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DOE Releases Final Materials and Fuels Complex Accident Report

DOE's Office of Health, Safety and Security (HSS) released – 1/12 – final report titled "Plutonium Contamination in Zero Power Physics Reactor Facility (ZPPR) at the Idaho National Laboratory" accident 11/8/11 at the Materials and Fuels Complex (MFC). [1]

Despite this detailed (123 page) and un-characteristly candid report that heavily criticizes MFC operating contractor (Battelle Energy Alliance-BEA) mismanagement, the report has significant deficiencies.

Background:

"On November 8, 2011, workers at the Idaho National Laboratory (INL) Materials and Fuels Complex (MFC) Zero Power Physics Reactor (ZPPR) Facility were packaging plutonium (Pu) reactor fuel plates. Two of the fuel storage containers had atypical labels indicating potential abnormalities with the fuel plates located inside. Upon opening one of the storage containers, the workers discovered a Pu fuel plate wrapped in plastic and tape. When the workers attempted to remove the wrapping material, an uncontrolled release of radioactive contaminants occurred, resulting in the contamination of 16 workers and the facility." [2]

"Based on results of the initial lung scans, three employees received follow-up lung scans. One of them had anomalous results in the first scan that needed checking. Scans for the two other employees revealed presence of Americium-241, an isotope that indicates that the employees may have inhaled plutonium." [3]

"During the afternoon and evening of November 8, 2011, all 16 affected individuals were lung counted for 30 minutes in the lung counter. Two individuals had positive results, 0.73 and 1.3 nCi ^{241}Am [nano-curie americium-241]. [4] The subsequent day's counting results were 0.41 nCi ^{241}Am (a 40% decrease) for one of these individuals and no detectable activity for the other." [5]

"BEA does not have procedures or a written technical basis document for assessing positive lung count results in terms of radiation dose. TEV-500 has information on evaluating the

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[1] www.hss.doe.gov/ see MFC final accident investigation. Herein after referred to HSS Report.

[2] HSS Rpt. pg. vii.

[3] INL News Release, 11/9/11, #6.

[4] A nano-curie of radiation is a billionth of one curie. Due to the extreme biological hazard of radioactive isotopes, EPA exposure standards are in pico-curie units or one trillionth of one curie.

[5] Independent radiation health researchers agree that a single particle of americium or plutonium lodged in the lung will cause DNA damage that will eventually result in a cancer. See "Plutonium, Deadly Gold in the Nuclear Age," International Physicians for the Prevention of Nuclear War, and Institute for Energy and Environmental Research, page 14.

magnitude of potential radiation dose based on nasal smear results, but there is no evidence that this information was used or otherwise considered during this accident response." [6]

"By examining witness testimony and historic documentation, including the ZPPR Suspect Fuel Log, the [HSS] Board determined that the fuel plate was damaged prior to being stored over 30 years ago. This damage resulted in a breach of the stainless steel jacket, which in turn allowed air (oxygen) and moisture (water) to infiltrate the fuel plate and react with the transuranic alloy.

"This assumption is supported the ZPPR Suspect Fuel Plate Log and by labeling seen on the clamshell that contained this fuel element prior to the accident, as well as witness testimony concerning the material condition observed during the accident. Over time, well-understood reactions between the air and moisture, which was present in the clamshell, and the metallic fuel alloy formed transuranic oxides and hydrides – likely including (but not limited to) UO_2, PuO_2, AmO_2, PuH_3, and AmH_3.

"These oxide and hydride compounds have far different physical properties than any of their constituents (i.e., transuranics, hydrogen, and oxygen); this fact is important in understanding this accident, since these new compounds readily form aerosols that are easily dispersible. During the fuel packaging operation in the ZPPR Workroom on November 8, 2011, these compounds were liberated, thus resulting in the accidental uncontrolled release of radioactivity.

