PSDAR & Decommissioning Working Group

Recommendations for NDCAP 2018 Annual Report

"The NDCAP PSDAR & Decommissioning Work Group will focus on familiarizing itself on all relevant PSDAR and Decommissioning documents, components, standards and information from the NRC, Nuclear Power Systems that have undergone decommissioning in recent years, and other related public information from authoritative sources, as well as discussing the relevant issues with appropriate representatives from both public and private sectors, with the intent of using all of this information as background to make appropriate recommendations to the other NDCAP Working Groups, and the NDCAP overall, for its statutorily required annual report, as well as any other appropriate recommendations during the next year."

1. **Decommissioning Annual Radiation Standard**

Finding:

NRC requires that a decommissioned nuclear site meet their annual radiation exposure standard of 25 millirems before releasing the impacted land from the Nuclear Power Station for unrestricted use.

Recommendation:

The Commonwealth of Mass. should adopt a nuclear safety radiation standard of less than10 millirems, applicable to all nuclear power system sites in the Commonwealth, as a greater level of protection for the citizens and environment of Mass.

2. **Emergency Planning Zone (EPZ)**

Finding:

The NRC is considering changing their requirement for nuclear licensees to maintain an Emergency Planning Zone (EPZ) from

10 miles around the nuclear site while the nuclear reactor is operational, to just that of the area surrounding the pad storing their dry casks, 10 months after the fuel is out of the reactor and is in the spent fuel pool, once the nuclear reactor is permanently shut down. There is still high risk from spent fuel rods until those rods have been moved into dry casks, sealed into those casks and those casks placed onto storage pads.

Recommendation:
The Commonwealth should encourage the NRC and Entergy to leave the 10 mile radius of the EPZ currently required for when the reactor is operational, to remain the same, including all related requirements, until all spent fuel assemblies are removed from wet storage and placed in NRC approved dry casks, sealed and stored on dry cask storage pads, on site, outside the reactor building, and at a safe distance back from the shoreline and elevated to protect against any impacts of sea level rise, and to assure a greater level of safety for the people of Mass., after which the size of the EPZ can be reduced to an area agreed upon by the Mass. Dept. of Public Health and the NRC.

3. **Decommissioning Option**
Finding:
Currently the NRC allows licensees three options for the decommissioning of nuclear power systems: DECON, SAFSTOR & ENTOMB. The most common form of decommissioning option chosen by licensees has been SAFSTOR, which can take up to 60 years. Entergy has indicated that it is leaning towards

the SAFSTOR option. Because the PNPS site is located in highly populated eastern Mass., where the ocean appears to be rising at a faster rate than the global average, the people, economies and environment of eastern Mass. are exposed to risk and economic loss. Such a long period for decommissioning would unnecessarily expose the people, economies and environment to potential risk and loss.

Recommendation:
Encourage Entergy to adopt rapid decommissioning as the option for the decommissioning of the PNPS, in light of the environmental and security threat environment, for the safety and economic benefit of all parties, the licensee, the people, economies and environment of the Commonwealth of Ma. The sooner the PNPS is fully decommissioned, the sooner the people and environment of eastern Ma. will realize a higher degree of protection, and the sooner the land impacted can be put to the best unrestricted use, as determined by the Town of Plymouth and the licensee working together.

4. **Ma. Nuclear Power System Decommissioning Oversight**
Finding:
Currently the Commonwealth of Ma. has no direct authority over the nuclear license and decommissioning of the PNPS.

Recommendation:
The Commonwealth should explore developing legislative authority over the decommissioning of nuclear power systems within its borders, along the lines similar to that which may

exist, and / or which may have been undertaken by other states with similar nuclear power systems.

5. **ISFSI Pad location**

Finding:

As part of the decommissioning process for the PNPS, the removal of all spent fuel rods from wet storage in the reactor building to dry casks, will necessitate the location and construction of a second storage pad for the dry casks once the existing pad has reached its design and planned capacity for the storage of dry casks.

Since the PNPS is located directly on the East Coast and Cape Cod Bay, the potential for flooding and storm damage to those dry casks due to significant flooding events and the additional impact of sea level rise is of great concern to the safety, of the people, environment and economy of the Host community of Plymouth, as well as adjacent communities.

Recommendation:

The Commonwealth should encourage the NRC to require Entergy to use the most current and accepted by the NRC, flooding information for the PNPS site, to locate that second pad, protecting it and the dry casks stored on it, against the potential from any future flooding damage. In addition, Entergy should be required to use such information to provide similar protection to the existing pad and casks stored on it, by taking whatever measures may be determined necessary by the Commonwealth to provide a similar level of protection.

