APPROVED AT 2/20/19 MEETING

NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL ("NDCAP")
Wednesday, November 28, 2018
Plymouth Community Intermediate School ("PCIS"), Little Theatre, 117 Long Pond Road, Plymouth, MA
Meeting Minutes

Meeting called to order at 6:30 p.m. by NDCAP Chair Sean Mullin.

NDCAP MEMBERS PRESENT:

- H. Joseph Coughlin, Member from Plymouth Nuclear Matters Committee
- Pine duBois, Speaker of the House Appointee
- John G. Flores, Appointee of Governor Baker
- Richard Grassie, Minority Leader of the House Appointee
- Robert Hayden[1], Department of Public Utilities
- David Johnston[2], Department of Environmental Protection
- Robert Jones[3], Executive Office of Health and Human Services
- Heather Lightner, Representative of the Town of Plymouth
- Joseph Lynch, Representative of Pilgrim Nuclear Power Station
- John T. Mahoney, Representative of the Town of Plymouth
- Sean Mullin, Minority Leader of the Senate Appointee (Chair)
- David C. Nichols, Governor Baker Appointee
- John Ohrenberger, Representative of Pilgrim Nuclear Power Station
- Kevin O'Reilly, Speaker of the House Appointee (Vice-Chair)
- Jack Priest, Department of Public Health, Radiological Control Program
- Senator Dan Wolf, President of the Senate Appointee

NDCAP MEMBERS NOT PRESENT:

- Jessica Casey, President of the Senate Appointee
- John Chapman, Executive Office of Housing and Economic Development
- Pat Ciaramella, Representative of Old Colony Planning Council
- Kurt Schwartz, Massachusetts Emergency Management Agency
- Paul D. Smith[4], Representative of UWUA Local 369

INTRODUCTION AND REVIEW OF JULY, AUGUST, SEPTEMBER, AND OCTOBER MEETING MINUTES:

Chair Mullin asked whether any Panel members had any proposed revisions to the July 18 meeting minutes. Hearing none, he called for a motion to accept the July 18 meeting minutes, which passed by unanimous vote of the members present. Next, Chair Mullin asked whether any Panel members had any proposed edits to the August 15 meeting minutes. Chair Mullin suggested two minor edits and called for a motion to accept the August 15 meeting minutes with his edits, which passed by a unanimous vote of the members present. Next, Chair Mullin asked whether any Panel members had any proposed edits to the September 19 meeting minutes. Hearing none, Chair Mullin called for a motion to accept the September 19 meeting minutes, which passed by a unanimous vote of the

[1] Designee of Angela O'Connor (DPU)
[2] Designee of Secretary Beaton (EEA)
[3] Designee of Secretary Sudders (Executive Office of Health and Human Services)
[4] Designee of Richard Sherman (Representative of UWUA Local 369)

members present. Lastly, Chair Mullin asked whether any Panel members had any proposed revisions to the October 24 meeting minutes. Hearing none, he called for a motion to accept the October 24 meeting minutes, which passed by unanimous vote of the members present.

HOLTEC PRESENTATION ON ITS CASK SYSTEM AND DESIGN ATTRIBUTES:

Chair Mullin noted that the Plymouth Board of Selectmen had requested an update on the Panel's activities, which he had provided at a recent board meeting. He also stated that the board provided him with a letter to Holtec from the Board listing the items that the town would like to negotiate with Holtec. Mr. Mahoney noted that the Board of Selectmen unanimously supported this list.

Chair Mullin introduced presenters Joy Russell and Stefan Anton from Holtec. Ms. Russell and Dr. Anton provided background information on their training and experience in the nuclear industry. Ms. Russell noted that other representatives from CDI are present at the meeting.