"The released aerosols would have likely been distributed throughout the Workroom over time, before settling, due to the natural circulation of air; however, this distribution by natural processes may have been accelerated by a number of mechanical factors. For example, after the material was spilled, a smear sample was taken within the clamshell, and then the clamshell was quickly closed, as observed in the video evidence. The act of quickly closing the clamshell lid over its base would have created a moderate overpressure and turbulence in the clamshell, thereby forcing air, and any aerosols entrained in that air, out of the space in which it was previously confined. The [HSS] Board confirmed this theory as a mechanism for accelerating aerosol dispersion by using a clamshell provided as evidence. In addition, both before and after the clamshell closure, air turbulence associated with the operation of the hood, airflow from the open ZPPR Vault, and other factors may have contributed to the distribution of aerosols throughout the Workroom.

"Bioassay sample collection (urine and fecal) was initiated for all 16 individuals on November 8, 2011. The six individuals with the highest nasal smear results were asked to provide daily fecal and urine samples. The other individuals were asked to provide samples on November 9, 2011, and then again November 11, 18, and 21, 2011. After the first week following the accident, the sampling interval was decreased for the six individuals with the highest nasal smear results to be consistent with the others.

"An offsite laboratory under contract provided support in analyzing the bioassay results. Site personnel stated that due to miscommunication with the offsite laboratory, the first samples sent were not properly handled. The fact that they were post-chelation samples was not taken into account and the results were not properly analyzed. Because communications with the laboratory were verbal, the cause of the miscommunication could not be determined. This error was corrected for subsequent sample analyses.

"On November 9, 2011, a second chelation was offered to the individuals with initial positive lung count results. Both individuals declined chelation at that time. Three out of the four individuals having chelation developed flu-like symptoms, including loss of appetite and

[6] HSS Rpt. Sec. 2.4.5.2

diarrhea.

Analysis

"Requiring personnel to shower before lung counting likely would have allowed a quicker assessment of the magnitude of the dose. Site personnel stated that one of the reasons they did not provide showers for the personnel undergoing decontamination was an insufficient supply of hot water at the lung counting facility. If the nearby CFA Medical facility showers had been used, the initial lung count results would likely have been a better indicator of the magnitude of the intakes.

"While TEV-500 provides guidance on evaluating nasal smear results, there is no other guidance on quickly evaluating lung count results. There was evidence of insufficient knowledge of radiological isotopic content and the physical properties of the radioactive material present for use in evaluating radiological monitoring data.

"Better communication with the offsite laboratory regarding the status of the bioassay samples and the requested type of analysis could have allowed the initial samples to be analyzed properly and could have avoided a delay in evaluating the radiological impacts of the accident." [7]

"The [HSS] Board concluded that BEA does not have a process in place to promptly assess intakes of radioactive material for use in internal dose assessments and medical response to radiological emergencies. [Judgment of Need (JON) 18]

"The Board concluded that BEA does not have an effective program for training cognizant personnel on certain radiological response activities (e.g., showering before special lung counts, nose blowing) and communicating radiological information (e.g., information concerning bioassay samples)." [emphasis added] [JON 15, JON] [8]

Direct, Root, and Contributing Causes

"The [HSS] Board determined that this accident was preventable.

The Board determined that the **direct cause** of the accident was the cutting and handling of the plastic wrapping around the Pu fuel plate, which released the Pu contaminants.

Root causes are the causal factor(s) that, if corrected, would prevent recurrence of the same (local) or similar (systemic) accidents. The Board determined that the **local root causes** were:

• BEA did not accurately analyze the Pu hazard in the safety basis and establish commensurate controls.

• The management system lacked requirements intended to influence the decision making of the NFM and SS, resulting in a single-point decision to cut the wrapping.

The Board determined the following systemic root causes:

• "DOE-ID accepted the risk of known safety basis deficiencies and allowed continued operation of the ZPPR Facility within the framework of a multi-year safety basis upgrade plan without putting effective interim controls in place.

• BEA continued operation of the ZPPR Facility with known safety basis deficiencies and without adequately analyzing the hazard to the worker or establishing effective work control processes.

