OPSMPEm Resource

From: West, Stephanie
Sent: Thursday, March 03, 2016 9:23 AM
To: OPSMNPEm Resource; OPSMPEm Resource
Subject: OPA Blog archive for January/February 2016
Attachments: blog-published-2016-03-03@08-30-00.pdf

NRC

OPA

Hearing Identifier: NRC_OfficialPresenceSocialMedia_Public
Email Number: 82

Mail Envelope Properties (711032f5f3664cd18ebd460abea48b58)

Subject: OPA Blog archive for January/February 2016
Sent Date: 3/3/2016 9:23:24 AM
Received Date: 3/3/2016 9:23:29 AM
From: West, Stephanie

Created By: Stephanie.West@nrc.gov

Recipients:
"OPSMNPEm Resource" <OPSMNPEm.Resource@nrc.gov>
Tracking Status: None
"OPSMPEm Resource" <OPSMPEm.Resource@nrc.gov>
Tracking Status: None

Post Office: HQPWMSMRS06.nrc.gov

Files	Size	Date & Time
MESSAGE	10	3/3/2016 9:23:29 AM
blog-published-2016-03-03@08-30-00.pdf	5039978	

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Priority: Standard
Return Notification: No
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Sensitivity: Normal
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U.S. NRC Blog

Archive file prepared by NRC

NRC Keeping an Eye on Water Levels along the Mississippi and Missouri Rivers

posted on Tue, 05 Jan 2016 20:41:52 +0000

Victor Dricks Senior Public Affairs Officer, Region IV Heavy rains and subsequent flooding across America's heartland are being carefully watched by the NRC and the operators of nuclear power plants located along the Missouri and Mississippi Rivers, although none of the plants are expected to be adversely affected. Flooding is one of the many natural hazards that nuclear power plants must be prepared for. As a condition of their operating license, every nuclear power plant must demonstrate the ability to withstand extreme flooding and shut down safely if necessary - requirements that have been updated and strengthened following the Fukushima accident in 2011.

According to the National Weather Service, the threat of significant flooding is expected to persist for another two weeks in parts of Nebraska, Missouri, Arkansas, Mississippi and Louisiana – all states with operating nuclear power plants. Each of these plants has emergency diesel generators that can supply backup power for key safety systems if off-site power is lost. And all plants have robust designs with redundancy in key components housed in buildings with watertight doors. In Nebraska, water levels are high along the Missouri River in the vicinity of Fort Calhoun and Cooper Nuclear Station, but not high enough to require any mitigating actions by plant operators. In Missouri, the Callaway plant is not expected to be affected by any of the heavy rains and flooding that have plagued other parts of the state. Arkansas Nuclear One, in Russellville, has not been affected by heavy rains and no impact is predicted. But some local roads that lead to evacuation routes were flooded, prompting local law enforcement officials to post detour signs. At Grand Gulf in Mississippi, levels on the Mississippi River continue to rise, with a crest expected on January 15. The projected river levels, however, are not expected to have any effect on site operations. At River Bend in Louisiana, the situation is similar. There, the Mississippi River level is expected to peak on January 18, at a level that will not affect site operations. Further downstream, levels on the Mississippi River near the Waterford nuclear plant are expected to crest at a level two feet below where the operator would need to take some actions at the site. Richard Smith, the Acting Chief of Region IV's Response Coordination Branch, said his staff is getting periodic updates from the National Weather Service on conditions that might affect any of the region's nuclear plants. Additionally, the NRC is relying on its resident inspectors, who live in the communities near the plants where they work each day, to independently verify that precautionary flooding procedures taken by plant operators are being properly implemented. "We're following events closely here in the Region," Smith said, "and if anything changes significantly our on-site inspectors will be able to confirm that the operators are taking appropriate protective actions."

Comments

comment #1640498 posted on 2016-01-05 18:26:37 by CaptD

> Like it or not, Fukushima proved that Nature can destroy any land based nuclear reactor, any place anytime 24/7 despite the best plans of man. I wish the NRC the best and salute both the "beefing up" of safety standards and the double checking of water levels at every NPP.

Considering Plant Circumstances for Post-Fukushima Requirements

posted on Thu, 07 Jan 2016 13:58:53 +0000

Lauren Gibson Project Manager Japan Lessons-Learned Division When the NRC establishes a new requirement or asks its licensees for information, the agency sets appropriate deadlines. Plants usually meet those deadlines, but sometimes there are complications and a licensee needs more time than was originally anticipated. The NRC established such deadlines for its post-Fukushima actions and, in some cases, licensees have asked for more time to complete the work. For instance, a plant might need information from the U.S. Army Corps of Engineers to finish reevaluating its

flooding hazard. What happens if the U.S. Army Corps of Engineers is still working on that information as the NRC's deadline approaches? Another plant might be nearing compliance with all aspects of the Mitigating Strategies Order, but unforeseen prolonged and severe winter weather causes construction delays with the equipment storage building. Other plants have announced that they will be shutting down in a few years, but after some deadlines for Fukushima-related work will have passed. What do all these plants do? They formally ask the NRC to revise the plant's deadlines or relieve the plant of its requirement. The NRC considers many things when reviewing these schedule change requests, including:

- Has the plant adequately justified its request?
- Is the amount of extra time requested reasonable?
- How will the plant continue to ensure safety in the period between the initial and proposed due dates?

If a licensee does not provide enough information for the NRC to make a decision, it will either request additional information from the licensee or deny the request. The NRC takes extension requests very seriously and ensures that each is thoroughly reviewed – by project managers, technical experts, NRC lawyers and enforcement experts, and NRC management (in some cases, up to the Director of the Office of Nuclear Reactor Regulation). Plants that are permanently shutting down have other options. Depending on the timing of their shutdown, they may request that NRC orders requiring certain actions be cancelled or rescinded for them. The NRC will only rescind an order after the plant has certified it has permanently ceased operations and is no longer an operating reactor. This ensures the requirements stay in place if the plant later decides to keep operating. Plants can also ask to delay certain work on the orders, which was the case for the recently-approved Oyster Creek relaxation request. The delay is not indefinite, though. If Oyster Creek does not shut down as planned, it must complete the work by a specified date. Plants would follow a similar process to ask for schedule relaxations on the information requests (for example, the Vermont Yankee licensee requested to be relieved of responding to the request once the plant was shut down). All of these requests get plenty of NRC review time. The NRC staff carefully considers each request on a plant-specific basis, and the NRC would only approve a relaxation request if a licensee provides good justification and demonstrates that safety would be maintained if the request were approved. Even with the limited number of relaxation requests approved by the NRC, the industry is well on its way to appropriately implementing all post-Fukushima safety enhancements.

Comments

comment #1642341 posted on 2016-01-15 11:25:43 by Andrew Dodson in response to comment #1642335

> Alrighty scott, expect it by september! Cordially, AMD

comment #1642329 posted on 2016-01-15 09:49:40 by Andrew Dodson

> What is the NRC's position on low pressure reactors with redundant passive cooling systems? Why not just require reactors to be absolutely fail safe? Its possible to engineer such systems... in fact its quite simple!

comment #1642335 posted on 2016-01-15 10:23:06 by NRC in response to comment #1642329

> Once a vendor submits a "low-pressure… redundant passive cooling" reactor design, the NRC will review its ability to meet the relevant requirements. More information on the NRC's advanced reactor activities is available on the agency website: http://www.nrc.gov/reactors/advanced.html Scott Burnell

comment #1643444 posted on 2016-01-23 14:15:26 by Garry Morgan

> QUESTIONS Simply - "Lessons Learned" purpose is to increase safety of nuclear reactors under the purview of the NRC, and be proactive in identifying potential problems and fixing them before they become problems. If I'm wrong, please inform me, these are safety and regulatory related tasks, correct? Lessons of Fukushima should be like a Preventive Maintenance program on steroids, correct? Are Human Reliability/Factors programs a part of Post Fukushima requirements? Why is it the stated position of the NRC not to require adherence to details involving specifications and safety requirements which could prevent serious problems, to include a cascading of events resulting in catastrophic multiple system failures of a nuclear reactor? DISCUSSION Case in point, quote - "The NRC expects that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice are not NRC requirements;

therefore, no specific action or written response is required." Are over 200 loose parts banging around inside a reactor pressure vessel, to include damaging components, not a sufficient reason to issue a finding regarding the failure to adhere to technical specifications; or issuing a requirement to insure this failure doesn't reoccur? A lack of attention to detail, and a failure to enforce regulatory requirements, has been a previous problem for reactor operators and the NRC. This case (There are other cases such as Davis-Besse, which was a more serious problem involving a lack of attention to detail.) involves TVA's Sequoyah Unit 1, reference IN 2016-02. The loose parts were known to be a problem in the Sequoyah Unit 1 Reactor Pressure vessel since its' last refueling in 2013. Then, there was the lack of controls and management oversight regarding the most simple of tasks, wearing cold weather suits and various protocols of protecting an open reactor pressure vessel (RPV) during refueling. The cold weather suits were dropped into the RPV during refueling. The intentional ignoring of crucial design requirements and improvements, failing to pay attention to detail involving simple but important tasks and requirements, subsequently allowing a reactor to operate without attention to detail, inadequate safety features and designs, external and internal to the reactor, are exactly what resulted in the cascading catastrophic failures of the nuclear reactors at Fukushima-Daiichi, Japan. Accident investigations involving various complex engineering systems requiring human interactions reveal that in most cases catastrophic failures occur as a result of multiple small failures cascading over time into a catastrophic failure. The earthquake and Tsunami was the trigger which put into motion the final act of a building disaster. The psychological detachment from reality and situational complacency, or delusion that "it can never happen to me (this includes a facility or organization)," is as much of a problem as a series of cascading system failures. Human Reliability/Factors are often elements overlooked and are either the trigger for the disaster or a part of the reason for multiple system failures. Human Reliability/Factors failures regarding attention to technical/safety details and failing to enforce safety and technical requirements at nuclear facilities doesn't appear to be a lesson learned from Fukushima. What say you NRC?

comment #1640945 posted on 2016-01-08 11:34:26 by Moderator in response to comment #1640767

Generally, U.S. nuclear power plants have provided appropriate information and analysis to support the Fukushima-related requests. If the licensee has not provided that information and analysis, the NRC has asked for more information. In three cases, the request was either denied or the licensee withdrew it after discussions with the NRC – those plants met the required deadlines and actions. In another case, the NRC approved an extension, but not for the full amount that the licensee requested. The NRC will not approve and has not approved a request that does not meet our standards. Scott Burnell

comment #1640788 posted on 2016-01-07 13:35:32 by CaptD

Ditto the two comments listed above. I think it would be great if you listed the numbers of requests denied and/or the enforcements that resulted. That would go a long way toward showing the public that the NRC is not too cozy with those they "regulate," which after all is one of the most important lessons learned from Fukushima.

comment #1641521 posted on 2016-01-11 08:00:27 by Dan Williamson in response to comment #1640788

Such activity is a matter of public record. Go look them up for yourself.

comment #1641408 posted on 2016-01-10 18:59:03 by Anonymous in response to comment #1640945

I earlier posted on another NRC Blog on “Writing Rules on Lessons Learned from Fukushima,” and commended what staff did and are doing is a great job in trying to implement safety on Tier 1 and Tier 2 issues, while their senior management is tap dancing around the Commission who have their own priorities (and not write into rules some of the implemented EAs) – can you blame them? But licensees trying to take advantage of the staff playing cozy here trying to seek reliefs has to be put in some context. It is like the staff, with their hands tied behind the back are participating in a b__tt kicking contest. However a little bit of explanation that, the NRC provided to the commenters, to this blog, is perfectly in order that, with respect to EAs which are enforcement actions (which are just that); but the leeway given here is for only for request for Information or about reactors that are defueled and permanently shut down. It is perfectly in order and per 10 CFR 50.54(f)* any how! You cannot convince Nay Sayers all the time, always ! * they ought to read these Regulations and educate themselves.

comment #1640767 posted on 2016-01-07 10:38:57 by Public Pit Bull

NRC, of all the licensee requests for extending due dates, moving back deadlines, or otherwise failing to met commitments as originally promised, how many of those requests have you denied? And what were the consequences to the licensee? Take even the past 5 or 10 years for example? My read is that the NRC rarely says no to anything nuclear power plant owners ask. I believe those owners enjoy gifts from the NRC Santa Claus year round whether they have been naughty or nice! (:-)

comment #1640773 posted on 2016-01-07 11:05:26 by Nikohl Vandel

I guess I'd just suggest, since Fukushima, this industry needs the NRC's voice and directions to be strongly empowered. The balance in regulations here have been undermined for so long by industry, our Regulator voice needs to still grow and be empowered. And then there's the waste..... Great work, NRC, yet if your going to be truly legit in this industry, your voice needs to be louder and have some bite with it.

NRC Embarks on First Phase of Increased Oversight Process at Pilgrim

posted on Mon, 11 Jan 2016 18:12:02 +0000

Neil Sheehan Public Affairs Officer Region I As a new year kicks into gear, the NRC will be stepping up its oversight activities at the Pilgrim nuclear power plant. The start of a formalized review process is in line with our pledge last year to apply additional scrutiny amid performance

concerns.  In September, the agency announced the finalization of an inspection finding for the Plymouth, Mass., facility. Classified as “White,” or of low to moderate safety significance, the finding stemmed from issues involving the plant’s safety relief valves. Based on that enforcement action, in combination with two earlier “White” findings received by the plant, Pilgrim moved to Column 4, of the agency’s Action Matrix, which dictates the agency’s level of oversight at plants. We said at the time that the plant would be subjected to numerous hours of inspections above the normal level as a consequence of the change. While all of the specific details of the increased oversight are not yet in place, we’ve notified the plant’s owner, Entergy, that the inspection process would entail three phases. Phase “A” of the 95003 process – that number refers to an inspection procedure for plants in Column 4 -- is scheduled to occur this week. It will involve a review of various aspects of the plant’s corrective action program, with a specific focus on older items that were in need of attention. A plant’s corrective action program serves the vital purpose of ensuring problems are addressed in a timely manner, and we want to ensure items entered into it were, in fact, appropriately dispositioned. The objective will be to determine if continued operation is acceptable and whether additional regulatory actions are required to arrest declining performance. Current plans call for Phase “B” to be carried out during the week of April 4. During that phase, the NRC will evaluate the overall performance of the plant’s corrective action program since a problem identification and resolution inspection was completed there last August. In other words, this phase will be keyed to more recent corrective actions, particularly since the plant entered Column 4. Each of those phases will be performed by three inspectors from the NRC’s Region I Office in King of Prussia, Pa. Based on the results of those first two phases, the NRC will develop a plan for, and map out the scope of, Phase “C.” It will cover items not inspected during the first two phases and include an assessment of the plant’s safety culture and such areas as human performance, equipment reliability and procedure quality. What’s more, the inspectors will review the work done as part of the plant’s performance improvement plan. That plan is due to be submitted to the NRC sometime in mid-2016. This final phase will be the most comprehensive of the three and will seek to inform the agency’s decision on whether sufficient progress has been made to end the agency’s increased oversight of the facility. The timeframe for that review will be available later this year. Another step will be the NRC’s issuance of a Confirmatory Action Letter to Pilgrim that will spell out actions needed for the plant to satisfy any remaining safety concerns. The agency will subsequently inspect the company’s follow-through on those commitments. It should be noted that the NRC has not waited until now to increase its oversight at Pilgrim following the decision last September. The agency has already performed focused inspections at the plant, in such areas as operator performance, preparations for adverse weather, and problem identification and resolution. In addition, the NRC has added a third Resident Inspector – there are normally two -- assigned to Pilgrim since November. Even though Entergy has announced that Pilgrim will be shutting down no later than June 2019, the NRC remains committed to our safety oversight, with these inspections helping to inform our determinations. We also remain committed to communicating to the public regarding our oversight activities at Pilgrim as they advance. That information will be made available via this blog, our web site and in correspondence. Stay tuned.

