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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

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Government Agency Type: State

Government Agency: MDEQ and MAE/MPSC

General Comment

See attached file(s)

Attachments

2017-06-13 NRC Docket NRC-2015-0070-0178



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



C. HEIDI GREYER
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June 13, 2017

VIA E-MAIL

Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Rulemakings and Adjudications Staff

SUBJECT: NRC Docket; NRC-2015-0070-0178

The Michigan Department of Environmental Quality (MDEQ) is submitting the enclosed comments regarding *Regulatory Improvements for Power Reactors Transitioning to Decommissioning* for your consideration.

These comments were developed in coordination with the Michigan Agency for Energy and the Michigan Public Service Commission. We take an active interest in human health and environmental protection. In addition, we also consider economic and other impacts that decommissioning plants have on the communities which host them.

If you have any questions, contact Mr. David Asselin at 517-614-9913; by e-mail at asselind1@michigan.gov; or by mail at MDEQ, Waste Management and Radiological Protection Division, Radiological Protection Section, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,

Steven R. Sliver
Assistant Division Director
Waste Management and Radiological
Protection Division

Enclosure

cc: Ms. Madhu Anderson, Michigan Agency for Energy
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Comments to U.S. Nuclear Regulatory Commission
Regulatory Improvements for Power Reactors Transitioning to Decommissioning
NRC Docket ID: NRC-2015-0070-0178

**Michigan Department of Environmental Quality
Waste Management and Radiological Protection Division
Radiological Protection Section Comments**

Appendix A – Emergency Preparedness

In general, we support the phased approach to decommissioning and agree with the suggested revisions to establish Levels 1, 3, and 4. We have a few concerns, suggestions, and comments mainly concerning Level 2.

- We agree with the transition to a phased approach provided all necessary measures for returning the site to unrestricted use for any public and private purpose are thoroughly accounted for and provided for by the appropriate responsible party. It follows that:
 - The document appears to relieve the licensee of the responsibility to maintain offsite Emergency Preparedness (EP) after Level 1, which leaves the states and locals with the stewardship of spent nuclear fuel (SNF) for an unidentified period of time. While SNF is onsite, state and local governments are still responsible for responding to incidents and to assure to the public that any releases from the SNF will not have health or environmental impacts. As a result, state and local governments will need to maintain the capability to respond to any situation affecting the site (even if it is in Level 3).
 - The Task 3 Report, which is referenced in Appendix A, refers to individuals being relocated within a reasonable timeframe (e.g., 24 hours). In order to meet this objective, offsite response organization will still require the equipment and expertise to assess an accident and make protective action decisions.
 - Continuing offsite EP for the entirety of Level 1 and having the capability remain for offsite monitoring during Levels 2 and 3 should be considered. Stakeholders should have input on any final decisions to allow transition from Level 1 to Level 2.

- It is understood that Level 2 Permanently Defueled Emergency Plan (PDEP) would constitute a change in emergency action levels (EALs) following NEI 99-01 (Appendix C). These EALs should be included in the decommissioning final rule and mentioned to stakeholders for transitioning from Level 1 to Level 2.
- The Level 2 PDEP (PDEP; NEI 99-01, Revision 6, November 2012) considers hostile actions which occur within the owner controlled area/airborne attack threat as a condition that would warrant declaration of Alert (PD-HA1). The statement is made that, “The Alert declaration will also heighten the awareness of Offsite Response Organizations (ORO), allowing them to be better prepared should it be necessary to consider further actions.” There is no further path available under a PDEP for any further actions to be implemented. Further, Appendix A of *Regulatory Improvements for Power Reactors Transitioning to Decommissioning* states that, “...hostile action requirements would not apply to decommissioning sites that have progressed to Level 2.” There is still the need for sufficient ORO resources to be available to respond to a hostile action occurring in Level 2. In some jurisdictions, this need would be beyond that of normally available resources.
- Offsite EP, including immediate response and environmental monitoring capabilities, should not be fully discontinued until risk to human health and the environment are completely negated, which does not occur until the complete removal of all SNF from the onsite Independent Spent Fuel Storage Installation. Offsite EP should include response capabilities to address the 10-hour zirconium fire scenario and the need to evacuate, as well as offsite monitoring capabilities for any release to the environment, whether it be significant or not (i.e., a fraction of the Protective Action Guide [PAG]). Offsite EP will need to continue to maintain the ability to assure minimal public health and environmental impacts from releases and to address the need for protective actions to be taken due to releases. Release scenarios could include the exceedance of EPA relocation PAGs, or more likely, a low magnitude release if spent fuel were to somehow be released or if containers (including dry casks) were compromised.

