Environmental Defense Institute

News on Environmental Health and Safety Issues

September - October 2011 **Volume 22 Number 6**

Groups File Complaint to ID Governor on Mackey Dam Hazards

We are requesting that your offices take preventative action to protect the town of Mackay, Idaho from the collapse of Mackay Dam. Pursuant to Idaho Code Title 42 Chapters 1701-1721, we are requesting that an inspection and administrative enforcement action be commenced for Mackay Dam.

Mackay Dam is in poor condition, in an unsafe location and is a clear and present danger to the town of Mackay, Idaho. At risk are 600 residents and their property that is in close proximity to the dam. Mackay residents will have no advanced warning of an imminent dam collapse; even with warning evacuation could be difficult or impossible. At this time, there is no electronic or human warning system in place to allow evacuation.

Mackay Dam was built nearly a century ago without any thought given "to conform to seismic or hydrologic design criteria." The Utah Construction Co. had no previous experience in reservoir construction. No one knows how safe the dam will be during the next earthquake or major flood. Mackey Dam lies 11 miles from the Borah earthquake fault that caused a 7.3 earthquake (1983).

The State of Idaho classifies Mackay Dam as a Category 1 "high hazard." The dam receives safety inspections every two years. Since the last inspection was in 2009, the Idaho Department of Water Resources report does not reflect that Mackay Dam was overtopped in 2010 and 2011 from high run-off. (See photos of Mackay Dam Running Over Spillway on April 26 2010 and on June 26, 2011.

The 2009 recommendation of the dam inspector annual inspections to be made has not been followed. Other recommendations have been ignored for years by the Mackey Dam owner, the Big Lost River Irrigation District. These include failure to:

- Maintain a record of the amount of flowing water through the base of the dam.
- Issue storage authorization for one-year intervals
- Update emergency action/operation plan to keep it current
- Monitor all leaking water through the base of the dam, and to keep a comprehensive record of flow quanties for future reference and evaluation
- Install a log-boom or similar floating barrier at the entrance to the emergency spillway to help prevent boaters from accidental entry when reservoir is experiencing full-pool runoff conditions.

The Idaho 2009 dam inspection report states:

> "Much about this dam is not known due to poor documentation during initial construction and subsequent modifications. The amount of leakage observed at the right-center toe of the dam is cause for concern despite claims by the owner that 'it has always leaked like that'."

The flow of water from the base of the middle of the dam is now leaking at a rate greater than 1 cu ft. per second, enough water to fill a backyard swimming pool about every 30 minutes.

Mackay Dam, should it not hold, threatens to send an 80 ft. wall of water towards the town of Mackay within 6 minutes. The dam face is 67 ft. high and the reservoir covers 1392 acres with a storage capacity of approximately 45,000 acre feet of water.

On the west side of the dam, the emergency spillway lies beneath a large mass of rock with a continuous crack from top to bottom. This area is susceptible to massive rock movement should an earthquake occur. The steep cliff above the spillway constantly sheds rock into the spillway channel. There is no abutment on the east side of the dam. The concrete spillway channel has numerous cracks throughout.

The State of Idaho has a history of ignoring potential disasters. In 1976, the earthen Teton Dam began eroding due to a leak at its base, then burst, resulting in 11 deaths and over a billion dollars in property damage. Teton Dam, built during the same era and of similar design, was only 125 miles away from Mackay Dam.

Dam failures can result from any one, or a combination, of the following causes:

- Earthquakes, which typically cause longitudinal cracks at the tops of the embankments, leading to structural failure.
- Prolonged periods of rainfall and flooding, which cause most failures;
- Inadequate spillway capacity, resulting in excess overtopping of the embankment;
- Internal erosion caused by embankment or foundation leakage or piping;
- Improper maintenance, including failure to remove trees, repair internal seepage problems, or maintain gates, valves, and other operational components;
- Improper design or use of improper construction materials;
- Landslides into reservoirs, which cause surges that result in overtopping;

- Freezing and thawing causing changes in soil density and shrinkage of embankments in contact with bedrock abutments that might adversely affect the safety of earth dams.
- High winds, which can cause significant wave action and result in substantial erosion; and,
- Destructive acts of terrorists; (NOTE: In the spring of 1933, during a drought, farmers desperate for water to irrigate their crops, dynamited the head house tower at the dam releasing all impounded waters, and destroyed diversion equipment at the Blaine Diversion. A week later they also blew up the diversion gates at Darlington. More threats of dynamiting caused the Utah Construction Co. to considerably reduce the asking price for its interest.)

All of the above causes for potential dam failure exist at Mackay Dam.

