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Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants

Comment On: NRC-2014-0002-0003

Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants; Extension of Comment Period

Document: NRC-2014-0002-DRAFT-0018

Comment on FR Doc # 2014-05105

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General Comment

See attached file(s) which represents the complete comments of the American Red Cross:

I. SUMMARY

The basis for the proposed Interim Staff Guidance (ISG) is focused largely around the initiation point for a zirconium fire and the assumption that a drained spent fuel pool (SFP) will be refilled within a critical 10-hour period. The narrow focus and, in our view, inadequately supported assumptions upon which the ISG is founded, do not support the proposed changes.

The ISG moves too far, too fast and would, if adopted, cripple preparedness efforts beyond what is reasonable for a facility that will, for years to come, house highly radioactive materials. Amplifying this concern is the fact that the proposed policy provides nothing in the way of replacement or backup systems in the event that the NRC's assumptions about the degree of risk or the speed at which mitigative actions can be taken prove incorrect. Summed up, while the proposed ISG still calls for critical alerting and response infrastructure, it removes the financial support and regulatory muscle necessary to ensure that such systems are in place.

It is the request and recommendation of the American Red Cross of the Vermont & the New Hampshire Upper Valley Region that the NRC NOT implement the proposed change. Rather, public safety would be best served by leaving the current policy in place until greater evidence supports a finding that a decommissioned plant

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containing nuclear fuel does not pose a threat to public well being. Moreover, additional focus must be placed upon the assumption that mitigative steps can be taken in response to a drained SFP, i.e. refilled, in the requisite time frame.

It is our view that the NRC, as a regulatory agency charged with public safety, should not assume a posture in which all potential risks to a decommissioning nuclear facility are presumed known and understood. Rather, its role is to assume that the unanticipated can occur and that preparedness steps must incorporate preparation for the “unknown.” The proposed ISG does just the opposite.

Attachments

NRC Interim Staff Guidance -- NSIRDPR-ISG-02 - Red Cross Comment Submitted

MEMORANDUM

To: Nuclear Regulatory Commission

From: Lawrence G. Crist, Regional Executive
American Red Cross, Vermont & the New Hampshire Upper Valley Region

Date: April 10, 2014

Re: NSIR/DPR-ISG-02 -- Emergency Planning Exemption Requests for
Decommissioning Nuclear Power Plants

I. SUMMARY

The basis for the proposed Interim Staff Guidance (ISG) is focused largely around the initiation point for a zirconium fire and the assumption that a drained spent fuel pool (SFP) will be refilled within a critical 10-hour period. The narrow focus and, in our view, inadequately supported assumptions upon which the ISG is founded, do not support the proposed changes.

The ISG moves too far, too fast and would, if adopted, cripple preparedness efforts beyond what is reasonable for a facility that will, for years to come, house highly radioactive materials. Amplifying this concern is the fact that the proposed policy provides nothing in the way of replacement or backup systems in the event that the NRC's assumptions about the degree of risk or the speed at which mitigative actions can be taken prove incorrect. Summed up, while the proposed ISG still calls for critical alerting and response infrastructure, it removes the financial support and regulatory muscle necessary to ensure that such systems are in place.

It is the request and recommendation of the American Red Cross of the Vermont & the New Hampshire Upper Valley Region that the NRC **NOT** implement the proposed change. Rather, public safety would be best served by leaving the current policy in place until greater evidence supports a finding that a decommissioned plant containing nuclear fuel does not pose a threat to public wellbeing. Moreover, additional focus must be placed upon the assumption that mitigative steps can be taken in response to a drained SFP, i.e. refilled, in the requisite time frame.

It is our view that the NRC, as a regulatory agency charged with public safety, should not assume a posture in which all potential risks to a decommissioning nuclear facility are presumed known and understood. Rather, its role is to assume that the unanticipated can occur and that preparedness steps must incorporate preparation for the "unknown." The proposed ISG does just the opposite.

