OPSMPEm Resource

From: West, Stephanie
Sent: Wednesday, July 02, 2014 9:10 AM
To: OPSMNPEm Resource; OPSMPEm Resource
Subject: Replace blog archive for March and April 2014
Attachments: blog-published-2014-05-01@09-03-02.pdf

The attached is a corrected version of the blog archive for March and April 2014

The associated ML#'s are as follows

ML14126A694 – Non-public
ML14126A705 – Public

OPA

NRC

Hearing Identifier: NRC_OfficialPresenceSocialMedia_Public
Email Number: 49

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Subject: Replace blog archive for March and April 2014
Sent Date: 7/2/2014 9:09:53 AM
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From: West, Stephanie

Created By: Stephanie.West@nrc.gov

Recipients:
"OPSMNPEm Resource" <OPSMNPEm.Resource@nrc.gov>
Tracking Status: None
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MESSAGE	217	7/2/2014 9:09:57 AM
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Reply Requested: No
Sensitivity: Normal
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U.S. NRC Blog

Archive file prepared by NRC

The NRC's Annual Regulatory Information Conference Goes Mobile

posted on Tue, 04 Mar 2014 15:34:25 +0000

Stephanie West
Public Affairs Specialist

While it's not Candy Crush or Angry Birds, it is a step acknowledging the importance of putting more accessible content on that little device you hold in your hand. That's right, the NRC is now offering a new mobile-friendly website loaded with information about this year's Regulatory Information Conference – the RIC. For those attending the RIC in person, the mobile website will help you keep track of the schedules for all the sessions, workshops and the tours we'll be giving at our new Operations Center. But don't worry if you can't make it to the RIC this year. You can still use your favorite device to browse through the nuclear safety topics and regulatory activities covered at this year's conference. By visiting the agenda, for example, you can find out about a particular speaker and view the presentations for technical sessions. You can also take a close-up, virtual tour of posters and table-top sessions The mobile site will be available until early summer 2014. So, there is plenty of time for activities such as accessing webcast archives, and navigating to presentations, handouts and speeches. You can visit the main RIC website and access mobile content via the link. The world of mobile of computing is certainly not getting any smaller. So we don't plan to shrink from the challenge of enhancing our mobile capabilities. We'll keep evaluating and innovating to make the information most interesting to you available on the devices so many of us use every day. Of course you can always get RIC information and content through some of our social media sites. We'll be posting videos on YouTube, photos on Flickr and tweeting postings of content to our Twitter followers. Meanwhile, stay tuned for more "Mobile NRC" ventures in the future.

Comments

comment #266110 posted on 2014-03-04 13:48:15 by CaptD

> Mobile access should be the standard to which the NRC should adopt, since it would make searching for documents easier and allow even more public access due to its simplicity! As it is now, using ADAM for those outside the NRC is cumbersome at best and completely frustrating at worse. It's time that the NRC make material easy to search for without the public it serves having to use special terminology!

comment #266781 posted on 2014-03-05 11:21:49 by Rich in response to comment #266200

> Thanks for the detailed agenda. I found some of my issues identified there. I take back everything I said except for the part about the Commissioners. (:-)

comment #266200 posted on 2014-03-04 16:00:51 by Moderator in response to comment #266138

> A detailed agenda is here: https://ric.nrc-gateway.gov/agenda.aspx Moderator

comment #266138 posted on 2014-03-04 14:27:00 by Rich

> Thanks for alerting us to this conference a week in advance of its occurrence. I failed to find much detail in your agenda. You would think it would be pretty detailed by this late date. Of course this annual conference is pretty much of a one-way conversation anyway. Really no more than a chance for the NRC Commissioners to sound important and knowledgeable. Wonder how much NRC staff time is taken up writing speeches and providing information for these folks so they can sound important and knowledgeable. The

agenda says important regulatory issues will be discussed, however, not a single specific issue is identified in the agenda. Let me try and help with some ideas for important regulatory issues… • How can the NRC improve its regulatory effectiveness? • Why is the NRC baseline inspection program so often found to be inadequate? • Why has it become necessary for nuclear plant after nuclear plant to be placed under an enhanced NRC inspection program? • How can the NRC performance indicator program be improved so that deteriorating plant performance can be identified before actual significant operational events occur at the plant? • Is the NRC doing everything it can to resolve the high level waste problem in the US? • What steps are being taken to make the NRC inspection program more proactive and less reactive? • Has the NRC done everything reasonably possible to protect nuclear power plants from terrorist attack? Do these efforts include protecting upstream dams from terrorist attack? • Should affected nuclear plants be allowed to operate while awaiting the results of significant safety studies? For example, pending earthquake and tsunami-type reviews. • What are the hottest topics on the NRC Blog and Open Forum sites?

Nuclear Medicine and the NRC: How it Works for Us, Patients and Health Care Providers

posted on Thu, 06 Mar 2014 14:40:33 +0000

Sophie Holiday
ACMUI Program Manager

One of the more interesting things to emerge from nuclear weapons development was the use of radioisotopes in medicine. Before the end of World War II, there wasn't much in the way of peaceful uses for radioisotopes. But in 1946, the Manhattan Project found a way to use its weapons technologies for the common good. It used a reactor at Oak Ridge to produce isotopes that could be distributed widely for research, medicine and industrial uses. The Oak Ridge reactor offered a new family of isotopes created when uranium atoms fission, or split apart. These "byproduct" materials have many uses. It works like this: Radioisotopes give off energy that can be detected as they move through the body, allowing them to be used as "tracers." This allows technicians to view different processes of the body than can be seen on x-rays. In larger amounts, some isotopes can also be used to target and destroy tumors. Today, about 17 million patients each year in the U.S. benefit from imaging with radioisotopes or are involved in research, according to the Society of Nuclear Medicine and Molecular Imaging. About 150,000 patients a year undergo radionuclide therapy. More than half of the diagnostic procedures are cardiovascular studies. But nuclear medicine patients may have cancer, diabetes, even Alzheimer's disease. Radioisotopes are also used for bone scans, to locate tumors, to treat infections, and for studies of the liver, kidney, and lungs. And new procedures are being developed all the time.

acmuiquote

The NRC's job is to review uses of radioisotopes in medicine and determine if they can be safe both for the patient and the medical personnel – as well as the public. To ensure the NRC has access to the best available information for our reviews, we rely on a committee of experts known as the Advisory Committee on the Medical Uses of Isotopes. This committee is made up of 13 health care professionals from several disciplines, including nuclear medicine, nuclear cardiology, nuclear pharmacy, medical physics, patients' rights advocacy and health care administration. There are also representatives from the Food and Drug Administration and an NRC Agreement State—a state that has assumed regulatory authority over certain radioactive materials used in their state. They are appointed by the Commission and serve four-year terms. They meet twice and have three teleconferences each year. These committee members advise the NRC on technical and policy issues related to nuclear medicine. Last year, the committee provided advice on changes needed to our regulations on medical isotopes and trends in a relatively new therapy called Y-90 microsphere brachytherapy. This therapy uses tiny beads containing radioactive material to target and destroy liver tumors while preserving healthy tissue. We recently named three new members to fill open seats on the committee. For more information, see the committee's webpage.

Comments

comment #267854 posted on 2014-03-06 14:00:05 by Garry Morgan

Thank you, very useful information and directly connected to your mission of reviewing and regulating medical isotopes.

comment #268877 posted on 2014-03-07 14:43:32 by Moderator in response to comment #268757

Thanks for your comment, we're glad you liked our post. Just to clarify, what we are saying is that radioactive tracers allow imaging of different bodily processes than can be seen on x-rays, not that the tracers can be seen on x-rays. Maureen Conley

comment #268757 posted on 2014-03-07 12:09:38 by John J. Coupal

Abbott Laboratories was one of the first pharmaceutical companies to distribute those radioisotopes produced in Oak Ridge for use as radiopharmaceuticals in nuclear medicine. I believe some former federal government Oak Ridge employees left for Abbott in North Chicago, Illinois. There is one technical error in the post. The images of the human body from incorporated radionuclides are not seen on x-rays, but on nuclear medicine scans or images, which reveal 2-D or 3-D location of photons emitted by the radionuclide and detected by specialized imaging devices (e.g., gamma cameras). Great to see a post about healthcare benefits resulting from a

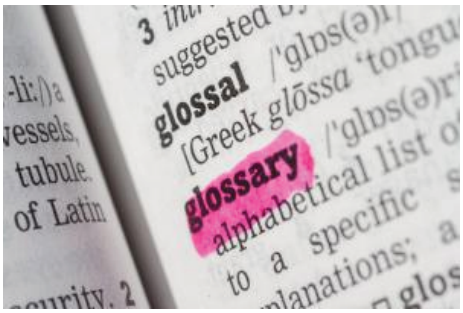
weapons project!

NRC Defines Risk Terms in a New Glossary

posted on Mon, 17 Mar 2014 14:06:10 +0000

John Nakoski
Office of Nuclear Regulatory Research
Division of Risk Analysis

As with many subjects, when you're talking about Probabilistic Risk Assessment (PRA) terms, it can get confusing when the same terms mean different things. To reduce this confusion, the NRC's Office of Nuclear Regulatory Research decided to produce a glossary of risk-related terms. In November 2013, we published NUREG-2122, "Glossary of Risk-Related Terms in Support of Risk-Informed Decisionmaking." This glossary provides a single source for definitions of terms used in risk-informed activities. This document clarifies the terms and provides the proper context for using them. For example, the glossary defines the word "assumption" as "a decision or judgment that is made in the development of a model or analysis." It then describes how "assumption" is used within the context of a PRA. We developed the list of terms by first reviewing documents used to support risk-informed activities. Both experienced and new staff contributed to this initial list to ensure terms were not excluded too early. We then screened the list to develop the final glossary by considering each term's significance to risk-informed decisionmaking. After we finalized the list, we identified definitions that already existed for these terms. Where a definition already existed, we left it as is. Also, when a definition was consistent among the various sources, it was used as the basis for the final definition in the glossary. To help in understanding the definitions we used, we included cross-references to other terms in the glossary. Also, for the more complex terms, we included plain language background information to clarify the definition used by experts. This supporting information eliminated technical jargon and -- we hope -- makes the terms more accessible to non-technical readers. For example, the glossary goes into quite a bit of detail about "Bayesian analysis," an uncommon term for the lay audience. The glossary explains that the term applies to a type of analysis used when occurrences of an event are so rare or nonexistent that data from actual event occurrences (frequentist approach) are not reliable. In addition to defining the terms, the glossary describes how they are used in risk-informed decisionmaking and offers some insights on their history. Where multiple definitions exist, we included them in the descriptions along with an explanation of their differences. This is our attempt to make what we do a bit less opaque to the non-scientist. We hope it reduces ambiguity and promotes common understanding for better communication. If you have thoughts about future adjustments, feel free to let us know in the comments.



Comments

comment #279036 posted on 2014-03-17 13:48:06 by Garry Morgan

> Quote from page 2-11 NUREG 2122 - "...no special risk knowledge is presumed by the audience, a basic understanding of nuclear safety is assumed." Is the public to assume that the NRC's goal in protecting the public is an ASSUMED mission or a practiced mission? Are folks to ASSUME that the NRC understands nuclear safety? The NRC utilizes a model of a parachutist on page 4-9 to discuss an accident sequence. Your path sequence is flawed as there are no allowances for an unintended event occurring prior to an attempt to deploy the "chute," a very long list in the case of a parachute accident, in the sequence. On Page 4-40, the Event Tree example, goes into more detail in the case of the parachutist accident scenario, it is still lacking the detail required. You display an over simplification of a defined model for accident sequences in risk analysis, why? Am I to ASSUME your entire sequence of accident evaluations/investigation definitions of all events are flawed if the "parachutist scenario" is the defining methodology the NRC utilizes in an accident or event investigation? Note: You do define the term "External Hazard;" however, it is not listed in the "tree" as a required item to investigate. Applicable in this case, e.g. tampering, missile (foreign object) strike, medical condition of the jumper, amongst other factors. It is appreciated that the NRC considers beyond-design-basis accidents (BDBA) in the definitions of risk analysis. Unfortunately you issue forth what seems to be a conflicting statement in your BDBA description on page 4-15, quote: "A nuclear facility must be designed and built to withstand a design-basis accident (DBA) without threatening public health and safety. However, the nuclear facility is not necessarily designed to withstand BDBAs." What is it, either it is designed and built to withstand the accident or it is not? If the design does not contain the necessary elements to withstand the BDBA how will the nuclear facility be built to withstand the BDBA? The NRC's description of the design vs. building a nuclear facility appears to be an example of flawed logic; before such a complex building may be built, it must be designed. Logic flaws in risk analysis process do not build confidence in the organization performing the risk analysis. Maybe this is a communications failure, which should also be part of risk assessment, it is not listed. More questions, where may the nuclear plant "Risk Profiles" be found? Is there a singular risk profile number assigned to each nuclear facility? Your sharing the NUREG document as well as facilitating this discussion is appreciated.

comment #292557 posted on 2014-03-28 07:14:56 by car service in response to comment #279109

> I second that, great response from Garry Morgan

comment #279097 posted on 2014-03-17 14:47:49 by CaptD

This is a good start and I encourage the NRC to apply this new glossary to their ongoing investigations, especially like those about the replacement steam generator debacle at San Onofre and St. Lucie http://blog.cleanenergy.org/2014/03/12/open-letter-fpl/ . Since the lay public has a right to be informed as to what is actually being done to identify the root causes of all accident and incidents, so that the rest of the US Nuclear Fleet can be operated in a safer manner! Sure there will be always be Experts that disagree with everything that other Experts on the opposite side of any debate say, but when the NRC repeated refuses to accept that more than one steam generator tube can fail at one time, ex-NRC Experts, knowledgable Engineers and others must question why the NRC refuses to make this change. since San Onofre proved that more than one steam generator tube could fail at one time and because not one but 8 tubes failed in-situ testing a cascade of failing tubes could under the correct conditions lead to draining the reactor core coolant! I also agree that the global nuclear industry has the money it needs to fund all the peer reviewed studies it wants, that end up saying whatever they want them to, or they simply will not publish them... We also know that exactly three years ago today, all the Japanese nuclear Experts (along with many other nuclear Experts across the World) that said that "modern" nuclear power plants were safe and had so many safety features that they would not meltdown because they were so well designed, were proven terribly wrong by Fukushima's triple meltdowns and that it will take decades if not about 100 years to deal with its on-going pollution of the Pacific Ocean, that is, if nothing BIG goes BAD before then. Also in all fairness, mankind will have to employ NEW types of equipment that have never ever been built, in order to deal with the new problems Fukushima has created. Also, until fully decommissioned, the Japanese will continue to contaminate massive amounts of sea water with radioactivity daily, that will all end up in the Pacific Ocean unless the UN sanctions the Japanese with penalties which should be used to finance Solar (of all flavors) R&D and it's installation in developing Countries, if they will agree to not use nuclear. This will enable mankind to begin the transition to Solar while at the same time reduce the need for our Earth's limited resources. Yes I also agree that the Coal Industry has many health problems associated with it, which the Nuclear industry is all too eager to point out; but the SAME THING COULD BE SAID ABOUT THE NUCLEAR INDUSTRY; since it also mines radioactive Uranium ore which is then processed into highly radioactive fuel rods of several different types. Once this radioactive fuel is used in a reactor, it then produces huge amounts of additional radioactive waste that will have as yet unknown effects on mankind over the enormous timespan that it will take to render all of it harmless! Because this radioactive timespan dwarfs anything currently affecting mankind, it is completely unscientific to say today, what the harmful effect of our using nuclear power plants in the twentieth and twenty-first century will be generations from now! For example, should highly radioactive "dirty" material from Fukushima be used in a terrorist weapon at some point in the future, its affect on man must be placed directly upon the nuclear industry that created it, because without building the nuclear power plants it would have never existed to cause harm to man's health. This is yet another potential "future" health problem that cannot be discounted since there is so much radioactive waste material unaccounted for at Fukushima and many other locations globally! It is no longer fair for the nuclear industries spokespersons, the IAEA and/or regulators like the NRC to try to limit Energy discussions to only the positive points that favor using nuclear while at the same time shrugging off all other negative points as not being relevant! Some of the above was also posted at : http://thebulletin.org/needed-ability-manage-nuclear-power

comment #279109 posted on 2014-03-17 14:58:16 by CaptD

Salute to Garry Morgan for his comments.

comment #279123 posted on 2014-03-17 15:09:08 by CaptD

I'd like to add that the NRC still fails to take into consideration the proven fact that Nature can destroy any land based nuclear reactor, any place anytime 24/7 just like it did at Fukushima and no engineering design work or NRC specifications can prevent that from happening. Fukushima proved that even though the probability of a meltdown was a 1 in 10,000 year or even a 1 in a 100,000 year event, not 1 but 3 meltdowns could occur almost on the same day! Probability dictates that an event is just as likely to happen today as it is sometime in the future, yet the NRC tends to always imply that if something does happen it will be far into the distant future, which is illogical at best and simply dangerous in the worst case. Using scientific to somehow imply that something is safe when it is not is the worst thing those with scientific knowledge can do, because it make scientists look like "snake oil salesmen". The USA cannot afford a nuclear accident for any reason and therefore it is up to the NRC to review each nuclear power plant operator and determine what changes need to be made, in order to insure Zero Tolerance when it come to compliance with all safety regulations , because even then Nature can strike at any time...

comment #284113 posted on 2014-03-21 09:29:50 by Moderator in response to comment #280515

On page 83 of NUREG 2122, “Risk Profiles (Plants)” is defined as: The major results generated by a PRA that characterize plant risk.” Additional clarifying information is also provided that states: A plant risk profile presents a concise synopsis of the major PRA results. This synopsis may consist of numerous characterizations of risk, including: • Core damage frequency and large early release frequency for internally and externally initiated events during various modes of operation. • Percentage contributions to core damage frequency and large early release frequency by initiating event and accident sequence type. • Ranking of the contribution of individual basic events and cutsets to core damage frequency and large early release frequency, based on various importance measures. • Comparison of PRA results to PRAs for other plants. • Qualitative risk insights on plant design features. The information that comprises the plant risk profile includes site-specific design and operating information that [is] maintained by the licensee. Consistent with this definition, the “Risk Profile” of a plant is maintained by and can be “found” with the licensee. The NRC does not maintain the “Risk Profiles” for nuclear power plants as licensees are not required by regulation to have PRAs nor to provide the NRC with risk information. However, the NRC does use risk information in its assessment of the performance of licensees of operating nuclear power plants. Information on the background and results of the NRC’s oversight of operating reactors can be found at: http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/index.html#Region1Plants. In addition, licensees can voluntarily submit risk information as part of a license amendment request. This information is used by the NRC consistent with the guidance provided in

Regulatory Guide 1.174, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant Specific Changes to the Licensing Basis,” (http://pbadupws.nrc.gov/docs/ML1009/ML100910006.pdf). John Nakoski

comment #280510 posted on 2014-03-18 14:10:30 by CaptD

Reblogged this on nuclear-news and commented: My new comments have been added, enjoy!

comment #280515 posted on 2014-03-18 14:14:22 by Garry Morgan

Help please, for the moderator or anyone else concerning NUREG 2122's mention of nuclear facility "risk profiles." Where may the nuclear plant “Risk Profiles” be found? Is there a singular risk profile number assigned to each nuclear facility?

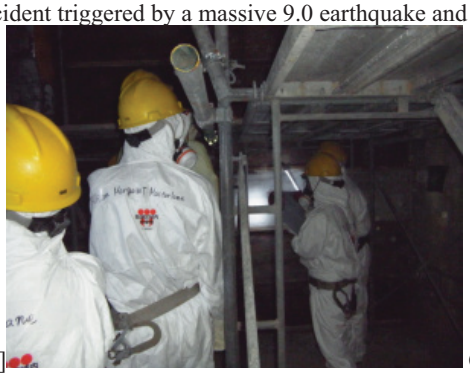
comment #280522 posted on 2014-03-18 14:18:54 by Garry Morgan in response to comment #279109

Thanks CaptD; the salute is smartly returned sir.

Marking Three Years of Post-Fukushima Progress

posted on Tue, 11 Mar 2014 12:51:17 +0000

Allison M. Macfarlane
Chairman

The approach to the Fukushima Dai-ichi reactor complex winds through empty villages where weeds grow in silent communities, storefronts are shattered and advertising signs entice a population that may be years in returning. A year ago I visited the site of the devastating March 11, 2011, accident triggered by a massive 9.0 earthquake and subsequent 46-foot tsunami. [caption id="attachment_5143" align="alignright" width="300"]  Chairman Allison Macfarlane and other NRC officials stand in the darkened interior of Reactor 4 at the Fukushima Dai-ichi nuclear complex northeast of Tokyo Dec. 13, 2012. Photo courtesy of TEPCO[/caption] The site where four of six reactors were inundated bears testament not only to the power of the natural forces but also to the huge hydrogen explosions that rocked three of the reactors. Rusting trucks lay about the property. And thousands of workers in protective gear and full-face respirators scramble over the shattered industrial complex. It is hard to visit the site without coming away impressed with the forces at work and a recognition this cannot be allowed to happen again anywhere. In the United States, we must redouble our efforts to prevent such an accident here, whether caused by an earthquake, another natural disaster or a man-made event. Not long after the accident at Fukushima, the independent U.S. Nuclear Regulatory Commission I chair embarked on a concerted effort to learn and apply lessons from Fukushima. The Commission set out a three-tiered program of safety enhancements. Many of the recommendations -- while complex -- are grounded in simple concepts. Among them are ensuring all U.S. plants take the latest seismic and flooding information into account; ensuring that the 31 U.S. early design boiling water reactors similar to those at Fukushima have the capacity to vent pressure and perhaps even filter vented air; ensuring there is sufficient additional equipment at the ready to deal with a loss of power at a reactor site and provide backup cooling; and getting additional sensors and cooling capacity for spent fuel pools. The NRC staff and the nuclear industry have made good progress in responding to the recommendations to date. We have approved plans for nuclear power plants to buy additional equipment and distribute it around their sites so that they will be able to respond even if a severe event disables permanently installed equipment. They are in the process of installing spent fuel pool instrumentation, and this spring and fall they will begin major work to accommodate hardened venting systems and additional wiring and piping to connect to newly installed cooling equipment. Every U.S. plant is in the process of completing an in-depth reanalysis of their sites’ potential for floods and earthquakes. We’ve checked the first flooding analyses and expect more in soon. We also expect the earthquake analyses from the vast majority of U.S. plants by the end of March. We’ll ensure the plants compare their sites’ new analyses to their existing designs to see what enhancements might be needed. The NRC has conducted our work following Fukushima in a spirit of openness and transparency, and we’ve benefitted greatly from public feedback. Over the past three years we’ve addressed Fukushima-related topics in more than 150 public meetings. These meetings let the public see and participate in discussions on proposed NRC actions and the industry’s responses. Finally, let me address the occasional Internet-based concerns we’ve seen about Fukushima contamination in the Pacific Ocean. Contamination near Japan’s coast is well below U.S. and international drinking water limits. And the Pacific’s vast volume has greatly dispersed any contamination before it can reach our west coast. Here the concentrations are projected to be hundreds or a thousand or more times below already strict U.S. and international limits that protect public health

and the environment. Scientists have not seen any Fukushima contamination that raises a concern about the U.S. food supply, water supply, or public health. The images of Fukushima are indelibly impressed on my mind. Even now I'm still struck by the experience of seeing the empty nearby villages, each holding memories of the 160,000 people displaced by the accident. Fukushima put nuclear safety in the spotlight. As we continue our work to address lessons learned, the NRC is committed to keeping it there

Comments

comment #273784 posted on 2014-03-12 11:21:58 by ChasAha in response to comment #273022

> The fears are not groundless. It is not paranoia. To call something a 'true fact' does not necessarily make it so. I feel like it's okay for you to attempt to belittle me with your arrogant attitude that because you THINK you know it all, makes it true. That's where your thinking is flawed. Have you read the BEIR VII Report? "The more you get paid by the nuclear power industry, the more likely you are to avoid expanding your knowledge of the subject beyond the nuclear power industries 'talking point' manual." – by anonymous (probably a former Nuclear Industry Employee) I guess it's okay to basically call me a fear monger, but if I call you a DNA destroying baby killer, that would probably be going to far.

comment #272905 posted on 2014-03-11 15:05:32 by Engineer-Poet in response to comment #272737

> Meanwhile in the *real* world, then-commissioner Jazcko ordered a 50-mile (80 km) evacuation radius around the F. Dai'ichi site, making it impossible for American navy units to conduct rescue operations and deliver aid in some of the areas hardest-hit by the tsunami. The Japanese themselves only ordered a 20 km evacuation radius. This is just one of the ways that radiation phobia kills people.

comment #273787 posted on 2014-03-12 11:29:04 by ChasAha in response to comment #272983

> I agree with CaptD's comment below. Windmills and Solar Panels do not require an 'evacuation zone' when there's an accident.

comment #272654 posted on 2014-03-11 09:12:42 by Daniel

> As an organization charged with promoting facts, the NRC never mentions that 1) no one died from radiation at Fukushima and 2) the radiation levels are safe in most of the evacuated zones and have been since the day after the accident

comment #273422 posted on 2014-03-12 02:31:27 by Aladar Stolmar

> Severe accident prevention strategy = reactor core firestorm prevention In order to regain the public support for nuclear power we must abandon the practice of defending against diverse initiating events and demonstrate a successful severe accident prevention strategy. It is evident that the severe accident in the PWR and BWR plants is a firestorm of cladding – coolant reaction within the core, destroying the first barrier between the radioactive fission products containing fuel pellets and the environment. Preventing the firestorm ignition is the winning strategy for the future of nuclear power, and it does not require the abandonment of PWR and BWR proven designs. It just requires the full understanding of the dynamics of severe accident progression and the timely intervention of operators by rapid depressurization and staged all the way to gravity flooding of reactor. Do we have all the means to do that? What additions we have to make to our hardware and what are the necessary corrections in our accident response manuals?

comment #278858 posted on 2014-03-17 10:46:42 by Rich in response to comment #275053

> CaptD is right on again! Bill Gates would have sold his mother if there was enough money in it. Telling people that spent fuel is harmless and a treasure is like trying to pick up a turd by the clean end. Recycling spent fuel would make sense but you still have to deal with the residual high level waste even though its volume would be reduced. Try living anywhere near Fukushima or ever growing anything near there again. Even if eventually you grew some rice, how would you market it? Half-price rice rice from Fukushima. Don't miss this glowing bargain. The rice that keeps on giving. Get real, nuclear is far from ideal!

comment #284762 posted on 2014-03-21 22:05:19 by ChasAha in response to comment #274909

> The one FACT that's clear to me is that there are differences of opinions when it comes to 'claiming' things as fact. People should realize that first. Especially, when it comes Nuclear Power. I disagree that, as you say, I am spreading fear. I would say, that I am spreading love instead. I love animals, children and even unborn generations that are going to be dealing with this ongoing catastrophic global event for centuries. Learning about bio-accumulation of radiation contamination and learning in advance how to mitigate when needed and to best protect yourself and your loved ones is what I'm talking about. IMO - That reduces fear and stress. The primary, easy to understand, point of the BEIR VII report is that, in short summary, it says... "There is no safe level of radiation above normal background." [paraphrased]

comment #272875 posted on 2014-03-11 14:22:17 by Engineer-Poet in response to comment #272726

IPPNW is urging the EU to drop their 600 bq/kg level down to 5 bq/kg so it is based on an actual health safety factor rather than

an arbitrary intervention level.