Can a similar occurrence be prevented? Recommendations to consider are:

- Install an electronic warning system and 24 hour monitoring
- Create an emergency plan for evacuation
- Make annual inspections and an action plan to correct deficiencies
- Repair leakage
- Spillway repairs
- The federal government should take over ownership of Mackay Dam due to national security issues,
- The current owner must carry adequate liability insurance for loss of life and property damage
- Access to the dam should be blocked to prevent sabotage

The above 9/14/11 Complaint to ID Governor Otter and Gary Spackman acting Director ID Department of Water Resources was submitted by David B. McCoy, Esq., Chuck Broscious on behalf of Environmental Defense Institute, and James Powell, Executive Director, Keep Yellowstone Nuclear Free.

It must also be noted here as to the possibility of a Mackay dam break compromising safety at the INL due to INL estimates of potential floodwater height. The alarm system, while not necessarily allowing local residents to evacuate could provide many hours for INL facilities to be put into a safer reactor shutdown configuration before flood waters reached INL. This is in addition to the flood inundating buried radioactive waste and causing more contaminate migration into the Snake River Plain aquifer.

DOE Cleanup of INL Buried Nuclear Waste Not So Complete

Below is a joint Idaho Families for Safe Energy, Environmental Defense Institute and Keep Yellowstone Nuclear Free letter to Idaho Governor and Idaho Department of Environmental Quality Oversight Director Burke submitted 9/21/11.

We respectfully request that the State's INL Oversight team correct and clarify the information on the INL Oversight Program website and brochures regarding the buried plutonium waste at INL.

On the DEQ webpage of FAQ's, the word "ALL" misrepresents the facts i.e., "DOE will treat transuranic and alpha-contaminated mixed waste now stored at the INL and begin shipments to the Waste Isolation Pilot Plant for disposal no later than 1999. **All transuranic waste will be removed from the state** by a target date of Dec. 31, 2015, and no later than Dec. 31, 2018." All waste will, in fact, not be removed from the INL site.

On the DEQ webpage, you detail the 2008 deal on the buried waste. You are incorrectly using the word "MOST" about the buried plutonium removed, i.e., "July 1, 2008, the state of Idaho and the U.S. Department of Energy (DOE) finalized an agreement (Agreement to Implement U.S. District Court Order dated May 25, 2006) outlining a cleanup plan for buried waste at the Idaho National Laboratory (INL). **The agreement requires DOE to remove most of the transuranic waste buried** in the Subsurface Disposal Area (SDA) at the INL decades ago and ship it to a secure facility out of Idaho." The facts show that less than 80% percent of plutonium contaminated waste will be removed.

From the DEQ huge color brochure this summer sent to thousands of innocent teachers and citizens, and still promoted at http://www.deq.idaho.gov/media/704742-monitor-summer-2011.pdf See page 3/5, but you then need to slide the screen to the right to see the full page headline declaring the **"Idaho and DOE resolve the meaning of ALL.".** The brochure states "The DOE claimed that "all" meant only the above-ground transuranic waste located in the Transuranic Storage Area at the INL. **Idaho contended that all transuranic waste meant just that—all—including the waste buried** in the subsurface disposal area (buried waste)."

DEQ needs to make citizens aware that only 12% of transuranic waste was "targeted" for removal. To misrepresent this number for public relation purposes is dishonest and not aligned with the purpose and mission of Idaho DEQ. The Idaho Cleanup, by the numbers, will only remove 7,500 cubic meters of the

62,000 cubic meters buried at the site. See http://www.deq.idaho.gov/media/550373-implementation_agreement_2008.pdf in section V(6/43)

7,500 cubic meters is in fact not "most" nor "all' of the plutonium contaminated waste spread and buried in our 15 acre, 62,000 cubic meter waste dump. We demand that DEQ make it clear to every citizen that depends on DEQ to protect them, exactly what "all" now means, and exactly how much plutonium is really being left buried, despite the 41 years of promises to remove it all?

To help the public understand the risk, the DEQ should have a webpage explaining the DOE discoveries of the threat of plutonium moving with water, since the dump is in a historical flood zone. But DEQ website never mentions plutonium nanoclusters nor colloid transport of plutonium in water.

In 2008, DOE's Dr. Soderholm and her team stated, "**For almost half a century, scientists have struggled with plutonium contamination spreading further in groundwater than expected, increasing the risk of sickness in humans and animals**."

It was known nanometer-sized clusters of plutonium oxide were the culprit, but **no one had been able to study its structure or find a way to separate it from the groundwater."** The DOE Doctor continued "**Models have been based on the free-plutonium model, creating discrepancies between what is expected and reality**. Soderholm said that with knowledge of the structure, scientists can now create better models to account for not only free-roaming plutonium ions, but also the nanoclusters.

