

**TODAY'S FULL EDITION: Tuesday, March 15, 2011 -- 01:10 PM**

## SPOTLIGHT

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### **1. CLIMATE: House Dems mount last-gasp defense of EPA; McConnell targets agency with Senate amendment** *(03/15/2011)*

**Jean Chemnick, E&E reporter**

With House Energy and Commerce Committee passage of a bill to strip U.S. EPA's power to regulate greenhouse gases a foregone conclusion, Democrats today launched a last-ditch effort to reinstate the agency's position that man-made emissions are the main cause of global warming.

Meanwhile, a debate erupted in the Senate this morning over climate and EPA regulations as the upper chamber was considering a small-business bill. Senate Minority Leader Mitch McConnell (R-Ky.) introduced an amendment to the bill that is identical to the bill Energy and Commerce is considering -- as well as the equivalent of a stand-alone bill introduced by Sen. James Inhofe (R-Okla.).

In the House, Energy and Commerce Committee ranking member Henry Waxman (D-Calif.) and Reps. Diana DeGette (D-Colo.) and Jay Inslee (D-Wash.) offered three slightly different amendments, all of which would amount to a congressional endorsement of the science of climate change.

Waxman's would have stated that Congress accepted EPA's finding that "warming of the climate system is unequivocal," referring to rising atmospheric and ocean temperatures, melting icepack and other phenomena.

DeGette's would have said that Congress accepts that "elevated concentrations of greenhouse gases resulting from anthropogenic emissions "are the root cause of recently observed climate change."

Inslee's would have supported EPA's finding that man-made greenhouse gas emissions endanger public health -- which forms the basis of its current and future regulation of those emissions under the Clean Air Act.

All three amendments were defeated along party lines, by 20-31, 21-30 and 21-31 votes, respectively. The full bill is likely to be passed out of the committee later today.

The Democrats said their amendments would not necessarily reinstate EPA's plans to regulate emissions if the bill sponsored by committee Chairman Fred Upton (R-Mich.) became law, but they would at least reverse the bill's assertion that greenhouse gas emissions don't endanger public health and safety by changing the climate.

Waxman said this finding was "the work of multiple, independent research teams, using different techniques and different data sources."

"These conclusions are based on measured changes in the world we live in, not on model projections," he said. "Pretending problems aren't real doesn't make them go away. Most of us learned that in grade school. We need to face these scientific facts."

But Republicans said that Congress should not be in the business of endorsing scientific findings, especially when there is some disagreement among scientists about the reason for rising temperatures.

"My good friend from California tries to make it appear that the science is settled," said Chairman Emeritus Joe Barton (R-Texas). "I would actually say, on the contrary, the science is not settled; instead, the science is actually going the other way."

Barton said that there were as many regions in the United States where cooling trends have been observed as regions with warming trends, and some scientists do not link greenhouse gas emissions to climate change.

He said he would not support any legislation that would curb emissions except at such high levels that direct exposure would be harmful to humans.

Barton also complained that EPA had not conducted sufficient scientific analyses of its own on the effects of global warming, but instead relied on outside scientists for its conclusions.

The Upton bill, which is expected to pass both the committee and the full House, would prevent EPA from regulating greenhouse gas emissions from large stationary sources such as electric utilities, oil refineries and manufacturing facilities. It would also prevent EPA from crafting greenhouse gas tailpipe emissions rules for vehicles after model year 2016.

While the committee was debating the Democratic amendments today, McConnell was touting his amendment to the small-business bill. He said he was compelled to make the move because new EPA regulations will lead to even higher gasoline prices and result in the loss of jobs in Kentucky and elsewhere.

"Fourteen million Americans are looking for work," McConnell said on the Senate floor. "Gas prices are approaching \$4 a gallon. And the Obama administration wants unelected and unaccountable bureaucrats to impose new regulations that will destroy even more jobs -- and drive gas prices even higher.

"If you want proof that common sense is taking a backseat to ideology in the White House, look no further: This plan is bad for jobs. It's bad for the economy. And it must be stopped."

## TOP STORIES

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### 2. **NUCLEAR CRISIS: Failures in storage pools, battery backups point to problems in U.S. fleet** *(03/15/2011)*

**Hannah Northey and Jenny Mandel, E&E reporters**

Spent fuel at Fukushima Daiichi Nuclear Power Station's Unit 4 caught fire last night and released radiation directly into the air before the fire was brought under control and extinguished, according to the International Atomic Energy Agency (IAEA).

The spent fuel pool, which stores used fuel rods submerged in water as they gradually cool over several years to a temperature at which they can be moved to other storage, is located next to the containment building and is normally under the roof of an outer building.

That outer building may have blown off, as the IAEA reported that the pool was open to the atmosphere and that "Japanese authorities are saying that there is a possibility that the fire was caused by a hydrogen explosion."

Hydrogen explosions have caused the reactor buildings to blow up at the Unit 1 and 3 reactors, and the IAEA also reported an explosion last night at the Unit 2 reactor. Authorities did not immediately report damage at any of the four sites to the reactor containment vessels, the concrete-and-steel structures around the reactors designed to hold in radiation in the event of an emergency.

Yesterday, some experts were assessing the radiation risk from spent storage pools as greater than the danger from the reactors themselves, as emergency crews appeared to be warding off further reactor meltdowns with pumped seawater, and at least one pool -- at the Unit 3 reactor -- showed signs in satellite images of potentially being compromised and emitting steam directly into the atmosphere.

In a call with reporters, Robert Alvarez, a senior scholar with the progressive Institute for Policy Studies and former deputy assistant secretary for national security and the environment with the Energy Department, said if cooling water in the pools is lost and the spent fuel becomes partially or fully exposed to air, it can overheat and the zirconium protection around it can catch fire. "Then you have the potential for very very significant, long-term land area contamination," Alvarez said.

Indeed, overnight, the IAEA reported that radiation dose rates as high as 400 millisieverts per hour -- enough to cause excess cancers in four out of 100 people in just one hour, according to a National Academy of Sciences analysis -- were reported at the site. Those levels fell to 0.6 millisievert per hour several hours later, IAEA reported, which they said suggested that local levels of radioactivity were decreasing.

Thomas Cochran, a nuclear physicist, senior scientist with the Natural Resources Defense Council and member of the Energy Department's nuclear energy advisory committee, said that under normal circumstances, the pools do not present a radiation risk even if exposed directly to the outside air.

"It's got a lot of water in it, and it's got several meters of water above [the spent fuel rods], so you can peer over the side and you're shielded from the radiation by the water," Cochran explained, adding that a reprocessing facility in the United Kingdom maintains open-air pools on which seagulls and other birds regularly land.

But he said the occurrence of a fire indicates some sort of damage to the pool itself, to have allowed the water level to so quickly fall low enough for the used fuel to overheat.

"We're days away from this accident; you'd have to walk away from that pool for a long time for that water to evaporate away. So something else has to have happened," he said.

"The problem with this particular design is that the pool -- it's like building a concrete swimming pool up on the fifth floor. And if you start having explosions in the building, you should start to worry about the pool leaking," Cochran added.

This group of reactors all share the elevated spent fuel pool design, meaning the entire group is vulnerable to the same design flaw.

Cochran said some other plant designs put the pool underground, which makes it less vulnerable to an explosion, though an earthquake could still cause structural damage and cause such a pool to leak, especially if the quake far surpassed the design specifications for the plant as occurred in this case.

### **Storage pools a known issue**

U.S. nuclear regulators have considered the dangers posed by spent fuel pool vulnerabilities in the past.

Following the 2001 terrorist attacks in the United States, the National Academy of Sciences undertook a study, "Safety and Security of Commercial Spent Nuclear Fuel Storage," which focused primarily on the risks associated with a terrorist attack on a spent fuel pool and consequent radiation release.

The report concluded that spent fuel pools are needed at all operating nuclear power plants to store recently used fuel as it cools and that a fire of the zirconium protective layer around the spent fuel rods "could result in the release of large amounts of radioactive materials."

The report suggested certain relatively simple measures like rearranging the spent fuel assemblies in pools to more evenly disperse heat and putting in place redundant cooling measures. It also made other recommendations that were redacted on security grounds.

NRDC's Cochran criticized the decision by the Nuclear Regulatory Commission (NRC) to classify so much of the report, "ostensibly so you wouldn't assist potential terrorists," because "as a consequence you deny the public the chance to decide whether they agree with that analysis."

One finding of the report, echoed by several nuclear experts in recent days, is that "dry cask storage," in which partially cooled spent fuel is stored in concrete and steel structures, generally underground, is inherently safer than storage in pools.