Contributing Causes

"Contributing causes are events or conditions that collectively with other causes increased the likelihood of the accident but that individually did not cause the accident. The Board identified three contributing causes to this accident:

[7] HSS Rpt. Sec. 2.4.5.2, pgs. 21-22

[8] HSS Rpt. Judgment of Need (JON) Pg. 60

1. The organizational transition resulted in a loss of knowledge and past practices and records that indicated the conditions associated with the fuel plates.
2. Senior MFC management did not recognize the significance of information provided by the history of Pu fuel plate failures and by the MFC ISRC Chairman's white paper.
3. The PWS used to conduct the work did not contain directions governed by any of the referenced operating instructions, leading to the creation of work steps without an appropriate hazard analysis or accompanying means of mitigation." [9]

As of January 18, "The 16 employees involved in the accident have been continuously evaluated and treated by INL medical professionals. Fourteen of the 16 employees have returned to full duties including radiological work. Two employees have returned to no radiological work pending completion of their radiation dose estimate." [10]

After more than three month after the accident and DOE still has not "completed their radiation dose estimates," the public are justifiably skeptical about DOE ability to protect the public should a major accident occur releasing radiation to the environment.

Controversy over DOE claims that MFC accidents did not release radiation to the environment. However DOE's own reports challenge this unwarranted claim.

"Nov. 14, 2011: While personnel were treating passivated [sic] sodium in building MFC-766, a pressure excursion in the piping occurred. The area was evacuated; on-scene command personnel surveyed the areas outside the building and found no signs of a fire**.** A release of asbestos occurred during the excursion that exceeded reportable quantities, but there were no injuries or other releases from the incident. An investigation is under way. (EM-ID—CWI-BIC-2011-0009)." [11]

It is a credible assumption that if asbestos was released that there was also a release of radioactivity. The MFC had previous events that should have gotten BEA in gear to protect workers; but did not.

"April 5, 2011: It was determined that surveillance for safety exhaust system filters at the Fuel Conditioning Facility did not meet applicable standards. The facility remained in the secure mode until the filter testing procedures were revised to comply with the applicable standards, and testing was completed. (NE-ID—BEA-FCF-2011-0002)."

"Oct. 12, 2011: An operator at the Materials and Fuels Complex received an elevated dose of radiation to his right hand while processing metal fuel samples. The elevated dose is believed to have occurred in the Hot Repair Area, when radiological samples were characterized and packaged for transport. Dosimeters for all personnel who took part in this activity were analyzed and no additional abnormal results were identified. The extremity dose tracking requirements were modified to require that all personnel who use extremity dosimetry estimate and track their personal dose when signing on to a radiological work permit. (NE-ID—BEA-HFEF-2011-0004)."

"Jan. 4, 2012: High winds damaged a power meter at the Materials and Fuels Complex, such

[9] HSS Rpt. Pg. 67
[10] INL News Release, 1/18/12
[11] DOE-ID Bi-Weekly Summary for the Period Nov. 8-Nov. 28, 2011

that the lower portion of the meter allowed uncontrolled access to hazardous energy. The area was roped off, notifications made and the power meter was repaired immediately. (NE-ID—BEA-MFC-2012-0001)."

"Jan. 12, 2012: During a routine safety walk-down in building 798 at the Materials and Fuels Complex, it was discovered that an instrument air-line had been installed in the building's heating and ventilation system without proper authorization. A critique was held and work associated with the project was shut down pending activity reviews and corrective actions." (NE-ID—BEA-MFC-2012-0002)."

"Jan. 17, 2012: INL staff unexpectedly discovered radiation labels on equipment they were preparing to return to a customer. A radiological contamination and radiation survey was conducted, the cage used to store the instruments was posted as a controlled area, and management notifications were made. (NE-ID—BEA-INLLABS-2012-0001)."

"Jan. 18, 2012: A technical violation of the safety standards for a glove box at the Special Nuclear Materials Storage Facility at the Materials and Fuels Complex was noted during a routine safety review. The violation was the result of an administrative oversight when the safety documents were approved, and had no safety consequences. A technical safety violation was declared and the safety document was updated to correct the administrative error. (NE-ID—BEA-FMF-2012-0001)." [12]

The Idaho Falls Post Register also published the following articles:

"Toxic report – DOE skewers INL management over radiation accident." (Jan 19, 2012)

"INL chief speaks out –Director points to policy failures in exposure" (Jan 21, 2012)

"Creating a safety culture"(opinion by Corey Taule – Jan 22, 2012)

"Taking care of our people"[Leadership at Idaho National Laboratory has always placed the safety of its employees first, writes John Grossenbacher.] Jan 29, 2012.