So, by the IPPNW, the EU would have to ban the sale of bananas (roughly 100 Bq/kg of K-40 and other natural radioisotopes), as well as salt substitute (KCl) and prohibit the potassium iodide pills used to protect people against accidental releases of radio-iodine. Very smooth! Thousands of people die each year from the inhalation or over-ingestion of hydrogen hydroxide. I await the IPPNW's program to ban hydrogen hydroxide with bated breath.

2,973 people died of causes related to the Fukushima disaster.

Those people (mostly fragile elderly) died because they were ordered to evacuate, and there was neither proper transportation to move them nor adequate facilities to receive them. Many lived in what amounts to "cube farms", which is intensely stressful and carries a high risk of spread of disease. Some never got there, dying of stress or medical neglect in the journey. All of this would have been avoided if the evacuation had NOT been ordered. Shelter-in-place was adequate for the threat. Radiation levels never came close to what's required to induce acute radiation sickness (ARS), and the elderly in particular are at almost zero risk of long-term illness from low-level radiation; they simply will not live long enough for any newly-induced cancers to become a threat to life or even health. They died because Tokyo ignored the major threat while shrinking in fear of a minuscule one. This sort of disproportionate and downright harmful fear is typically called a "phobia". The proper response to a damaging phobia isn't to humor it, but to treat it. It would be helpful if the radio-phobes received counseling and education on actual radiation science, perhaps combined with anti-anxiety medication to blunt their conditioned emotional response to the issue until their heads can take over. In the most severe cases, this might require inpatient treatment. I look forward to the day when "Lily Munster" and her cohort can walk the shores of California without worrying themselves sick that some bit of natural monazite sand, or even some droplet of sea-spray perhaps carrying a few atoms of Cs-134 from Japan, might somehow leap up and zap them dead. I especially look forward to the day that they stop trying to infect the entire world with their crazy fears.

comment #272874 posted on 2014-03-11 14:20:50 by devolpi

> Although the NRC chairperson has inherited a formidable post-Fukushima agenda, she should be advised to elevate vital ACRS and staff Tier 3 recommendations on water-level instrumentation to higher, more appropriate, and timely attention. The traumatic billion-dollar TMI-2 accident still serves as an awesome reminder that indestructible instrumentation is needed for durably responding to unexpected changes in reactor-coolant water level. The Fukushima reactor cores melted down without instrumented indications of impending or actual loss of coolant. Reactor safety can be enhanced not only for spent fuel pools: Reactors themselves need autonomous, survivable water-level instruments. A. DeVolpi, retired reactor physicist

comment #273845 posted on 2014-03-12 12:30:33 by Garry Morgan in response to comment #272971

> Commanders and Radiation Protection Officers involved in this event who failed to protect those under their command, should as a minimum be forced to retire, resign or face Non-Judicial punishment for their negligence. Those directly responsible for jeopardizing the health and welfare of sailors needlessly under their command should be Court Martialed. Apparently, the commanders at sea ignored their alarm warnings that they were in a highly radioactive plume.

comment #273848 posted on 2014-03-12 12:33:49 by Moderator

> Please note that according to the blog guidelines, comments need to be related to the topic of the post (in this case, the accident at Fukushima). We are applying that guideline liberally here, but please, for comments unrelated to the Fukushima accident, we'd appreciate you using the Open Forum section of the blog. Moderator

comment #272855 posted on 2014-03-11 14:09:09 by ChasAha

> The second to the last paragraph above is almost entirely incorrect or very misleading. Where do you get your information on dispersion of 'radioactive' contamination? Radiation will spread and accumulate, especially since the ongoing 3 meltdowns are not going to stop any time soon. The saying "dilution is a solution to pollution" is just a rhyme, it is not truth. "Scientists have not seen any Fukushima contamination that raises a concern about the U.S. food supply, water supply, or public health." - Macfarlane What? There are many others whose opinions differ greatly. In all fairness I feel that should be mentioned. In my opinion you are obviously being informed by the wrong scientists/doctors or experts that most likely have conflicts of interest in the Nuclear Industry. We should not allow this kind of misguided information to harm our children or the environment, just for the sake of continuing a proven high risk technology whose only real solution is to decommission all of the Nuclear plants and then start trying to figure out what to really do with the nonstop dangerous waste.

comment #272856 posted on 2014-03-11 14:09:35 by Desert Tripper in response to comment #272713

> stock, I have no idea what you're talking about. The US has plenty of fuel in dry cask storage. Storing fuel in pools is only temporary until decay levels allow the temperature to lower enough for dry cask storage. This type of storage is ideal to keep the fuel long term until the next generation of reactors come on-line that can utilize what is now "spent fuel" in their fuel cycles.

comment #272858 posted on 2014-03-11 14:10:33 by Franko in response to comment #272726

> Sorry but 5 bq/ kg is simply ridiculous. A single banana contains roughly 15 bq, and you need about 6 to make a kg. So you are way

out. The world has always been a radioactive place, life developed in this environment we are used to it. The natural background in Denver is several times higher than it is in the area of Fukushima that will be resettled in April. But cancer rates in Denver are not any higher than in any other place in the US.

comment #272833 posted on 2014-03-11 13:38:55 by joy cash

We have not begun to learn our nuclear "lesson" as long as any nuclear plants or weaponry exists. Perils will always far outweigh benefits. Until government & corporate profit are separated I hold little hope that our species will survive.

comment #273864 posted on 2014-03-12 13:01:40 by Garry Morgan in response to comment #273564

As you know Commander Adams, estimates are not facts of the actual radiation dose received by the ships company. Like you, I have faith in our Armed Forces and the varied missions they may be assigned to perform. There is the appearance there was an element of negligence involved in the operation. The actual dose received may be calculated based on the classified information contained in the ships daily status report and the dosimeter readings of each individual exposed. It would be negligence knowing that you are sailing into a highly radioactive plume and not issue individual dosimeters. Unfortunately, it appears this is exactly what happened; is that not true Commander? A commander in a peacetime operation should not jeopardize the health and welfare of those under his or her command when the information available in real time indicated a dangerous hazard in the form of a highly radioactive plume, as was the case in this incident. There are reports which have surfaced, due to the ongoing legal action, indicating dangerous levels of radiation were present and known by Naval Commanders participating in the operation. I thought it very revealing that not one Sailor, or Marine, including officers shown in hundreds of photographs during the operation displayed personal dosimeters. Garry Morgan U.S. Army Medical Department, Retired

comment #273889 posted on 2014-03-12 13:37:15 by Rich in response to comment #273848

I assume Mr Moderator you are referring to my blog on a huge potential flooding problem at the Fort Calhoun Station. You are probably right, the only connections that I could see to Fukushima were tsunami, flooding, seismic design, and earthquakes. Mentioning terrorism was way off base. I apologize.

comment #272801 posted on 2014-03-11 13:03:39 by jmdesp in response to comment #272708

Stock, there has been actually 6 deceased workers on the Fukushima daiichi plant after the accident, but none of them due to receiving radiations. Two were drowned by the Tsunami, the others died much later, long after the explosions that were releasing large amount of radiations. Internal *alpha* radiation is 20 times more dangerous, that's why the raw value is multiplied by 20 **before** giving a mSv value. Today only cesium is found in the Fukushima area, and it does not emit alpha radiation. The radiations of cesium are very similar to the ones of the radioactive potassium that's naturally occurring in our food, and our body actually processes the two very similarly which means that on average the cesium is excreted after 90 days for adults (earlier for kids). In the recent measurements in the Fukushima area, almost 100% of the radioactivity is from potassium 40 and not cesium 134 or 137 as shown by this Japanese document : http://www.fukushima.coop/pdf/kagezen_2013_shimoki_02.pdf

comment #272795 posted on 2014-03-11 12:54:07 by Engineer-Poet in response to comment #272726

That is very interesting. Bananas average about 100 Bq/kg between K-40 and other natural radioisotopes, so it follows that the 5 Bq/kg standard would prohibit the sale of bananas. Presumably it would also prohibit the sale of salt substitute (potassium chloride), and the potassium iodide pills used to protect people against radio-iodine releases would themselves be banned as too radioactive. Moderator Note: A portion of this comment was removed.

comment #278820 posted on 2014-03-17 10:05:32 by Daniel in response to comment #275059

And let us not forget all the IAEA workers that are on site ever since the first week of April 2011, 2 weeks after the tsunami. And the Areva workers. We all know the IAEA and Areva want the greatest harm to be assumed by their employees the world over. Nice catch Captain D !!

comment #272987 posted on 2014-03-11 16:32:23 by James Greenidge

Lily, if it wasn't you who claimed that airline pilots used the radioactivity from Indian Point as a beacon maybe a year or two back, I apologize for the error. Still, if you're going to make these deaths attributed to anything nuclear DO please cough up the beef in terms of links and addresses of your certified sources. It's only in being accurate -- and honest to the public. And I do not place the deaths of evacuees on the reactors but rather the bad knee-jerk reactions of clueless government officials. The evacuees would've done well enough staying put without someone's ill-researched judgement and incompetence booting them out. Chernobyl was a grand test example that it wasn't necessary to clear everyone out of Dodge, and Fukushima was hardly a Chernobyl. James Greenidge Queens NY

comment #272982 posted on 2014-03-11 16:21:00 by CaptD

Great article with links: The Betrayal of Mankind by the Radiation Protection Agencies http://du-deceptions.blogspot.com/

comment #272983 posted on 2014-03-11 16:21:27 by Rod Adams (@Atomicrod) in response to comment #272833

> Dr. James Hansen would disagree with your statement that "perils will always far outweigh benefits." He and a colleague named Pushker A. Kharecha recently published a peer reviewed paper titled "Prevented Mortality and Greenhouse Gas Emissions from Historical and Projected Nuclear Power" documenting the 1.84 million lives saved so far by using nuclear energy instead of burning coal or natural gas to supply the same amount of electricity. You can find the paper here: http://pubs.acs.org/doi/abs/10.1021/es3051197 He is campaigning now to convince his associates in the environmental community to take a new look at nuclear energy. Rod Adams Publisher, Atomic Insights

comment #272955 posted on 2014-03-11 16:02:00 by jmdesp in response to comment #272736

> @Lilly : The study that you reference about the black dust is available as pre-print here. http://pubs.acs.org/doi/abs/10.1021/es405294s The location where the dust sample were taken in 2012 are all very near the plant, Namie, Futaba, Minami-soma, Iidate, not in Tokyo. The color comes from the fact it consists mostly of asphalt, tire particles, lichen, soil. While the amount of cesium at around 7MBq/Kg may seem high, it's not enough to make the area a hot spot by itself since testimonies of the time confirm the amounts collected were usually below a gram, so a few hundreds Bq. Some plutonium was found inside the sample, but the amount is 10 million times smaller at 0,7Bq/Kg.

comment #272957 posted on 2014-03-11 16:03:22 by CaptD

> Leaked Emails Expose NRC’s Cover-Up of Safety Concerns Days After Fukushima Disaster | EcoWatch http://ecowatch.com/2014/03/10/leaked-emails-nrcs-fukushima/ Here is a great listing of internal NRC emails that give a sense of what was being discussed immediately after 3/11/11 occurred: http://pbadupws.nrc.gov/docs/ML1117/ML11175A278.pdf Note: It takes a while to load, but it is worth it and/or saving to disc. NRC employees talking in coded phrases, using foreign languages, trying to tell each other to follow the chain of command so as not to make any public statements and even to other US Gov't. Labs (which were the most telling emails to me) to not get involved. Taken together, they illustrate just how bad Fukushima really was, despite the happy face that BOTH the NRC and the Nuclear Industry tried their best to project to the public. It has been a rough road for the past 3 years and in retrospect, I'd give the NRC a D+ grade and I'd give the US Nuclear Industry a D- grade for their handling of Japans Nuclear Debacle. To be fair, sometimes those in the Nuclear Industry do get it right but what they have to say is not welcomed by their associates, even though it is the truth: "Clearly we're witnessing one of the greatest disasters in modern time." - AREVA Executive VP March 21, 2011

comment #272959 posted on 2014-03-11 16:06:49 by CaptD in response to comment #272874

> Agreed, along with many other improvements that all the Utilities will fight the the NRC tooth and nail, even though their ratepayers will be the ones paying for these safety improvements! That is just the tip of the nuclear power plant safety problems we face!

comment #272965 posted on 2014-03-11 16:11:22 by CaptD

> Why does the NRC always forget to mention all the negative effects of using NPP, from the cradle (aka mining) to the grave (aka centuries of ☢ Waste storage), which make using NPP less than GREEN? We all need to start providing fair balanced descriptions of generation technologies if we are to have an educational discussion, which as Scientists we should all insist upon, since accurate Data is our bread and butter! Where is the complete NRC listing of all the different kinds of radioactive pollution observed both in Japan and in the USA since 03/11/11 and just as important, why has the NRC withheld reporting detailed listing of everything observed?

comment #272971 posted on 2014-03-11 16:16:02 by CaptD

> To Engineer-Poet The USS Reagan task force was contaminated by Fukushima "fallout" and they were lucky to only have as few crewmen and crew women affected as they did, since the US Navy did nothing to prevent them from being exposed! http://enenews.com/u-s-navy-officer-radiation-levels-routinely-exceeded-300-times-normal-for-over-a-month-far-from-fukushima-yet-i-was-given-only-gloves-my-son-was-throwing-up-30-to-40-times-some-days-video

comment #272901 posted on 2014-03-11 15:00:54 by Engineer-Poet in response to comment #272736

> *1973 workers at Daiichi have received over 100 mSv internal thyroid exposure.*

That is a half-truth at best. The measured exposures of F. Dai'ichi emergency workers were published more than 2 years ago. Of the 20,549 persons scanned, only 167 had total exposures greater than 100 mSv (p. 12). Of the general public, no children (none!) exceeded the screening level (p. 22). In contrast to the non-event of radiation hazard, the "secondary disaster" was created by policymakers and a phobia-ridden public (p. 26).

comment #273828 posted on 2014-03-12 12:17:42 by Rich

> Nuclear Safety Thanks for the update. As noted the NRC has been working on Fukushima issues for three years. Important

earthquake and flooding reviews continue. My major concern is how a nuclear plant downstream of a vulnerable earthen dam can be allowed to continue operation when the NRC has information that the plant's flood protection design basis is woefully inadequate in the event of a catastrophic failure of the dam. Long ago the NRC calculated that Fort Calhoun Station would be hit with a tsunami-type surge of 46 feet if the upstream dam failed. This would far exceed the plant's design flood elevation resulting in a Fukushima accident at the plant. The nuclear industry prides itself in taking a conservative approach with regard to nuclear safety. Why does the NRC not take a similar approach in this situation? I know a more detailed flood analysis is underway but even if the 46 foot surge is off by 50% a devastating accident would still result. It is almost spring and it brings to mind the serious Missouri River flooding that occurred just 3 years ago at about this time of the year. One can only imagine the impact of a dam failure with a high reservoir level on everything downstream including a nuclear power plant. As upstream dams are not protected from terrorist attack, it makes these dams a tempting terrorist target. Also these dams would fail under earthquake conditions that are not nearly as severe as to what the nuclear plant itself is designed to withstand. Somehow the NRC must believe that the licensee will figure out a way to "evaluate" it's way out of this problem. Common sense tells even the layman that if a dam failed during the significant 2011 flood event the plant would have been subject to a severe accident. NRC, please put safety first.

comment #272885 posted on 2014-03-11 14:32:37 by Engineer-Poet in response to comment #272708

FT.com states airline crew flying regularly from New York to Tokyo receive an additional 9 mSv/yr from cosmic radiation. Airline crew in general are healthier than the general public. 20 mSv/year is nothing. The residents of Ramsar in Iran receive on the order of 260 mSv/yr with no observable impact on health. Any area where radiation levels have sunk below 100 mSv/yr should be designated open for habitation; all the Fukushima isotopes are busily decaying away, so that's as high as they're ever going to be again.

comment #273833 posted on 2014-03-12 12:23:10 by Garry Morgan in response to comment #273422

Engineering can not solve the issue of deceit, a problem within the nuclear industry. The issue of deceit has taken off like a "firestorm" in an oxygen enriched environment since the Fukushima disaster. Defense in depth must begin at the levels of leadership in both the corporate level and at the regulator. False information, propaganda, gag orders, failing to keep the public properly informed does not, nor will it ever build confidence in nuclear power nor our NRC Regulator. Your statement Mr. Stolmar is bothersome, "...we must abandon the practice of defending against diverse initiating events." Is that not the same as: "...demonstrate a successful severe accident prevention strategy."? Planning, preperation and training for any event which may occur, isn't that part of defense in depth. If you are not aware or identify the worse case scenario, how are you going to plan, train and engineer a response? There seems to be a denial that non-design basis events may occur and result in a disaster. That denial is often initiated by leadership for the purposes of benefiting the nuclear corporation's bottom line; not protecting the health and welfare of the citizenry.

comment #272897 posted on 2014-03-11 14:54:12 by William McCullough in response to comment #272736

@LillyMunster Guarapari is a town in Brazil next to a beach rich in monazite sands. The sand naturally contains phosphates of thorium and uranium. Readings as high as 20 uSv/h have been recorded there (~175 mSv/year). It's a tourist destination. People have lived there for hundreds of years. You can also look up Ramsar, Iran where the background radiation is ~200mSv/Year. People have lived there for thousands of years. In fact NIH has published a study (http://www.ncbi.nlm.nih.gov/pubmed/11769138) of the people who live there that show that their exposure to higher levels of background radiation actually imparts a protective mechanism. Their bodies are better adapted to repairing chromosal abnormalities than people who live in lower background locations. Daniel is right that the area around Fukushima is safe.

comment #272713 posted on 2014-03-11 10:55:14 by stock

The anniversary of Fukushima is not something to celebrate. We do not celebrate the holocaust. After 3 years, there is still no knowledge or public admission of where the coriums are. That is mind boggling. And in the USA we allow plants to store their spent fuel (the most dangerous thing) right on top of the reactor or right next to it, rather than using existing technology and to dry cask it. Cask it before we need caskets.

comment #272943 posted on 2014-03-11 15:43:24 by Moderator in response to comment #272737

by way of clatrification, the NRC recommended to the Department of State an evacuation zone for Americans residing in Japan. Evacuation orders issued for Americans came from the Department of State. Moderator

comment #272944 posted on 2014-03-11 15:44:31 by Moderator

We understand this topic can be emotional, but please refrain from personal attacks on other commenters (per the blog comment guidelines). Thank you. Moderator

comment #273955 posted on 2014-03-12 15:04:23 by ChasAha in response to comment #273022

'True Facts about ocean radiation and the Fukushima disaster ' "Instead of attempting a sound science appraisal of the triple meltdowns... It's an 'expose' with more holes than a Fukushima reactor." - Michael Collins (award winning environmental reporter) Mar 11, 2014 See full article: http://www.enviroreporter.com/2014/03/fukushima-the-perfect-crime/all/1/

comment #272726 posted on 2014-03-11 11:13:31 by LillyMunster

> The US intervention levels for radioactive contamination are not guarantees of health safety. They are only levels where the government will pull food off the market. The US also has the highest intervention levels in the world at 1200 bq/kg. IPPNW is urging the EU to drop their 600 bq/kg level down to 5 bq/kg so it is based on an actual health safety factor rather than an arbitrary intervention level. A level of 6 bq/kg in human urine has been documented as capable of causing bladder cancer. 2,973 people died of causes related to the Fukushima disaster. How many will die or become ill from their exposures over the coming decades remains to be seen. If only as much effort went into reform of the nuclear industry that has gone into trying to spin what has happened in Fukushima to make it go away, we might actually be safer.

comment #272736 posted on 2014-03-11 11:24:54 by LillyMunster in response to comment #272654

> That is just completely wrong and those kinds of comments are exactly why the public distrusts the nuclear industry. "nobody died" is a total distortion. 2973 deaths are tied to the Fukushima disaster itself. A number of hospital patients died in the evacuation. Two workers at Daiichi drown during the tsunami. Another four workers have died at the plant, one under suspicious circumstances that appear to have been an acute radiation exposure incident. 1973 workers at Daiichi have received over 100 mSv internal thyroid exposure. Two workers had over 650 mSv internal exposure. Five workers were over 250 mSv internal exposure. Many more reached the 100 mSv exposure limit in the first year of the disaster. Proclaiming "nobody died" for political points is dishonest and reprehensible. There are many who worked at the plant who may yet die from their exposures or see their health seriously damaged from their heroic efforts to keep the plant from spiraling further out of control. Exposures of those near the plant have been plagued with a lack of timely screening, inaccurate dose reconstructions and efforts to dilute the exposures by including those exposed in counts of the entire population of Japan. Hot spots of black substance, a mix of dirt, metallics and fuel fragments from one of the reactors at Daiichi are found all around the evacuation zone and as far away as Tokyo. There is a peer reviewed paper this month in the American Chemical Soc journal on this. Readings in Futaba range from 10 uSv/h to 30 uSv/h excluding hot spots. I am sure there are some evacuees who would rent their homes out to Daniel so he can go live there. Since it is so "safe".

comment #272737 posted on 2014-03-11 11:27:41 by dosdos in response to comment #272654

> The reason that they never mention it is because those two statements are not true. NRC is in charge of promoting nuclear power, not the facts. They are complicit in the coverup that the Japanese government is perpetrating. The FOIA searches have found ample documents to show that is the case. Take off your blinders.

comment #272742 posted on 2014-03-11 11:30:44 by Gary

> Everybody trance in death walk with status quo life compromised.

comment #272761 posted on 2014-03-11 12:11:18 by Rod Adams (@Atomicrod) in response to comment #272708

> @stock Can you provide a link to the "Freedom of Information Act documents" that describe the 5 people who too "acute lethal doses" at Fukushima? I would like to learn more. Rod Adams Publisher, Atomic Insights

comment #272773 posted on 2014-03-11 12:26:28 by Rod Adams (@Atomicrod) in response to comment #272736

> @LillyMunster Daniel specifically stated "no one died from radiation at Fukushima." He did not say no one died. You may have misunderstood, but you are being inaccurate when you state that he has been "dishonest and reprehensible." The doses that you mention are far below those that would provide an acute case of radiation poisoning or lead to a near term fatality. The very bottom of the range of exposures that cause those effects is about 800 - 1,000 mSv - (0.8-1 Sv or 80-100 rem). At Chernobyl, none of the first responders that received less than 2,200 mSv suffered a near term death. Everyone with lower exposures recovered from acute radiation sickness. 40 survivors received between 2,200 and 4,100 mSv. http://www.unscear.org/docs/reports/2008/11-80076_Report_2008_Annex_D.pdf (see page 58) The bottom of the range at which there is a proven link to an increased chance of contracting cancer is 50-100 mSv, so there are a few workers who fall into that category. So far, they are all still living and have no special health problems. No one in the general public has received a dose that would put their long term health at risk, but they have sure received a huge dose of fear-related stress that may have already caused health issues. http://hps.org/documents/risk_ps010-2.pdf Rod Adams Publisher, Atomic Insights

comment #273146 posted on 2014-03-11 19:36:22 by CaptD in response to comment #272983

> Rod Adams Sure there will be always be Experts that disagree with everything that other Experts on the opposite side of any debate say! I also agree that the nuclear industry has the money it needs to fund all the studies it wants, that end up saying whatever they want them to, or they simply will not publish them... We also know that exactly three years ago today, all the Japanese nuclear Experts (along with many others across the World) that said that "modern" nuclear power plants were safe and would not meltdown because they were so well designed, were proven terrible wrong by Fukushima's triple meltdowns and that it will take decades if not about 100 years to deal with its on-going pollution of the Pacific Ocean, that is, if nothing BIG goes BAD before then. Yes I also agree that the Coal Industry has many health problems associated with it, which the Nuclear industry is all too eager to point out; but the SAME THING COULD BE SAID ABOUT THE NUCLEAR INDUSTRY; since it also mines radioactive Uranium ore which is then processed into highly radioactive fuel rods of several different types. Once this radioactive fuel is used in a reactor, it then

produces huge amounts of additional radioactive waste that will have as yet unknown effects on mankind over the enormous timespan that it will take to render all of it harmless! Because this radioactive timespan dwarfs anything currently affecting mankind, it is completely unscientific to say today what the harmful effect of our using nuclear power plants in the twentieth and twenty-first century will be generations from now! For example, should highly radioactive "dirty" material from Fukushima be used in a terrorist weapon at some point in the future, its affect on man must be placed directly upon the nuclear industry that created it, because without building the nuclear power plants it would have never existed to cause harm to man's health. This is yet another potential "future" health problem that cannot be discounted since there is so much radioactive waste material unaccounted for at Fukushima and many other locations globally! It is no longer fair for the nuclear industries spokespersons to try and/or the NRC to limit discussions to only the positive points that favor using nuclear while at the same time shrugging off all other negative points as not being relevant!

comment #275805 posted on 2014-03-14 15:05:03 by CaptD

I propose that the Chairman of the NRC would be well advised to fund an independently done History: After 3/11 and then once it is completed, use it to examine exactly what responses by the NRC were later found incorrect, in order to determine how they occurred, since it is obvious that the NRC chain of command failed in its duty to keep the public informed with factual up to date information. This effort would be similar to an NRC AIT review and would result in the NRC being far better prepared if/when the next nuclear incident/accident occurs so that it can fulfill its mandate by responding far more Professionally. This History is very important because if/when the next "Fukushima" occurs, the NRC needs to respond in a more Professional manner that relies upon best practices, instead of just nuclear industry protectionism. Since the NRC already has existing funds for many programs and/or studies, funding this historical review should be given top priority. I believe that Paul Langley, myself and a few others that have been documenting this information since 3/11/11 would be most interested in this undertaking since we have already collected most of the publicly available documentation that we would need to complete this History. Example: Paul Langley's Nuclear History Blog http://nuclearhistory.wordpress.com/author/nuclearhistory/ A multi-part series of "Flashbacks" of the News released immediately after Fukushima occurred. Paul Langley's series uses actual News accounts that were published and/or official reports that were considered factual at the time they were released. This series also illustrates just how MSM was really only reporting information that (no surprise to many of us) was later found to be completely inaccurate because it tried to protect the nuclear industry from the fallout of Fukushima's triple meltdowns!

comment #275831 posted on 2014-03-14 15:37:22 by CaptD in response to comment #273564

To Garry Morgan Thanks for adding your "spot on" comments, I look forward to reading many more from you. Regarding sailing into radiation, one would hope that the US Navy would know exactly what types and amounts of radiation were in the area since the USS Reagan was nuclear powered and therefore had a complete complement of Nuclear Trained Officers I also have read that there were not enough Iodine pills aboard and that most of those that did receive them were Officers instead of the enlisted men and women that were tasked with sweeping the decks and doing other activities that kept them outside instead of inside the ship. The US Navy also had sailors sign health releases that many are now questioning, since they had no idea of what exactly they were for, if in fact the task force was exposed to enough radioactivity that the ships (and exposed equipment like aircraft) of the task force had to be decontaminated... The NRC should help everyone understand what the health effects are of exactly what happened.

comment #279127 posted on 2014-03-17 15:13:31 by jmdesp in response to comment #272708

In the first days after 11/3, Areva did send a help team to assist Tepco as soon as possible, together with large amount of boron. Japanese government clamping on information ? Everyone can read hostile to nuclear article in all the Japanese newspapers, there's no clamping at all ! But where is your hostility to all the new coal that is being built in Japan currently to replace nuclear with expedited, simplified environmental impact studies ? How many people will it kill, hasn't a coal plant in Italy just been ordered to be shut down because of the several hundreds of death it's pollution causes every year ? Even if maybe what happens with some of the external worker isn't very closely followed, they all are subject now to the same radiation standard as in the US, which safety has been verified by large and extensive epidemiological studies. This is much safer than air pollution from fossil fuel.