Cochran said dry cask storage becomes possible two to four years after the fuel is retired from use, when the temperature drops enough that with proper ventilation, the zirconium cladding will not melt. "It would be extremely hot both thermally and radioactively at that point, but it wouldn't be hot enough to melt the cladding," he said.

Because dry cask storage does not require active cooling, it is inherently safer than a system that relies on power-dependent water cooling systems that can fail, as has happened at the Daiichi plants.

### **U.S. fleet**

According to General Electric Co., 32 boiling water reactor (BWR) Mark 1 units like those in use at the Daiichi plants are in operation worldwide, and experts say there are 23 comparable plants in the United States.

"The BWR Mark 1 reactor is the industry's workhorse with a proven track record of safety and reliability for more than 40 years. ...There has never been a breach of a Mark 1 containment system," the company said yesterday.

But Cochran believes the elevated pools are just one design element of the Daiichi plant setup that clearly needs further review in the United States.

"I think there are a lot of problems with these BWRs and Mark 1 and 2 containments, and there's a lot of work to be done to repair the safety deficiencies in the U.S. plants. Otherwise, they should be phased out," Cochran said.

"You don't design a reactor so that every time you get a partial-core melt you would blow the top off the reactor. There's obviously a design flaw in the hydrogen management. ... You don't have to be very smart to figure out that there was some failure in the design for managing that type of an event," Cochran said.

He said another clear design flaw lies with the regulatory requirements governing backup power for the reactors. It was an initial grid power outage to the plant from the earthquake, followed by failure of the backup diesel generators due to damage in the tsunami and depletion of four-hour backup batteries, that led to the cooling system failures in Fukushima.

#### **4 to 12 hours of battery backup**

Indeed, many scientists and environmental groups are pointing to the unfolding events as a wake-up call for U.S. regulators to go further in ensuring the country's 104 reactors have sufficient battery power to continue operating if power is lost and backup diesel generators fail.

The country's nuclear plants could lose independent off-site power sources and backup generators and slowly come to rely on batteries that only run for four to eight hours, said David Lochbaum, a nuclear engineer and director of the Union of Concerned Scientists' (UCS) nuclear safety program. Only a smaller group has batteries that can produce power for up to 10 hours, he said.

Lochbaum acknowledged that many plants are better prepared for disasters in the aftermath of the terrorist attacks of Sept. 11, 2001, both in terms of backup generation and personnel to fight fires, and "those might be sufficient to deal with what happened in Japan," he said.

Nuclear Energy Institute (NEI) Senior Vice President Tony Pietrangelo said today that nuclear reactors in the United States are in compliance with NRC's "station blackout rule," which requires nuclear facilities to develop plans and practices to continue operating when power is lost.

On a call with reporters today, Pietrangelo conceded that the loss of power factored into the situation at Japan's Fukushima Daiichi plant. Operators at the reactor lost power and three units "tripped" or shut down after the earthquake struck on March 11, at which time emergency diesel generators worked for about an hour until they were washed away by the tsunami and batteries were brought in.

But in the United States, some reactors -- Pietrangelo could not confirm how many -- install diesel generators underground for protection and, depending on the plant, have batteries that can last up to 12 hours. All U.S. nuclear plants, he said, are designed to sustain the most severe earthquakes for the region within which the plant is located.

When asked how the industry would feel about reactors being required to have more backup battery power, Pietrangelo said, "That's the kind of review we do to apply the lessons learned going forward."

Environmental groups have raised concerns about the "standard blackout rule" since it was implemented in the 1980s, calling into question whether the agency confirmed that all U.S. plants can cope with a total loss of power "at any time." Industry groups like NEI, on the other hand, submitted comments making clear that any requirements beyond the rule would prompt further formal rulemaking activities.

NRC conducted a study in 2003 that found all plants were complying with the rule, generally by adding diesel or gas turbine generators, and confirmed that all facilities reviewed had a "4- or 8-hour coping capability."

Lochbaum yesterday pointed to a handful of events in which nuclear power plants in the United States were knocked offline, generators failed and batteries were used as a last resort.

In 1998, a tornado struck the Davis-Besse nuclear power station, a pressurized water reactor in Ohio, and damaged the facility's access to external power. The plant was shut down and emergency diesel generators powered the safety system until external power could be restored, according to NRC.

In 1992, the Turkey Point nuclear reactor in Florida was damaged by Hurricane Andrew's winds of up to 145 miles per hour, causing a loss of power, according to NRC. In that situation, the backup diesel generators failed because of problems with moisture in the equipment, and remaining emergency diesel generators carried the load. The NRC report notes that the backup generators were crucial to pumping power into the facility.

"To say that this never happens" is wrong, said Jim Riccio, a nuclear policy analyst for Greenpeace. "There are examples ... even with a robust grid like ours, you're going to have problems."

### 3. **NUCLEAR CRISIS: Could Calif. reactors be next?** (03/15/2011)

**Colin Sullivan, E&E reporter**

SAN FRANCISCO -- California's coast and its nuclear power plants are unlikely to experience the kind of massive offshore earthquake or sustained tsunami that rocked Japan last week, but more local tsunamis from submarine landslides are possible, according to experts who study West Coast tectonics.

The two nuclear plants on the California coast operate near population centers near the Pacific Ocean. Pacific Gas and Electric Co.'s Diablo Canyon facility is close to San Luis Obispo, and Southern California Edison Co.'s San Onofre plant is just south of Los Angeles.

The generating stations, in operation since the mid-1980s, are built to withstand earthquakes of 7.0-7.5 magnitude, and both have tsunami walls that are 25 to 30 feet tall. But the plants are more threatened by onshore faults than offshore, with Diablo Canyon especially vulnerable given its proximity to the San Andreas Fault.

Costas Synolakis, director of the Tsunami Research Center at the University of Southern California, said the offshore earthquake zone close to either plant is not capable of producing the 8.9 magnitude quake that devastated Northeast Japan last week. Regions farther north, from the California line to British Columbia, are in much greater danger for that sort of event, he said.

Those areas are near what is called the Cascadia Subduction Zone, which is capable of producing the kind of tsunami that inundated Japan and leveled everything in its path. The zone last ruptured around 1700, so, in theory, a big quake is possible anytime.

"The Cascadia Subduction Zone ... is the only offshore earthquake zone [on the West Coast] capable of producing megathrust events, i.e., very large 'top 10' type earthquakes," said Synolakis, adding that Seattle is in far more danger than any spot south of the California-Oregon line for that kind of quake plus tsunami.

"The impact to Seattle could be devastating," he said.

The Cascadia zone is capable of a 9.2 quake, which "could happen any time," Synolakis said. Offshore faults close to either nuclear power installation in California are not likely to top 7.5.

Even so, threats from the Earth's volatile geology in Southern California are plentiful.

Onshore earthquakes are always a danger, and there is a chance submarine avalanches (also called landslides) triggered by quakes could produce local tsunami events that wash into either of the two California plants, both of which will soon have to be relicensed if they are to continue pumping out electricity.

Synolakis said submarine landslides "can generate a fairly large tsunami," though this sort of wave would not travel across the ocean. Such events are not usually considered during safety proceedings because they are so rare.

"These things can be fairly devastating, locally," said Synolakis, estimating that the maximum run-up onshore would be about 45 feet in the southern part of the state.

#### **'The real Earth is not perfect'**

Mark Legg, an offshore fault expert and geophysicist with Legg Geophysical in Huntington Beach, Calif., agreed that the Cascadia zone is the real threat for a coastal quake/tsunami event that might rival Japan's.

The last time something of that magnitude occurred off the California coast was more than 30 million years ago, Legg said, explaining that the North American plate is no longer "being shoved" (or subducted) under the continental margin offshore, as a plate was in Japan last week.

Legg noted that the largest local tsunami off California was caused by a quake in 1927 in Point Arguello, which produced waves of about 7 feet. But he was also hesitant to rule anything out, because even offshore quakes that would tend to move more horizontally -- as they would off the California coast -- can "slip sideways" and produce walls of water.

"The real Earth is not perfect," said Legg, explaining that California has a number of spots called transverses, one right off the coast of Santa Barbara, that could result in tsunamis if the sea floor ruptures at the right angle.

"Those are areas that could see tsunamis generated even in a strike-slip system," he said. "This is a problem which is still being sorted out in the scientific community."

Legg noted that the Bay Area's Loma Prieta quake, in 1989, whose epicenter was in the Santa Cruz Mountains south of San Francisco, led to a tsunami caused by the uplift of the thrust movement so close to the ocean. The area of the uplift extended offshore, creating a tsunami.

