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Regulatory Improvements for Power Reactors Transitioning to Decommissioning

Comment On: NRC-2015-0070-0178

Regulatory Improvements for Power Reactors Transitioning to Decommissioning; Request for Comment on Draft Regulatory Basis

Document: NRC-2015-0070-DRAFT-0200

Comment on FR Doc # 2017-05141

Submitter Information

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General Comment

Thank you for the opportunity to comment on the "Regulatory Improvements for Power Reactors Transitioning to Decommissioning" Draft Regulatory Basis Document. While we hope never to experience a decommissioning, we understand it is important to develop regulation and guidance for the process.

Our greatest concern is the health and safety of the public. A small increase in risk is an increase that we are not willing to accept. Throughout the document it notes where there would be a savings in manpower and/or money. Again, we are more concerned with the health and safety of the public and the effectiveness of offsite responder organization (ORO) response, than the cost of doing business.

Please see the attached document for the State of Ohio's comments.

Attachments

NRC-2015-0070-0178 Decommissioning Rulemaking Comments



- Bureau of Motor Vehicles
- **Emergency Management Agency**
- Emergency Medical Services
- Office of Criminal Justice Services
- Ohio Homeland Security
- Ohio State Highway Patrol



June 13, 2017

Nuclear Regulatory Commission

Re: Docket ID NRC-2015-0070-0178

Thank you for the opportunity to comment on the “Regulatory Improvements for Power Reactors Transitioning to Decommissioning” Draft Regulatory Basis Document. While we hope never to experience a decommissioning, we understand it is important to develop regulation and guidance for the process.

Our greatest concern is the health and safety of the public. A small increase in risk is an increase that we are not willing to accept. Throughout the document it notes where there would be a savings in manpower and/or money. Again, we are more concerned with the health and safety of the public and the effectiveness of offsite responder organization (ORO) response, than the cost of doing business.

On page 27, it is mentioned that the MBDBE rule would rescind Orders EA-12-049 and EA-12-051. However, EA-13-109 is noted with the other two, but not noted as being rescinded. Will it also be rescinded?

It is mentioned in a couple places that the NRC will make an Environmental Assessment available when the rule is final. As it is noted on page 35, it is to be made available for public comment with the proposed rule. When do you expect this document to be issued for public comment?

If an accident were to occur and it would take ten hours to reach clad ignition temperature, at what point are the offsite response organizations (OROs) notified? At what point do you notify and evacuate the public? If a fair number of evacuation time estimates (ETEs) are four hours, then mitigation actions must occur within six hours. Add to it the time before evacuation to notify the public on the alert and notification system that the NRC indicates is no longer needed then you are down to maybe five hours, if lucky. Offsite radiological emergency response capabilities should not be relaxed until fuel is in dry cask storage (DCS).

“At 1 mile, PAGs would be expected to be exceeded within 2 to 3 hours, and at 5 miles, PAGs would be expected to be exceeded 8 to 9 hours after release.” Exceedance of Protective Action Guides (PAGs) past the site boundary is a General Emergency (GE). How can you not have an offsite radiological emergency response plan? Until you can say there is no evacuation potential, then the offsite response capability is still needed.

NUREG/CR-6864 concluded that the evacuations that were studied were successful in saving lives. Did the study take into the account of the risk levied by putting people on the road in an evacuation order? The study chose 50 out of 230 evacuations of 1000 people or more. What was the selection criteria for those 50 evacuations? The Abstract states that:

“The following factors were statistically significant for a less efficient evacuation: traffic accidents, number of deaths from the hazard, number of injuries caused by the evacuation... looting or vandalism. In addition, interviews stated that the following contributed to the efficiency and effectiveness of their

Mission Statement

To coordinate activities to mitigate, prepare for, respond to, and recover from disasters

evacuation: a high level of cooperation among agencies, use of multiple forms of emergency communications, community familiarity with alerting methods, community cooperation, and well-trained emergency responders.”

As noted in the Abstract, the reason evacuations are efficient and safer are well laid out and imply that offsite radiological emergency preparedness needs to be maintained until the spent nuclear fuel (SNF) is no longer a hazard. Also, backup route alerting and sirens should be maintained until the SNF is at least in DCS.

