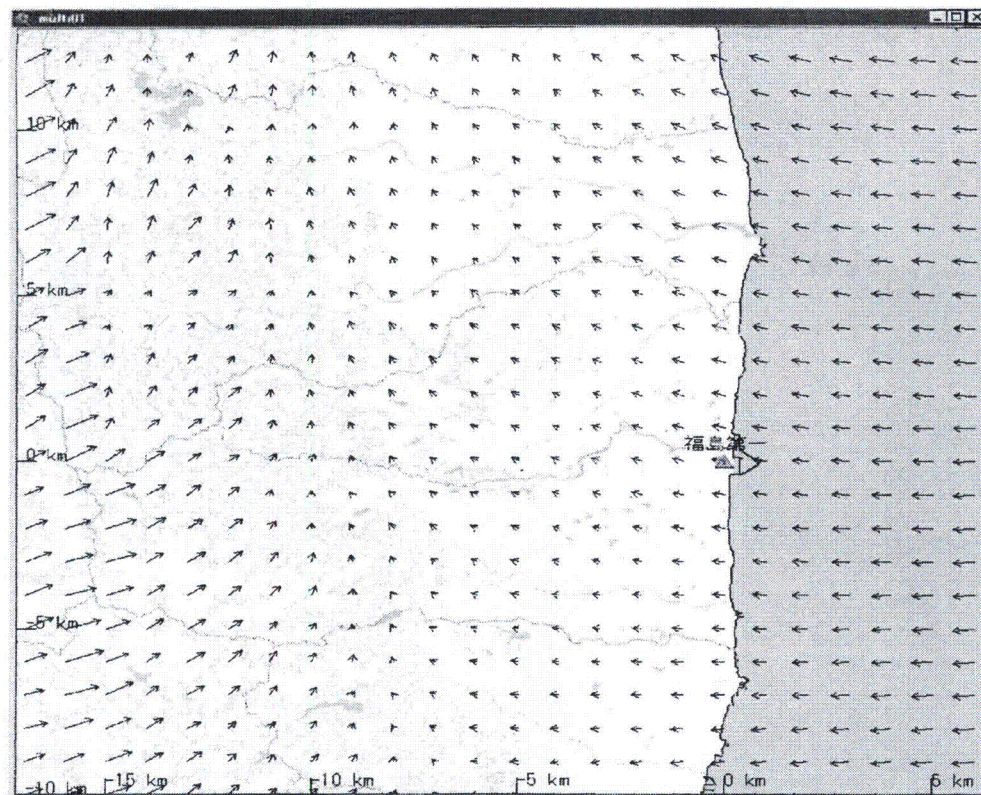
放出モード = 単位量放出

放出核種・放出率(積算): Bq/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

02時定期福島1-2号炉

No.: S45179



風速場(地上高)

日時 = 2011/03/18 02:00

気象データ = G.P.V. + 観測値

(2011/03/16 02:00) まで

福島第1 狭域図

サイト中心 : 141°02'10" - 37°25'12"

領域 : 23km X 23km

表示高度 = 120.00 m

サイト中心付近の風 : 東南東 2.5 m/s

大気安定度 : E型

計算モデル名 = WIND21

計算メッシュ幅 水平方向 = 0.50 km

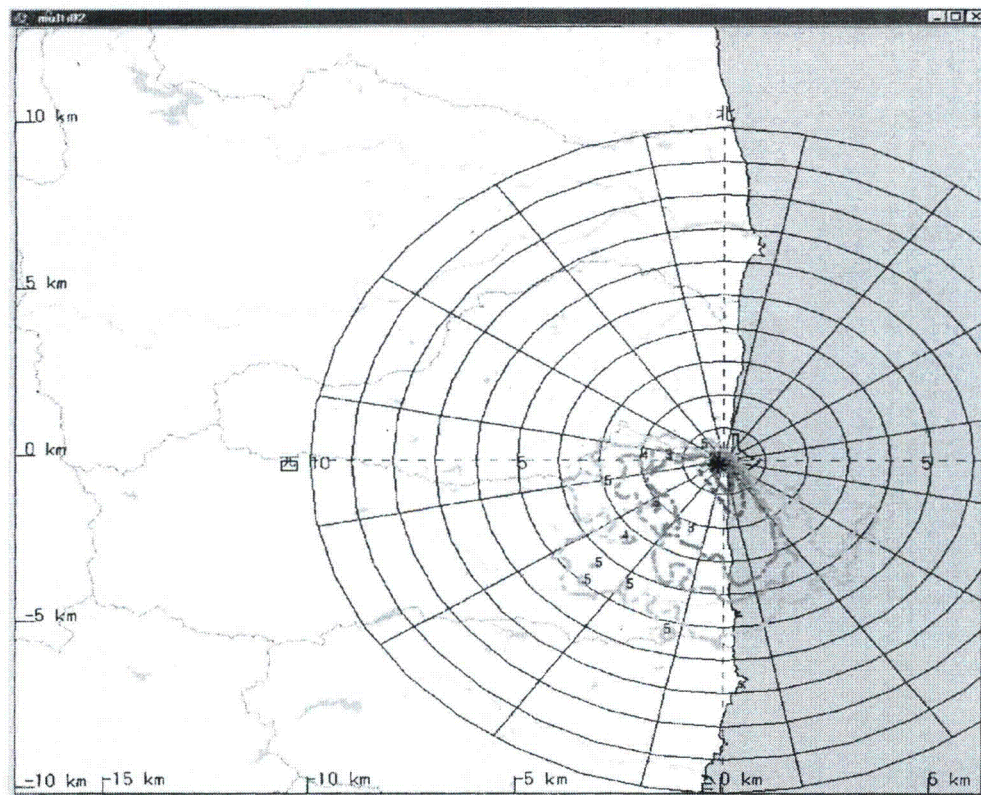
【凡例】

標準風速 (標準領域の場合の長さ)

→ = 5 m/s

0 2時定期福島1-2号炉

No. : S45179



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 03:00 -

2011/03/16 04:00

気象データ = G P V + 観測値

(2011/03/16 02:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Ba/m³)

1 = 1.0×10^{-9}

2 = 5.0×10^{-10}

3 = 1.0×10^{-10}

4 = 5.0×10^{-11}

5 = 1.0×10^{-11}

最大濃度 = 1.771×10^{-9} Ba/m³

放出地点から (-0.1, -0.3) km (* EP)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 02:00

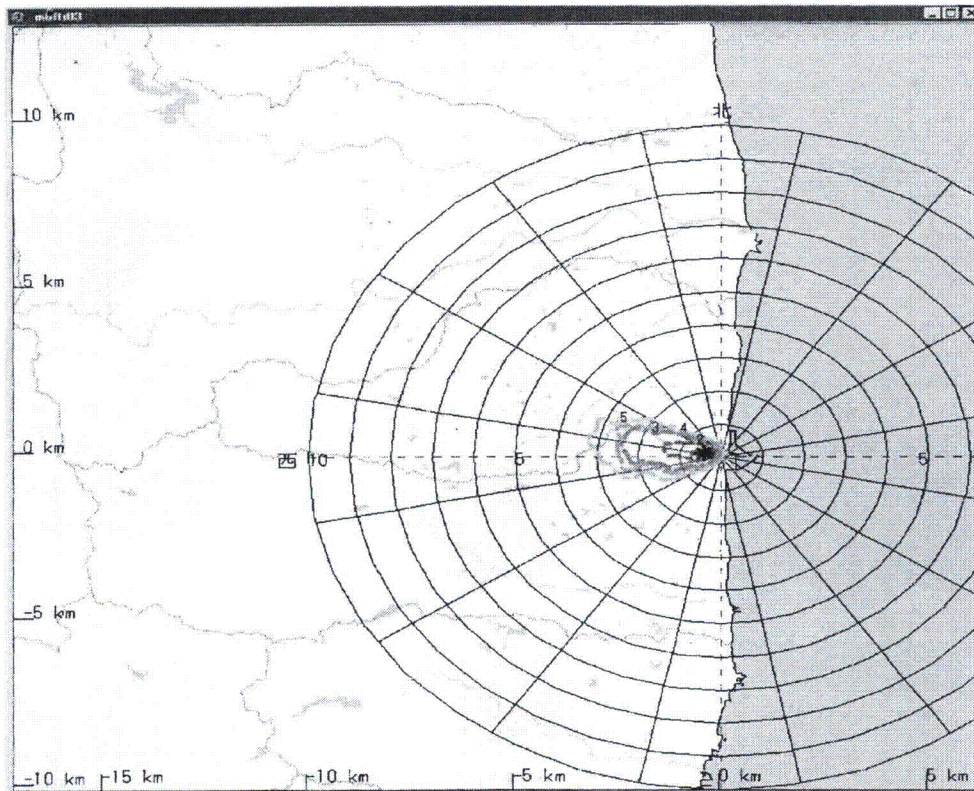
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

ヨウ素 : 1.00×10^0 (1.00×10^0)

02時定期福島1-2号炉

No. : S45179



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 02:00 -

2011/03/16 03:00

気象データ = G P V + 観測値
(2011/03/16 02:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m3)

1 = 1.0×10^{-9}

2 = 5.0×10^{-10}

3 = 1.0×10^{-10}

4 = 5.0×10^{-11}

5 = 1.0×10^{-11}

最大濃度 = 1.368×10^{-9} Bq/m3

放出地点から (-0.3, -0.1) km (*印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 02:00

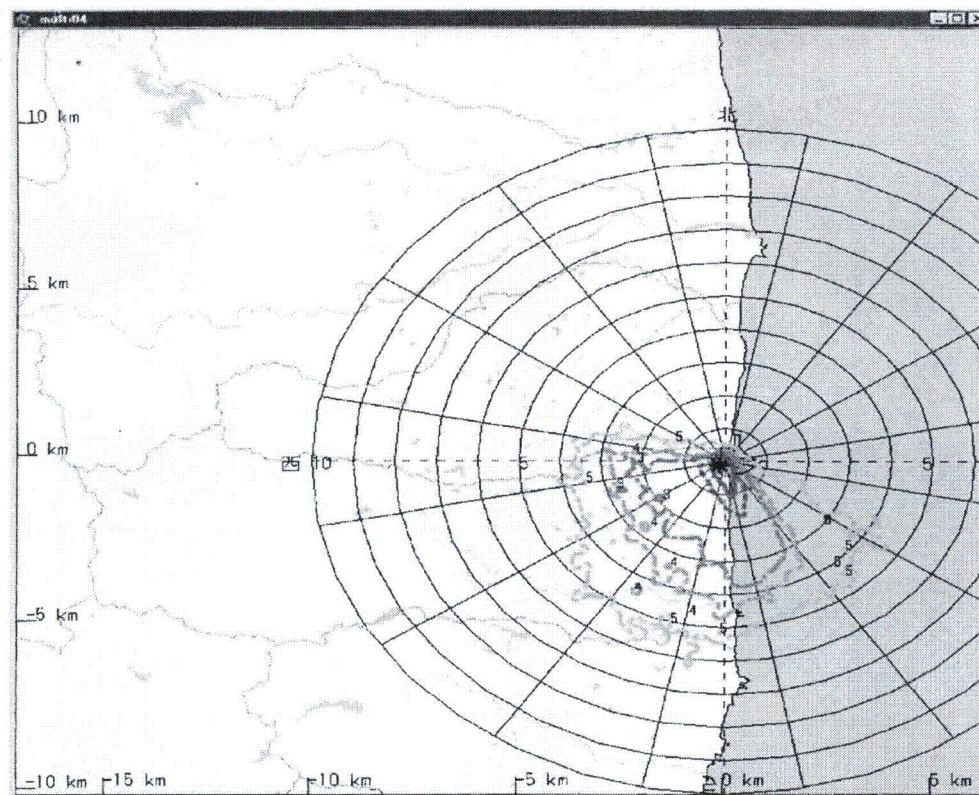
放出モード = 単位量放出

放出核種・放出率(積算): Bq/h (Bq)

ヨウ素 : 1.00×10^0 (1.00×10^0)

○ 2時定期福島1-2号炉

No. : S45179



空気吸収線量率

日時 = 2011/03/16 03:00 -

2011/03/16 04:00

気象データ = G P V + 観測値

(2011/03/16 02:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-14}

2 = 5.0×10^{-15}

3 = 1.0×10^{-15}

4 = 5.0×10^{-16}

5 = 1.0×10^{-16}

最大線量率 = $2.453 \times 10^{-14} \mu\text{Gy/h}$

放出地点から (-0.1, -0.3) km (※ EP)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 02:00

放出モード = 単位量放出

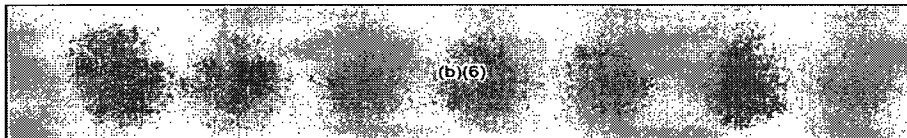
放出核種・放出率(積算): Ba/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

0 2時定期福島1-2号炉

No.: S45179

From: JapanEmbassy_TaskForce
To:



Subject: 0300 SPEEDI Data -- unzipped
Date: Tuesday, March 15, 2011 2:49:40 PM
Attachments: FUKUSHIMA1 air_dose03-05h01.gif
FUKUSHIMA1 wind03h01.gif
FUKUSHIMA1 air_concentration03-04h01.gif
FUKUSHIMA1 air_concentration03-05h01.gif
FUKUSHIMA1 air_dose03-04h01.gif

0300 SPEEDI Data, unzipped, as requested.

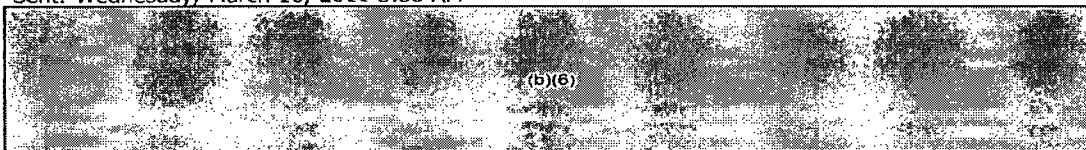
Tes Eustaquio
Operations Assistant
Japan Embassy Command Center
Telephone: 03-3224-5530
Email/Blackberry: EustaquioMV1@state.gov

SBU

This email is UNCLASSIFIED-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]

Sent: Wednesday, March 16, 2011 3:35 AM



Subject: 03時SPEEDI単位量放出図形イメージの送付

関係者各位

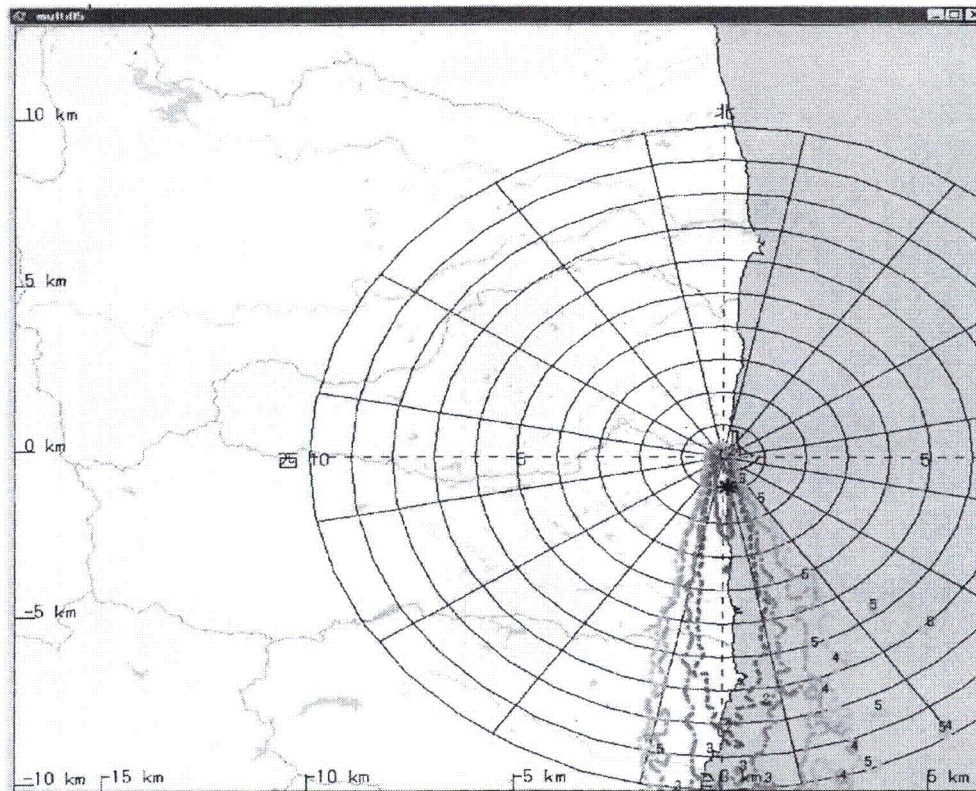
お世話になっております。

原子力安全技術センター 水野です。

3/16 03時のSPEEDI単位量放出図形のイメージデータを送付致します。

ご確認のほど、よろしくお願い致します。

IIII/19



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 04:00 -

2011/03/16 05:00

気象データ = G P V + 観測値

(2011/03/16 03:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 5.0×10^{-15}

2 = 1.0×10^{-15}

3 = 5.0×10^{-16}

4 = 1.0×10^{-16}

5 = 5.0×10^{-17}

最大線量率 = $8.813 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (0.2, -1.1) km (* En)