comment #279143 posted on 2014-03-17 15:32:35 by jmdesp in response to comment #273110

CaptD and Rich have just no factual argument here, and the way they describe M. Gate sounds like libel. The megaton to megawatt program has transformed tons of Russian bomb material into very valuable fuel for the American power plants for years. There's no reason why we wouldn't want to use modern technology to do the same with spent fuel. We know how it could be done, even we know the Canadian CANDU plants could be adapted to burn spent fuel without having to built new types of plant. The farmers near Fukushima are trying to rebuilt their industry, selling rice that is well below the safety norms. I applaud the emperor of Japan that ordered some to be served to him : http://www.japantoday.com/category/national/view/imperial-palace-receives-fukushima-rice-at-emperors-request But this effort is made difficult by the relentless effort by people like CaptD and Rich to infuse fear into as many people as possible, based on no rational reason. This is really a despicable attitude. Some people are afraid, and voicing their honest concern, I respect that. But this is clearly not what we are seeing here, instead a systematic effort to instill fear.

comment #279164 posted on 2014-03-17 15:55:13 by Rod Adams (@Atomicrod) in response to comment #273845

@CaptD Please go back and review my post. My source is the US Department of Defense Operation Tomodachi Registry. It is not a slanted news report or an attempt to interpret information posted by unknown sources on the internet. My knowledge is admittedly not "first hand," because I was not on a ship off of the coast of Japan in 2011. I have reviewed official documents and spoken to

responsible individuals. In my last US Navy assignment, which ended in September 2010, I worked in the OPNAV office that was responsible for oversight and funding of all of the Navy's intermediate maintenance establishments. I have excellent sources of information and direct contact with people who were responsible for both operations during the humanitarian efforts and for the ship clean-up. Rod Adams CDR, USN (ret) Publisher, Atomic Insights

comment #273022 posted on 2014-03-11 17:26:31 by joffan7 in response to comment #272855

Dear Chas You might like some more accurate but less scary-dramatic information then you appear to be getting at the moment, from real oceanographers and marine chemists. http://deepseanews.com/2013/11/true-facts-about-ocean-radiation-and-the-fukushima-disaster http://www.dailykos.com/user/MarineChemist# I agree that we should not allow misguided information, and the groundless fears it can generate, to harm our children. Nor should such paranoia-based reasoning interfere with the development of our science, economy or humanitarian ability to end energy poverty.

comment #273011 posted on 2014-03-11 17:13:10 by Rod Adams (@Atomicrod) in response to comment #272708

I have tracked down the source of the claim for 5 lethal doses. It was a hastily composed email that included several other mistaken claims. Since it was written by a US NRC staffer, I verified with the US NRC Office of Public Affairs that the email was incorrect. You can find details at http://atomicinsights.com/tracking-squashing-5-lethal-dose-myth/ Rod Adams Publisher, Atomic Insights

comment #273262 posted on 2014-03-11 22:13:46 by manic in response to comment #272957

I think your evaluation of corporate (or bureaucratic as the case may be) communication does a dis-service to those who are involved in these organisations. In every position I have ever held in business, I have been directly advised from superiors NEVER to talk to the press and ALWAYS keep customer and company information confidential; discretion is paramount, especially when there is a proximate emergency. This policy is ubiquitous throughout the world and does not imply a cover-up. Individuals in the same profession use professional language (jargon), the use of which allows for more efficient conveyance of meaning. This does not imply a cover-up. There is ample information on the internet regarding Fukishima, such as press releases and reports from TEPCO, the Japanese government and organisations that are involved or closely linked to the cleanup. Perhaps allegations of cover-up are an inability or unwillingness to comprehend the reality of the situation? Also, You've taken the quote of the Areva VP out of context. He was talking, of course, about the destruction of property and the immense human tragedy caused earthquake and tsunami.

comment #274805 posted on 2014-03-13 12:24:20 by devolpi in response to comment #274066

Thanks for curiosity about autonomous EX-VESSEL water-level instrumentation, a technology that has a substantial technical foundation derived in part from the TMI-2 accident. Ignored TMI-2 post-accident recommendations regarding reactor water-level monitoring and inadequate-core cooling can be found online in NUREG 737 and 933 as generic safety action items IIF-1, -2, and -3. They have been treated as “resolved” as recently as December 2011, despite the occurrence to date of four disastrous loss-of-coolant accidents. No traction has occurred from efforts to inform responsible professional and regulatory organizations by means of October and November 2012 presentations at the Anaheim IEEE and ANS San Diego meetings, as well as subsequent presentations at NRC, DOE, Argonne, and other nuclear institutions. You can find much more by Googling “water-level monitoring in nuclear reactors DeVolpi.”

comment #274520 posted on 2014-03-13 05:54:45 by Rod Adams (@Atomicrod) in response to comment #273845

@Garry Morgan You have made some pretty damning accusations, held court and declared guilt, apparently based on news reports and photos where you did not "see" any dosimetry. Don't forget that radiation is easy to measure. The general area doses were measured and below the levels at which there is any need for dosimetry. Airborne contamination levels were well above background, but they were not at levels high enough to put anyone at risk. Yes, there was some measurable contamination on surfaces, but it was not at a high enough level to put anyone at risk. Yes, it was above the "standard", but since the standard is "not detectable" it is a very low trip wire that is designed to indicate an issue worth investigating. The standard is not a radiation health issue. I presume that you are a traditional radiation protection person who believes there is no safe level, but that stance is not supported by science; it is a political stance that is used to establish regulations. According to the best science, there is no evidence for any negative health effect for doses less than 50-100 mSv (5 to 10 rem). No one even came close while assisting the Japanese people to recover from a terrible natural disaster. No one jeopardized the health and welfare of sailors needlessly. They took appropriate actions in a situation that was probably less hazardous than sending sailors into smoky areas or operating on a normally operating flight deck. Military members inherently know that they occasionally need to take moderate risks in order to accomplish important missions or to save people's lives. Rod Adams CDR, USN (Ret)

comment #275853 posted on 2014-03-14 15:52:47 by CaptD in response to comment #273845

Rod Adams ===> Since you were not aboard and are using either hearsay or releases made by the US Navy, remember that there are also many US Navy sailors that now have health issues since their USS Reagan deployment and even those civilians workers working aboard the USS Reagan have reported health issues, so the proper thing to do is to first find out much more by getting the US Navy to release all the radioactivity data they have, so that the public can better understand exactly what happened. For you to say that someone else has "made some pretty damning accusations, held court and declared guilt, apparently based on news reports and photos where you did not “see” any dosimetry" is putting yourself in the the exact same boat, since you are doing the same thing in saying

that they are wrong! Data and factual information must rule the day, and if nothing else, this points out that the US Navy should have reported what they observed in almost real time, because not doing so, has now made them look like they are covering up something and/or for themselves.

comment #279371 posted on 2014-03-17 19:59:25 by CaptD

Reblogged this on nuclear-news and commented: Many good comments here worth reading if you are interested in reactor "safety".

comment #281327 posted on 2014-03-19 02:50:53 by uobd2

I hope that such events never happen again, also hope the world peace.We go to work every day, and your family happy together, you are safe.

comment #272708 posted on 2014-03-11 10:49:45 by stock in response to comment #272654

I hope you are being facetious, because those are not facts. Freedom of information act documents indicate that 5 people took acute lethal doses at Fukushima, and allowing kids, or adults, to live in 20mSv zones of external radiation, that is likely to become internal radiation and thus 20 times worse, is patently criminal. They did a better job at Chernobyl.

comment #273589 posted on 2014-03-12 06:43:39 by Aladar Stolmar in response to comment #272957

Face saving is the biggest concern, instead of investigating the possibility of preventing the ignition of firestorm in the core.

comment #273591 posted on 2014-03-12 06:48:59 by Aladar Stolmar in response to comment #272874

I disagree. The venting of stagnant steam and flooding the reactor is needed with depressurization. This will prevent the ignition of firestorm in the core, the reducing reaction of steam by the zirconium. And will leave the cladding and the fuel in it intact.

comment #273564 posted on 2014-03-12 05:49:37 by Rod Adams (@Atomicrod) in response to comment #272971

@CaptD I have more faith in the integrity of the US Navy than you do. My former employer took good care of its people, treating the radioactive contamination in the sea off of the coast of Japan with what I believe was an excess of caution. The USS Reagan, as a nuclear-powered ship, carried adequate monitoring gear and employed skilled people to conduct surveys and samples. According to the report issued as part of the Operation Tomodachi Registry (https://registry.csd.disa.mil/registryWeb/Registry/OperationTomodachi/DisplayAbout.do) the maximum doses a sailor on the USS Reagan during the period from March 12, 2011 through May 11, 2011 would have received are as follows: (https://registry.csd.disa.mil/registryWeb/docs/registry/optom/OPTOM_USS_RONALD_REAGAN.pdf) Whole body: 0.008 rem Thyroid: 0.11 rem That computed maximum dose makes the following assumptions: "These estimates were calculated based on you spending 24 hours outdoors/on-deck, having a constantly high physical activity level (and associated breathing rates), and being exposed to the radiation over the entire 60-day period. Your actual radiation doses are expected to be lower due to the protection afforded by being below deck and lower levels of physical activity for much of this time." Rod Adams CDR, USN (Ret)

comment #274909 posted on 2014-03-13 14:38:10 by joffan7 in response to comment #272855

Chas It's ironic to hear you complaining about someone else belittling you with an arrogant attitude, when your post takes that as its whole basis. There is zero reason to balance facts with lies. And lies are what you have been sold in the "opinions that differ greatly". In fact I have read the BIER VII report, although I would not claim I've read it cover to cover. I don't know why you bring it up though; you seem to feel that it is an argument on its own whereas in fact it is a complex document with many different points to discuss within it. Spreading fear is not a harmless activity, as many people seem to believe. It has a real impact on people's lives and indeed on their health. Your suggested ridiculous counterproposal only underlines how accurate my call is. As for the Michael Collins piece - so many words, so little content. If you want to waste your time on that nonsense, who am I to stop you? His criticism of the Kim Martini article's style is particularly ironic, given his own style. Note: Some content removed for adherence to the blog comment guidelines.

comment #275053 posted on 2014-03-13 18:20:07 by CaptD in response to comment #273110

Bill Gates is not all knowing, he did not do so well estimating how Apple would do.

comment #275059 posted on 2014-03-13 18:31:26 by CaptD in response to comment #272708

Left unsaid is the data on all the undocumented first responders that has been "lost" by those questionable companies that hired them to work at Fukushima immediately after 3/11. Since the Utility keeps itself an arms length away from "contract workers" we may never know how many of them were affected by radiation, especially since the Japanese Gov't. has now clamped down on all reporting that it considers Anti-Japanes which would include anything about Fukushima related illness or death!

comment #275049 posted on 2014-03-13 18:18:27 by CaptD in response to comment #272856

Dessert Tripper, sorry you are wrong, high burnup fuel is not as yet safe to store in casks and/or transport in them since the NRC has allowed them to be used without first figuring out how to store.transport them, Placing the cart before the horse" to quote a high level NRC Expert! Waiting for "next generation of reactors come on-line that can utilize what is now “spent fuel” in their fuel cycles." may or may not work out depending upon what happens during the meantime... One only has to look at other attempts to store and reduce radioactive materials to see that accident do happen even to Experts. Could the Carlsbad Plutonium Dump become a US Fukushima ?

comment #275046 posted on 2014-03-13 18:10:38 by CaptD in response to comment #272855

joffan7 You are employing the tired old Pro-Nuclear Blogging habit of talking down to those that do not agree with you, by saying that only nuclear experts know everything... Except how to have kept Fukushima from causing a triple meltdown and more important, how to shorten the many decades required to not try and deal with it!...

comment #274320 posted on 2014-03-13 01:53:26 by Aladar Stolmar in response to comment #273833

Dear Garry Morgan, I used the phrase “…we must abandon the practice of defending against diverse initiating events.” to point to the fact that there is a common cause in all of the severe nuclear reactor accidents which is not acknowledged, disregarded, even covered-up by the very NRC and IAEA, suppose to be the government bodies to prevent the disasters. When I raised as a Safety Concern the issue of cladding -coolant interaction in 1987(!) in Westinghouse as being misrepresented in the computer codes, I've been denied even the possibility to defend myself from ridiculous accusations... Now I'm proposing a solution to prevent the ignition caused by any diverse initiating events. Do You think that after Fukushima and the additional 4 (four) reactors lost for the same common cause I'm getting any attention?! What I'm stating that the ignition of firestorm in the reactor core can and should be prevented by venting of steam and depressurizing the reactor, and indeed gravity flooding of the core. Which means that the non-design basis events could be prevented, the fuel will remain intact in any event. I also propose to design only demonstrated safe reactor systems, which means that the reactor must be placed in a containment designed for the consumption of the entire Zirconium inventory and the worst detonation of the Hydrogen produced from that (1000 kg in 10 seconds for PWR and 1800 kg in 10 sec for BWR) in the containment. Even if we prevent the ignition of the firestorm in the core. Only such a doubled safety could be considered real safe nuclear power plant design.

comment #274066 posted on 2014-03-12 18:31:43 by hiddencamper in response to comment #272874

Hey just curious, what are the recommendations on water level instrumentation, or do you know where I can find them? I didn't know there was a recommendation on level instruments. There are many water level instruments in BWRs, but they have ranges and are complex, and operators need to be trained on understanding when their indications are valid or not. In US BWR EOPs, if your indications are invalid, you are supposed to take all actions to flood the reactor until water is over flowing out the safety valves. (just adding info about BWR instrumentation, not trying to make a point)

comment #273104 posted on 2014-03-11 18:56:33 by Marcel Williams in response to comment #272855

The Earth's oceans are naturally radioactive thanks to the radioactive uranium, thorium, and potassium that they contain. The Earth's rivers dump over 32,000 tonnes of naturally radioactive uranium into the oceans every year-- dwarfing anything that could have come out of Fukushima. Marcel

comment #273110 posted on 2014-03-11 19:03:08 by Marcel Williams in response to comment #272713

No one died of radiation exposure from Fukushima. Maybe we should celebrate that! And I don't recall anyone ever being killed from spent fuel. In fact, spent fuel is a valuable commodity owned by the Federal government and, therefore, the American people. Bill Gates estimates that spent fuel may be potentially worth over $100 trillion in clean energy production in next generation reactors. Marcel

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An NRC Official Writes About His First-Hand View of the Japan Nuclear Disaster

posted on Thu, 13 Mar 2014 13:48:40 +0000

Eric Leeds
Director, Office of Nuclear Reactor Regulation

Last month, I traveled to Japan with a group of senior NRC executives, including all four Regional Administrators. We spent a busy week meeting with representatives from various Japanese organizations involved in nuclear activities, as well as touring the Kashiwazaki Kariwa, Fukushima Dai-ni and Fukushima Dai-ichi nuclear power plants. At the end of almost every day, we took time to reflect, to discuss what we learned, and to record our thoughts. I wanted to offer a few personal insights from what I found to be a profound experience. On the bus ride to the Fukushima Dai-ichi Nuclear Power Plant, the site of the accident in 2011, we passed through the town of Tomioka, about 7 to 10 km south of the site. Before the accident, Tomioka had been a vibrant seaside village of approximately 16,000 residents. It was a resort town, with its own train stop, beachfront, restaurants and hotels. The town is now empty, uninhabitable because of radiological contamination (about 1 microsievert an hour). There are no inhabitants, no electricity, no running water. The damage caused by

test11

the earthquake and tsunami remains. Those who had lived in the town are now allowed to enter to visit their homes, but they can't stay overnight. The authorities are decontaminating the town and plan to have it inhabitable in about three years. Thinking about the people who, for all this time, have lost their homes, lost their jobs, and lost their community leaves me feeling sick to my stomach. For me, a career safety regulator, the feeling is very personal. When we reached the site, we boarded a different bus, a bus prepared for a contaminated site, with plastic herculite covering the seats and more plastic and duct tape covering the floor. We donned a full set of anti-contamination clothing, shoe covers, and respirators. There are about 250 cars, trucks, and buses on site, ferrying a site workforce of about 4,000 workers. As we passed workers at the site and in other vehicles, it struck me that everyone was wearing full anti-Cs, respirators, and helmets. It left me with an eerie feeling, as if I were in a science fiction movie. We toured the site, often leaving the bus to see specific site areas. While a great deal of work has already been accomplished, much of the damage from the earthquake and tsunami remains, if only pushed to the side. Broken buildings, twisted metal, crushed concrete and smashed vehicles still litter the site. TEPCO is currently moving the spent fuel from the Unit 4 spent fuel pool to the common pool for the site, and we toured both pools. Since we could not get into the containments of the damaged reactors due to the ongoing high dose rates, our hosts took us to the torus room of the undamaged Unit 5 containment, to show us where the containment vent valves were located on the damaged units. This was done so we could understand the difficulty the operators faced in trying to manually open the valves. ericquote1 I tried to picture the challenge for the operators, going into this confined area in pitch black, the heat stifling, the dose rate steadily increasing, looking for the valves they'd have to operate manually. The descriptions of the accident from the operators who lived through the ordeal will stay with me forever. Many of them truly believed they were going to die. They had no idea if their families survived the tsunami or where their families were. Yet they stayed and fought the accident. They were incredibly courageous. I am more convinced than ever that the Fukushima lessons learned we are requiring the industry to implement are critical to ensure an accident like the one at Fukushima doesn't happen here. We have to ensure the licensees fully implement, maintain, and exercise the Fukushima lessons learned. We have to make sure the licensees prepare their facilities and are ready to confront the unexpected. We are the ones who are accountable to and responsible for protecting the American public. It's our job. For me, it's personal. It's what I'm here to do.

Comments

comment #275620 posted on 2014-03-14 10:18:33 by voiceofreason in response to comment #274978

> Even 200mSv per year internal is infinitisimal compared to other risks we accept every day. 20 times worse than not bad at all is still not bad at all. kitemansa is right on. Stop the insanity.

comment #274996 posted on 2014-03-13 16:35:43 by CaptD

> http://www.publicintegrity.org/2014/03/12/14394/plutonium-fever-blossoms-japan Japan's Nuclear Fever RE: the ama-agari system is "like having cops and thieves working in the same police station." The Japanese people, like many others people in most of the Countries that have nuclear power plants, actually now have no choice over what kinds of energy those in charge of their Government choose to provide, since there is a powerful international nuclear industry group that actually controls the very people that make these decisions! The IAEA is the public front for this group but aside from them are all the large Corporations that are using Nuclear energy generation to both keep ratepayers as their energy "slaves" and to further their own nuclear backed position in World politics. In essence, we are seeing an elaborately staged show, in which many distinguished actors profess their loyalty to the desires of all the people watching, using speeches that proclaim that nuclear safety and its security are paramount. But we have seen this show many times before and have learned that no matter what these actors say or do, in the end that they are just actors that are receiving a fat paycheck for doing their job to the best of their ability, which is to make us believe that nuclear is somehow "good for us" when in fact it is N☢T. Nuclear is expensive, cradle to grave, it has the potential to go BAD like at Fukushima and it generates enormous amounts of radioactive waste that takes decades if not generations to deal with, but the really big problem with not using nuclear is that the above mentioned Group will lose their control over us because the big secret is out: Solar allows ratepayers to generate energy themselves (Energy Freedom, after the initial payback) and therefore it costs less than the energy that Utility are providing to us long term! Due to Fukushima and Countries like Germany, which have called out the Nuclear Industry, we are now seeing the effects of a well-orchestrated Pro-nuclear, industry-wide media blitz that is Global in nature. Said another way, this is an yet another attempt by the nuclear industry to save itself from the increasing penetration of Solar (of all flavors) into the World's energy generation marketplace. Because Solar is growing rapidly in both residential and now large-scale Utility sized installations, Solar continues to acquire ever more of the total Energy generation market and especially the percentage of energy generation that used to belong to and was tightly controlled by, Big Nuclear. Additionally if the cost to decommission aging nuclear power plants was much lower and there was a place to "hide" nuclear waste, many if not most of our older nuclear power plants that are still in operation today would now be either fully decommissioned or well along in the process. Today, it is now not only both far less expensive and much less RISKY to generate energy with Solar (of all flavors) and/or natural gas fired generation but the ratio of installation and operation costs of Solar/Natural Gas vs. Nuclear continues to decline almost monthly! Unless there is a major scientific breakthrough in nuclear physics, nuclear generation will only be installed where Government and/or elected Leaders place what is good for their nuclear industries ahead of what is good for their people. Examples of this forced use of Nuclear: 1. In Japan, where the people clearly do not want their reactors restarted, yet their Leaders/ Utility Gangs push nuclear upon them. a. The Yakuza and the Nuclear

Mafia: Nationalization Looms for TEPCO http://www.thewire.com/global/2011/12/yakuza-and-nuclear-mafia-nationalization-looms-tepco/46803/ - disqus_threadb. http://www.bloomberg.com/news/2012-05-09/japan-takes-control-of-tepco-in-10-year-plan-to-revive-profit.html c. Former Prime Minister of #Japan: We've been lied to, #nuclear experts lying to us…file://localhost/They've been telling a pack of lies http/::enenews.com:former-prime-minister-weve-bee d. NHK News Giant in Japan Seen as Being Compromised http://www.nytimes.com/2014/02/03/world/asia/news-giant-in-japan-seen-as-being-compromised.html?smid=tw-share&_r=0 2. In the UK, where the proposed Hinkley C Nuclear Power Plant project has been shown to be more expensive that installing solar. a. Hinkley C Nuclear Power Plant To Get Twice The Rate As Solar PV From UK Government http://cleantechnica.com/2013/10/30/hinkley-c-nuclear-power-plant-get-twice-rate-solar-pv-uk-government/Double Standard For Nuclear Energy & Wind Energy In UK? http://cleantechnica.com/2013/11/09/uk-nuclear-price-uk-wind-energy-price/ b. Solar Power Cheaper Than Nuclear In Cloudy Old England http://cleantechnica.com/2013/02/19/solar-power-cheaper-than-nuclear-in-cloudy-old-england/ - RH7GXpCcfKFgUrkB.99 3. In the USA, where multi-billion dollar cost over runs, safety issues, nuclear waste and decommissioning costs have continued to plague the US nuclear industry. a. "Cheap" nuclear power a myth, suggests economist http://www.sandiegoreader.com/news/2013/dec/29/ticker-cheap-nuclear-power-myth/? b. Nuclear Energy Operators Say Market Stacked Against Them http://shar.es/RstOJ c. Fukushima – it can happen in America – new book http://shar.es/Rs5DX To be fair, sometimes those in the Nuclear Industry do get it right but what they have to say is not welcomed by their associates, even though it is the truth: "Clearly we're witnessing one of the greatest disasters in modern time." - AREVA Executive VP March 21, 2011 Posted: http://www.forbes.com/sites/kensilverstein/2012/03/10/nuclear-shaken-but-still-standing-after-fukushima/

comment #285099 posted on 2014-03-22 03:46:26 by ACCA

There is a tested and proven solution to treat such a contaminted water without generating any additional sludge. It has been already tested @ nuclear certified laboratory. Test results are now disclosed.. See the following CCN iReport about it: http://ireport.cnn.com/docs/DOC-1045751

comment #275655 posted on 2014-03-14 11:02:38 by jb

I would like to thank Mr. Leeds for blogging concerning this. I agree that institutionalizing 'Lessons Learned' is critical to avoiding repeating history.... For a good scientific review of the long term damage, our National Academy of Sciences recently published "Radiation dose rates now and in the future for residents neighboring restricted areas of the Fukushima Daiichi Nuclear Power Plant" http://www.pnas.org/content/early/2014/02/19/1315684111 The abstract closes on a positive note concerning future re-habitation of much that area, "... the extra lifetime integrated dose after 2012 is estimated to elevate lifetime risk of cancer incidence by a factor of 1.03 to 1.05 at most, which is unlikely to be epidemiologically detectable."

comment #277281 posted on 2014-03-16 02:55:30 by Per Peterson

This is an excellent post. But I would add a couple of points. The the tsunami caused by the rupture of subduction faults during the Great East Japan Earthquake killed almost 20,000 people. It had been known scientifically for over 10 years that these types of tsunamis occur in this region at least every 1000 years. The Japanese nuclear regulatory agency clearly made a major mistake in not acknowledging the geologic scientific evidence that very large subduction-fault induced tsunamis capable occurred at least every thousand years. Exactly the same situation exists in the U.S. Pacific northwest, and in Canada and Alaska. There are no coastal nuclear plants in this area, but there are a lot of people. Following the Great East Japan Earthquake, the U.S. Government has actually reduced funding for the NOAA Pacific Northeast tsunami warning system. http://www.latimes.com/local/la-me-triple-junction-quakes-20140312,0,2124861.story#axzz2vo9EIfTo This is obviously stupid, but also is understandable. The key issue for safety is to also have the capability to respond effectively even if bad things happen. My critique with this post is that it does not address the response part directly, and instead only the preventing-the-need-to-respond part. The Great East Japan Earthquake occurs about every 1000 years in Japan. Oregon, Washington state, British Columbia, and Alaska face the same tsunami threat. There are no U.S. nuclear power plants near similar subduction faults. On the U.S. side, we need to make sure that every U.S. nuclear plant has procedures and has trained and provided resources its staff to respond effectively to any event, even those that might occur every 1000 or 10,000 years. This was already largely done under the U.S. response to 9/11 plane crashes, which required U.S. utilities to acquire portable pumps and electrical generators, and develop procedures and training for plant staff to use this equipment in the event that the worst happened. So for safety, the most important lessons of the Japanese Fukushima accident is that we must assure that the plant staff have the training, authority, and resources needed to respond to any accident. And it would make a lot of sense to further improve our tsunami warning system for the northwestern U.S. -Per Peterson

comment #275694 posted on 2014-03-14 12:09:19 by James Greenidge

Let's mandatorily evacuate all children living within ten miles downwind of any coal or oil or garbage fired power plant since we've LONG known as a certified medical fact that their pollution and particulates enter and accumulate in their lungs and GI tract, not by guesswork and speculation as with trivial radiation effects. Watch health hypocrisy climb! Hey, what's good for the nuclear goose is definitely overdue for the fossil gander. James Greenidge Queens NY

comment #287841 posted on 2014-03-24 10:24:52 by Tit

We note on this,it's really a valuable lesson for us if we want to increase a safety nuclear plan.

comment #275976 posted on 2014-03-14 18:17:53 by Troy Martel

Be it fossil or nuclear, the safest plant is the one defueled, yet continues to maintain a full staff and pay insurance premiums.

comment #288977 posted on 2014-03-25 10:16:12 by kitemansa in response to comment #287899

Keeping people away from their homes when the known Rad-Con levels are 1/4 the known safe levels is not good practice. Forcing them out in the middle of the aftermath of a major earthquake is not good practice either. And recognizing that the Linear No-Threshold model is flawed and that as a minimum a threshold model of some sort can be used is good news, but is hardly just "smiling".

comment #276532 posted on 2014-03-15 09:28:13 by William McCullough in response to comment #274978

Here is a link to a recent paper providing evidence to change the threshold of evacuation to 700mSv per year. Also note that the paper shows a beneficial response (hormetic) at around 100mSv per year. This means that people living around Fukushima will be healthier. http://dose-response.metapress.com/media/272ktmvyyp2d367rvvtk/contributions/g/3/7/1/g371w56515724pj0.pdf

comment #278228 posted on 2014-03-16 23:08:22 by Diane in response to comment #274767