On page A-9, it notes that the NRC’s conclusion from the studies is that 10 hours is a sufficient amount of time for taking protective actions offsite and that pre-planning is not a necessary prerequisite. If spontaneous decision-making is so easy, then why do we have such extensive planning now?

While the NRC feels for Level 1 with the change in operating status of the plant, there needs to be only one final annual dissemination of information to the public, we believe that information should be provided to the public at each level change. We wondered why one would issue the final documentation when there are several years left in the process. Subsequent guidance should be disseminated to explain the change of each level and what risks are still involved until there is no more risk.

Throughout the document, it is referenced that NRC “intends” to provide guidance on many topics. What time frame do you expect for that process to occur?

The NRC proposes to maintain emergency preparedness requirements in place for hostile actions for Level 1. However, the hostile action based (HAB) exercise requirement will be removed from the 8-year exercise cycle. Yet, emergency action levels (EALs) will remain in place for security-based initiating events “for exercises and drills.” If hostile action EALs still exist, then it could be assumed that the NRC feels a security event is still a viable option at the facility. If so, then the HAB exercise requirements should be maintained.

It is curious, though, that the NRC excluded no-power reactors from the definition of “hostile action” because a non-power reactor as defined in 10 CFR 50.2, “Definitions,” is not a nuclear power plant, and a regulatory basis had not been developed to support the inclusion of non-power reactors in the definition of “hostile action.” We recommend either refining the definition under 10 CFR 50.2 or developing a hostile action guidance to include Level 1, if not Level 2, facilities.

Table 1 details the minimum staffing requirements for Level 2 facilities. Should there be a minimum staffing required for Level 3?

Under Level 2 *Emergency Classification Levels (ECLs) and Emergency Action Levels*, offsite radiation monitoring would be performed as the need arises. But by who? If emergency planning scales back for Level 2 facility OROs, then there may not be trained or equipped field monitoring teams to provide monitoring. Based on the minimum staffing level, it is assumed that the facility does not have the personnel to perform such monitoring either.

Based on calculations can you guarantee that Level 2 facilities cannot go beyond an Alert classification? It is mentioned that the probability of going above an Alert is low. How low? Obviously there must be some risk. If it is low, it is still not zero. What is the probability that an operating plant can go to a General Emergency (GE)? With today’s safeguards and training, one would hopefully say low. Yet, we still are geared up, trained, and ready for such an occurrence. If a Level 2 can go beyond an Alert, then the emergency preparedness programs should be prepared. The time available to mitigate a problem is also noted as a reason for the Level 2 ECLs. However, an operating reactor is likely to take days to get to a GE. Again, we are ready for that unlikelihood.

“The exact timeframe that will be required for emergency declaration for licensees in Level 2 is still under consideration by the NRC staff and will be provided at the proposed rule stage... should not exceed 60 minutes.” If the NRC chooses 60 minutes to declare and the licensee has 60 minutes to notify the OROs, per page A-22, then OROs have just lost two hours to plan. And “while unlikely, the consequences of such an

accident [zirconium fire] could lead to an offsite dose in excess of the EPA PAGs.” If PAGs could be exceeded offsite, then we have entered a General Emergency and evacuations are likely to occur. Please realize that a potential 10 hour timeclock is running and every hour that it takes for the OROs to be notified is all that less time to prepare and even less time for the public to reach safe distances. If the licensee is aware of an emergency, why would you not inform the OROs as soon as possible, instead of waiting 60 minutes? The 15-minute clock should not be relaxed until the SNF is no longer a hazard.

As noted in NUREG/CR-6864, the efficiency and effectiveness of evacuations came from a high level of cooperation among agencies, use of emergency communications, familiarity with alerting methods, and well-trained emergency responders. While most communities may have all-hazard emergency response plans, it is obvious that one must plan for specific hazards.

During a beyond-design-basis event, it is likely that Federal resources will be activated according to this document. If Federal resources were activated, it is likely the event is a GE, so why are we still talking about reducing EP efforts? While Federal resources may be activated, one still needs to remember deployment and travel times. Dependent upon the resource, it could be 6 to 12 hours before help arrives. What should an ORO who has no radiological plan do in the meantime?

One thing that has not been discussed is the actual spent fuel pools (SFP). They are not in robust buildings like the reactors are. A release to atmosphere is so much easier to have occur. Another question that has arisen, will fire fighters be trained to handle a zirconium fire? It is a unique situation and hazard that licensees need to recognize.