"It wasn't very big, so it didn't do much damage," Legg said. "But if the landslide were bigger, it could be a lot worse."

A "very large submarine landslide" documented from about 7,500 years ago created coastal waves in the 20- to 50-foot range, Legg said, calling an event of that magnitude a "worst-case" scenario.

It is those kinds of scenarios that have led some academics to question where we build nuclear capacity. Chris Goldfinger, director of the Active Tectonics and Seafloor Mapping Laboratory at Oregon State University, said the recent events in Japan could signal a need to revisit whether any society should build such plants next to fault zones.

"Building critical facilities on active faults is an inherently dangerous practice and should only be done when all scenarios are very well accounted for, as they were not in Japan, even though the Japanese take great care with safety issues," Goldfinger said.

### **Diablo Canyon relicensing**

For PG&E, the Japan quake comes just as the Nuclear Regulatory Commission is reviewing its application to relicense the 2,240-megawatt plant, to keep it operational through 2045. Edison is also expected to file for a new license, for San Onofre, which is about 2,200 megawatts in size.

The question of new seismic studies for both appears likely to dog the entire relicensing process, which tends to take about four years to complete. PG&E has already found itself in the crosshairs for claiming, in testimony submitted to the California Energy Commission in October 2008, that "there is no uncertainty regarding the seismic setting and hazard at the Diablo Canyon site."

A letter sent last month from 10 California lawmakers to the Blue Ribbon Commission on America's Nuclear Future noted that weeks later, in November 2008, the U.S. Geological Survey discovered a new offshore fault close the plant, making it the second active fault in the area.

"An intersection of the faults could significantly alter previously held assumptions about potential seismic activity and threat to Diablo Canyon," the lawmakers wrote, asking for a hearing before the Blue Ribbon Commission.

The utility is also trying to recover funds from ratepayers for the relicensing to the tune of \$85 million. That process is under way at the California Public Utilities Commission. PG&E did not return calls seeking comment.

## **4. NUCLEAR CRISIS: Radiation fears spur U.S. sales of potassium iodide pills** (03/15/2011)

**Hannah Northey, E&E reporter**

U.S. manufacturers of potassium iodide pills are reporting "overwhelming demand" and some temporary shortages, even though federal regulators say radiation from Japan's crippled Fukushima Daiichi nuclear plant is not expected to reach America.

Virginia-based Anbex Inc. reported yesterday it was out of potassium iodide pills until mid-April. A common form of salt, the compound is one of three FDA-approved drugs that block human and animal thyroid glands from absorbing excessive amounts of radiation. The U.S.-based arm of Swedish company Recipharm AB, which produces the potassium iodide ThyroSafe tablets, also is reporting "overwhelming need" and has temporarily shut down its online sales orders.

The Nuclear Regulatory Commission, which works with the Energy Department and other agencies to monitor radioactive releases and predict their path, said on Sunday that "all the available information" indicates small releases from the Fukushima reactors were being blown out to sea. Given the distance between Japan and Hawaii, Alaska, the U.S. territories and the West Coast, NRC said those regions were not expected to experience any harmful levels of radioactivity.

The International Atomic Energy Agency (IAEA) said Fukushima Daiichi's Unit 2 experienced an explosion yesterday that may have damaged the containment vessel, on the heels of explosions at Units 1 and 3. The agency also reported a fire at Unit 4.

The Japanese government is evacuating residents within a 20-kilometer zone around the plant, and advising people within 30 kilometers to take shelter indoors. The government also is distributing iodine tablets, according to the IAEA, and a 30-kilometer no-fly zone has been established around the plant.

The NRC is ramping up its own efforts, saying yesterday it was sending more of its officials to Japan to help the Fukushima Daiichi plant operators cool the reactors, as well as offering shelter, potassium iodide, staffing and equipment for victims of the earthquake and tsunami.

Meanwhile, attention in the United States has turned to increased scrutiny of the country's nuclear fleet and how to protect Americans in the event of such a crisis, including the purchase and distribution of potassium iodide.

California health officials issued a statement on their website informing the public that taking potassium iodide pills is not recommended at this time, since the NRC said Japan's nuclear crisis presents no danger to the state.

But Rep. Edward Markey (D-Mass.) is once again pushing the federal government to distribute potassium iodide to people within a 20-mile radius of a nuclear power plant.

The NRC currently requires states with populations within the 10-mile emergency planning zone of a commercial nuclear reactor to considering dispensing potassium iodide as a protective measure along with evacuations and shelter provisions.

Markey says members of the Obama administration have rebuffed his requests, despite repeated letters.

## **Potassium iodide**

The Food and Drug Administration (FDA) issued a final guidance on potassium iodide in 2001 to inform decisions by regulatory agencies, including the NRC and state and local governments, on the safety of the pills. That same year, the NRC implemented its 10-mile rule.

FDA found, based on studies following the 1986 nuclear meltdown in Chernobyl, that potassium iodide effectively blocks the thyroid from taking up radioiodine, and its use will "be effective in reducing the risk of thyroid cancer in individuals or populations at risk for inhalation or ingestion of radioiodines."

The FDA said short-term administration of the drug is safe, but could include side effects of salivary gland inflammation, gastrointestinal disturbances, allergic reactions and minor rashes. The agency also said people with iodine sensitivity should not take the drug.

The agency spelled out that the pills are effective for 24 hours at a time, and that risk of inhaled radioiodines at the "time of the emergency" depends on the magnitude of the release, wind direction and other atmospheric conditions, and "thus may affect people both near to and far from the accident site."

The pills do not guard against the body's uptake of other radioactive materials, the FDA said, provide no protection against "external irradiation of any kind" and should be used in conjunction with evacuation plans, shelters and control of foodstuffs.

The FDA is now directing the public to buy potassium iodide from a handful of companies, including Anbex, Recipharm, and Fleming & Co. Pharmaceuticals.

According to NRC documents, the shelf life for 130-milligram potassium iodide pills is seven years, and the 65-milligram tablets have a shelf life of six years.

Markey has raised concerns that the drug should be distributed to a larger number of inhabitants surrounding U.S. nuclear facilities.

Markey sponsored legislation that became law in 2002 making potassium iodide (KI) available to state and local governments within a 20-mile radius of nuclear reactors.

But the George W. Bush and Obama administrations decided against implementing the law, Markey said, and are "denying communities access to stockpiles of" potassium iodide. Markey sent a letter yesterday to John Holdren, the president's director of the Office of Science and Technology Policy, asking the administration to implement the amended Public Health Security and Bioterrorism Preparedness and Response Act of 2002.

"Japan reportedly is now distributing KI to its citizens," Markey wrote. "We should not wait for a catastrophic accident at or a terrorist attack on a nuclear reactor in this country to occur to implement this common-sense emergency preparedness measure."

## JAPAN EARTHQUAKE

### 5. NUCLEAR CRISIS: Weighing fears of radiation doses in Japan

(03/15/2011)

Paul Voosen, E&E reporter

For a moment last night -- early morning in Japan -- dire news emerged from the Fukushima Daiichi nuclear power plant. For the first time, measured radiation levels briefly spiked toward dose ranges known to cause radiation sickness and serious health problems.

But since that single detection event, which caused the evacuation of noncritical personnel around the plant, radiation levels at the plant have subsided, according to the International Atomic Energy Agency. The IAEA is closely collaborating with the Japanese government on monitoring the Fukushima plant.

The high-dose event detected at the plant hit 400 millisieverts (mSv) per hour, a rate that could cause radiation sickness within a few hours. Sieverts, typically measured in millisieverts or microsieverts -- an important rate difference -- are the international standard for measuring the effective health risks different radiation types will have on the human body.

Since that event, radiation levels at the plant dropped to 11.9 mSv per hour and then, six hours later, 0.6 mSv per hour, a level well below immediate health concerns but still equivalent to receiving six chest X-rays in one hour.

It is uncertain what caused the radiation spike. Japan's chief Cabinet secretary, Yukio Edano, today told the Japanese television network NHK TV that debris from the collapse yesterday of the external building around the plant's No. 3 reactor and containment structure may have been the cause, but that has not been confirmed.

When considering the dose levels circulated in the past 24 hours, it is important to keep a few things in perspective. First, radiation doses are cumulative, measured in terms of dose per hour, day or year. For example, an astronaut on a typical half-year mission on the International Space Station will record a dose of up to 150 mSv, in total, over that time -- well below the per-hour dose briefly detected at Fukushima.