Comments

comment #1642157 posted on 2016-01-14 09:56:30 by drbillcorcoran in response to comment #1642079

> If you want safety, peace, or justice, then work for competency, integrity, and transparency.

comment #1642016 posted on 2016-01-13 09:59:34 by drbillcorcoran in response to comment #1642005

> CaptD, Do you have any links to the #SanOnofreGate ?

comment #1642005 posted on 2016-01-13 08:37:57 by CaptD

> RE: the NRC has added a third Resident Inspector It would be best if the NRC used inspectors from other Regions, since there would be much more "Inspecting" done without having to "fit in" with the local inspectors views of ongoing safety. If this had happened at San Onofre, #SanOnofreGate * would never have occurred. I would also suggest that outside consultants also be tasked with surprise inspections of each NPP, Beckman Associates "Independent Consultants Inspection Report of what occurred at San Onofre was critical of not only the operator SCE's questionable root cause but also of the Region IV NRC AIT Report (which is why it was not released to the public until after it was announced San Onofre was being decommissioned, which also conveniently stopped the investigations in the root cause of the destruction of the almost new Replacement Steam Generators (RSGs) due to In-Plane Fluid Elastic Instability (IPFEI). Happily, the root cause investigation of what happened at San Onofre is still being continued, it is just not being done/controlled by SCE or the NRC... * The investigation into the multi-billion $ SCE-CPUC ripoff.

comment #1642079 posted on 2016-01-13 21:39:01 by Anonymous

> Niel – Nice PR job (seriously) and glad to see the NRC is putting its best foot forward in disseminating the oversight process for a plant with multiple/repetitive degraded cornerstone and on its way to a voluntary shutdown. THIS IS a tough town, and a tough customer to please. Work hard, you have got a tough job cut up for you! Good luck and you are going to need it!

comment #1641830 posted on 2016-01-12 08:20:01 by drbillcorcoran

> • Character An inescapable fact is that the character of an industry is largely a reflection of the character of its regulators, and, of course, vice versa . Competence, integrity, compliance, and transparency or their lack seldom exist on only one side of an industry-regulatory interface .

comment #1641581 posted on 2016-01-11 13:42:51 by drbillcorcoran

> • Mistaken Trust An inescapable fact is that the competent investigation of every harmful event reveals that the causation of the harm includes the mistaken/ naïve/ unwarranted/ gullible/ imprudent trust in one or more erroneous/ untrustworthy assumptions, devices , procedures, processes, people, contractors , and/or conditions. The functional alternatives include monitoring, curiosity, skepticism, and the "questioning attitude." "You get what you inspect; not what you expect."-an old Navy proverb

comment #1641584 posted on 2016-01-11 14:09:29 by Nikohl Vandel

> Be hardcore nit pickers on steroids. They well comply. #fuqafukushima

comment #1641585 posted on 2016-01-11 14:10:07 by Nikohl Vandel in response to comment #1641584

> WILL comply.

comment #1641595 posted on 2016-01-11 14:59:57 by drbillcorcoran in response to comment #1641584

> • Dysfunctional Priorities An inescapable fact is that the competent investigation of every harmful event reveals that the causation of the harm includes the dysfunctional prioritization of something conflicting with safety by multiple individuals, entities, groups, and organizations. These include regulatory agencies, oversight agencies, trade organizations, professional societies, standards making bodies, labor organizations, industrial/commercial entities, investors, management, and individual contributors.

comment #1641610 posted on 2016-01-11 15:58:20 by Nikohl Vandel in response to comment #1641595

> True, which is why the NRC needs to start prioritizing with the industry in such a way dysfunction is organised to closing down the old plants, getting the waste managed on a whole new level, and, if new nuclear plants are built they use recycled waste as fuel.

comment #1641612 posted on 2016-01-11 16:24:51 by drbillcorcoran

> • Elementary Failures An inescapable fact is that the competent investigation of every harmful event reveals that the causation of the harm includes the failure to apply elementary principles of design , human factors , human behavior technology, engineering , science, operations, communications, administration , quality , regulatory compliance, and/or management. Often there is a contemptuous/ dismissive/ arrogant/ ignorant disregard for even needing to know what these elementary principles are, much less flowing them down to where they might need to be applied.

Throwback Thursday -- The Sample in the Cigar Box

posted on Thu, 14 Jan 2016 18:19:57 +0000

"Back in the day," people stashed all kinds of treasures in cigar boxes, including family photos, or used them as handy storage bins for sewing supplies or loose change. This cigar box was used for a different purpose. It held the first sample of Plutonium-239, first created in 1940 by a team led by Dr. Glenn Seaborg. Seaborg stored the sample in this box, after discovering its fission properties in March 1941. Courtesy of the Creative Services Office, Lawrence Berkeley National Laboratory.

Comments

comment #1642774 posted on 2016-01-18 10:41:27 by John Coupal

> 1. Somebody in that scientific trio (or in their family) was a cigar smoker. 2. The cigars formerly inside were on sale, reduced from 10 cents, to 5 cents each. 3. The cigar boxes appear hand-made with dovetailed wooden joints which required some word-working expertise. Were the boxes cheaper to make than the total cost of cigars packed within?

comment #1642328 posted on 2016-01-15 09:44:42 by Anonymous

> What a sample that Glen Seaborg, the Italian refugee scientist Segre' and Glen's assistant Joseph Kennedy precipitated, after pains taking meticulous amount of work, finally on March 28, 1940. This sample you see in that cigar box is the original platinum dish (measured two-thirds of an inch across and half in in depth) which contains the spec sample of 0.25 micro grams of Pu-239. It is preserved to date in that dish with a simple protective layer of Duco Cement glued to a piece of card board. None of the bloggers here would appreciate the importance of that discovery to those three at that time.

comment #1643709 posted on 2016-01-25 20:47:25 by Rob Schneider in response to comment #1642216

> Well, I do believe he meant 'convenient'. That said, it's rumored rather strange things can happen in such places as 'convents'...They fissioned their single god yielding alpha, beta, and ghost-like gamma, right?

comment #1642460 posted on 2016-01-16 08:36:04 by Engineer-Poet in response to comment #1642195

> For what it's worth, the "non-fissile" Pu-240 and Pu-242 isotopes will still fission if hit with fast neutrons (over 1 MeV), and in fact have a greater fission cross-section than U-235 in that energy range. A fast-spectrum reactor will consume all plutonium more or less indiscriminately. There's no better way to make weapons-grade Pu unusable for weapons than to put it through a nuclear reactor. A large amount of what does not fission gets converted to isotopes which make the material useless for weapons. The MOX plant in N. Carolina, currently the subject of controversy, is intended to eliminate weapons material by exactly that means.

comment #1642216 posted on 2016-01-14 17:41:37 by Dan Williamson in response to comment #1642179

> "Convent"? What would nuns want with plutonium?

comment #1642179 posted on 2016-01-14 13:29:32 by CaptD

> ... And much more convent than using a pig, unless you did not smoke cigars!

comment #1642180 posted on 2016-01-14 13:34:36 by Nikohl Vandel

> What do we do with Plutonium-239 now?

comment #1642195 posted on 2016-01-14 15:21:49 by NRC in response to comment #1642180

> Here is an excerpt from one of our Science 101 blog posts http://public-blog.nrc-gateway.gov/2014/05/15/nrc-science-101-what-is-plutonium/ The various isotopes of plutonium have been used in a number of applications. Plutonium-239 contains the highest quantities of fissile material, and is notably one of the primary fuels used in nuclear weapons. Plutonium-238 has more benign applications and has been used to power batteries for some heart pacemakers, as well as provide a long-lived heat source to power NASA space missions. Like uranium, plutonium can also be used to fuel nuclear power plants, as is done in a few countries. Currently, the U.S. does not use plutonium fuel in its power reactors.

comment #1642204 posted on 2016-01-14 15:48:34 by Nikohl Vandel in response to comment #1642195

> =) thank you. (Aside: no more nuclear weapons should ever be built.)

COOP – Not Where Chickens Roost

posted on Tue, 19 Jan 2016 17:29:42 +0000

John Biddison Senior Emergency Response Coordinator While the weather's been quite mild on the East Coast so far this winter, that might change

by the end of the week, according to weather forecasts. People who've lived around Washington, D.C., for a while likely recall 2010's back-to-back blizzard "Snowmageddon" that limited the city's ability to function. The NRC, along with the other federal agencies headquartered near Washington, is ready to keep working in situations even worse than that. How? We use COOP. In "government speak," COOP means Continuity of Operations – how the federal government keeps working even if potential weather or other severe

events in the Washington, D.C., metropolitan area disrupt the normal operations of a federal government agency. The NRC tests its detailed COOP plan periodically. This includes participating in an annual federal COOP exercise, which takes many months to plan and several days to carry out. Under the NRC COOP plan, NRC staff finds alternate places and ways to continue their work – this might mean staff members telework or physically relocate to alternate work stations. Staff in other locations can also take on new or different responsibilities. Certain vital mission functions that absolutely must continue are pre-identified. Other less critical functions might be temporarily suspended. The NRC is revising and improving its plan based on new information, such as input from the last national exercise. For instance, we are updating information technology plans, enhancing decision-making, and providing our staff with additional guidance. We also recently enhanced our emergency communications with our staff and the public. Planning for COOP is one of the most important things the federal government and the NRC does. It's planning we all hope never to have to use, but it's vital to have during unexpected events or emergencies.

Comments

comment #1642875 posted on 2016-01-19 13:27:15 by Nikohl Vandel

> I'm oh so curious how many scenarios happening at once the NRC's COOP plan is prepared for ... it's it like on a SyFy movie kind of disaster? And, it makes me grateful for the new facility in AZ.

comment #1642895 posted on 2016-01-19 17:00:20 by CaptD

> Got to admit that COOP sounds way better than COP for Continuity of Operations, since the NRC really does not preform that function despite what most people believe.

comment #1642983 posted on 2016-01-20 15:44:01 by Dan Williamson in response to comment #1642895

> CorporalD, December 16, 2016, NRC blog site: "By being responsive to all those that do post comments, the NRC will become better, since they will have yet another vehicle to gain valuable feedback in a timely manner." Is this more of that "valuable feedback" you were talking about?

NRC Geared Up for Potent Winter Wallop

posted on Fri, 22 Jan 2016 16:26:08 +0000

Neil Sheehan Public Affairs Officer Region I What a difference a month makes. As of late December, many East Coast residents were savoring record warmth and a winter which, until that point at least, had been largely devoid of a certain four-letter word (snow), as well as ice. Fueled by a potent El Nino – a warming of Pacific Ocean waters that occurs every several years – the season was marked more by bustling golf courses and joggers wearing shorts than an abundance of the white stuff. But now a sizable storm that has piggy-backed on the jet stream is taking aim at the East and promises to deliver what could be a significant winter wallop accompanied by large snow accumulations and strong winds in many areas. As is always the case, the NRC is ready to keep a close watch on nuclear power plants that potentially could be impacted by the storm. Plant personnel have checklists of specific tasks to be performed when a significant storm – no matter whether a blizzard or a hurricane – is approaching. For instance, there will be "walkdowns," or surveys, of plant grounds to ensure there are no objects or debris that could get whipped into the air by strong winds and cause damage to any structures, power lines or the switchyard. Another activity is to check that tanks that supply fuel to emergency diesel generators are filled. If the flow of power from the grid to the plant is disrupted for any reason, these generators will activate and provide power to key safety systems until the normal electricity alignment can be restored. There needs to be sufficient fuel on hand in case the generators are needed for any extended period of time. Also, plant operators must prepare for the possibility of flooding. One way to do this is to follow each site's procedures, which can involve checking that flood-protection doors are properly secured, putting sandbags in place, stationing portable pumps or other actions. NRC Resident Inspectors will be monitoring the completion of these activities using their own inspection procedure while also tracking the storm's track and expected conditions at each site. All indications are that this storm – dubbed Jonas by the Weather Channel – is one to take seriously. The NRC is prepared to do just that. For information on how NRC HQ prepares, see this post.

Comments

comment #1643655 posted on 2016-01-25 11:02:06 by stock in response to comment #1643644

> Aloha, and thanks Victor, can you expand on resources available at these quick deployment center, do they have full time standby helicopters and pilots on call, and is there a runway also? What size of generators do they stock, and what is the biggest generator that can be rapidly deployed. How many different types of cabling, breakers, subpanels, etc are needed to ensure that they can quickly tie into the plants emergency circuits. Also, in a grid down for months, civil chaos, possibly highways blocks and fuel distribution system non functional, can you ensure that there wouldn't be a problem at a nuke plant. I don't think this "stress test" would pass with flying colors, but flying Xenon. TY

comment #1643657 posted on 2016-01-25 11:05:25 by stock in response to comment #1643276

> Neil, in light of the events that transpired during the storm, can you re-comment on the need for per-inspections on switch yards including transformers and connections.

comment #1643654 posted on 2016-01-25 10:52:07 by stock in response to comment #1643576

> Sir, respectfully, it is hard to say with a straight face that nuclear is "clean". Just ask the monkeys in Japan that just last week had their feces measured at 150,000 Bq/kG, vast majority Cesium with the 137/134 ratio clearly indicating Fukushima origins. Also, all nuclear plants emit radiation as a normal part of their operations, some are so dirty they are hundreds of times higher in leakage than others. The salmon population has been pretty much wiped out via Fukushima and its radiation and mutated planktons and viruses that are working over the whole Pacific right now. So we

can pretty much write them off already. Sorry, but in the balance between wildlife and human life, I think that we need as much hydro as we can do. I do like heating my home with wood, its extremely renewable, and the newly planted trees are a great way to use up the good supply of plant food in the air, we call that CO2. That said, the opposite side of your argument can only imply that you would recommend heating with electricity, which only makes sense in the mildest of climates, although a case can be made for heat pumps in moderate climates. But making that electricity with nuclear, where each plant produces about the equivalent radiation of 3 nuclear bombs, PER DAY, makes little sense compared to solar PV which has come of age, has beat grid parity almost everywhere and once purchased, your "rate per kWH" stays the same for it's 30 to 40 year life. Whereas in the classic utility model, the rates go up at 3% to 6% per year, except in place like Vogtle with a nuke plant costing $18 Billion, and the cost of project financing they need to extract $65 Billion from the ratepayers over time to have the project "make sense", that will double or triple their rates almost immediately,. The combustion engine will certainly not be outlawed, and will likely fade away, but never go away, as EV's make further market penetration via technology and cost/economies of scale. EV's are also an important part of a primarily solar PV fed grid since these EV's that are plugged in 94% of the time, can solve a calculated 58% of all of the "storage" needs that PV will require and they can solve that problem with nothing more than a smart charger. And by the way, you can take my 275 HP 1966 Mustang right about the same time you come and take my guns, it ain't gonna happen. So yes we can charge up our own EVs with electricity we make on our own roofs, and this highly distributed generation will make America stronger and more robust, and less subject to terror attack. Finally, I was disappointed that at the end you choose to play one of the stalest lies of the nuclear generations, which simply stated is: If you don't have nuclear you are going to be in the cold and dark (you can throw also 'dirty hippies' if you like also). Sorry, we ain't buying it and we collectively are not that dumb to build another dysfunctional system, my own PV system actually allows me to use MORE electricity, it is after all a valuable product that enhances human life. Solar PV lets you maximize those benefits.

comment #1643462 posted on 2016-01-23 19:33:48 by Anonymous in response to comment #1643437