II. OVERVIEW

On too many occasions, various disaster preparedness and response agencies have failed to see beyond the immediate conventional wisdom. This, in combination with a

failure to always understand and incorporate lessons learned, has too often produced inadequate protections for the American people. NSIR/DPR-ISG-02, unfortunately, runs the risk of repeating these past mistakes.

The precipitous shift in policy incorporated in the ISG involves regulatory oversight during a stage in the life of a nuclear facility in which it is going from routine operations to the “out of the ordinary” processes inherent in a one-time decommissioning process. Changes during that transitional period for a plant should be addressed with caution and great deliberation.

A review of the proposed ISG raises questions about several assumptions that seem inherent in the approach that would be adopted. These assumptions would include:

1. The universe of potential mishaps is limited and known and the ability and timeliness within which they will be addressed is known and sufficient.
2. The work conducted at a facility going through the decommissioning process will not experience unexpected work-place accidents or mistakes.
3. A spent fuel pool can always be refilled within 10 hours, regardless of the severity of the catastrophic event that caused its drainage or in the face of simultaneous emergencies.
4. State and local governments will be able to maintain significant response capability even after essential funding for such is terminated.
5. The public will respond in a rationale and predictable manner during a nuclear accident.
6. Any radiological release will be small, the wind will blow through a predictable and narrow corridor effecting only a small population and that this population will be both readily identifiable and manageable.
7. There will be no need for evacuation and, even if there is, that plans and systems will be maintained and or improved absent critical industry funding.
8. The equipment, personnel, supplies and infrastructure necessary to rapidly shelter and care for what potentially would be thousands of frightened people will remain in place once the industry has withdrawn its financial support and the NRC is no longer involved in ensuring that local capabilities exist.

III. HISTORY

There are three historical points of reference that are worth revisiting in the context of the changes being proposed in the ISG. A review of each can be instructive as to where the proposed ISG goes too far and does not account for lessons learned.

A. Three Mile Island:

Three Mile Island (TMI) demonstrated precisely why the NRC cannot assume that the public will understand the risk and respond in a manner that is in line with the expectations of government officials or, perhaps, even rationale. TMI called for no evacuation, yet 200,000 people self-evacuated.

There is no evidence to suggest that a similar self-evacuation would not occur today. In fact, wouldn't the NRC's own views on so-called "shadow evacuations" appear to confirm the premise that people will not evacuate based solely upon the information presented to them by industry or governmental officials, but upon their own intuition or fears. In a study entitled, "Criteria for Development of Evacuation Time Estimate Studies," November 2011, the NRC advised that an assumed 20 percent of the permanent, non-EPZ population in the 10-15 mile radius from a power plant will participate in a shadow evacuation.

A March 2013 report prepared by the GAO entitled "Emergency Preparedness: NRC Needs to Better Understand Likely Public Response to Radiological Incidents at Nuclear Power Plants," examined similar issues regarding the predictability of the public's response to a radiological event. The report recommended, in part, that "NRC Commissioners obtain information on public awareness of radiological emergency preparedness for communities outside the 10-mile emergency planning zone and the likely response of those communities in the event of a radiological incident"

There is no reason to believe that the public's mass evacuation response to Three Mile Island (TMI) would be any different should a radiological event occur today. In the past three years, both NRC and GAO reports have both reinforced the unpredictable nature of the public response. These reports reference the need to more closely examine public awareness relative to preparedness activities. Despite the history of TMI and the findings of these reports, the Interim Staff Guidance being proposed would severely handicap the ability of those on the ground who are engaged in communicating preparedness plans to communities. The result is likely to be greater confusion and apprehension during a time of great transition at a decommissioning plant within the communities surrounding the facility.

B. Hurricane Katrina

Hurricane Katrina is a seminal event in the disaster preparedness arena, perhaps most importantly for the lessons learned from a response that, at several stages, faltered. A comprehensive report was prepared for President Bush to examine the response to this devastating event. That report, "The Federal Response to Hurricane Katrina: Lessons Learned," prepared under the leadership of the Assistant to the President for Homeland Security and Counterterrorism, was presented to the President in February of 2006.