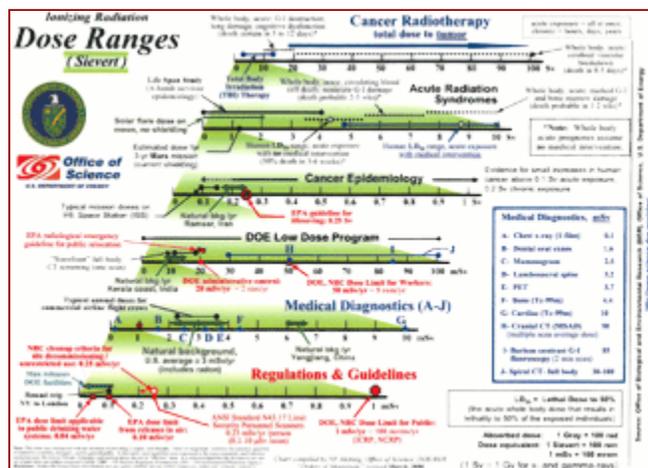
While a dose of 400 mSv per hour is considered a high-risk event -- small increases in cancer risk can begin to be detected from that point -- acute exposure begins to take a severe health toll at one level higher of exposure. At 4,000 mSv of total exposure, a level that has not been reported, red blood cells begin to expire and the gut takes moderate damage, often leading to a patient's death, especially if untreated.

The radiation detected at the plant, however, is largely a health concern for local workers. (*For more on understanding radiation, [click here.](#)*) If the broader public receives any additional radiation exposure -- residents of the United States, for example, are exposed to about 5 mSv a year of radiation through natural and medical sources -- it will come through ingesting wind-borne, radioactive particles released by the plant.

U.S. regulators have said radiation from Japan's crippled Fukushima Daiichi nuclear plant is not expected to reach the United States.

The particles of most concern are iodine-131 and cesium-137. The iodine isotope emits electrons, subatomic particles that are unable to penetrate the skin. If the iodine is ingested and migrates to the thyroid in large enough quantities, however, these electrons -- called beta radiation -- can do serious long-term damage to the thyroid, causing cancer.

Cesium-137, meanwhile, emits charged light, massless particles that can stream through the body, known as gamma radiation. However, the ultimate concern with cesium also involves ingestion, as the element can concentrate in bones, continuing to emit gamma radiation as it does. Unlike iodine, which quickly falls in concentration, reduced by its own radioactivity, cesium-137 is persistent, lingering for decades before its decay drops its size in half.



It is uncertain, currently, how much cesium and iodine have escaped the plant.

Chart prepared by DOE's Office of Science showing regulatory standards and health effects of low- and high-dose radiation. Click the image for a larger version. Photo courtesy DOE.

Radiation doses can be difficult to understand.

Sieverts are used to estimate doses to the entire body; directed exposure of organs sensitive to radiation can be problematic at lower doses, and vice versa. Radiation targeted directly at cancer tumors is measured in whole sieverts, but thanks to its targeting, the more direct health effects are avoided.

While any listing of health impacts from radiation is incomplete, here is a sample of dose ranges, taken from an [explanatory chart](#) prepared by the Energy Department's Office of Science:

- 0.1 milliSievert (mSv), single exposure = one chest X-ray.
- 3 mSv per year = average U.S. exposure to natural background radiation.
- 3 mSv per year = average additional dose for commercial airline workers.
- 3.7 mSv, single exposure = one PET scan.
- 50 mSv per year = limit for DOE nuclear workers.
- 30-100 mSv, single exposure = one full-body CT scan.
- 100 mSv and above, single exposure = evidence for small increase in cancer incidence.
- 200 mSv per year = natural background radiation in Ramsar, Iran.
- 1,000 mSv (1 Sv) = estimated dose for a three-year mission to Mars.
- 4 Sv, single exposure = 50 percent risk of death in three to six weeks, without treatment.
- 8.5 Sv, single exposure = 50 percent risk of death in three to six weeks, with treatment.
- 11 Sv, single exposure = certain death in five to 12 days without medical intervention.
- 100 Sv, single exposure = certain death in zero to 5 days without medical intervention.

## 6. **JAPAN: Death toll rises, stocks plunge, foreigners flee escalating nuclear crisis** (03/15/2011)

In just four days, a cascade of catastrophes has transformed Japan from one of the world's most comfortable countries into one of its most afflicted.

Thousands of people are dead and tens of thousands have gone days with little food and water and almost no heat in Asia's wealthiest country after it was battered with three related catastrophes: a 9.0-magnitude earthquake and countless aftershocks, a tsunami that devastated the country's shoreline and an escalating emergency at the Fukushima Daiichi nuclear power plant.

Today, a dangerous plume of radioactive material leaked from a coastal power plant, causing panic among stock traders and evacuation orders from foreign countries.

Not only did the radiation leak prompt mass evacuations and a no-fly zone for a 19-mile radius around the facility, but it left the country with an energy shortage that has caused power cuts at some refugee shelters even as the weather turns colder. Local officials, who are having trouble finding enough space for morgues and coffins, can't get dry ice to pack the bodies because of the blackout.

Following a 6:14 a.m. explosion at the Unit 2 reactor this morning (5:14 p.m. yesterday in Washington), Prime Minister Naoto Kan addressed the nation.

"Please listen to my message calmly," he said, before explaining that radiation had escaped from malfunctioning reactors at Fukushima Daiichi into the environment.

Local readings suggested a very high risk, he said, although nine hours after the blast they had dropped to lower, but still elevated, levels.

"The radiation level has risen substantially," Kan said. "The risk that radiation will leak from now on has risen."

The government issued orders for people within 12.5 miles of the plant to evacuate and those within 19 miles to stay indoors. But the government's top spokesman said the 13 million people in Tokyo, 150 miles to the south, would be safe.

Citizens weren't sure whether to trust the little information they received from the government, though, and lines snaked at Tokyo's Narita and Haneda international airports as people sought flights far away from the lingering threat of radiation poisoning.

Meanwhile, stocks have plummeted nearly 17 points in the first two business days since the crisis. Today, the Nikkei 225 recorded a record drop, closing down 10.55 percent at 8605.15. Yesterday saw a 6.2 percent drop.

"What has happened in the stock market reflects the amount of uncertainty -- the different rumors that are flying around," said Edwin Merner, a 30-year-old Tokyo resident and president of the Atlantis Investment Research Corp. "A certain panic thinking that is going on. I think the main thing is, people just don't know. And they don't necessarily trust the information they have been hearing" (Chico Harlan, [Washington Post](#), March 15). -- AS

## 7. **GERMANY: Seven pre-1980s nuclear plants will be shuttered**

(03/15/2011)

Germany will shut down seven of its nuclear power plants that began operating before 1980, the government announced today.

Chancellor Angela Merkel said the closures were part of a nuclear policy moratorium imposed in light of Japan's crisis. She said the shutdowns would be carried out by government decree as they have not yet reached an agreement with the plants' operators.

Environment Minister Norbert Roettgen said it was uncertain if all nuclear power plants shut down during the three-month moratorium would remain closed or if they would later be reconnected to the grid.

Yesterday, Merkel moved to suspend an unpopular coalition decision to extend the life of Germany's 17 nuclear power plants, which drew accusations of trickery and political maneuvering.

"She just wants to get through the provincial assembly elections," said Social Democrat leader Sigmar Gabriel. "The whole thing doesn't make sense and is really just a transparent trick" (David Stamp, [Reuters/Yahoo News](#), March 15). -- PK

## 8. **ELECTRICITY: Crisis unlikely to derail developing nations' nuclear plans** (03/15/2011)

The disaster in Japan has some energy officials in the United States and Europe thinking twice about nuclear expansion, but India, China and some other energy-hungry countries say it isn't pausing their plans to continue using nuclear power plants and building new ones.

Acknowledging the need for safety, they say their booming energy needs give them little choice but to keep investing in nuclear power.

"Ours is a very power-hungry country," said Srikumar Banerjee, the chairman of India's Atomic Energy Commission, during a news conference yesterday in Mumbai. Almost 40 percent of India's 1.2 billion population does not have regular access to electricity, he said. "It is essential for us to have further electricity generation."

And China, which has the world's most ambitious nuclear expansion plans, will not be deterred by Japan's problems, Vice Minister of Environment Zhang Lijun said Saturday.

With those two countries leading the expansion -- and countries elsewhere in Asia, Eastern Europe and the Middle East also turning to nuclear power amid rising fossil fuel prices and concerns about climate change -- the world's fleet of 443 nuclear reactors could more than double in the next 15 years, according to the World Nuclear Association, an industry trade group.