I have the same concerns you do, Rich.

comment #274872 posted on 2014-03-13 13:55:30 by kitemansa

Keeping people away from their homes because on a >1mSv/y exposure rate is down right criminal. The IAEA safe exposure limit is 25µSv/h, or nearly 220 times the 1mSv/y limit. Wht a criminal waste!

comment #274969 posted on 2014-03-13 15:48:27 by stock

You state that you are accountable to the American public? In what way?

comment #287899 posted on 2014-03-24 11:49:40 by stock in response to comment #280825

I see....don't use models for an evacuation, instead, make sure the people are contaminated first, and that you can prove it with a MIST calibrated instrument, and a peer review, during an massive tradegy, oh sure, that will work out just fine. there is PLENTY of evidence of external exposures less than 100mSv causing serious diseases, and its not JUST cancer. And the chance it becoming internal (through air, food, and water) in those Japanese areas is very high. "Decontamination" has been shown to be inneffective." And no, "smiling" won't prevent the damage.

comment #274821 posted on 2014-03-13 12:53:29 by Aladar Stolmar

Are You now accepting that the ignition of firestorm in the reactor core can and should be prevented by venting of steam and depressurizing the reactor, and indeed gravity flooding of the core? Which means that the non-design basis events could be prevented, the fuel will remain intact in any event. I also propose to design only demonstrated safe reactor systems, which means that the reactor must be placed in a containment designed for the consumption of the entire Zirconium inventory and the worst detonation of the Hydrogen produced from that (1000 kg in 10 seconds for PWR and 1800 kg in 10 sec for BWR) in the containment. Even if we prevent the ignition of the firestorm in the core. Only such a doubled safety could be considered real safe nuclear power plant design.

comment #274767 posted on 2014-03-13 11:39:49 by Rich

Taking Fukushima Seriously If it takes taxpayer-funded trips by NRC leaders to Japan to really take the accident at Fukushima seriously then the trips are very worthwhile. Perhaps trips to Chernobyl and its 20-mile exclusion zone will help these leaders to take Chernobyl more seriously as well. The Chernobyl accident occurred in 1986 and 28 years later this exclusion zone still exists. I think most people understand the complete devastating nature of both these accidents even without the benefit of an actual visit to the accident sites. Now the question is will the NRC really accelerate completion of the safety reviews that have been in progress for 3 years. The NRC is allowing each affected plant licensee to evaluate its own operation with respect to earthquake and tsunami protection. I question how these reviews can possibly be thorough and unbiased. I fear it will be an exercise in pencil-whipping away potential problems.

comment #280491 posted on 2014-03-18 13:59:56 by kitemansa in response to comment #275694

But the fossil fuel gander has a LOT more money it can use to cook the nuclear goose. And it is certainly using it.

comment #280497 posted on 2014-03-18 14:02:03 by kitemansa in response to comment #275168

Oh but that's NATURAL radiashun, yup! |rolls eyes|

comment #280546 posted on 2014-03-18 14:41:25 by kitemansa in response to comment #274767

The Fukushima FUD-Con disaster was very real. The Fukushima Rad-Con "disaster", not so much.

comment #280825 posted on 2014-03-18 18:41:05 by joffan7

This is the second article where NRC people have posted gloomily about the forcibly-evacuated towns near Fukushima Daiichi. They seem oblivious to the fact that it is regulatory action that has produced this wasteland. Take heed, regulators. This "devastation" was unnecessary - the people could have gone on living there on the flip-side of the precautionary principle - DON'T WRECK PEOPLE'S LIVES unless you have solid evidence they are in danger. Not assumptions, not models, not vague statements by long-ago Nobel prize winners - you need actual evidence of likely harm to do this to people.

comment #280820 posted on 2014-03-18 18:36:47 by joffan7 in response to comment #275976

A full staff of unicorns, that is, who will sneeze out the gold dust necessary to pay both the insurance on an unproductive building and their own salaries. Though why you would need any significant insurance on a defueled nuclear plant is a mystery, perhaps known only to those who believe that even saying the word "nuclear" is some kind of mortal danger.

comment #275168 posted on 2014-03-13 20:48:14 by William McCullough

I ask that the Mr. Leeds explain why he is making the statement that the town of Tomioka is "...uninhabitable because of radiological contamination (about 1 microsievert an hour)." The town of Guarapari is in Brazil. About 100,000 people live there. Here is a link to a video of a woman with a geiger counter as she is sitting on the beach. You can clearly see readings of 30-50 microsieverts an hour. http://www.youtube.com/watch?v=RvgAx1yIKjg

comment #275124 posted on 2014-03-13 20:00:05 by richard123456columbia in response to comment #274767

Rich, exactly, the plant owners will down play the hazard and if it goes a head and blows up NRC will be protected because they can say that the plant operators gave them bad reports.

comment #275629 posted on 2014-03-14 10:28:46 by voiceofreason

The sentiments expressed by Mr. Leeds are those that are putting our country at risk of high energy prices and lack of technological edge. The solutions you "are convinced" about are wasteful, unnecessary and divert the focus of energy companies from finding real solutions to a sustainable energy future. It is abundantly clear the aim of the NRC is to shut them all down - death by a thousand (more like a billion) cuts. Keep at it - you're well on your way to achieving your goal.

comment #274978 posted on 2014-03-13 16:04:37 by stock in response to comment #274872

You are looking at it wrong. You said >1 millSv per year is your understanding of why people are being kept away. The statement is 1 micro Sv per hour. Or a little over 10 mSv per year....EXTERNAL. However, it is very likely that this radiation will become internal, At which point it is at least 20 times worse. That would be 200mSv per year. Certainly even it it is just 10mSv....children should be allowed there. They did a more responsible job at Chernobyl

comment #275179 posted on 2014-03-13 21:01:48 by kitemansa in response to comment #274978

The Japanese are not removingoccupational limits on areas until they achieve 1mSv/y above natural background. The IAEA limit is 220mSv/y which includes the effects of unanticipated injestion like dust and dirt on hands etc... as long as the food and drink meet the requirements too. We are talking major differences here. Japan is being absurdly restrictive and their restrictiveness just feeds the fear, uncertainty and doubt.

comment #276745 posted on 2014-03-15 13:57:02 by Rod Adams (@Atomicrod) in response to comment #274767

@Rich The government-established exclusion zone might still exist in the region near the Chernobyl reactor, but there seems to be a lot of wildlife that pays little or no attention to government edits. Mary Mycio, a Ukrainian-American journalist, visited the area many times and slowly began to realize that the abandonment was not caused by radiation, but by government decision making. I highly recommend her book, Wormwood Forest, about the area. http://www.nap.edu/catalog.php?record_id=11318 For a quick summary of what she found without reading the book, you might want to listen to this 2006 interview. http://atomicinsights.com/atomic-show-21-interview-with-mary-mycio-author-of-wormwood-forest-a-natural-history-of-chernobyl/ There are also a few stubborn babushka's who refused to leave their homes and have been living an agrarian life in the exclusion zone for the past 28 years. http://www.cnn.com/2013/11/07/opinion/morris-ted-chernobyl/ It is absurd to think that an area with a dose rate of less than 10 mSv per year is "uninhabitable" due to the radiation exposure. It is far more logical to recognize that it might be uninhabitable because of the damage to water systems, electricity distribution systems, and other parts of the infrastructure as a result of the tsunami. You seem to have little faith in governments and nuclear plant operators, but have you ever considered the power of the government interests and large multinational petroleum companies that benefit by selling more diesel fuel and LNG when nuclear reactors are not running but people are still using electricity? Rod Adams Publisher, Atomic Insights

It’s That Time Again – Open Government Plan Revision Time

posted on Thu, 20 Mar 2014 12:53:13 +0000

Stu Reiter
Co-Chair Open Government Advisory Group

You probably hoped we were talking about Spring – long awaited for those of us on the East Coast – but in truth, we’re talking about the every-two-year review of the agency’s Open Government plan. We published our first plan on April 7, 2010, and then issued a revision on June 7, 2010, to reflect your feedback. In April 2012, we updated our plan again – although our effort to get your feedback wasn’t what we’d describe as a resounding success. On June 1, 2014, we will re-publish our plan. Among other things, we will note accomplishments over the past two years and plans over the next two years, including: • Focusing on improving the process of handling Freedom of Information Act requests; • Embracing the President’s Digital Government Strategy and, among other initiatives, deploying a mobile-based public meeting feedback option; • Continuing to grow our social media program with increased subscriber and viewer rates – at times nearly doubling previous years’ statistics; • Continuing to enhance our collaboration with state and tribal governments through a range of outreach efforts; • Continuing to enhance our collaboration with the international community, with increased focus on sharing information after the lessons learned from the Fukushima accident; • Improving the public’s ability to participate in the NRC’s regulatory processes by creating a one-stop web location for rulemaking actions and other documents open for comment; • Modernizing the management of our records to make information capture and categorization more complete and transparent; and • Enhancing stakeholder involvement in public meetings using technologies such as web streaming and conferencing As we finalize our plan, we invite your thoughts

on how we can further improve our openness program and its focus on transparency, participation and collaboration. While comments are welcome at any time, comments must be received by April 4, 2014, to be considered specifically for the June update. Please submit your thoughts as comments to this post or via our Online Comment Form. We very much look forward to hearing from you!

Comments

comment #284641 posted on 2014-03-21 19:46:46 by stock

> I applaud the NRC for only a minor amount of moderation, however, the long time frame between comments and approval makes it hard to have a "conversation" which is what a blog is all about. Get some interns or something! Thanks!

comment #287776 posted on 2014-03-24 08:35:22 by Moderator in response to comment #284641

> The blog is checked for comments at least twice every work day, usually many more, to get comments posted promptly. The blog is not moderated on evenings, weekends or federal holidays. Moderator

comment #284282 posted on 2014-03-21 12:54:09 by Moderator

> To address the delay in the discussions on the blog, the NRC piloted an alternative, additional, real-time discussion platform we called Chat. However, after six months of Chats, we determined it wasn't quite meeting the need. The platform seemed to best support only very short responses to questions, which put off some users. So the NRC is now looking at alternative platforms, either one that allows more complete written dialogue or one that uses video. Stay tuned while we do the research! Moderator

comment #283203 posted on 2014-03-20 14:34:16 by CaptD

> The NRC needs to provide equal amounts of access/time/money to those that speak against topics, as it does to the Nuclear Industry that speaks for a topic that is before the NRC because that will level the playing field we all must use... + Much faster moderation would be key to promoting actual discussions instead of what we have now which is just a series of "posts"... + Being able to use basic formatting and/or edit functions would also make this blog better for all.

Spring Is Annual Assessment Time at the NRC

posted on Mon, 24 Mar 2014 12:31:50 +0000

David McIntyre
Public Affairs Officer

Spring is here at last, and with it the season of NRC’s annual assessments of nuclear

power plant performance during the previous calendar year. The Office of Public Affairs is issuing press releases faster than trees drop pollen announcing public meetings in the vicinity of each plant to update residents on how their local plants performed. These meetings are routine, in that we hold them every year. Yet they are important, because they represent a report card of sorts on plant safety and because they give the agency a chance to reach out to its most important stakeholders -- the people who live near the plants and have the highest stake in their safe operation. The annual assessment letters were issued to the plants earlier this month. And the grades were mostly good. As of the end of December, 89 of 100 operating commercial nuclear reactors were in the two highest performance categories. Of those, 80 were in the highest level, with nine others requiring some additional oversight to correct issues of low safety significance. Another nine were in the third category, requiring even more oversight to correct what we call "degraded" performance. More good news though – between December 31 and the time the assessments were issued, four of these 18 reactors in the lower second and third column had resolved their issues and moved back into the top category. One reactor, Browns Ferry 1 in Alabama, is in the fourth performance category. It requires increased oversight because of a safety finding of high significance – including additional inspections to confirm the plant's performance issues are being addressed. Finally, Fort Calhoun plant in Nebraska is currently under a special NRC oversight program distinct from the normal performance levels because of an extended shutdown with significant performance issues. The plant remains under special oversight even though the NRC approved its restart last December. You can find the report card for your local plant on the NRC website's Reactor Oversight Process page. Just click on the plant's name in the left-hand column, then look for the 4Q/2013 assessment report on the plant's individual page. Here you will also find each plant's current placement in the NRC action matrix, along with performance indicators and inspection findings. Press releases about when your local plant's assessment meeting will be held can be found here.

Comments

comment #313802 posted on 2014-04-15 08:05:36 by Janelle

> Have you ever considered about adding a little bit more than just your articles? I mean, what you say is fundamental and everything. However think of if you added some great photos or video clips to give your posts more, "pop"! Your content is excellent but with pics and clips, this blog could undeniably be one of the very best in its niche. Wonderful blog!

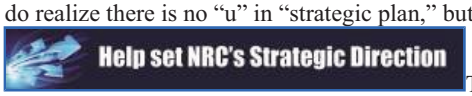
comment #287940 posted on 2014-03-24 12:35:09 by Rich

> Thanks for the update and the links to nuclear power plant performance summaries and performance indicators. I reviewed the 4Q/2013 performance report on the Ginna nuclear power plant. The overall performance summary looked good with the exception of one white finding that is still under review by the NRC. What was not mentioned in the performance report summary were 13 repetitive violations involving scaffolding at Ginna over the last couple of years. I did note that the NRC plans Problem Identification & Resolution inspections this year. Repetitive violations are serious and reflect poorly on the plant's corrective action program, management, and safety culture. For this substandard performance not to be mentioned in the plant's assessment report or reflected in the plant's performance indicators, indicates to me that the NRC views this performance as acceptable.

The NRC Wants to Put the "U" in Strategic Plan

posted on Wed, 26 Mar 2014 13:58:30 +0000

Francine Goldberg
Senior Advisor for Performance Management

Well, we do realize there is no "u" in "strategic plan," but the NRC is drafting its 2014-2018 road map and we want your input before we finalize it. 

The plan is updated every four years and is used to guide our work. You may not be aware that all of NRC's business lines (operating reactors, new reactors, fuel facilities, nuclear materials, etc.) link their annual plans to the strategic plan and all our senior executive performance plans are linked to it as well. If you're familiar with our previous Strategic Plan, you'll notice our mission and strategic goals remain basically unchanged, but the new plan does contain some new components. For example, a vision statement has been added to emphasize the importance, not only of what we achieve, but of how we regulate And there are now three strategic objectives, one for safety and two for security. Each objective has associated strategies and key activities that will be used to achieve them. For example, this is one of the strategies for the safety objective along with three key activities: Ensure the NRC's readiness to respond to incidents and emergencies involving NRC-licensed facilities and radioactive materials, and other events of domestic and international interest. · Use operational experience and lessons learned from emergency-preparedness exercises to inform the regulatory activities. · Coordinate with federal, state, local, and tribal partners to strengthen national readiness and response capabilities. · Employ outreach before, during, and after emergency-preparedness exercises, and increase collaboration and sharing of best practices and lessons learned after emergency-preparedness exercises and incidents. The goal of the comment period is to take advantage of the collective knowledge of the public – there is a "u" in public, after all -- to make sure our plan is as good as it can be. Why should you take the time to comment? Well, perhaps you are aware of a key external factor that we have missed that could affect the strategies and activities we have planned. Or maybe you have ideas for additional strategies or activities we need to focus on to achieve one of our objectives. This is your opportunity to weigh in and tell us if we are addressing the issues of importance to you. All comments will be reviewed and incorporated, as appropriate, into a revised plan. The disposition of substantive comments will be included in a Commission paper transmitting the resulting plan to the Commission for their final review and approval. Please submit your comments online through the federal government's rulemaking website, www.regulations.gov using Docket ID NRC-2013-0230; or by mail to Cindy Bladey, Chief, Rules, Announcements, and Directives Branch, Office of Administration, Mail Stop: 3WFN-06-44M, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. The comment period is coming quickly. It closes on 04/04/2014. Comments on this blog post cannot be

considered, so please use the official channels. More information is also available in the Federal Register Notice. We look forward to hearing from you soon.

Comments

comment #296553 posted on 2014-03-31 12:04:13 by Rich in response to comment #296401

> Thanks for your prompt informative response. I have placed my comments on the record, so to speak, in the manner you indicated. Perhaps the strategic plan is not the place for these specific comments but I sincerely hope these issues are being rigorously evaluated by the NRC. I appreciate what you said about the NRC overseeing how nuclear plant licensees are evaluating safety concerns but I am still concerned that there will be tremendous pressure exerted by nuclear plant owners to keep their huge investment viable. Has the NRC considered a total independent review of selected plants that are especially susceptible to these safety issues?

comment #292836 posted on 2014-03-28 12:53:50 by Moderator in response to comment #290599

> Thanks for this great suggestion! Although it is not possible for us to do this for the current version of the Strategic Plan, our plan is updated every four years and we'll consider it for next time. Fran Goldberg

comment #296738 posted on 2014-03-31 15:54:08 by Moderator in response to comment #296401

> The NRC independently reviews any information and analysis plants submit in response to regulatory requirements, and the agency will perform its own confirmatory analysis when warranted. Plants must provide acceptable justification for any deviations from NRC-endorsed procedures and guidance for carrying out required work. Scott Burnell

comment #292098 posted on 2014-03-27 22:01:07 by Rich

> NRC Strategic Plan Does Not Adequately Address Real Nuclear Safety & Security Issues. Please consider the following… 1. Catastrophic Failure of Dams Upstream of Nuclear Plants There have been 700 dam failures in the US since 1975. In the US 34 nuclear plants lie downstream from more than 50 dams. Therefore, the cumulative likelihood of a least one plant being affected by a dam failure is too high to ignore – especially since these risks do not include the possibility of earthquakes or sabotage. Dams as a weapon of mass destruction cannot be ignored. Such a dam failure would result not only in a huge public safety calamity but a Fukushima-type nuclear accident. The NRC is allowing each nuclear plant to perform its own re-evaluation of flooding risks. How can these "evaluations" be anything but biased and self-serving? Furthermore, the NRC does not require that these analyses consider catastrophic dam failure due to terrorist attack or a severe earthquake. I see nothing in the NRC Strategic Plan that adequately addresses this significant nuclear safety and security issue. 2. Interim Centralized High Level Waste Storage Area The NRC Strategic Plan only mentions the high level waste repository at Yucca Mountain. There has been little real progress in sitting such a facility in decades. The NRC has no plan whatsoever to allow for a centralized, interim, ground-level, away-from-reactor-site storage facility in a secure location. A suitable secure place would be at an existing large military reservation. Allowing dangerous high-level waste to accumulate at over 100 different locations in the US is atrocious. An act of terrorism at any one of these sites would not only result in a huge radioactivity release but a fire that would render the reactor(s) on-site uncontrollable and would eventually result in a core melt situation.

comment #290599 posted on 2014-03-26 16:37:38 by CaptD

> Asking for input is a good start but the NRC could do a much better job by posting all these suggestions on the web so that others could then "like" and or post comments about them; all of which would make the discussion process far better for both the NRC and everyone that depends upon them! If the NRC spent a small percentage of what they spend to "help" the nuclear Industry (with grants and funding studies) on enabling as many public groups as possible contribute to the NRC's dialogue then we would have a far better discussion.

comment #296401 posted on 2014-03-31 08:57:10 by Moderator in response to comment #292098

> Thanks for reading the plan and providing this comment. We hope you will submit it through regulations.gov as described in the last paragraph of the blog post. That way, it will be sure to get full consideration during our comment review process. This link will take you directly the page you need: http://www.regulations.gov/#!documentDetail;D=NRC-2013-0230-0001 . The strategic plan is designed as a high-level document setting the general direction of the agency. It does not include specifics, such as you mention in your comment. To address your concerns, however, we should say that the NRC has established exactly how these flooding reevaluations should be conducted, and the resulting reviews will be scrutinized by NRC staff to confirm they met the criteria for a quality evaluation. Finally, the NRC will review actions taken or proposed by licensees in response to these reevaluated hazards to ensure that public health and safety continues to be protected. Fran Goldberg

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The Three Mile Island Nuclear Plant – An Update on the 35th Anniversary

posted on Fri, 28 Mar 2014 13:08:23 +0000

Neil Sheehan

Public Affairs Officer
Region I

[caption id="attachment_5230" align="alignright" width="300"] The Three Mile Island Unit 2 Control Room bustles during the crisis in 1979. For more historical information, click on the photo to go to the NRC YouTube video about the accident.[/caption] Today marks 35 years since the accident at the Three Mile Island 2 nuclear power plant. As is the case every year, it represents another opportunity to reflect on the most significant nuclear power plant accident to ever occur in the U.S. Perhaps less well known to the average citizen is where things stand in terms of the Middletown, Pa., site all these years later. GPU Nuclear, which owned the plant at the time of the accident, removed the damaged fuel from the reactor and decontaminated the plant in ensuing years. Once the plant was placed in a safe, stable condition, it transitioned to what is known as “post-defueled monitored storage” -- a change that was formally approved by the NRC in 1993. Last year, the current owner, FirstEnergy, submitted a roadmap to the agency on its plans for eventual dismantling the plant. Those details were contained in a document called a Post-Shutdown Decommissioning Activities Report, or PSDAR. In short, the plant will remain in storage until its neighboring reactor, Three Mile Island 1, permanently ceases operations, something currently expected to happen in 2034. Once that happens, decommissioning work on both units will be undertaken, but those efforts are projected to take many years. NRC regulations allow up to 60 years for the completion of decommissioning activities for U.S. nuclear power

plants. [caption id="attachment_5228" align="alignright" width="300"] A view of the TMI-2 control room, last year, with two NRC inspectors.[/caption] Meanwhile, the NRC will continue to inspect TMI-2 at regular intervals. The focus of those reviews includes maintenance of the structures, management oversight, fire protection and plant support activities. The results of those inspections can be found in the NRC’s electronic documents system. While another anniversary has arrived for TMI, the work on keeping close watch on the plant goes on, and will continue for many years to come.

Comments

comment #293024 posted on 2014-03-28 16:48:55 by Moderator in response to comment #292777

> We understand “greenfield” to mean that all industrial buildings have been removed and the site has been released for unrestricted use. Five former reactor sites meet both criteria. Another eight that have been released for unrestricted use still have buildings on the sites. Maureen Conley

comment #293053 posted on 2014-03-28 17:14:22 by Garry Morgan

> Part of Dr. John Gofman's forward in the book "Poisoned Power," a case against nuclear power before and after the Three Mile Island disaster. Unfortunately the book, "Poisoned Power," did not stop the insanity. Redistribution is encouraged: http://www.ratical.org/radiation/CNR/PP/index.html#TOC Short Bio - Dr. John William Gofman (September 21, 1918 – August 15, 2007) was an American scientist and advocate. He was Professor Emeritus of Molecular and Cell Biology at University of California at Berkeley. Some of his early work was on the Manhattan Project, and he shares patents on the fissionability of uranium-233 as well as on early processes for separating plutonium from fission products. (Wiki) Excerpt and Summary: "An ethical society, concerned with preserving the inalienable right to life, would learn all the steps in such pathways before ever permitting activities which could release the radioactive poisons upon the public. An uncertainty factor of 1,000 is a horrible uncertainty to have about the dose a human infant will receive. Experimentation on people by the nuclear industry must be stopped, and the industry's disdain for people's health—its "Expose first, learn later" philosophy—must be exposed for its moral bankruptcy." "The risks from irradiation are cumulative. A small dose will give you a small risk. But another small dose will give you an additional small risk. By now, the nuclear industry must have announced 100,000 "small" releases of radioactivity into the environment. It is the only industry which can add 100,000 "small" releases to each other, and still say the sum is small and the harm to the public is zero!" "There has been

much press and TV coverage devoted to the technical aspects of the Three Mile Island accident, but very little to its moral aspects. Yet the really important questions about nuclear power are ethical: •The use of lies and deception by the nuclear industry in order to manipulate public opinion, and in order to use people, even kill people, for the benefit of that industry. •The experimentation on people without their knowledge or consent. •The acceptance of random murder and denial of the inalienable right to life as the cost of "progress." •The genetic degradation of the human species, vs. our minimum responsibility to protect our species' genes from injury. •The need to hold bureaucrats and industry employees personally accountable and responsible for implementing hazardous and even murderous policies, even if such policies are advocated by Congress and the President." "Yes, Poisoned Power is a sad story about the absence of ethics and morals in men. But it is not too late to jolt society into realization of what is going on, and what is in the future if humans do not improve in the very basic and minimum principles of morality. Either we improve, or the future is dismal indeed. We hope that Poisoned Power upsets you enough to make you work toward such improvement."

comment #296374 posted on 2014-03-31 08:08:52 by Rich

Lest We Forget - The NRC played a role in causing the accident at TMI I am glad the NRC is reflecting on the accident at Three Mile Island. As we reflect we must take a look at our roles leading up to and during the accident. The NRC has done a masterful job of pointing out the shortcomings of the industry they regulate. It is human nature I think for us to find it easier to point the finger at others rather than at ourselves. The NRC, to this very day, has not adequately pointed the finger at themselves for contributing to this accident. They have conveniently failed to mention their role in this tragedy. Inadequate reactor operator training was one of the root causes of the accident. And of course we know that the NRC is responsible for the licensing and the training of every single licensed reactor operator. More than this, the NRC's culpability goes much deeper. For years prior to the TMI accident the NRC created and perpetuated a dangerous operator mind-set. They mandated extensive training and annual re-training for all reactor operators at all nuclear power plants that emphasized the dangers of overfilling the reactor cooling system. The NRC training focused on preventing the reactor cooling system from becoming overfilled and over pressurized. They wanted operators to prevent the reactor cooling system from "going solid" at any cost. The NRC did not want system pressure relief valves to be actuated causing a Loss of Coolant Accident (LOCA). While this sounds like a good thing, it lead operators to do exactly the wrong thing during their response to the TMI accident. Let me try and explain. Once the normal heat removal capability of the reactor cooling system failed, the reactor and the reactor cooling system heated up causing the level in the pressurizer (a surge tank connected to the coolant system and located at a position above the reactor) to increase and the pressure in the cooling system to increase. The pressure reached the point where a pressure-relief valve automatically lifted as designed to relieve the over pressure. Unknown to the operators the relief valve failed to re-close when pressure was reduced causing an on-going LOCA. As precious reactor cooling fluid was being lost from the system, automatic fluid makeup systems cut in, actuated by the low system pressure. These makeup systems were doing exactly what they were designed to do - keep the fuel in the reactor covered and cooled with water. If these makeup systems had been allowed to continue operation the reactor fuel would never have melted and the TMI accident would not have occurred. However, the NRC-perpetuated operator mind-set to avoid overfilling the coolant system, resulted in operator action that overrode the automatic response by throttling and then securing this vital makeup flow. The NRC inappropriately stressed, in the operator training program, only one aspect of safety at the expense of the big picture, that is, keeping the reactor covered and cooled with water. This negative training directly lead to operator error that caused the accident. To their credit the NRC made improvements to their regulatory process after TMI, but to my knowledge they have never fessed up to messing up the reactor operator-training program. And that is inexcusable.