The clusters also are a problem for plutonium remediation. The free ions are relatively easy to separate out from groundwater, but **the clusters are difficult to remove.** "

The DEQ website also does not mention the new plutonium dump permitted, called ICDF, or the Idaho Consolidated Disposal Facility. This omission needs correction, since stakeholders were promised no more waste dumping and no more waste shipments into Idaho. Citizens need to know the Settlement Agreement allows up to 200 acres of plutonium contaminated waste for new projects that create more waste. While INL refers to this as "trace plutonium," Idaho DEQ needs to clarify how many billion plutonium particles are allowed to be buried, and report that in total pounds of raw plutonium, so that stakeholders understand both the legacy plutonium, the present, and the future plutonium the State is permitting. While we would prefer the full plutonium clean up promised, which would provide $13 billion in Idaho jobs, we ask that DEQ practice honest reporting of the reality of the waste situation."

The Explosive Truth Behind Fukushima's Meltdown

David McNeil and Jake Adelstein report in the *Independent*/UK 8/17/11; "This one of the mysteries of Japan's ongoing nuclear crisis: How much damage did the 11 March earthquake inflict on the Fukushima Daiichi reactors before the tsunami hit?

Fukushima Daiichi nuclear power plant after Japan's earthquake and tsunami in March. Photograph: Reuters The stakes are high: if the earthquake structurally compromised the plant and the safety of its nuclear fuel, then every similar reactor in Japan may have to be shut down. With almost all of Japan's 54 reactors either offline (in the case of 35) or scheduled for shutdown by next April, the issue of structural safety looms over any discussion about restarting them.

Plant operator Tokyo Electric Power Co (Tepco) and Japan's government are hardly reliable adjudicators in this controversy. "There has been no meltdown," government spokesman Yukio Edano repeated in the days after 11 March. "It was an unforeseeable disaster," Tepco's then president Masataka Shimizu famously and improbably said later. Five months since the disaster, we now know that meltdown was already occurring as Mr Edano spoke. And far from being unforeseeable, the disaster had been repeatedly forewarned by industry critics.

Throughout the months of lies and misinformation, one story has stuck: it was the earthquake that knocked out the plant's electric power, halting cooling to its six reactors. The tsunami then washed out the plant's back-up generators 40 minutes later, shutting down all cooling and starting the chain of events that would cause the world's first triple meltdown.

But what if recirculation pipes and cooling pipes burst after the earthquake – before the tidal wave reached the

facilities; before the electricity went out? This would surprise few people familiar with the 40-year-old reactor one, the grandfather of the nuclear reactors still operating in Japan.

Problems with the fractured, deteriorating, poorly repaired pipes and the cooling system had been pointed out for years. In September 2002, Tepco admitted covering up data about cracks in critical circulation pipes. In their analysis of the cover-up, The Citizen's Nuclear Information Center writes: "The records that were covered up had to do with cracks in parts of the reactor known as recirculation pipes. These pipes are there to siphon off heat from the reactor. If these pipes were to fracture, it would result in a serious accident in which coolant leaks out."

On 2 March, nine days before the meltdown, government watchdog the Nuclear Industrial Safety Agency (NISA) warned Tepco on its failure to inspect critical pieces of equipment at the plant, including recirculation pumps. Tepco was ordered to make the inspections, perform repairs if needed and report to NISA on 2 June. It does not appear, as of now, that the report has been filed.

The *Independent* has spoken to several workers at the plant who recite the same story: serious damage, to piping and at least one of the reactors, occurred before the tsunami hit. All have requested anonymity because they are still working at or connected with the stricken plant. Worker A, a maintenance engineer who was at the Fukushima complex on the day of the disaster, recalls hissing, leaking pipes.

"I personally saw pipes that had come apart and I assume that there were many more that had been broken throughout the plant. There's no doubt that the earthquake did a lot of damage inside the plant... I also saw that part of the wall of the turbine building for reactor one had come away. That crack might have affected the reactor."

The reactor walls are quite fragile, he notes: "If the walls are too rigid, they can crack under the slightest pressure from inside so they have to be breakable because if the pressure is kept inside... it can damage the equipment inside so it needs to be allowed to escape. It's designed to give during a crisis, if not it could be worse – that might be shocking to others, but to us it's common sense." Worker B, a technician in his late 30s who was also on site at the time of the earthquake, recalls: "It felt like the earthquake hit in two waves, the first impact was so intense you could see the building shaking, the pipes buckling, and within minutes I saw pipes bursting. Some fell off the wall...