計算モデル名 = PRMCA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 03:00

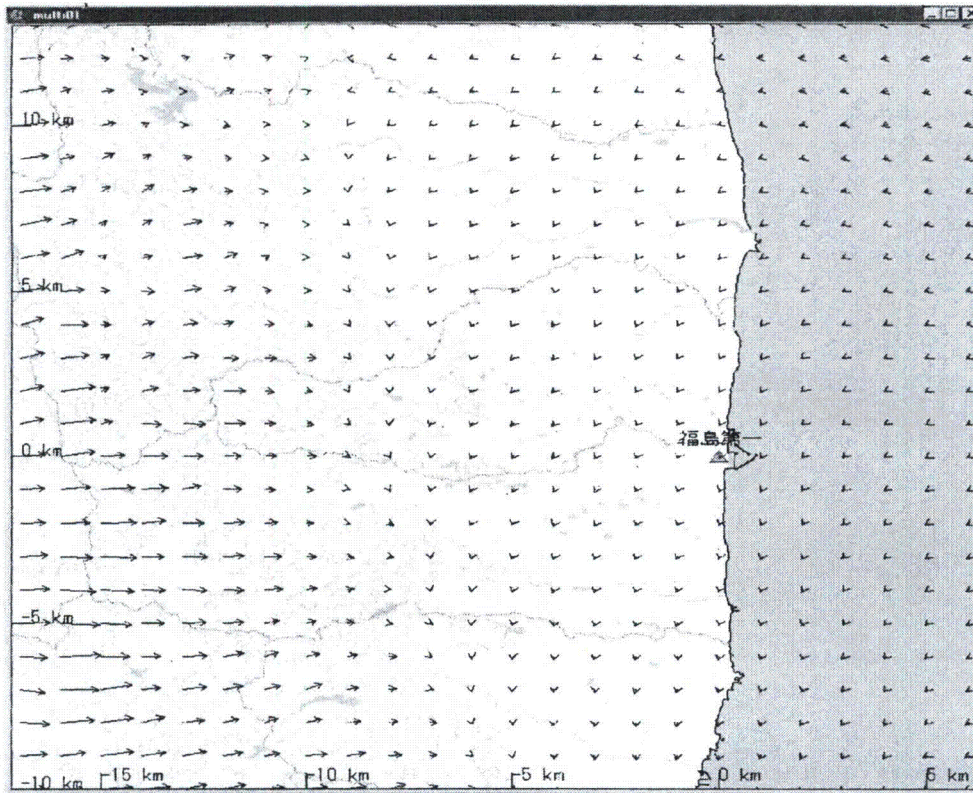
放出モード = 単位量放出

放出核種・放出率(種算): Ba/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

03時定期福島1-2号炉

No.: S45181



風速場(地上高)

風速場(地上高)

日時 = 2011/03/16 03:00

気象データ = GPM + 観測値

(2011/03/16 03:00) まで

福島第1 狭域図

サイト中心 : 141°02'10" - 37°25'12"

領域 : 23km X 23km

表示高度 = 120.00 m

サイト中心付近の風 : 北北東

1 m/s

大気安定度 : G型

計算モデル名 = WIND21

計算メッシュ幅 水平方向 = 0.50 km

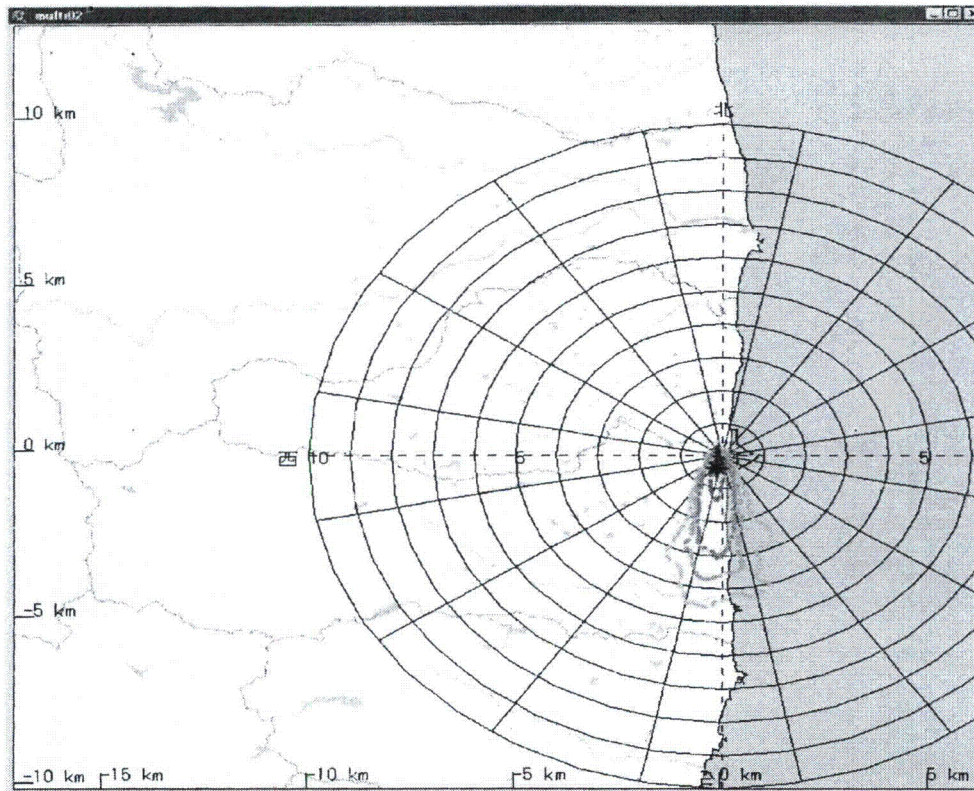
【凡例】

標準風速 (標準領域の場合の長さ)

→ 10 m/s

03時定期福島1-2号炉

No. : S45181



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 03:00 -

2011/03/16 04:00

気象データ = G P V + 観測値
(2011/03/16 03:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 1.0×10^{-9}

2 = 5.0×10^{-10}

3 = 1.0×10^{-10}

4 = 5.0×10^{-11}

5 = 1.0×10^{-11}

最大濃度 = 1.249×10^{-9} Bq/m³

放出地点から (-0.1, -0.6) km (※ EPI)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 03:00

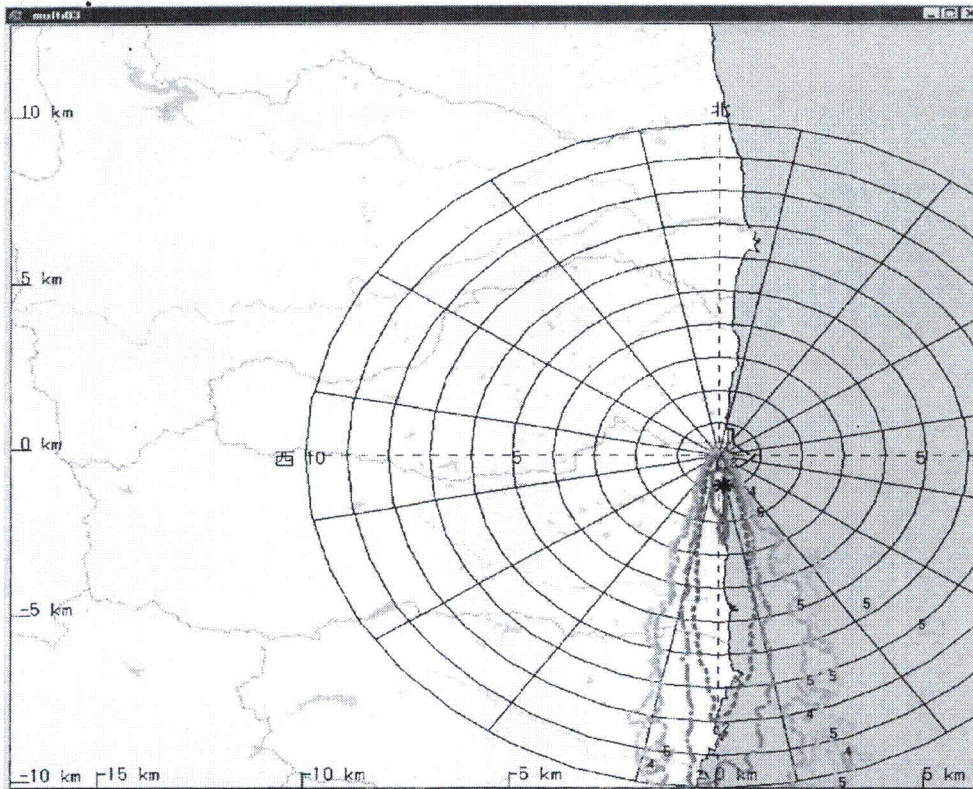
放出モード = 単位量放出

放出核種・放出率(積算): Bq/h (Bq)

ヨウ素 : 1.00×10^0 (1.00×10^0)

03時定期福島1-2号炉

No.: S45181



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素) (地上高)

日時 = 2011/03/18 04:00 -

2011/03/18 05:00

気象データ = G.P.V. + 観測値

(2011/03/18 03:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 5.0×10^{-10}

2 = 1.0×10^{-10}

3 = 5.0×10^{-11}

4 = 1.0×10^{-11}

5 = 5.0×10^{-12}

最大濃度 = 7.367×10^{-10} Bq/m³

放出地点から (0.2, -1.1) km (* EP)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/18 03:00

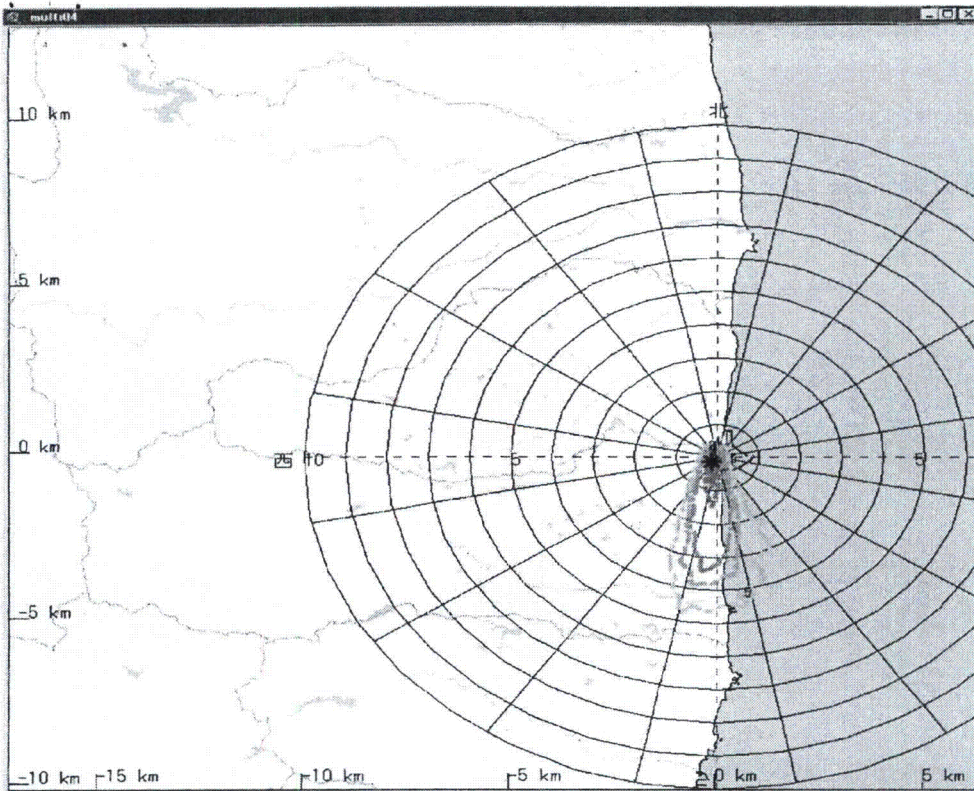
放出モード = 単位量放出

放出核種・放出率(積算) : Bq/h (Bq)

ヨウ素 : 1.00×10^0 (1.00×10^0)

03時定期福島1-2号炉

No. : S45181



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 03:00 -

2011/03/16 04:00

気象データ = G P V + 観測値

(2011/03/16 03:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-14}

2 = 5.0×10^{-15}

3 = 1.0×10^{-15}

4 = 5.0×10^{-16}

5 = 1.0×10^{-16}

最大線量率 = $2.403 \times 10^{-14} \mu\text{Gy/h}$

放出地点から (-0.1, -0.3) km (x E7)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 03:00

放出モード = 単位量放出

放出核種・放出率(積算): Bq/h (Bq)

希ガス : 1.00×10^0 (1.00×10^0)

03時定期福島1-2号炉

No. : S45181

From: Cherry, Ronald C.
To: Alan Remick; Aleshia Duncan; Duncan, Aleshia D; Trapp, James; James Trapp (BB); Mears, Jeremy M; Morales, Russell A; Nesheiwat, Julia; Tamada, Yoshimi; Ulses, Anthony; Uchida, Koichi
Subject: Nuclear Team Contacts List
Date: Tuesday, March 15, 2011 9:00:31 AM
Attachments: Embassy Nuclear Team Contacts_3.15.doc

All:

Please let me know of any changes that need to be made to this list.

Thanks very much.

Ron

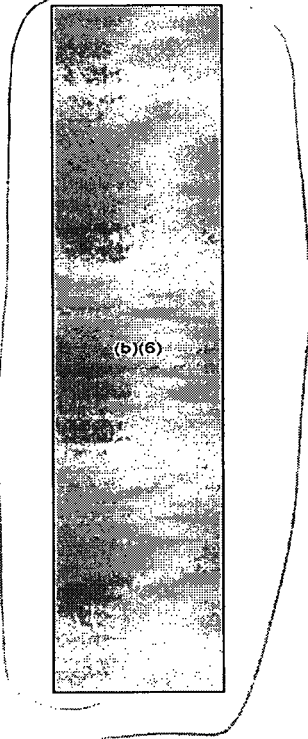


Ronald C. Cherry
Energy Attaché
Director, DOE Japan Office
U.S. Embassy Tokyo
Tel. (0)3-3224-5444
Fax (0)3-3224-5769
Cell (B)(6)
email CherryRC@state.gov

This email is UNCLASSIFIED.

1111/20

EMBASSY NUCLEAR TEAM

ECON Unclassified Conference Room (Rm 4037), Extension X5046

<u>Name</u>	<u>Cell Phone</u>	<u>Office Phone</u>	<u>Email</u>	
Ron Cherry		03-3224-5444	CherryRC@state.gov	
Aleshia Duncan		03-3224-5475	DuncanAD@state.gov Aleshia.Duncan@nuclear.energy.gov	
James Trapp, NRC			 James.Trapp@nrc.gov	
Tony Ulses, NRC			Anthony.Ulses@nrc.gov	
Alan Remick, DOE			DartDOELiaison@OFDA.gov	
Joe Hughart, HHS		(b)(6)		
Koichi Uchida			03-3224-5476	UchidaKX@state.gov
Yoshimi Tamada			03-3224-5478	TamadaYX@state.gov
Julia Nesheiwat				NesheiwatJ@state.gov
Russ Morales			3224-5459	MoralesRA@state.gov 
Jeremy Mears		3224-5853	MearsJM@state.gov	

Japan Embassy Command Center

JECC email: JapanEmbassyTaskForce@state.gov

Tel: Main 03 3224 5530 Fax 03 3224 5131

Senior Team Leader	03 3224 5531
Emergency Action Officer	03 3224 5533
Editor	03 3224 5542
Pol/Mil Coordinator	03 3224 5541
Public Affairs Coordinator	03 3224 5543
Operations Assistant	03 3224 5530
Japanese Press Monitor	03 3224 5532
Additional Line	03 3224 5534

DOE Nuclear Incident Team nitops@nnsa.doe.gov Tel. for DOE EOC: 202-586-8100

State Department Task Force: TaskForce-1@state.gov Tel. for State crisis management: 202-647-6611.

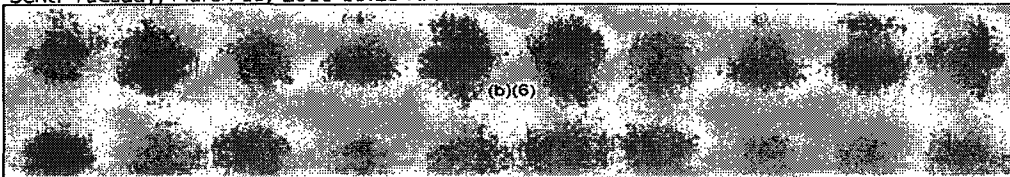
From: NITOPS
To: CMHL; "harac@hnl.gov"; HQO Hoc
Cc: NITOPS
Subject: FW: 2300 SPEEDI Data
Date: Tuesday, March 15, 2011 11:32:24 AM
Attachments: 0315-23hSPEEDIimage.zip

FYI

Nuclear Incident Team
Main: (202) 287-2355
ECN-Red: 4734
Watch Office: (202) 586-8100
Unclas: NITOPS@nnsa.doe.gov
Class: NIT@doe.sgov.gov
JWICS: NTIC@doe.ic.gov (ID msg for NIT delivery)

-----Original Message-----

From: JapanEmbassy, TaskForce [mailto:JapanEmbassyTaskForce@state.gov]
Sent: Tuesday, March 15, 2011 11:25 AM



Subject: 2300 SPEEDI Data

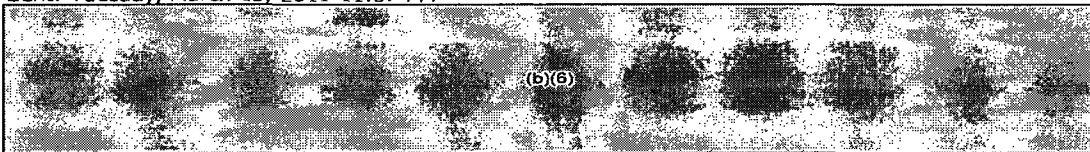
Attached, please find the 2300 SPEEDI data.