Root Causes – Unchanged

By Tami Thatcher

The Department of Energy Office of Health, Safety and Security issued this accident investigation report in January 2012: "Plutonium Contamination in the Zero Power Physics Reactor Facility at the Idaho National Laboratory, November 8, 2011." The contamination event affected 16 employees at the Materials and Fuels Complex (MFC) operated for DOE by its operating contractor BEA at the Idaho National Laboratory (INL).

Safety basis deficiencies were found to be systemic root causes of the accident, and actually that is rather unusual. I had worried about how the safety bases had been managed after BEA took over MFC. The safety basis deficiencies began before BEA, when Argonne National Lab West operated what is now called MFC. They had avoided upgrading their safety bases through the 90's due to budget austerity. The DOE Argonne Office in Illinois then conveniently approved

[12] DOE-ID Bi-Weekly Summary For the Periods April 5, 2011 – Jan. 23, 2012

many of their old outdated safety bases as 10 CFR 830 compliant when the "rule" went into effect in 2001 to avoid having to cease operations. So, when BEA took over MFC around 2004, they really stepped into a difficult situation with aging facilities, weakly supported safety bases documents and the loss of experienced staff. DOE did not want to spend resources to fix things and cleaver excuses were made to allowing BEA to slowly upgrade the safety bases over time. This is still in progress seven years later even though these safety bases are listed as "approved under the rule" on DOE's website.

The 10 CFR 830 rule basically requires DOE nuclear facilities to analyze the hazards, their likelihood and consequence and then to identify the conditions, safe boundaries, and hazard controls necessary to protect workers, the public, and the environment from adverse consequences. These analyses and hazard controls constitute the safety basis on which the DOE and the contractor rely to conclude that facility operations or activities can be conducted safely. The rule includes the requirement of reporting deviations to the approved safety basis using the Unreveiwed Safety Question process. Reporting would be required when the likelihood of a hazard documented in the safety basis increased or the consequences increased or a new hazard was identified. And, if BEA didn't understand this before the event, they might now understand that the information from the safety basis is also used in developing safe work planning in the facility and in planning and preparation for emergencies.

For radiological protection of workers, the safety basis includes a combination of facility-specific hazard analysis as well as handing off to more general overall radiation protection program requirements. In addition, each work activity requires specific planning and controls for radiological protection addressing expected and off-normal conditions. It is the facility manager's responsibility to implement the safety basis in the facility and to approve all activities and procedures used in the facility.

The safety basis upgrade was encouraged by DOE to follow a minimalist approach and not to question the validity of existing supporting documents, for example. And during this process, DOE and the BEA agreed to a large subset of issues where they would not apply the Unreviewed Safety Question reporting requirements of 10 CFR 830. Effectively, they all agreed to basically turn off the reporting of safety basis issues. They argued that the safety basis deficiencies didn't matter because of the strong Integrated Safety Management programs at INL. They did this because reporting issues can be embarrassing and costly and it tends to create more urgency to fix issues that are found.

When I worked at INL, a positive USQ turned on various processes to assure that the problem was resolved and all aspects were implemented (hardware changes, document changes, training, and so forth). And these things cause a big strain on budgets and schedules. Often, facility operations were restricted until the fixes were verified as complete.

The conclusion that defective fuel in the ZPPR facility had a higher likelihood than previously documented in the safety basis would normally have resulted in a positive USQ. And it would then have required formal examination of whether any activities must be restricted and required a formal determination of whether additional hazard controls were needed. But these processes had been turned off. And with DOE's direction to do so.

The accident investigation report makes it clear to me just how bad the safety basis (10 CFR 830) and integrated safety management (48 CFR 970.5223-1) are at INL. In particular, how bad it's gotten throughout all levels of nuclear facility staff at MFC.

When it was determined that damaged fuel was an "anticipated event" that required additional in-facility worker consequence analysis rather than an "extremely unlikely event," the safety

analysis group should have interfaced with the facility manager to ensure that fuel inspections or other safety measures were put in place. Nobody had bothered to understand the historical procedures in the facility or its Suspect Fuel Log. The approved work plan was streamlined and written as though nothing could go wrong. The shift supervisor should have stopped the job when the abnormal fuel packaging and labeling was found. The facility manager should have stopped the job when contacted about the questions from workers. The radiological planning and emergency planning needed improvement.