Ms. Russell stated that Holtec's objective for the meeting is to provide additional background information on the dry fuel spent storage system. She next described Holtec's business, which is the safe storage of spent nuclear fuel. She noted that environmental protection is a core goal of the company. She explained that Holtec has developed a new manufacturing facility in New Jersey and that Holtec is a vertically integrated company. She stated that the equipment deployed at Pilgrim is manufactured in the US, as are all their equipment deployed worldwide. She noted that Holtec's spent fuel systems will be in use at 116 sites in the world, out of 440 sites worldwide. She explained that numerous nuclear regulatory entities worldwide, including the NRC, have approved Holtec's systems.

Ms. Russell stated that Pilgrim adopted Holtec's Hi-Storm system in 2009 after a bid evaluation process, and that there are 17 loaded Hi-Storm systems loaded at Pilgrim. She noted that Holtec is committed to continue moving the casks from the low pad to the new, higher pad. She also explained that the term "spent fuel" could be misleading because it is a solid ceramic material. She passed around replica examples of one pellet. She explained that the pellets are stacked inside a tube called a fuel rod, and the fuel rods are placed inside a fuel assembly. The assemblies are stored in a 40-foot deep pool. She noted that after spending time in the water, the assemblies could be moved into dry fuel storage. The purpose of the dry fuel storage is to protect the spent fuel, the outside environment, and the public. She explained that the casks contain outer shells and inner shells, and that the space between them, which is 27" thick, is filled with concrete. She explained that there is no rebar in the concrete, and that this prevents cracking. She explained that the design requires minimal maintenance because it has no pumps or motors, and is purely passive. She stated that every nuclear plant has processes and procedures in place to ensure that the cask functions properly. Mr. Mahoney asked when a lid is placed on the casks.

Ms. Russell explained that the NRC regulates the cask system. Under NRC regulations, Holtec's design must meet certain requirements, including withstanding different types of projectiles. These projectiles include automobiles. She stated that the NRC's licensing and safety board found that the Holtec system could withstand being hit by a fully laden F-16 or a Boeing 767. Ms. Russell explained that the loaded ISFSI pads would emit a radiation dose of less than 5 millirem per year, which is the same exposure that a person would experience on a cross-country flight.

Dr. Anton explained that he would provide more details on the canisters, which are multipurpose canisters made of stainless steel. He stated that it is fully welded. The canisters are licensed for use in either a storage system or a transportation system.

He stated that a fully welded system is impregnable from release of radioactive material, and this type of canister has never leaked. Mr. Priest asked how the canisters are monitored to ensure that the welds are leak proof. Dr. Anton replied that x rays and helium leak tests are used to examine the welds to make sure they cannot leak. Because of these tests, no specific monitoring is required.

Dr. Anton explained that cask systems are designed to last for a long period because there is no permanent repository solution in place. Therefore, they must maintain their integrity, and, after testing at Diablo Canyon, the NRC has concluded that there are no concerns with the Holtec canisters. The NRC has developed an aging management plan to monitor casks on an ongoing basis, and Holtec's manufacturing process reduces the risk of stress corrosion cracking. Dr. Anton described the interior of the canisters, which is made of metamic-HT. Next, Holtec showed a 5-minute video depicting the 5-day process for loading canisters into dry cask storage.

NDCAP MEMBER QUESTION AND ANSWER:

Mr. Mahoney asked whether all welding is done by machine or if any is done by hand. Dr. Anton responded that most is done by machine

Ms. Lightner asked about the inspection process. Dr. Anton responded that the purpose is to ensure that the surface of the canister is inspected and has no flaws on the surface. Ms. Lightner asked what would happen if flaws were detected. Dr. Anton responded that Holtec would not attempt to repair the canister, but rather place the flawed canister into a larger canister, which would also be welded shut. He explained that this situation has not arisen.

Mr. Coughlin asked what would happen with fuel assemblies when it is time to move the spent fuel offsite. Mr. Russell explained that canisters will be removed from the storage casks and be placed in a transportation cask, which weighs less, and these transportation casks can be sent by barge or rail.

Mr. Johnston asked how the casks are drained after leaving the pool. Dr. Anton explained that there are NRC-approved methods, including vacuum drying and flooding with hot helium.