SBU
This email is UNCLASSIFIED

Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]
Sent: Tuesday, March 15, 2011 11:57 PM

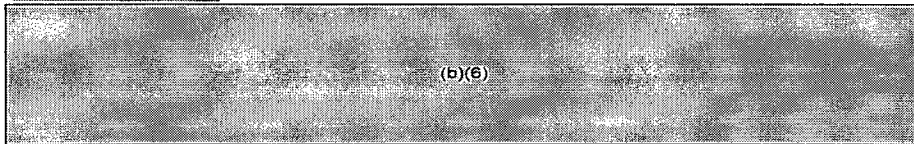


Subject: 23時SPEEDI単位量放出図形イメージの送付

関係者各位

IIII/21

From: JapanEmbassy_TaskForce
To:



Subject: 0400 SPEEDI Data, Unzipped
Date: Tuesday, March 15, 2011 4:20:18 PM
Attachments: FUKUSHIMA1 air dose(04-05h).gif
FUKUSHIMA1 wind(04h).gif
FUKUSHIMA1 air concentration(05-06h).gif
FUKUSHIMA1 air concentration(04-05h).gif
FUKUSHIMA1 air dose(05-06h).gif

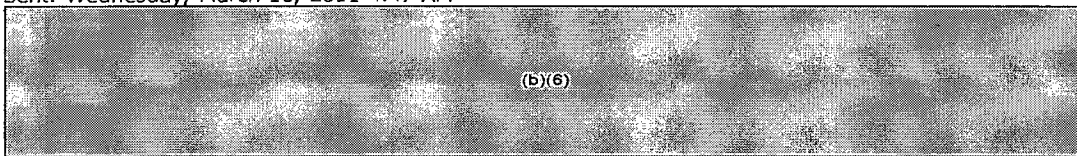
Attached, please find 0400 SPEEDI data, unzipped.

SBU
This email is UNCLASSIFIED

Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]
Sent: Wednesday, March 16, 2011 4:47 AM

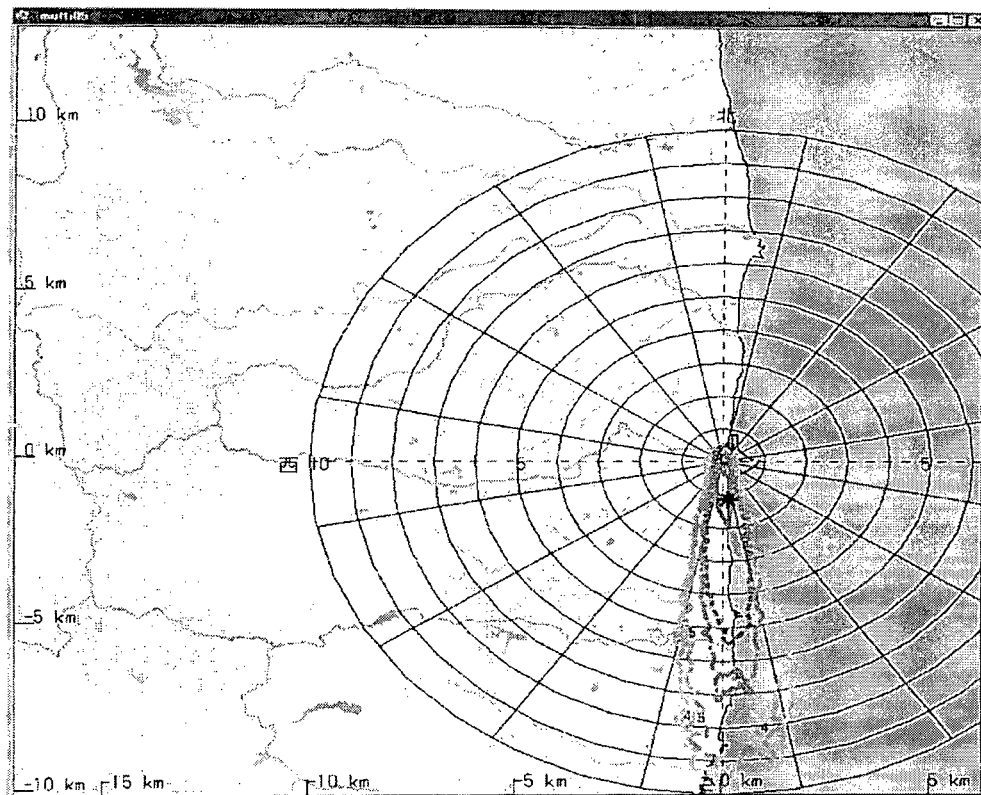


Subject: 04時SPEEDI単位量放出図形イメージの送付

関係者各位

お世話になっております。
原子力安全技術センター 水野です。
3/16 04時のSPEEDI単位量放出図形のイメージデータを送付致します。
ご確認のほど、よろしくお願い致します。

IIII/22



空気吸収線量率

日時 = 2011/03/18 04:00 -

2011/03/18 05:00

気象データ = GPM + 観測値

(2011/03/18 04:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 5.0×10^{-15}

2 = 1.0×10^{-15}

3 = 5.0×10^{-16}

4 = 1.0×10^{-16}

5 = 5.0×10^{-17}

最大線量率 = $8.528 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (0.2, -1.3) km (* EPI)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/18 04:00

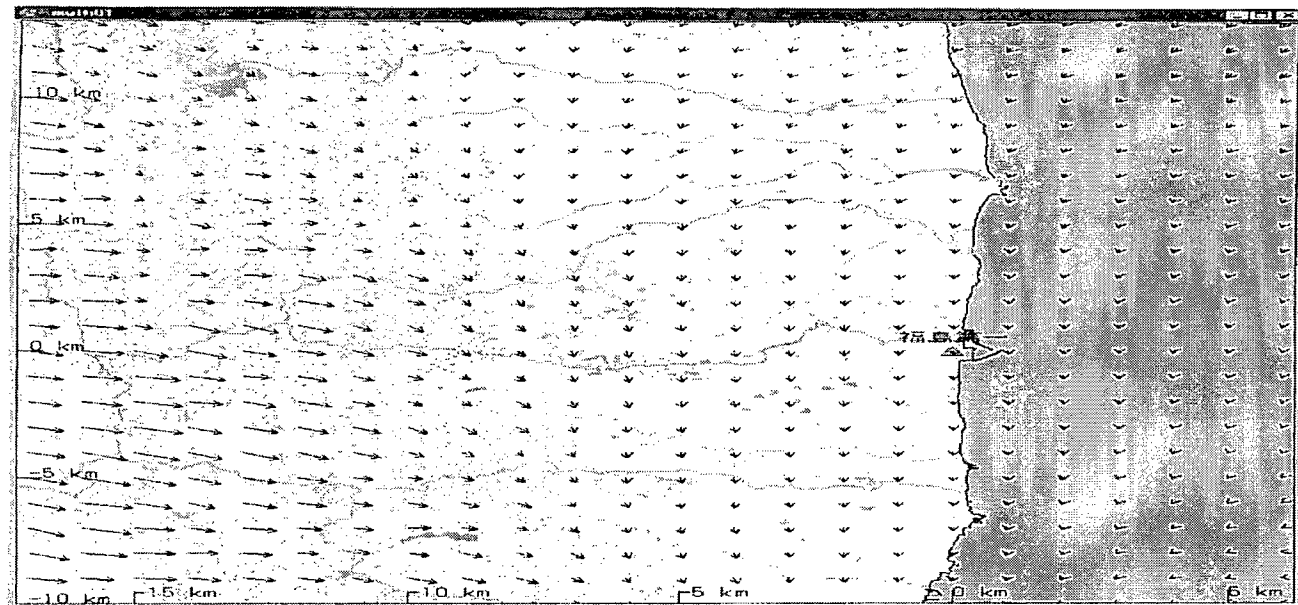
放出モード = 単位量放出

放出核種・放出率(推算): Bq/h (Bq)

希ガス : 1.00×10^0 (1.00×10^0)

04時定期福島1-2号炉

No. : S45183



風速場(地上高)

日時 = 2011/03/16 04:00

気象データ = G.P.V. + 観測値
(2011/03/16 04:00) まで

福島第1 狭域図

サイト中心 : 141°02'10" - 37°25'12"

領域 : 23km X 23km

表示高度 = 120.00 m

サイト中心付近の風 : 北 2.2 m/s

大気安定度 : F 型

計算モデル名 = WIND21

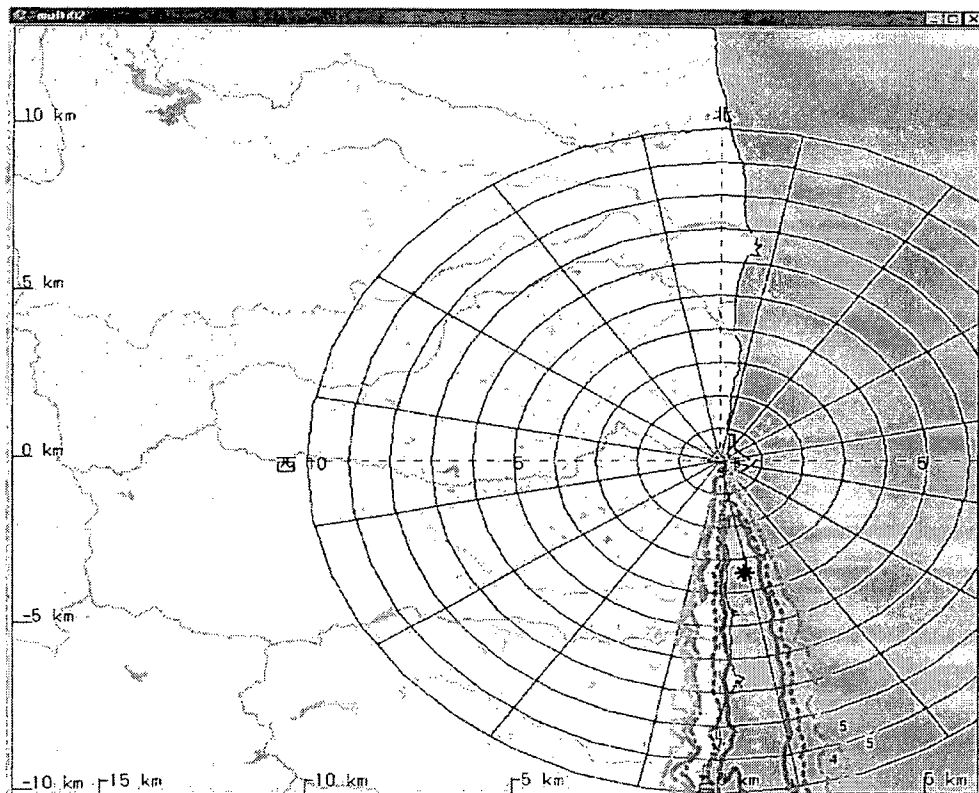
計算メッシュ幅 : 水平方向 = 0.50 km

〔凡例〕
標準風速 (標準領域の場合の長さ)

→ = 10 m/s

○ 4 時定期福島1-2号炉

No. : S45183



大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 05:00 -

2011/03/16 08:00

気象データ = G P V + 観測値

(2011/03/16 04:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 2.773×10^{-10} Bq/m³

放出地点から (0.7, -3.8) km (★印)

計算モデル名 = PRADA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 04:00

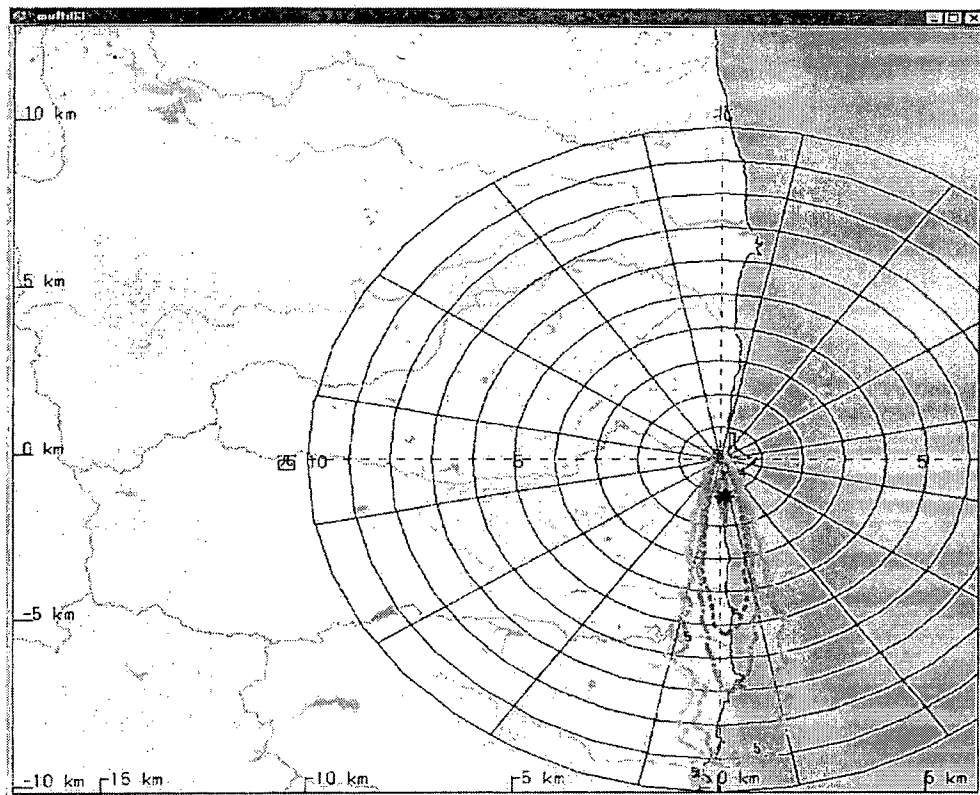
放出モード = 単位量放出

放出核種・放出率(積算) : Bq/h (Ba)

ヨウ素 : 1.00×10^0 (1.00×10^0)

○ 4 時定期福島1-2号炉

No. : S45183



大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 04:00

2011/03/16 05:00

気象データ = G.P.V. + 観測値

(2011/03/16 04:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

経度 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 5.0×10^{-10}

2 = 1.0×10^{-10}

3 = 5.0×10^{-11}

4 = 1.0×10^{-11}

5 = 5.0×10^{-12}

最大濃度 = 6.571×10^{-10} Bq/m³

放出地点から (0.2, -1.3) km (*印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 04:00

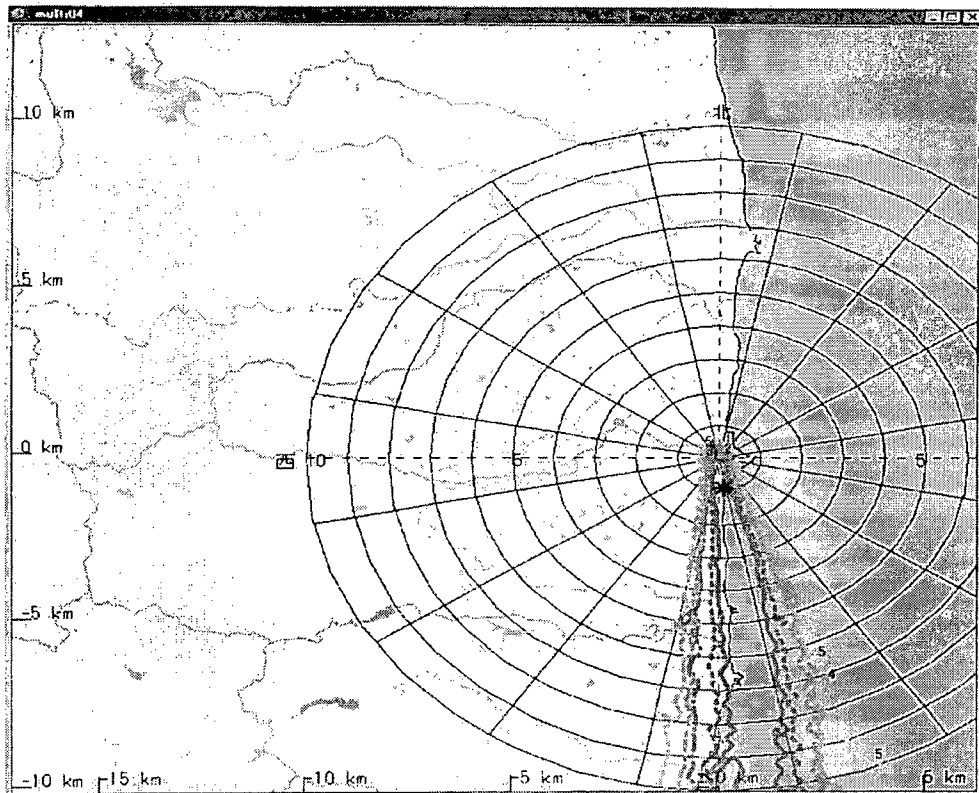
放出モード = 単位量放出

放出核種・放出率(積算) : Bo/h (Bq)

ヨウ素 : 1.00×10^0 (1.00×10^0)

04時定期福島1-2号炉

No. : S45183



空気吸収線量率

日時 = 2011/03/16 05:00 -

2011/03/16 08:00

気象データ = G.P.V. + 観測値

(2011/03/16 04:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 (μGy/h)

1 = 1.0×10^{-15}

2 = 5.0×10^{-16}

3 = 1.0×10^{-16}

4 = 5.0×10^{-17}

5 = 1.0×10^{-17}

最大線量率 = 3.839×10^{-15} μGy/h

放出地点から (0.2, -1.1) km (*印)

計算モデル名 = PRKDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 04:00

放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

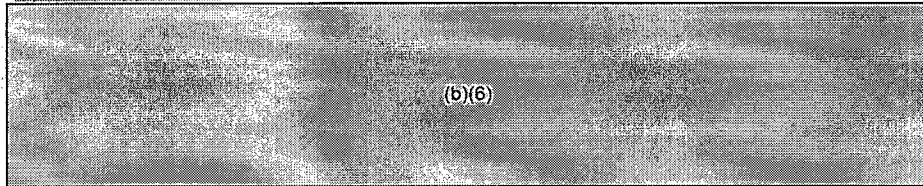
希ガス : 1.00×10^0 (1.00×10^0)