Thanks. Can I know what that LCO TS is, and thanks in advance? P.S. These days the blog post is so responsive and makes it more respectable (and did you notice the signal-to-noise ratio is healthy !!!)

comment #1643436 posted on 2016-01-23 12:44:57 by Anonymous

Is there any Tech. Spec/LCO associated with severe weather /Blizzard event (as in Tornado speed winds) that might require a plant so shut down?

comment #1643437 posted on 2016-01-23 13:11:58 by Moderator in response to comment #1643436

Yes. Moderator

comment #1643440 posted on 2016-01-23 13:26:53 by stock in response to comment #1643437

Can you supply a copy of those tech specs, thanks!

comment #1643576 posted on 2016-01-24 18:11:09 by Jim Bowlby in response to comment #1643246

What a great idea! Let's shutdown the one source that currently provides 60% of our clean energy 24/7 and replace it with let me guess...windmills and solar panels because this is free energy and the wind always blows and the sun always shines. And next we can get rid of those nasty fossil plants that burn coal, oil and gas and contribute to global warming and kill people with their emissions. Those old hydro dams that we built back during the Great Depression need to be decommissioned before they fall apart and hurt someone. Once they are gone the rivers can be restored to their natural beauty and the salmon can run free. We can all heat our homes with wood because wood smoke is natural and wood is a renewable energy source. Let's outlaw the combustible engine and make sure that everyone drives electric cars. We can charge them up at home with our very own windmills and solar panels for free. Now the only thing we'll have to worry about is if the lights will come on when we flip the switch.

comment #1643644 posted on 2016-01-25 09:12:34 by Moderator in response to comment #1643534

The NRC sets strict requirements for safe spent fuel storage. Developed through a public process, they provide a sound technical basis for protecting public health and safety and the environment. Spent fuel pools and dry cask storage canisters are robust structures designed to be able to withstand the effects of the most powerful earthquakes predicted in the vicinity of any operating reactor. All nuclear power plants are equipped with emergency diesel generators capable of supplying power to safety-related systems. And, as a result of the Fukushima accident in 2011, the industry has established two centers – in Phoenix, Arizona, and Memphis, Tennessee – where additional emergency response equipment is stored which can be rapidly dispatched to a nuclear plant in the event of need. Victor Dricks

comment #1643530 posted on 2016-01-24 11:53:12 by Moderator in response to comment #1643462

We're looking to post an update, although it may not be until tomorrow. Moderator

comment #1643534 posted on 2016-01-24 12:42:02 by stock

Somewhat off topic, but some very accurate citizen scientists have been reviewing west coast ocean bottom subduction, earthquake at volcanic formations, and a possible 9.0 earthquake on the west coast. Do you guys have this on your radar, and what actions are being taken to mitigate effects on nuclear plants, or spent fuel storage. A 9.0 could knock power out for months, any spent fuel pools would be at grave risk, that would pretty much toast the whole country. mahalo!

comment #1644958 posted on 2016-02-04 18:38:44 by Debby Stark

"...that currently provides 60% of our clean energy..." They must be making a huge amount of money! Maybe it's time nuclear power plants pay for their own insurance and stop relying on taxpayer subsidies for everything from the roads that haul the fuel to the plants, to the water sucked out of the rivers and poured back in hot and radioactive, and the pretty much non-existent waste storage facilities. Yeah, too cheap to meter...

comment #1643782 posted on 2016-01-26 11:24:38 by Nikohl Vandel in response to comment #1643576

And, always have a candle handy. For me, the toxic waste not being recycled is the biggest threat to anything we think of when thinking nuclear. Who's gonna recycle it?

comment #1643675 posted on 2016-01-25 13:49:20 by David Andersen in response to comment #1643436

Start here: http://www.nrc.gov/reactors/operating/list-power-reactor-units.html, select the plant you are interested in, under "Key Documents" Select "Operating License" that is where the Tech Specs are.

comment #1643246 posted on 2016-01-22 11:32:42 by Nikohl Vandel

Thank you for doing all that you can before the storm ... even though most of those plants should be decommissioned so we never need to worry about this stuff anymore. #safetyfirst

comment #1643259 posted on 2016-01-22 13:03:48 by Nancy Allen

How many plants could be affected ? Which ones?

comment #1643260 posted on 2016-01-22 13:10:32 by stock

Does the NRC provide or require inspectors to have a 4 wheel drive vehicle? Are there facilities for inspectors to stay overnight and eat at the plant?

comment #1643263 posted on 2016-01-22 13:18:45 by stock

What actions have been taken for those primary substations / transformers shorting out during storms?

comment #1643266 posted on 2016-01-22 13:45:48 by NRC in response to comment #1643260

The NRC does not require inspectors to have a four-wheel-drive vehicle. If needed, the agency may call upon local emergency responders to assist with getting an inspector to a site, but that is rare. A more likely scenario is that a Resident Inspector would remain at the site for the duration of a severe storm. Each storm has unique characteristics and therefore the NRC performs assessments of staffing needs prior to and during the event. Neil Sheehan Region I Public Affairs Officer

comment #1643267 posted on 2016-01-22 13:47:18 by NRC in response to comment #1643259

The NRC is closely monitoring potential impacts on multiple sites. In Region I, which covers the Northeastern U.S., there may be significant snow accumulations at plants in central and eastern Pennsylvania while winds and high tides could affect plants in Maryland, New Jersey and possibly other states. Given the blizzard conditions expected, the agency will remain in close communication with plant operators to evaluate the conditions present at their respective facilities. Neil Sheehan Region I Public Affairs Officer

comment #1643268 posted on 2016-01-22 13:47:31 by CaptD

Fukushima proved that Nature can destroy any land based nuclear reactor (including its Spent Fuel Pool), any place anytime 24/7 despite what the NRC does, it just has not happened yet. This is the real lesson to be learnt from Fukushima. What we really need is a law that says that if a nuclear accident occurs anywhere in the USA, all nuclear power plants must be immediately decommissioned; that way the NRC and especially the nuclear Utilities would be "forced" to make sure that no accidents occurred because it would hit them in their bottom line, not to mention saving taxpayers billions in damages.

comment #1643276 posted on 2016-01-22 14:11:06 by NRC in response to comment #1643263

One action taken is to ensure any debris that could become airborne during a storm and result in switchyard electrical shorts are addressed prior to the arrival of severe weather. Another is close monitoring of equipment performance during the storm. Transformer failures generally do not occur as a result of storms. Neil Sheehan Region I Public Affairs Officer

comment #1643305 posted on 2016-01-22 17:11:55 by David Andersen in response to comment #1643260

Meaning no disrespect to the resident inspectors, but they are only there to observe. The plant personnel are professional and are well trained to deal with severe weather.

comment #1643312 posted on 2016-01-22 18:31:10 by A. Steen

You stated "Another activity is to check that tanks that supply fuel to emergency diesel generators are filled." By saying that you give the anti-nuclear advocates that read this column the impression that it is the only time the level in the storage tanks are checked. I operated a nuclear plant for 30 plus years and those tank levels are checked at least twice a day, every day, rain or shine. They are always filled.

comment #1643321 posted on 2016-01-22 19:32:03 by stock in response to comment #1643305

Uh David, if they cannot get to the job, they cannot do their job. I thought the context was obvious enough to not further explain the question.

Update: As the Blizzard Moves Out of the Mid-Atlantic

posted on Sun, 24 Jan 2016 22:35:43 +0000

Neil Sheehan Public Affairs Officer Region I ***UPDATE: As an update to the downpower and then shutdown of Calvert Cliffs Unit 1, the plant has restarted and once again began sending power to the electrical grid as of about 1:30 a.m. today (Jan. 26). The plant was returned to service after***

the main transformer cable that had become disconnected, apparently as a result of blizzard-driven winds, was fixed. That issue led to the plant reduction in power during the storm. Repairs were also made to address condenser tube leakage that was identified and led to a decision to shut down the plant on Monday morning. NRC Resident Inspectors assigned to the plant tracked the repair work and the unit's restart. As of Sunday afternoon, only one nuclear power plant in Region I may have been directly impacted by the blizzard. (Region I covers the Northeastern U.S.) Power output at Calvert Cliffs Unit 1, in southern Maryland, was reduced to just under 15 percent on Saturday evening after an electrical cable associated with a main transformer was found to be disconnected. It was not immediately clear if the storm was responsible for the cable coming loose. The downpower was needed to facilitate repairs. While upstate New York was expected to be spared much of the intensity of the winter storm, the James A. FitzPatrick nuclear power plant was shut down by its operators at about 10:40 p.m. Saturday after icing impacted the facility's flow of cooling water drawn from Lake Ontario. Power had already been reduced to about 50 percent at the Scriba, N.Y., plant due to lowering water intake levels at the time of the manual scram (shutdown). The plant was safely shut down and the NRC's Senior Resident Inspector for FitzPatrick traveled to the site to independently verify plant conditions and observe operator actions. The single-unit boiling-water reactor remained out of service as of this morning as troubleshooting and follow-up activities continued. After the Pilgrim nuclear power plant experienced several winter storm-related shutdowns in recent years, the plant's owner, Entergy, was prepared to conduct a pre-emptive shutdown of the facility should certain severe weather conditions occur. The NRC has been closely monitoring any effects of the blizzard on the Plymouth, Mass., site and has confirmed that there have been no significant impacts at the facility and certainly none that would have triggered the pre-emptive shutdown criteria. On a similar note, the NRC has kept close tabs on the Oyster Creek nuclear power plant, in Lacey Township, N.J. During Hurricane Sandy in late October 2012, water levels on the canal from which the plant draws cooling water reached levels that caused the declaration of an "Unusual Event" – the lowest level of emergency classification used by the NRC – and later an "Alert" – the next rung up on the emergency classification ladder. The water levels did not reach those levels during this storm and therefore no emergency declarations were necessary.

Comments

comment #1643659 posted on 2016-01-25 11:24:57 by Lillia Frantin

> There's little new to add, is there. The NRC shuts its eyes & ears, acts like 'climate change' is another Republican-corporate deniers fantasy and lets Pilgrim go (down?) on its merry and dangerous way. What will it take for Neil S. and the NRC honchos to declare they are either bought & paid for (paid off?) by the nuclear bandwagon...or do the right thing and make Pilgrim's owners COMPLY with b BASIC SAFETY & COMMONSENSE rules & precautions. You don't want or need the comments from We citizens..you've got your agenda it seems --protect the industry at all costs...as long as its not corporate-costs. Shame on you is too easy. But with you NRC holding all the cards (while the Pilgrim & nuclear power owners stack the deck against safety & health) what can we do but 'Wait & Pray'...some regulatory system, huh? Awful. If even Pilgrim has an 'accident' (Oh forgive me...an INCIDENT...No, I mean accident), its not only us who will pay the price...Our grandchildren will reap what YOU ARE SOWING.

comment #1643585 posted on 2016-01-24 19:33:36 by Nikohl Vandel

> Thank you. Although, with options like windmills we don't even have to worry about any of this. Why do we continue doing this?

comment #1643587 posted on 2016-01-24 20:34:17 by Mike Mulligan

> "Has been no significant impacts at the facility"...could the NRC describe all storm related impacts at Pilgrim?

comment #1643588 posted on 2016-01-24 20:36:15 by William Maurer

> Pilgrim is recognized by the NRC as one of the worst performing nuclear power plants in the country. Pilgrim is owned and operated by a company who has been unwilling (at least) since re-licensing to invest the money required to maintain minimum NRC safety standards for a safe operation and has steadily gone downhill. Therefore Entergy has elected to shut Pilgrim down and couched it as "due to economics". Translation: Entergy can't compete without cutting corners. In my opinion the NRC, Entergy, FEMA and MEMA needlessly gambled once again with public safety at Pilgrim during this storm rolling the dice against known switchyard deficiencies and a nuclear reactor known to have problems during scrams and restarts associated with severe winter weather conditions when emergency evacuations are impossible. This gamble was purely in the service of saving Entergy the $$$$ associated with a preemptive precautionary shutdown. Again in my opinion this was reckless risk taking and textbook sociopathic corporate behavior, facilitated by "government" regulators with stronger loyalties and sympathies to the private sector than to the public sector. Now they all are patting themselves on the back for "lucking out". Incredible! The sad part is most people will buy it because they are uninformed by design about Pilgrim deficiencies and risk (ie decades of recurrent switchyard flashovers with resultant scrams increasingly with more and more complications, leaving malfunctioning SRVs in operation, inoperable meteorological towers for inordinate periods of time, years of tritium leaks, etc, etc, etc). This is a cue: The "smart money", the insurance companies who are elite world class professional risk takers and who have done their due diligence won't insure commercial nuclear reactors...too risky! The fact that Pilgrim wasn't shut down as a precaution in this last storm by regulators speaks to a way too cozy relationship between regulators and the commercial nuclear energy industry. Disgusted....Bill Maurer

comment #1643697 posted on 2016-01-25 17:40:50 by Anonymous

> Pilgrim is an eyesore and agree with the assessment that the licensee will try to squeeze the maximum juice out of it, before the plant voluntarily shuts down in 2019 (like Vermont Yankee). The residents of Plymouth have earned its bragging rights boxed up in a town with no emergency evacuation routes and fear of imponderables what with Entergy's poor operational records. But can't agree with the assessment of a broad brush "too cozy relationship between regulators and the commercial nuclear energy industry." On the contrary, the NRC has upped the ante on oversight inspection, consistent with a plant, with multiple/repetitive degraded cornerstone, what more they can do! Just because of a perceived threat, a cop cannot confiscate the driver's license, you have to commit a traffic violation to do so, or at least that is how the law operates. Don't shoot the messenger, dear Pilgrimers, the NRC s all what you have got on your side, not the plant's operator.

comment #1643881 posted on 2016-01-27 06:41:12 by Engineer-Poet in response to comment #1643585

> Nikohl, as I write this it is 25°F (-4 C) outside, dead calm, and dark. In your ideal world, how would you keep me from worrying about freezing to death?