Chinese and Indian officials have been careful to note that their plans include a focus on safety. India's Department of Atomic Energy will review all safety systems at India's nuclear plants, "particularly with a view to ensuring that they would be able to withstand the impact of large natural disasters such as tsunamis and earthquakes," India's prime minister, Manmohan Singh, said yesterday.

And Sunday, Xie Zhenhua, vice chairman of China's National Development and Reform Commission, said, "Evaluation of nuclear safety and the monitoring of plants will be definitely strengthened."

Although India's nuclear energy establishment has seen some stiff opposition from environmentalists and villagers, analysts say the Japan crisis is unlikely to stir up significantly more public protest, given the country's desperation for more electricity.

"If 1 percent of the population was against nuclear power, you might now get 2 percent," said G. Balachandran, a consulting fellow at the Institute for Defense Studies and Analysis, a policy research group in New Delhi. "I am really not concerned about the opposition that may develop around this" (Timmons/Bajaj, [New York Times](#), March 14). -- AS

## 9. **NUCLEAR: GE defends design of Japanese reactors** (03/15/2011)

General Electric Co., the supplier of Japan's now-stricken reactor, defended the design of its product, saying the containment system is safe and reliable.

The Fukushima Daiichi nuclear power plant is equipped with a boiling water reactor containment system provided by GE 40 years ago. Critics of the product, called Mark 1, said it is not as robust as later models.

GE dismissed the criticism.

"The BWR Mark 1 reactor is the industry's workhorse with a proven track record of safety and reliability for more than 40 years," said Michael Tetuan, spokesman for GE Hitachi Nuclear Energy. "There has never been a breach of a Mark 1 containment system."

Japanese engineers are working to cool the cores of three reactors at the plant, two made by GE and one by Toshiba Corp., after last week's earthquake.

The Toshiba reactor was damaged during a separate explosion overnight. It appears to have sustained damage only to the concrete building outside the reactor container.

The Japanese government and Jeffrey Immelt, chief executive of GE, have said the steel containers surrounding their reactors have not been affected (Andrew Dowell, [Wall Street Journal](#), March 15). -- PK

## 10. **HEALTH: Emergency workers in Japan face radiation exposure** (03/15/2011)

As risk of radiation exposure mounts, many wonder how long workers at Japan's stricken nuclear reactors can keep struggling to prevent full meltdowns.

The workers have been using fire equipment to pump seawater into three failing reactors while fighting fire at a fourth reactor.

All four reactors have been contaminated by radioactive isotopes, and radiation levels continue to rise. Technicians who have not been evacuated risk escalated exposure and may have to be replaced if work is to continue.

"If they exceed a certain amount, they can't go back in for a day or a week or longer," said Lew Pepper, a professor at Boston University's School of Public Health.

The pool of replacements for this kind of work is limited so there may not be many people to call on in the event that current workers are given reprieve.

Arnold Gundersen, a consultant who worked in American plants that are nearly identical to the stricken Japanese facilities, said it is likely the company is calling in retirees and workers from unaffected plants. They may also be asking current workers to volunteer themselves for exposure to more radiation. Many Japanese workers might be willing to take that risk, said Gundersen.

Full bodysuits and air packs are standard gear for people working close to the reactor, but such clothing may fail to block gamma rays and other penetrating radiation that can lead to cancer or, in some cases, near-term illness or death.

During the 1986 Chernobyl accident in Ukraine, emergency workers were exposed to high levels of radiation, sometimes without being aware of the dangers. More than two dozen died of acute radiation illness.

"People in Chernobyl were just overexposed," Pepper said. "The outcome for those folks was death."

Determining exposure limits is typically contingent upon three factors: distance, time and shielding. Extensive contamination in Japanese plants means distance and shielding are no longer considerations, and time is therefore the only variable.

In Japan, there is no time to train volunteers to help with the effort.

"You need somebody who is familiar with the plant, because you need somebody to do it now," Gundersen said (Henry Fountain, [New York Times](#), March 14). -- PK

## 11. STATES: Texas nuclear expansion halted while Ga. moves ahead

(03/15/2011)

Two planned reactors in Texas have been suspended following the threats of a nuclear meltdown in Japan.

The reactors were an expansion at the South Texas Project nuclear plant that was expected to be licensed. Their construction was scheduled to begin in 2012, but utility company CPS Energy and NRG Energy Inc., the project's majority partner, have agreed to halt talks over the utility purchasing power from the reactors, CPS CEO Doyle Beneby announced yesterday.

NRG had planned to build the new reactors using an investment from Tokyo Electric Power Co., which owns the Fukushima Daiichi plant in Japan that was damaged by Friday's earthquake and tsunami, and loan guarantees from the Japanese government. The two are unlikely to invest in nuclear energy in the United States after the incidents in Japan.

NRG has had trouble finding new investors because of a lower demand for electricity and the low price of natural gas. The company had announced that it would make a final decision this year on whether to continue the project.

"Until more information is available, it makes sense to put our discussions on hold," Beneby said. "My first thoughts are for the people of Japan ... and also to the Tepco work force that is struggling to maintain control of the ... nuclear facilities in such extreme conditions" (Tracy Idell Hamilton, [Houston Chronicle](#), March 14).

Unlike in Texas, Atlanta-based Southern Co. said it will continue on schedule with the country's first nuclear reactors in decades. The company's subsidiary, Georgia Power, and partners are attempting to build two Westinghouse Electric Co. AP1000 reactors at Plant Vogtle in Georgia.

Approval for the reactors by the U.S. Nuclear Regulatory Commission could come as early as the summer. The company is also hoping for a license to operate the plant by the end of this year.

"We do not anticipate that events in Japan will impact our construction schedule or our ability to stay on budget," Southern Co. spokesman Todd Terrell said ([AP/Yahoo News](#), March 14). -- AP

## 12. CALIFORNIA: Crescent City is a 'tsunami magnet' (03/15/2011)

Since the tidal gauge was installed in Crescent City's boat basin in 1934, the small port on California's northern coast has seen 34 tsunamis of all sizes.

The latest, on Friday, took one life about 20 miles to the south, where a young man was on the beach taking pictures at the mouth of the Klamath River. The waves also ripped up docks in the boat basin, sinking 11 boats and damaging 47, authorities said.

"Crescent City is what I call a tsunami magnet," said Lori Dengler, a professor of geology and chairwoman of the Geology and Oceanography departments at Humboldt State University.

"When you look at the contiguous 48 states, there is no question that Crescent City has had more damage and typically has the highest water levels recorded at any West Coast site, no matter where it comes from -- whether it comes from Chile, or Alaska or Japan," she said.

This time, the port was saved from more severe damage because the surge hit at low tide, keeping it within the breakwalls around the harbor.

On Good Friday, 1964, the town wasn't so lucky. When a huge earthquake in Alaska's Prince William Sound sent bigger surges down the coast, 11 people were killed and 29 city blocks wiped out.

To a boat at sea, Japan's tsunami wave, which raced across the ocean at the speed of a jet airplane, was hardly noticeable. At about 3 or 4 feet high, it was a bump in the ocean. But as it moved eastward, the energy bounced off a huge underwater ridge that extends out from Mendocino, which deflected part of it toward Crescent City. The deflection slowed the wave, but made it higher.

As it moved into shallower water, energy built and it was focused again by the half-moon shape of the bay. The first surges to hit the shore were small, but as they bounced back they became bigger. The biggest surge to hit the tidal gauge was 8.1 feet, said Dengler.

In Japanese, the word tsunami means harbor wave, and often the worst physical damage comes once the waves enter a harbor, according to Costas Synolakis, professor of civil and environmental engineering and director of the Tsunami Research Center at the University of Southern California.

"What we are realizing in California is if we have tsunamis coming from far away, we are not going to see huge waves of the size we saw in Japan," he said. "But we are going to have these very strong currents that essentially destroy ports" ([AP/Washington Post](#), March 14). -- AS

## CONGRESS

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### 13. **APPROPRIATIONS:** Japanese nuclear crisis dominates DOE budget hearing (03/15/2011)

**Katie Howell, E&E reporter**

Energy Secretary Steven Chu today used a House Appropriations subcommittee hearing to try to quell fears about U.S. nuclear energy safety and to reassure nuclear advocates that the Obama administration remains committed to the energy source.

"The American people should have full confidence that the United States has rigorous safety regulations in place to ensure that our nuclear power is generated safely and responsibly," Chu said during the Energy and Water Development Subcommittee hearing.