Mr. Grassie asked what the lifespan of a canister is, and if it has a warranty. Ms. Russell replied that the warranty is a confidential contractual term. Mr. Grassie asked if the lack of need to monitor the casks is a design goal or a design result. Dr. Anton responded that it is a design result because it is a passive system that is leak tight, and that the design life for the system is 100 years. Mr. Grassie asked what the oldest Holtec system currently in use is, and where it is located. Ms. Russell responded that Plant Hatch or at Dresden, which both loaded in 2000.

Mr. Flores asked for confirmation that the life expectancy of the casks is 100, but that in practice the oldest casks in operation at this point are 18 years old. Dr. Anton responded this is accurate and that the life expectancy of the casks is 100 years, if maintained correctly.

Ms. duBois asked what proper maintenance of the casks entails. Sr. Anton responded that the NRC has defined maintenance requirements, and they include inspections for surface degradation. Ms. duBois also asked how the helium is vented. Dr. Anton responded that helium remains, and that only water is expelled. Ms. duBois asked for clarification of Holtec's mission to protect the environment. Ms. Russell responded that protection of the environment and people are paramount, and this comes from ensuring the integrity of its systems. She noted that Holtec's manufacturing facilities also strive to minimize environmental impacts.

Vice-Chair O'Reilly asked what will happen at the end of the casks' lifespans if no permanent waste repository has been established at that time. Dr. Anton responded that the waste would be placed into new casks if necessary. He noted that the casks might remain effective even after 100 years and that 100 years is a minimum lifespan.

Senator Wolf asked how long the spent fuel remains harmful. Dr. Anton responded that it would remain harmful longer than 100 years. Senator Wolf noted that the Panel should consider how the costs associated with cask replacement in 100 years would be allocated. He also asked about the warranty term for the casks. Ms. Russell responded that she is not at liberty to divulge information related to contract terms.

Chair Mullin noted that the public should be made aware of certain contractual terms, such as the warranty period. He asked about cask transportation. Dr. Anton responded that the canisters are moved from the storage cask to a smaller, transportation cask. Chair Mullin asked why the licensing process has been reduced from 5 years to 3 years. Dr. Anton responded that the basket materials used now allow hotter assemblies to be inserted that previous technology allowed. This reduces the time the canisters must remain cooling in water. The temperature is 400 degrees Celsius.

Mr. Nichols asked about the NRC certification system timeline. Dr. Anton responded that the NRC formerly certified systems in 20-year increments, and a licensee would reapply every 20 years. Recently, the period has been extended to 40 years. He noted that most of Holtec's systems are certified for high burnout fuel.

ENTERGY AND HOLTEC DECOMMISSIONING UPDATE:

Andrea Sterdis, VP of Regulatory Programs for CDI provided background information on CDI and her professional background. She explained that, on November 15, Holtec and Entergy jointly submitted to the NRC a license transfer application for Pilgrim. Holtec also submitted a PSDAR based on DECON and included a DECON exemption request to use the decommissioning trust fund for site restoration and spent fuel management expenses in addition to decommissioning. She explained that this type of exemption request is typical in the nuclear industry.

Ms. Sterdis noted that, on the same day, Entergy also submitted a PSDAR to the NRC, but Entergy's was based on SAFSTOR, which is a decommissioning approach under which a licensee leaves a decommissioned plant standing in a safe condition for up to 50 years before decommissioning it. She explained that Holtec's DECON PSDAR would only be effective if the NRC approves the license transfer; otherwise, Entergy's SAFSTOR PSDAR would be effective.

Ms. Sterdis noted that the schedules between the Holtec and Entergy PSDARs are different, and that Holtec plans to do partial site release within 8 years following license transfer and sale closure. She explained that cost estimates also differ. Holtec requires a realistic cost estimate to begin decommissioning as soon as the license transfer occurs, whereas SAFSTOR estimates are based on projections of costs 50 years in the future. She stated that both approaches would result in safe, compliant decommissioning.