comment #1644073 posted on 2016-01-28 14:15:39 by William Maurer

> In this post Mr Sheehan and the NRC categorizes Pilgrim's winter weather switchyard failures and subsequent scrams as "After the Pilgrim nuclear power plant experienced several winter storm-related shutdowns in recent years, the plant's owner, Entergy, was prepared to conduct a pre-emptive shutdown of the facility should certain severe weather conditions occur." The "recent years" timeline is spin (a cover up) that minimizes decades of the NRC either not connecting the dots or looking the other way while both BECO and Entergy gambled running Pilgrim at 100% during severe winter weather conditions known to result in switchyard failures and subsequent scrams (sometimes with complications). Here is that documented history: Feb 6, 1978 (Nor'easter/Blizzard: "Blizzard of 78") - The reactor automatically scrammed when heavy snowfall caused electrical breakers in the 345 kilovolt switchyard to flashover and trip. Feb 6, 1978 - The reactor automatically scrammed from 24 percent power when high winds and ice buildup caused all transmission lines to fail (causing a LOOP). . Feb 13, 1983 (Nor'easter/Blizzard) [LER 1983-007 LOOP] - With the reactor shut down, there was a LOOP.Feb 13, 1983 - High winds caused salt accumulation on electrical equipment that led to an electrical fault and a LOOP lasting about 1 minute. (records not on NRC webpage: "salt accumulation and electrical fault" suggests flashover) Feb 15, 1983 - The unit was connected to the electrical grid to end a 48.2 hour forced outage. Oct 30, 1991 (Nor'easter/Hurricane: "Perfect Storm") [LER 1991-024 Loss of Preferred and Secondary Offsite Power Due to Severe Coastal Storm While Shutdown] - The operators shut down the reactor when a severe storm blew seaweed into the intake structure, clogging the circulating water pumps, and causing a loss of condenser vacuum. Oct 30, 1991 - Weather-related LOOP lasting 120 minutes (switchyard flashover reported in LER) Dec 13, 1992 (Nor'easter/Blizzard) [LER 1992-016 Automatic Scram Resulting From Load Rejection at 48 Percent Reactor Power] - The reactor automatically scrammed on a generator load rejection caused by flashovers in the switchyard due to salt deposits during a severe storm. Dec 18, 1992 - The unit was connected to the electrical grid to end a 116.4 hour forced outage. Mar 13 1993 (Nor'easter/Superstorm/Blizzard: "Storm of the Century") [LER 1993-004 Automatic Scram Resulting From Load Rejection at 100 Percent Reactor Power] - The reactor automatically scrammed on a generator load rejection caused by flashovers in the switchyard due to wind-packed snow during blizzard conditions. Mar 13, 1993 - Weather related LOOP lasting 1 minute. Mar 17, 1993 - The unit was connected to the electrical grid to end a 84.5 hour forced outage. Dec 19, 2008 (Nor'easter/Blizzard) [LER 2008-006 Automatic Scram Resulting from Switchyard Breaker Fault during Winter Storm; LER 2008-007 Momentary Loss of all 345kv Off-Site Power to the Startup Transformer from Switchyard Breaker Fault] - The reactor automatically scrammed when a winter storm caused icing in the main switchyard.(switchyard flashover reported in 1/26/15 Supplemental Inspection Report) Feb 8, 2013 (Nor'easter/Blizzard: "Nemo") [LER 2013-003 LOOP Events due to Winter Storm Nemo] - The reactor automatically scrammed at 9:17 pm when a blizzard caused LOOP. (switchyard flashover reported in 1/26/15 Supplemental Inspection Report) Feb 9, 2013 - Workers restored offsite power to the site at 6:09 pm. Feb 10, 2013 - Offsite power to the site was lost at 2:02 pm. Feb 12, 2013 - Workers restored offsite power to the site at 4:05 am. Feb 15, 2013 - The reactor was connected to the electrical grid at 10:39 pm to end a 169.37 hour forced outage. Jan 27, 2015 (Nor'easter/Blizzard: "Juno") Forced Outage due to LOOP during winter storm Juno. Switchyard flashovers. Feb 8, 2015 - Restarted to 79%; Reached 100% on Feb 10, 2015. Precautionary Shutdown Feb 15, 2015 (Nor'easter: "Neptune") Precautionary shutdown in advance of Nor'easter Neptune and an anticipated LOOP (first ever precautionary preemptive shut down provoked by citizens' discovery and analysis of the history above). Feb 18, 2015 - Restarted to 18%; Complications delayed ramp up; Reached 100% on Feb 22, 2015. Only hind site allows the NRC to make the following statement, "The NRC has been closely monitoring any effects of the blizzard on the Plymouth, Mass., site and has confirmed that there have been no significant impacts at the facility and certainly none that would have triggered the pre-emptive shutdown criteria." There is no such degree of "certainty" when severe weather is approaching and a preemptive decision to shut as a precaution needs to made. Entergy, the NRC and MEMA choose to gamble and got lucky. Did they even power down to 50% just in case? In light of the documented facts I would prescribe a belt and suspenders approach to severe winter weather conditions at Pilgrim rather than another roll of the dice, especially considering an evacuation might be impossible for days and first responders are already stretched and coping with the standard (non nuclear) severe winter weather emergencies. In my opinion, this is reckless risk taking...for what purpose, Entergy's bottom line? C'mon!

comment #1644081 posted on 2016-01-28 16:01:12 by Engineer-Poet in response to comment #1644073

> You do realize that LOOP is an acronym for "loss of **outside** power"... in other words, the lines or transformers have a problem and circuit breakers shut them off? You do realize that LOOP will happen to ANY power plant under the same circumstances? You do realize that it's harmless and the plant handles it just fine? Or are you just throwing around terms the public is not familiar with, for the purpose of fear-mongering?

comment #1643909 posted on 2016-01-27 10:30:41 by

> Moderator Note: Some of the comments have moved far from the topic of the post. We ask that a conversation about topics unrelated to the storm be continued on the Open Forum section.

comment #1643846 posted on 2016-01-26 21:28:45 by Engineer-Poet in response to comment #1643680

> In case this doesn't thread right, this is a reply to CaptD.

How about the multi-billion dollar failures of Nuclear?

You mean, the multi-year delays that the mandated review process would have thrown into the schedule for bringing San Onofre back up again? They were completely political, not technological. Now, tell me how you can write a law to make the sun shine and the wind blow when people need them to. I'm all ears. Does the name "King Canute" ring any bells?

comment #1643788 posted on 2016-01-26 12:00:45 by Engineer-Poet in response to comment #1643697

Pilgrim is recognized by the NRC as one of the worst performing nuclear power plants in the country.

Shocking! And in other news, HALF the US population falls below the median in all measures! Yes that was sarcasm, but when someone uses a blatantly misleading trope it is important to show just how it is being used to imply a false conclusion. In any top-to-bottom ranking of anything, one is going to come in last. If you eliminate it because it's last, something ELSE comes in last. Why not compare outside just nuclear plants? For the sake of public safety, the total risks associated with any plant should be considered. For Massachusetts in 2014, compare Pilgrim to Brayton Point. Pilgrim generated 5,769,154 MWH of electricity with zero air emissions and perhaps 1 truckload shipment of fuel. The hazards associated with the truckload of fuel are minuscule and the risks from air emissions, zero. Brayton Point generated 2,573,319 MWh from 1.13 million tons of coal, generating perhaps 2.9 million tons of CO_2 plus un-scrubbed sulfur, mercury, particulates and other air toxics. At $37/ton (underestimate) social cost for the CO_2 alone, the coal emissions cost the equivalent of 36 lives per year at $3 million each—for less than half the output of Pilgrim; at a more recent estimate of $220/ton, it's equivalent to killing more than 200 people per year. To this we must add the mortality and morbidity of car-train

accidents in shipping its fuel, the health damage from blowing fines, and the health and ecological harm from shipping and dumping the ash. Natural gas is hardly exempt. Pipeline explosions cause fatalities and injuries, gas fields and pipelines leak toxics, and the CO2 emissions and their associated damages only fall by about half compared to coal. The 4 biggest reactor meltdowns outside the old Soviet Union have a grand total of zero fatalities between them. Given the circumstances of Fukushima, this is more or less a worst-case result—and the plants remained safer to the public than a single coal plant, or even a gas plant. To put it bluntly, the worst nuclear plant in the USA is safer than the best natural gas plant in the world. Until the "alternatives" can actually provide the 24/7 energy supply that nuclear can (which will happen about the 43rd of never), their fossil-fired backup must be rolled in with their public risk. When this is done, nuclear is the safest option for the USA and the world. If the anti-nuclear forces actually cared about public safety they would stop harping on Pilgrim and go after fracking's exemption from the Clean Water Act, inadequate safety measures on ash dumps, and greenhouse gas emissions regardless of source.

comment #1643767 posted on 2016-01-26 09:41:32 by CaptD in response to comment #1643680

> Eng-P How about the multi-billion dollar failures of Nuclear? #SanOnofreGate The new hashtag about the ongoing investigation into the multi-billion $ SCE-CPUC ripoff.

comment #1643680 posted on 2016-01-25 14:52:22 by Engineer-Poet in response to comment #1643585

> *with options like windmills we don't even have to worry about any of this.*

Blistering cold and clear calm spells often follow winter snowstorms, and demand peaks at such times. Anything that fails to generate when it's needed the most isn't an "option", period.

comment #1643682 posted on 2016-01-25 15:00:18 by Engineer-Poet in response to comment #1643659

> It's ironic that the NRC made much out of putting Pilgrim on an improvement program, and some anti-nuclear activist interprets this as "The NRC shuts its eyes & ears". When the rhetoric is completely false to fact, you have to wonder just how much of a hold the speaker has on reality. But most interesting is this:

> *acts like 'climate change' is another Republican-corporate deniers fantasy*

Nuclear power generates 63% of the carbon-free electricity in the USA, and was responsible for ALL of the successful de-carbonizations of grids in Europe (France, Belgium and Sweden) compared to NONE for "renewables", yet Lillia Frantin blames NRC inaction for lack of movement on climate change? Another reality-free comment. If the USA grid was 78% nuclear like France's, the electric sector would not have a carbon problem (or an air-pollution problem). It was the "No Nukes!" activists who saved the coal industry from nuclearization. Congratulations, the paternity test shows that the climate change problem is YOUR baby!

comment #1643684 posted on 2016-01-25 15:23:17 by Dan Williamson in response to comment #1643587

> What did you have in mind? Limited access to the cafeteria....difficulties with employee parking? That sort of thing?

comment #1644316 posted on 2016-01-29 22:27:40 by steamshovel2002

> It's worse than you think. They go by a standard rate of loops per every one hundred years. I counted about 22 LOOPs in Pilgrim's history beginning in 1980. "Pilgrim's Astonishing Number Of LOOPs: NRC's Historical Record Of LOOPs in Nuclear Industry" http://steamshovel2002.blogspot.com/2015/01/pilgrims-astonishing-number-of-loops.html In the 100 year rate in Pilgrim, this comes out to at least 55 LOOPs per one hundred years. They average a LOOP every two years. The NRC says the average rate per reactor is about a LOOP once every 100 years. Conservatively they allow in all calculation of violation levels and safety analysis a rate of about 4 loops per 100 years. It's the standard rate of all plants put in safety calculating. Why doesn't the NRC force all plants to use their actual LOOP rates (not the standard generic rate). Why does the bad actors always get a free ride? The NRC allows Pilgrim to use 4 LOOPs in all risk calculations. Pilgrim uses a conservative rate (sarcasm) of about 6 LOOPs. The actual rate is about seventeen more frequent that what Pilgrim and NRC puts into their calculations. I call this fraud. What would Pilgrim's all past violations and safety analysis look like if the plant recalculated them in their actual rate of 55 LOOPs per 100 years? Would these recent violations be a yellow or red findings not white? As in Fukushima, you're got to go into a LOOP to get to a meltdown and subsequence off site radiation dose. I talked about this to senior NRC officials and they all blew me off? Mike Mulligan Hinsdale, NH

Plainly Telling the Public about Our Environmental Reviews

posted on Tue, 26 Jan 2016 15:26:18 +0000

Tomeka Terry, Project Manager Office of New Reactors The NRC feels it's important to write our documents so that all readers can understand them. We've previously discussed writing in plain English and acronym use. The agency's made extra effort to write plainly in its documents most read by the public, and to reduce the use of acronyms when we can. We use many tools to inform the public about who we are and what we do. Our work is technical and some documents must meet legal standards, but we still want people to understand as much as possible. So we went a step further—creating a new tool to improve understanding and reduce reading effort. Environmental impact statements help the NRC decide whether to approve projects, such as licensing the building and operating of a nuclear power plant. Each environmental impact statement for a new reactor will now include a "Reader's Guide" with a simple, short overview of the statement. The Reader's Guide summarizes the project's potential environmental impacts. It also describes alternatives and ways to reduce the effects the project would have on the environment. We've also included an overview of the NRC's new reactor licensing process and opportunities for public participation in the Reader's Guide. The brochure format makes understanding the environmental impact statement easier. Most NRC environmental impact statements average 1500 pages, while the Reader's Guide gives an overview in about 40 pages. The Reader's Guide also helps us conserve resources. When we send our documents to the public, we can now print a short document and include the full environmental impact statement on an enclosed CD. Two recent Reader's Guides cover a draft environmental impact statement for a proposed new reactor in Pennsylvania and a final environmental impact statement for a site in New Jersey.

Comments

comment #1646299 posted on 2016-02-18 03:06:59 by Rabby

> It's a good idea. I think that so many documents for public consultation are actually impossible to read unless you work with these kinds of issues - which means the point of a public consultation is missed. So plain English is needed. Thanks for making these developments and I hope it will encourage more people to be involved in the processes that are most important to them.

comment #1643844 posted on 2016-01-26 21:24:27 by Engineer-Poet in response to comment #1643780

> *The biggest environmental issue, though, for each review is the waste. Without a REAL solution being used for the waste, no plant is environmentally sound.*

Then you'll be happy to know that the actual waste, as in fission products, is steadily disappearing without any help from anyone. It's the source of the heat that must be dissipated from cooling pools and dry casks. In about 300 years (much less than the toxic lifespan of landfills from the Roman republic!) spent fuel is so well-cooled that it can be handled for minutes or hours with nothing more than gloves.

> *We can no longer have this situation without some commitment to recycling the waste.*

GE-Hitachi is trying to do something with the remaining uranium and higher actinides. There is a deal in the works to build two S-PRISM units in the UK to dispose of their stockpile of reclaimed plutonium and turn it into energy.

> *could we really endure Diablo melting down as #fuqafukushima number 2 into our Pacific?*

Diablo Canyon has PWRs, not BWRs. It lies well above any possible tsunami.

> *Besides, what would happen to our wines in that region?*

Have you ever gone to Alamagordo? There are some tasty wines made there, atomic-bomb fallout notwithstanding. When I went there I brought a couple cases home.

comment #1643780 posted on 2016-01-26 11:21:48 by Nikohl Vandel

> Thank you, as a new person in the nuclear discussion, the NRC is always trying to help make it easy to understand. The biggest environmental issue, though, for each review is the waste. Without a REAL solution being used for the waste, no plant is environmentally sound. At least I have learned here on earth, when the garbage backs up we have serious problems everywhere. We can no longer have this situation without some commitment to recycling the waste. Speaking of environmental review, maybe I'm wrong, yet I still see a Fukushima style plant sitting on the earthquake faults on the coast here in California and, you know, could we really endure Diablo melting down as #fuqafukushima number 2 into our Pacific? Besides, what would happen to our wines in that region?

comment #1645641 posted on 2016-02-10 07:31:39 by

> What a Crock!

Throwback Thursday – The Smithsonian Welcome Center and the NRC

posted on Thu, 28 Jan 2016 16:12:05 +0000

 Seen here, under construction, is the now-open Welcome Center at the Smithsonian's National Museum of American History. It is named for a previous NRC Chairman and his wife. Question: What is the name of the Chairman?