"Information is still coming in about the events unfolding in Japan, but the administration is committed to learning from Japan's experience as we work to continue to strengthen America's nuclear industry," he added.

His comments come days after an earthquake and tsunami devastated Japan and threatened a number of nuclear reactors there.

Chu said the "world learns a lot from each new incident" and that the United States is "ever increasing our vigilance in nuclear safety."

He said current efforts are geared toward helping the Japanese government and power companies cool down the reactors and stop leaking. "Then, we'll learn what happened and we'll look at our own reactors," Chu said.

But he indicated America's 104 operating nuclear plants are already safe. Those in earthquake-prone areas are built to withstand conditions well beyond the worst earthquake that geologists say a region could experience. And reactors situated near coastlines are built with tsunami protections, he said.

"We look at the maximum size geologists say could ever happen, and then we design above and beyond that," Chu said.

He also touted reactor technology under development in the United States and the oversight of the Nuclear Regulatory Commission, an autonomous Energy Department agency.

But lawmakers appeared more concerned about the administration's commitment to continue nuclear energy development and stressed that the disaster in Japan and the current political unrest in North Africa highlight the need for a comprehensive energy policy.

"Whether natural or man-made, we must be able to confront disasters ... with diversity of supply that doesn't leave" the United States tied to one energy source, said Rep. Rodney Frelinghuysen (R-N.J.), chairman of the subcommittee. "To the administration's credit, after a 30-year hiatus, the U.S. is now committing more resources to nuclear power. I hope to hear about your own commitment as President Obama's chief spokesman on energy policy."

Chu stressed that all forms of energy production involve risks and that the Japanese crisis may yield important safety lessons like the BP PLC oil spill in the Gulf of Mexico did last summer.

"Whenever there's an incident such as what's happening in Japan, we pay close attention to that," Chu said. "We still believe that despite the tragedy in Japan, we can learn lessons, and it's probably premature to say anything but we will learn from this. All our baseload forms of energy right now do produce risk."

## 14. **POLITICS:** Christian Coalition visits Hill for energy discussion

(03/15/2011)

**Sarah Abruzzese, E&E reporter**

The Christian Coalition of America came to Capitol Hill today, not to proselytize or discuss issues like abortion or gay marriage, but to talk about the United States' energy policy and the need to end the country's dependence on foreign oil.

The conservative group often comes to Washington, D.C., to discuss issues with lawmakers, but the "Capitol Hill Roundtable Discussion on Energy" marked the first time the group has focused on energy issues with members of Congress.

The group founded by the Rev. Pat Robertson has traditionally focused on social issues but has broadened its reach in recent years to include the environment and related topics.

Announcing the event, the coalition said in a statement, "We believe that there needs to be a conservative discussion on a national energy policy that speaks to the values of energy independence, national security, prosperity, family and stewardship. That is why we are sponsoring this discussion."

Among the speakers was Sen. Dick Lugar (R-Ind.) -- a target of conservatives as he prepares to run for a seventh term next year. He told the assembled group of more than 50 people that "solving our energy crisis is fundamental to ensuring the security, economy and well-being of all Americans."

Larry Schweiger, the president and CEO of the National Wildlife Federation, lauded the president and CEO of the Christian Coalition, Roberta Combs, for taking a stance that is unusual in the conservative community. Schweiger noted that energy independence is a "family value as well as an issue of faith."

Schweiger said he was concerned about the country's energy policy and that the United States needs to be self-sufficient, end oil subsidies and protect human and natural environments and, "finally, we ought to be strengthening the economy of this nation."

Other speakers who addressed the group were C. Boyden Gray, who was a U.S. special envoy, White House special counsel and ambassador to the European Union under Republican administrations; Rep. Roscoe Bartlett (R-Md.); Sen. Lindsey Graham (R-S.C.); Sen. Richard Burr (S.C.); and Rear Adm. John Nathman, the retired former commander of the U.S. Fleet Forces Command.

Gray said, "The United States is drowning in substitutes for oil."

He said the country must become more reliant on natural gas, which is plentiful in the United States, to become less dependent on oil.

A speaker representing the nuclear industry opted not to come to the event in light of the ongoing crisis in Japan.

Gray spoke about the perils the nuclear industry is facing as well as the unrest in the Middle East that is negatively affecting gas prices.

"The solution to it is not going to be found in 'Drill, baby, drill,'" Gray said, "because the increase in U.S. production is not going to be big enough to impact the price."

Meanwhile, Burr promised that legislation he has crafted with Sen. Saxby Chambliss (R-Ga.) will be introduced soon that focuses on promoting multiple forms of energy, including nuclear.

That is not to say that the country has not been "impacted by what has happened over the weekend, the tragedies in Japan," he said -- only that it will take time to figure out exactly what happened.

Gray said the best way is to find a solution to the energy shortage that is not linked to the price of oil and that the country must develop products that are not "held hostage" to events in the Middle East.

He went on to say that "rising oil prices also threaten job growth and economic recovery."

Bartlett said the country reached peak oil production in 2006 and that the United States is now supplementing it with unconventional oil like tar sands from Canada.

"We have got to move to renewables," Bartlett said. "The solution to this problem is not 'Drill, baby, drill' -- it is conservation."

## 15. **CLEAN TECH: New Senate bill would reinstate manufacturing credit**

*(03/15/2011)*

**Katie Howell, E&E reporter**

Ohio Democrat Sherrod Brown today led a group of Senate Democrats in floating legislation to renew a tax credit for clean energy manufacturing.

The bill would reinstate the Advanced Energy Manufacturing Tax Credit program, or 48C, which provides a 30 percent investment tax credit for manufacturing equipment for renewable energy projects, batteries, electric cars, energy conservation technologies or technologies that capture and store carbon dioxide or otherwise reduce greenhouse gas emissions.

The program was originally funded by the 2009 stimulus law but was oversubscribed, and dozens of eligible projects remained in the pipeline after initial funds ran out.

"Clean energy is a high-growth, 21st-century industry in which American manufacturers can and should play a central role," Brown said in a statement. "We should renew the 48C program, so that other clean energy manufacturers in my state and across America can take advantage and add jobs at the same time."

Democrats have been pushing for months without success to renew the program and provide more funding.

Brown's bill is co-sponsored by Democratic Sens. Debbie Stabenow of Michigan, Maria Cantwell of Washington and Bob Casey of Pennsylvania.

## **POLITICS**

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## 16. **WHITE HOUSE: CEQ counsel defends climate report against GOP attacks** *(03/15/2011)*

**John McArdle, E&E reporter**

A White House official came to the defense today of a recent report on government preparations for global warming-induced weather changes after Republicans attacked the effort as a backdoor bid to regulate greenhouse gas emissions.

At issue is the White House Interagency Climate Change Adaptation Task Force report that proposes government responses to things like an increased frequency of severe storms and other events caused by changing weather patterns.

"In and of itself, it doesn't accomplish any emissions reductions. What it does is have the federal government being smart about its infrastructure and operations," said Gary Guzy, the second in command at the Council on Environmental Quality. "It's not even really a policy debate. It's a debate about good operations and sound government and sound management, and this is what we should be about."

But that is not how Sen. John Barasso (R-Wyo.) sees the debate.

Late last month, Barasso sent a letter to CEQ Chairwoman Nancy Sutley, asking about possible economic implications of the report and the policies that may stem from it. Barrasso called the report part of the Obama administration's attempt to implement "job killing cap-and-trade policies" that will "weaken our energy security and decrease economic growth" (*E&E Daily*, March 1).

The report, released Oct. 5, 2010, does not deal with the mitigation of greenhouse gas emissions through a program like cap and trade. It focuses instead on things like increasing local government water-use efficiency to prepare for more frequent droughts and relocating key facilities away from coastal areas vulnerable to sea-level rise and hurricanes.

Barrasso has introduced a bill aimed at barring the federal government from implementing any regulation related to climate change, whether it has to do with cutting industrial greenhouse gas emissions or not.

But Guzy said the report is simply recommendations for how the public sector can deliver better services while protecting its infrastructure and investments.

"It's how well-run companies in the private sector behave, and it's incumbent upon us as stewards of government resources to do that," he said.

Guzy made his comments after an appearance this morning at the General Services Administration's Interagency Resources Management Conference in Washington, D.C.

During his panel appearance alongside top officials from GSA, the Department of Energy and the Department of Defense, Guzy also took on an issue that has riled Capitol Hill: government regulations.

The White House and Republicans are currently in a political tug of war over who should control the process of streamlining government regulations that stifle the economy. Both agree that red tape needs to be cut, but the White House and Democrats worry that Republican efforts could roll back regulations to the point that could threaten the health and safety of Americans.