With regard to next steps, she stated that the NRC is conducting acceptance review, which takes about 60 days. Next, the NRC will docket the license transfer and have a public comment period. This usually happens 30-60 days after docketing. She noted that the PSDAR would have a comment period 30 days

after submittal and the NRC will hold a local public meeting on the PSDARs 60 days after submittal. She stated that Entergy and Holtec requested license transfer approval by May 31, 2019.

NDCAP MEMBER QUESTION AND ANSWER:

Mr. Coughlin asked for clarification whether the comment periods begin with publication in the Federal Register, which Ms. Sterdis confirmed.

Ms. duBois stated that site cleanup in 8 years and 60 years differ in that the site may be submerged in 60 years.

Vice-Chair O'Reilly asked about the analysis used to determine socioeconomic impacts in the PSDAR and noted that Plymouth conducted a study that reached different conclusions regarding socioeconomic impacts.

Senator Wolf stated that the Panel is presented with only two options: support the license transfer to Holtec in order to have the DECON outcome that it prefers; or oppose the license transfer and have the SAFSTOR outcome it does not prefer. He asked why Entergy is unwilling to propose DECON.

Chair Mullin stated that certain answers are less firm than he would like. He stated that Holtec has provided no assurances to the community and suggested that Holtec confer with the town and state to discuss such assurances. Ms. Sterdis noted that the economic impacts referenced by Vice-Chair O'Reilly and Chair Mullin are related to the economic impacts of decommissioning activity itself, not the impacts of shutting down the plant.

Senator Wolf asked why a license transfer is necessary for decommissioning to be done in 8 years. Mr. Massie responded that the Entergy PSDAR reflects a nuclear operations company, whereas Holtec's expertise is in decommissioning.

INTERAGENCY WORKING GROUP UPDATE:

Becky Ullman, Chief of Staff at EEA and Gary Moran, Deputy Commissioner at DEP presented. Ms. Ullman stated that the administration's goal for Pilgrim's decommissioning is that it be done safely and that all state and NRC regulations are adhered to, and that the licensee maintain sufficient funds to carry out decommissioning.

Regarding the purpose of the interagency working group, she stated that it was established to represent the state in matters pertaining to the plant's decommissioning and to monitoring pre and post shutdown activities. Its tasks include assisting in developing a comprehensive MOU between the state and Entergy that would transfer to subsequent buyers, development of a work plan, and review and provide feedback on NRC proceedings. The group will review comments provided in Pilgrim related proceedings. EEA Secretary Matt Beaton leads the interagency working group and briefs the governor daily, and Ms. Ullman coordinates the group. She listed the agencies represented on the interagency working group. She stated that each agency has its own expertise.

To date, the working group has held a series of meetings with Entergy and Holtec to begin a relationship and set expectations. EEA has provided relevant information to Entergy to make sure they have the most up to date data. With regard to radiological cleanup standards, EEA has had discussions with Entergy and Holtec. The group has worked on procuring a contractor through an RFP, and contractor selection is expected by December 19 with a contract to take effect on January 1.

With regard to coordination with the Panel, Ms. Ullman noted that the group sees itself as a partner with the Panel in identifying priorities to be addressed within the PSDAR to be included in the MOU. She stated that Mr. Johnston would serve as liaison between the Panel and the working group because he is a member of both, and he will provide working group updates at each Panel meeting.

With regard to coordination with the AG's office, the group will hold weekly meetings with the AG's office to analyze the PSDARs to present a united position.

For next steps, Ms. Ullman stated that the best area for collaboration on the PSDAR, and she would appreciate the Panel's analysis of what are the most concerning areas of the PSDAR to be addressed in an MOU.

NDCAP MEMBER QUESTION AND ANSWER:

Senator Wolf stated that he looks forward to collaborating with the working group and appreciates that resources are being engaged early in the process.

Mr. Lynch thanked Ms. Ullman for the presentation and asked if she could share her notes from her presentation.