"Someone yelled that we all needed to evacuate. But I was severely alarmed because as I was leaving I was told and I could see that several pipes had cracked open, including what I believe were cold water supply pipes. That would mean that coolant couldn't get to the reactor core. If you can't sufficiently get the coolant to the core, it melts down. You don't have to have to be a nuclear scientist to figure that out." As he was heading to his car, he could see that the walls of the reactor one building had started to collapse. "There were holes in them. In the first few minutes, no one was thinking about a tsunami. We were thinking about survival."

The suspicion that the earthquake caused severe damage to the reactors is strengthened by reports that radiation leaked from the plant minutes later. The Bloomberg news agency has reported that a radiation alarm went off about a mile from the plant at 3.29pm, before the tsunami hit.

The reason for official reluctance to admit that the earthquake did direct structural damage to reactor one is obvious. Katsunobu Onda, author of Tepco: The Dark Empire, explains it this way: A government or industry admission "raises suspicions about the safety of every reactor they run. They are using a number of antiquated reactors that have the same systematic problems, the same wear and tear on the piping." Earthquakes, of course, are commonplace in Japan.

Mitsuhiko Tanaka, a former nuclear plant designer, describes what occurred on 11 March as a loss-of-coolant accident. "The data that Tepco has made public shows a huge loss of coolant within the first few hours of the earthquake. It can't be accounted for by the loss of electrical power. There was already so much damage to the cooling system that a meltdown was inevitable long before the tsunami came."

He says the released data shows that at 2.52pm, just after the quake, the emergency circulation equipment of both the A and B systems automatically started up. "This only happens when there is a loss of coolant." Between 3.04 and 3.11pm, the water sprayer inside the containment vessel was turned on. Mr. Tanaka says that it is an emergency measure only done when other cooling systems have failed. By the time the tsunami arrived and knocked out all the electrical systems, at about 3.37pm, the plant was already on its way to melting down.

Kei Sugaoka, who conducted on-site inspections at the plant and was the first to blow the whistle on Tepco's data tampering, says he was not surprised by what happened. In a letter to the Japanese government, dated 28 June 2000, he warned that Tepco continued to operate a severely damaged steam dryer in the plant 10 years after he pointed out the problem. The government sat on the warning for two years.

"I always thought it was just a matter of time," he says of the disaster. "This is one of those times in my life when I'm not happy I was right."

During his research, Mr Onda spoke with several engineers who worked at the Tepco plants. One told him that often piping would not match up to the blueprints. In

that case, the only solution was to use heavy machinery to pull the pipes close enough together to weld them shut. Inspection of piping was often cursory and the backs of the pipes, which were hard to reach, were often ignored. Repair jobs were rushed; no one wanted to be exposed to nuclear radiation longer than necessary.

Mr Onda adds: "When I first visited the Fukushima Power Plant it was a web of pipes. Pipes on the wall, on the ceiling, on the ground. You'd have to walk over them, duck under them – sometimes you'd bump your head on them. The pipes, which regulate the heat of the reactor and carry coolant are the veins and arteries of a nuclear power plant; the core is the heart. If the pipes burst, vital components don't reach the heart and thus you have a heart attack, in nuclear terms: meltdown. In simpler terms, you can't cool a reactor core if the pipes carrying the coolant and regulating the heat rupture – it doesn't get to the core."

Tooru Hasuike, a Tepco employee from 1977 until 2009 and former general safety manager of the Fukushima plant, says: "The emergency plans for a nuclear disaster at the Fukushima plant had no mention of using seawater to cool the core. To pump seawater into the core is to destroy the reactor. The only reason you'd do that is no other water or coolant was available."

Before dawn on 12 March, the water levels at the reactor began to plummet and the radiation began rising. The Tepco press release published just past 4am that day states: "The pressure within the containment vessel is high but stable." There was one note buried in the release that many people missed: "The emergency water circulation system was cooling the steam within the core; it has ceased to function."

At 9.51pm, under the chief executive's orders, the inside of the reactor building was declared a no-entry zone. At around 11pm, radiation levels for the inside of the turbine building, which was next door to reactor reached levels of 0.5 to 1.2 mSv per hour. In other words, the meltdown was already underway. At those levels, if you spent 20 minutes exposed to those radiation levels you would exceed the five-year limit for a nuclear reactor worker in Japan.

Sometime between 4 and 6am, on 12 March, Masao Yoshida, the plant manager decided it was time to pump seawater into the reactor core and notified Tepco. Seawater was not pumped in until hours after a hydrogen explosion occurred, at roughly 8pm. By then, it was probably already too late.