comment #292806 posted on 2014-03-28 12:14:04 by devolpi

Although NRC Public Affairs celebrates TMI-2 accident closure, some major lessons that should have been learned have never been implemented. Three Fukushima meltdowns have accentuated these same shortcomings. The TMI accident was preventable if ex-vessel autonomous ex-vessel water-level instrumentation had been previously installed. Moreover, one or two Fukushima loss-of-coolant meltdowns might have been forestalled or prevented if such instrumentation had been introduced as a consequence of the TMI tragedy. It took about five years before it was possible to characterize fuel relocation after the TMI accident; it might take even longer at Fukushima. If ex-vessel water-level instrumentation were installed, it could help, for years after a meltdown, to characterize fuel reconcentration. National and international TMI post-accident assessments, such as NUREG-0933 (Dec. 2011), had formally recognized the “Identification of and Recovery from Conditions Leading to Inadequate Core Cooling” as a high priority. However, similar lessons from the Fukushima meltdowns are buried by the NRC TMI Fukushima Task Force at the bottom of Tier 3 “Enhanced Reactor and Containment Instrumentation.” –A. DeVolpi, PhD, retired nuclear-reactor safety specialist

comment #292983 posted on 2014-03-28 15:54:01 by Donald M. Scheef

I would like to respond to the comments of Dr. DeVolpi and nspunx4: I don't understand what is meant by "ex-vessel autonomous ex-vessel water-level instrumentation." Aside from the redundancy, ex-vessel water level is measured in many locations - Pressurizer, Refueling Water Storage Tank, Containment Recirculation Sump, etc. None of these had anything to do with the TMI-2 accident. The term "autonomous" doesn't make sense in this context. Perhaps you mean "self-powered," "safety-grade" or "redundant." Probably, what is meant is "Reactor Vessel Level Indication System," commonly referred to by the acronym RVLIS. Yes, we realize that the primary loop in a PWR is completely filled with water - during NORMAL operation. We propose to measure the water level in a closed, high-pressure system during ACCIDENT conditions, when it is certainly possible to have a steam bubble in the reactor vessel. This was exactly the problem at TMI-2. The thermodynamics of the event produced a large steam void in the reactor coolant system while pressurizer level was excessively high. If the operators at TMI-2 had had a RVLIS system, they might not have taken the improper actions that uncovered the core and caused severe fuel damage. The discussion of the Fukushima accident is not germain to PWRs. These were BWR type plants, which have always had multiple indications of reactor vessel water level. The problem at Fukushima was that these instruments lost electrical power supply and became inoperable. Perhaps this is why Dr. DeVolpi used the

term "autonomous" (meaning self-powered?). I can not comment on this possibility because I am not aware of any such instrumentation. With respect to PWRs, all commercial PWR power plants in the US have now installed redundant, safety-grade RVLIS instrumentation. This was one of the post-TMI accident requirements, and was completed long before the Fukushima event. Donald M. Scheef

comment #295644 posted on 2014-03-30 16:42:29 by Engineer-Poet in response to comment #292806

Actually, the Fukushima meltdowns would have been greatly reduced in magnitude, and the hydrogen explosions prevented, if Naoto Kan had not demanded that the reactor operators delay the venting of the Unit 1 containment for several hours (needed in order to add water). For some reason, his scheduled press conference took priority over halting the progress of fuel damage.

comment #297523 posted on 2014-04-01 12:11:10 by Rich A in response to comment #293340

Not only backsides but look at the number of folks in the Control Room. Total lack of control of Control Room access. Most of these folks had no real business being in the CR! Most of these folks were regulatory rubberneckers. Sad picture in more than one respect!

comment #296730 posted on 2014-03-31 15:44:22 by stock in response to comment #292781

When you are blowing up cells and DNA, it is pretty clear what the results are, and there is plenty of scientific evidence that does show that low dose does cause diseases and cancers. Hormesis is a lie. How much "extra" radiation are you trying to put into your body to get those positive effects? Maybe I am wrong, maybe you are pursuing extra radiation, if so, please explain your regimen of extra radiation. Moderator: Some content removed to adhere to the comment guidelines.

comment #296723 posted on 2014-03-31 15:37:22 by stock in response to comment #294065

I agree, I want to see the NRC instigating strong financial penalties, which are the ONLY way to get the attention of a Corporation.

comment #294065 posted on 2014-03-29 10:08:28 by Garry Morgan in response to comment #292806

Point well made sir. Proper safety engineering costs money, money the civilian nuclear industry has not been willing to expend. Unfortunately the NRC at times seems more supportive of the nuclear industries bottom line instead of the health, safety and welfare of the public.

comment #294062 posted on 2014-03-29 10:04:27 by Garry Morgan in response to comment #292895

Amusing? There is nothing amusing about the deceit perpetrated on the American people by the nuclear industry and their cadre of multi-million dollar law firms and PR propagandists. Reminds folks of the tobacco campaigns of the 20th century, cigarette smoking is good for you. The same propaganda is being facilitated by the nuclear industry. Three mile Island, Chernobyl, Fukushima should have been a wake up call demonstrating nuclear power is deadly, dangerous and expansive. Instead, the nuclear industry floods the media with propaganda and deceit to protect their bottom line. Nuclear power is a classical example of money being placed before ethics, morals and sometimes the law.

comment #293340 posted on 2014-03-28 22:35:30 by Robert Connor

Could you not find a better picture of the 3 mile Island control room in 1979? I would rather not look at everybody's backside.

comment #292645 posted on 2014-03-28 09:12:17 by Daniel

And must we remind everyone that no one died from radiation at TMI. Lots of hype. And no one died from radiation at Fukushima. Lots of hype there as well.

comment #292655 posted on 2014-03-28 09:23:24 by Stephen Burns

Actually, wasn't Metropolitan Edison Co. the licensed owner operator at the time of the accident, though it was one of a few electric utlities held by General Public Uilities Corporation, a holding company. Ulitmately, TMI 1 and 2 were divested from Met Ed to the ne GPU Nuclear Corporation about 1982, a step in many ways necessary if TMI 1 was to resume operation given the cloud on Metropolitan Edison in light of the accident and other matters involving criminal liability.

comment #292948 posted on 2014-03-28 15:10:31 by nspunx4 in response to comment #292806

Um... You do realize that the primary loop in a pwr is completely filled with water except for the steam space in the pressurizer? How do you propose to measure water level in a closed high pressure "solid" (except for the steam space in the pressurizer) system? Oh yeah... You measure the level in the one place that has a "level" the pressurizer.

comment #292895 posted on 2014-03-28 13:57:29 by Tony Leshinskie

Growing up north of TMI (in Shamokin, PA) and having immediate family living in Middletown & Lancaster, PA at the time of the accident, I still have vivid memories of the differences in the news reporting and the public perception of the accident as portrayed in local and national news broadcasts. The local news coverage stemmed more from curiosity over the fact that all the local TV & radio stations, as well as the local newspapers, were notified that there would be a major press conference at what was then a fairly new power plant (Unit 1 had produced power for maybe 2 years, Unit 2, just under a year). The overall tone of the local news reports was that while there was cause for concern about what was happening at Unit 2, engineers and plant operators were on top of everything. (Our neighbors were doing there best to address the situation and would keep us informed on what was happening.) This overall tone did not change throughout their coverage of the events. The local media appeared to be genuinely interested in getting answers out to the public. As a result, the local coverage focused on what State and NRC officials were actually trying to tell the public rather than going for sound bites. (Maybe that was because the local press liked covering Dick Thornburg & Lt. Governor Bill Scranton, or that they found the NRC's spokesman, Harold Denton, to be "folksy" or the fact that one of the NRC's other technical leads was Vic Stello, who was essentially a "local boy" having grown-up in Kulpmont, PA and earning his engineering degree at Bucknell University in neighboring Lewisburg, PA.) The tone of the national news was another story: ALL OF PENNSYLVANIA WAS IN DANGER and we should think about evacuating Maryland, New Jersey and Washington DC just to be on the safe side! I don't think anyone in my family or among my high school friends believed or were afraid that there was any real danger from the plant until Governor Thornburg ordered the evacuation of pregnant women and small children from the immediate area. (I don't blame the Governor for that. Considering how confusing communications had become at the plant, it was better to conduct a likely unnecessary evacuation, if only to give the swarm of newsies something to report away from the plant itself. The operators, engineers and NRC investigators at the site could focus on resolving the problem with fewer distractions.) Even after this, while people were definitely worried, I didn't see signs of panic. I think people believed the local news reports and figured that as long as they were willing to remain at TMI to report the news, the rest of us were still safe. My resentment of the national news exploiting what was a potentially dangerous situation to assure a 'vivid story' (and great TV ratings) rather than providing an accurate account of what was happening was a major factor when I pursued a college degree and a career in nuclear power. While TMI put the anti-nuke power movement into high gear within the United States, I found it amusing that in the years immediately following the accident, the greater concern in the Harrisburg area always appeared to be that the accident would depress local real estate values rather than actually hurt anyone. While there were subsequent local protests at TMI and at (relatively) nearby new power plant construction at Susquehanna (Berwick, PA) and Limerick (Pottstown, PA), the movement failed to prevent the restart of TMI-1 or the start-up of 4 new nuclear power plants all within a 2-hours' drive of TMI. (That protestors sometimes showed up at the Montour Power Station, a coal-fired plant with cooling towers not all that far from the Susquehanna plants, to protest nuclear power was out-right comical.)

comment #292777 posted on 2014-03-28 11:32:59 by stock

Hey Moderator, how many nuclear plants have actually been decomissioned back to "green field" status? Thanks!

comment #292781 posted on 2014-03-28 11:36:28 by stock in response to comment #292645

Thats a silly statement Daniel. You could fairly state, no one died from acute radiation poisoning within 20 days at TMI, and have some credibiility , but any time that you release "husky doses" into an environment there are going to be statistical deaths as well as negatively synergistic diseases. It is not JUST cancer that radiation causes. It weakens the whole organism.

comment #292782 posted on 2014-03-28 11:37:06 by stock in response to comment #292655

Indeed, the only way out of a nuclear accident is to socialize the costs and losses.

comment #292887 posted on 2014-03-28 13:45:58 by Jeff Walther in response to comment #292781

Your statement is a blind assertion. It is not supported by any research. There is no reliable evidence that low level exposure to radiation has any negative effect on organisms and there is a fair body of evidence that it actually has a positive effect.

comment #293058 posted on 2014-03-28 17:21:06 by devolpi in response to comment #292983

The term “ex-vessel” is key to understanding how an autonomous water-level instrumentation system can – and should -- be installed in both BWRs and PWRs. As indicated in an expired 1987 patent, high-energy gamma-ray detectors located outside the pressure vessel (but inside the containment shield) have been shown to be quite sensitive to water-level changes inside the reactor. “Autonomous” in this case means that the system would (1) function independently of in-core instruments, (2) have its own power and electronics, and (3) be shielded by the intervening pressure vessel from other influences. There is a reasonably substantial publication record, based initially on experiments at the TREAT test reactor in Idaho, with confirmation derived from the LOFT experiment series, and with computational agreement published by French CEA scientists. Because Fukushima meltdowns occurred without reactor operators being aware of impending or ongoing loss-of-coolant, those accidents serve to remind the nuclear community that all water-cooled reactors would be well served by cost-effective installation of autonomous instrumentation. --Alex DeVolpi

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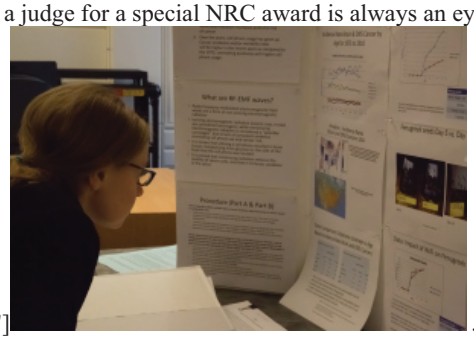
The NRC Supports Local Science with A Special Student Award

posted on Mon, 31 Mar 2014 13:31:28 +0000

Jenny Tobin
Project Manager
Office of Nuclear Reactor Regulations

The Montgomery County (Md.) Science fair, aka “ScienceMontgomery,” is not your average science fair. Many of the students living in the communities around the NRC headquarters have access to advanced science curricula and research opportunities, and there is a large pool of high-tech, biomedical, and research institutes that set the bar high for hands-on learning. For me, who grew up in a very small Midwest farming community, serving as a judge for a special NRC award is always an eye-opening experience. [caption id="attachment_5238" align="alignright" width="300"]  Jenny Tobin reviews Montgomery County, Md., science projects for a special NRC award.[/caption] I was in good company with a 14-person volunteer team of NRC employees who got to evaluate more than 300 science projects from local middle schools and high schools. I was on the team that reviewed the high school projects and we picked the top three for NRC Community Awards that demonstrated achievement and application to the NRC mission, goals and responsibilities. What I find most interesting, year after year, is watching, listening and seeing the current trends in topics the students choose as their science project. A science project can be an experiment, a demonstration, a research effort, a collection of scientific items or display of scientific apparatus presented for viewing. This year there was a huge surge in cyber security, computer modeling and analyses projects throughout the fair. In the high school completion judges must listen to the student’s presentation and their responses to questions asked. You can tell immediately which students know their topics and which ones have had too much adult or parental support. What stands out when you speak to students can easily be summed up in their ingenuity of their project design, subject knowledge and passion for discovery solutions. I found these in the 2014 NRC award winners. I particularly find amazing how the students re-engineer and recycle materials, and create new working designs. In the case of the first place project “Replacing Modern Sprinkler Systems with Infrared Detection to Locate and Extinguish Fires,” it was cool how they took motherboards, rubber bands and other common household items to create a working product that used infrared sensor technology to detect the hot spots of a fire and direct water to this location. For the NRC, fire protection and fire code continues to be a major spotlight issue in nuclear power plants and facilities. When I listened to the student whose project, “Saturated Nuclear Matter in the Large Nc and Heavy Quark Limits of Quantum Chromodynamics,” his ownership or mastery of the subject and presentation was so amazing that it made me flash back to my own quantum physics professors in college. This high-schooler was so savvy and professional. Basically his project worked through mathematical proofs, from first principles, on fundamental properties of quantum chromodynamics. [caption id="attachment_5248" align="alignleft" width="300"]  NRC Deputy Executive Director Michael Weber (left) presents special awards for projects that relate to the agency's work. Also in the picture (left to right) students Richard Wang, Kevin Chen, Andrew Komo, Noah Kim, George Klees and the NRC’s Kreslyon Fleming.[/caption] Novel solutions to real world problems such as “Finding Ways to Reduce Rush Hour Commute Times Using Computer Simulations” were another common theme at the science fair. This student programmed a simulation for a certain section of highway to evaluate potential solutions (such as adding exits, increasing the speed limit, adding a lane, etc.) to determine the best method to reduce traffic delays. He used data from the Department of Transportation to construct a true-to-life model of the situation. I could use less traffic to and from work! In the end, learning about science is at the heart of a science fair; and anything I can do to fuel this passion is reward enough. By the way, the NRC supports this event because it is a way to give back to the community, engage students with an interest in STEM careers and – possibly – as a future recruitment tool. Winners receive an award certificate, a chance to present their projects to NRC staff and a NRC logo merchandise gift certificate. Nine students were selected for the NRC Community Award that demonstrated achievement and application to the NRC mission, goals and responsibilities. **Middle School (Junior) Division:** 1st Place: Raspberry Pi Controlled Robots -- Student: Kevin Chen; Roberto Clemente Middle School 2nd Place: Securing Computer Networks -- Students: George Klees and Theo Tosini; Takoma Park Middle School 3rd Place: The Efficiency of Data Encryption Methods -- Student(s): Andrew Komo and Noah Kim; Takoma Park Middle School **High School (Senior) Division:** 1st Place: Replacing Modern Sprinkler Systems with Infrared Detection to Locate and Extinguish Fires -- Students: Ishan Mundra and Karan Chawla; Poolesville High School 2nd Place: Saturated Nuclear Matter in the Large Nc and Heavy Quark Limits of Quantum Chromodynamics -- Student: Ishaun Datta; Montgomery Blair High School 3rd Place: Finding Ways to Reduce Rush Hour Commute Times Using Computer Simulations -- Student: Richard Wang; Poolesville High School

Comments

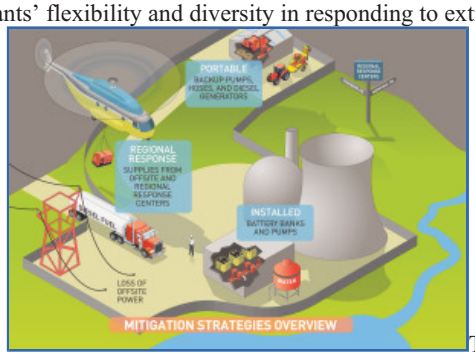
comment #315428 posted on 2014-04-16 08:43:56 by dadiehost

Nice article.

Addressing the Unpredictable Through Mitigation Strategies

posted on Wed, 02 Apr 2014 14:00:28 +0000

Lauren Gibson
Project Manager
Japan Lessons-Learned Directorate

The Fukushima accident reminded us how important prior planning is when it comes to safely handling extreme events at a nuclear reactor. We continue to conclude U.S. plants can survive many scenarios, such as loss of offsite power or flooding. After Fukushima, however, we're requiring plants to have strategies for dealing with the long-term loss of normal safety systems. Instead of figuring out which events might happen, we're focusing on significantly improving the plants' flexibility and diversity in responding to extreme natural phenomena (such as severe flooding, earthquakes, extreme temperatures, etc.). 

The plants' strategies must protect or restore key safety functions indefinitely in the case of an accident. The strategies focus on keeping the core cool, preserving the containment's barrier that prevents or controls radiation releases, and cooling the spent fuel pool. Plants with more than one reactor must be able to do this for every reactor on site at the same time. Ideally, plants would have everything for their strategies on site. The strategies must protect the plant indefinitely, however, so plants may need to bring in additional equipment or resources. The order reflects this by having three phases with different requirements. The first phase begins with the accident or event. At this point, the plants will use installed equipment, such as steam-driven pumps or battery-powered systems, to protect or restore safety functions. The plants must be able to shift to the second phase before the installed equipment is exhausted. The strategies' second phase uses portable equipment that's stored onsite, such as additional pumps or generators. This equipment is stored near the reactors and reasonably protected from severe weather or earthquakes. The phase two resources are brought to the reactors and connected to maintain the safety functions. During this phase, plants would also be able to transfer fuel from onsite tanks to the places were it's needed to run generators and other equipment. Plants have to ensure the third phase can take over before the portable equipment runs out of supplies. The final phase starts when outside help arrives. The nuclear energy industry is setting up two response centers to provide additional equipment and other resources to any U.S. reactor within 24 hours. One center is in Memphis, Tenn., and the other is in Phoenix, Ariz. The plants have all submitted a plan for what they intend to do and use in each of these phases. The plans must also explain how the plants will have everything in place by the end of 2016. We've been reviewing those plans and we're at the point of issuing interim staff evaluations, which let the licensee know whether we think they are on the right track. The NRC will inspect the plants throughout this process to ensure the strategies will get the job done. Our website's Japan Lessons Learned section has more information about the mitigation strategy requirements and related guidance. Note: The graphic is now available on our Flickr site.

Comments

comment #298603 posted on 2014-04-02 12:57:59 by devolpi

NRC appears trapped in its own rhetoric, failing to heed some crucial lessons from nuclear accidents 35 years ago at TMI, and just a few years past at Fukushima. Rather than prevention, the Lessons-Learned Directorate focuses on mitigation strategies. Instead of forestalling a meltdown in the first place, the Directorate stresses responding to the consequences, such as: "handling extreme events at a nuclear reactor ... keeping the core cool ... preserving the containment's barrier that prevents or controls radiation releases ... and cooling the spent fuel pool." All that is too late to prevent reactor self-destruction, followed by financial and public-relations havoc. Some major lessons that should have been learned from the TMI-2 accident were never implemented, and now three Fukushima meltdowns have accentuated these same shortcomings. The TMI accident occurred when operators lacked real-time independent indications of evolving loss of coolant. The TMI meltdown could have been prevented if autonomous ex-vessel water-level monitoring instrumentation had been installed. The Fukushima Task Force has been amply briefed on this capability, but continues to emphasize mitigation rather than prevention. The proposed water-level monitoring (high-energy gamma-ray technology) developed as a consequence of the TMI accident was published, even patented, long ago. As a result of the TMI-2 loss-of-coolant accident, NRC formally recognized as a high priority (NUREG-0933 [Dec. 2011]) – but never implemented -- "Identification of and Recovery from Conditions Leading to Inadequate Core Cooling." Similar lessons derivable from Fukushima are inexplicably relegated by the NRC Task Force to the bottom of its Tier 3 basement. –A. DeVolpi, PhD, retired nuclear-reactor safety specialist

comment #299821 posted on 2014-04-03 14:11:54 by Moderator in response to comment #298721

It is now available on our Flickr site: https://www.flickr.com/photos/nrcgov/13589521543/ Moderator

comment #300773 posted on 2014-04-04 09:28:20 by Garry Morgan in response to comment #298750

Thank you Scott. We had discussions yesterday at the Watts Bar Inspection meeting concerning NRC oversight of the Regional Response Centers. I hope the NRC will inspect all contracts relating to the stocking, preventive maintenance and shipping of equipment to nuclear facilities in the case of a disaster.

comment #298559 posted on 2014-04-02 11:55:36 by Garry Morgan

Does NRC planning take into consideration the events as outlined in these petitions petitions? "Potential interruption of active cooling for spent fuel pools due to geomagnetic disturbance and resulting long-term loss of outside power presents an unacceptable risk to public health and safety. Using the NRC-approved method of Probabilistic Risk Assessment (PRA), Petitioner has shown that spent fuel pools as currently designed and licensed do not meet NRC standards for safety. Amendment to the Code of Federal Regulations is required to rectify this situation."
http://www.resilientsocieties.org/images/Petition_For_Rulemaking_Resilient_Societies_Docketed.pdf Or, mitigating strategies as a result of a Carrington Event: http://www.resilientsocieties.org/images/NRC-2011-0299_Resilient_Societies_May_04_2012.pdf

comment #298660 posted on 2014-04-02 14:31:30 by Rich

I do like the concept of regional response centers. I know they are designed to support a severe accident at any US nuclear plant site, but I wonder if at least some of the emergency equipment to be housed there could be used to support a non-nuclear disaster as well. I am thinking of emergency power generators and other electrical equipment like large batteries and inverters. Could these resources be listed and supplied to say FEMA so that they could consider them in the case of a natural disaster?

comment #299733 posted on 2014-04-03 12:47:16 by Moderator in response to comment #298750

We could have been clearer in our original response. The NRC has had more than a year of extensive discussion with the industry regarding the creation and stocking of the response centers. The NRC continues that discussion and the agency will inspect and oversee the centers, since they are part of responding to events at U.S. nuclear power plants. The NRC has no authority to volunteer potential non-nuclear uses of the material in the response centers, which is the collective property of the nuclear power plant owners. FEMA is the national agency that deals with large scale, non-nuclear events – FEMA's website has more information on its roles and responsibilities -- http://www.fema.gov/recovery-support-functions Scott Burnell

comment #299565 posted on 2014-04-03 08:58:01 by Garry Morgan in response to comment #298750

Wait a minute, you can't have it both ways. either the nuclear industry has response centers or they do not. You say in the article about the response centers: "The nuclear energy industry is setting up two response centers to provide additional equipment and other resources to any U.S. reactor within 24 hours. One center is in Memphis, Tenn., and the other is in Phoenix, Ariz." Here you pass the buck and say you have no control over the regional response centers: "The regional response centers are privately owned facilities and the NRC only has jurisdiction over events at nuclear power plants. FEMA is in the best position to discuss national response resources." Do you know what is in the regional response centers since you have no control over them? Is FEMA in the best position to know what is needed to support nuclear facilities during an extended disaster? Does the NRC participate in the inspection of these centers? It is not reassuring to know that the regulator does not control the stockpiling or inspection of emergency equipment and supplies at these private facilities for the nuclear industry. It would also seem prudent to inspect the contracts involved in the so called "regional response centers" to insure that they are actually valid contracts and that the contracts are actually being fulfilled.

comment #298721 posted on 2014-04-02 15:36:58 by in response to comment #298506

I would like to know the same

comment #298506 posted on 2014-04-02 11:20:37 by David Pendleton

Is there any way to get a higher resolution copy of the graphic attached to this blog?

comment #298727 posted on 2014-04-02 15:45:29 by Moderator in response to comment #298559

As we noted in our Dec. 2012 press release on the topic (http://pbadupws.nrc.gov/docs/ML1235/ML12353A410.pdf): "The NRC rulemaking process can appropriately handle further examination of the issues in [the] petition. The first step will be monitoring the progress of several Fukushima-related activities designed to enhance plants' abilities to keep spent fuel pools safe. If the staff concludes these activities fall short of resolving the petition's concerns, the agency will work to develop a technical basis for the petition's suggested rule change. If such a basis cannot be established, the NRC will update the public on why the petition's suggestions were not adopted." Scott Burnell

comment #298728 posted on 2014-04-02 15:45:59 by Moderator in response to comment #298506

> Yes, we emailed it to you. It will also be available on Flickr shortly. Moderator

comment #298501 posted on 2014-04-02 11:14:43 by Rich

> NRC-Planning for the Unthinkable I commend the NRC and the nuclear industry for considering accident scenarios that are beyond even the conservative design bases for nuclear power plants. The 3-phase accident response planning sounds very good. The first two phases must be handled with equipment that is on-site and ready to go. The last phase relies on equipment that is housed off-site in one of two response centers in the US. These centers are located in Memphis and Phoenix. Will these centers be operational by 2016 (the same timeframe for nuclear power plants to have their phase 2 equipment in place)? When considering severe earthquakes and Noah-type flooding, how will equipment stored in Memphis and Phoenix be moved to the affected nuclear plant site? As I understand it some of this equipment is quite large e.g. large diesel generators and battery banks. Will there be provisions for airlifting this equipment to the site? Again my thanks to the NRC and the nuclear industry for thinking about and planning for the unthinkable.

comment #298734 posted on 2014-04-02 15:53:07 by Moderator in response to comment #298501

> The regional centers are expected to be fully operational this year. The centers' proximity to major air freight facilities allows airlifting of major equipment to airfields near each operating nuclear power plant. Each plant's strategies include appropriate measures to move equipment from the local airfield to the site. Scott Burnell

comment #298750 posted on 2014-04-02 16:28:29 by Moderator in response to comment #298660

> The regional response centers are privately owned facilities and the NRC only has jurisdiction over events at nuclear power plants. FEMA is in the best position to discuss national response resources. Scott Burnell

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Change is in the Air: NRC Launches New Career Opportunities Website

posted on Tue, 08 Apr 2014 14:32:11 +0000

Kristin Davis
Senior Human Resources Specialist

With April showers comes the countdown to graduation, and some student's thoughts turn to the job market. Even those already employed may be getting the urge for a change of scenery. In that spirit the NRC has launched a new Career Opportunities website to attract the

technologically savvy job seekers of today. Our website is often the first introduction prospective applicants have to the NRC and our important mission. This redesign allows us to improve that first impression with enhanced maneuverability and the most up-to-date information, all while embodying the NRC work style and attitude. The fresh new look gives the NRC an entirely new online presence that aligns seamlessly with our overall recruitment campaign and conveys to prospective applicants that NRC has career opportunities for motivated, bright and dedicated experienced professionals as well as recent college graduates. To attract top talent to fill our mission critical positions, we must develop relationships with potential candidates long before we need them. The Career Opportunities website is just one of the many avenues we use to do just that. We also attend college and professional career fairs, place ads in professional journals and post jobs on online job boards. Each year, the NRC hires about 200 new staff members in fields such as engineering, nuclear science and security.