In a discussion this morning about the future of the transportation industry, Guzy defended some regulations as being beneficial to both the health and the economy of the United States.

He specifically pointed to a joint rule by U.S. EPA and the Transportation Department last year that boosted automobile and light-truck efficiency and greenhouse gas standards for model years 2012 to 2016. It was a rule that was developed in conjunction with California -- which was considering releasing its own standards -- as well as auto manufacturers, trade associations and unions.

Guzy said the effort provided both market stability for automakers and better protections for Americans.

It was accomplished "with the support of industry, without litigation and saves our country some 900 million barrels of oil" over the course of the program, he said.

"It's so successful that industry came back to us and said, 'Regulate us again,'" he added, referring to the ongoing development of fuel efficiency standards for model years 2017-2025.

Earlier this year, California announced it would again coordinate the release of its updated light-duty vehicle standards with the federal government's planned release later this year, a move that gave stakeholders hope that there will be alignment in requirements.

## **17. CAMPAIGN 2012: Haley Barbour scorches Obama's economic and energy policies** (03/15/2011)

In a speech to Chicago business executives yesterday, Mississippi Gov. Haley Barbour, a prospective GOP presidential candidate, lambasted President Obama's economic and energy policies but stopped short of criticizing the incumbent's cautious approach to Libya.

Speaking to the political action committee of the Chicagoland Chamber of Commerce, Barbour accused Obama of adopting an energy policy that was more of "an environmental policy," doing little to advance domestic oil production. He also said the president has never deemed \$4-a-gallon gasoline "unacceptable." But, unlike other critics, Barbour did not disparage Obama for his circumspect on Libya.

"I think we need to be cautious about being quick on the trigger," he said. "The idea of nation-building, in my opinion, is something we need to be very, very, very careful about."

Barbour did, however, excoriate the president for what he deemed out-of-control federal spending, especially on entitlement programs.

"Despite his failure of leadership, the structural changes need to put entitlement programs on a sustainable path must be the centerpiece of the next stage of government reform that's been under way for over 30 years," Barbour, a former political director in the Reagan White House, said.

He hailed the controversial actions of Republican leadership in Wisconsin, Indiana and Ohio as a "courageous and necessary fight to reign in excessive government spending" by reforming "unsustainable entitlement in public-sector union benefits" (Rick Pearson, [Chicago Tribune/Los Angeles Times](#), March 14). -- AS

## ENERGY

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### 18. OIL AND GAS: Petroleum trade group stresses its safety role

(03/15/2011)

**Mike Soraghan, E&E reporter**

The American Petroleum Institute is stressing that it's not just about lobbying but also about ensuring safety.

API, the oil and gas industry's main trade group, held a conference call today with reporters to outline the group's history of setting standards for pipelines, offshore oil rigs and onshore gas wells.

"It is a heritage that offers every American the reassurance that we are doing the right things to protect our workers, the communities where we operate and the environment," said David Miller, director of API's standards program.

The industry has found itself under scrutiny in the wake of pipeline explosions, including one in Pennsylvania last month that killed five people; the Deepwater Horizon explosion and spill last year in the Gulf of Mexico; and growing concern about the effect of a drilling process called "hydraulic fracturing" on drinking water.

Earlier this year, API chief Jack Gerard chafed at a recommendation by the presidential commission studying the Gulf spill that called for an independent, self-policing safety watchdog institute.

"Outside of Washington, D.C., API is known as a standards-setting group -- we've been doing this since 1924," Gerard said ([E&ENews PM](#), Jan. 12).

In today's conference call, API officials lamented that their safety role is poorly understood by the public.

"It is clear to us that there is an immense lack of knowledge about the role API and the industry it represents play in ensuring safe operations in every segment of the industry," Miller said.

### 19. NUCLEAR WASTE: DOE lacks strategy for modeling cleanups --

GAO (03/15/2011)

**Emily Yehle, E&E reporter**

The Department of Energy doesn't have a "comprehensive strategy" for ensuring the quality of the computer models it uses for cleanups of nuclear waste sites, the Government Accountability Office says in a new [report](#).

DOE is responsible for treating hazardous waste left behind after nuclear weapons programs and energy research. The process can be complicated: Some radioactive waste is stored in leaky underground tanks that have contaminated soil and groundwater.

Officials consequently rely on computer models to determine the extent of the damage and the best way to treat it. But GAO found that DOE's Office of Environmental Management (EM) does not regularly ensure that contractors are using those models correctly.

"EM's failure to fully oversee its contractors' implementation of quality assurance procedures has led to a reduced level of confidence that the models reasonably represent the conditions they are meant to simulate," GAO analysts wrote. "In several cases, we found necessary quality assurance reviews were not conducted."

DOE spends billions of dollars to clean up the sites, and officials estimated last year that the total cost could reach \$329 billion. Two sites account for about 60 percent of the waste: the Hanford Site in Washington state and the Savannah River Site (SRS) in South Carolina. Much of the cleanup work is done by contractors.

In a response to the report, DOE officials said they have standards to ensure the computer models' quality. GAO did not disagree; instead, analysts contended that the agency does not provide specific guidance to EM on how to ensure those standards.

In a review of eight cleanup decisions at Hanford and SRS, GAO analysts found that EM conducted required quality assessments of computer models in only three cases. That can be detrimental when such models "often contribute to the basis for cleanup decisions that can cost hundreds of millions of dollars to implement," analysts wrote.

GAO recommended that DOE develop a comprehensive strategy for managing computer models "to promote consistency, reduce duplication, and ensure sharing of lessons learned."

DOE spokeswoman Katinka Podmaniczky said EM adheres to industry standards but also "continuously looks for ways to improve in both model development and application." The agency already has begun several initiatives, including one that aims to incorporate newly developed computing capabilities for predicting the movements of subsurface contamination.

"EM will continue to work with our regulators and other stakeholders to determine and apply appropriate models to support cleanup decision making, and will incorporate the GAO recommendations as part of our ongoing Journey to Excellence in the EM program," she said in an e-mail.

[Click here](#) for the GAO report.

## 20. **NATURAL GAS: Ark. quakes quiet following injection well shutdowns** (03/15/2011)

Although it may be too early to draw a definitive connection, the number and severity of earthquakes in Arkansas have decreased significantly since two injection wells in the state were shut down.

According to the Center for Earthquake Research and Information, approximately 100 earthquakes shook the central part of the state during the seven days preceding the shutdown earlier this month. A dozen of those quakes had magnitudes greater than 3. Since the well shutdowns, there have been 60 recorded quakes, only one of which had a magnitude greater than 3.

"We have definitely noticed a reduction in the number of earthquakes, especially the larger ones," said Scott Ausbrooks, geohazards supervisor for the Arkansas Geological Survey. "It's definitely worth noting."

The two injection wells, one of which is owned by Chesapeake Energy Corp. and the other by Clarita Operating LLC, are used for disposal of wastewater from natural gas production. On March 4, both companies agreed to temporarily cease injections following a request by the Arkansas Oil and Gas Commission.

Ausbrooks said it was too soon to tell if the earthquakes are related to injection activities. Even if there is a connection, he said, the quakes might not stop for some time.

"If there is a relationship, the seismic activity could go on for weeks, months or even years," he said.

In an effort to determine that relationship, a six-month moratorium was imposed in January on the creation of new injection wells in the area (Sarah Eddington, [AP/Houston Chronicle](#), March 14). -- PK

## 21. **COAL: Ill. governor blocks gasification plant** (03/15/2011)

Illinois Gov. Pat Quinn (D) today vetoed a bill that would help site a coal-gasification plant in his state, praising the environmental and employment aims of the measure but criticizing the burden he said it would place on utility consumers.

The bill would have created 1,500 construction jobs and 700 permanent positions in a southern Illinois county for a plant that would have transformed coal into cleaner-burning synthetic gas.

The bill also would have forced Ameren Corp. and other Illinois gas utilities to purchase that synthetic gas for the next 10 years, even if they could find better prices elsewhere. That cost, the governor said, would be transferred to customers' utility bills.

"Clean coal technologies continue to show promising results in Illinois and around the world," Quinn wrote in his veto message. "Our state, with its abundance of coal and cutting-edge technologies, is positioned to take the lead. However, our investments in clean coal must not come at the expense of consumers" (Kevin McDermott, [St. Louis Post-Dispatch](#), March 14). -- PK

## 22. NATURAL GAS: Marcellus Shale 'is a huge gift,' N.Y. geologist says

(03/15/2011)

New York's top scientist on underground features has spoken out in support of drilling in the Marcellus Shale in upstate New York.