6. PSDAR Submission & Public Meeting Timing

Finding:

The NRC requires the licensee of the PNPS up to two years after the shutdown of the reactor, to submit a Post Shutdown Decommissioning Activities Report (PSDAR) which details the decommissioning option chosen, the decommissioning cost estimate and timeline.

The NRC mandates one public meeting to discuss the PSDAR with the public after the PSDAR is submitted to the NRC. This timeline is not in the best interests of the Commonwealth of Mass., or the host and adjacent surrounding communities to the PNPS.

Recommendation:

The Commonwealth of Mass. should encourage Entergy to submit its PSDAR on the PNPS to the NRC six months prior to the shutdown of the reactor at PNPS. It should also encourage the NRC to conduct its public meeting on the Pilgrim PSDAR within 60 days following the submission of the PSDAR to the NRC so that the host, and the public can have sufficient time and opportunity to review the PSDAR and submit and / or present their comments on it to Entergy and the NRC at, and / or prior to that public meeting so that Entergy will have sufficient time to review those comments and decide which of those comments it may adopt and / or include I their final PSDAR prior to the actual beginning of the decommissioning process.

7. PSDAR Review & Approval by the NRC

Finding:

Current NRC rules do not require the NRC to approve PSDAR submissions by NPS licensees. The NRC simply accepts them and reviews them to determine whether they meet the NRC requirements, and if not, the NRC notifies the licensee of the deficiencies which the licensee must then address. This does not appear to be the best practice to protect the interests of the host and adjacent communities.

Recommendation:

The Commonwealth should encourage the NRC to amend their regulations to require that licensee PSDARs be reviewed and accepted by the NRC, and the Commonwealth, as fully meeting their decommissioning requirements prior to the licensee being able to proceed with their decommissioning plans, and in an expeditious and transparent manner. This should assure the maximum protection of the people, environment and economies of the host and adjacent communities.

8. Decommissioning Financial Protection Plans

Finding:

The NRC rules require NPS licensees to maintain sufficient insurance to protect against loss from accidents resulting in leaked stored radioactive fuel, and other radioactive storage material waste onsite. The amounts of this insurance can, however, be reduced, by obtaining and exemption from the NRC. The NRC is considering changing this to a two step graded approach, vs a four step approach, assigning a fixed amount of onsite insurance to each step.

Recommendation:
The Commonwealth should encourage the NRC to adopt the approach that will fully insure against the consequences to the Region should an accident occur impacting offsite assets, while continuing to review the technical basis for each approach, the proposed amounts of financial protection for each level and the significance of government-sponsored indemnity and its applicability to a decommissioning reactor, and to present the results of their review and recommendations to the public before making and implementing a final decision. The Commonwealth would be in the best position to represent the interests of the Host community and the public.

9. Decommissioning Trust Fund (DTF)

Finding:
The NRC requires licensees to maintain sufficient funds to meet its requirements for decommissioning funding assurance for decommissioning activities. Such funding and funding assurance does not directly allow for such funds to be used for non-decommissioning activities, such as spent fuel management and emergency planning. Such funds may be used for non-decommissioning activities only if the licensee requests an exemption that is approved by the NRC, which finds that the funds in the Decommissioning Trust Fund are sufficient to fund all decommissioning activities, as well as the additional activities in the request, such as spent fuel management. The NRC is currently considering changing their DTF regulations and eliminating the requirement that licensees file an application

for exemption for the use of such funds. The NRC states that it would, however, continue to require the licensee to provide "reasonable" assurance that sufficient funds remain available for all decommissioning activities.

Recommendation:
The Commonwealth should encourage the NRC to go beyond a "reasonable" assurance sufficient fund requirement for all decommissioning activities and require licensees to provide a "guarantee" of sufficient decommissioning funds to fund the completion of all decommissioning activities.

10. Emergency Preparedness

Finding:
The NRC is considering changing their current rules dealing with their emergency preparedness requirements. It is proposing a graded approach that is commensurate with reductions in radiological risk at four different stages or levels of decommissioning: (1) permanent cessation of operations and removal of all fuel from the reactor vessel, (2) sufficient decay of fuel in the SFP such that it would not reach ignition temperature within 10 hours under adiabatic heatup conditions, (3) transfer of all fuel to dry storage, and (4) removal of all fuel from the site.

Recommendation:
The Commonwealth should support this change, so long as it is also agreed to by MEMA and FEMA, and only if those agencies

have thoroughly evaluated the impact of the plan on the Commonwealth’s people and resorces.