Based upon the diminishing risks posed by SNF as it ages, we recognize that some EP functions can be relaxed without an increase in risk to human health. Based

upon this consideration, we recommend the offsite EP functions can be modified as follows:

- Offsite EP that could be stood down in Level 2:
 - ORO planning to send a representative to the EOF [NUREG Criterion C.2.a]
 - Plant message dissemination to the public [NUREG Criterion E.5]
 - The Alert and Notification System (ANS) primary and backup [NUREG Criterion E.6]
 - Scripted EAS messages for the public [NUREG Criterion E.7]
 - Periodic testing of the entire emergency communications system [NUREG Criterion F.3]
 - Dissemination of information to the public [NUREG Criterion G.1, G.2]
 - Coordinate programs to acquaint news media with emergency plans [NUREG Criterion G.5]
 - Capability to detect and measure radioiodine concentrations [NUREG Criterion I.9]
 - Ability to locate and track airborne radioactive plume [NUREG Criterion I.11]
 - Provisions for evacuation routes [NUREG Criterion J.2]
 - Protective measures for the plume exposure pathway [NUREG Criterion J.10.a-f]
 - Relocation centers [NUREG Criterion J.10.h]
 - ETE studies [NUREG Criterion J.10.i]
 - Traffic/Access Control points [NUREG Criterion J.10.j]
 - Dealing with evacuation impediments [NUREG Criterion J.10.k]
 - Time estimates for evacuation of sectors [NUREG Criterion J.10.l]
 - PADs for plume exposure pathway [NUREG Criterion J.10.m]
 - Registering and monitoring of evacuees [NUREG Criterion J.12]
 - Process for authorizing emergency worker exposure over the PAG [NUREG Criterion K.4]
 - Post-accident estimation of total population exposure [NUREG Criterion M.4]
 - All of Planning Standard N
- Offsite EP that would need to remain in place for Level 2:

- All of Planning Standard D
 - Notification Methods [NUREG Criterion E.1, E.2]
 - Communication with the plant and radiological monitoring teams [NUREG Criterion F.1.d]
 - Activation of emergency response personnel [NUREG Criterion F.1.e]
 - Communication with fixed and mobile medical facilities [NUREG Criterion F.2]
 - Points of contact for use by the news media [NUREG Criterion G.3.a]
 - Media spokesperson [NUREG Criterion G.4.a]
 - Exchange of information among spokespersons [NUREG Criterion G.4.b]
 - Rumor control [NUREG Criterion G.4.c]
 - Offsite radiological monitoring equipment [NUREG Criterion H.7]
 - Maintaining offsite emergency equipment [NUREG Criterion H.10]
 - Identification of emergency equipment/kits [NUREG Criterion H.11]
 - Receipt and analysis of field monitoring data and sample media [NUREG Criterion H.12]
 - Capability and resources for field monitoring [NUREG Criterion I.7]
 - Field team operations [NUREG Criterion I.8]
 - Capability for dose assessment [NUREG Criterion I.10]
 - Capability for implementing protective measures [NUREG Criterion J.9]
 - Means of relocation [NUREG Criterion J.10.g]
 - Ingestion pathway [NUREG Criterion J.11]
 - Dosimetry for emergency workers [NUREG Criterion K.3.a, K.3.b]
 - Offsite contamination control and decontamination [NUREG Criterion K.5.a, K.5.b]
 - All of Planning Standard L
 - Post-accident recovery [NUREG Criterion M.1, M.3]
 - All of Planning Standard O
 - All of Planning Standard P
- Offsite EP functions that do not apply to decommissioning
 - All of Planning Standard A
 - All of Planning Standard C (with the exception of C.2.a)
 - Activation of State/local emergency response network [NUREG Criterion F.1.a]
 - Communication with contiguous State/local governments [NUREG Criterion F.1.b]

- Communication with Federal [NUREG Criterion F.1.c]
- EOC [NUREG Criterion H.3]
- Activation and staffing of EOCs [NUREG Criterion H.4]

It is understood that the level of those EP functions that would need to remain in place would be modified from that of an operating nuclear power plant to that of one in Level 2. However, there are still some considerations that need to be taken into account such as continued environmental monitoring assurance and the capability to respond appropriately regardless of the plant's level of decommissioning. We believe this should be similar to the considerations in Appendix G.

Appendix G – Offsite and Onsite Financial Protection Requirements and Indemnity Agreements

Overall we believe this should be consistent with Appendix A, but have Appendix A follow the approach laid out in Appendix G. As there are defined reductions in dollar amounts per the graded reduction levels, there should be a similar defined reduction in the level of EP provision maintained consistent with those in the table in Appendix G.