The public alert and notification system (ANS) would not be required for licensees in Level 2. If PAGs can be exceeded, then the ANS is required. A low probability of the PAGs being exceeded offsite does not mean there is no probability. For example, there appears to be a link between fracking and increased incidents of earthquakes. More earthquakes, especially if one occurred beyond-design-basis, would increase the low probability. If an earthquake occurs on site, can you say there will be no damage? No SFP leak? No PAGs exceeded?

The NRC has admitted that while a low probability, there is a chance that PAGs could be exceeded offsite in a Level 2. It is still necessary to maintain both the 10-mile and the 50-mile emergency planning zones (EPZs). If there is a plume of any size, there will be an ingestion zone. As page A-23 speaks to “even for the worse-case severe accident,” it is apparent that the NRC recognizes that there is a chance. If there’s a chance, then there is too much risk to not maintain the 10/50 EPZs until the SNF is in the DCS.

In the previous paragraph, we were talking about worst-case severe accidents. If there is a chance for such an event, then licensees in Level 2 need to maintain pre-planned PAR strategies. What is the rationale that Level 1 would need to maintain PAR strategies and Level 2 does not?

We found the statement “licensees in Level 2 would still be required to determine whether a radiological release is occurring” very interesting. Why wouldn’t they be required to determine whether or not a radiological release is occurring?

If there is a chance of exceeding PAGs offsite, then there is a chance of evacuations. If there are a chance for evacuations, should you get rid of evacuation time estimates (ETEs) for Level 2 facilities?

Page A-24 “requires licensees to maintain and describe adequate provisions for emergency facilities and equipment, including: equipment at the site for personnel monitoring, equipment for radiological assessment, facilities and supplies for decontaminating onsite individuals, first aid facilities and medical supplies, arrangements for the treatment of individuals injured in support of licensed activities.” Why would you have licensees in both Level 1 and Level 2 maintain these capabilities, if Level 2 OROs are decreasing EP efforts? We do agree both levels need to maintain these capabilities. However, we feel that Level 2 OROs should maintain their Level 1 capabilities as well.

Is it a requirement only for licensees to maintain communication systems (with backup power) and communication plans? Or are OROs expected to maintain this equipment and plans as well? If OROs are, then equipment and plans need to be maintained and tested regularly.

It is appreciated that the licensees will be required to offer OROs the opportunity to participate in radiological drills and exercises. However, if the licensee is still performing drills and exercises, then there is still an apparent risk involved. Dependent upon the guidance that the NRC provides on drills/exercises for Level 1 facilities, it would be a good idea to include Level 2 OROs as well.

We agree that there is no offsite EP needed for Level 3 and Level 4 facilities. If a licensee can terminate its EP program for Level 4, what program are Level 3 facilities maintaining? Is there still a risk to offsite?

On page A-29, we like the documented baseline plan in Option 1. However, we are concerned with the fact that licensees would not need to consider whether the change is a reduction in effectiveness. What is the point of an emergency program if changes are allowed to reduce effectiveness? We are also concerned about Option 2 where the public can only comment on this rule and supporting guidance. The public should be able to comment on changes to the emergency plan for transitioning from each level.

It is appreciated that the plan changes are available on NRC's website, but that does not allow the public to comment on level changes. The NRC should also be required to approve licensee plans when they change from one level to the next to ensure there are no reductions in effectiveness for the new level. Why will it not be required for the NRC to make new findings of reasonable assurance for emergency plans of decommissioning sites?

As ANPR commenters suggested, emergency plan changes should be coordinated with OROs if they are affected.

The NRC is proposing licensees conduct a review of EP program elements. We prefer option 1 of intervals not exceeding 12 months. If you must give a second option, then instead of "2) as necessary... if the licensee chooses the second option... every 24 months," change to "2) as necessary, not to exceed 24 months."

If an environmental assessment (EA) will be provided for the rulemaking, then when will it be available for public comment? Will it be available for public comment? If the NRC has concluded that environmental impacts are minor, then why issue an environmental assessment (EA) with the rule?

On page A-38, "...the NRC conducted an analysis to demonstrate the decay time necessary for fuel... The results of this study are generally applicable..." Which or how many sites have these results not been applicable to? How are the results not applicable and what does that mean?