Later that month, Tepco went some way toward admitting at least some of these claims in a report called "Reactor Core Status of Fukushima Daiichi Nuclear Power Station Unit One". The report said there was pre-tsunami damage to key facilities, including pipes.

"This means that assurances from the industry in Japan and overseas that the reactors were robust is now blown apart," said Shaun Burnie, an independent nuclear waste consultant who works with Greenpeace. "It raises fundamental questions on all reactors in high seismic risk areas."

As Mr Burnie points out, Tepco also admitted massive fuel melt 16 hours after loss of coolant, and seven or eight hours before the explosion in Unit One. "Since they must have known all this, their decision to flood with massive water volumes would guarantee massive additional contamination – including leaks to the ocean."

No one knows how much damage was done to the plant by the earthquake, or if this damage alone would account for the meltdown. But certainly Tepco's data and eyewitness testimony indicates that the damage was significant.

As Mr Hasuike says: "Tepco and the government of Japan have provided many explanations. They don't make sense. The one thing they haven't provided is the truth. It's time they did."

* Spent fuel pools filled with roof debris

* Earthquake concerns about the weight of the water being pumped into the containment structures

"Confidential Assessment" of Fukushima Nuclear Reactors Obtained Under Freedom of Information Act

By Dave McCoy

The Nuclear Regulatory Commission (NRC) issued a confidential assessment that stated the following conditions existed at the Fukushima Japan Daiichi Nuclear Reactor Units:

- Failed safety and backup systems
- Hydrogen explosions
- Destroyed secondary containments
- Failed pumps and spray nozzles clogged with salt
- Reactor cores filling with salt
- Reactor water in turbine building basements
- Failure of pump seals
- Unknown temperatures levels in reactor cores
- Rising temperatures in spent fuel pools filled with roof debris
- Earthquake concerns about the weight of the water being pumped into the containment structures

Although the report was written 15 days after the earthquake and tsunami that devastated Japan 3/11/2011, this information was not made formally available until 8/3/2011, a full five months after these events.

The NRC knew early on that fuel meltdown was occurring at the Daiichi nuclear reactors. By making its assessment confidential, NRC may have delayed appropriate international response to the fuel meltdowns. Two days after the tsunami hit the reactors, the British government began to co-ordinate with nuclear companies to downplay events to prevent undermining public support for nuclear power.

Locally the response at Fukushima was for evacuation within 2 miles of the reactor site. The delay in accurately assessing the contaminated area put huge numbers of Japanese at risk by the belated news that the evacuation needed to be expanded to 20 miles. The delay meant more people were unknowingly exposed to higher levels of radiation.

A minimal amount of information from the NRC report was published by the NY Times on April 5, 2011 but did not convey the enormity of the existing danger.

The nuclear industry has a vested interest in withholding information from the public that might threaten further development of nuclear facilities. Why did the NRC delay providing the confidential assessment of the Fukushima disaster for nearly 5 months? The NRC still has not provided to the public the documents that accompany the report. It was known that the type of nuclear reactors manufactured by General Electric used at Fukushima had serious technical difficulties. The NRC has not offered an explanation for its secrecy in the face of the most serious nuclear accident since Chernobyl.

The NRC report was relying on conflicting information for making technical recommendations from TEPCO, the Japanese operator, the Japanese Industrial Forum (JAIF), Nuclear & Industrial Safety Agency (NISA), and General Electric Hitachi Nuclear Energy (GEH).

The NRC report strongly indicates knowledge that the reactors had experienced core fuel meltdown the first week after the tsunami. The NRC knew that damaged fuel may have slumped to the bottom of the reactor core in Units 1, 2, and 3. NRC knew the secondary containment for Unit 1 was severely damaged by a hydrogen explosion. The water level inside the reactor Units 1 through 3 was unknown but was insufficient. The continued injection of salt water put cooling the cores in jeopardy from salt buildup. Damaged fuel in the reactor core was likely encased in salt. Spray nozzles for cooling probably clogged by caked salted deposits. Natural circulation of water was impeded by core damage. Temperature readings taken did not accurately measure the actual conditions in the reactor cores. It was difficult to determine how much cooling was getting to the fuel.

High radiation levels of over 150 R/hr. were present near the units although the source instruments measuring those levels were unknown. A radiation level of 26 mR/hr was at the Daiichi plant gate.

The injection of sea water for cooling the reactor cores posed a further danger because hydrogen gas is more prevalent in salt water than in fresh water. The oxygen from the seawater could come out of solution and "create a hazardous atmosphere inside the primary containment."