We also agree with previous Advance Notice of Proposed Rulemaking comments and NRC staff notes regarding financial protection in that the amounts in the SECY papers need to be modified to properly consider inflation, risk level, and new knowledge based on the Fukushima incident and not the Three Mile Island accident.

In the section on "Transportation" where SECY-93-127 is discussed, we support future consideration on the transfer of spent fuel. It is the responsibility of the U.S. Department of Energy, not the licensees, to ultimately dispose of SNF. It follows that, a decommissioned licensee in Level 3 (ISFSI only) has likely met their obligation and the only reason the SNF is still onsite is because there is no repository currently available. We suggest that consideration be given to the availability of funds for states who are the stewards of SNF in their respective state in order to provide for upkeep, monitoring, response to emergencies, etc., as needed, and in a fixed amount such that it is not necessary for states to pursue funds from the federal government.

There appears to be an inconsistency with Appendix A and Appendix G in the assessment offsite and onsite consequences. Under the “Basis for Proposed Changes” section, it is mentioned that the “...rod cladding temperature must not exceed 565 degrees C,” whereas Appendix A mentions the 10-hour heat-up to 900 degrees C. This is the only place where the value of 565 degrees C is mentioned in the entire document.

Appendix H – Current Regulatory Approach to Decommissioning

The Role of State and Local Governments and Non-Governmental Stakeholders (H 24)

We believe a community advisory board is a very important concept. All licensees are different; some may embrace and actively seek community involvement voluntarily, while others may not.

Option 1 – No Action

Not all states have a radiological control board; specifically those states that are non-agreement states. Non-agreement states may have very little radiological control authority, but have statutory authorities and obligations to be upheld. Although as stated, “...all currently decommissioning facilities have already established community advisory boards,” we cannot expect this to be true for each and every plant that goes into decommissioning and we cannot take credit for an overall assumption.

Option 2 – Guidance Development/Enhancement

We are currently seeing a lack of meaningful participation by state and local governments and NRC- and licensee-to-state relations tend to be top-down rather than a collaborative effort. This option has the premise that it would apply to “licensees that are planning to create a community committee,” but does not indicate that they would have to do so.

The five details given in this section are good and should be included in whatever final version is created.

Option 3 – Rulemaking to Mandate Creation of a Community Advisory Board

We believe a requirement to create a community advisory board is probably needed. We agree with the NRC staff, however, that the NRC should not have an oversight role in this board.

Our recommendation is a combination of Option 2 and Option 3. The only thing that should be mandated is the creation of a community advisory board. Flexibility should be maintained for this board by using the guidance given under Option 2 using the five details listed.

Michigan Agency for Energy/Michigan Public Service Commission (MAE/MPSC) Comments

1. The MAE/MPSC primary concern is that the NRC administers a safe, concise, clear, and affordable decommissioning process for all nuclear plants that protects the environment and provides for the public's health and safety.
 - a. Recognition of how the MAE/MPSC use and are affected by NRC's decommissioning plans will allow us to be good partners with the NRC. We rely on the clarity and transparency of NRC decommissioning requirements to do our jobs. Additional detail on the requirements and timeline of the decommissioning process would be very helpful to address uncertainty.

Particularly, identifying the timeframe when certain sections of the property can be considered for redevelopment would be helpful to communities interested in mitigating adverse economic impacts of nuclear plant closures.

The decommissioning timeline, including the decision to cease operations of a nuclear plant, needs to align with resource adequacy planning processes at the MPSC, Michigan, and any regional transmission levels. Also, there continues to be a critical need for a detailed long-term waste storage timeline, not only for interim storage, but for long-term disposal planning for both operating and decommissioned nuclear plants.

- b. Any baseline testing of plant areas for future monitoring should be commenced before the plant ceases operations. Coordinating necessary baseline testing with the soon to be decommissioned plant's last fueling

outage would likely shave more than a year from the decommissioning process without disrupting operation.