Comments

comment #313928 posted on 2014-04-15 09:46:45 by badboy27282013

> wow i think that's great news for us.

comment #304989 posted on 2014-04-08 12:04:12 by CaptD

> The NRC should spend much more on public outreach and their website than they do on their HR efforts, because it shows where their priority really is... The NRC should give grants to those in the public that have proven to be factual "watchdogs" since the NRC's primary goal is insure regulatory safety and as the San Onofre Debacle has proven, the NRC needs all the help it can get.

comment #315225 posted on 2014-04-16 06:25:38 by Nickolas

I wanted to thank you for this great read!! I definitely loved every bit of it. I've got you book-marked to check out new things you post…|…

comment #313253 posted on 2014-04-15 01:21:45 by Parthavi in response to comment #304989

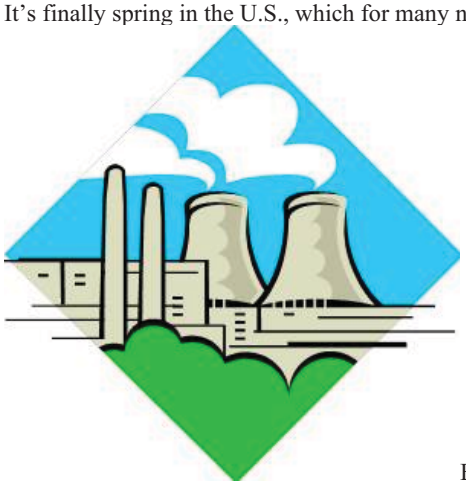
I somewhat second your thought. But this is nice step taken towards outreach.

April Showers Also Bring Seasonal Power Plant Refueling Outages

posted on Thu, 10 Apr 2014 14:13:49 +0000

Neil Sheehan
Public Affairs Officer
Region I

The robins are chirping, the daffodils are pushing out of the cold ground and the sun is shining for an additional minute or two every day. It's finally spring in the U.S., which for many nuclear power plants heralds the start of refueling and maintenance outages.



Every 18 to 24 months, nuclear power plants shut down to allow for the replacement of about a third of the fuel in the reactor with fresh rods. The outages also make it possible for plant personnel and contractors to perform a number of projects, such as the refurbishment or replacement of pumps and valves, and inspections of components not accessible when the reactor is operating. Hundreds of contractors assist with this work, making these outages periods of intense, round-the-clock activity for at least several weeks. No doubt nearby coffee shops do a booming business, not to mention area hotels and restaurants. The NRC also beefs up its inspection footprint during these shutdowns, which are usually scheduled for spring and fall because those are the times when the demand for electricity is generally lower. Resident Inspectors assigned to the plant on a full-time basis and specialist inspectors observe select work activities to ensure adherence to safety regulations. They are also able to glean information about what employees and contractors are learning as they put eyes on key pieces of equipment. There are procedures that help guide NRC inspectors during outages, including one that helps target and prioritize areas for review. A key, though, is remaining flexible while maintaining a holistic view of what almost overnight becomes a particularly bustling workplace. Nuclear power plants are baseload electricity generators designed to run at 100 percent, but they need to occasionally take a strategic timeout to refuel and kick the tires, so to speak. With careful planning, a focus on safety and an attention to detail, the tasks can be effectively completed and the unit restored to service in time to help meet the additional cooling demands of the ensuing summer or the warming needs of the following winter.

Comments

comment #309689 posted on 2014-04-12 09:27:27 by kamery termowizyjne

Thanks God there are reasonable people that take care about our power plants. I really believe that they are our eco-energy of the future.

comment #307187 posted on 2014-04-10 10:33:49 by Rich

Thank God for reliable, base-load nuclear power plants. Unlike fickle wind and solar power you can depend on nukes 24/7. Without nukes and coal-fired power plants our electrical grid would be notoriously unstable and unreliable. Let's make sure that we always have a powerful electrical grid backbone.

comment #307327 posted on 2014-04-10 13:30:38 by CaptD

This sounds so much like an informercial for the nuclear industry, I wonder why that is? Baseload is yet another myth, since it is easy to get along just fine without using any Nuclear Baseload, just like CA did when all four of its reactors were down at the same time and guess what, NO Brownouts at all. It would be helpful for the NRC to list just how much additional nuclear waste is being generated by all these refuelings, since the OLD fuel rods must be stored for decades if not longer! This is especially if what was

removed was high burn up fuel rods which require much longer cool down periods and as yet have no approved long term storage casts to contain them...

comment #307332 posted on 2014-04-10 13:45:47 by CaptD in response to comment #307187

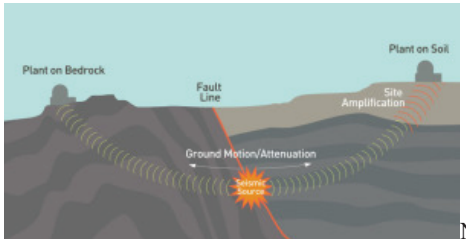
Rich - Ha Ha Ha that is a funny one, since many Countries run just fine without using nuclear reactors and they are not generating any expensive nuclear waste that must be securely stored for generations. I agree that Coal and Nuclear are BOTH dirty, so it is imperative that mankind start investing in truly clean generation, instead of just yet more OLD technology! Imagine if "just" new Nuclear R&D money was focused on developing hydro-thermal and/or wave/tidal energy, things would start looking much cleaner and safer for mankind! BTW: I recently saw a TV show that said that there is a 10 knot ocean current at the tip of South Africa, imagine placing large turbines underwater that would then send that power ashore! Nuclear is now an aging technology that has left mankind with enormous amounts of radioactive waste that will now and in the future threaten our environment for generations! I predict that the NRC will begin to shift into doing more waste monitoring than reactor monitoring because the cost of using nuclear is now so much more expensive than many other cleaner forms of generation! Moderator: Some content removed to adhere to the comment guidelines.

Fukushima Lessons: Updating Earthquake Hazards at U.S. Nuclear Plants

posted on Fri, 04 Apr 2014 20:40:24 +0000

Scott Burnell
Public Affairs Officer

The NRC is examining new earthquake-related information from U.S. nuclear power plants, and we're making that information available over the next week or so. We'd like to summarize how we got here and what the next steps are.



Nuclear power plant designs set a basic standard for reactors to completely and safely shut down after an earthquake, based on site-specific information. Plant construction methods and other design factors add to a reactor's capacity to safely withstand stronger motions than what the basic design describes. The end of March marked an important milestone for our post-Fukushima activities. We received 60 reports from central and eastern U.S. nuclear power facilities updating the seismic hazard at their individual reactors. The NRC staff is making these reports available through its normal process. The NRC will post each plant's report on the agency website's Japan Lessons-Learned Activities page. We will require the same updates of the three western power plants (Palo Verde in Arizona, Columbia Generating Station in Washington, and Diablo Canyon in California), but delayed by one year because of the more complex geology in that region of the country. Each western plant is individually looking at the seismic sources and local ground motion characteristics that could affect it. This Senior Seismic Hazard Analysis Committee process will inform the overall seismic hazard reassessment that the western plants are completing. Our staff will spend the next month going over the submissions carefully, checking for errors, before confirming which plants will be required to do more extensive analysis of their ability to respond safely to a significant earthquake event. These reports mark the first step in a comprehensive process to keep safety at U.S. plants up-to-date with the latest understanding from the earth sciences on the processes that create earthquakes in the U.S. In 2012, the Department of Energy, Electric Power Research Institute and the NRC joined forces to update the "seismic source model" for the central and eastern U.S. This was based on a new understanding of what creates earthquakes on the North American tectonic plate, with a focus on the New Madrid fault zone near St. Louis, the Charleston fault zone near Charleston, S.C., and other updated information. The data on seismic sources will be used in conjunction with a ground motion model for the central and eastern U.S. as well as data from individual plants on the localized geology, topography, soil cover, and other data to create a picture of the "ground motion response spectra" for each plant. This new ground motion response spectrum at each plant will be compared with that developed in the past to see if the new data suggests the plant could see higher ground motions than previously thought. If that is the case, the plant will be considered to have "screened in" to further detailed seismic hazard analysis. Those plants that "screen in" will be required to do a seismic "probabilistic risk assessment" or a seismic "margin analysis" to evaluate in detail how the existing plant structures and systems would respond to the shaking from the range of earthquakes that could affect the plant based on our current understanding of seismic sources. This assessment is extensive, involving experts from a variety of fields, and will require at least 3 years to complete. Once these assessments are complete, the NRC will decide if significant upgrades to plant equipment, systems, and structures are required. In the meantime, to ensure that the plant is safe, the NRC requires that by the end 2014, plants have reported the interim actions they will take to ensure the safety of the plants before the assessment is complete. Such measures could include re-enforcing existing safety-significant equipment or adding equipment. It's important to remember that significant earthquakes at central and eastern U.S. plants are unlikely. But it is our job to ensure that these plants are ready for all that nature might throw at them. And it is our job to keep up with the changes in the science to ensure that plants are as safe as they can be.

Comments

comment #301998 posted on 2014-04-05 11:53:34 by perdajz

Let's not forget the most important lesson here: any earthquake that leads to core damage is far worse than the core damage itself. Another lesson would be that if you shutter nuclear plants for fear of earthquakes, say in Bavaria of all places, the resulting environmental damage from fossil fuels will dwarf any risk from the NPP. IMO, Fukushima can be dismissed from considerations of NPP risk. PRA makes the assumption that the environment is safe and the NPP is a threat to the environment and those in it. That's not what happened at Fukushima: if you were walking on the beach that day, you were dead; if you were in the plant, you had a good chance of survival. From a probabilistic standpoint, it makes no sense to worry about initiating events that are far worse than a slow release of fission products. Otherwise, you end up thinking like an anti-nuke and asking the NRC to figure out how many angels can dance on the head of a pin.

comment #302031 posted on 2014-04-05 12:53:51 by Richard McDonald

The real "Lesson to be learned" is that towns and cities should be protected as well as reactors. After all, the reactors survived Richter 9 and no one at the plant died from the tsunami. 18,000 died because the towns had no tsunami protections. Let's build 100-foot tall tsunami walls around all cities and towns along the coasts (starting with Los Angles) -- after all, you can never be too safe!

comment #303865 posted on 2014-04-07 11:50:33 by Rich A in response to comment #301273

I went to the link you provided on flood analyses required of nuclear plants downstream from dams. These dams are not designed to withstand an earthquake of near the magnitude that nuclear plants are designed to withstand. More disturbing is the fact that these dams have no measures in place to protect them from terrorist attack. Dam failure would result in a tsunami event for downstream nuclear plants equivalent to Fukushima. I can understand then why the NRC has put a gag order on any information relating to dam failure flooding analyses. What is also very disturbing to me is that in one case the NRC calculated that an upstream dam failure would result in a tsunami wave 46-feet high at the Fort Calhoun Nuclear Station. Yet the NRC has taken no action to address this terrible threat to the plant and the public. The NRC is obviously hoping that the owner of the plant will evaluate this problem away. Furthermore, how can the owner of a plant be expected to do a thorough and unbiased flooding analysis when their huge investment in the plant is at risk?

comment #304851 posted on 2014-04-08 08:13:40 by benjohnsont

I have read some valuable information of earthquake hazards

comment #305161 posted on 2014-04-08 15:28:04 by Rich A in response to comment #301273

Thanks once again for the response. You mentioned other sources of information on flooding. What would be examples of these other sources. I would think however that there is no more definitive source on flooding than the Army Corps of Engineers.

comment #305002 posted on 2014-04-08 12:26:29 by Rich A in response to comment #301273

I appreciate the prompt response Mr Moderator. You mentioned that an affected nuke plant would have time to take action in the event of a catastrophic upstream dam failure. If you think a few hours is a lot of time then I suppose you are right. I think in that time though it would be a lot like rearranging the chairs on the Titanic. The nagging issue with nukes is that you have to remove decay heat for months to prevent nuke fuel from overheating. Gross flooding renders all efforts to keep fuel covered and cooled utterly impossible. In a couple of hours the plant could be shutdown and cooled down but there would be no way to maintain it without any AC or DC power. Can you even fathom the destructive power of a nearly 5-story wall of water descending on not only the plant itself but the entire Missouri River valley? I received an April 4, 2014, copy of the non-safeguards version of what the Army Corps of Engineers sent the Fort Calhoun Nuclear Station relative to what they found if an upstream dam failed on the Missouri River. Pardon my pun but it must be pretty "damming" info to be withheld from the public record. As I understand the data provided it would give the flood elevation at select river miles downstream of a failed dam. Those river miles would include those at the reactor site itself. Now that this information is officially on the docket, will the NRC take appropriate action to protect the public if the projected flood elevations exceed that for which the plant is currently designed (1014 feet)? Also will the NRC share this info with other parties who have a real need to know? Some of these parties would be FEMA, and local, county, and state emergency preparedness groups? Lastly, you mentioned that the Corps has noted no problems with the soundness of these very old upstream earthen dams. Of that I have no doubt whatsoever. However, we both know that is not the issue. The issue is a severe earthquake causing catastrophic dam failure. Or an act of terrorism using a large IED or a suitcase nuke that utterly destroys the dam. I hope the data provided by the Corps supposes total, complete, instantaneous dam destruction.

comment #304149 posted on 2014-04-07 16:29:51 by Moderator in response to comment #303865

There is no evidence of any “tsunami” or sudden flooding scenario that would prevent Fort Calhoun from taking appropriate actions to protect the public prior to a flood’s arrival. As we’ve noted previously, the NRC reviews all information plants submit to us and performs its own confirmatory analysis when warranted. We will do so when Fort Calhoun submits its flooding reanalysis. That review would tease out any biases or unjustified methods of analysis. The Army Corps of Engineers continues to monitor the dams upstream from Fort Calhoun and has yet to suggest any near-term remediation is needed for those dams. Scott Burnell

comment #301911 posted on 2014-04-05 09:18:23 by Rich A

I am glad the NRC is updating earthquake hazards at nuclear plants themselves. But what about the earthquake resistance of the dams that are upstream of many US nuclear plants? The failure of any such dam would result in tsunami-type event for downstream nuclear plants.

comment #306382 posted on 2014-04-09 15:40:05 by Moderator in response to comment #306118

The staff continues to process the reports and we expect the rest of the reports will be posted in the next week or so. Scott Burnell

comment #306160 posted on 2014-04-09 12:11:23 by Rich A in response to comment #301273

Thanks for the clarification. So for a nuclear plant on the Missouri River, other sources of floodwaters would perhaps be other streams and tributaries feeding the Missouri River? If that is so wouldn't that even add to the flood projection consequences postulated by the Corps if an upstream dam failed? I will post elsewhere if I have other than a seismic concern in the future. Thanks for your patience.

comment #306135 posted on 2014-04-09 11:32:41 by Moderator in response to comment #305161

By flooding sources I meant sources of flood waters, not information. Since this blog post discusses seismic evaluations, further questions or comments about flooding are more appropriately directed to JLD_Public.Resource@nrc.gov or to the blog’s Open Forum. Scott Burnell

comment #306118 posted on 2014-04-09 11:04:57 by Ram

I see that the seismic hazard reports for only a handful of the plants have been uploaded. When can we expect all of the reports top be available on ADAMS?

comment #307149 posted on 2014-04-10 09:37:57 by Moderator in response to comment #306160

The licensee must consider all sources of flood waters in their evaluation. We are not able to comment on the Corps' protections. We’ve referred your questions to JLD_Public.Resource@nrc.gov for further discussion. Scott Burnell

comment #311569 posted on 2014-04-13 23:30:17 by hiddencamper in response to comment #302979

Nuclear engineer here. Each plant has an "Operating Basis Earthquake" (OBE) and "Safe Shutdown Earthquake" (SSE). The plant is allowed to continue operating up to and including the OBE. Above the OBE, a plant must shut down and inspect for damage. The SSE is the plant's "Design Level" for post earthquake safe shutdown, and must maintain integrity of its seismically qualified systems up to that level.

comment #305068 posted on 2014-04-08 14:10:12 by Moderator in response to comment #305002

The Army Corps of Engineers has followed its normal procedures for determining what parts of its analysis are publicly available. Other government agencies would work directly with the Corps to obtain that information, if necessary. Fort Calhoun will perform its flooding re-evaluation based not only on the Corps’ information but also other flooding sources. The NRC will review Fort Calhoun’s re-evaluation and ensure the plant responds accordingly. Scott Burnell

comment #302807 posted on 2014-04-06 11:36:40 by Rich in response to comment #301998

Excellent point about any earthquake leading to core damage is far worse than the core damage itself. However, as we all know, a NPP core damage accident by itself has a huge negative effect on people and the environment. A huge exclusion zone still exists at Chernobyl after 28 years. No telling how long a huge exclusion zone around Fukushima will have to be maintained. Tell me one more time that fossil fuel is worse than nuclear fuel? I want to be safe now and in the future and nuclear is nonsense. It is like playing Russian roulette with 5 bullets in a 6-shooter.

comment #301273 posted on 2014-04-04 19:29:51 by Moderator in response to comment #301249

This blog post has information on the agency's recent actions related to flooding risks: http://public-blog.nrc-gateway.gov/2012/10/24/nrc-continues-to-take-action-on-flooding-issues/ Moderator

comment #301249 posted on 2014-04-04 19:09:31 by Robert Geller

It's good that seismic standards are being reviewed, but it was the tsunami at Fukushima that did most if not all of the damage. What are you doing to review and, if necessary, upgrade countermeasures against tsunami and flooding risks?

comment #301193 posted on 2014-04-04 17:32:24 by CaptD

RE: "Our staff will spend the next month going over the submissions carefully, checking for errors, before confirming which plants will be required to do more extensive analysis of their ability to respond safely to a significant earthquake event." And what happens if one or more of our Nuclear Power Plants suffer something a bit more stressful than a "significant earthquake event"? Think Fukushima or worse... :-0 The NRC still fails to take into consideration the proven fact that Nature can destroy any land based nuclear reactor, any place anytime 24/7 just like it did at Fukushima and no engineering design work or NRC specifications can prevent that from happening. Fukushima proved that even though the probability of a meltdown was a 1 in 10,000 year or even a 1 in a 100,000 year event, not 1 but 3 meltdowns could occur almost on the same day! Probability dictates that an event is just as likely to happen today as it is sometime in the future, yet the NRC tends to always imply that if something does happen it will be far into the distant future, which is illogical at best and simply dangerous in the worst case. Using science to somehow imply that something is "safe" when it is not, is the worst thing those with scientific knowledge can do, because it makes nuclear scientists and engineers look like " snake ☢il salesmen". Think how the Japanese regulators felt both before and after Fukushima occurred. Now imagine the staff of the NRC in the exact same situation only they are at the "Before" position making claims about what will occur "after" a "significant earthquake event". The USA cannot afford a nuclear accident and therefore it is up to the NRC to insure that there is Zero Tolerance when it comes to compliance with all safety regulations in order to thereby guarantee US that a nuclear accident will never happen for any reason, because Nature can strike at any time... Excerpts taken from http://public-blog.nrc-gateway.gov/2014/03/17/nrc-defines-risk-terms-in-a-new-glossary/comment-page-1/#comment-279123

comment #302979 posted on 2014-04-06 15:54:44 by Dan M

Surely, the NRC do not mean what they say in the following sentence: "Nuclear power plant designs set a basic standard for reactors to completely and safely shut down after an earthquake, based on site-specific information." If they do mean it, then they actually mean that a network of nuclear stations must all shut down after a postulated earthquake that exceeds a specified level. That is a terribly unsafe act. When we came to this question many years ago at Ontario Hydro, we found that such a mass shutdown would collapse the Ontario grid along with, most likely, that of the entire Northeast Power Pool. We engaged in a long discussion with the Canadian regulator on this matter, and they eventually agreed with our assessment. Therefore, no Canadian nuclear plant incorporates a seismic trip — nor should it, any time in the future. Interunit power connections at multi-unit stations plus suitable qualified emergency generators along with power setback and step back functions in the computer control systems of each unit give strong assurance that each nuclear site retains its capacity for “islanded" operation. Following a serious earthquake, these nuclear sites provide excellent “black start” capability for the NEPP grid. Dan

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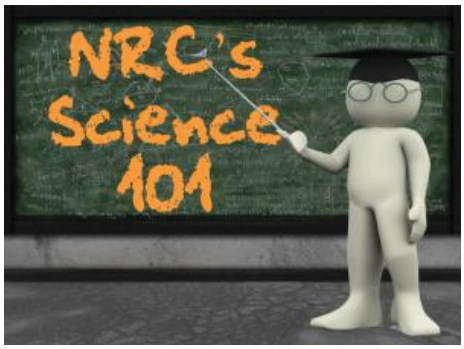
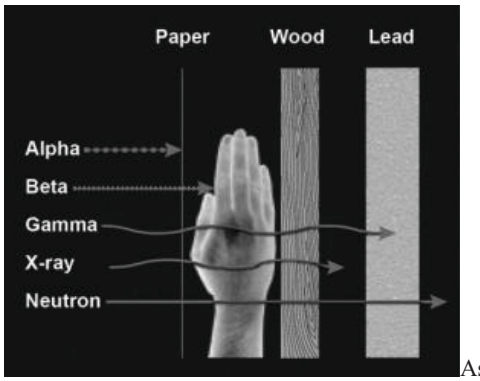
NRC Science 101 -- Different Types of Radiation

posted on Mon, 14 Apr 2014 14:00:09 +0000

Donald Cool
Senior Radiation Safety Advisor



In earlier Science 101 posts, we talked about what makes up atoms, chemicals, matter and ionizing radiation. In this post, we will look at the different kinds of radiation. There are four major types of radiation: alpha, beta, neutrons, and electromagnetic waves such as gamma rays. They differ in mass, energy and how deeply they penetrate people and objects. The first is an alpha particle. These particles consist of two protons and two neutrons and are the heaviest type of radiation particle. Many of the naturally occurring radioactive materials in the earth, like uranium and thorium, emit alpha particles. An example most people are familiar with is the radon in our homes. The second kind of radiation is a beta particle. It’s an electron that is not attached to an atom (see previous blog post). It has a small mass and a negative charge. Tritium, which is produced by cosmic radiation in the atmosphere and exists all around us, emits beta radiation. Carbon-14, used in carbon-dating of fossils and other artifacts, also emits beta particles. Carbon-dating simply makes use of the fact that carbon-14 is radioactive. If you measure the beta particles, it tells you how much carbon-14 is left in the fossil, which allows you to calculate how long ago the organism was alive. The third is a neutron. This is a particle that doesn’t have any charge and is present in the nucleus of an atom. Neutrons are commonly seen when uranium atoms split, or fission, in a nuclear reactor. If it wasn’t for the neutrons, you wouldn’t be able to sustain the nuclear reaction used to generate power. The last kind of radiation is electromagnetic radiation, like X-rays and gamma rays. They are probably the most familiar type of radiation because they are used widely in medical treatments. These rays are like sunlight, except they have more energy. Unlike the other kinds of radiation, there is no mass or charge. The amount of energy can range from very low, like in dental x-rays, to the very high levels seen in irradiators used to sterilize medical equipment.



As mentioned, these different kinds of radiation travel different distances and have different abilities to penetrate, depending on their mass and their energy. The figure (right) shows the differences. Neutrons, because they don't have any charge, don't interact with materials very well and will go a very long way. The only way to stop them is with large quantities of water or other materials made of very light atoms. On the other hand, an alpha particle, because it's very heavy and has a very large charge, doesn't go very far at all. This means an alpha particle can't even get through a sheet of paper. An alpha particle outside your body won't even penetrate the surface of your skin. But, if you inhale or ingest material that emits alpha particles, sensitive tissue like the lungs can be exposed. This is why high levels of radon are considered a problem in your home. The ability to stop alpha particles so easily is useful in smoke detectors, because a little smoke in the chamber is enough to stop the alpha particle and trigger the alarm. Beta particles go a little farther than alpha particles. You could use a relatively small amount of shielding to stop them. They can get into your body but can't go all the way through. To be useful in medical imaging, beta particles must be released by a material that is injected into the body. They can also be very useful in cancer therapy if you can put the radioactive material in a tumor. Gamma rays and x-rays can penetrate through the body. This is why they are useful in medicine—to show whether bones are broken or where there is tooth decay, or to locate a tumor. Shielding with dense materials like concrete and lead is used to avoid exposing sensitive internal organs or the people who may be working with this type of radiation. For example, the technician who does my dental x-rays puts a lead apron over me before taking the picture. That apron stops the x-rays from getting to the rest of my body. The technician stands behind the wall, which usually has some lead in it, to protect him or herself. Radiation is all around us, but that is not a reason to be afraid. Different types of radiation behave differently, and some forms can be very useful. For more information on radiation, please see our website.

Don Cool, who holds a Ph.D. in radiation biology, advises the NRC on radiation safety and for 30 years has been active on international radiation safety committees.