Photo courtesy of the Smithsonian Institution

Comments

comment #1644059 posted on 2016-01-28 11:17:49 by

Ivan Selin

comment #1644062 posted on 2016-01-28 12:25:23 by John Coupal

Ivan Selin

comment #1644065 posted on 2016-01-28 12:42:12 by Moderator in response to comment #1644062

Yes, you are both correct. A donation from Nina and Ivan Selin made the center possible. Selin was NRC Chairman from 1991 to 1995. More information is here: http://americanhistory.si.edu/press/releases/national-museum-american-history-will-open-nov-21

Crossing the Finish Line at Watts Bar

posted on Tue, 02 Feb 2016 13:46:07 +0000

Joey Ledford Public Affairs Officer Region II Watts Bar Unit 2, the nation's first new commercial nuclear unit in a generation, received its NRC operating license last October and is closing in on its first nuclear chain reaction. (Power production is still a ways off.) The NRC is still on the job as the staff transitions to operational inspection duties. [caption id="attachment_6889" align="alignright" width="386"]

An NRC inspector looks on as TVA workers install components at Watts Bar Unit 2. [/caption] The agency's Region II-based construction inspection staff, supplemented by headquarters staff, have booked more than 127,000 hours making sure the new unit has been built according to its design specifications. More than 350 agency inspectors and other staff have been involved in the inspection and project management effort, which geared up in earnest in 2008 when the Tennessee Valley Authority committed to completing the unit it had initially started building in 1973 and later suspended. The Watts Bar plant, located about 50 miles northeast of Chattanooga, Tenn., has a unique history. Unit 1, which also traces its roots to 1973, was the last U.S. plant to come on line when it was finally licensed in 1996 after a similarly lengthy construction hiatus. When work resumed on Unit 2, the NRC recalled a handful of staffers who had been involved in inspecting work on the sister unit to ensure "knowledge transfer." "Our goal is to verify the design is accurate," said James Baptist, who was a team leader for several years during Watts Bar 2 construction and has recently become chief of the Region II branch overseeing the transition from construction to operation. "We want to ensure Unit 2 looks and operates just like Unit 1. It greatly assists the effort when you have a working model right beside you." As is the case with most NRC inspection efforts, the corps of construction resident inspectors led the way, reporting to the site daily and amassing a big percentage of those 127,000 hours. "Everything came through the residents in terms of what was going on at the site," said Chris Even, who recently transitioned from senior construction project manager to senior project inspector in the new branch overseeing the transition. "We always relied on the residents for knowing exactly what was going on." The workload was huge from the beginning, with more than 550 construction inspection items to be inspected and closed. And Baptist noted that even though the plant was designed in the 1970s, it's built to today's standards. "They purposely built Unit 2 to be a mirror image of Unit 1 while including all the updated safety enhancements that have accrued over the last 25 or 30 years," he said. For example, Watts Bar is the first plant in the nation to comply with all the NRC's post- Fukushima upgrades as well as the newest cybersecurity requirements. One might think that with the license issued and the plant about to start up that the NRC inspection effort would be winding down. Baptist said that is not the case. "We still have our foot on the gas," he said. Just as the NRC inspectors were dedicated to make sure Watts Bar Unit 2 was constructed and tested according to the design and NRC regulatory requirements, they will continue to maintain that vigilance as the plant begins and continues to operate.

Comments

comment #1644898 posted on 2016-02-04 09:13:38 by Engineer-Poet in response to comment #1644696

> It will be interesting to see if the "greens" will acknowledge that Watts Bar 2 will produce electricity even when there is no sun shining and no wind blowing, making its production far cheaper than anything stored up from unreliable sources. The value of Watts Bar 2 is enormous. The costliest kilowatt-hour is the one you need and don't have. Humanity learned thousands of years ago that the wind and the sun will not deliver when needed, and then learned that "renewable" wood could not renew itself fast enough. This is the only reason why people tolerated the difficulty and pollution of coal, oil and gas. Nuclear is better by all measures. The anti-nuclear movement has been doing the fossil fuel industry's work for 50 years, keeping first coal miners and now gas frackers in business. They show no sign of stopping. They are anti-environment.

comment #1644696 posted on 2016-02-02 11:44:38 by CaptD

> It will be interesting to see what the price of energy from Watts Bar Unit 2 is as compared to Renewables (Wind & Solar) when it first comes on line, then 5, 10, 20 and 30 years from now, as the cost of ever lower Renewables sinks in.

NRC Finishes Review of Vermont Yankee Decommissioning Planning Report

posted on Thu, 04 Feb 2016 13:48:05 +0000

Neil Sheehan Public Affairs Officer Region I More of a marathon than a sprint, the decommissioning of a nuclear power plant can in some cases take

decades. But central to the successful completion of that process is careful planning and vigilant oversight. In December of 2014, the Vermont Yankee nuclear power plant embarked on that phase of its life after being permanently shut down. As required by the NRC, Entergy, the plant's owner, submitted a Post-Shutdown Decommissioning Activities Report, or PSDAR, on Dec. 19, 2014. What exactly is a PSDAR? It is a report designed to provide the NRC and public with a general overview of the company's proposed decommissioning activities. The report includes estimated costs for decommissioning and an affirmation that the decommissioning can be completed consistent with the site's environmental statement. Since the PSDAR only provides information and is not a federal action, it does not require NRC approval. However, the agency does review such submittals to confirm they meet regulatory requirements. Besides performing an evaluation of the nuts-and-bolts aspects of the decommissioning plans, the NRC staff also reviewed public comments regarding the report. Along those lines, the agency held a public meeting on Feb. 19, 2015, in Brattleboro, Vt., for the purpose of receiving comments. Those remarks and others submitted separately in writing were all considered as the report was being prepared. The NRC staff has now completed its review of the report and has determined the planned decommissioning activities, schedules and other information described in it are consistent with the agency's requirements in this area. A copy of the NRC's letter to Entergy regarding the PSDAR review results will be made available in the agency's electronic documents system, ADAMS. Also on the topic of Vermont Yankee's decommissioning, as of Feb. 1, 2016, the responsibility for Vermont Yankee has been transferred within the NRC from the office responsible for operating reactors to the office responsible for decommissioning nuclear power plants. Going forward, the Office of Nuclear Material Safety and Safeguards' Division of Decommissioning, Uranium Recovery and Waste Programs will oversee licensing activities involving Vermont Yankee. The NRC will continue to perform inspections at Vermont Yankee, with the intention of being on-site anytime a major activity is taking place.

Comments

comment #1645508 posted on 2016-02-09 05:29:28 by Engineer-Poet in response to comment #1645214

> *Now Vermont Yankee joins a host of nuke plants that have entered decommissioning without the NRC having a rule in place.*

A number of nuke plants have FINISHED decommissioning, some of them to greenfield status. It makes you wonder why the NRC needs new rules.

> *Of course burners emit pollutants into the air, but so do nuke plants.*

You can't get away with such blatant falsehoods here. Nuke plants are restricted to radioactive emissions levels far below the tramp uranium and decay products that come out the stacks of coal plants. Natural gas from the Marcellus is chock-full of radon.

> *Difference is you cannot see all the deadly radioactive stuff that is constantly dumped on the public by nukes*

If it existed you could measure it with a dosimeter. It doesn't. Nuclear plants have radiation monitors at the plant fence. It's so ironic that you obsess over every trivial event at a nuclear plant, while ignoring the extensive monitoring of every detail that allows such events to be detected and reported in the first place.

> *But the collected fly & bottom ash from coal-burners is properly handled and disposed of and does not pile up all over the place.*

Not piling up all over the place? You wish. You can't get away with ignoring the large, multiple seeps from and major failures of coal-ash dumps in North Carolina and Tennessee, to name just two. Arsenic, lead, mercury... they never decay. They are poisonous forever. I'd just LOVE to see a requirement that the emissions from coal and natural gas plants be captured and sealed up in stainless steel just like spent nuclear fuel. The USA would have to dump all the gas backups for your "renewables" along with most of the "renewables" themselves. We would quickly have a grid with nuclear, hydro, a bit of geothermal and not much else. Or maybe not geothermal; it brings up a lot of radium which deposits as scale in pipes, so-called NORM (Naturally Occurring Radioactive Material).

> *The much more dangerous high level radioactive waste sits in overloaded open spent fuel pools*

They can't be loaded any more than the NRC allows, and the NRC loading is calculated to be safe.

> *This of course makes all these pools tempting terrorist targets.*

Sealed in metal pins, inside an alignment grid, under ten meters of water which requires a (rather slow) crane to pull them out of, inside a closed building, on a site defended by armed guards, behind fences... yes, those targets are SO much more attractive compared to nightclubs and sports events. If you're a complete fool. Which is why no terrorist plot against one has ever been discovered. The "tempting terrorist target" canard has been rattling around the anti-nuke echo chamber for years. There's not a single shred of evidence to support it, but that doesn't stop you from repeating it ad nauseam.

comment #1645411 posted on 2016-02-08 09:12:09 by Half-TruthSlayer in response to comment #1645214

> Nice try Gmax. Of course burners emit pollutants into the air, but so do nuke plants. Difference is you cannot see all the deadly radioactive stuff that is constantly dumped on the public by nukes & not just under accident or upset conditions but 24/7. But the collected fly & bottom ash from coal-

burners is properly handled and disposed of and does not pile up all over the place. Not so with nuke waste. The much more dangerous high level radioactive waste sits in overloaded open spent fuel pools in over 90 locations across our country. This of course makes all these pools tempting terrorist targets.

comment #1644903 posted on 2016-02-04 09:43:46 by Half-TruthSlayer

It is so interesting that the NRC concludes that the "info" Entergy provided meets requirements when the NRC still has not issued its decommissioning rule. Now Vermont Yankee joins a host of nuke plants that have entered decommissioning without the NRC having a rule in place. Makes you wonder why continue the rule-making process, what a waste?! Speaking of waste, it is like what to do with all the high level radioactive spent fuel waste that is piling up at over 93 different nuclear sites in the US, many near large population centers. No other energy industry is allowed to operate without provisions for the safe handling & permanent disposal of all dangerous byproducts. The NRC is not a public safety watchdog they are a nuke industry lapdog!

comment #1644900 posted on 2016-02-04 09:38:59 by Engineer-Poet

The decommissioning of Vermont Yankee is a crime against humanity. Shutting down the reactor led directly to the replacement of its output, not by "renewables", but by natural gas. This comes at the cost of millions of tons of CO_2 emissions per year. The social cost of CO_2 emissions has been estimated at $220/ton. If the USA's nuclear plants were compensated even half of this for their avoided emissions, not one would be at risk of shutting down due to poor market conditions.

comment #1644895 posted on 2016-02-04 09:02:45 by Nikohl Vandel

One by one, thanks to so many advancements , these old plants need to shut down sooner rather than later. Let's get Diablo Canyon shut down next, we really don't need another Fukushima! #ClimateAction

comment #1644913 posted on 2016-02-04 11:21:37 by CaptD

I hope that they are not going to get to use inferior Waste casks like SCE is trying to do at San Onofre. It is past time for the NRC to tighten up its requirements for Waste storage, so that future generations don't get stuck having to pay for re-handling ☢ waste so that Utilities can profit today.

comment #1644907 posted on 2016-02-04 10:28:56 by John J. Coupal, Ph.D.

With nations around the world - including China - ramping up the building of power nuclear reactors, what do the people in those countries know that the United States - and its citizens - evidently do not?

comment #1645033 posted on 2016-02-05 05:42:47 by Engineer-Poet in response to comment #1644913

"Inferior" (dry spent fuel storage) casks? Inferior how? What's the docket number of the application for this? Let's see if this exists anywhere except in your imagination.

comment #1645093 posted on 2016-02-05 13:36:35 by Engineer-Poet in response to comment #1644907

China doesn't have its fossil-fuel companies hijacking the Chinese national interest and blocking nuclear power. The United States does.

comment #1645112 posted on 2016-02-05 17:38:01 by Half-TruthSlayer in response to comment #1644895

So true. I am tempted to respond in kind to another comment made by an engineer who thinks he is a poet. But I won't. Suffice it to say that some comments make neither rhyme nor reason!

comment #1645214 posted on 2016-02-06 15:43:38 by Gmax137 in response to comment #1644903

" No other energy industry is allowed to operate without provisions for the safe handling & permanent disposal of all dangerous byproducts...". You're joking, right? The coal & gas burners spew their waste directly into the atmosphere, killing thousands of people every year.

comment #1645443 posted on 2016-02-08 13:09:28 by Moderator in response to comment #1644903

Thank you for your comments You are correct that the NRC has begun work on new regulations in the area of decommissioning. The agency announced the start of that process in November. Because of the many steps involved with developing new federal regulations, involving the receipt and consideration of public comments, the Commission isn’t expected to complete the development of those new requirements until sometime in 2019. In light of the increase in the number of decommissioning plants, the NRC has determined the regulation changes are well worth the investment of effort at this time. That said, there are already in place clearly articulated requirements as to how decommissioning activities should proceed. One of those steps is the review of a Post-Shutdown Decommissioning Activities Report (PSDAR) for each permanently shutdown nuclear power plant, the step the NRC staff has now finished. As for the spent nuclear fuel at each decommissioned plant, the NRC’s focus is on ensuring that the storage of the materials continues to be safely carried out, whether the fuel is in the spent fuel pool or dry cask storage. Each owner of a decommissioned plant must also develop a long-term plan for the management of its spent fuel. Vermont Yankee’s owner has done that and the NRC staff has reviewed the plan and found it to be acceptable. Neil Sheehan

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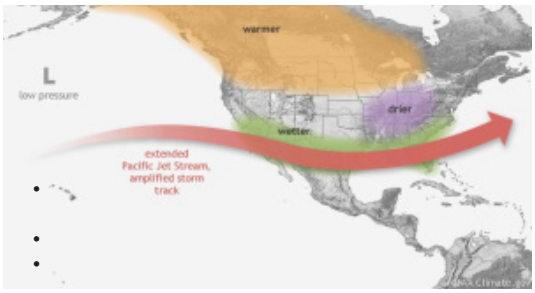
El Nino and NRC Preparedness

posted on Tue, 09 Feb 2016 17:03:59 +0000

F. Paul Peduzzi Branch Chief Division of Preparedness and Response El Niño is already making itself felt along the West Coast. This phenomenon occurs every two



to seven years. It warms sea surface temperatures in the eastern-central Pacific Ocean, shifting average sea level pressure and tropical rainfall in dramatic fashion, and leading to weather pattern changes over parts of the northern and southern hemispheres. Forecasters expect this year's El Niño to be one of the strongest ever, based on changes in the sea surface temperatures of the Pacific. No two El Niño's are exactly alike, but the pattern generally has these effects:

Increased rain and snow across California and the southern United States, with less in the Pacific Northwest and in the Ohio and Tennessee valleys
Milder than normal winter across the northern United States
More hurricanes than normal in the eastern Pacific and fewer in the Atlantic during hurricane season (June 1 – November 30)

The NRC is alert to potential impacts on our licensees. Facilities such as nuclear power plants are designed to withstand much more severe weather than El Niño typically brings. Nuclear power plants are designed and built to withstand the most severe weather and floods historically reported for their area. Several plants experienced strong El Niño weather patterns in the '80s and '90s with no major problems. Following the Fukushima events in Japan in 2011, the plants have enhanced their ability to deal with major floods. For example, additional portable safety equipment, such as pumps and generators, is now available both onsite and offsite. However, El Niño's storms could block roadways, making it difficult for plant staff to get to the site and impeding public evacuation routes. Plant operators can use other transportation means to get staff and equipment to the site, if needed. And emergency plans have provisions to clear evacuation routes or use alternate routes. These provisions have been tested before, such as during the Missouri River flooding of 2011 The bottom line? California may be unusually soggy this winter, but the NRC does not expect the current El Niño to cause any safety issues for the nation's nuclear power plants. As always, we remain vigilant and continue to work with other federal agencies on emergency preparedness and incident response, just in case.

Comments

comment #1645775 posted on 2016-02-11 16:54:46 by Engineer-Poet in response to comment #1645566

> *I'm sorry to say, Engineer-Poet, that YOU have been misinformed*

Yet when I bring up specifics with references, you can't tell me how you're right and I'm wrong.

> *I will not try to further enlighten you*

I'll just hammer on you with facts, then. It's not very hard and it's fun.

> *beyond the FACTS that I gave you when you asked for specifics.*

Your claims of fact turned out not to support the FUD you're pushing, either because they aren't facts or they don't mean what you imply they mean.