Icing on the cake: two different MFC directors had ignored the top safety cop a contractor has – the safety oversight committee chairman –concerning radiological handling of fuel in the facility.

Nobody wanted to be the wet blanket to say they ought to take the safety basis increase in the likelihood of an accident seriously and cease operations until they gained better understanding of the condition of the fuel.

But, basically everybody was doing their job as DOE had encouraged them to do: shut up and don't make a fuss over safety issues. Don't look for problems because we don't have money to fix them, not in the 90s, not when the contracted transferred to BEA around 2004, and not now.

With the November 8, 2011 event, there was no earthquake, no equipment failure, no operator asleep at the controls, none of the usual suspects. Integrated safety management and 10 CFR 830 had been, if not turned off, sufficiently dimmed at all of the facilities at MFC, and on November 8, 2011, it mattered. And the likely response by DOE will be to replace the contractor, giving DOE a scapegoat for the problems and safety culture that they very much created.

Tami Thatcher is a former nuclear safety analyst at INL.

Convoluted DOE Gamesmanship

by Tami Thatcher

Tami Thatcher reports 1/26/12 in the Idaho Falls *Post Register*: "The Department of Energy's failure to provide adequate funding is the root cause of the November 2011 plutonium exposure at INL.

Have you ever watched 5-year-olds play a board game like Chutes and Ladders? When experienced at the game, the savvy player positions his game piece to the desired position, pretending to move according to the dice. Years ago, watching children play the game in this manner had reminded me of working at the Idaho National Laboratory. And apparently, what has changed is the degree to which the rules are reinterpreted.

The loss of experienced staff at INL's Materials and Fuels Complex during the BEA contract change coupled with woefully inadequate safety basis documentation creatively approved with caveats by DOE as 10 CFR 830 rule compliant led to the Nov. 8 plutonium contamination event at MFC.

While reading the DOE-led accident investigation report available online, I really didn't know whether to laugh or cry.

When the safety oversight committee chairman's concerns are ignored regarding something so tangible as anticipated hazards to workers, how likely are concerns raised about potential accidents yielding off-site contamination to be addressed? Answer: Not very likely.

How can a facility with a safety basis deemed as "approved under the rule" by DOE have significant vulnerabilities and just go on with business as usual?

Well, it turns out that DOE can approve just about anything as 10 CFR 830 rule compliant. Lacks identification of the hazard? Lacks defensible likelihood estimation? Lacks reasonable consequence assessment? Fails to address modern natural phenomena hazards? Lacks verifiable supporting references? No matter.

DOE approves it and contractor requests for adequate funding are denied. The basis for DOE's blanket approval of a large catch basket of issues was the "strong framework of integrated safety management" that so obviously failed on so many levels Nov. 8.

In truth, the most effective safety oversight at DOE facilities typically comes from knowledgeable individuals who are near retirement and whose families do not need company-provided medical insurance. These individuals are rare.

Without them or a very strong safety culture, you are likely to get major tip-toeing about bringing up safety concerns, as happened when the "whitepaper" given to management was twice ignored.

From this recent event, it is clear that not only are the safety bases at MFC inadequate years after disingenuously being declared 10 CFR 830 compliant, so is integrated safety management, the process relied upon for day-to-day operations.

The historical "cure" for such problems is a contractor change, but that simply distracts from the root cause: DOE's refusal to provide adequate funding.

The only potential losers in this world of convoluted DOE gamesmanship besides the contractor who loses a share of award fee are the workers who get contaminated and anyone on-site or off-site affected in a future accident event. Not DOE's problem!

Tami Thatcher is a former nuclear safety analyst at INL.

Will the Downwinders Finally be Heard?

Janet Monti reports 1/23/12 in the Emmitt, Idaho *Messenger-Index*; “On this job, I should not have an opinion about what I write. I work hard to remain neutral. But, when it comes to downwinders, I sometimes find it hard to remain objective. Over the years, this story has brought me to tears more times than I remember. Tears of sorrow and of frustration. The topic has blindsided me at unexpected moments. But, there have been a few random moments of hope.