Comments

comment #312847 posted on 2014-04-14 18:47:40 by acehoffman

> This blog post is biased and misleading, and says nothing at all about what radiation does to DNA -- the main concern of all who read it. For example, the sentence on tritium in the paragraph on beta particles should be amended as follows: Original: "Tritium, which is produced by cosmic radiation in the atmosphere and exists all around us, emits beta radiation." Suggested rewrite: Tritium, which is produced by cosmic radiation in the atmosphere and exists all around us IN MINUTE QUANTITIES in surface water and in trace quantities elsewhere in the biosphere except around nuclear power plants (which are allowed to routinely emit hundreds of Curies of tritium every year), emits beta radiation." Instead you've misled people into thinking "tritium is all around us." Naturally-occurring tritium is NOT a substantial concern for anyone; but Canada's CANDU reactors are particularly bad, and NO tritium level is good for you: Tritium is extremely hazardous to humans because it can go anywhere in the body and is a DNA disrupter, as well as (usually) creating HO molecules inside the body, which are extremely hazardous as well (these oxidants are created because tritium is usually absorbed by the body as one atom of an "HTO" (instead of H2O) water molecule). The rest of that paragraph, about Carbon-14 dating, should also be amended to mention that C-14 dating will never be a reliable method of dating anything in the Nuclear Age (it will still work for dating artifacts from before 1945). This is because nuclear power plants and weapons produce vast quantities of the isotope and therefore, the levels of C-14 in the biosphere that exists now varies from place to place, and what percentage of C-14 a living object will be made of can no longer be relied on for dating purposes. Events such as Chernobyl, Fukushima, or any dry cask spent fuel fire release C-14 and many other radioactive nasty things, which then pollute the planet in uneven (and unfair) ways. The paragraph on neutrons may appear to the uninformed as being fairly neutral, but in reality, neutrons continue to be emitted by the spent fuel for tens of thousands of years and are a significant danger because they go through just about everything until they finally randomly smack hard into a nucleus, at which point, of course, they can do significant damage including causing other emissions. Neutron emissions are one of the reasons spent fuel is so dangerous and difficult to handle. Additionally, the neutron flux from spent fuel from reactors which are shut down permanently in mid-cycle is especially strong. And most reactors end up shutting down mid-cycle, because it's more profitable to keep them running until something too expensive to fix finally breaks than to retire them any other way. The last comparison, that x-rays and gamma rays "are like sunlight, except they have more energy" is absurd, unless a 1-mile-per-hour collision is like a 10,000-mile-per-hour collision. X-rays are about 10,000 times more powerful than visible light, and gamma rays are about a million times more powerful. You could have at least said "a lot more energy" instead of just "more energy". And describing dental x-rays as "very low" amounts of energy is likewise raising the bar. ALL types of ionizing radiation are very strong forms of energy emissions, whether they are "like" photons that the sun puts out (but with "a lot more energy") or high-speed helium atoms without their electrons (alpha particles), or high-speed electrons (beta particles), or penetrating but short-lived neutrons (about 15 minutes before they decay by beta emission into hydrogen, on average). Claiming that an alpha particle "doesn't go very far" because it is heavy is not only counter-intuitive, it's wrong (at least according to Newtonian physics, to the extent it applies at the sub-atomic level). I presume what the author intended to refer to is that the "large" alpha particle has a cross-section (as measured in

barns, for example) which interacts with the nuclei of other atoms much more than, for example, a beta particle would. The "very large" charge is, of course, the main thing that interacts with other atoms and molecules: it ionizes them (for example by knocking off an electron). One alpha particle -- what you refer to as "low energy" -- can ionize thousands of molecules in the human body. A DNA molecule consists of a specific unique chain of approximately 13 billion atoms. Nearly every cell in the human body has a DNA chain (red blood cells being one exception). DNA damage from a single ionizing radioactive emission can cause THOUSANDS of separate cancers to develop! When discussing beta particles, you state they "can go a little further than alpha particles." This again is rather imprecise and in many ways dreadfully inaccurate. High energy beta particles can go nearly a centimeter through tissue (for example, all the way through a fetus's heart or a baby's pinkie). Lower energy beta particles don't penetrate so much, but oddly enough, most of the damage from beta emissions is done as it runs out of energy because at higher energy levels, it whizzes by things and is slightly slowed by them, but does not damage them because it goes by too fast to have much effect. So both "low-" and "high-" energy beta emissions do roughly the same level of damage, and in approximately the same volume of space -- though that pocket of damage is generally further away from the source for a high-energy beta emission. Your discussion of the effects of radiation on the human body didn't mention DNA damage at all, it sticks almost entirely to discussing the benefits of medical radiation, and then assures us that "radiation is all around us." Well, yes, it is, but there's no reason to increase the level of radiation that is already there. You seem to forget that your whole job is to make sure that level doesn't go up "significantly" but clearly, you've lost sight of what level of radiation is significant, and of DNA damage is significant. Even very low levels of radiation can be harmful to DNA and if a clean alternative exists, it should be taken, and if not, perhaps the whole process should be reevaluated. For energy needs, there are clean alternatives such as solar, wind, wave, geothermal, biomass, and so on. For medical diagnostics and treatments, there are also alternatives to many of the radioactive procedures, but cost of the installed radiation equipment (such as CT-SCAN machines) must be amortized over thousands of patients, and the cost of buying an entire different diagnostic device in addition to the CT machine is prohibitive, especially because some things will still probably need to be diagnosed with a CT-SCAN for many decades to come. But in general, medical doses have been significantly reduced over the past few decades because radiation is so incredibly dangerous, and because better and better radiation detectors are now available.

comment #325433 posted on 2014-04-22 09:08:17 by Moderator in response to comment #324619

The blog is checked multiple times a day so that comments are approved and posted frequently. As stated previously, we try to be liberal in our application of the comment guidelines so as to allow as much dialogue as possible, although at times we will remove direct, personal attack verbiage while still posting the remainder of the comment. We also try to limit our moving of topics to the Open Forum for the same reason. Moderator

comment #330591 posted on 2014-04-25 14:49:37 by stock in response to comment #330573

thanks Maureeen, I will review the doc later. I had found some others where they list fission product, but like 22 years after the burn....would prefer to have data on the year of burn stoppage.

comment #330606 posted on 2014-04-25 15:03:18 by stock in response to comment #330573

Maureen I did a review, and thank you so much, this is a great resource, and they do a simple list of the primay fission products 1 year after burn, and for various enrichments and degree of burn. Perfect for what I need to do. Sorry to ask another favor, but can you find a similar resource that would depict fission products and neutron production from various MOX mixes? Thanks!

comment #314246 posted on 2014-04-15 13:48:14 by stock in response to comment #313978

yeah arent those the nice folks who jacked up the "allowable" radiation in food by 1000% after Hillary went to chat with the Japanese. Spread the love Hillary.

comment #314011 posted on 2014-04-15 10:44:07 by stock in response to comment #313883

The NRC link doesn't really provide any usefulness for CPM in an airplane. I would like average CPM based on altitude and lattitude. I have scoured the web and come up empty handed. Some people are saying that post Fukushima, that airplane doses are way way up compared to back in the day. 900 CPM sure seems high to me, I have it on video. Airline personnel could be at extreme risk, it would be nice to facts, any further help you could provide would be great. How does one calculate body dose from Cosmic, is it mostly all Gamma, and at what energy levels. Some Xray too? Other stuff?

comment #313998 posted on 2014-04-15 10:36:06 by stock in response to comment #313885

I think one of the great lies of the radiation industry is that cancer is the only risk of radiation. In fact, radiation contributes to numerous health problems as shown in this list. http://nukeprofessional.blogspot.com/2014/03/cancer-does-not-just-cause-cancer-it-is.html

comment #314008 posted on 2014-04-15 10:42:48 by Hadija

thank you for the great informative article, learned a lot

comment #313978 posted on 2014-04-15 10:23:26 by nancy in response to comment #313890

the EPA & DOE....you mean the pollution enablers? a true answer from them is about as likely as the truth in your article. monsanto/GE lovers they are & you are.

comment #324619 posted on 2014-04-21 19:14:06 by CaptD

Attention NRC Moderators! If we have to wait so long to get normal comments posted then please explain why you allowed: Dan Williamson's April 17, 2014 at 8:23 am (see above) comment to be posted at all, since "halitosis and warped floors." has no place in this NRC blog... BTW if you delete the above comment you are welcome to delete this comment about it. Thanks

comment #317396 posted on 2014-04-17 13:28:24 by CaptD

Radioactive dosages are very important but what is even more important is getting truthful factual information and data, especially about radiation releases. If the NRC started to release data about all releases then those in the public with scientific training could better judge what is happening but because this in not the case the public is left having to trust others that may not have the technical expertise they do to make health related decisions for the public at large! Somewhere i the past the nuclear industry got permission to keep all information secret from the public and that decision should be reexamined because to continue to withhold key safety and/or health information is no longer acceptable in the 21 Century! Here is just one example of why the public needs to be concerned: Estimated radiation doses of Fukushima returnees withheld for half a year http://ajw.asahi.com/article/0311disaster/fukushima/AJ201404160056 Here is another : Contamination of USS Ronald Reagan During Fukushima Response Underreported http://www.internationalpolicydigest.org/2014/02/06/contamination-uss-ronald-reagan-fukushima-response-underreported/ and another DOE To Do WIPP Mine Reentry On April Fools Day http://www.fukuleaks.org/web/?p=12709 and one more: 5 Types Of Plutonium Released From WIPP; Officials Not Informing Public – Dr. Caldicott: Inhaling A Millionth Of A Gram Of Plutonium Will Induce Lung Cancer http://www.infiniteunknown.net/2014/03/26/5-types-of-plutonium-released-from-wipp-officials-not-informing-public-dr-caldicott-inhaling-a-millionth-of-a-gram-of-plutonium-will-induce-lung-cancer/ As I post on the above: Attention NRC, EPA & WIPP Officials: When something happens, show US all the Data and stop talking to us like we have no scientific training! If you will N☢T, then we are Calling You Out (CYO) , because the only real reason that you will not share ALL THE DATA is that it shows something VERY BAD has happened and you are afraid of a public panic…! Experts from: http://www.sfreporter.com/santafe/article-8394-woops-wipp-did-it-again.html and http://shar.es/BG86d

comment #317375 posted on 2014-04-17 13:07:17 by CaptD in response to comment #313890

Again: Dr. Donald Cool I am sure we would get a much more professional and timely reply if you were the one asking the question, since you are in a position to talk to them as one professional to another! If you are not interested in pursuing this , then just let me know, the Chairman has my contact info. BTW: If what I believe is accurate then I think the NRC should be VERY interested in finding out much more about it, and who better to find out about it for them since you advise the NRC on radiation safety and for 30 years has been active on international radiation safety committees.

comment #313833 posted on 2014-04-15 08:27:13 by dadiehost

Very Informative article.

comment #325638 posted on 2014-04-22 12:01:47 by stock in response to comment #324619

It appears that those who attack any type of anti-radiation comment get free reign to use false arguments, ad hominems, and be generally rude. Since the NRC is tasked with promotion of the nuclear industry, I guess this is expected.

comment #317486 posted on 2014-04-17 14:28:04 by stock in response to comment #313885

@ Dan Williamson I see, your opening salvo is an Ad hominem false argument, followed by the standard nuker deflection of FUD And then finally the "you can't prove it" argument, similar to the you can't find it fallacy. I am amazed you didn't retort with eating a banana while flying....LOL Moderator Note: Some verbiage removed to adhere to comment guidelines

comment #314355 posted on 2014-04-15 15:23:46 by Garry Morgan in response to comment #313885

Bill, regarding my question 4 - I would suggest our esteemed experts study the history of the National Academy's Bier VII Report and understand that this statement is a true statement: “There is no safe level of exposure and there is no dose of (ionizing) radiation so low that the risk of a malignancy (cancer) is zero.” Dr. Karl Morgan, the father of Health Physics -BIO - http://www.ccnr.org/Karl_Morgan.html When nuclear corporate lobbyists become embedded into the regulatory process we have what is called, "a corrupted system." Bier VII Report's conclusion National Academy of Sciences BEIR VII, Phase 2, 2006 study, pg 15: There is a "no-threshold dose-response relationship between exposure to ionizing radiation and the development of cancer in humans." "The chapter on DNA repair and processing concludes that it is likely that exposure of humans to low doses and low dose rates does result in permanent alterations in DNA sequences, which points away from a threshold." Richard Wakeford, Review of Evaluation of the Linear-Non-threshold Dose-Response Model for Ionizing Radiation (National Council on Radiation Protection, NCRP Report No.136), Journal of Radiological Protection, 2002, Vol. 22 No.3 No threshold means that any dose of radiation can lead to cancer. Wakeford states, "The report begins by examining the way in which radiation energy is deposited in cells. It concludes

that at low doses and low dose rates the relevant biological damage would be produced by a 'single hit' because of the spatial and temporal sparseness of the events causing the damage. Since cancer is considered to be monoclonal (single cell) in origin, this suggests that the dose-response is linear at low doses with no threshold." Again, no threshold means that any dose of radiation can lead to cancer which means that there is no safe dose of radiation. Nuclear industry supported health physicists attack the evidence as it is financially advantageous for them to do so. Money before health and citizen welfare has long been the driving value of the trillion dollar multi-national nuclear corporation.

comment #312284 posted on 2014-04-14 11:34:19 by Garry Morgan

Four Questions Quote: "Tritium, which is produced by cosmic radiation in the atmosphere and exists all around us, emits beta radiation." 1) Is the tritium which is produced and discharged into our environment by nuclear fission safe? Another quote: "Radiation is all around us, but that is not a reason to be afraid. Different types of radiation behave differently, and some forms can be very useful." 2) Does this mean that some alpha, beta and gamma emitters are not useful and are dangerous? 3) If alpha or beta particles are ingested via water, air or food should I be concerned? 4) Is this a true statement? "There is no safe level of exposure and there is no dose of (ionizing) radiation so low that the risk of a malignancy (cancer) is zero."

comment #331913 posted on 2014-04-26 10:25:02 by Garry Morgan

The fuel pool inventory emits ionizing radiation and if uncovered will burn, thus emitting deadly levels of ionizing radiation into the air, land, water and atmosphere such as occurred at Fukushima. Is the NRC saying they do not know the amount in weight and radionuclide content of current radioactive material in the fuel pools which they are supposed to be regulating which is contained in spent fuel pools and in dry storage at the various nuclear power plants across the nation? Could you please explain where the current weight and radionuclide inventory of each fuel pool and dry storage may be found, link etc. Again, the key word is current inventory. The info document you listed is from 1992, it is appreciated but surely there is a current listing of fuel pool weight and radionuclide inventory which you track as our regulator? Help us out here please.

comment #312595 posted on 2014-04-14 15:54:57 by stock in response to comment #312512

Aloha Doc Cool I tried hard to find background levels for airplane flight radiation. Couldn't come up with any. On a recent trip I measured 9 to 15 CPS with my Radiation Alert Inspector Geiger Counter, per SECOND. That is up to 900 CPM, which is 35 times my average background. That is at 30000 to 35000 feet. What is historical normal ranges for in flight?

comment #312598 posted on 2014-04-14 15:57:54 by stock in response to comment #312526

Well we know that Fukushima "signature" radiation was detected in Lithuainia. Even as the WIPP plutonium release in New Mexico, we heard officials telling us "don't worry, those are heavy metals, they can't go far". Makes me say hmmmmmm.....

comment #335450 posted on 2014-04-28 17:12:51 by Moderator in response to comment #330606

We are not aware of any similar sources of radionuclide inventory data for MOX fuel. This report was prepared for the Department of Energy as part of its Yucca Mountain program to characterize materials that require geologic disposal. MOX fuel is not used in the U.S. for power production in commercial nuclear reactors. Maureen Conley

comment #312526 posted on 2014-04-14 15:10:40 by CaptD

Dr. Donald Cool - I'd like to get your opinion about Uranium-packed nanoscale spheres called "buckyballs" and has the NRC or any of the other Gov't. Labs have identified any of them, since there have be studies suggesting that they can be carried great distances by the wind. More about this topic here: http://www.enviroreporter.com/2012/02/beta-watch/#comments

comment #312531 posted on 2014-04-14 15:15:43 by CaptD

Dr. Donald Cool - I'd like to ask you, Has Fukushima radiation has been detected in the Upper Atmosphere and if so, what effect if may be having upon our weather/climate since radioactive particles are highly charged?

comment #312512 posted on 2014-04-14 14:59:31 by CaptD

A key issue about radiation is that while many people in a crowd may receive only minimal dosages someone standing next to them may inhale a single tiny highly radioactive particle sometimes known as a "fuel flea" which would result in serious health effects. The same thing is true for measuring radiation, since especially after explosive releases like Fukushima, radiation is not the same everywhere, so that a reading taken in one part of a city could be dramatically different that one taken just a short distance away. Since the wind and other environment factors move radioactive particles great distances, there is no guarantee that health thresholds are not being exceeded without personal dosimeters and even then they do not measure radiation that has been inhaled, unless it is a large amount.

comment #317039 posted on 2014-04-17 08:23:42 by Dan Williamson in response to comment #313885

"nukeprofessional.blogspot" eh? The only things missing from their list are halitosis and warped floors. So you fellows must lay awake at night sweating about that 300 mrem you're getting every year just being on earth. The FUD specialists count on the inability of the typical citizen to quantify risk and their proclivity to be stampeded into irrational fear by buzzwords. You're right....the risk of detrimental effects from exposure to ionizing radiation is not zero. But you don't know what it is. And studies of the occurrance of cancer in radiation workers indicates no higher rate than that in the general population....showing that the risk is vanishingly low.

comment #312383 posted on 2014-04-14 13:15:16 by stock

Yeah, just keep smiling, and no amount of radiation can harm you, at least that is what the Dr in Japan said. Different type of radiation behave differently, and some can be very harmful. And plutonium is roughly 5000 times more dangerous than Radon. Plutonium is what was being pumped out of WIPP

comment #312387 posted on 2014-04-14 13:19:13 by Erica

Please explain how nuclear power plants make tritium. What are the radioisotopes that are routinely released?

comment #312397 posted on 2014-04-14 13:30:54 by Moderator in response to comment #312387

We will be doing a future NRC Science 101 on how a nuclear power plant works. Moderator

comment #324146 posted on 2014-04-21 12:43:55 by CaptD in response to comment #321063

Gary - Great comment that speaks to the heart of the NRC's radiation reporting problem, the industry and probably many within the NRC don't want the public to understand radiation... Now with low cost radiation monitoring instrumentation that automatically uploads measurements to the web their is no good reason for radiation monitoring to be done in real time especially around all nuclear power plants and other nuclear Gov't. facilitates.

comment #324166 posted on 2014-04-21 13:04:18 by stock in response to comment #321925

I see, then why does Plutonium have a W(r) multiplier of 115,000 when most internal radiation gets a W(r) of around 20 to 50. Radon in areas subject to it, can be greatly controlled by a simple radon system around $1000. One of the greatest lies of the radiation industry is that background is high (even if they made it high), therefore don't worry about a little more. Uh, and that little point about Plutonium ALSO killing as a Heavy Metal, and one that goes to the liver and pretty much will kill you will liver cancer, except that the lung cancers will likely kill you first. 255 of 255 Beagles were killed directly by Pu inhalation.

comment #324167 posted on 2014-04-21 13:07:24 by stock

Slightly off topic, but one I have spent a few hours trying to ferret out. Can Doc Cool or anyone here provide realistic radiation inventory data for spent fuel based on an average burn up rate? I am looking for not just the Ur, Pu and higher transuranics, but the fission products such as Cs, Sr, and all the usual suspects. Thanks!

comment #330573 posted on 2014-04-25 14:35:38 by Moderator in response to comment #324167

I was asked to respond to your question. The NRC does not track the isotopic inventory in each spent fuel assembly at nuclear power plants. The following is a link to a public document titled “Characteristics of Potential Repository Wastes”: http://curie.ornl.gov/system/files/documents/38/Part%201%20MOL.20100608.0018%20RW-0184R1%20Vol%201.pdf. It contains physical, isotopic, and thermal characteristics of all type of commercial spent nuclear fuel assemblies. For example, in the middle of Table 2.4.13 on Page 2.4.17, the most dominant (i.e., >1%) isotopes, in terms of curies/Metric Tons of Initial Heavy Metal (MTIHM), for a typical Pressurized Water Reactor (PWR) spent fuel assembly enriched up to 4.42%, burned up to 40,000 MWD/MTIHM, and cooled for 10 years are shown. These numbers are still valid to date. The number for each isotope should be multiplied by 0.45 MTIHM/assembly, which is a typical number for a PWR assembly, in order to obtain the isotopic inventory in a single PWR fuel assembly. Maureen Conley

comment #321925 posted on 2014-04-20 00:41:53 by OsandZs Chemist in response to comment #312383

Consider that radon and its progeny have multiple alpha emissions in a commonly equilibrium ambient environment. Nearly all these alphas are higher in energy than all plutonium isotopes. We are bathed in ambient and deep lung concentrations every hour of our lives. The federal radon exposure limits (10CFR20) are 1000 times higher than for plutonium with some evidence that 1) the original dosimetry testing was flawed, and 2) there was conscious attempts to make it so that the public would have all nation-states end nuclear weapons (the Mueller assertions and the genesis of LNT). A good place to start the knowledge process is http://radiationeffects.org/ and the open letter to journal editors.

comment #313282 posted on 2014-04-15 01:44:24 by Bill in response to comment #312284

Howdy Gary, While not being qualified to answer any of your questions I will attempt to address them anyway(because this is the internet.) Question 4. (Because of how you ordered your questions, it makes more sense to address four first.) Is this a true statement?

“There is no safe level of exposure and there is no dose of (ionizing) radiation so low that the risk of a malignancy (cancer) is zero.” The answer depends on the models used for radiation and the effects of radiation. As you are most likely aware, the current model (used for almost everything but cancer therapy, cell research, and various tissue research) is the linear no-threshold (LNT) model. This model assumes that there is no threshold below which radiation causes no increase risk of cancer. While the risk of cancer is 44% for males and 38% for females in the United States, it is difficult to get data to validate or refute the LNT model. Because of how slight the model predicts the increase in cancer from low doses and low dose rates of radiation, a barbaric animal study of at least 2 million mice/rats would be needed to get the statistics desired to say with certainty whether or not the LNT is valid or invalid.(or at least if there is enough evidence to refute or not refute the LNT model) Whether or not the LNT model is correct is inconsequential in that, it is a useful tool. All models are wrong, but some are useful. While I personally feel that the LNT model is false, since cells do regularly repair damage from radiation within hours of exposure, I appreciate the value it brings in the absence of data from a project that would need to be on the order of the Megamouse experiment. The statement is true and false, depending on what model you choose. Question 3. If alpha or beta particles are ingested via water, air or food should I be concerned? Your question is concerning weakly penetrating radiation. While these types do not get past the dead skin(mostly) from the external exposure side, they do present a hazard to the internal environment of your body. While I would like to answer your question with a simple yes, keep in mind there are radioactive elements in all of the food we eat. Question 2. Does this mean that some alpha, beta and gamma emitters are not useful and are dangerous? While your question was specific to alpha, beta, and gamma emitters, ingrained in it was the assumption that the radioactive properties are what makes something useful or dangerous. Many times the chemical nature of an element presents a larger hazard than its corresponding radioactive isotopes. Barium for example, or mercury comes to mind. Usefulness and dangerousness is in the eye of the beholder. Dimethylmercury is extremely dangerous but still used. (hopefully it will be phased out soon.) There are about 3000 isotopes that are known to exist, some are dangerous(maybe because of their chemical nature), some are not useful(maybe we haven't had a need for that isotope yet), most are shortlived, some are alpha, beta, and gamma emitters. So yes, there are some that are dangerous and are not useful. And finally your Question 1. Is the tritium which is produced and discharged into our environment by nuclear fission safe? I have never felt that the lines from Rudyard Kipling, "If," had more application, "if you can bear to hear the truth you've spoken twisted by knaves to make a trap for fools." (I am including this also because of how the other comments weren't even about this specific article, they appeared to be from individuals seeking to have someone from the NRC make a comment about the ongoing incident at Japan, so that it could be cited for further debate). I think what you are really asking about is, what are the health hazards of releasing tritium into the environment, and does releasing tritium into our environment present a unique hazard that is different from the tritium that is naturally produced. While I am in no way qualified to answer this question either, I would indicate A) How water is/should be tested for tritium contamination, B) How the public would be informed if the water didn't pass said test, C) Why we believe said test is a good way of determining risk to the public. D) How slowly groundwater moves from some release point to the pumps that retrieve it. (depending on where you are from or how you get your water) E) What error is associated with that test, and what would cause a false positive. I wish you good luck in finding the complete answers you seek as you take charge of your health and the health of your family and friends.

comment #317646 posted on 2014-04-17 16:07:08 by Moderator in response to comment #313890

CaptD -- Buckyballs are generally considered to fall under the realm of nanotechnology, and in this case the manipulation of carbon at a molecular level. The National Nanotechnology Initiative (http://www.nsf.gov/crssprgm/nano/), part of the National Science Foundation, has some information on the subject. The NRC staff in the Office of Nuclear Regulatory Research are following developments in the general area of nanotechnology, and I have let them know of your comments. Don Cool

comment #313883 posted on 2014-04-15 09:15:46 by Moderator in response to comment #312595

There is quite a lot of information out there on the web about cosmic radiation in flights. For example, the NRC’s web page on calculating your radiation dose (http://www.nrc.gov/about-nrc/radiation/around-us/calculator.html) gives 2 mrem per year from cosmic radiation living at 1000 feet above sea level; 2000 miles in an airplane also gives you 2 mrem. An average flight across the Unites States would be somewhere between 2 and 5 mrem. Cosmic radiation levels vary, generally being greater as you go towards the poles. Don Cool

comment #313885 posted on 2014-04-15 09:16:40 by Moderator in response to comment #312284

In response to your questions: 1) The tritium produced through nuclear fission is identical to natural tritium. The EPA has a good fact sheet on tritium, including its potential health effects. http://www.epa.gov/radiation/radionuclides/tritium.html 2) The risk posed by various radioactive materials is largely a function of the type of radiation, and how much you get, as discussed in the post. Whether a particular source has a beneficial use or not, it is important that we take precautions, minimize exposures, and use it safely. That’s what the NRC and effective regulation are all about. 3) Probably not. There are naturally occurring amounts of different radioactive materials that are always in our food and water. Like the tritium example in the blog, all water has small quantities of tritium, and this is not a problem. The Environmental Protection Agency, and the Food and Drug Administration have levels for food and water. 4) Frankly speaking, we don’t know. The information we have on radiation risks comes from much higher levels of exposure. Since we can’t know for sure, we control radiation assuming there could be some risk even at very low levels, even though it could well be that there is really no risk. This is an overstatement of the so-called “linear non-threshold” view of radiation, which holds that any exposure to radiation, no matter how low, increases one’s risk, however slightly, of eventually contracting cancer. Don Cool

comment #313887 posted on 2014-04-15 09:17:40 by Moderator in response to comment #312531

That’s a very interesting question, but it’s out of my area of expertise. You might ask the National Weather Service or the

Environmental Protection Agency, perhaps, among others. Don Cool

comment #313890 posted on 2014-04-15 09:18:32 by Moderator in response to comment #312526

It's an interesting question, but not one that I can answer for you. You could ask the Environmental Protection Agency, or the Department of Energy, which is responsible for the National Laboratories. Don Cool

comment #321063 posted on 2014-04-19 11:52:37 by Garry Morgan in response to comment #317396

We can Make Radiation Visible from nuclear facilities in real time. http://www.makeradiationvisible.org/ The questions are: Will the regulator require it? Will nuclear facility operators be transparent? Current monitoring and publishing of ionizing radiation contamination surrounding nuclear facilities is not transparent and is outdated. Plus, current radiation monitoring requirements are akin to the "fox guarding the hen house;" monitoring activity is conducted based on averaging with quarterly computations reported annually to the regulator and certainly not timely in reporting to the public. Current radiation monitoring and reporting to the public surrounding nuclear facilities appears to protect the operator, and is not adequate to protect the public. NRC personnel have stated in Region 2, at Nuclear Facility Inspection Public Meetings, that the public would not understand if the data was displayed in real time. It is not a wise decision for NRC supervisory staff to assume the public does not understand.

comment #321118 posted on 2014-04-19 12:29:55 by CaptD in response to comment #313890

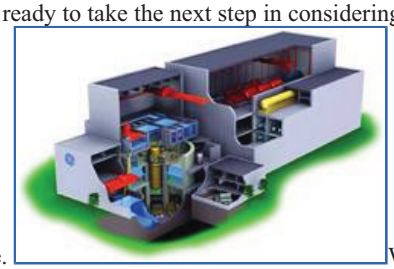
To: Moderator RE: Comment posted April 17, 2014 at 4:07 pm and the NRC Chairman Dr. Donald Cool, your efforts to expand our knowledge base just earned you a SALUTE! Please continue to moderate and/or help US explore these and other issues since they may very well be important both now and/or in the future! I'd like to suggest that the NRC Chairman immediately establish an Office of Information Confirmation (OIC) which answer directly to the Chairman and would serve as an informational request portal for those seeking answers to radioactive related questions that may very well affect our health. The OIC knowledge base could then be expanded as needed, as additional blog comments are posted along with their moderated replies. The OIC would fill the large vacuum which now exists between the general public and the experts that work for the NRC. Since radiation safety is a primary NRC safety concern, the OIC would allow interested non-NRC personal to post questions to the NRC that they feel need to be answered. Once a question/topic has been posted the discussion would then be educational both for the NRC and the general public, since the OIC knowledge base could be searchable and/or used by the public. I envision the OIC as new resource that would provide the NRC with a powerful new outreach tool that will allow them to better fulfill its mandate of providing transparency to the public. I'd be very interest in speaking to you about the formation of the OIC, so if you are interested you can contact me through the Office of the Chairman who has my contact information on file.