> *I would suggest that you might look at the websites I suggested and to which I might add: the Union of Concerned Scientists, Fairewinds, Jones River Watership Association, Association to Preserve Cape Cod, Sierra Club, Pilgrim Watch, NIRS*

Sierra Club is an interesting case. Did you know that it was originally formed to stop hydro projects from flooding pristine wild landscapes, and its motto was "Atoms Not Dams"? It also originally supported ZPG, to protect nature from human encroachment. Somehow, both of those positions have been reversed! There was a fight for control of the board, environmentalists against a group which didn't want to alienate the SC's big donors. One donor, David Gelbaum, is known to have said that if the SC ever opposes immigration it will not see another cent from him. Does that sound like a principled environmentalist position? Do you think that the SC's reversal on nuclear power isn't also bought and paid for? The rest of them are just propaganda organizations. UCS: formed out of the Vietnam war protest movement. Its founders weren't bright enough to distinguish between nuclear weapons (designed to go boom) and nuclear reactors (designed to be impossible to go boom) and is infamous for using cherry-picked sections of papers. Fairewinds: an anti-nuclear propaganda organization run by Arnie Gundersen, whose "reactor operator license" is for a research reactor at RPI with an output power of 100 watts. He makes claims without evidence and stands by them even when they are proven false, such as his assertion that the Unit 4 fuel pool at Fukushima went dry (it never got close). Jones River Watership Association: no expertise in technical matters. Its homepage says it was formed to protect against water diversions from the watershed, which has nothing to do with Pilgrim or any other nuclear plant. Under "Projects -> Ecology" it lists "Climate Change" and "Unplug Pilgrim", which are totally contradictory—nuclear energy generates 63% of the carbon-free electric power in the USA, and every lost reactor adds directly to the emissions of greenhouse gases. None of the staff or boards of directors appear to have any technical expertise. Under "Friends and Allies" is listed "WindSun Institute", a private organization. Now, who would be interested in badmouthing nuclear power in order to sell their own product, especially by driving up retail prices to make themselves more competitive? Pilgrim Watch and NIRS: the first is obvious, and NIRS explicitly states it is for a nuclear-free planet; no pretense of even-handedness for either one. I wouldn't buy a used car from any of those people or organizations, let alone allow them to dictate my energy policy. The people who want to shut down 63% of the USA's carbon-free electricity, and make it effectively impossible to fully de-carbonize energy (natural gas is the "bridge fuel" with no end to the bridge), are tools of the fossil fuel industry. Fossil fuel interests are the only ones who benefit from their activities. Anyone taking their information from such sources is a tool of the money people behind them. I hope for your sake you're getting paid for your "work" here; I'm not.

comment #1645787 posted on 2016-02-11 19:21:02 by Engineer-Poet in response to comment #1645566

> By the way, the natural background level of tritium measured in Vienna in 1966 appears to be about 60 pCi/liter (I'll let you do your own unit conversions). You could take all the "contaminated" groundwater at Pilgrim and just dump it into the ocean, and nobody would be able to tell the difference.

comment #1645540 posted on 2016-02-09 13:44:06 by CaptD

Fukushima reminds us that Nature can destroy any land based nuclear reactor, any place anytime 24/7. It is just a matter of how and when, that is what the NRC refuses to accept, which is exactly the same mistake the Japanese made, thinking that they could "out engineer" Nature.

comment #1645541 posted on 2016-02-09 13:54:14 by CaptD in response to comment #1645527

Drbillcorcoran - Good Comment. The Root Cause is Corp. Greed and even though almost all, if not all, expenses related to operating a nuclear power plant are borne by ratepayers, the Utilities that operate them fight every safety related expense as unnecessary! If the USA passed a Law requiring the Decommissioning of all nuclear reactors is any of them had a nuclear accident, then we would see the Nuclear Industry get interested in Safety fast. Until that happens or there is a BAD accident, the industry will continue to give lip service to Safety while squeezing as much profit out of their reactors as possible, because they are in business to make MONEY.

comment #1645542 posted on 2016-02-09 14:00:08 by Janet Azarovitz

The arrogance and the spouting of so many untruths exhibited by the NRC is mind blowing. The lessons learned and supposed implementation of extra safeguards is almost laughable. Evidenced by the installation of an untested Rube Goldberg device, generators in ground level sheds with keys to the bobcat to get them in place many yards away, any one with any sense shakes their head in disbelief that this agency is mandated to keep us safe.

comment #1645545 posted on 2016-02-09 14:14:02 by Moderator in response to comment #1645527

The NRC's 2011 senior manager task force reviewing the information from Fukushima (http://pbadupws.nrc.gov/docs/ML1118/ML111861807.pdf) concluded that U.S. reactors were safe for continued operation. The NRC's efforts since Fukushima have enhanced U.S. reactor safety measures above that acceptable level. Scott Burnell

comment #1645546 posted on 2016-02-09 14:15:20 by in response to comment #1645541

Absolute correct.

comment #1645550 posted on 2016-02-09 14:54:14 by Dan Williamson in response to comment #1645527

"thoughtful inquiry"? If the designers / builders of Fukushima Daiichi had taken the prudent engineering expedient of putting their emergency electrical supplies in hardened, flood-proof buildings.....like all US plants are designed.....we would never have heard of the place. Daiichi and her neighboring units rode out a record-breaking earthquake just fine. It was an extended station blackout that was their undoing. So, to address an egregious design error in Japan, we now have US plants in the middle of the desert ramping up for tsunamis, and plants with no active geologic faults within hundreds of miles hunkered down waiting on Mr. Richter to strike. All to the tune of a conservatively-estimated $4 billion bill to the US consumer.

comment #1645527 posted on 2016-02-09 12:39:01 by drbillcorcoran

What was necessary after Fukushima was necessary before Fukushima. How come it took Fukushima to prompt the post-Fukushima upgrades at other plants worldwide? What were the harmful conditions, behaviors, actions, and inactions that resulted in its taking Fukushima to prompt the post-Fukushima upgrades at other plants worldwide?

comment #1645555 posted on 2016-02-09 15:50:16 by drbillcorcoran in response to comment #1645545

Scott, I was really hoping for answers. My questions were: How come it took Fukushima to prompt the post-Fukushima upgrades at other plants worldwide? What were the harmful conditions, behaviors, actions, and inactions that resulted in its taking Fukushima to prompt the post-Fukushima upgrades at other plants worldwide?

comment #1645556 posted on 2016-02-09 15:51:34 by drbillcorcoran

• Embarrassment of Oversight An inescapable fact is that when an oversight agency has been embarrassed by the revelation of outrageous incompetence, lack of integrity, noncompliance, and/or lack of transparency by one overseen entity all similar overseen entities are punished in some way by the same and similar oversight agencies .

comment #1645566 posted on 2016-02-09 17:13:08 by Engineer-Poet in response to comment #1645542

Care to list a few, with specific cites showing how the NRC is wrong?

comment #1645567 posted on 2016-02-09 17:16:02 by Engineer-Poet in response to comment #1645540

Nature didn't destroy Fukushima Dai'ichi (a series of bad decisions about the height of the construction site, height of seawall, and siting of diesel generators and their fuel did), and both Fukushima Dai'ini and Onagawa came through similar or worse beatings without making the news. Meanwhile, paranoia like yours got Germany to shut down a whole heap of nuclear plants (someone's afraid of tsunamis on the Danube, I guess) and made the country safe for lignite. Nice going there.

comment #1645752 posted on 2016-02-11 12:21:54 by Janet Azarovitz in response to comment #1645566

I'm sorry to say, Engineer-Poet, that YOU have been misinformed and I will not try to further enlighten you beyond the FACTS that I gave you when you asked for specifics. I would suggest that you might look at the websites I suggested and to which I might add: the Union of Concerned Scientists, Fairewinds, Jones River Watership Association, Association to Preserve Cape Cod, Sierra Club, Pilgrim Watch, NIRS, among many others.

comment #1645660 posted on 2016-02-10 11:01:04 by janet azarovitz in response to comment #1645566

The list is so long for one plant in particular, the Pilgrim Nuclear Power Station which is less than 30 miles from where I live on Cape Cod in Massachusetts. A place that is in many respects an island, connected to the mainland by two bridges which would be closed to residents and visitors,

> (numbering over 400,000 in the summer) in order that those living within an arbitrarily designated epz are able to evacuate in the event of an accident at Pilgrim.....identical in design to Fukushima Daiichi. The history of events at this 43 year old reactor plant goes back to the earliest years of its operation so I will mention the more recent ones that has placed it at the lowest level of safe operation in the U.S. based on numerous forced shutdowns and equipment failures, and is a category just one step above mandatory shutdown by federal regulators. By changing the rules, the NRC, mandated to keep us safe, has allowed the Entergy corporation to profit through years of flashovers in the switchyard occurring because of its vulnerable location caused by salt deposits as well as icing during the severe storm with windpacked snow during blizzard conditions. The Fukushima catastrophe happened because of a loss of offsite power and Pilgrim losing power has been proven to be just as vulnerable. To continue, the fact is that there is leaking tritium and though Pilgrim sits on top of the aquifer it still operates, PNPS has an overloaded spent fuel pool because it's cheaper than putting in safer dry cask storage, a 24/7 firewatch in control room ordered because of inattention and disregard of a 1992 federal advisory , a two year long malfunctioning of meteorological towers on reactor site, a “Rube Goldberg” design to address a beyond design flooding which could disable the plant cooling systems, proven climate change conditions which raised the waters from Cape Cod Bay that are used to cool the reactor and necessitated shut down (Entergy now looking to raise the EPA temperature baseline to counter known patterns that are happening with climate change thereby continuance of operation), pump failure leading to lowering water levels, operation of the plant for 19 years without Clean Water Act permit. The list goes on and should include the environmental damage that has killed millions of fish and larval forms of life. Time and again, the Pilgrim Nuclear Power Station has been given repeated chances by the NRC to bring the plant up to levels of safe operation. It has failed to do so. Citizens are aware of this and in 2013 all 15 towns on Cape Cod voted to support a ballot question that called on Governor Patrick to call upon the NRC to shut Pilgrim down. Along with thousands of residents through environmental and grass roots organizations asking that this be done, the plant is still in operation and now, only because it is no longer considered as profitably viable, the corporation says it will be shut down by 2019. It should have been decommissioned at the end of it’s planned existence back in 2012. The NRC worked hand in hand with the corporation, so it is still limping along and producing money for their coffers. There is data to support all the above at PilgrimCoalition.org and the CapeCodBayWatch.org

comment #1645621 posted on 2016-02-10 05:42:02 by drbillcorcoran in response to comment #1645545

> The non-answer is a nonresponsive reply to a question. A non-answer can take the form of “I already told you the answer”, the form of an answer to a different question, or the form of an evasion. A non-answer is slick and sleazy. It turns the stomach. A non-answer is like the tarpaulin over the pick-up truck cargo bed on the way to the landfill; it covers everything required by law and conceals the trash and filth. Non-answers are a form of bullying. They make use of a position of power to stiff-arm the concerned questioner. They exploit asymmetric relationships. Non-answers are a form of intellectual corruption. They impede honest dialogue. They are dismissively disrespectful of due process. Historically, non-answers have been used by intellectually corrupt regimes to create a chilling effect on honest dissent. Once an organization perceives that it has used the non-answer to avoid admitting prior incompetence, lack of integrity, noncompliance, and/or lack of transparency, a precedent has been set. The non-answer becomes an accepted way of life, a part of the intellectually corrupt culture that pervades the agency. When management accepts non-answers to stakeholders it provides a convenient way to evade accountability. Once the agency accepts non-answers to its critics it begins to accept non-answers from those it oversees. What were the roles of non-answers in agency embarrassing shortfalls such as the Callaway Xenon Shutdown, the Peach Bottom Sleeping Guards and the Davis-Besse 2002 Imprudent Extension? Non-answers erode public confidence in the fundamental technologies. By not expressing outrage at non-answers to stakeholders the industries are driving nails into their own coffins.

comment #1645637 posted on 2016-02-10 07:21:55 by Dan Williamson in response to comment #1645545

> Don't bother, Mr. Burnell. Those aren't "questions." They're vague, open-ended rhetorical grenades lobbed in from the grandstands. You could write a novella in response to each, and they would be dismissed out-of-hand over some perceived lack of specificity and forthrightness. Resist the call to fall on your sword.

comment #1645682 posted on 2016-02-10 20:09:52 by Engineer-Poet in response to comment #1645566

> *[The NRC] has allowed the Entergy corporation to profit through years of flashovers in the switchyard occurring because of its vulnerable location caused by salt deposits as well as icing during the severe storm with windpacked snow during blizzard conditions.*

I'm not getting your objection here. This is something that affects the *switchyard*. Any plant on that site would have the same things happening. It has nothing whatsoever to do with the nuclear section. Why the fear?

> *The Fukushima catastrophe happened because of a loss of offsite power and Pilgrim losing power has been proven to be just as vulnerable.*

Not quite. Fukushima had a total station blackout that lasted HOURS before any damage occurred. How long does it take to clear a salt-induced flashover short at Pilgrim? I'm thinking, worse comes to worst, the interruptors are opened and someone goes out with a water or hot glycol spray like they use to de-ice airliners and washes the insulators down, and the outside power is back up in half an hour. Pilgrim is not in an area subject to tsunamis, and its diesel generators are more than capable of keeping the reactor cool until outside power returns.

> *To continue, the fact is that there is leaking tritium and though Pilgrim sits on top of the aquifer it still operates*

I actually dug through that a couple days ago. The number quoted is "8 million pCi/liter", which sounds so much bigger than "8 micro-curies per liter" which it's equivalent to. (A picocurie is about 2.2 disintegrations per minute. Your body contains about 120,000 picocuries of potassium-40 alone; you literally cannot live without potassium.) So. 8 µCi/liter of tritium. Do you know how much tritium is in a typical radioluminescent "EXIT" sign? About 25 curies; that is 25 MILLION micro-curies. One sign contains as much tritium as a volume of "highly radioactive" leak-water ten meters square by 30 meters high. You probably go past such radioactive signs all the time, in businesses and such. Why aren't you afraid of *them*? Because they're "approved"?

> *PNPS has an overloaded spent fuel pool because it’s cheaper than putting in safer dry cask storage*

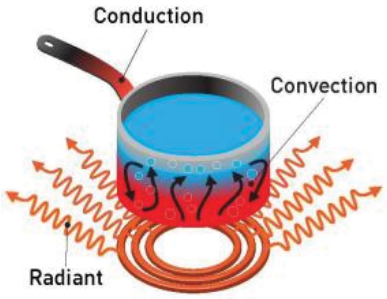
So on the one hand you say that the NRC isn't competent to rule that the spent-fuel pool loading is safe, but on the other hand you say the NRC's word on the safety of Pilgrim and its ranking among US plants is unquestionable (not to mention its approval of radioactive EXIT signs). Well, which is it? Is the NRC incompetent or the ultimate authority? Is there ANYTHING you say that doesn't boil down to "nukes bad!"? If you dig into these things you come to the conclusion that all of the FUD (fear, uncertainty and doubt) is completely unjustified. It has been whipped up by a

decades-long propaganda campaign. I don't know whether you're a knowing part of it or just a dupe, but regardless, you're a perfect parrot for the interests behind it.