Reactor water from Unit 1 was known to be in the Turbine Bldg. basement. The volume of sea water injected to cool the core left enough salt to fill the lower plenum to the reactor core plate and restrict spraying the core. Natural circulation of sea water was impeded by core damage. The Unit 1 fuel pool heated up. The entire fuel pool floor was covered by the debris from the building roof after a hydrogen explosion had occurred.

The reactor Unit 4 spent fuel pool had a hydrogen explosion that damaged the secondary containment of the reactor. A lack of cooling caused zirconium in the spent fuel rods to react with water and release hydrogen that exploded. Particulates from the spent fuel pool were ejected and found up to 1 mile way. Highly radioactive material had to be bulldozed and covered between units 3 and 4.

Cooling for the Units 5 and 6 fuel pools was lost when a pump failed. A hole had to be drilled in the rooftop to avoid hydrogen buildup.

Since NRC recommendations were based on the available technical information and assumptions, NRC "acknowledged that the information is subject to change and refinement."

On April 6, Reuters reported that "the core at Japan's Fukushima nuclear reactor has melted through the reactor pressure vessel," Rep. Edward Markey told a House hearing on the disaster, saying: "I have been informed by the Nuclear Regulatory Commission (NRC) that the core has gotten so hot that part of it has probably melted through the reactor pressure vessel."

If the NRC had commented on the fuel meltdown at the time it occurred it would have allowed emergency measures by the international community to be implemented. The Japanese were reluctant to acknowledge the severity of the meltdown that threatened their role in a trillion dollar nuclear industry. The Japanese government failed to inform residents about the full extent of uncontained radiation.

Nearly 100 days after the Fukushima disaster, TEPCO finally confirmed that the fuel meltdown occurred in Unit 1 within the first 16 hours and the damaged fuel slumped to the bottom of the reactor.

On May 24, 2011, the New York Times reported that TEPCO admitted that all three reactors experienced fuel meltdown probably within 3 days after the tsunami.

On June 9, 2011, a report by the Japanese government announced that: "The nuclear fuel in three of the reactors at the Fukushima Dai-Ichi nuclear plant has melted through the base of the pressure vessels and is pooling in the outer containment vessels." The report describes a "melt-through" as being "far worse than a core meltdown" and "the worst possibility in a nuclear accident." TEPCO said it is trying to contain the contaminated water and prevent it from leaking into the ocean, but elevated levels of radiation have been confirmed in the sea water surrounding the plant."

The Fukushima nuclear fuel burned through the containment vessel and is sitting on the concrete foundation of the plant leaking into the groundwater. It is TEPCO's position that constructing an underground barrier to stop the molten lava from spreading into the groundwater would cost too much money and reduce profits.

The radiation released from the Fukushima disaster caused untold misery for 80,000 people that had to be evacuated. The land surrounding Fukushima is more highly contaminated than the Chernobyl site where resettlement was required. Food, groundwater, air and soil contamination expose children and their parents to high radiation levels that may cause cancer and disease.

Japan increased the 'acceptable exposure limit' to twice the 'nuclear waste level' for infants and children. The limits in food have been set up to 20 times the international standards for nuclear waste limits. These levels are hundreds of times higher than legal limits allowed in food and beverages of other nations around the world.

Radioactive contamination has reached around the world and been poorly monitored and reported by the news media. Westinghouse and General Electric build and supply nuclear reactors. Westinghouse (CBS) and General Electric (NBC and CNBC) have a vested interest in limiting news about nuclear plants, radioactive contamination and cancer.

The NRC Confidential Assessment may be viewed on the Citizen Action website at www.radfreenm.org .

Dave McCoy is Executive Director of Citizen Action New Mexico, and an Environmental Defense Institute Board member.

DOE: "Nothing Like This Could Happen Here" ?

By Tami Thatcher

As the recent tragedy in Japan unfolds, many people have been following the nuclear drama of keeping reactor cores and stored spent fuel from overheating and releasing airborne radioactive contamination. We may feel that nothing like this could happen here.

We have only one operating reactor nearby, the Advanced Test Reactor. Carefully selected information is presented by DOE and its contractor in order to promote the idea that the ATR is no safety threat. Phrases like "low pressure and temperature," "multiple water reserves," "redundant power supplies" are emphasized. Funny they never seem to mention how different ATR fuel is from a commercial power reactor or how much more complex its frequently modified core configurations and non-symmetrical power distributions, both of which make it easier to overheat the fuel. They never mention the poor reliability performance of various backup power supplies, the poor seismic capability of the water delivery systems overall, the likelihood of a loss of coolant accident, or the accidents that will be so rapidly progressing as to not allow the various make-shift approaches to mitigate an accident. They never seem to say much about the potential radionuclide release and effects on our region.