The Katrina report outlined many key lessons learned by the Federal Government, nine of which covered topics that are relevant to the issues required to be examined

when making determinations regarding emergency preparedness in the arena of radiological incidents at nuclear power facilities. We have serious concerns that the ISG being proposed gives inadequate consideration to the lessons learned from Katrina, an event that is not so distant in our history that they should so soon be forgotten.

The nine most relevant lessons learned from Katrina, as outlined in this Presidential report, are as follows. Our concern relative to the ISG, as proposed, follows each lesson. We would strongly encourage that NRC staff review the February 2006 report in its entirety.

1. Critical Challenge: Knowledge and Practice in the Plans

The NRC is eliminating any possibility of meaningful cross-agency and leadership level training on an on-going basis.

2. Critical Challenge: Insufficient Regional Planning and Coordination

By eliminating the industry requirement to fund planning and coordination, the NRC is severely hampering, if not eliminating, the likelihood that such activities will occur in the future.

3. Critical Challenge: Communications

Absent industry underwriting, state/local agencies cannot maintain the necessary level of communications relative to systems, equipment or personnel. State, local and non-governmental agency resources are simply insufficient to meet the need.

4. Critical Challenge: Logistics and Evacuation

By eliminating the requirement that the industry must fund these elements, there is little possibility that any of these systems will remain in place to the degree necessary should an event actually occur.

5. Critical Challenge: Public Safety and Security

Virtually all funding for these critical services stems from the industry contribution, which the NRC is now proposing constitutes "an undue burden."

6. Critical Challenge: Public Health and Medical Support

Since there will no longer be a federal/state planning and exercise process of any significance due to the absence of both the requirement to carry out such activities or the funding to do so, there is little likelihood that these systems will function at an acceptable level should such be required of them.

7. Critical Challenge: Human Services

Although there have been significant advancements made toward alleviating the shortcomings highlighted in the wake of Katrina, the issues persist even in the face

of industry funding targeted to addressing these challenges. The NRC's proposed policy would eliminate that funding, with predictable results.

8. Critical Challenge: Public Communications

Absent industry financing, there is little possibility that a state/local entity will be able to support their elements of this complex communication network, especially in a place where plant location dictates multi-state/federal coordination in messaging, timing and personnel. This will also severely impact the ability of federal agencies to gather and disseminate accurate information in a timely manner. Communication is usually the first casualty of a disaster. However, the proposed NRC regulations could well result in this component becoming a casualty long before a disaster strikes.

9. Critical Challenge: Environmental Hazards and Debris Removal

Again, absent industry financing, there is little possibility of ensuring the accuracy or speed in which critical messaging will occur. As was learned in Fukushima, confusing and incorrect messaging relating to radiation levels and location left first responders and the general public in harm's way.

10. Critical Challenge: Non-governmental Aid

By eliminating the industry requirement to underwrite these services and aid, it is unrealistic to expect that such aid will be available in a timely, sufficient or coordinated manner. We will have, effectively, taken a large step back into the pre-Katrina world.

The entire report can be found at:

<http://permanent.access.gpo.gov/lps67263/katrina-lessons-learned.pdf>

C. FUKUSHIMA

Lessons learned and how they apply to the U.S.:

1. Radiation does not behave according to plans

Rather than follow the "best case scenario" typically practiced in disaster drills, radiation at Fukushima did not follow straight line symmetry, nor did it adhere to the traditional "pie shaped" dispersal pattern. This resulted in confusion, panic and exposure to the evacuated public and responders alike. The assumptions relative to a drained spent fuel pool that are relied upon as a foundation for the Interim Staff Guidance are those of the "best case scenario" variety. If those assumptions are wrong, the proposed policy leaves no Plan B upon which to rely.