Dry Casks 101: Managing Heat

posted on Thu, 11 Feb 2016 13:44:34 +0000

Caylee Johanson Mechanical Engineer In this series we've been talking about storing spent nuclear fuel in dry casks. One major function of these casks is to cool the fuel. Keeping the spent fuel from getting too hot is one way to ensure casks will be safe. As the fuel cools, heat is transferred from inside the cask to the outside. Our experts look at how the cask will perform this function. We require the cask and fuel to remain within a certain temperature range. Our review looks at four main areas: Spent fuel releases heat as a result of its radioactive decay. This is called decay heat. A key function of dry storage casks is to move the decay heat from the cask to the outside environment to ensure the fuel and cask components do not get too hot. Our experts look at how that heat will move through the cask and into the environment. The method used to remove heat has to be reliable and provable. Heat must also be removed in a way that is passive—meaning no electrical power or mechanical device is needed. Casks use conduction, convection and radiation to transfer the heat to the outside. The graphic shows the three heat transfer methods. As you can see, conduction transfers heat from the burner through the pot to the handle. The process of heat rising (and cold falling) is known as convection. And the heat you feel coming off a radiator, or a hot stove, is known as radiant heat. These methods work the same way in a storage cask. Where the canister or metal structure containing the fuel touches the fuel assemblies, heat is conducted toward the outside of the cask. Most casks have vents that allow outside air to flow naturally into the cask (but not into the canister) and cool the canister containing the fuel (convection). And most casks would be warm from radiant heat if you stood next to them. (The heat generated by a loaded spent fuel cask is typically less than is given off by a home-heating system.) We limit how hot the cask components and fuel materials can get because we want to protect the cladding, or the metal tube that holds the fuel pellets. Limiting the heat is one important way we can ensure the cladding doesn't degrade. The cask must keep spent fuel cladding below 752 degrees Fahrenheit during normal storage conditions—a limit that, based on the material properties of the cladding, will prevent it from degrading. The fuel must also remain below 1058 degrees in off-normal or accident conditions (such as if a cask were dropped while it is being positioned on the storage pad, or if a flood or snow were to block the vents). We also confirm the pressure inside is below the design limit to make sure the pressure won't impact the structure or operations. Our experts review applications for new cask designs carefully to verify the fuel cladding and cask component temperatures and the internal pressure will remain below specified limits. Each storage cask is designed to withstand the effects from a certain amount of heat. This amount is called the heat load. We look at whether the designer correctly considered how the heat load will affect cask component and fuel temperatures. We review how this heat load was calculated. We also verify that the cask designer looked at all the environmental conditions that can be expected because these will also affect the cask component and fuel temperatures. These may include wind speed and direction, temperature extremes, and a site's elevation (which can affect internal pressure). To make sure the right values are considered, we verify they match the historical records for a site or region. We review all of the methods used to prove that the storage system can handle the specified heat loads. We also verify any computer codes used in the analysis and the values that were plugged in. For example, we look at the material properties for cask components used in the code. We look at calculations for temperatures and pressure. We make sure the computer codes are the latest versions. And we only allow designers to use codes that have been endorsed by experts. We might run our own analysis using a different computer code to see if our results match the application. The analysis and review allow us to see whether and how the dry cask will meet the temperature limits. Our review ensures the temperature is maintained and the cladding is protected. Finally, our review confirms the cask designer used acceptable methods to analyze or test the system and evaluate the thermal design. If we have any questions or concerns, we ask the designer for more information. Only when we are satisfied that our requirements are met will we approve the thermal analysis in a cask application.



Comments

comment #1645801 posted on 2016-02-11 20:22:02 by Engineer-Poet in response to comment #1645770

> *At Fukushima, one of the casks was opened and they determined the aluminum based fuel assembly baskets may not last more than 40 years.*

The Google translation of the Japanese paper is somewhat muddled, but there appears to be no problem with the baskets falling apart per se, just that they won't have the rated impact resistance due to the alloy grain structure changing under thermal annealing. This only matters if the canisters are to be transported. If you can't trust the aluminum alloy lattice grids when trucking the canister somewhere, you re-package the contents. If you don't have to move anything, you don't have to do anything. Or, you just move things right away so that the deterioration happens after any threat of impact has passed. Future canisters go with stainless steel and avoid the problem at the outset. There's a new generation of nuclear reactors coming which will consume today's "spent" LWR fuel, either in fractions (BN-1200, S-PRISM) or whole (Transatomic). Today's spent fuel is an energy resource twenty times as big as the energy originally extracted from it. That stuff isn't going to be left to sit for all that much longer.

comment #1645930 posted on 2016-02-13 04:26:06 by Engineer-Poet in response to comment #1645895

> Material in WIPP is retrievable, and dumping it does not meet the treaty obligation to change the isotopic composition to make it unsuitable for weapons. I get the feeling that you don't like the nuclear industry getting any positive PR from turning bombs into boons.

comment #1645754 posted on 2016-02-11 12:43:33 by Dan Williamson in response to comment #1645736

> And upon whose doorstep do you lay the blame for said "balkanization?" We have all the industrial processes proven and in place for dealing with reactor "recyclables." France and Russia perform reprocessing every day. The DOE has been has been transporting spent military cores for years. It's not a huge mystery what to do with the stuff....it's a gigantic red herring.

comment #1645836 posted on 2016-02-12 08:18:45 by Mike Mulligan in response to comment #1645754

> Like the government hating southern teabaggers putting the “Mixed Oxide Fuel Fabrication Facility” on the government’s dime? Recycling is way too expensive and dirty... Unless they invent a miraculous process... At least its job for Americans...

comment #1645883 posted on 2016-02-12 09:45:01 by Engineer-Poet in response to comment #1645754

> *Like the government hating southern teabaggers putting the “Mixed Oxide Fuel Fabrication Facility” on the government’s dime?*

Apparently the people who write the propaganda you read omitted the fact that use as MOX fuel is required by the weapons-reduction treaty, to change the isotopic composition of the plutonium to make it unusable for weapons.

comment #1645895 posted on 2016-02-12 12:09:38 by Mike Mulligan

> They could dump it in the” Waste Isolation Pilot Project” (WIPP) like the original plans. That is right, it is still shutdown over a one billion dollar general incompetence problem. There is many ways to get rid of the plutonium according to the agreement. It doesn’t have to be this southern boondoggle.

comment #1645898 posted on 2016-02-12 13:05:53 by CaptD in response to comment #1645801

> Engineer-Poet — You "banking on future tech to solve todays ☢ waste is silly, and yet another canard used by the nuclear industry to make work for itself in the future. Far better for US to just stop making the ☢ Waste now and then spend all the Nuke R&D money making renewables even more efficient and less expensive.

comment #1645899 posted on 2016-02-12 13:12:16 by CaptD in response to comment #1645770

> Donna — Great comment. I agree that the NRC should demanding "best Practice's" instead of bargain basement solutions, especially for long term storage of ☢ Waste. The NRC should also require that those storing ☢ Waste post a large Bond so that should there be a need in the future to deal with problems relating to the ☢ Waste there will be money available for that purpose instead of having the taxpayers foot the bill. Think how wrong decisions about Handford and WIPP have come back to haunt US, thanks to short term cheap "solutions" that were adopted to satisfy the Nuclear Industry.

comment #1645905 posted on 2016-02-12 14:45:41 by Dan Williamson in response to comment #1645754

> Actually, I should have said "credit" instead of "blame," since the achievement of this sorry state of affairs has been the life's work of so many of your fellow travelers.

comment #1645923 posted on 2016-02-12 21:41:56 by Engineer-Poet in response to comment #1645801

> *banking on future tech*

I'm not banking on future tech to do anything; I bank on physics. The heat output of today's SNF will fall with a half-life of about 30 years no matter what anyone does. After 40 years, I doubt it will matter if the support grids collapse or not; the fuel will not overheat. What I expect is that the resource value of that fuel will not go un-tapped that long.

> *Far better for US to just stop making the ☢ Waste now*

Ah, yes, the "switch to natural gas now and hope that *something will come along later" gambit. This is the line of the gas industry lobbyists, who are not shy in declaring "the plants that we're building, the wind plants and the solar plants, are gas plants".*

> *spend all the Nuke R&D money making renewables even more efficient and less expensive.*

No amount of money you spend will make the sun shine or the wind blow when they don't feel like it.

comment #1645736 posted on 2016-02-11 09:36:14 by Mike Mulligan

> *Government 101 Well, the problem with cask are…it’s a facilitative accommodation. Our nation has become too disorganized and balkanized to come up with a global solution to nuclear waste. Mike Mulligan Hinsdale, NH*

comment #1645737 posted on 2016-02-11 09:50:36 by Joe

> *Even if you read this very slowly to the executives at Southern California Edison they still would give a rip*

comment #1645770 posted on 2016-02-11 15:40:51 by Donna Gilmore

> *At Fukushima, one of the casks was opened and they determined the aluminum based fuel assembly baskets may not last more than 40 years. These are bolted lid metal casks, so they were able to open the cask without damaging it, unlike the thin welded canisters more common in the U.S. How will we know if the aluminum baskets used in the Holtec and other thin canisters have degraded before they fail? Currently, even the exterior of the loaded thin canisters cannot be inspected or repaired. Aging management should be built into any good engineering design. The NRC should stop approving dry storage that doesn't have built-in aging management now that we know these systems will be used for decades if not longer. Also, the*

NRC should require an approved remediation plan be put in place and included in the technical documents and made public prior to any more dry cask approvals.

When Duty Calls Region IV Goes Offshore

posted on Tue, 16 Feb 2016 16:39:02 +0000

Victor Dricks Senior Public Affairs Officer Region IV Lizette Roldan, a health physicist in the NRC's Region IV office, is not particularly fond of the water. But when duty called, she took a deep breath, steeled her nerves and underwent training on how to escape from a sinking helicopter in order to participate in a specialized inspection program. [caption id="attachment_6920" align="alignright" width="427"]

Lizette Roldan conducted an inspection on this offshore rig in May 2015 of licensed activities by Quality Inspection & Testing, Inc.[/caption] "I'm actually pretty terrified of the water, but I refuse to live in fear," said Roldan, a tri-athlete who runs three to five miles daily to stay in shape. "I saw this as a challenge that I could overcome." Roldan is one of three Region IV health physicists who periodically fly by helicopter to inspect oil rigs in offshore federal waters on behalf of the agency. Rick Munoz and James Thompson have also performed offshore inspections. Although the inspection procedures are similar for both land-based and offshore locations, the offshore inspection program requires special training designed to teach basic aviation safety awareness and emergency egress procedures from helicopters that crash into the ocean. The periodic inspections are coordinated with U.S. Department of Interior's Bureau of Safety and Environmental Enforcement, which provides helicopter transportation to offshore platforms and barges laying underwater piping in the Gulf of Mexico. Most offshore inspections are of short duration but inspectors may occasionally be required to stay overnight on the platforms for a variety of reasons (weather, helicopter availability, extended monitoring). The scope of inspection activities on offshore facilities normally involves the inspection of Agreement State licensees working in federal waters under reciprocity agreements. Roldan underwent her Helicopter Underwater Egress Training at a special facility in Louisiana where she and three other trainees were strapped into the cockpit of a helicopter simulator that was dunked four times into a large swimming pool. "I focus on remaining calm, that's the most important thing," Roldan recalled. The first dunking was the easiest. "I watched water fill the helicopter cockpit as it was lowered into the pool, took a deep breath, unhooked my seat belt and with the three other trainees swam out of an 'open' window to escape," she said. Then it got harder. The weight of a helicopter motor and its rotor means the helicopter will likely turn upside down when sinking. The second dunking required escape from the submerged and inverted helicopter through a window that had to be opened from the inside. The exercise escalated to having to coordinate escape from the submerged inverted helicopter with three other trainees. It's scary, but safe. Scuba divers are present during the tests to ensure the safety of the trainees. Roldan also had to learn how to survive a fire on an oil platform by jumping into the sea, show she could tread water for five minutes, form a "survival circle" with others while awaiting rescue and fight off sharks by kicking them in their snouts. Obviously, for these special NRC inspectors, it's not just another day in the office.

Comments

comment #1646202 posted on 2016-02-16 12:23:33 by CaptD

Don't forget the trick of inflating your pant legs (after tying the ankles) many have survived very long time using that. Good Luck

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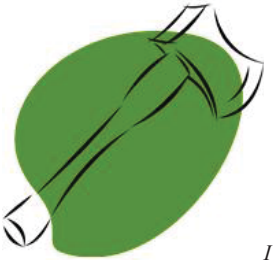
REFRESH -- Putting the Axe to the 'Scram' Myth

posted on Thu, 18 Feb 2016 14:46:32 +0000

Tom Wellock NRC Historian The NRC glossary defines a "scram" as "the sudden shutting down of a nuclear reactor usually by rapid insertion of control rods." But where did the word come from? One deeply engrained legend about the origin of the word dates to the first sustained chain reaction on December 2, 1942, at the Chicago Pile (CP-1), the first atomic reactor developed for the Manhattan Project. According to the legend, Enrico Fermi created the acronym, Safety Control Rod Axe Man, for Norman Hilberry. It was Hilberry's assignment that day to kill a possible runaway reaction by using an axe to cut a rope to allow the backup safety control rod to drop into the pile. The axe-man story now has a life of its own. A search on Google for "scram" and "axe" yields 124,000 hits. Even the NRC's glossary attributed scram's etymology to the axe man story. Oak Ridge National Laboratories reported a fanciful variation of this story where Fermi, presumably unimpressed with the physical prowess of his fellow physicists, recruited a

lumberjack from the Pacific Northwest to do the job. That version has now spread on the internet, and the acronym itself has mutated into Super-Critical Reactor Axe Man and Start Cutting Right Away, Man. Hilberry, as it turns out, only learned the story second-hand years later, which lends some doubt to the axe-man version. Other members of the CP-1 team recalled a different origin for the term. Leona Marshall Libby, the only female physicist present that day, wrote in her memoir that it was Volney "Bill" Wilson who called the safety rods "scram rods." She didn't explain why he used the term, but her credit to Wilson was supported by others involved in CP-1, including Warren Nyer.



I contacted Nyer recently, and he was eager to tell the "scram" story, one that squares well with Wilson's reported version of events. Nyer's job that day was to be Hilberry's backup. If all safety systems failed, he and the other members of the "suicide squad" were to dump a liquid cadmium solution on CP-1 to poison the reaction. The axe-man story is, he recalls, "a bunch of baloney." But he did offer another explanation for the word. His recollection was that Wilson was assembling an electrical panel that included a big red button. According to Nyer, someone asked Wilson the reason for the red knob. Wilson replied you'd push it if there was a problem. "Well, then what do you do?" he was asked. Wilson reportedly replied "You scram ... out of here." The word appears to have stuck. Further indication that "scram" was associated with Wilson's shutdown circuitry and not Hilberry's axe wielding comes from Enrico Fermi. The AEC declassified information on the Chicago Pile in late 1950, and Fermi authored a 1951 technical report on the reactor detailing the circuitry of the "SCRAM line" designed by Wilson's team. (See http://www.osti.gov/scitech/servlets/purl/4414200). And so it seems likely that scram switches all over the world owe their names not to the nuclear industry's later penchant for acronyms, but to the slang of 20th century America. REFRESH is an occasional series where we revisit some of our previous posts. This post is slightly revised from the original, one of the blog's most viewed posts, which first ran in May 2011.

