

May 18, 2011

Dr. Lewis Cuthbert
The Alliance for a Clean Environment
1189 Foxview Road
Pottstown, PA 19465

Dear Dr. Cuthbert:

I am responding to your letter to me dated April 11, 2011. In your letter, you raised concerns with the safety of the Limerick Nuclear Station in light of the events at Fukushima Daiichi, and requested that the NRC take a number of regulatory actions which you believe would enhance the safety of the facility.

The NRC has responded proactively to the tragic events in Japan to assure the public of the high level of safety of U.S. nuclear reactors, while at the same time initiating a comprehensive review effort to determine what appropriate safety enhancements may be warranted. Of note is that the agency will be reviewing its regulatory programs in light of lessons learned from the events in Japan over the course of the next six to nine months. The NRC staff has already implemented the Commission's direction of March 23, 2011, to establish a senior level task force to conduct a thorough review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system. This activity will have both near-term and longer-term components.

For the near-term effort, the task force has begun a 90-day review. This review will evaluate all of the currently available information from the Japanese events to identify near-term operational or regulatory issues potentially affecting the 104 operating reactors in the U.S., including the two Limerick units. Areas of investigation include, but are not limited to, the ability to protect against external environmental events, response to station electrical blackouts, spent fuel accident progression, and severe accident management issues. Over this 90-day period, the NRC staff will develop recommendations, as appropriate, for changes to inspection procedures and licensing guidance, and will recommend whether generic communications, orders, or other regulatory requirements are needed. For example, NRC Bulletin 2011-01, "Mitigating Strategies," was issued on May 11, 2011, requiring licensees to provide a written response to the NRC to confirm compliance with 10 CFR 50.54(hh)(2), which addresses plant requirements to develop and implement procedures to respond to a potential aircraft threat. The NRC staff will use this information to determine if additional assessment of implementation is needed, the current inspection program should be enhanced, or further regulatory action is warranted.

The task force's longer-term review will begin as soon as the NRC staff has sufficient technical information from the events in Japan, with a goal of commencing no later than the completion of the 90-day near-term effort. The task force will evaluate all technical and policy issues related to the events to identify any potential generic or research issues, changes to the reactor oversight process, and modifications to the NRC's regulations that should be pursued.

With those plans in place and underway, the NRC and the nuclear industry are currently pursuing actions that appear prudent, even though we do not yet have all the details needed to fully assess the implications of the Japanese events for the U.S. reactor fleet. Specifically,

nuclear plant licensees are voluntarily verifying that their capabilities to mitigate conditions resulting from severe accidents, including the loss of significant operational and safety systems, are in effect and operational. The NRC recently completed temporary instruction TI 2515/183 to look at licensees' readiness to deal with design basis accidents as well as more severe accidents (Limerick report 05000352,353/2011008; dated May 13, 2011; ADAMS ML111300367). The NRC will take additional actions that we believe to be appropriate as our understanding of the events in Japan become clearer.

In your letter, you requested that the agency take a number of actions which you believe will enhance the safety of Limerick. Several of the actions you mention will be the subject of the NRC's ongoing reviews, most notably licensee's station blackout coping provisions. Other issues, such as physical protection of the station in the event of a terrorist attack, were reviewed as part of the agency's response to the events of 9/11/2001. These post 9/11 requirements were incorporated into the NRC's regulations under 10 CFR 50.54(hh)(2) which, as I previously stated, addresses requirements to develop and implement procedures to respond to a potential aircraft threat.

I would like to address three specific points you raised in your letter, namely, 1) removing fuel rods from the pools before the required 5 years, 2) requiring more onsite water storage at Limerick, and 3) raising the permissible public radiation dose limit from 360 to 620 millirems per year. With regard to the transfer of spent fuel, Exelon is legally prohibited from transferring spent fuel to dry cask storage that has not cooled sufficiently per the licensing provisions and designs of the dry cask containers. We have verified through our inspections that, to date, the transfer of spent fuel to dry casks at Limerick has occurred after a cooling period far longer than the licensing provisions of the dry cask containers. Secondly, with regard to onsite water storage, the Limerick site has an onsite spray pond designed to remove decay heat from the facility for a period of at least 30 days. In addition, the cooling tower basins and a large onsite makeup water storage tank hold very large amounts of water which could be used to cool the facility for a number of weeks. Finally, with regard to what you characterized as an increase in the permissible doses, these are recent changes in the estimated radiation exposure of the average American as posted on the NRC's website, not an increase in permissible dose allowed by NRC regulation. This change is reflective of the current estimated annual radiation exposure of Americans from all sources of radiation such as radon, medical examinations and treatments, natural background, and other natural and man-made sources. This estimate was published by the U.S. National Council on Radiological Protection and Measurements (NCRP) over a year ago, but only recently updated on the NRC's website. The NRC regulatory limits of exposure to the public have not changed for many years. Information regarding the NRC's radiation exposure limits is provided in the attached fact sheet.

Finally, with regard to the decision to recommend a 50-mile radius evacuation of U.S. citizens near the Fukushima Daiichi site in Japan, this decision was based upon very limited and unverifiable information on the conditions at that facility that was available early on in the event. Specifically, there were preliminary indications of some reactor fuel damage at three of these reactors and severely degraded conditions in at least two of the spent fuel pools at the six-unit facility. The advisory was based on calculations performed by NRC experts that indicated that releases from these reactors could possibly exceed EPA protective action dose guidelines. This advisory was a prudent, conservative recommendation by the NRC and was not based on the specific radiological conditions that existed at that time, but rather was based on a conservative assessment of radiological conditions that could possibly exist given the limited information available.