- c. Of special concern is how the NRC would oversee a transfer of decommissioning responsibilities to a third party if such a transaction were to occur. NRC assignment of responsibilities upon an allowed transfer should continue to require public transparency and address possible changes in decommissioning trust fund values and earnings, the timing or cost of decommissioning nuclear plant sites, and any effects on the decommissioning fund trustee services. All decommissioning responsibilities should be very carefully reviewed and appropriately and clearly reassigned in any transfer transaction.
 - d. The radiological protection, physical and cyber security, and emergency preparedness of the decommissioning plan affects federal, state, and local partners. Testing schedules and similar activities should be coordinated and conducted with the participation of local and state response organizations, including the MAE/MPSC.
 - e. The MPSC receives a copy of the Triennial Report on the Adequacy of the Existing Annual Provision of Nuclear Plant Decommissioning from its regulated utilities that have a decommissioning plant. In this report, the utility can recommend increases and decreases in the nuclear decommissioning component of the nuclear surcharge based on MPSC orders. The clarity and timeliness of this report and others are what allows states to adapt to changes, and any reforms should not jeopardize timely receipt of that information.
2. The MAE/MPSC also advocate that the final NRC rule should ensure that sufficient funding is available to decommission a nuclear plant. The more clarity the NRC provides on decommissioning requirements, the more the NRC can realize its goal to streamline the decommissioning process by reducing the need for numerous exemption requests.
- a. It is important that the NRC and the public know, even before detailed decommissioning plans are submitted, that the decommissioning funding is adequate to shut the plant down safely. This could be done by having a general understanding of decommissioning costs based on

selected criteria, and allowing for contingencies as needed. Site-specific analysis and cost estimates, periodically updated for NRC review, could be started in the last refueling outage and then supplemented after the plant closes to assist that process, and possibly make it less costly.

- b. State regulatory commissions also rely on timely notification of changes to NRC decommissioning requirements or the decommissioning timeline to accurately set and update the decommissioning charges included in regulated utility rates. Such charges are applied to decommissioning funds, and are used to ensure that adequate money is collected for such funding and that intergenerational equity for ratepayers is maintained.

For example, a regulated utility may state to the MPSC that it has adequate resources set aside in a fund to decommission its nuclear plant, and that the NRC will oversee the process. However, if a nuclear plant decides to close before its expected closure date, it would not have as much time as originally planned to fund its decommissioning. If such costs might be sought to be recovered in rates, it is important that utility regulators clearly understand what the federal requirements are in order to fully judge the costs of early retirement versus other options. Any attempts to streamline the process should ensure transparency on these points.

- c. The NRC calculates the minimum decommissioning financial assurance amount. However, that estimate may not include the remediation of non-radioactive structures beyond what's necessary to terminate the license. Thus, the NRC estimate does not take into account remediation of any non-nuclear portion of the plant, post-shutdown fuel monitoring expenses, permanent disposal of spent nuclear fuel, or any other costs related to the independent spent fuel storage installations.

The NRC performs an assessment to see if its minimum decommissioning financial assurance formula is adequate or needed to be updated. NRC staff made a recommendation to the NRC not to change the formula. The NRC found that:

- 1) The formula amount was intended only to assure the bulk of the funds were being collected to decommission the plant enough to terminate the license;
 - 2) multiple levels of regulation provide decommissioning funding assurance; and
 - 3) an overall “robust NRC program” assures adequate decommissioning funding is available when needed.
3. All nuclear plants store spent nuclear fuel onsite on an interim basis, possibly in wet pools for five to ten years, after which, in some instances, it is possible to keep spent fuel in onsite dry cask storage. Utility customers have already made a substantial investment of more than \$4B to fund a permanent spent nuclear fuel storage facility, such as the Yucca Mountain Project in Nevada. This debate has been ongoing for decades and it is uncertain when it will be resolved, and Michigan notes its resolution should be pursued as a top priority to allow complete decommissioning of these sites.

Short of a permanent spent nuclear fuel waste storage facility, a definitive and acceptable treatment of the tons of spent fuel stored onsite for active and decommissioned nuclear generation plants must be determined and included in NRC decommissioning plans. We encourage the NRC to make sure its rules can work in both scenarios – a permanent facility and the time period prior to the opening of such a facility.

Finally, the NRC should consider treatment of nuclear steam supply systems equipment and other major plant components and whether or not they can be kept onsite, moved to a low-level waste site, or should be sent to other disposal or storage facilities.

3. When the proposed closure of the Palisades Nuclear Plant, owned by an entity not regulated by the MPSC was announced, Governor Rick Snyder spoke to the economic impact the closing will have on the area. These impacts are of special concern to the MAE, whose responsibilities for Michigan’s energy infrastructure, economy, and fuel supply are in addition to the responsibilities of the MPSC. The Governor said that:

Palisades is a major employer and economic engine for the region, so the continued operation of the plant through 2018 and the proposed community contributions would be vital. We need to make sure we use the next two years to wisely plan the use of state and local resources to adapt to whatever decision is made.

The Governor continued that no matter what decision is made, everything must be done to help the region adapt to a potential future without the nuclear plant. “The responsible thing to do is put a plan into action now to help our neighbors in Southwest Michigan prepare for a significant change in their communities.” Incorporation and continuation of any such transitional support provided to local communities into the NRC decommissioning process is recommended.