04時定期福島1-2号炉

No.: S45183

From: JapanEmbassy.TaskForce

To:



Subject: 0500 SPEEDI Data, unzipped

Date: Tuesday, March 15, 2011 4:49:25 PM

Attachments: [FUKUSHIMA1 air dose06-07h01.gif](#)
[FUKUSHIMA1 wind05h01.gif](#)
[FUKUSHIMA1 air concentration05-06h01.gif](#)
[FUKUSHIMA1 air concentration06-07h01.gif](#)
[FUKUSHIMA1 air dose05-06h01.gif](#)

0500 SPEEDI Data, unzipped, as requested.

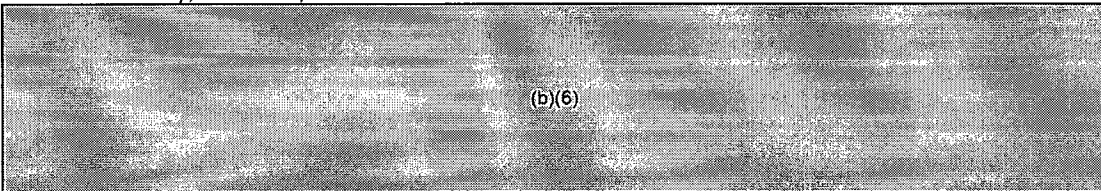
Tes Eustaquio
Operations Assistant
Japan Embassy Command Center
Telephone: 03-3224-5530
Email/Blackberry: EustaquioMV1@state.gov

SBU

This email is UNCLASSIFIED-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]

Sent: Wednesday, March 16, 2011 5:39 AM



Subject: 05時SPEEDI単位量放出図形イメージの送付

関係者各位

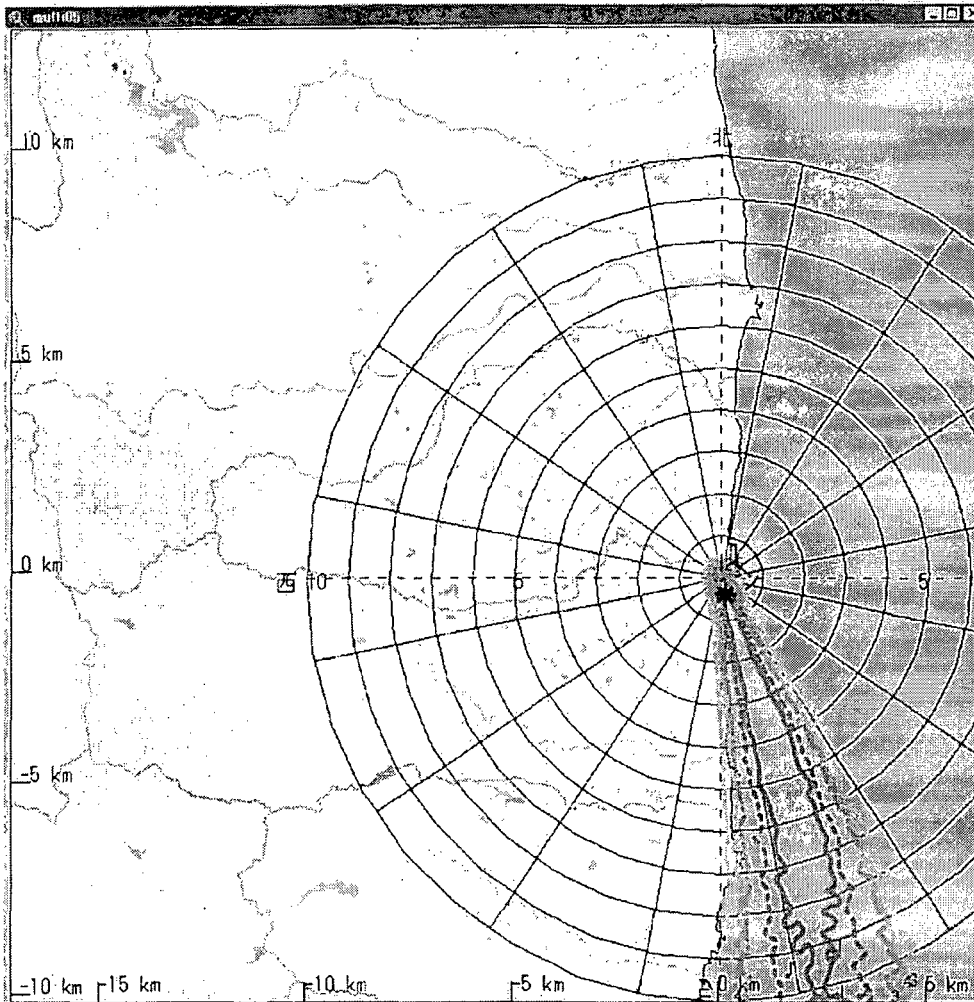
お世話になっております。

原子力安全技術センター 水野です。

3/16 05時のSPEEDI単位量放出図形のイメージデータを送付致します。

ご確認のほど、よろしくお願い致します。

IIII/23



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 08:00 -

2011/03/16 07:00

気象データ = G P V + 観測値

(2011/03/16 05:00) まで

福島第1 2号炉 状況図

放出地点 : 141°32'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-15}

2 = 5.0×10^{-16}

3 = 1.0×10^{-16}

4 = 5.0×10^{-17}

5 = 1.0×10^{-17}

最大線量率 = $2.744 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (0.2, -0.6) km (* EP)

計算モデル名 = PRH0A21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 05:00

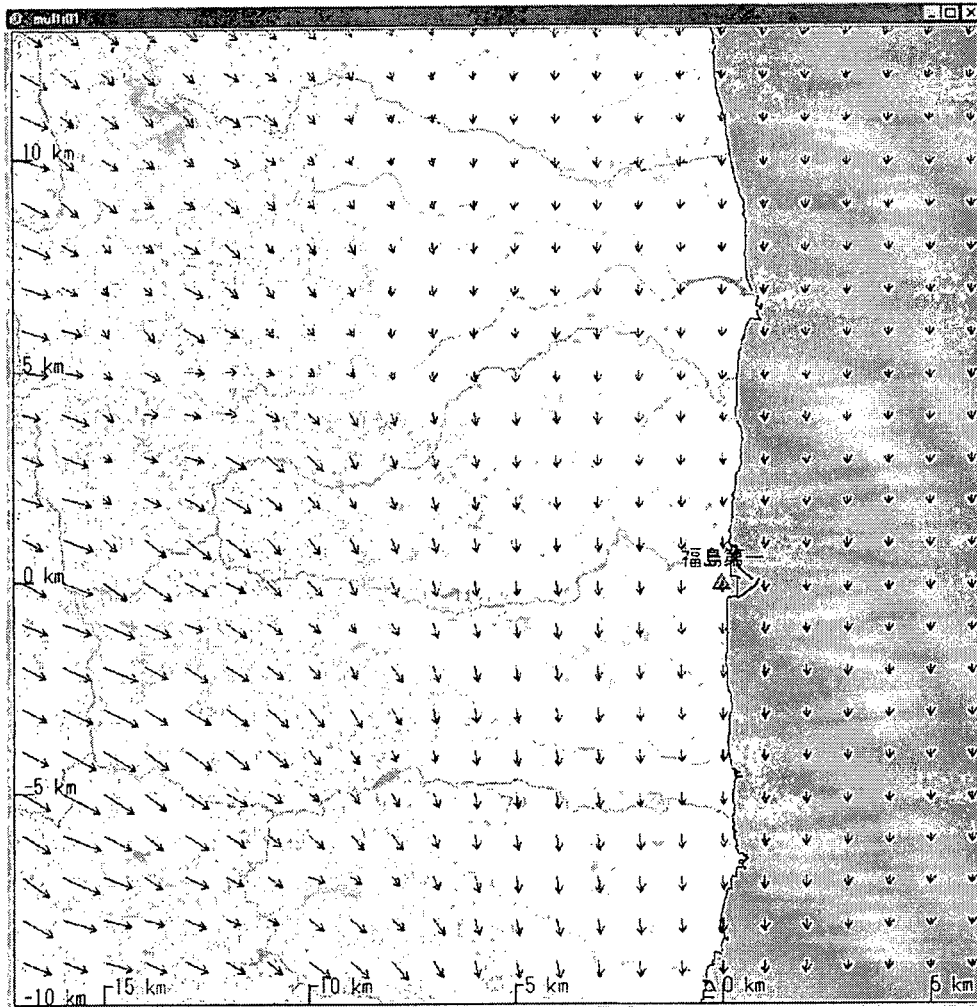
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

05時定期福島1-2号炉

No. : S45185



風速場(地上高)

風速場 (地上高)

日時 = 2011/03/16 05:00

気象データ = G P V + 観測値
(2011/03/16 05:00) まで

福島第1 狭域図

サイト中心 : 141°02'10" - 37°25'12"

領域 : 23km X 23km

表示高度 = 120.00 m

サイト中心付近の風 : 北 3.5 m/s

大気安定度: F型

計算モデル名 = WIND21

計算メッシュ幅 水平方向 = 0.50 km

【凡例】

標準風速 (標準領域の場合の長さ)

→ = 10 m/s

05時定期福島1-2号炉

No. : S45185

大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素) (地上高)

日時 = 2011/03/16 05:00 -

2011/03/16 06:00

気象データ = G P V + 観測値

(2011/03/16 05:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Ba/m³)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 2.089×10^{-10} Ba/m³

放出地点から (0.7, -3.3) km (* 印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 05:00

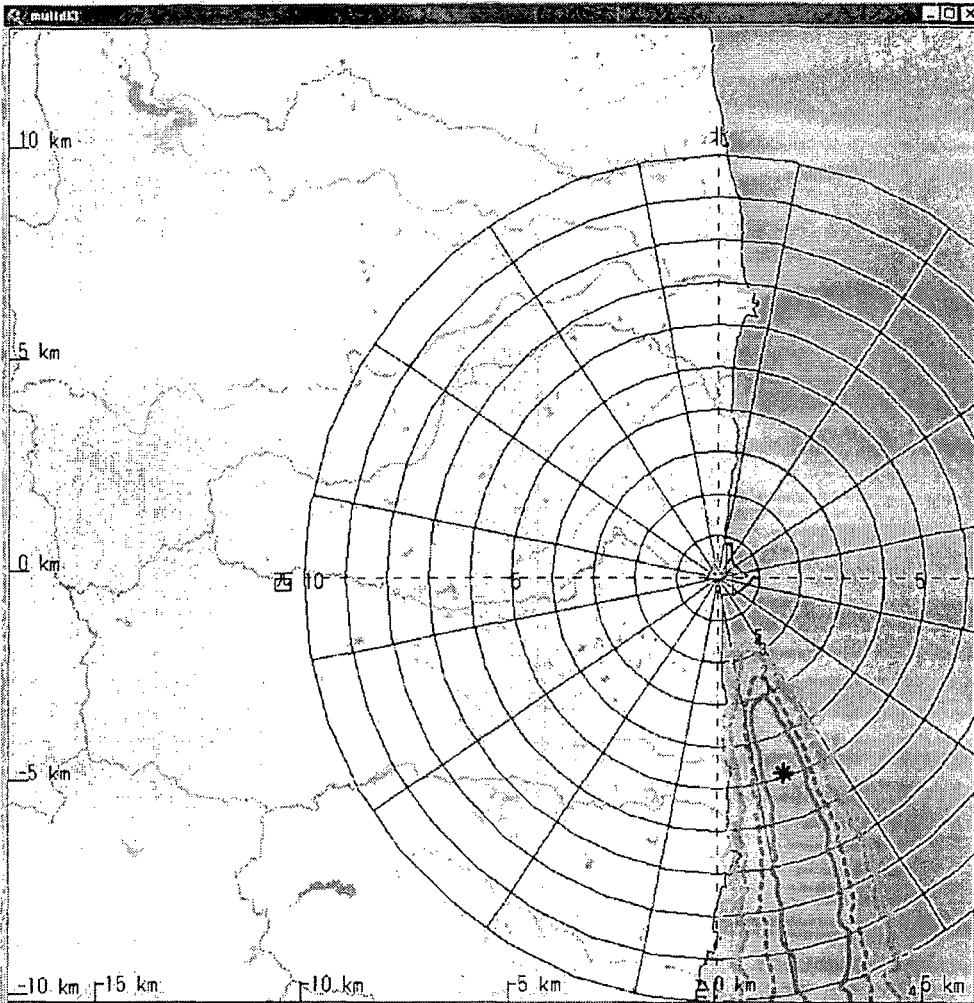
放出モード = 単位量放出

放出核種・放出率(積算) : Ba/h (Ba)

ヨウ素 : 1.00×10^0 (1.00×10^0)

05時定期福島1-2号炉

No. : S45185



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 08:00 -

2011/03/16 07:00

気象データ = G P V + 観測値

(2011/03/16 05:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m3)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 2.721×10^{-10} Bq/m3

放出地点から (1.7, -4.8) km (x 印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 05:00

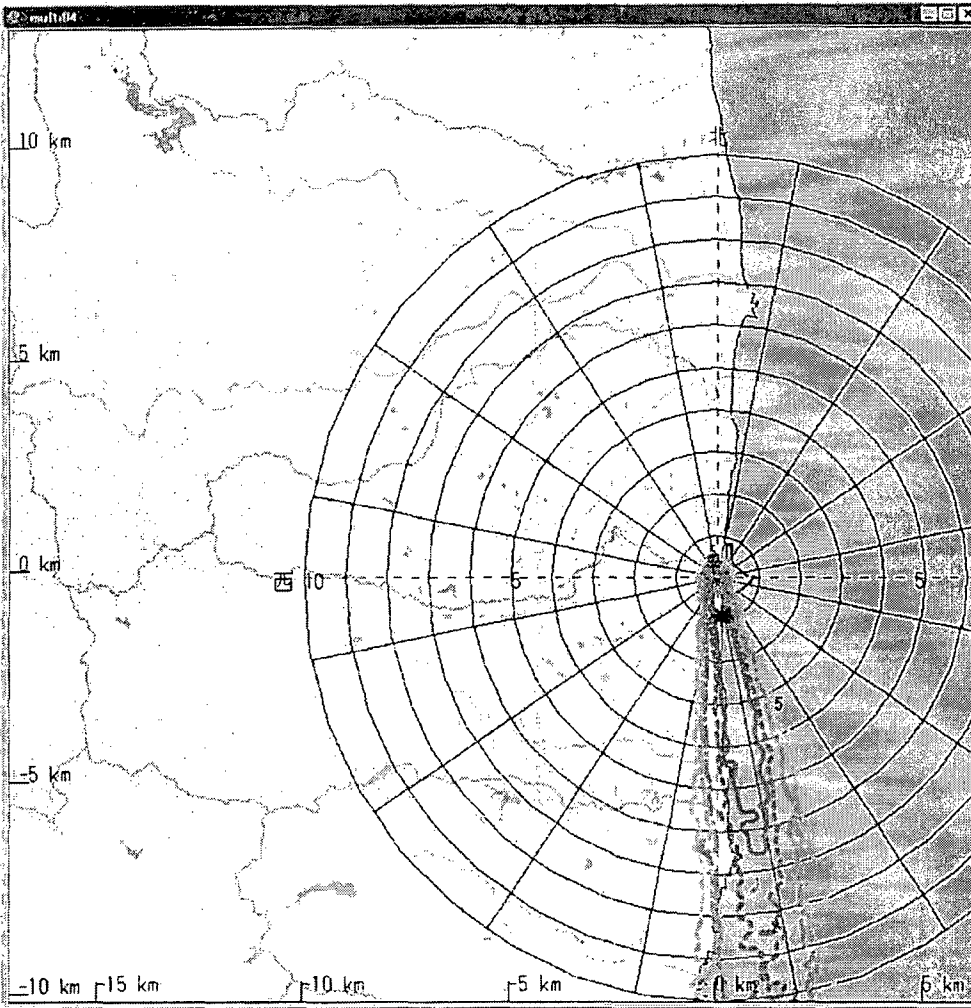
放出モード = 単位量放出

放出核種・放出率(積算) : Bq/h (Bq)

ヨウ素 : 1.00×10^0 (1.00×10^0)

05時定期福島1-2号炉

No. : S45185



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 05:00 -
2011/03/16 08:00

気象データ = G P V + 観測値
(2011/03/16 05:00) まで

福島第1 2号炉 狭域図
放出地点 : 141°02'08" - 37°25'18"
領域 : 23km X 23km
核種名 = 希ガス

【凡例】
空気吸収線量率等値線 ($\mu\text{Gy/h}$)

- 1= 1.0×10^{-15}
- 2= 5.0×10^{-18}
- 3= 1.0×10^{-16}
- 4= 5.0×10^{-17}
- 5= 1.0×10^{-17}

最大線量率 = $3.088 \times 10^{-15} \mu\text{Gy/h}$
放出地点から (0.2, -1.1) km (* E p)

計算モデル名 = PRWDA21
使用モデル名 = 通常モデル

【計算条件】
計算メッシュ幅 水平方向 = 0.25 km
放出高 = 120.0m
燃焼度 = 20000 MWD/MTU
原子炉停止時刻 = 2011/03/11 16:00
放出開始時刻 = 2011/03/16 05:00
放出モード = 単位量放出
放出核種・放出率(積算) : Ba/h (Ba)
希ガス : 1.00×10^0 (1.00×10^0)

0.5 時定期福島1-2号炉

No. : S45185

From: JapanEmbassy_TaskForce

To:

(b)(6)

Subject: 0600 SPEEDI Data

Date: Tuesday, March 15, 2011 5:38:30 PM

Attachments: FUKUSHIMA1 air dose006-07h01.gif
FUKUSHIMA1 wind006h01.gif
FUKUSHIMA1 air concentration007-08h01.gif
FUKUSHIMA1 air concentration006-07h01.gif
FUKUSHIMA1 air dose007-08h01.gif