Closing In on Finishing the ESBWR Design Review

posted on Thu, 17 Apr 2014 12:30:34 +0000

Michael Mayfield
Director, Advanced Reactor and Rulemaking Program

After a lot of technical discussions, the NRC is ready to take the next step in considering whether GE-Hitachi's Economic Simplified Boiling



Water Reactor meets our standards for U.S. use. We've been reviewing this new reactor design for several years. This design includes new types of safety systems that would use gravity to direct cooling water into the core during an emergency, even when electrical power is lost. Our review path took a major turn in 2011. In March of that year we issued our technical conclusions on the design. The NRC then drafted a regulation that would approve the ESBWR, but later in 2011, we received additional information related to the steam dryer design that made us pause. (The steam dryer prevents excess moisture from damaging the plant's turbine.) We spent 2012 and 2013 making sure we had all the necessary information from GE-Hitachi on the ESBWR steam dryer design. We've completed the review of the additional steam dryer design information and now have what we need to complete the design certification. The NRC expects to seek public comment on a supplemental proposed certification rule next month and to send a draft final rule to the five-member Commission in July. This process could lead to final certification of the ESBWR later this year. Utilities interested in new reactors can reference NRC-certified designs to simplify parts of their license reviews. The utilities applying for licenses to build ESBWRs, Detroit Edison in Michigan and Dominion in Virginia, will have to update their applications to account for any changes to the design. Our letter to GE-Hitachi on these developments is available in the NRC's electronic document database.

Comments

comment #317367 posted on 2014-04-17 13:04:29 by richard123456columbia

> Stated "We've been reviewing this new reactor design for several years. This design includes new types of safety systems that would use gravity to direct cooling water into the core during an emergency, even when electrical power is lost. Our review path took a major turn in 2011" In the 60's the nuclear industry promoted a Gravity feed system that all plants would have for insured safety but that changed, I believe because of cost and it will probably change when costs over run.

comment #321154 posted on 2014-04-19 12:56:02 by perdajz

> After several years, the Staff is finally "considering" finishing up? Seriously? The BWR has been around for a while, and there's no doubt any new variant of it is far, far safer than any of the hundreds of coal, hydro or gas fired plants operating in the US right now. Before the ESBWR meets your standards, how many wind turbines and gas plants will be built in the US? How many NPP will the Chinese put up? Will the Russians make your never ending gold standard reviews irrelevant to anyone outside the US? Have a look at the big picture.

Untangling Foreign Involvement in New Reactors

posted on Tue, 22 Apr 2014 14:38:42 +0000

Scott Burnell
Public Affairs Officer

For the second time in two years, the NRC's administrative law judges have offered a decision on what role overseas companies can play in

building and operating new U.S. nuclear power plants. In this most recent case, the Atomic Safety and Licensing Board concluded that Toshiba's participation in the South Texas Project new reactor project south of Houston is acceptable. When Congress created the Atomic Energy Act, it included language that prohibits "foreign ownership, control or domination" of nuclear facilities. In an August 2012 decision, the Board examined a company applying for a new reactor at the Calvert Cliffs site in Maryland. That decision concluded the company was 100 percent foreign-owned and therefore ineligible for a reactor construction and operation license. The South Texas case presents a different set of facts. The company applying for two new reactors, Nuclear Innovation North America, is a joint venture. A U.S. utility, NRG Energy, owns about 90 percent of NINA. Toshiba's North American subsidiary owns the rest. The NRC has previously approved joint ownership of U.S. reactors where the foreign partner owned more than 10 percent. In the South Texas application, however, the NRC technical staff determined in May 2013 that Toshiba's overall financial support of the project equaled improper control or domination. The Board's decision on the South Texas new reactor application explores some previously uncharted territory. Legal precedent on foreign ownership almost exclusively refers to transferring the licenses of existing reactors. Those license transfers largely have been made in the context of ownership percentage. The Board's decision applies the terms "control or domination" to the South Texas arrangement. The Board relied on the NRC's existing standard review plan to resolve the "control or domination" question. The ultimate decision is based on the South Texas application's corporate ownership structure and other measures. The Board concluded that those measures meet the review plan's aim of ensuring U.S. control of safety-related decisions. Both the NRC staff and the groups opposing the South Texas new reactors have the opportunity to appeal the Board's decision to the five-member Commission in charge of the NRC. A final decision on the South Texas proposal will take a couple more years due to ongoing technical reviews.

Comments

comment #325762 posted on 2014-04-22 14:02:48 by in response to comment #325546

> So if we have no nukes, no coal and no oil what are you suggesting to power your computer? Moderator: Some verbiage removed to adhere to comment guidelines

comment #325746 posted on 2014-04-22 13:37:17 by CaptD

> I see this as nothing but caving into the Japanese Nuclear Utility "Gangs." If the US nuclear Industry cannot get funding to build new US reactors because the American people and even Wall Street don't support the use of nuclear any longer, then hey, lets allow the Japanese to provide it since they have a perfect safety track record ($IC). The Japanese Government will not allow US Companies to own Japanese Companies, so why is the US giving the Japanese partial control/ownership over a nuclear reactor in the USA? The answer is NUCLEAR UTILITY PROFITS and Internationalization /Ownership of the US Energy Industry.

comment #325691 posted on 2014-04-22 12:39:00 by David Andersen

It seems that it's about time to amend the law. This regulation is a relic of the cold war and no longer makes sense, especially in the case of a Japanese or French owned company, since they already posses the technology to build nuclear plants and already supply many of the components.

comment #325546 posted on 2014-04-22 10:45:41 by Jan Boudart

Yes, Toshiba's participation is acceptable to the NRC, but so is everything else. Why are we paying the salaries of and supporting the NRC? NO NUKES, NO COAL, NO OIL! NO KIDDING!! Date: Tue, 22 Apr 2014 14:38:59 +0000 To: janunaj@hotmail.com

comment #326840 posted on 2014-04-23 08:54:15 by in response to comment #325641

And by vast you mean the football field that you could fit all the nuclear waste from all US plant from 40 years of operating. So "vast."

comment #325641 posted on 2014-04-22 12:04:43 by joy cash

When will we ever learn the lessons of Chernobyl & Fukushima? Nuclear energy costs too much & is deadly. What's so difficult to understand here? We can no longer turn blind eyes to nuclear spent fuel storage debacle. After 60 yrs., we must conclude, we have no where to safely store/dispose of our vast nuclear waste. This is the inheritance we leave our future generations. Enough talk about nuclear saftey, is simply doesnot exist.

comment #327168 posted on 2014-04-23 13:29:09 by joy cash in response to comment #326840

By "vast" I mean spent nuclear fuel's vast potential for ending life as we know it on earth. Pacific Ocean is part of our global ocean. Fukushima continues to pollute hundreds of thousands main source of nutrition from world ocean. Within months, 100% of tuna off US coast were found to be radioactive. US government response, raise allowable radiation levels in our food stuffs. Am I the only one here who thinks this is untenable? If storage of this spent fuel is so neat & safe, why not accept it into your neighborhood?

comment #326122 posted on 2014-04-22 21:24:09 by joy cash in response to comment #325762

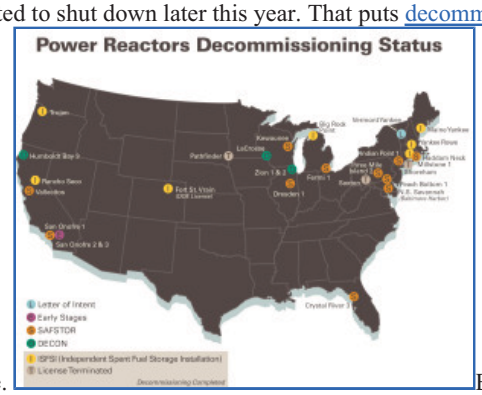
Solar, off-shore wind & wave technologies have out dated nuclear energy. Europe is far advanced is these fields. It seems our taxpayer governmentar subsidies are golden carrot that keeps nuclear energy industry in the government trough.

A New Look at Reactor Decommissioning

posted on Thu, 24 Apr 2014 13:32:47 +0000

David McIntyre
Public Affairs Officer

Four nuclear power plants closed in 2013 and another is expected to shut down later this year. That puts decommissioning in the spotlight – so the NRC has produced a new video explaining how it's done.



By way of background, the owners of Crystal River 3 in Florida, Kewaunee in Wisconsin, and San Onofre 2 and 3 in California already have taken the first steps toward decommissioning their plants. They've certified that they permanently ceased operations and removed the fuel from the reactors into their spent fuel pools. Their licenses no longer allow them to operate the reactors. The owners of Vermont Yankee will do the same when that plant stops operating as scheduled late this year. The companies then have up to two years to develop and submit decommissioning plans – called the post-shutdown decommissioning activities report, or PSDAR. The report includes a description and a schedule for decommissioning activities and their estimated cost. The report also includes a discussion of why any anticipated environmental impacts have already been reviewed in previous reports on the plant. Crystal River submitted its report last December. Plant owners typically combine two decommissioning approaches: DECON, in which the plant is dismantled and the site cleaned up to the NRC's specifications, and SAFSTOR, maintaining the plant as is for a period of time before final cleanup. Waiting allows the radioactivity at the site to decay, making cleanup easier. (A third approach, entombing the reactor in place, has never been used by NRC licensees.) Two years before the license is to be terminated, the plant owner submits its License Termination Plan to the NRC. The NRC surveys the site to verify the cleanup has been

successful before terminating the license (or amending it if spent fuel is still stored there). We hope you'll take a few minutes to view the new video. Even more information about the decommissioning process can be found on the NRC website.

Comments

comment #328540 posted on 2014-04-24 10:53:12 by stock

> Let me tell you what those who are paying the bills want to see. Right now, all used fuel over 5 years old shall be drycasked, this helps the work transition program for the plant employees. 5 years from shutdown, all the rest of the fuel is drycasked, and moved to an offsite loaction far away from populated areas and thus far away from the effects of an airliner or bomb attack on the site. Now start dismantling the plant. The short lived isotopes are pretty much gone. And the longer lived istopes, strontium, cesium, transuranics, and other nuetron activated items are just not going away so fast, so the excuse that "we have to let them decay more to make the decomm safer" is just reality and we don't buy it. Get on with it, head towards greenfield. And the excuse that "we have to let the funds set aside grow through compound interest to 'better serve the needs of the public' by allowing more funds 60 years from now....well anyone who thinks that at the lofty and fed pumped elevated nature of the equities and futures market valuations, plus the systemic risks and corruption inside the financial industries, and the near zero interest rates on fixed income investments. Well if there is anyone on this planet who think that any of these "investments" will even keep place with inflation whilst the printing presses run amok with NO end possible until there is a full on system collapse and reset, well if there is anyone on the planet who thinks this, I suggest that you take a few strong doses of the red pill. Decomm now, it is NOT getting any cheaper in terms of inflation corrected todays dollars. Please respond

comment #330663 posted on 2014-04-25 15:39:53 by CaptD in response to comment #330579

> Dave McIntyre - Thanks - I believe that the NRC should use San Onofre NPP as it's decommissioning test case since SONGS has literally just started the decommissioning process. This way the NRC can track it's decommissioning and insure that it is not only compliant to all NRC regulations, there are no more surprises from the Utility and post all relevant decommissioning data to the web, which is especially important since the high burn-up fuel used at SONGS poses an additional challenge since no long term storage casks have be approved to date. I believe that if the NRC does this then its decommissioning process will be streamlined, which will benefit everyone.

comment #329197 posted on 2014-04-24 19:35:54 by CaptD

> SCE got permission to use **High Burn-up Fuel** at San Onofre Nuclear Power Plant in CA without telling anyone about the expensive problems it would cause ratepayers (BTW the NRC does not even have an approved long term storage cask for high burn-up fuel yet). It is my opinion that this decision is ***the smoking gun which explains why the original steam generators had to be replaced which started this entire design debacle*** or said another way, if SCE had not gotten approval to update San Onofre's reactors they would have still be in use today and ratepayers would have been mega-billions ahead, since they would not have had to pay for expensive replacements, since the NRC only is concerned with safety not maintenance costs which SCE was only too happy to pass along to ratepayers, while at the same time making a profit on them! As of now, ratepayers have paid and/or are still paying about*****: - $60 million (PER MONTH) for ongoing expenses and getting zero energy - $750 million for the replacement steam generators that were designed dangerously - $300 million for new turbines - $200 million for new reactor heads - $500 million of decommissioning shortfall, estimated... - $1,500 million for 5+ decades of nuclear waste on-site storage costs *******NOTE: This is only a partial listing and I believe it is on the LOW side…** ===> One good thing is that San Onofre is now not creating any additional nuclear waste that future generations will have to deal with! Excerpts from: CPUC practices crooked as a dog's hind leg, by Don Bauder, http://www.sandiegoreader.com/news/2014/apr/24/ticker-cpuc-practices-crooked-dogs-hind-leg/

comment #329207 posted on 2014-04-24 19:46:26 by CaptD in response to comment #328655

> Jeff Walther - RE: "Songs and Crystal River need some repairs" For you to say it needs some repairs boggles the imagination San Onofre Nuclear Generation Station aka San☢ was an enormous engineering debacle that was a nuclear near miss (NNM) that would have affected 8-10 million people living in southern California! And before you or anyone else starts calling names, read the NRC AIT report and you will see that San☢ proved that more than one steam generator tube could fail at a time, causing a "cascade" of tube failures that could result in a loss of reactor core coolant, which is something that the NRC still refuses to take into consideration when considering reactor safety.

comment #329210 posted on 2014-04-24 19:55:11 by CaptD

> Fukushima proved that Nature can destroy any land based nuclear reactor, any place anytime 24/7! The US nuclear industry has dragged their feet making safety improvements and like the Japanese still believe that they not Nature are too powerful to fail! The real question is if they are wrong, for any reason, will the the people of the USA want to deal with it, since the Price-Anderson Act only pays up to $12 Billion, which is a drop in the bucket for something like a Fukushima-type accident which is a Trillion Dollar Eco-Disaster. I suggest that the Price-Anderson Act be modified so that its funds are increased to at least 1 Trillion dollars, that way there will be a realistic amount of money already set aside should something BAD occur or if decommissioning suffers "overruns" because of Utility and/or NRC short sighted planning. BTW: Has the NRC reviewed and responded to the GAO report that called them to task for not using good decommissioning estimates, which leave US (pun intended) hold the bag for all costs charged by the same utilities that created the problem in the first place? If the NRC has, then posting a link to it would be wonderful and if they have not, then how about an ETA for the response to the GAO?

comment #330431 posted on 2014-04-25 12:53:02 by stock in response to comment #328980

Thanks for the response, I think its a great idea to start dry casking everything in the country over 5 years old, think of the economic shot in the arm that would entail. Plus the workers from these 5 plants that are closing are mostly training in radiation hazards and they can transition to dry cask and then plant decomm. Makes way more sense than the expensive training for new people, and keep people off unemployment. And keeps them working in a field they probably like. I am not talking about SAFSTOR for several years....I am talking that letting them sit around in an area perfect for hookup of solar PV farms for 60 years is just wrong. None of these same companies who own nuke will exist in 60 years, so the parent company guarantee means naught. They will spin off profitiable divisions into the new energy paradigm like solar, and then the parent company left holding the nuke assets will simply go bankrupt. It is obvious it can only happen this way. And thanks for the nice blog, if the NRC wants to interact with real people, this is a good route. The moderation seems appropriate in type and extent. A frank discussion and debate with those who may have opposing views to nuclear will both sharpen your arguments and maybe even change your policies to what the People of the USA really want. We are sick and tired of what GE and Babcox and Wilcox want.

comment #333057 posted on 2014-04-27 05:12:57 by Peggy Dirsa in response to comment #328655

It is a worst waste to not admit a mistake. Nuclear is a mistake. It was not atoms for peace. We all need to see and admit this now instead of traveling further and further down a road we all know is a one-way street to destruction. You don't throw good money after bad. We need to chart a better future on a better road, not keep going down the wrong way.

comment #333054 posted on 2014-04-27 05:09:01 by Peggy Dirsa in response to comment #329197

From what I understand, that same *High Burn-up Fuel* or MOX fuel is what is being used at the Saint Lucie Nuclear Plant in Florida owned by Florida Power & Light. This fuel has proven to be very-very dangerous which is why the San Onofre Nuclear Plant was shut down. The St Lucie plant needs to stop too!

comment #333051 posted on 2014-04-27 05:03:53 by Peggy Dirsa

All of this nuclear material at each site needs to be put into those dry cask storage coffins... as soon as possible... no matter who foots the bill for the cost of doing so. This material must be safeguarded in every way possible from any emergency-type situation. It is the only thing that will protect the people!

comment #335454 posted on 2014-04-28 17:15:52 by Moderator in response to comment #330663

I was asked to provide a clarification regarding approved casks at SONGS. The NRC approved a spent fuel storage system in 2005 for use with high burnup fuel at San Onofre. Our records show Southern California Edison has been using this system to store high burnup spent fuel since 2007. Maureen Conley

comment #334445 posted on 2014-04-28 05:11:59 by Monalisa Baker

Thanks for Sharing. Great Informative.

comment #330579 posted on 2014-04-25 14:38:34 by Moderator in response to comment #329210

The May 2012 GAO report, GAO-12-258, (found here: http://www.gao.gov/products/GAO-12-258) made several recommendations regarding decommissioning funding oversight. The GAO recommended the NRC ensure reliability as part of the agency's process of reevaluating its decommissioning funding formula, by defining what the agency means by the term "bulk" of funds needed for reactor decommissioning. This was subsequently discussed at length in a June 20, 2013, paper to the Commission, SECY-13-0066, found here: http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2013/2013-0066scy.pdf . The GAO had also recommended that NRC document procedures for verifying the accuracy of licensee Decommissioning Funding Status reports. The NRC agreed, and identified the need to revise decommissioning funding assurance review guidance for the agency's financial analysis staff. That revision is currently in progress. The GAO also recommended that NRC continue to review fund balances in a way that is most efficient and effective for the agency. The NRC plans to continue reviewing fund balances reported by licensees against the records maintained by the fund trustees, whether at the licensee's site or another location. The NRC will also consider incorporating the reviews into other routine visits to licensee offices. The NRC anticipates it will coordinate with licensees and the respective financial institutions, where the decommissioning trust fund records are kept, and will continue to review the fund balances in an effective manner. Finally, the GAO recommended that we consider reviewing a sample of the licensees' investments to determine if licensees are complying with decommissioning investment standards and determine whether action should be taken to enforce these standards. Staff is currently considering alternative methods for reviewing licensee compliance with the regulations. We will report on this effort later this year. Dave McIntyre

comment #328781 posted on 2014-04-24 13:42:43 by stock in response to comment #328655

@ Jeff, Wow, first off, nuclear is neither clean, nor safe, and let me add, cannot be run economically even using these old clunker plants. Kewaunee was selling into a retail environment of 14 cents per kWH and couldn't compete with Natty and Solar. Your comment is "we try to pull the wool over your eyes by claiming that San O was a one for one replacement when it was nothing of the

sort, and then when it blow up in our face, we complain that the NRC is being too hard on us" These plants are not resources they are liabilities.

comment #328980 posted on 2014-04-24 16:16:50 by Moderator in response to comment #328540

Some of the issues you raise – such as an offsite storage or disposal facility – are beyond the NRC's jurisdiction. Others, such as expedited transfer of spent fuel, are currently before the Commission. The state of the economy is also out of our control, of course, but our financial mechanisms for decommissioning trust funds are conservative, scrutinized every other year (and annually for plants in decommissioning), and backed up by parent company financial guarantees. As for the potential for decommissioning plants to remain in SAFSTOR for several years, remember that (1) not all of them do, and (2) most that are in SAFSTOR are at the same site as operating reactors, which makes immediate dismantlement more complicated. Much of what you propose would involve changing NRC's regulations. One avenue you could pursue this would be to file a petition for rulemaking. Here's a link explaining how to do that: http://www.nrc.gov/about-nrc/regulatory/rulemaking/petition-rule.html Dave McIntyre

comment #328655 posted on 2014-04-24 12:19:33 by Jeff Walther

Decommissioning a working nuclear reactor (all of these) is about like filling the Panama Canal. Ultimately this will come to be seen as a great blunder and a monument to short sightedness. True, Songs and Crystal River need some repairs, but with a more cooperative attitude from the NRC and if they had taken into account the damage that would be done to the environment, and public health and safety by the filthy electricity sources which are substituting for safe, clean nuclear reactors, these reactors could continue to operate as well with only minor repairs. What a terrible, needless waste.

The NRC Keeps Watch Over Comanche Peak During Chapter 11 Proceedings

posted on Wed, 30 Apr 2014 12:24:26 +0000

Lara Uselding
Region IV Public Affairs Officer

The owner/operator of the Comanche Peak nuclear power plant -- Luminant Generation Company LLC – told us that its parent company, Energy Future Holdings (EFH), has filed for Chapter 11 bankruptcy. Chapter 11 provides time for a business to sort out its financial

problems. This is not the first time an action like this has involved a nuclear plant. The owner of the Diablo Canyon plant went through a bankruptcy in 2001, and, in the 1980s, the Seabrook plant went through a similar process. The NRC has been actively monitoring the situation since EFH told the Securities and Exchange Commission last year it may have difficulties meeting debt obligations. NRC staff has looked at any potential impacts on plant safety and security, the decommissioning fund, and the implementation of post-Fukushima action items. We determined the plant continues to be sufficiently funded. Based on NRC management visits to the Texas plant and monthly calls and meetings with company executives at the NRC Region IV office, the NRC has been assured EFH's financial issues will not have a negative impact on the safe operation of the plant. Staff from NRC's regional office in Arlington, Texas, will continue to conduct inspections and assessments to ensure public health and safety is maintained. They will also evaluate whether the financial conditions are impacting plant staffing, maintenance activities and emergency preparedness capabilities. Moving forward, the NRC has reminded the company it must continue to meet requirements of its license. For example, EFH/Luminant must have a financial support agreement of $250 million to ensure operating and maintenance costs for the two reactors can be met for a year. And EFH and Luminant must inform the NRC prior to transferring significant funds -- greater than 10 percent of total accounts -- away from Luminant. Once a new corporate entity is established the firm must notify the NRC to begin the license transfer process. The plant is in compliance with our decommissioning funding assurance requirements, and the NRC will work with the bankruptcy authorities to ensure decommissioning funds are insulated from creditor claims. Two NRC resident inspectors live in the local community and work at the plant. They are the agency's eyes and ears at the plant and their daily oversight helps to ensure the plant continues to be operated safely, and protects public health and the environment.

Comments

comment #338116 posted on 2014-04-30 08:53:28 by stock

$105M to $130M is clearly VASTLY underfunded for decomissioning. And the out years costs of nuke is one of the lies that needs to be maintained lest it become brutally obvious that nuclear makes no financial sense. True decommissioning and casking (casking should be done ASAP) is going to show between $500M and $1000B. Cost overruns and delays are standard operating procedures. in

the UK at Sellafield they now think it will cost 70B Pounds to clean up. roughly $117B USD.

comment #338131 posted on 2014-04-30 09:07:32 by Erica Gray

I'll hearing something about foreign ownership...What's going on?

comment #338178 posted on 2014-04-30 09:45:18 by stock

@Mod, there have been a handful of real decomissionings, what were the costs on all of those?

comment #338198 posted on 2014-04-30 09:57:51 by Mike Mulligan

Right, fracting is a game changer…is this the first of many?

comment #338393 posted on 2014-04-30 12:21:25 by wmark

It is not surprising that engineers have created easier way to generate nuclear waste. All the while, there is nothing new in waste treatment. The NRC oversees a dangerous industry whose major products are radioactive waste, disease, and cancer. How is the NRC managing the Gross Nuclear Product? They pretend it does not exist!

comment #338475 posted on 2014-04-30 13:40:03 by CaptD

My suggestion to the NRC Chairman, is to do an immediate "surprise" inspection of Comanche Peak nuclear power plant and make sure that some of the inspectors are NOT from Region IV since San Onofre NPP proved that Region IV was a bit too cozy with the operator, Southern California Edison (SCE) of the San Onofre NPP. Regarding to the cost to decommission, the NRC would be wise to require every operator of a NPP to provide a quarterly update to the NRC, with a current cost to decommission it, since San Onofre NPP proved that the decommissioning decision can be made by the operator without any discussion with regulators and/or ratepayers. Lastly if Comanche Peak is using high burn-up fuel that will require much longer cool down times as compared to non high burn-up fuel and therefore the NRC should require all the NPP's using high burn-up fuel to have much larger decommissioning funds, especially since using high burn-up fuel is much more stressful on the steam generators and all their related components which makes for more frequent replacements of expensive components. Using the decommissioning of San Onofre NPP that has just begun, as a perfect example: All the spent fuel will be sitting there for a very long time, think many decades and probably much longer since SCE used High Burn-up Fuel which the NRC does not even have an approved long term storage cask for. It is my opinion that that is why the original steam generators had to be replaced, which started this entire RSG design debacle or said another way, if SCE had not gotten approval to update San Onofre's reactors they would have still be in use today and ratepayers would have been many billions ahead, since they would not have had to pay for things like these: As of now, ratepayers have paid and/or are still paying*: - $60 million (PER MONTH) for ongoing expenses and getting zero energy - $750 million for the 4 replacement steam generators that were dangerous - $300 million for new turbines - $200 million for new reactor heads - $500 million of decommissioning shortfall, estimated... - $1,500 million for 5+ decades of nuclear waste on-site storage costs - $3,500 million for additional energy costs *NOTE: This is only a partial listing and I believe it is on the LOW side… ===> One good thing is that San Onofre is now not creating any additional nuclear waste that future generations will have to deal with!

comment #338479 posted on 2014-04-30 13:44:17 by CaptD in response to comment #338116

Good comment! SALUTE Decommissioning costs that have been collected from ratepayers while a NPP is in operation, are really a big piggy bank, that the operators get to access to for many decades after milking the NPP for all they are worth...

comment #338557 posted on 2014-04-30 14:51:54 by Moderator in response to comment #338131

Foreign ownership does not apply to Comanche Peak because there is not any foreign ownership or other significant foreign involvement among the owners that would need to be addressed. The staff would do a review if the owners changed and the license was transferred. Lara Uselding

comment #338690 posted on 2014-04-30 17:07:34 by stock

This report indicates that Yankee cost $608M for preliminary recomissioning (neglecting outyears costs of protecting and handling spent fuel). I suggest that the NRC immediately force all nuke operators to put $500M into escrow, into an account that they cannot control at all except for rebalancing the portfolio and even that requires conservative guidance.

comment #338887 posted on 2014-04-30 20:18:58 by Bill Young in response to comment #338178

Stock: According to this link, the decommissioning of Maine Yankee was $495 Million (2005 dollars).
http://www.maineyankee.com/public/pdfs/epri/my%20epri%20report-2005.pdf

comment #339114 posted on 2014-05-01 00:07:32 by Erica Gray in response to comment #338131

Meant "I heard the NRC is sending mixed messages about foreign ownership"...I just want to make sure the NRC sticks to the law and that there are no attempts to change it...like foreign investment to save these facilities. American people deserve protection through federal law, including that our nuclear reactors are controlled by the people most concerned about our country: fellow Americans." "Foreign Ownership, Control or Domination policy is spelled out in the Atomic Energy Act (AEA) of 1954," said Tom "Smitty" Smith, director of Public Citizen's Texas Office. "In Section 103d it says that no license may be issued to an alien or any corporation or other entity if the Commission knows or has reason to believe it is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government." Besides the writing is on the wall and I agree with Ralph Nader ~ http://readersupportednews.org/opinion2/271-38/19829-atomic-energy-unnecessary-uneconomic-uninsurable-unevacuable-and-unsafe

comment #338875 posted on 2014-04-30 20:07:22 by Bill Young in response to comment #338116

Stock: Sellafield was primarily a weapons facility. That would be like cleaning up Oak Ridge, Savanna River or Hanford. It is not at all equivalent to a commercial nuclear power plant. The reactors at Sellafield were primarily for weapons grade plutonium production. - Bill Young