With or without a seismic event, someday we too could be straining to determine the extent of fuel damage and amount of release by measuring the radiation levels downwind of the ATR.

With the same thinking that brought above ground nuclear weapons testing to Nevada, the ATR was sited remotely and thus did not need a containment or even need particular attention to emergency systems. Some were added, but mostly as an afterthought.

According to DOE's own audits, some safety systems at the ATR have been poorly designed and inadequately maintained and tested. But not to worry, this is accompanied by organizational weaknesses, poor conduct of operations and poor work control as documented in more DOE audit reports. Serious analytical errors have been more the rule rather than the exception at ATR.

The DOE is an agency with a clear conflict of interest when it oversees itself and then has to find the funding to fix the deficiencies.

The good news is that many upgrades to improve the seismic capability of equipment have been completed. I watched a decade or two of foot-dragging to avoid evaluation and upgrade costs, particularly when the site-specific seismic hazard was higher than expected.

The DOE's operational problems are largely un-scrutinized by the public and embarrassment is avoided this way. I authored and coauthored many risk studies for the ATR. Unfortunately, the possibility of a significant accident at ATR that releases some of its 1 billion curie radioactive inventory is not nearly as unlikely as DOE would have you believe.

This article appeared in Post Register Opinion, Idaho Falls, Idaho, 3/27/11. Tami Thatcher is a former risk assessment analyst for DOE INL nuclear facilities.

Blue Ribbon Commission Draft Report Comments

By Dave McCoy

The Blue Ribbon Commission Report, *What We've Heard So Far*, was written before the tragic events in Japan. Even so, the BRC Report is a good indication that the Commission overlooked many concerns prevented at the Albuquerque, New Mexico meeting.

Reading the BRC report and watching the misery of multiple reactor meltdowns unfold day by day in Japan and knowing that it will continue possibly for decades should be a wakeup call for the Commission: technical expertise does not protect the public from the most improbable of accidents; belief in reactor design as "failsafe" is a form of religious faith.

The tragic international events in Japan underscore the lack of safety in dealing with nuclear power generation and the storage and disposal of nuclear wastes. Nuclear accidents that were "impossible" or "highly improbable" according to the technical experts are happening right before our eyes at four of six reactors in Japan.

Human error is capable of defeating any well-intentioned design. See, e.g., *The Epistemic Value of Cautionary Tales*, Journal of Technology studies, Vol. XXXII, No. 2 Spring 2006.

The public is exhausted with the nuclear industry's attempt to spin contrived, duplicitous slogans and false information to minimize the danger for the continued operation and new construction of nuclear reactors. The words "death," "cancer," "leukemia," "earthquake," "seismic," "explosion," "meltdown," are not used at all in the BRC Report, but describe what the worldwide public is now viewing in Japan. The BRC Report is another display of bias, arrogance and failure to confront these above issues that were presented by Citizen Action and others. This suppression of issues stems from the goal of the BRC Report to minimize or ignore the reasons why the Nuclear Renaissance is a fool's game. Conducting "reactor safety checks" will not persuade the public that regulatory processes are protecting their interests. The incestuous relationship between nuclear industry and its regulators prevents an impartial investigation.

President Obama is held hostage by the nuclear industry as evidenced by his support of continued nuclear reactor construction. The BRC Report is rendered obsolete because it fails to consider the Japanese nuclear catastrophe and its consequences.

Nuclear power is touted by the Commission as 'America's Nuclear Future' for "clean, green energy" to counter global climate change. This illusion has been smashed by a tsunami of radioactive contamination, fear and the ongoing damage to people, the ocean, land and food supply. Farmers in the State of Washington dump radioactive milk in the fields. Bans on imported food from Japan are enacted. The experts that had the self- assured perception that they know something that the public cannot perceive now collide with a humbling reality: the public is watching reactors explode, meltdown, and spread terror and death. The radiation levels from the leaking Japanese reactors are thousands of times higher than what should be present in seawater.

Radioactive waste continues to pour into the ocean and travel about the planet on the wind. Comments from Citizen Action New Mexico to the BRC (January 28, 2011) stated: "A major nuclear accident can kill tens or hundreds of thousands of persons and render large areas uninhabitable. A comparable Gulf Coast accident still awaits the nuclear industry -- as if Chernobyl and Three Mile Island were not sufficient warning. Solar and wind generation may be expensive but at least the consequences for an accident are *de minimis* compared to the potential for a nuclear accident."

The above are excerpts of a more detailed report by Dave McCoy that is available at : www.radfreenm.org .