0600 SPEEDI Data, unzipped.

SBU

This email is UNCLASSIFIED

Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322
<http://japan.usembassy.gov/>

-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]

Sent: Wednesday, March 16, 2011 6:33 AM

(b)(6)

Subject: 06時SPEEDI単位量放出図形イメージの送付

関係者各位

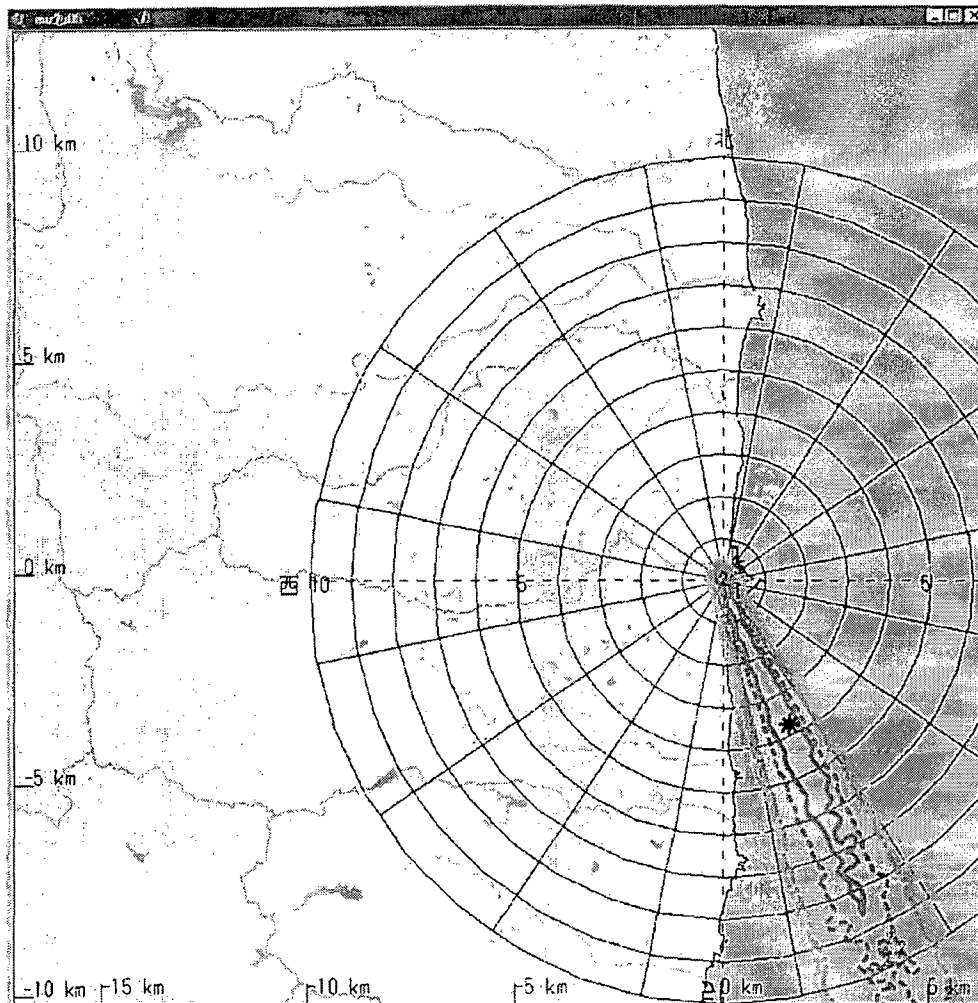
お世話になっております。

原子力安全技術センター 水野です。

3/16 06時のSPEEDI単位量放出図形のイメージデータを送付致します。

ご確認のほど、よろしくお願い致します。

IIIV/24



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 06:00 -

2011/03/16 07:00

気象データ = G P V + 観測値

(2011/03/16 06:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-15}

2 = 5.0×10^{-16}

3 = 1.0×10^{-16}

4 = 5.0×10^{-17}

5 = 1.0×10^{-17}

最大線量率 = $2.268 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (-1.7, -3.6) km (※ E1)

計算モデル名 = PRNDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 06:00

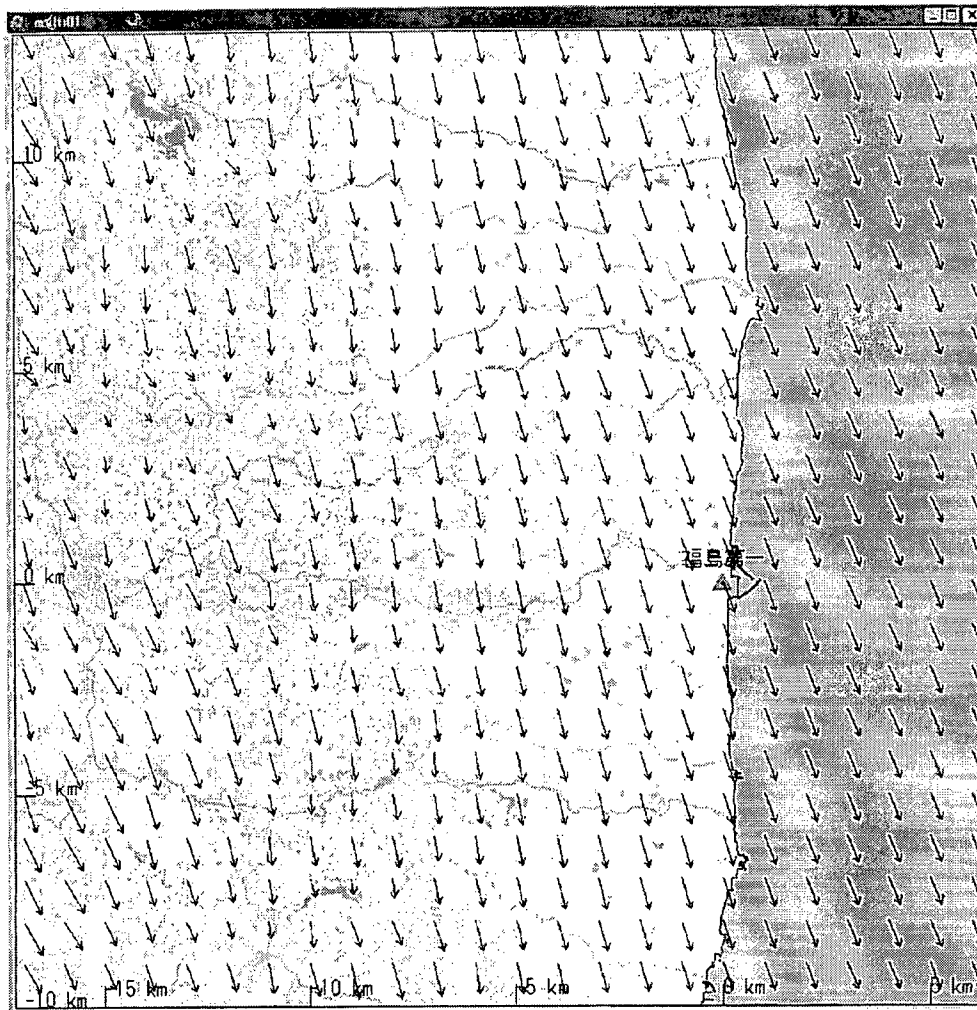
放出モード = 単位量放出

放出核種・放出率(推算): Ba/h (8a)

希ガス : 1.00×10^0 (1.00×10^0)

〇 6時定期福島1-2号炉

No. : S45183



風速場(地上高)

風速場 (地上高)

日時 = 2011/03/16 06:00

気象データ = G P V + 観測値

(2011/03/16 05:00) まで

福島第1 狭域図

サイト中心 : 141°02'10" - 37°25'12"

領域 : 23km X 23km

表示高度 = 120.00 m

サイト中心付近の風 : 北北西 6.8 m/s

大気安定度 : D型

計算モデル名 = WIND21

計算メッシュ幅 水平方向 = 0.50 km

【凡例】

標準風速 (標準領域の場合の長さ)

→ = 5 m/s

06時定期福島1-2号炉

No. : S45186

大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 07:00 -

2011/03/16 08:00

気象データ = G P V + 観測値

(2011/03/16 06:00) まで

福島第1 2号炉 狭域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 23km X 23km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m3)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 3.215×10^{-10} Bq/m3

放出地点から (2.2, -4.8) km (± E)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 0.25 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 06:00

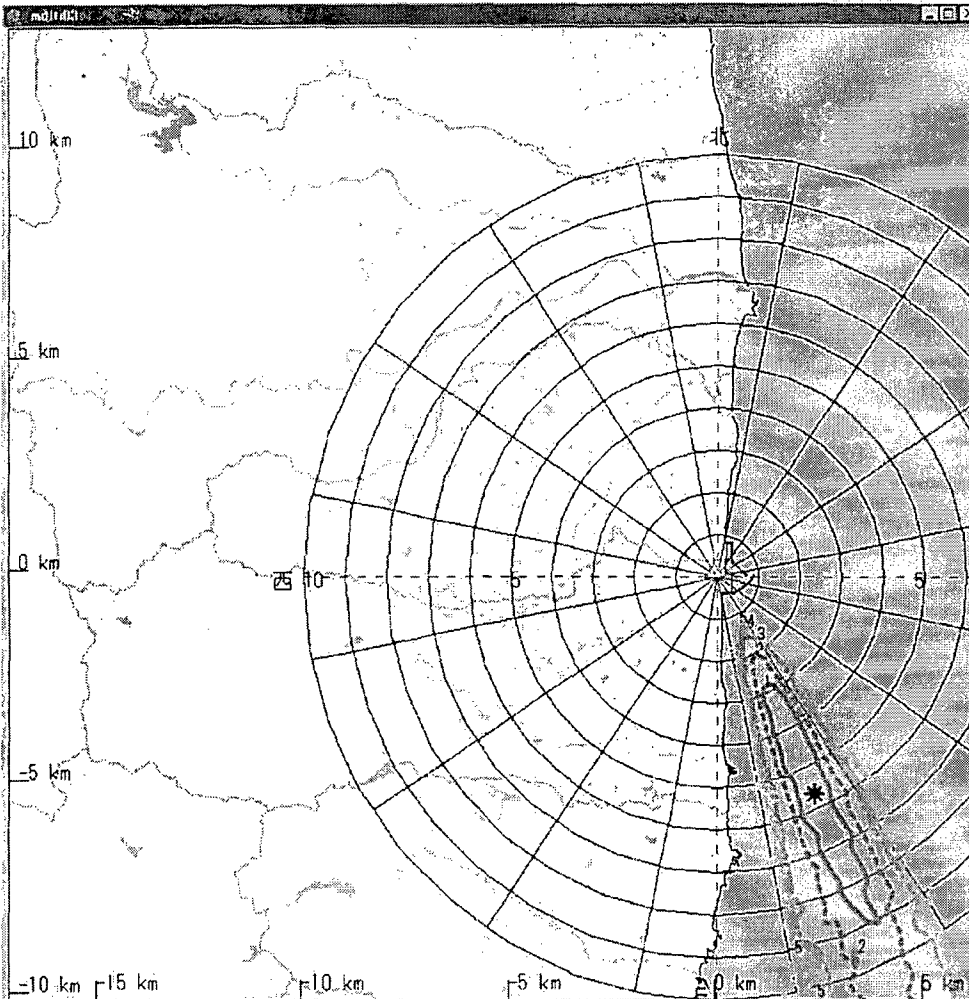
放出モード = 単位量放出

放出核種・放出率(積算): Bq/h (Bq)

ヨウ素 : 1.00×10^0 (1.00×10^0)

06時定期福島1-2号炉

No. : S45186



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)
日時 = 2011/03/16 06:00 -
2011/03/16 07:00
気象データ = G P V + 観測値
(2011/03/16 06:00) まで

福島第1 2号炉 狭域図
放出地点 : 141°02'08" - 37°25'18"
領域 : 23km X 23km
表示高度 = 1.00 m

【凡例】
大気中濃度等値線 (Ba/m3)
1= 1.0×10^{-10}
2= 5.0×10^{-11}
3= 1.0×10^{-11}
4= 5.0×10^{-12}
5= 1.0×10^{-12}

最大濃度 = 1.813×10^{-10} Ba/m3
放出地点から (2.4, -5.3) km (* 印)

計算モデル名 = PRWDA21
使用モデル名 = 通常モデル
【計算条件】
計算メッシュ幅 水平方向 = 0.25 km
放出高 = 120.0m
燃焼度 = 20000 MWD/MTU
原子炉停止時刻 = 2011/03/11 15:00
放出開始時刻 = 2011/03/16 06:00
放出モード = 単位量放出
放出核種・放出率(積算) : Ba/h (Ba)
ヨウ素 : 1.00×10^0 (1.00×10^0)

06時定期福島1-2号炉
No. : S45188

空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 07:00 -
2011/03/16 08:00

気象データ = G P V + 観測値
(2011/03/16 08:00) まで

福島第1 2号炉 狭域図
放出地点 : 141°02'08" - 37°25'18"
領域 : 23km X 23km
核種名 = 希ガス

【凡例】

空気吸収線量率等価線 ($\mu\text{Gy/h}$)

- 1 = 1.0×10^{-15}
- 2 = 5.0×10^{-16}
- 3 = 1.0×10^{-16}
- 4 = 5.0×10^{-17}
- 5 = 1.0×10^{-17}

最大線量率 = $2.738 \times 10^{-15} \mu\text{Gy/h}$
放出地点から (1.9, -4.3) km (*印)

計算モデル名 = PRWDA21

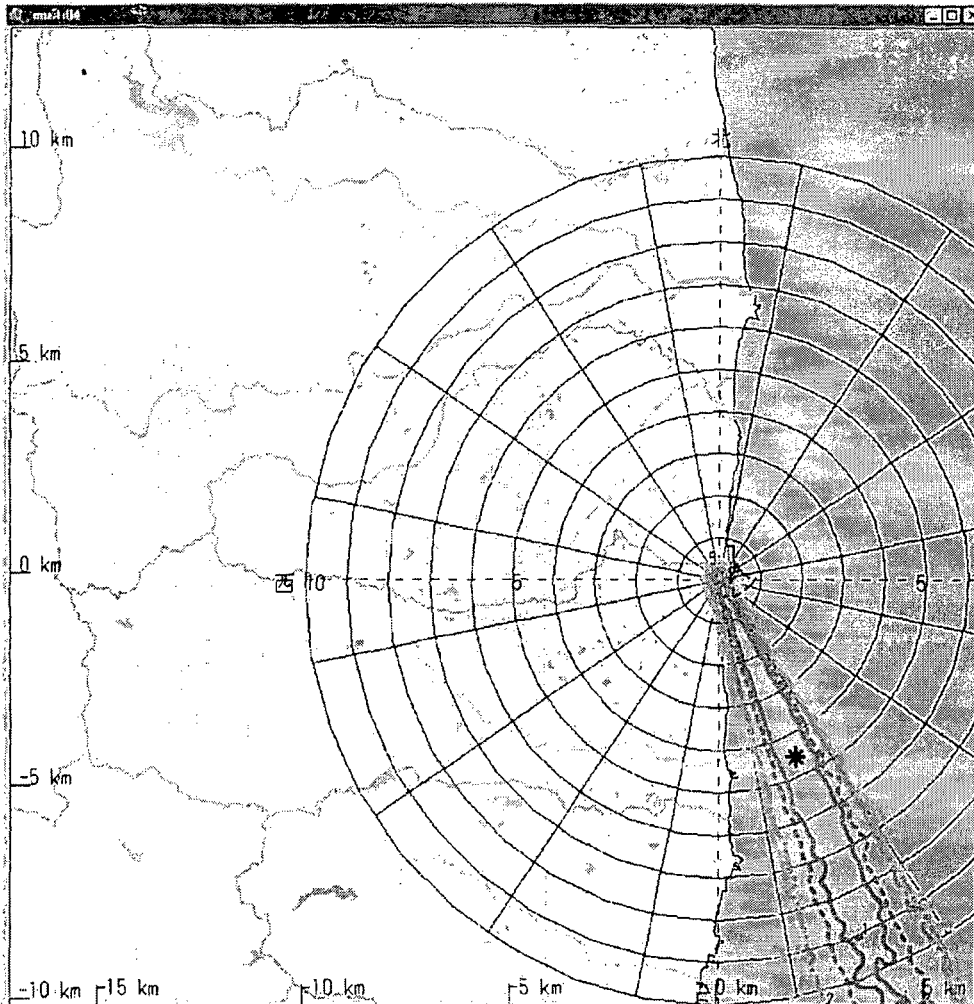
使用モデル名 = 通常モデル

【計算条件】

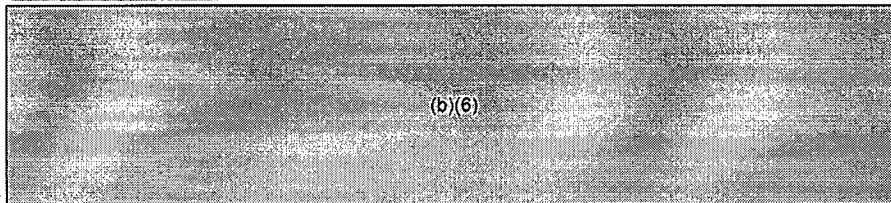
計算メッシュ幅 水平方向 = 0.25 km
放出高 = 120.0m
燃焼度 = 20000 MWd/MTU
原子炉停止時刻 = 2011/03/11 16:00
放出開始時刻 = 2011/03/16 06:00
放出モード = 単位量放出
放出核種・放出率(積算) : 6q/h (Ba)
希ガス : 1.00×10^0 (1.00×10^0)

06時定期福島1-2号炉

No. : S45166



From: JapanEmbassy_TaskForce
To:



Subject: 0638 SPEEDI Data
Date: Tuesday, March 15, 2011 7:47:33 PM
Attachments: FUKUSHIMA1 air_dose0110-11h01.gif
FUKUSHIMA1 air_dose0109-10h01.gif
FUKUSHIMA1 air_dose0108-09h01.gif
FUKUSHIMA1 air_concentration0110-11h01.gif
FUKUSHIMA1 air_concentration0109-10h01.gif
FUKUSHIMA1 air_concentration0108-09h01.gif
FUKUSHIMA1 wind0108h01.gif

Lynda Hinds
Staff Assistant to Ambassador John V. Roos U.S. Embassy
1-10-5 Akasaka, Minato-ku
Tokyo 107-8420
Tel. (03) 3224- 5370

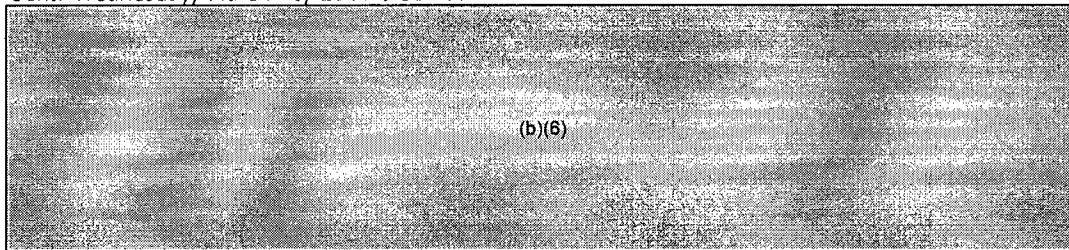
Twitter.com/AmbassadorRoos

SBU

This email is UNCLASSIFIED-----Original Message-----

From: JapanEmbassy, TaskForce

Sent: Wednesday, March 16, 2011 6:38 AM



Subject: 0600 SPEEDI Data

0600 SPEEDI Data, unzipped.

SBU

This email is UNCLASSIFIED

Jerome Ryan
Political Officer
U.S. Embassy Tokyo
1-10-5, Akasaka 1-Chome, Minato-Ku, Tokyo 107
tel:(81)(03)3224-5343
fax:(81)(03)3224-5322

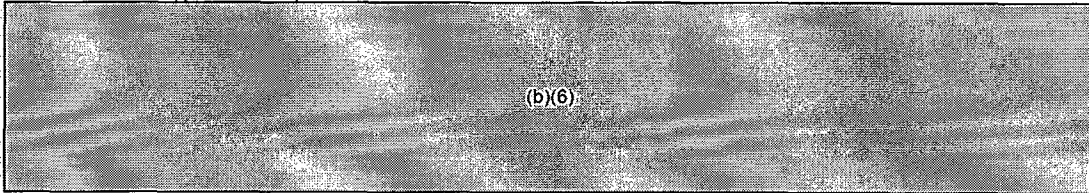
IIII/25

<http://japan.usembassy.gov/>

-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]

Sent: Wednesday, March 16, 2011 6:33 AM



Subject: 06時SPEEDI単位量放出図形イメージの送付

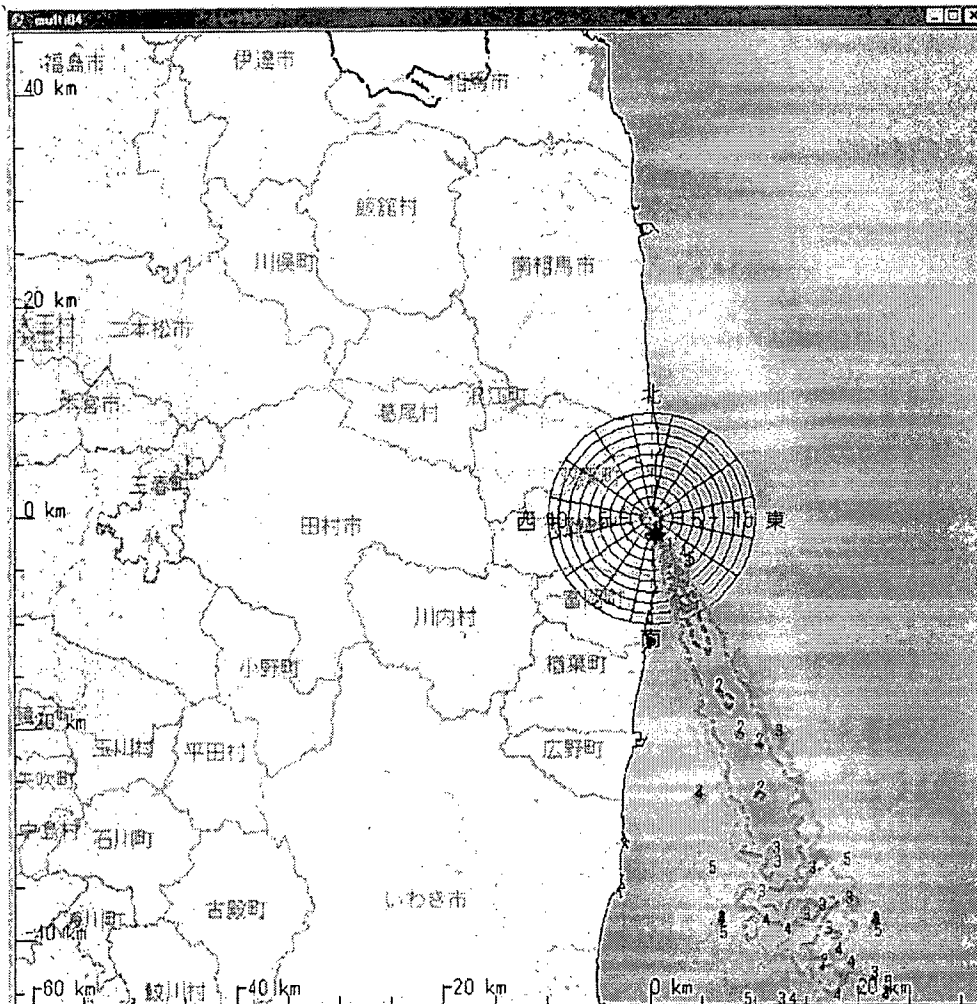
関係者各位

お世話になっております。

原子力安全技術センター 水野です。

3/16 06時のSPEEDI単位量放出図形のイメージデータを送付致します。

ご確認のほど、よろしくお願い致します。



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 10:00 -

2011/03/16 11:00

気象データ = G P V + 観測値

(2011/03/16 08:00) まで

福島第1 2号炉 広域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-15}

2 = 5.0×10^{-16}

3 = 1.0×10^{-16}

4 = 5.0×10^{-17}

5 = 1.0×10^{-17}

最大線量率 = $3.624 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (0.5, -1.7) km (*印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 08:00

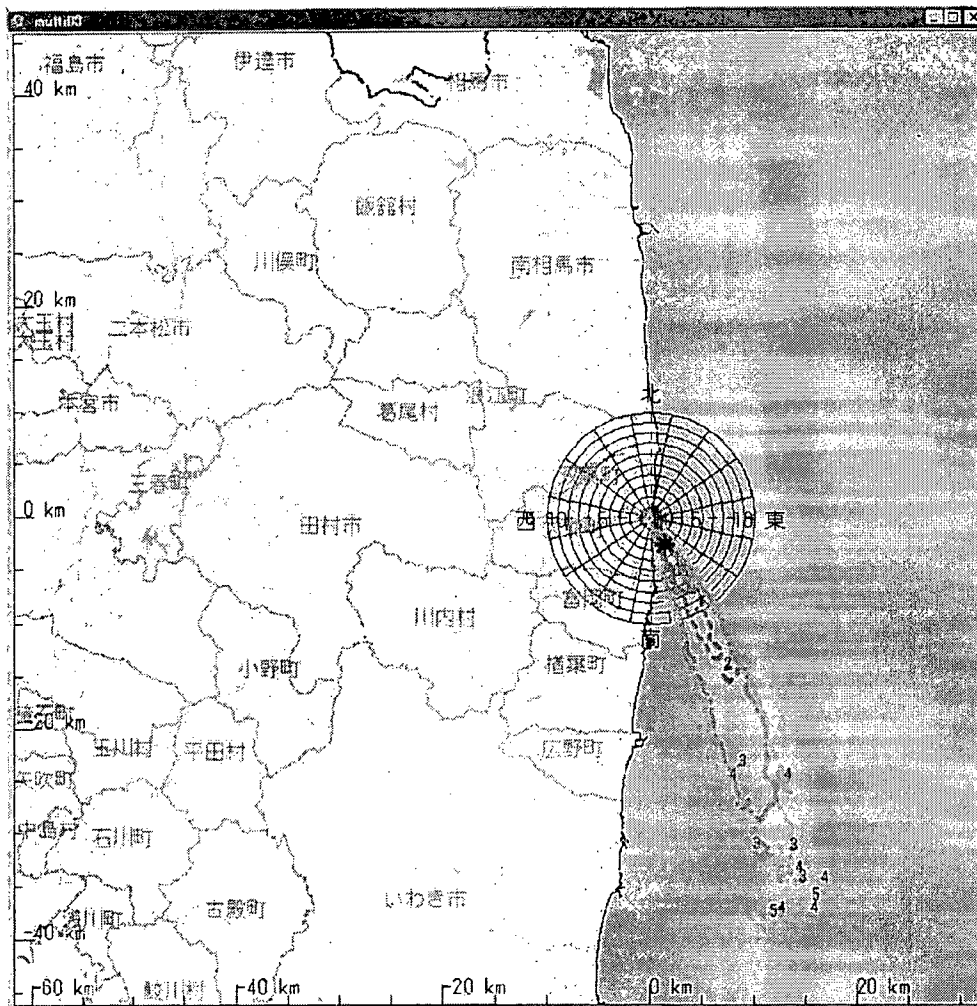
放出モード = 単位量放出

放出核種・放出率(積算) : Bq/h (Bq)

希ガス : 1.00×10^0 (1.00×10^0)

08時定期福島1-2号炉

No. : S45189



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 09:00 -

2011/03/16 10:00

気象データ = G P V + 観測値

(2011/03/16 08:00) まで

福島第1 2号炉 広域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-15}

2 = 5.0×10^{-16}

3 = 1.0×10^{-16}

4 = 5.0×10^{-17}

5 = 1.0×10^{-17}

最大線量率 = $3.233 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (1.5, -2.7) km (*印)

計算モデル名 = PRWD421

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 08:00

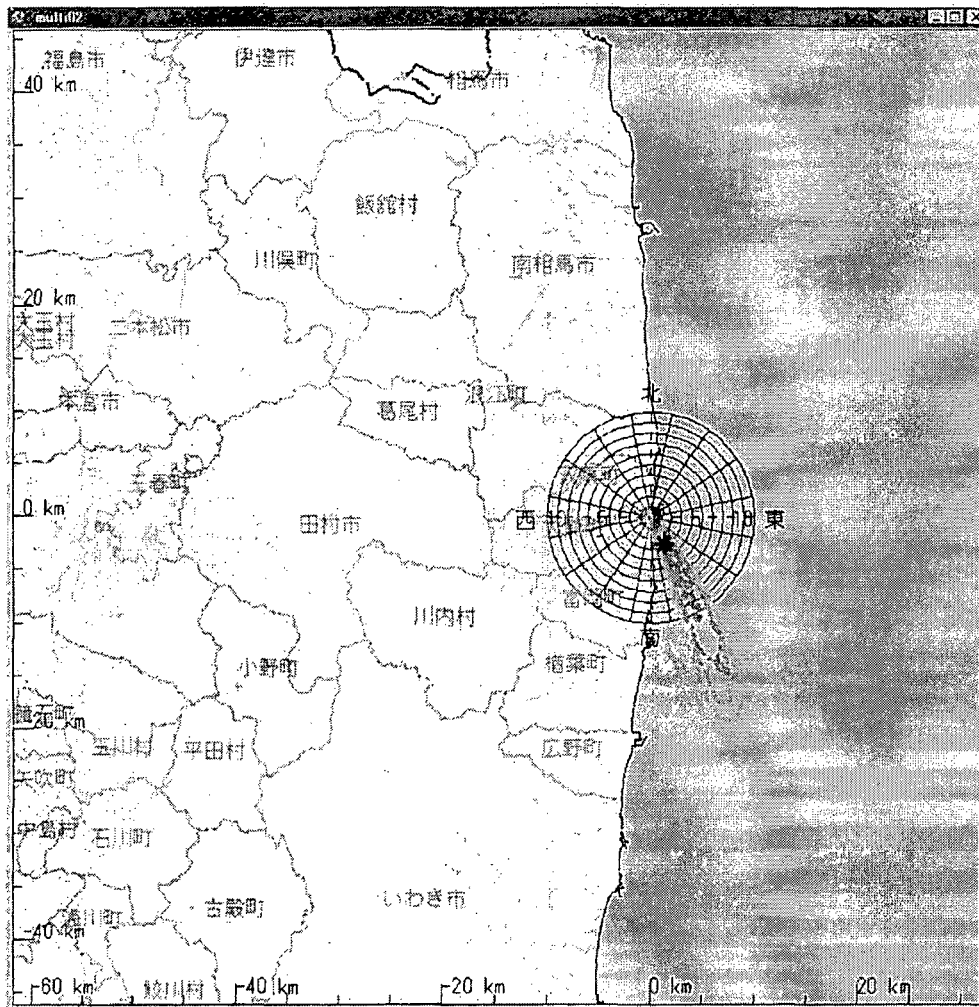
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

08時定期福島1-2号炉

No. : S45189



空気吸収線量率

福島第1 2号炉 広域図

日時 = 2011/03/16 08:00 -

2011/03/16 09:00

気象データ = GPM + 観測値

(2011/03/16 08:00) まで

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-15}

2 = 5.0×10^{-16}

3 = 1.0×10^{-16}

4 = 5.0×10^{-17}

5 = 1.0×10^{-17}

最大線量率 = $3.724 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (1.5, -2.7) km (*印)

計算モデル名 = PRWCA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 08:00

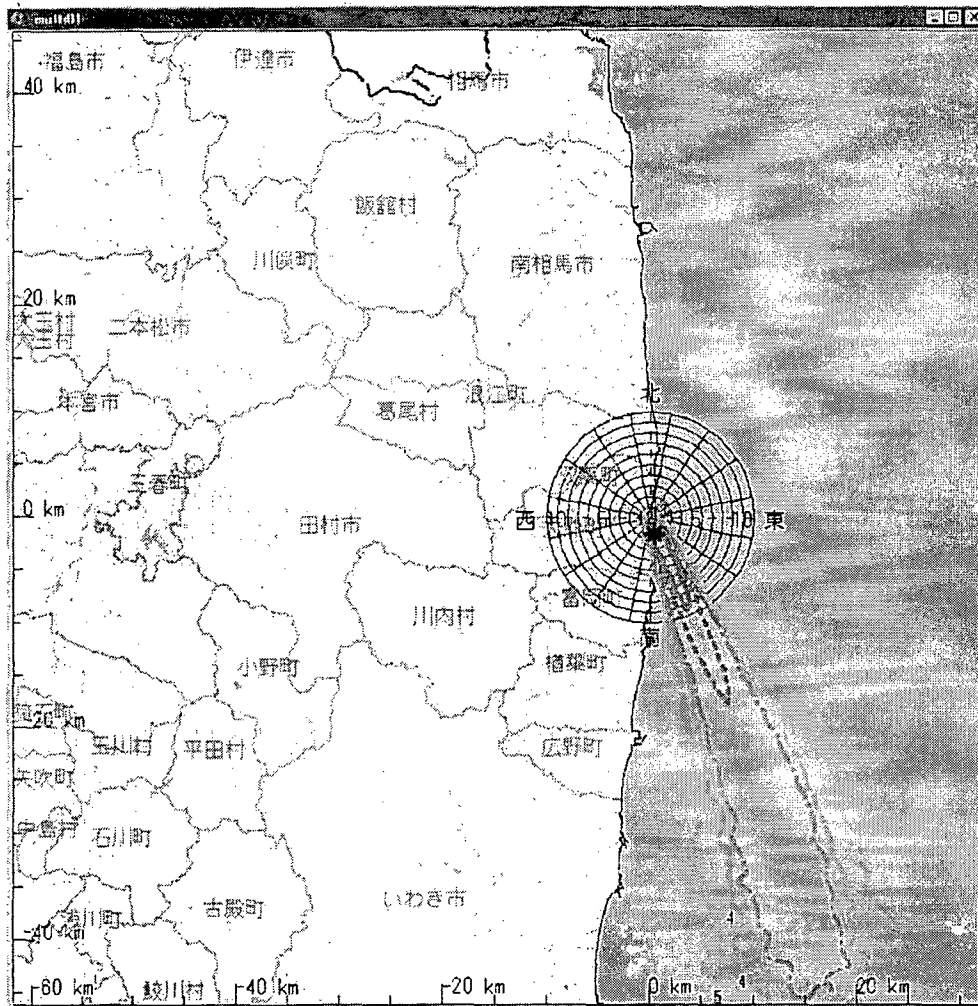
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

08時定期福島1-2号炉

No.: S45189



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素) (地上高)

日時 = 2011/03/16 10:00 -

2011/03/16 11:00

気象データ = G P V + 観測値

(2011/03/16 08:00) まで

福島第1 2号炉 広域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 2.646×10^{-10} Bq/m³

放出地点から (0.5, -1.7) km (* E印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 08:00