"The worst spin on the worst incidents are treated as if it's going to be the norm here," said Taury Smith, a state geologist who says he is more concerned about global warming than extracting natural gas. "This could really help us fight climate change; this is a huge gift, this shale."

Smith said he reached his conclusions from studying the science of hydraulic fracturing for three years and finding no cases in which the process led to groundwater contamination. His findings conflict with concerns of anti-fracking groups that say underground pools could be harmed because of drilling.

"Those are exaggerated problems; each incident wasn't the result of hydro-fracking," Smith said. "There were incidents of groundwater contamination near frack sites, but they were unrelated."

Smith suggested the industry should be closely monitored by the state's Department of Environmental Conservation and should be encouraged in its efforts to move the nation away from coal-fired power toward more environmentally friendly natural gas.

"If there's one group you can trust, it's the DEC," he said.

Former DEC Commissioner Alexander Grannis agreed with Smith that the dangers of hydraulic fracturing are likely overblown and said he believes DEC can set appropriate regulations.

Campaigns against the practice have been a source of funds for environmental organizations, Smith said. Allowing hydraulic fracturing in New York, he said, would bring more money to the state through job creation as well as income and business tax revenues. A potential severance tax could be assessed on the industry for extracting gas, providing another windfall for the state (James Odat, [Albany Times Union](#), March 14). -- PK

## LAW AND LOBBYING

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## 23. REGULATIONS: U.S. rail agency has NEPA authority, court rules

(03/15/2011)

### Lawrence Hurley, E&E reporter

A federal appeals court ruled today that the agency that oversees the nation's railroads retains the authority to impose environmental conditions on certain transactions.

The U.S. Circuit Court of Appeals for the District of Columbia also ruled that the Surface Transportation Board didn't violate the National Environmental Policy Act in approving the sale of the 120-mile Elgin, Joliet and Eastern main line near Chicago.

Canadian National Railway Co. had claimed the board could not require it to spend an additional \$68 million to build two bridges over the railroad, which it agreed to purchase in 2007 for \$300 million.

The board made its decision after ordering an environmental impact statement to look at how the increased freight traffic on the line, which circles Chicago, would affect local communities and traffic congestion.

In today's [ruling](#), the appeals court rejected the railroad company's argument that the 1980 Staggers Rail Act took away the board's ability to add environment-related conditions to sales involving the nation's less prominent railroads.

The board had maintained it was bound by NEPA to consider environmental impacts.

Judge David Tatel wrote in his opinion for a unanimous three-judge panel that the board was acting within its discretion in concluding that NEPA compliance "is more than a pointless bureaucratic exercise."

[Click here](#) to read the ruling.

## AIR AND WATER

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### 24. **WATER POLLUTION: EPA, S.F. Bay cities agree on stemming sewage discharges** (03/15/2011)

**Colin Sullivan, E&E reporter**

SAN FRANCISCO -- U.S. EPA has reached a tentative agreement with seven municipalities to address sewage spills into the San Francisco Bay during storm events.

EPA's Region 9 office here says seven cities served by the East Bay Municipal Utility District violated the Clean Water Act last year when they dumped about 125 million gallons of untreated or partially treated sewage into the bay during the rainy season.

Oakland, Emeryville, Piedmont, Berkeley, Alameda, Albany and the Stege Sanitary District since last September spilled sewage into the estuary because of overtaxed, old clay pipes that tend to leak when hit by hard storms, EPA said.

The cities have agreed to update the thousands of miles of pipes that route the waste throughout the Bay Area. In an interview, Jared Blumenfeld, EPA's regional administrator for the Pacific Southwest, admitted the cost for such upgrades would be expensive, but he would not pin down an actual figure, saying only that residents in those cities could expect a rate increase.

"Sewer overflows are an egregious problem," Blumenfeld said, "and the changes these cities are making will result in real improvements."

He also called the problem "shocking" and said he has made cleaning up the bay one of his top priorities.

The sewage may contain pathogens that threaten public health and often lead to beach closures and public advisories against fishing and swimming. The problem is concentrated in low-income communities often populated by minorities.

The proposed settlement, called a consent decree, stems from a lawsuit filed in December 2009 by the U.S. Justice Department against the cities. The San Francisco Bay Regional Water Quality Control Board and the State Water Resources Control Board also participated in the litigation and the settlement.

The East Bay Municipal Utility District serves a population of about 650,000.

## TRANSPORTATION

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### 25. **TRANSIT: Strapped systems gird for crowds as gasoline prices surge** (03/15/2011)

**Jason Plautz, E&E reporter**

The formula is simple: The higher the gasoline price, the more commuters will use trains and buses.

So says the American Public Transportation Association. In a report released yesterday, the group says \$4-per-gallon gasoline could spur an extra 670 million passenger trips, while \$5 a gallon could mean another 1.5 billion trips. Gasoline prices nationwide are currently at \$3.55 a gallon.

"It's the quickest, easiest thing you can do," APTA President William Millar said in an interview. "Most people can't afford to throw out their old car and buy a hybrid. But people could leave that car parked a little longer and use public transit a little more often and it will give them more direct savings."

But as pump prices head north, financially stressed transit systems are worried about handling the crowd. Many agencies are trimming services and raising fares because of budget constraints. And House Republicans are pushing to further slash federal cash for transit.

While APTA's ridership predictions seem high, Millar said, they are based on past patterns. In 2008, for example, when gasoline prices topped \$4 a gallon, ridership reached its highest rates in more than 50 years.

The appeal is easy to see: A \$2 bus fare is a draw when it can cost \$40 or so to fill up a car's gasoline tank. According to a monthly report released by APTA, public transit riders saved \$825 a month on average in February, based on national gasoline and parking rates.

Already, cities are seeing more commuters using transit. Philadelphia's transit agency reported a 10 percent increase in February over the same month last year, while ridership shot up 14 percent in Oakland.

Gerry Carpenter, a spokesman for the Utah Transit Authority in Salt Lake City, said his system has seen an 8 percent increase in January and February, a period where the agency lost riders a year before. While the city has been seeing overall increases every year, Carpenter said it was clear that gasoline prices were already having an impact.

"There's more and more of an advantage here in riding public transportation to help your budget," Carpenter said.

Meanwhile, Triangle Transit, which serves North Carolina's Research Triangle area, saw a 23 percent year-to-year jump in February, commuter resources director John Tallmadge said. Last week, the service recorded more than 5,000 individual trips, a level first seen 2008 when gasoline topped \$4 for the first time.

Tallmadge also said Triangle Transit was getting a record number of telephone calls, many from new riders asking about service.

"Those are good indicators of increased demand," Tallmadge said.

## **Agencies deal with coming cuts**

But rising demand is likely to cause problems for systems that have cut service to cope with budget problems.

Utah Transit's Carpenter said his system's main funding source, the state sales tax, has been hit hard by an economic slowdown, forcing the elimination of some bus routes, despite growing ridership.

Similar cuts have been made nationwide or fares were raised to offset declining government subsidies, Millar said.

If House Republicans succeed in their efforts to shrink federal contributions to transit, things could get worse. Republicans' fiscal 2011 budget proposal would cut 22 percent from the New Starts grant program, which provides federal grants for transit projects, and eliminate federal funding for the Washington, D.C., metro system.

"We know that Congress is trying to tackle the very difficult issue of the national debt and current deficit spending," Millar said. But he added that investment in transportation infrastructure is "the foundation for economic growth."

Millar, though, remains optimistic that transit agencies will survive. The elections last November that sent a wave of conservative lawmakers to Capitol Hill also saw more than 70 percent of local transit initiatives pass, including several that raised taxes.

"Over the last 15 years, transit ridership and use has grown about 34 percent. ... As we have been improving our public transit systems, people have used them," Millar said. "It's pretty clear the U.S. public is ready and willing, and when they're given good projects ... willing to put up the money" to build those projects.

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**E&ETV'S ONPOINT**

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**26. OIL AND GAS: CAP's Weiss discusses politics of rising prices***(03/15/2011)*

Can the United States quickly and significantly lower gas prices by tapping into the Strategic Petroleum Reserve? During today's OnPoint, Daniel Weiss, a senior fellow and director of climate strategy at the Center for American Progress, explains what the U.S. government can do to ease the impact of rising gas prices on consumers and create a long-term energy strategy that will reduce the country's dependence on oil. He also discusses the short-term outlook for prices.

[Click here](#) to watch today's OnPoint.

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