In the U.S., there are two emergency planning zones (EPZ) established around a nuclear power plant. The first zone, the 10-mile EPZ, is where exposure from a radiological release event would likely be from the radioactive plume and it is in this EPZ where protective actions such as sheltering and/or evacuation would be appropriate. Beyond the 10-mile EPZ and out to the 50-mile EPZ is the ingestion exposure pathway where exposure to radionuclides would likely be from ingestion of contaminated food/milk and surface water. These zones are not limits but rather provide for a comprehensive emergency planning framework that would allow expansion of the response efforts beyond the zones should radiological conditions warrant such expansion.

In the event of a radiological emergency at a nuclear power plant in the United States, we would anticipate knowing substantially more information regarding the condition of the reactors, their containment structures, and the spent fuel pools, in part, because of the active presence of NRC resident inspectors. We would be able to make precise recommendations regarding the evacuation of individuals within the 10-mile radius EPZ of the facility, as well as providing recommendations on the need for any other protective action (such as sheltering) beyond the 10-mile EPZ in the rare event that radiation doses to the public are projected to be above the EPA protective action guideline.

In summary, the NRC will be promptly evaluating the lessons learned at Fukushima Daiichi as it applies to the safety of existing power reactors as well as the adequacy of emergency planning guidance and policy in the United States. This would include a review of radiation doses actually received at various distances from the Fukushima Daiichi facility, particularly those at and beyond the 20-kilometer (12-mile) evacuation zone established by the Japanese government around the Fukushima site. At this time, the agency considers our existing emergency preparedness framework and regulations to provide reasonable assurance of adequate protection of public health and safety in the event of a radiological emergency at a U.S. power reactor facility.

I trust this letter has been responsive to your concerns. If you have any additional questions in this matter, please contact me at (610) 337-5120. I anticipate talking with you personally at the upcoming Limerick Annual Assessment Meeting on May 18, 2011.

Sincerely,

/RA/

Paul G. Krohn, Branch Chief
Projects Branch 4
Division of Reactor Projects

Enclosure: OPA Fact Sheet

In the U.S., there are two emergency planning zones (EPZ) established around a nuclear power plant. The first zone, the 10-mile EPZ, is where exposure from a radiological release event would likely be from the radioactive plume and it is in this EPZ where protective actions such as sheltering and/or evacuation would be appropriate. Beyond the 10-mile EPZ and out to the 50-mile EPZ is the ingestion exposure pathway where exposure to radionuclides would likely be from ingestion of contaminated food/milk and surface water. These zones are not limits but rather provide for a comprehensive emergency planning framework that would allow expansion of the response efforts beyond the zones should radiological conditions warrant such expansion.

In the event of a radiological emergency at a nuclear power plant in the United States, we would anticipate knowing substantially more information regarding the condition of the reactors, their containment structures, and the spent fuel pools, in part, because of the active presence of NRC resident inspectors. We would be able to make precise recommendations regarding the evacuation of individuals within the 10-mile radius EPZ of the facility, as well as providing recommendations on the need for any other protective action (such as sheltering) beyond the 10-mile EPZ in the rare event that radiation doses to the public are projected to be above the EPA protective action guideline.

In summary, the NRC will be promptly evaluating the lessons learned at Fukushima Daiichi as it applies to the safety of existing power reactors as well as the adequacy of emergency planning guidance and policy in the United States. This would include a review of radiation doses actually received at various distances from the Fukushima Daiichi facility, particularly those at and beyond the 20-kilometer (12-mile) evacuation zone established by the Japanese government around the Fukushima site. At this time, the agency considers our existing emergency preparedness framework and regulations to provide reasonable assurance of adequate protection of public health and safety in the event of a radiological emergency at a U.S. power reactor facility.

I trust this letter has been responsive to your concerns. If you have any additional questions in this matter, please contact me at (610) 337-5120. I anticipate talking with you personally at the upcoming Limerick Annual Assessment Meeting on May 18, 2011.

Sincerely,
/RA/
 Paul G. Krohn, Branch Chief
 Projects Branch 4
 Division of Reactor Projects

Enclosure: OPA Fact Sheet

Distribution w/encl:(via e-mail)

- D. Roberts, DRP
- J. Clifford, DRP
- P. Krohn, DRP
- A. Rosebrook, DRP
- E. Torres, DRP
- S. Ibarrola, DRP
- E. DiPaolo, DRP, SRI
- N. Sieller, DRP, RI
- N. Esch, DRP, AA
- R. Barkley, ORA

SUNSI Review Complete: rsb1 (Reviewer's Initials)

DOCUMENT NAME: G:\ORA\Barkley\ACE Letter on Limerick - Rev 2_ERO.docx

After declaring this document "An Official Agency Record" it **will be** released to the Public.

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RI/ORA	NRR	RI/DRP	RI/DRP	
NAME	RBarkley/ RB	RNelson/RN	EDiPaolo/AAR for	PKrohn/ PGK	
DATE	05/09/11	05/ /11	05/13/11	05/ 17 /11	

OFFICIAL RECORD COPY