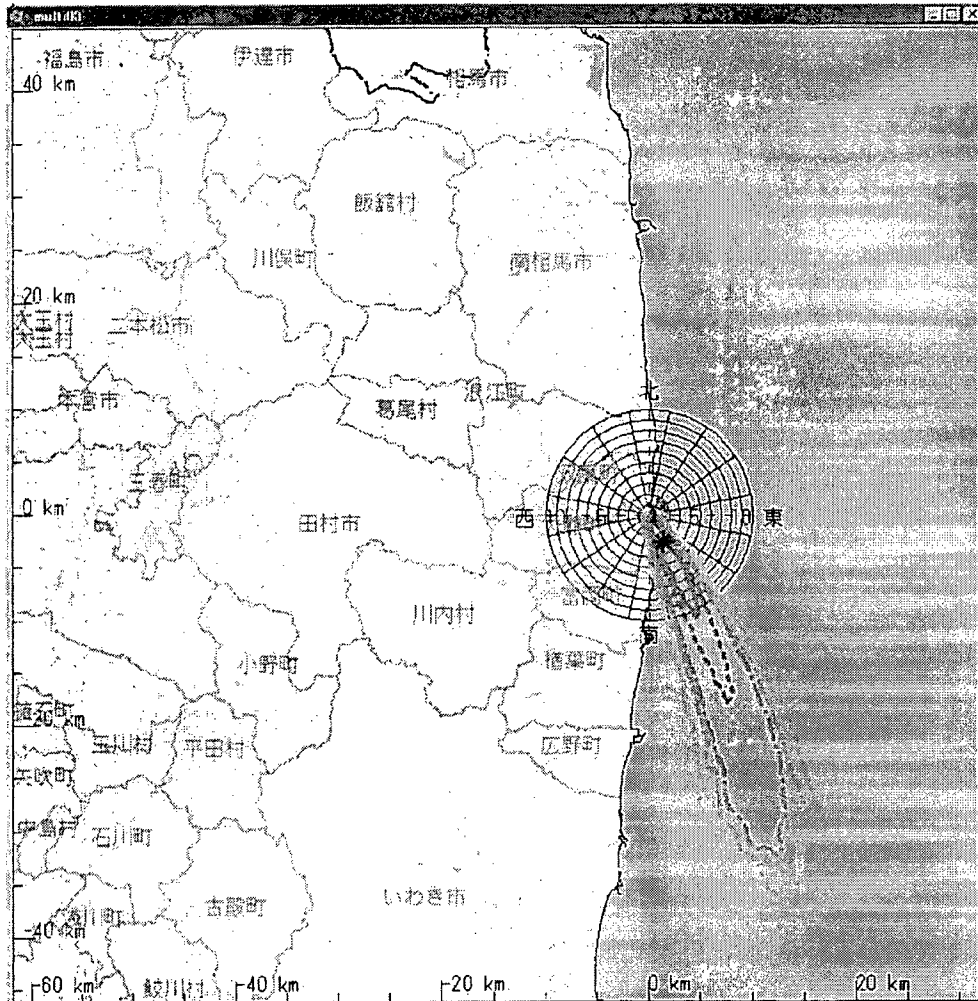
放出モード = 単位量放出

放出核種・放出率(積算) : Bq/h (Ba)

ヨウ素 : 1.00×10^0 (1.00×10^0)

C 8 時定期福島1-2号炉

No. : S45189



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素) (地上高)

日時 = 2011/03/16 09:00 -

2011/03/16 10:00

気象データ = G.P.V. + 観測値

(2011/03/16 08:00) まで

福島第1 2号炉 広域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 2.846×10^{-10} Bq/m³

放出地点から (1.5, -2.7) km (*印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWD/WTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 08:00

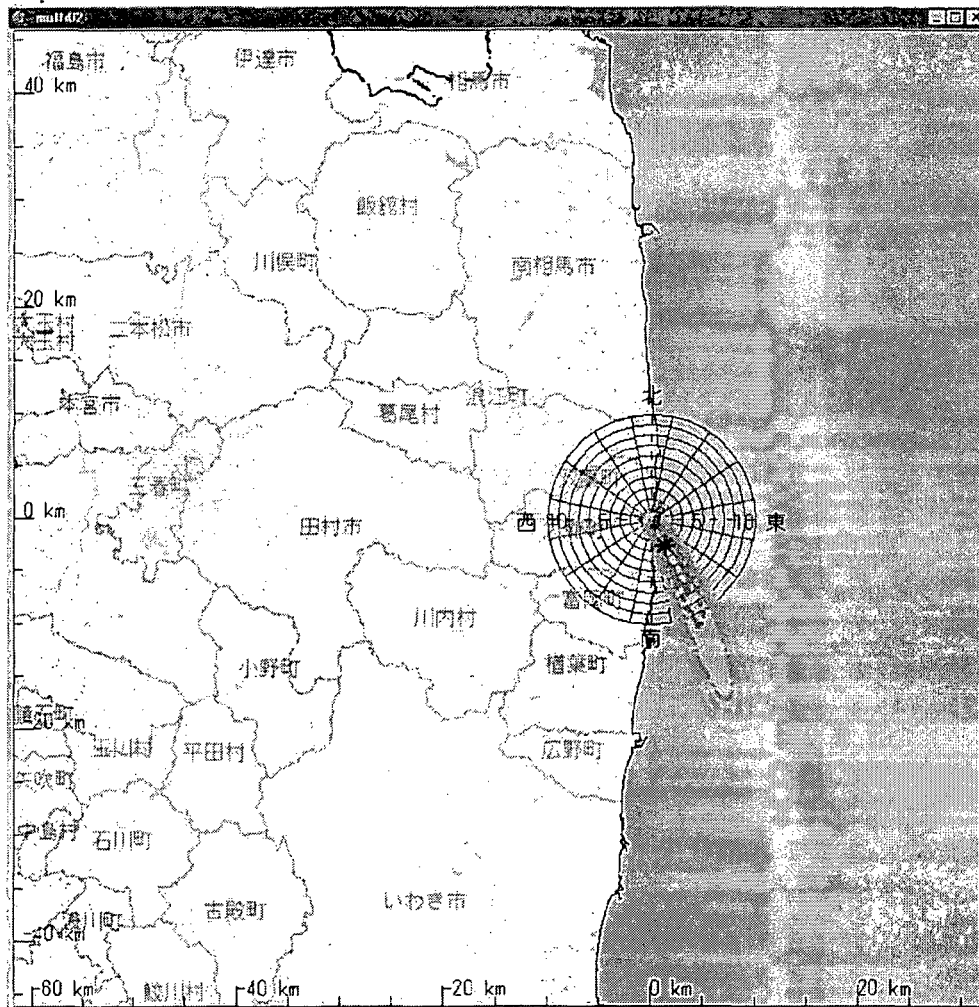
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

ヨウ素 : 1.00×10^0 (1.00×10^0)

08時定期福島1-2号炉

No.: S45189



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素) (地上高)

日時 = 2011/03/16 08:00 -

2011/03/16 09:00

気象データ = G P V + 観測値

(2011/03/16 08:00) まで

福島第1 2号炉 広域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 2.580×10^{-10} Bq/m³

放出地点から (1.5, -2.7) km (*印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 08:00

放出モード = 単位量放出

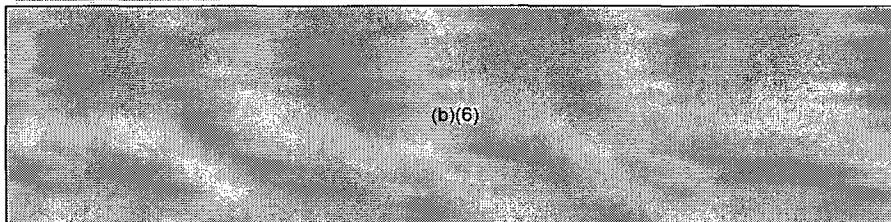
放出核種・放出率(積算): Bq/h (Bq)

ヨウ素 : 1.00×10^0 (1.00×10^0)

08時定期福島1-2号炉

No. : S45189

From: JapanEmbassy_TaskForce
To:



Subject: 0946 SPEEDI Data
Date: Tuesday, March 15, 2011 9:02:38 PM
Attachments: [FUKUSHIMA1 air dose011-12h01.gif](#)
[FUKUSHIMA1 air concentration010-11h01.gif](#)
[FUKUSHIMA1 air concentration0109-10h01.gif](#)
[FUKUSHIMA1 air concentration011-12h01.gif](#)
[FUKUSHIMA1 wind09h01.gif](#)
[FUKUSHIMA1 air dose010-11h01.gif](#)
[FUKUSHIMA1 air dose0109-10h01.gif](#)

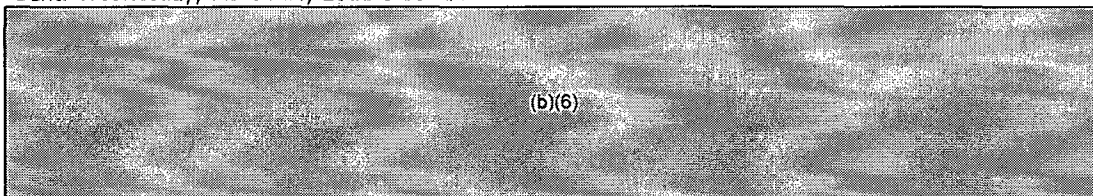
0946 SPEEDI Data, unzipped.

SBU

This email is UNCLASSIFIED-----Original Message-----

From: nustec [mailto:spd01@nustec.or.jp]

Sent: Wednesday, March 16, 2011 6:33 AM



Subject: 06時SPEEDI単位量放出図形イメージの送付

関係者各位

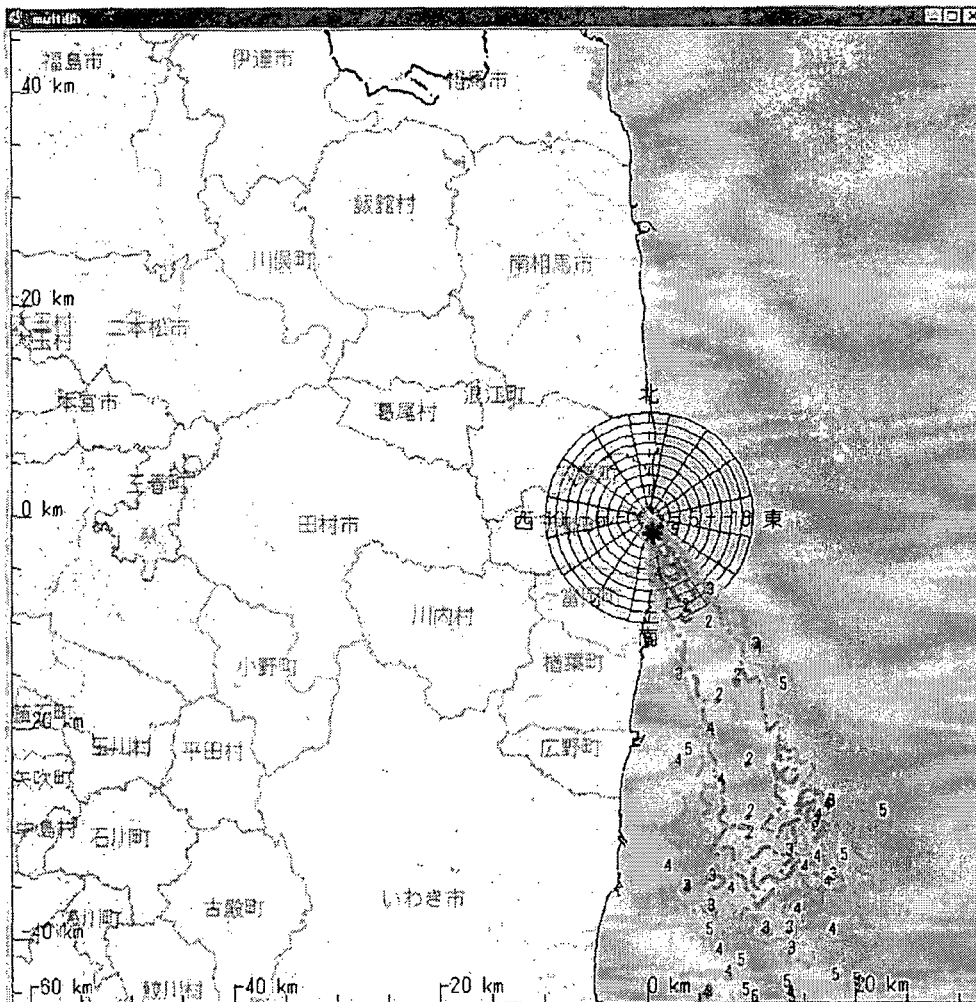
お世話になっております。

原子力安全技術センター 水野です。

3/16 06時のSPEEDI単位量放出図形のイメージデータを送付致します。

ご確認のほど、よろしくお願い致します。

IIII/26



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 11:00 -

2011/03/16 12:00

気象データ = G P V + 観測値

(2011/03/16 09:00) まで

福島第1 2号炉 広域図

放出地点 : 14°02'08" - 37°25'18"

領域 : 92km X 92km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-15}

2 = 5.0×10^{-16}

3 = 1.0×10^{-16}

4 = 5.0×10^{-17}

5 = 1.0×10^{-17}

最大線量率 = $4.423 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (0.5, -1.7) km (x E印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 09:00

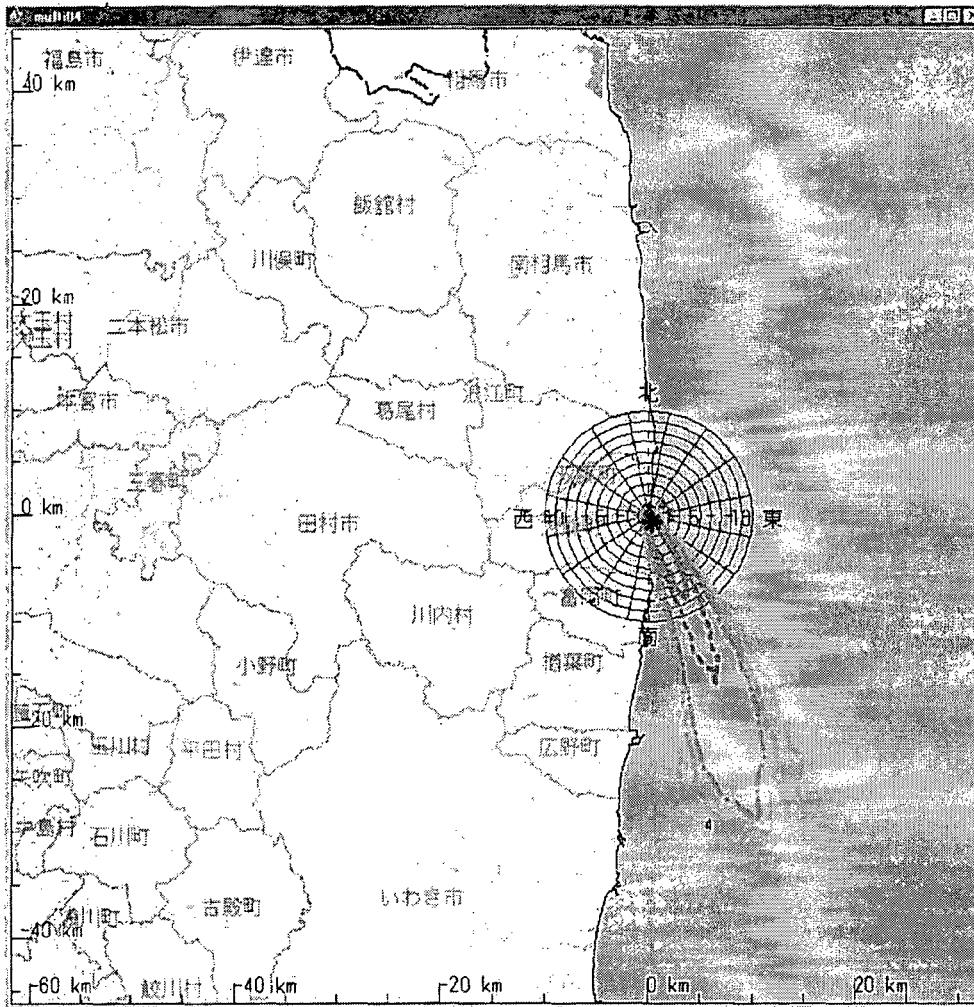
放出モード = 単位量放出

放出核種・放出率(積算) : Bq/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

09時定期福島1-2号炉

No.: S45192



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/18 10:00 -

2011/03/18 11:00

気象データ = G.P.V. + 観測値

(2011/03/16 09:00) まで

福島第1 2号炉 広域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 3.885×10^{-10} Bq/m³

放出地点から (0.5, -0.7) km (*印)

計算モデル名 = PRWD421

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/18 09:00

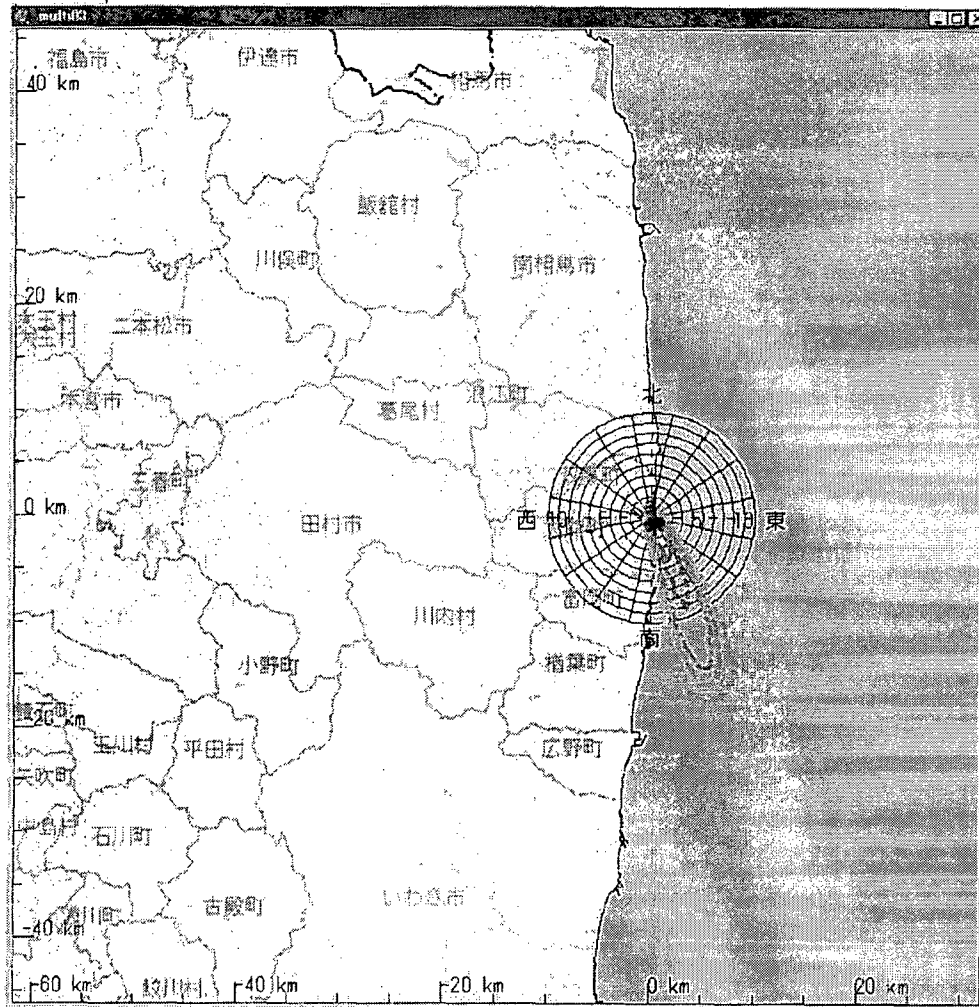
放出モード = 単位量放出

放出核種・放出率(推算): Bq/h (Bq)