2. Public trust in nuclear power industry/government Officials is weak, at best

Within days of the on-set of the disaster, the public came to trust little of what the industry told them, received inadequate information from the government and severely criticized the government for relying on the nuclear industry to address

the crisis. In the US, should NRC assumptions as to what could happen with a ruptured spent fuel pool or dry cask tampering prove incorrect, there is going to be little tolerance among the general public relative to government statements as to the extent of danger or the wisdom of precautionary actions suggested.

3. A nuclear plant-related disaster may occur simultaneously with other disasters.

The occurrence of simultaneous disasters, the tsunami and the events at the Fukushima plant, overwhelmed disaster response systems. Historically, and currently, the only thing that has enabled federal/state/local/non-governmental agencies to maintain the excess capacity near nuclear facilities in the U.S. to respond to a nuclear power plant disaster has been industry financial support.

4. “Best case scenario” planning resulted in “worst case scenario” outcomes.

Emergency shelters were both overwhelmed by the public and over-run by spreading radiation to such a degree that shelters were compelled to relocate multiple times, resulting in additional public panic and a high rate of death related to shelter fatigue among elderly people. In some instances, evacuees were relocated to as many as 3 different shelters before finding stable sheltering more than 200 miles from their homes. Some shelters remained open for over 1 year.

5. When confronted with an actual disaster, response agencies are likely to deviate from carefully constructed public positions, resulting in confusion and fear on the part of the public, as well as overwhelming emergency response systems.

The decision by the US Government to order US military personnel to evacuate to a distance of 50 miles flew in the face of more than 30 years of planning doctrine that had been based on assuring the public that there will never be a need to evacuate further than 10 miles. Such an action has now placed a significant element of doubt in the minds of future evacuees and responders alike as to what a “safe” distance is from a nuclear disaster.

IV. THE VERMONT RED CROSS EXPERIENCE:

Following the disaster at Fukushima, the Vermont & New Hampshire Upper Valley Region of the American Red Cross conducted a year and a half-long review of the Vermont Radiological Emergency Response Plan as it relates to the state’s only nuclear plant (Entergy Corporation’s Vermont Yankee Nuclear Power Plant). The conclusions of that study, relative to sheltering and mass care, identified several unworkable components from the perspective of ensuring public wellbeing. Highlights of the review:

1. Concerns that a single Reception Center for evacuees could handle a potential 28,000 Vermont evacuees and that those evacuees would arrive at the Reception Center in an orderly fashion and only in pre-ordained stages.

2. That waiting until an event occurs to assign evacuees to specific shelters poses unacceptable levels of confusion and delay. The Red Cross has proposed a pre-designated shelter system by community. While eliminating several logistical concerns, it does raise others with regard to the local transportation system's ability to facilitate these specific transfers.
3. Shelters were deemed to be sited too close to the EPZ and too few in number. Based on the Fukushima experience, the Red Cross has now sited its shelters in excess of 50 miles from the EPZ and increased the number of shelters to 25. This in turn, has raised new logistical and support concerns so as to call into question the ability of the transportation segment of the plan to fulfill its mission and dramatically increased the number of shelter workers needed to support this increase in shelters.
4. The pre-designation of evacuees to specific shelters and the new 50 mile radius for shelter locations have called into question the efficacy of the radiological monitoring/screening components of the Plan as they relate to sheltering.

V. CONCLUSION

The aforementioned review/analysis exposed significant weaknesses in the current Vermont Radiological Emergency Response Plan which has been under development for over a quarter century. If tried and true plans can be found this wanting when it comes to nuclear power facility preparedness, what should we expect our level of preparedness to be once ISG-02 is put into place and there is no effective plan? The challenges we have identified locally are difficult enough to resolve with the full support of our industry partner. Should the proposed interim staff guidance be accepted, it would not only hinder the ability to resolve these problems, but it would cause a break down in planning and communication that would generate a greater divide between the level of preparedness that now exists and that which should be attained to assure public safety in the possible event that the NRC's theoretical assumptions prove to be even partially incorrect during an accident or intentional act during decommissioning.