Senators Advocate for Radiation Exposure Compensation Act of 2011

In a 9/12/11 open letter to Patrick Leahy, Chairman U.S. Senate Committee on the Judiciary and Chuck Grassley ranking Member of the Senate Committee on the Judiciary, from U.S. Senators Tom Udall, Jeff Bingaman, Mike Crapo, Michael Bennet, James Risch, and Mark Udall stated the following:

"Dear Chairman Leahy and Ranking Member Sessions:

"Several months ago we introduced S. 791, the Radiation Exposure Compensation Act of 2011 (RECA) that was referred to your committee. This bill would address key deficiencies in RECA, and extend compensation to a number of currently unqualified but suffering uranium workers and downwinders. Considering the importance of RECA to many of our constituents, we respectfully request that you move quickly to hold a hearing to bring to light existing deficiencies in the compensation program and to review our legislation.

"As the United States government built up its Cold War nuclear arsenal during the mid-20th century,

many Americans paid the price with their health. Some were sickened through exposure to above ground atomic weapons tests. Others were exposed to heavy doses of radiation from working in the uranium mining industry. To compensate these individuals for their unwitting exposure to dangerous levels of radiation, Congress passed the Radiation exposure Compensation Act of 1990. In the ensuing years, shortcomings in the original law have become apparent. It is time to review the effectiveness of RECA, and to renew debate over the populations who should be compensated through the program.

"The Radiation Exposure Compensation Act Amendments of 2011 would expand the geographic qualification for compensation for those made sick from exposure to radiation from above ground atomic weapons test at the Nevada Test Site. The bill would also extend compensation for individuals who were exposed to the original atomic bomb test at Trinity site and those in Guam who were exposed to atomic weapons tests in the Pacific. The bill would further extend compensation to uranium workers who worked in mines and mills after 1971, and make other smaller improvements to RECA.

"We thank you for your leadership on the Judiciary Committee, and we urge you to move forward with a hearing on compensation for radiation exposure. We look forward to discussing the changes proposed in our bill, and believe it is time for a productive debate on the need for improving the original act."

EDI thanks Preston Truman's decades-long advocacy on this issue and posting it. For more information on RCRA see: www.downwinders.org

This S.791 bill in Congress requires wide public support because it offers compensation for the tens-of-thousands of people sickened by this nations' obsession with nuclear weapons – regardless the catastrophic impact on Americans and Pacific islanders.

EDI applauds Senators Tom Udall, Jeff Bingaman, Mike Crapo, Michael Bennet, James Risch, and Mark Udall for their continued advocacy and concerns for us as their constituents. Additionally, the hearings requested by the Senators' are crucial to putting this enormous tragedy into the public records – regardless if the S. 791 gets passed.

Nuke Plant Headed for Wyoming?

Wyoming State Legislators conducted meetings last week with two nuclear plant developers. Representatives from Pacific Corps Energy and Alternative Energy Holdings Inc. (AEHI) presented before a special Nuclear Development Task Force in Cheyenne. The meetings addressed the feasibility of building a nuclear power plant in Wyoming. Several bills were passed by the taskforce, taking the first of many steps towards a 10-year, $14 billion nuclear plant construction plan.

Discussed by the legislative group was the fundamental barrier to nuclear plant construction, which is the high cost. Right now, a nuclear plant costs around five times as much as a natural gas plant. "These are very capital-intensive," explained Cindy Crane, Vice President of Pacific Corps. "They take many, many years, have a huge amount of uncertainty for the first five years, and then you have your typical construction risks."

To mitigate the financial burden on her company, Crane suggested the State could charge Wyoming households a "Construction Work in Progress", or "CWIP" fee. This addition to monthly energy bills would transfer some of the constructions costs for a nuclear plant onto the consumer. This type of surcharge is illegal in many states, but allowed in Wyoming.

Additionally, Crane mentioned that her company would be more likely to develop in Wyoming if low-interest, long-term loans could be secured by the state. In addition to local support, Pacific Corps would also be eligible to socialize their loan's liability through Department of Energy Loan Guarantee programs. Crane suggested that the State could also pay for initial site feasibility studies.

Nuclear waste issues were also discussed, as any waste created by the proposed Wyoming plant would have no long-term destination other than Wyoming. Thorne Davis of AEHI suggested Wyoming could adopt an "interim storage policy", similar to that of Idaho's, allowing the storage of nuclear waste in the state until a long-term national repository has been completed. Davis also suggested Wyoming could be a candidate for nuclear reprocessing.

The group plans to meet again next month on October 17th.

For more information see full story posted at: www.kynf.org