Mr. Mahoney asked how the administration is prioritizing the Pilgrim closure. Ms. Ullman responded that it is a top energy priority. Mr. Mahoney suggested that working group members tour the Pilgrim plant. He also asked about budgeting for the working group's consultants. Ms. Ullman responded that the budget provides for $100,000.

Ms. Lightner asked if the working group has communicated with the Governor. Ms. Ullman responded that the group is directed by the governor's office and corresponds with it multiple times per week.

Mr. Johnston stated that he looks forward to providing communication between the group and the Panel.

Mr. Grassie asked specifically how Mr. Johnston would serve as liaison between the two groups. Ms. Ullman responded that she would provide Mr. Johnston with the most recent updates from the working group before each Panel meeting.

Mr. Flores asked if the legislative branch is involved in the working group. Ms. Ullman responded that it is not, and that it coordinates executive branch agencies.

Ms. duBois asked if the working group could provide the Panel with the same data it has provided Entergy. Ms. Ullman responded that she would be able to share it.

Mr. Coughlin suggested developing a regular means of communications between the working group and the Panel, and asked if the working group keeps meeting minutes. Ms. Ullman responded that the Panel will receive an update on the working group's activities at each Panel meeting.

Chair Mullin stated that he supports entities such as the working group, the Panel, and the town of Plymouth united and speaking with one common voice. He also recommended that the state, Entergy, and Holtec collaborate to decommission Pilgrim properly.

PUBLIC QUESTION AND ANSWER:

Guntram Mueller asked whether the missile used in Holtec's testing of its casks was a dead weight or if it exploded. Dr. Anton responded that the NRC regulations require dead weight

Diane Turco noted issues that occurred during the movement of Holtec casks at San Onofre, and asked if protections would be put in place to prevent the same from happening at Pilgrim. Dr. Anton responded that those protections will be put in place at Pilgrim.

Jim Lampert asked why Holtec did not include escalation of decommissioning costs in its PSDAR and where it included its estimated profit. He also asked how the interagency working group plans to communicate with the public and whether the interagency working group is subject to the open meetings law. Mr. Massie from Holtec responded that the NRC prescribes the method for calculating decommissioning costs, and they performed their analyses consistent with those regulations. He also explained that profit is included in the cost estimate. Ms. Ullman explained that communications with the public would occur through the usual communication channels at EEA and the Governor's Office. She also explained that EEA's legal department has determined that the interagency working group is not subject to the open meetings law.

Henrietta Consentino asked what the difference is between the canisters at San Onofre, where some canisters were scratched, and at Pilgrim. Dr. Anton responded that a shielding ring that caused the scratch was too tight, and that this type of ring will not be used at Pilgrim. Chair Mullin suggested that Holtec provide additional information on San Onofre.

Mary Lampert asked what funds would be used in the event that a cask cracks or if the casks need to be replaced in 100 years. Mr. Massie responded that those funds would come from litigation with the DOE.

Elaine Dickinson noted that there was a breakdown in reporting the incident at San Onofre and asked what would have happened if a canister had dropped there. My. Lynch responded that the requirement to report the incident was the licensee's, not Holtec's. Dr. Anton explained that the canister was tested for drops and would not have been breached.

Richard Rothstein asked whether the warranty issue would be moot after the license transfer is approved because Holtec would be the licensee for its own products (as opposed to the current contractual relationship between Holtec and Entergy). Ms. Russell responded that this is accurate. He also recommended that the interagency working group should involve the Panel in developing its MOUs.

WRAP UP AND ADJOURN

Chair Mullin stated that the NRC has tentatively scheduled a public meeting in Plymouth to discuss Pilgrim-related developments on January 15. He noted that NRC representatives may also appear at the following day's Panel meeting. He explained that there would be no Panel meeting in December, and the next Panel meeting will be on January 16.

Chair Mullin called for a motion to adjourn. It was so moved and seconded.

Meeting adjourned at approximately 9:20 p.m.