Appendix B has a few confusing sections. On B-4, the same format should be used for both Option 1 and Option 2. Page B-12 discusses Options 1 – 3. But on page B-13, the document goes into an assessment of Option 2. The format for Option 2 matches the Option 1 formatting on page B-4. However, there are no assessments for Options 1 or 3. On page B-14, under *Backfitting Considerations*, it states "of the two options..." The preceding section discusses three options, so which two options are you speaking to?

On page B-1, staff notes that "there is no efficient regulatory mechanism for addressing the reduced security risk associated with decommissioning nuclear power reactors and appropriated adjusting the security requirements. Should a mechanism be developed to address this?"

Current regulations must be updated to define a definition for "decrease in effectiveness" and should address how licensees may demonstrate there is no decrease. The change process for 10 CFR 40.43(p)(2) should also be revised. "Decrease in effectiveness" must defined and followed.

A Certified Fuel Handler (CFH) is given a lot of authority, including the capability to suspend security measures. How are CFHs vetted? What is the process? What training are they provided allowing them to act in a capacity similar to a "senior licensed operator?" Is there a fitness for duty requirement?

Once a reactor permanently ceases operation, the reactor control room need no longer be designated as a vital area. While vital equipment required for the reactor is removed, are there no instrumentation or controls for the SFP?

If the regulations “provide that the number of armed responders for **operating reactors** shall not be less than ten,” then shouldn’t the regulations provide for non-operating reactor security? Is it ten onsite at all times, or ten total?

On page B-15, we agree with the comments requesting security remain high as long as there is spent fuel still located in the SFP. We also agree with Option 2A on page C-6, regarding removal of requirements when spent fuel is stored in dry casks. We feel this gives the licensees incentive to get to DCS.

Beginning on page E-10, the options 1 – 3 don’t really specify what the impact on the public would be. What is the impact?

It is unclear why the decommissioning trust funds (DTFs) do not allow for the expenditure to restore the property to its original condition and/or managing spent fuel. We feel it would be wise to require licensees to accrue the amount needed for radiological decommissioning as well as these other items. The *Table of Minimum Amounts* would need to be revised as would the regulations. It is mentioned that licensees have asked to withdraw funds for spent fuel management. If the NRC allowed regulatory exemptions to enable the use of funds, then it is recommended that the regulations be revised to maintain consistency and reduce exemptions required. Funding should also be accounted for Part 72 specific-licensed independent spent fuel storage installation (ISFSI) decommissioning.

On page F-9, under *NRC Staff Observations*, it mentions Regulatory Options 1, 2, 3, and 5. First, it doesn’t mention an Option 4. Second, only options 1 and 2 are mentioned under Regulatory Options. Are we reading this wrong?

On page F-10, it references “licensees that are not electric utilities.” What licensees would these be? Why do “merchant plants” need to provide increased initial funding of the DTF at licensing? It is agreed that the rulemaking needs to more accurately establish the amount of funds needed for decommissioning easier in a facility’s life.

We find the graded approach to onsite/offsite insurance to be lacking. It is too early to reduce the requirements at Level 2. Insurance should not be reduced until Level 3 when all spent fuel is transferred to an ISFSI. The first paragraph on page G-8, mentions a “beyond design” accident that is “reasonably conceivable.” Such an accident is possible up to three years after shut down, dependent upon spent fuel storage configuration. If this is so conceivable, then why would one reduce the insurance requirements at Level 2 in the graded approach? What is the reasoning behind requiring a Level 4 to maintain offsite insurance?

Licensees were granted exemptions to 10 CFR 140.11(a)(4) to reduce primary financial protection from \$375 million to \$100 million, but many have voluntarily opted to keep the maximum protection. If the licensees feel they need to maintain the \$350 million, then they must feel there is an inherent risk with maintaining fuel in the SFP. Primary protection should be maintained at \$350 million until all fuel in in DCS.

We don’t agree with NRC’s statement that “both ‘dry storage’ and ‘wet storage’ are equally safe.”

Starting on page H-2, it says “there could be an impact if the decision of the 1996 decommissioning rulemaking is reversed.” What could cause it to be reversed?