When I started writing about nuclear fallout in 1997, I had no idea it would mushroom into a national debate that would span three decades - and it may not be done yet.

Most of us know that above ground nuclear tests were done in Nevada in the 1950s and 1960s. Fallout from these tests contained a variety of toxic dust, with Iodine-131 gaining the most notoriety. The National Cancer Institute says I-131 can cause thyroid cancer.

In 1990, the U.S. Congress approved paying people from a handful of counties in Nevada, Utah and Arizona for some cancers their residents developed.

In 1997, the NCI released a report that said areas that received the most fallout were not in the counties Congress was already compensating. Gem County [Idaho] was the third hardest hit by fallout in the country. And, in spite of a lot of news and political coverage, this inequity of payment has never been changed.

Since 1997, I have listened to people who are scared for the lives of their grown children.

I watched an elderly farmer's eyes fill with tears when he realized the milk they sold their neighbors decades ago may have caused cancer decades later.

I heard people beg federal officials "Never again!"

I placed obituaries on the Messenger Index pages of people who died without their voice being heard.

I get telephone calls at home from people I'll never meet who are afraid; those who tired from the hard work to stay healthy; and still others who ask, "Why?" aren't they included with those already recognized by our federal government.

I followed the frustration of elected officials who have fought for recognition of Idahoans.

Many people have shared their stories or told me about family or friends. I have been given intimate details of what their body now does - or doesn't do; each trusting I will not share this private information. Each of these people said what they wanted was recognition, it was not about the money. I am sure money to help pay for ever-increasing medical bills would be helpful. After all, who wants to leave behind a mountain of debt?

Every one of these people wanted recognition for a wrong done. They want to be counted, to know their sacrifice means something.

Friday is the 61st anniversary of the first test in Nevada. Last fall, Congress approved this as Downwinders Day.

I hope Friday becomes a first step to gaining recognition for all of America's downwinders - especially those who can no longer share their story." [13]

On Day of Remembrance, Downwinders Say Not Enough is being Done

Justin Corr reports 1/27/11 for *KTVB.com* in Emmett, Idaho; **"**Friday is a national day of remembrance for downwinders, people who worked and lived downwind from nuclear testing sites and got sick from the radiation. But more than 60 years after the first above-ground nuclear weapons test in Nevada, many Idaho downwinders say not enough is being done.

Last year Bill Reynolds went to the doctor for tests. "I was feeling tired and wore out," said Reynolds.

He found out he had MDS (or myelodysplastic syndrome), a blood disease that can be a pre-cursor to leukemia. "Not knowing what this is he prints me up some papers," said Reynolds. "The first line is 'MDS: no cure.'"

Reynolds says his doctor told him he likely got it from exposure to radiation, even though he's lived in Emmett his whole life. "He said I was exposed to an atomic blast, his exact words," said Reynolds.

Bill, along with hundreds of other downwinders in Idaho, believe radiation carried downwind from the nuclear weapons tests in Nevada in the 1950s and 1960s caused his illness. "Numerous kids that I went to school with either have cancer or have already died of cancer," said Reynolds. "I'm positive this has all come from the radioactive fallout, from the tests in Nevada."

Emmett is a long way from the Nevada test site. However, a government report in the late

[13] Also see; "Fallout – An American Nuclear Tragedy" by Philip L. Fradkin; and "Killing Our Own, The Disaster of America's Experience with Atomic Radiation," by H. Wasserman, N. Soloman, R. Alvarez, and E. Walters.

1990s revealed that four of the five counties in the country, most exposed to the nuclear fallout, are in Idaho. One of those counties is Gem County.

In 1990, Congress passed a law which requires the government to pay people with specific diseases, like Bill's MDS, who were living in parts of Arizona, Utah, and Nevada at the time of the testing. But if you were living in Idaho, like Bill or the other downwinders, you're ineligible. Although, Idaho's congressional delegation and all the downwinders in this tight-knit farming community are trying to change that.

"A time will come when we do get it pushed through," said Reynolds. "Because especially the people of Emmett, they don't give up on things."