Comments

comment #1646459 posted on 2016-02-19 13:59:50 by B. B. Blevins

> *I grew up in Oak Ridge, Tennessee, graduating from high school there in 1971. Given the town's association with the Manhattan Project and my own personal interest in history, I had an ongoing desire to learn as much as I could about the town and its historic purpose. At some time during my high school years, I had the chance to be in the same place as Dr. Eugene Wigner, although I don't remember the purpose of the specific gathering. I seem to remember that he was in Oak Ridge for an extended period of time, which is consistent with my learning later that he remained a consultant to the national laboratory long after WWII. I spoke to Dr. Wigner for several minutes asking him about early Oak Ridge during the Manhattan Project. During a conversation about the Chicago graphite pile being removed to Oak Ridge, I remember him asking me if I knew what SCRAM stood for, and I responded that I did not. He then shared the following... At some moment before commencing the CP-1 experiment, Enrico Fermi made the comment (may be only to Wigner or a few in addition to Wigner) that those assigned with the wielding the axes (notice that that he indicates more than one) stood a reasonable chance of dying as a result of the experiment. Fermi noted that if axe-men cut the rope too soon, they would have to personally answer to him in severe terms, and if they cut the rope too late, they might die from an uncontrolled chain reaction from the pile. There was some conversation that Fermi and only Fermi would signal if an when the ax-men should cut the rope. From that conversation the phrase, "Start Cutting Rope Axe Men," was used and the SCRAM acronym was born. I note that the the various wordings of the acronym the moderator cites above are different from the one that Wigner shared with me. I also note that the narrative above makes no mention of Fermi's ax-men comment prior to the CP-1 experiment. The SCRAM story told to me by Wigner is something that can never be proven, but I find it very hard to believe that I was the only person over the course of Wigner's life to hear the story from him. I do not find Fermi's notation in a 1951 technical report at all compelling in disproving the SCRAM acronym account that Wigner shared with me. By 1951, SCRAM had become the common shorthand description for the emergency shutdown of a nuclear reactor, no matter what that method of shutdown might be. I have not read Wigner's book, and have no explanation as to why the story he shared with me does not appear there (assuming it doesn't). I am compelled to believe Wigner's story because he was a nobel prize winner, a confidant of Fermi, present at the CP-1 experiment and had no reason to create a story that was not factual. For all of the "evidence" presented in the moderator's narrative above, I do not think we should dismiss the possibility that a private conversation between Wigner, Fermi and may be one or two others subsequently led to the clever SCRAM acronym. The acronym would be a natural outcome reflecting Fermi's concern that the axe-men not screw up the CP-1 experiment, and his insistence that no one should do anything unless he issued the command, "Start cutting rope axe men!" Once the acronym was in use among a broader group of people as shorthand for the emergency shutdown of a chain reaction, the more obvious, correct and coincidental meaning of the word -- "get the hell out" -- would certainly come into play. As time has passed, it is not unusual that many different wordings would be assigned to the acronym. As for my Wigner story, we should never forget one of the fundamental axioms of history -- there is an element of truth to any story that persists through time.*

comment #1646501 posted on 2016-02-19 19:30:51 by K Barnes in response to comment #1646459

> *I heard the exact same story years ago 1978 from a Mr. Herb Diegel who had worked as a medic on the USS Enterprise and was sent into Hiroshima as a medic following Japans surrender. He later became a Health Physics technician at Los Alamos following the war. The only other thing I remember about it is the signal. When asked what the signal was, Fermi said when I drop. Other than that the story was as pretty much the same. He was the one that also said Health Physics came to be the name because of national security. They did not want the term radiation associated with any job, so the term health physics was adopted in place of radiation protection.*

comment #1646367 posted on 2016-02-18 20:10:08 by CaptD

> *Way I heard it, SCRAM was what those present should do, after trying their best to stop the reaction. As it beat it, or in far more modern 60's terminology SPLIT...*

comment #1646379 posted on 2016-02-18 21:17:26 by Engineer-Poet in response to comment #1646315

It DID mean "run like hell!"; there's no other way to take "scram out of here".

comment #1646358 posted on 2016-02-18 18:59:02 by

Great story. Thanks for publishing it!

comment #1646331 posted on 2016-02-18 14:44:10 by Moderator in response to comment #1646324

Please note the last sentence, which states the post was originally published May 2011. Moderator

comment #1646337 posted on 2016-02-18 16:25:34 by Blubba

Another myth regarding nuclear power is that when Lewis Strauss predicted electricity would become "too cheap to meter" he was referring to nuclear fission. In fact, his autobiography ("No Sacrifice Too Great") says he was actually referring to hydrogen fusion research, which was a then secret offshoot of cold war thermonuclear weapons projects. According to the DOE authorized history of the US fusion program by Joan Bromberg, Strauss and the AEC commissioners were so excited about the prospects of cheap fusion energy that Strauss even proposed dangling a million dollar prize to the Project Sherwood group that harnessed fusion power first.

comment #1646321 posted on 2016-02-18 12:37:33 by Tony Leshinskie

Thanks for the research on this one! The mother of an acquaintance of mine was one of the "adding machine girls" on the Manhattan Project and worked at the University of Chicago campus during the time that CP-1 first achieved criticality. She has Alzheimer's now, which sometimes results in her mind replaying (and her repeating) conversations and memories she had / has regarding her work on the Project. My acquaintance has been trying to coax information out of his mother regarding the "scram" story for quite some time. I'll be greatly curious to see whether this account brings out any memories from her.

comment #1646324 posted on 2016-02-18 12:56:33 by Ken Barnes

Not being one to just accept what I read on the internet as fact and the fact I have heard the axe story from people all my career. So I am not so quick to dismiss it as some people might be, up until today it was FACT, not it is unclear. First you recently contacted Mr. Nyer, and the date on your article is 2/18/16. Warren Nyer passed away recently at 94 years of age. Nobody ever challenged the origin of the term SCRAM until now. At the time Mr. Nyer was an undergraduate physics student (probably a bright one) to get selected for this project. Not to be disrespectful of Mr. Nyer but he may not have been in on every detail of the project.

comment #1646315 posted on 2016-02-18 09:54:45 by Nikohl Vandel

Lol, I would have thought it meant "run like hell!" The stories and narrations of our existence ... fun. Thanks NRC.

comment #1646780 posted on 2016-02-22 12:18:30 by Moderator in response to comment #1646459

Thanks for Dr. Wigner's account. While it mostly accords with Norman Hilberry's story, their memories are in conflict with at least four other CP-1 veterans. Hilberry's account of the SCRAM story was laid out in a letter he wrote in 1981 to Professor Raymond Murray, a professor of nuclear engineering at North Carolina State University. Murry used the letter as the basis for a 1988 article in "Nuclear News" magazine about scram's origin. Hilberry told Murray that the account was not his own. "I did not get the SCRAM story until many years after the fact. Then one day one of my fellows who had been on [CP-1 physicist Walter] Zinn's construction crew called me Mr. Scram. I asked him, 'How come?' And then the story." That Hilberry, the lone axe man that day, was unaware of the meaning of SCRAM and only learned of the story after the passage of many years leaves some doubt to its accuracy. Hilberry himself deferred to Leona Marshal Libby's account of that day. Though he had not read her 1979 book, "The Uranium People, " he told Murray it "should be the most authentic recounting on record" because she had been part of "the Fermi 'thinking family' and [was] in some ways more intimately involved with the Fermi thought processes during those days than were any others . . . ." What did Libby say about SCRAM? On page 122, she described the first ever SCRAM of a chain reaction in which she attributes the the word to Volney Wilson whose team had designed the rod control circuitry: "Fermi waited—and waited—to test Volney Wilson's control circuits. Suddenly bells rang, startling everybody; the ion chamber flux had passed the level preset for safety. Wilson reached over and tore the connecting wires out of the wall to stop the bells. Electric motors drove in the safety rods. . . . Volney Wilson called these 'scram' rods. He said that the pile had 'scrammed,' the rods had scrammed into the pile. This word has entered the vocabulary of power-plant operation, and also of nuclear submarines, so that any shutdown of the reactors is called a scram." Libby did not explain why Wilson used that term, but Wilson did. Raymond Murray's 1988 article in "Nuclear News" did not accord with Warren Nyer's memory of events. He contacted Wilson and another member of Wilson's team, Hugh Barton. Nyer sent their response to "Nuclear News:" "The word arose in a discussion Dr. Wilson, who was head of the instrumentation and controls group, was having with several members of his group. The group had decided to have a big button to push to drive in both the control rods and the safety rod. What to label it? 'What do we do after we punch the button?,' someone asked. 'Scram out of here!,' Wilson said. Bill Overbeck, another member of that group said, 'OK I'll label it SCRAM.' " "I was part of a different group," Nyer wrote, "but that accords with my memory." In the Fermi technical report I mentioned in the blog, "SCRAM" only appears in Appendix II and its accompanying circuit diagrams. Appendix II was written not by Fermi but by Wilson and his team, including Barton. Tom Wellock

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NRC Librarian Not Yet Closing the Book on his Lengthy Career

posted on Tue, 23 Feb 2016 13:52:01 +0000

Anna McGowan Branch Chief Office of the Chief Information Officer [caption id="attachment_6938" align="alignright" width="315"]

Paul Gallien has spent much of his 50-year federal career in this library.[/caption] It's not often that we focus on an individual NRC staffer in a blog post. But we thought it appropriate to recognize Paul Gallien, who recently celebrated 50 years in federal service. Paul has worked as a librarian within the federal government longer than the NRC has been in existence. If there were a book on him, you might find it catalogued under "C" for continuity. Fresh from Gallaudet University with a degree in Library Science in 1965, Paul started his federal career at the National Oceanic and Atmospheric Administration library. After 22 years there, Paul joined the NRC's Technical Library, a valuable resource for NRC staff in which scientific and technical information is managed and preserved. Thanks to Paul and his colleagues in the Technical Library, NRC staff have a readily available and easily accessible collection of information that aids them in carrying out our agency's regulatory and research responsibilities. Paul's many years of experience are vital to the technical library as it prepares to transition to its fourth generation online catalog system. Deaf from the age of three, Paul's contributions are only made more special by his offer of friendship and mentoring to his colleagues, deaf and hearing alike. He is always willing to share his experience with newer colleagues. And as a long-time volunteer with the deaf-blind community, he serves as a tactile interpreter and provides transportation assistance. Paul may owe his longevity at least partly to his commitment to health and fitness. He "hikes" weekly up and down the 18 flights in the NRC's headquarters building. With no plans for retirement and a proclamation to continue working for another 25 years, maybe we'll see him on the stairs and in the Technical Library for years to come. Perhaps the best way to celebrate Paul's 50 years of federal service is to simply say, "thank you for your continued dedication and professionalism over these many years."

Comments

comment #1646853 posted on 2016-02-23 11:06:53 by Charles Wilhem

> *Hi, I doubt you remember me. I remember Paul though. >*

comment #1646862 posted on 2016-02-23 12:09:02 by sandrad2015

> *I love this human interest story. Keep up the good work!!! Fifty years at the same job and he is still smilingâ¦says a lot for the NRC. Sandy Smith | NuScale Power | Technical Editor*

NRC Actions Stack up Well Against International Reviews

posted on Thu, 25 Feb 2016 14:33:49 +0000

William Orders Senior Project Manager Japan Lessons Learned Division Ever since the March 2011 nuclear accident at Japan's Fukushima Daiichi plant, regulators around the world have asked "what have we learned?" The Fukushima accident led the nuclear power industry worldwide to reconsider how we approached nuclear safety in the case of extreme natural events. Regulators and the nuclear industry have put a high priority on addressing the accident's lessons and implementing safety enhancements. Last year, the United Nations' International Atomic Energy Agency, issued a report that took another look at the accident and detailed what was learned. The NRC has reviewed the report to see if it might lead us to additional actions here in the United States. At this point, we see that either the NRC, the U.S. government, or the nuclear industry are already addressing the IAEA report's lessons. U.S. actions on these lessons are consistent with the international community's approach to the issues. A more detailed comparison of the report's recommendations with relevant U.S. actions is available here. Reviews of the accident have focused on the effects of earthquakes and floods, as well as positioning plants to deal safely with a complete loss of off-site and back-up power. Nuclear power plants worldwide are addressing these issues with steps that include:

re-examining external hazards,
improving electrical systems,
adding ways to cool the fuel in the reactor core,
protecting the reactor containment,
adding ways to cool the spent fuel in storage pools, and
developing capabilities to quickly provide equipment and assistance from on-site or off-site emergency preparedness facilities.

The NRC and our international counterparts have compared our post-Fukushima approaches before. In 2014, an IAEA team report looked at several of the lessons the NRC has learned from the accident. The report, after examining our efforts at that time, concluded the NRC has "acted promptly and effectively." The team also said the NRC's inspections on Fukushima-related issues were "exemplary." As the NRC continues reviewing the IAEA 2015 report in detail, we are heartened that our international counterparts are all addressing the same concerns. Our collective actions are enhancing safety worldwide. More information on the NRC's response to the Fukushima accident can be found on NRC's Japan Lessons Learned website. A description of the accident is available here.

Comments

comment #1647105 posted on 2016-02-25 11:25:30 by Helen

> *It amazes me that people like Ms. Azarovitz question that the people who work for the NRC are interested in anything other than ensuring everyone's safety. What possible benefit could the NRC have for a "pass" on safety? They all have families. They work at the nuclear plants. Do you really think that they would let anything slip that might risk their own and their own families' safety? Do you really think they want an accident that would make them all look bad? It's stunning to me when people are critical of a system that they have no personal knowledge about. Before you criticize, best to do your homework. The NRC is the toughest nuclear regulator in the world! No other country has such tough restrictions. You should be grateful. There has never been a fatal nuclear accident in the entire history of nuclear power in the US. And you are skeptical?*

comment #1647111 posted on 2016-02-25 13:04:53 by CaptD

> *Everybody and especially the IAEA are now patting each other on the back having tried to successfully side step the damage to their industry caused by Fukushima. 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... If you don't learn from your mistakes then you will continue to make them. Imagine if the next meltdown occurs and it happens in France, where all of Europe is downwind, will the nuclear industry still continue to look the other way, while counting all the ways it will never happen again. The world is now watching while the Japanese Government (which owns TEPCO) eliminate free speech in an attempt to silence those speaking out about Fukushima, since the Nuclear Utility "Gangs" are the ones that actually run the country. They will continue to make billions every year on the "cleanup" for generations, while actually enabling as much of the ☢ waste as they can to enter the Pacific Ocean, so they do not have to pay to process it. Instead of allowing all the waste to enter the Pacific Ocean at Fukushima, at the very least the Japanese should be shipping all the radioactive "cooling" water via super tanker to be evenly distributed through the worlds oceans. I am against all Ocean Pollution but spreading it evenly would be far less damaging then to kill one portion of the Pacific Ocean. It is past time that the UN get involved, and if they will not for any reason, then the next step is to boycott all Japanese Goods until it makes financial sense for the Japanese do what is best for mankind instead of these Nuclear Utility "Gangs". BTW: The Fuky Effect: The on-again, off-again fissioning of the ☢ corium(s), as they interact with water below Fukushima will continue to be problematic for decades if not generations. Northern Japan has been damaged by Fukushima, yet the Japanese continue to push nuclear because it is good business.*

comment #1647113 posted on 2016-02-25 13:27:09 by Janet A in response to comment #1647105

> *Skeptical? Yes. Knowledgeable? Yes. No, I don't believe any decent individual would out their famity in harms way but I do believe that have too much faith in the infallibility of nuclear reactors. They're willing to do what they do believing an accident will not happen.....an accident that is waiting to happen.....example, the energy corporations's three reactors at the bottom of the list of poorly run plants.*

comment #1647171 posted on 2016-02-26 17:26:12 by drbillcorcoran in response to comment #1647105

> *Some fatalities at US commercial nuclear plants ANO Surry Calvert Cliffs Crystal River Comanche Peak ? Others?*

comment #1647096 posted on 2016-02-25 10:04:37 by Janet Azarovitz

> *What a bunch of drivel. The PR staff of the NRC has been working overtime, I'm sure. Citizens have no faith in the NRC because it is right alongside, hand in hand with the nuclear industry. The NRC has not made us safer by giving the industry and the powerfully rich corporations, time after time, either a pass on their woeful "safety" improvements or they change the rules. I don't know how the Commissioners can sleep at night.....maybe they dream of the money they will pocket when they are later employed by the industry.....some going back to the industry jobs they held before being appointed to the NRC.*

comment #1647389 posted on 2016-02-29 11:34:07 by Moderator in response to comment #1647171

Deaths that have occurred at U.S. commercial nuclear power plants have been due to a variety of workplace accidents and workers' personal health issues. There have been no worker deaths attributed to radiological accidents. Tom Wellock

comment #1647558 posted on 2016-03-02 09:13:43 by drbillcorcoran

The Fukushima Investigation is Far From Over We still do not have a chronological list of the missed opportunities and the harmfully dysfunctional conditions, behaviors, actions, and inactions together with their impacts on the harmful results. What individuals and organizations advised TEPCO to address the safety shortcomings that resulted in the explosions and meltdowns? There is a group compiling the unanswered questions. You may join by sending an email to rcsotp_20_fukushima_ltbl_-subscribe@yahoogroups.com

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