Why would NRC review the post shutdown decommissioning activity report (PSDAR) but not approve it? In spite of not needing to review the PSDAR, if there are deficiencies, a Request for Additional Information (RAI) is issued to the licensee. The licensee must provide a response to satisfy informational requirements in 10 CFR 50.82(a)(4). How does the NRC not see that as approving the PSDAR? What happens if the RAIs are not addressed or not addressed adequately? Can the NRC say that decommissioning cannot begin?

The licensee must submit a PSDAR within two years of ceasing operations. After two years, what is the purpose of having the NRC “review” the document? What if there are deficiencies, but the licensee has been decommissioning for two years now? How can there be deficiencies if there is no approval process? The PSDAR must be submitted prior to any decommissioning activities. There should be a clear cut plan and timeline with details. This is provided in the PSDAR which includes proposed decommissioning activities and schedule through license termination.

The License Termination Plan (LTP) is to be submitted at least two years prior to license termination. The NRC reviews and approves this plan. A PSDAR should still be reviewed and approved in addition to the LTP. We agree the LTP should be made available for public review and comment and a public meeting held. However, if decommissioning is almost done, then what is the purpose of a public meeting or the level of detail in the LTP?

While we prefer Option 2 on page H-7, it indicates the “Standard Format and Content for Post-Shutdown Decommissioning Activity Report” would be updated to “encourage licensees to add additional detail on topics...that are of greatest interest to those stakeholders impacted...” How do you “encourage” licensees to do something that is evidently not regulatory?

At the top of page H-8, the document discusses “addressing the potential need to replace casks, or other spent fuel storage components at some point before the end of life of the ISFSI.” What is the typical end of life expectancy for an ISFSI?

Beginning on page H-8, we like parts of Option 2 with the additional detail. Option 3 is also nice, especially where the state and local governments can provide feedback on the PSDAR. The PSDAR should be updated on a periodic basis, especially with no end to onsite storage in sight. Why wouldn’t you update it as technologies, timelines, or other details change? However, what period would you choose? Option 4 is also amenable. If the NRC does not review and approve a PSDAR, then what recourse is available if something is “wrong?” Whatever is done, we agree something must be done and that “no action” is unacceptable.

The choice of the decommissioning method should not necessarily be left to the licensee. The State of Ohio strongly feels that all facilities should use DECON. SAFSTOR is not a viable option, without significant input from stakeholders. SAFSTOR should not be considered if offsite response funding is no longer available. Of course, ENTOMB must be left as an absolute last alternative.

It is interesting that the existing regulatory framework allows public input into the PSDAR and LTP. If the licensee does not need to have the PSDAR approved by the NRC, then what will they do with the public input?

Starting on page H-27, we like Option 2 and Option 3. Why would the NRC require periodic updates from the advisory boards? Is the NRC not burdened enough with paperwork to review the activities of the board, topics discussed at meetings, etc.? We also question the “voluntary” advisory boards. Why would licensees continue the practice if there is no need to?

10 CFR 50.82 needs to have the explicit requirement for licensees to consider/plan how they are going to manage and remove spent fuel from the site before they decommission the structures, systems, and components that support moving, unloading, and shipping the spent fuel. Why was this removed from the 1996 rulemaking? We support Option 3 on page H-33.

We agree with 10 CFR 50.51 requiring licensees to continue to maintain their facilities until their license is officially terminated by NRC.

On page J-2, “decommissioning license amendments for these plants were reviewed on a case-by case basis and resulted in various outcomes.” Were they different outcomes because of a lack of consistency or because different outcomes were necessary. If the latter, perhaps we should continue reviewing plants on a case-by-case basis. Or come up with a general plan and any variation requires approval.

We are uncomfortable with the plants that do not have an aging management program (AMP). Millstone closed in 1988 and intends on maintaining their SFP until 2048. What affect does not having an AMP have on them? Do they need one? How safe is it to store spent fuel in the SFP for that length of time, especially if they are already having degradation issues? Why wait five years to determine the rate of the degradation?

For fitness for duty, we agree with Option 3. Fatigue management should not be inconsistent across the board. Safety of the public is first and foremost, we cannot have fatigued personnel working at plants managing spent fuel.

We would like to reiterate our appreciation to be invited to comment on this rulemaking. Decommissioning is something no one wants to see, but we all have the potential to experience. As always, our focus will remain on the health and safety of the citizens of Ohio.

Sincerely,

A handwritten signature in cursive script, appearing to read "C. Salz".

Chris M. Salz

Radiological Branch Chief