Sens. Mike Crapo and Jim Risch have co-sponsored legislation to extend that government compensation to Idahoans. Right now, as has happened many times before, the bill is stuck in committee. But Risch says this is something they won't stop fighting for."

Court to Vermont: "Drop Dead"

Harvey Wasserman reports 1/24/12 in *Common Dreams*; "A federal judge has told the people of Vermont that a solemn contract between them and the reactor owner Entergy need not be honored.

The fight will almost certainly now go to the US Supreme Court. At stake is not only the future of atomic power, but the legitimacy of all deals signed between corporations and the public. Chief Justice John Roberts' conservative court will soon decide whether a private corporation can sign what should be an enforceable contract with a public entity and then flat-out ignore it.

In 2003 Entergy made a deal with the state of Vermont. The Louisiana-based nuke speculator said that if it could buy and operate the decrepit Vermont Yankee reactor under certain terms and conditions, the company would then agree to shut it down if the state denied it a permit to continue. The drop dead date: March 21, 2012.

In the interim, VY has been found leaking radioactive tritium and much more into the ground and the nearby Connecticut River. Under oath, in public testimony, the company had denied that the pipes that leaked even existed.

One of Yankee's cooling towers has also collapsed...just plain crumbled.

One of Yankee's siblings---Fukushima One---has melted and exploded (VY is one of some two dozen Fukushima clones licensed in the US).

In the face of these events, the legislature, in partnership with Vermont's governor, voted 26-4 to deny Entergy a permit to continue. But the company is determined to continue reaping huge profits on a 35-year-old reactor -- long since amortized at public expense -- with very cheap overhead based on slipshod operating techniques where safety always comes second. Along the way Entergy has also tried to stick Vermont Yankee into an underfunded corporate shell aimed at shielding it from all economic liabilities.

To allow VY to continue fissioning, Judge John Murtha latched onto Entergy's argument that the state legislature committed the horrible sin of actually discussing safety issues. These, by federal law, are reserved for Nuclear Regulatory Commission. He chose to ignore the serious breach of contract issues involved. As Deb Katz of the Citizens Awareness Network puts it:

"Entergy's lawyers cherry-picked legislators' questions about safety" from a previous debate relating to nuclear waste. "Judge Murtha supported the corporation over the will of the people."

The surreal nature of telling a state it can't vote to shut a reactor because it dared to consider the public health dates to the Atomic Energy Act of 1954. To paint a happy face on the atomic Bomb, Congress essentially exempted the nuclear power industry from public accountability. It gave the Atomic Energy Commission sole power to both regulate and promote its "too cheap to meter" technology.

Some 67 years later, Judge Murtha says the legislature's encroachment on the province of safety means Entergy can violate its solemn legal agreement with the people of Vermont.

In practical terms, this could mean that any corporation can bust any public trust on even the flimsiest pretext. Let the corporate lawyers find some pale excuse and the company can skirt its contractual obligations. In the hands of the supremely corporatist Roberts Court, this case could join Citizens United in a devastating one-two punch for the unrestrained power of the private corporation.

It would also put the reactor industry even further beyond control of the people it irradiates.

Thankfully, the judge did not entirely rule out the possibility of the state taking some kind of action. Vermont's Public Service Board still has the right to deny Entergy an extension. Perhaps the commissioners will ban the word "safety" from all proceedings. If they do say VY must be shut, Entergy's legal team will certainly even newer, more creative ways to appeal.

Vermonters will stage a shutdown rally March 21. Local activism against the reactor continues to escalate.

No US reactor has been ordered and completed since 1973. Shutting Vermont Yankee or any other of the 104 American reactors now licensed might well open the floodgates to shutting the rest of them, as Germany is now doing.

Karl Grossman has suggested Vermont use eminent domain to shut VY, as New York did 20 years ago to bury the $7 billion Shoreham reactor, which was stopped from going into commercial operation.

However it happens, the people of Vermont are in a race against time to prevent another Fukushima in their back yard---which is also all of ours.

"When this rogue corporation is again rejected," says Katz, "the will of the people and democracy will be upheld. Let’s commit to doing whatever we can to at last make a nuclear corporation keep its word."”