ヨウ素 : 1.00×10^0 (1.00×10^0)

09時定期福島1-2号炉

No.: S45192



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 09:00 -

2011/03/16 10:00

気象データ = G P V + 観測値

(2011/03/16 03:00) まで

福島第1 2号炉 広域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 2.539×10^{-10} Bq/m³

放出地点から (0.5, -0.7) km (* 印)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWd/MTU

原子炉停止時刻 = 2011/03/11 13:00

放出開始時刻 = 2011/03/16 09:00

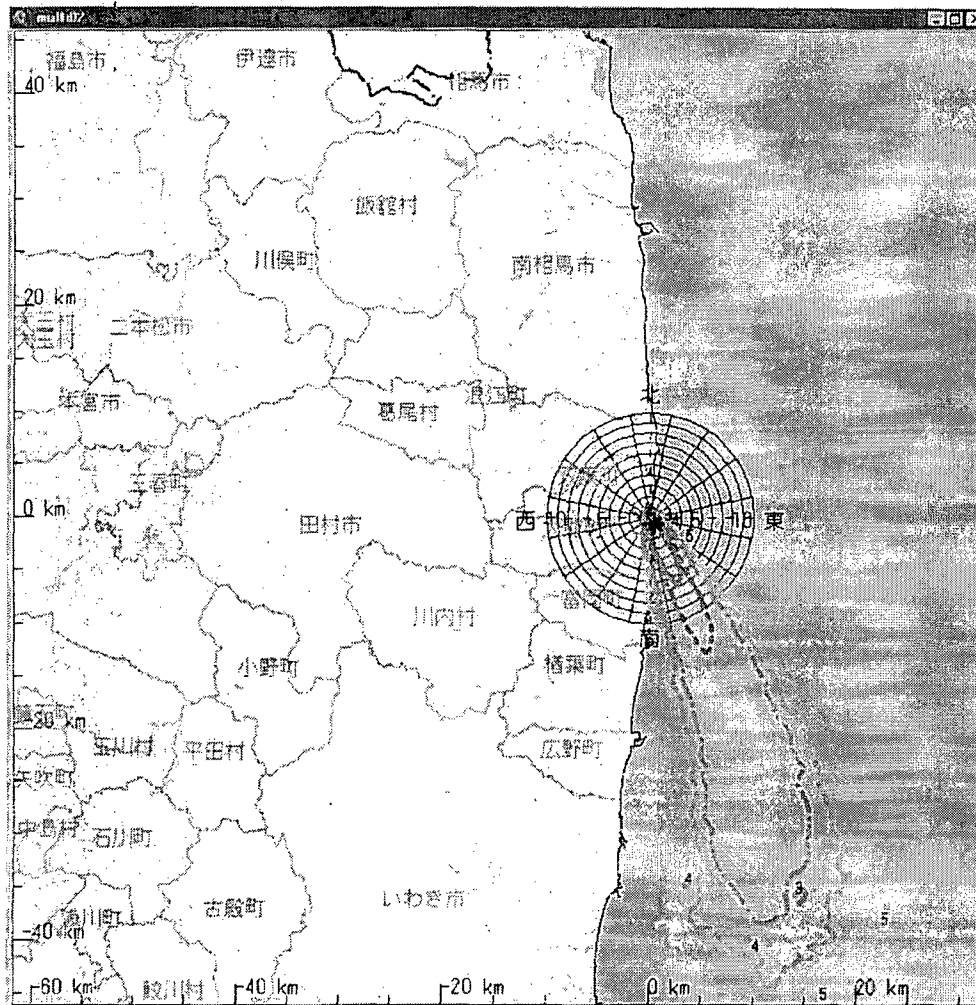
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

ヨウ素 : 1.00×10^0 (1.00×10^0)

09時定期福島1-2号炉

No. : S45192



大気中濃度(ヨウ素)(地上高)

大気中濃度(ヨウ素)(地上高)

日時 = 2011/03/16 11:00 -
2011/03/16 12:00

気象データ = G P V + 観測値
(2011/03/16 09:00) まで

福島第1 2号炉 広域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

表示高度 = 1.00 m

【凡例】

大気中濃度等値線 (Bq/m³)

1 = 1.0×10^{-10}

2 = 5.0×10^{-11}

3 = 1.0×10^{-11}

4 = 5.0×10^{-12}

5 = 1.0×10^{-12}

最大濃度 = 4.663×10^{-10} Bq/m³

放出地点から (0.5, -0.7) km (* E P)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 09:00

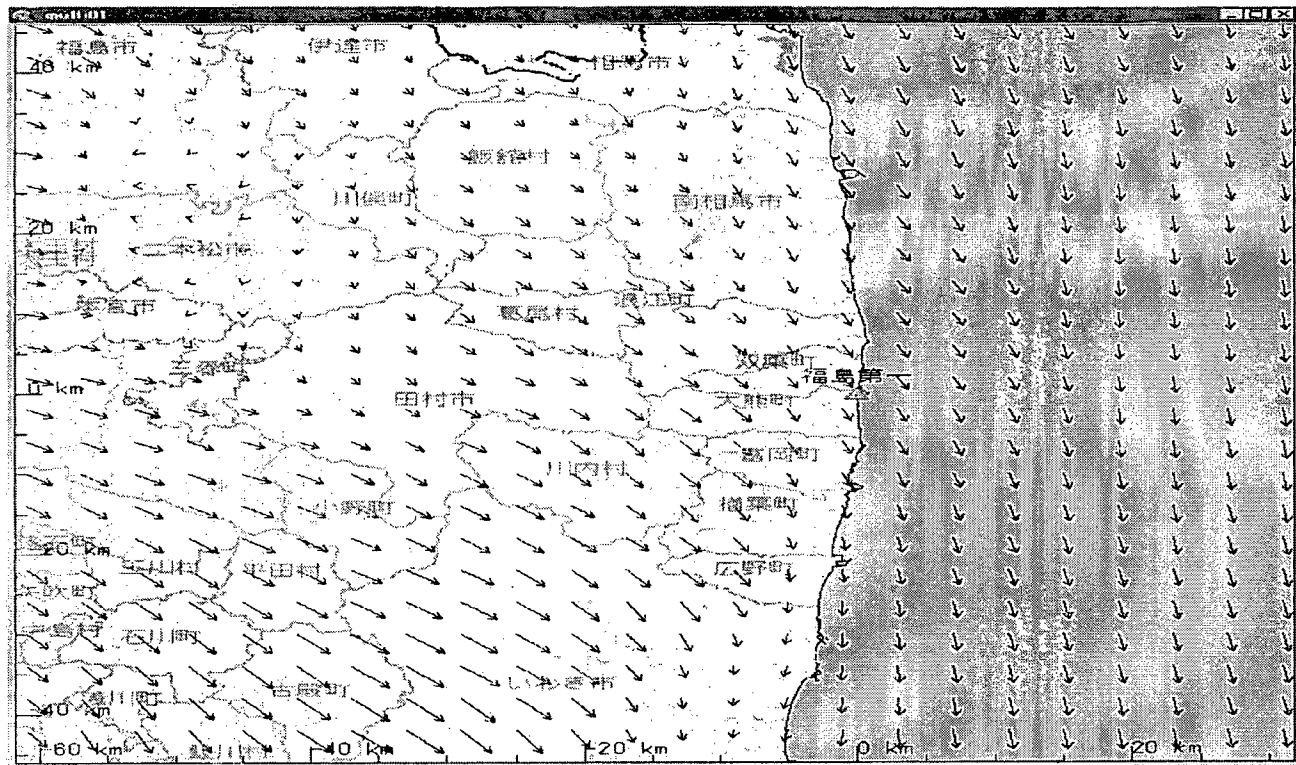
放出モード = 単位量放出

放出核種・放出率(積算) : Ba/h (Ba)

ヨウ素 : 1.00×10^0 (1.00×10^0)

09時定期福島1-2号炉

No. : S45182



風速場(地上高)

風速場(地上高)

日時 = 2011/03/16 09:00

気象データ = G P V + 観測値

(2011/03/16 09:00) まで

福島第1 広域図

サイト中心 : 141°02'10" - 37°25'12"

領域 : 92km X 92km

表示高度 = 120.00 m

サイト中心付近の風 : 北北西 4.4 m/s

大気安定度 : C型

計算モデル名 = PHYSIC

計算メッシュ幅 水平方向 = 2.00 km

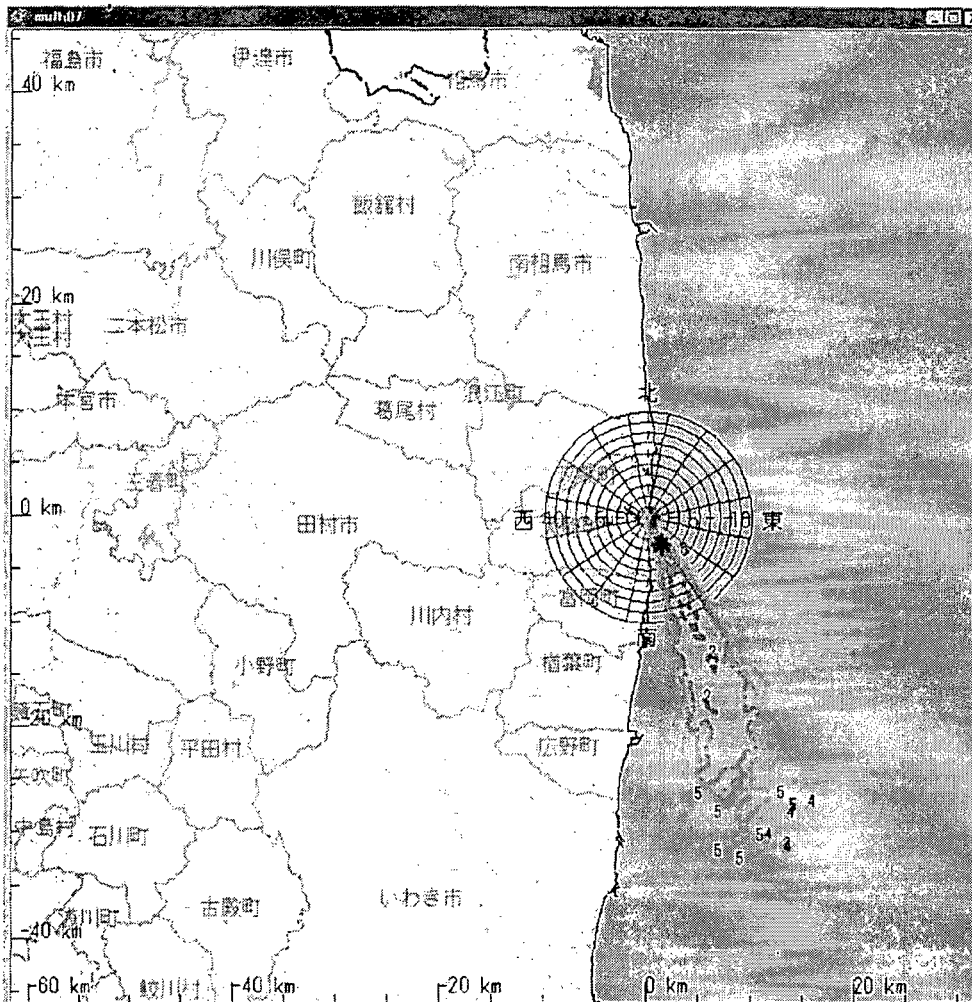
【凡例】

標準風速 (標準領域の場合の長さ)

→ = 10 m/s

09時定期福島1-2号炉

No. : S45192



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 10:00 -

2011/03/16 11:00

気象データ = G P V + 観測値

(2011/03/16 09:00) まで

福島第1 2号炉 広域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 ($\mu\text{Gy/h}$)

1 = 1.0×10^{-15}

2 = 5.0×10^{-16}

3 = 1.0×10^{-16}

4 = 5.0×10^{-17}

5 = 1.0×10^{-17}

最大線量率 = $2.843 \times 10^{-15} \mu\text{Gy/h}$

放出地点から (1.5, -2.7) km (* EP)

計算モデル名 = PRWDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 09:00

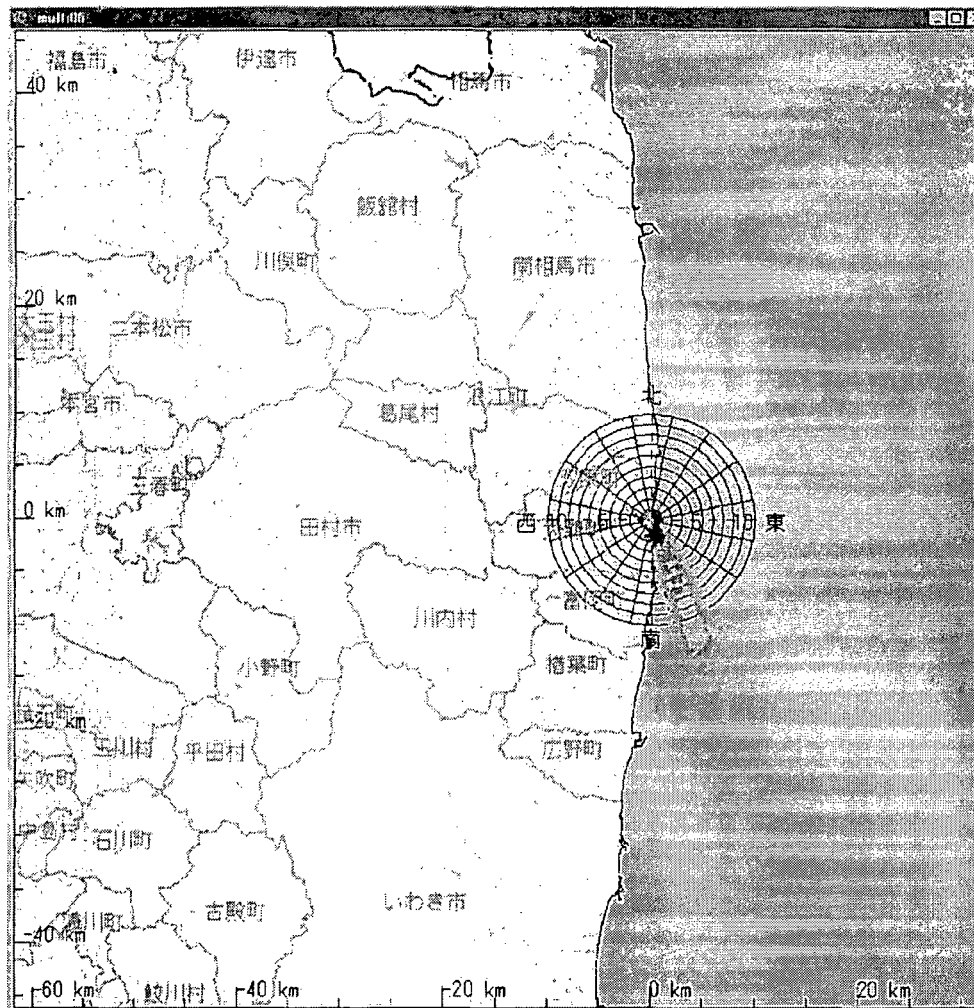
放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

09時定期福島1-2号炉

No.: S45192



空気吸収線量率

空気吸収線量率

日時 = 2011/03/16 09:00 -

2011/03/16 10:00

気象データ = G P V + 観測値

(2011/03/16 09:00) まで

福島第1 2号炉 広域図

放出地点 : 141°02'08" - 37°25'18"

領域 : 92km X 92km

核種名 = 希ガス

【凡例】

空気吸収線量率等値線 (μGy/h)

1 = 1.0×10^{-15}

2 = 5.0×10^{-16}

3 = 1.0×10^{-16}

4 = 5.0×10^{-17}

5 = 1.0×10^{-17}

最大線量率 = 1.654×10^{-15} μGy/h

放出地点から (0.5, -1.7) km (*印)

計算モデル名 = PRKDA21

使用モデル名 = 通常モデル

【計算条件】

計算メッシュ幅 水平方向 = 1.00 km

放出高 = 120.0m

燃焼度 = 20000 MWD/MTU

原子炉停止時刻 = 2011/03/11 16:00

放出開始時刻 = 2011/03/16 09:00

放出モード = 単位量放出

放出核種・放出率(積算): Ba/h (Ba)

希ガス : 1.00×10^0 (1.00×10^0)

09時定期福島1-2号炉

No.: S45:22