**Responses to Information Requests from Senator Robert Menendez**
**Letter Dated January 14, 2013**

**1. Because of power outages during the storm, 36 out of 43 warning sirens were inoperable so that an alert system in the surrounding community might have failed if it had been needed. It is my understanding that legislation was required at Indian Point to provide this back-up power for sirens. In my view, at a minimum, nuclear power plants that are in areas that are subject to power outages should all be provided this protection. Please provide comments on this issue.**

At the height of the storm, a total of 39 of Oyster Creek's 42 emergency sirens were rendered inoperable due to power outages and equipment damage. The Federal Emergency Management Agency (FEMA) approved backup emergency notification method for Oyster Creek is route alerting, which involves emergency personnel in vehicles driving assigned routes to deliver emergency instructions using public address systems. Route alerting was available during the storm.

The 2005 Energy Policy Act requires nuclear power plants with a permanent population in excess of 15,000,000 people within a 50-mile radius to have backup power available for the emergency notification system, including the emergency siren warning system. Indian Point is the only nuclear power plant that meets this population criterion. However, subsequent to the 2005 Energy Policy Act, the NRC revised its regulatory requirements for emergency planning and preparedness to include a provision requiring all plants to have a backup alert and notification capability independent of the primary system. As mentioned above, Oyster Creek utilizes route alerting as their independent backup emergency notification method, which has been approved by FEMA. In addition to meeting the new regulation, Exelon has voluntarily committed to the State of New Jersey to install new sirens with battery backup capability by June 1, 2013.

**2. Also because of the power outages, I have concerns about the capacity of the generators at the plant. Can you please comment on the capacity of them to operate when power outages are long-lasting and can you help identify if the cooling pumps were close to failure and if they did fail, if there are other sources of cooling water for the generators?**

During the loss of offsite power, both of the air-cooled emergency diesel generators at Oyster Creek started as designed and provided power to vital equipment. Each of the two emergency diesel generators has the capacity to power all necessary safety-related equipment on its own. The licensee is required to keep enough diesel generator fuel oil onsite to last seven days. As part of storm preparation procedures, the licensee tops off the fuel oil storage tanks. Therefore, at the time of the storm they had more than the minimum seven day requirement. Since the emergency diesel generators are cooled by air, the loss of service water (which is assumed to occur during the probable maximum hurricane) would not have any effect on Oyster Creek's diesel generators.

**3. Residents have voiced concerns about electrical corrosion that might have been caused by the storm. Can you verify if seawater reached any critical electrical infrastructure at the plant and whether there was corrosion?**

No flood water reached any safety-related electrical infrastructure during the storm. The service water and emergency service water motor enclosures remained above the flood level. The associated cabling is enclosed in water-tight conduits and was unaffected. The licensee

performed visual inspections of the intake structure following the flood to check for water damage. These inspections identified a piece of non-safety related electrical equipment that exhibited some degradation, which the licensee subsequently successfully cleaned and tested.

**4. Residents have also raised concerns about the dry cask storage area. Was the dry cask storage of radioactive waste area compromised and could it be vulnerable to a future storm?**

The independent spent fuel storage facility was designed with natural phenomena in mind, including flooding. The highest flood water expected during a storm is 22 feet, and the storage facility is located at approximately 23 feet about sea level. Since the storm surge only reached 7.4 feet, it was unaffected by the storm. Specifically, the NUHOMS 61BT cask system used at Oyster Creek is capable of handling flood water to a depth of 50 feet and water velocity of 15 feet per second.

**5. In light of the dramatic changes to flood risks as evidenced by FEMA's new flood maps and the damage from Sandy, I ask that a revised flood management plan be considered and an overall assessment made on how close we came to a disaster and whether projections indicate the site would be able to withstand damage from future hurricanes.**

The flooding analyses required for nuclear plants are more conservative than the FEMA flood maps. Oyster Creek's Final Safety Analysis Report summarizes their flooding analysis, which concluded that the highest flood water level that can be expected on the plant site is 22 feet. This would happen during the occurrence of a probable maximum hurricane. Oyster Creek was therefore designed to withstand floods of up to 23.5 feet. Compared to the 7.4 foot water level from Hurricane Sandy, Oyster Creek was not close to flood induced disaster.

U.S. nuclear plants are capable of safely handling the most likely floods at their sites. However, as one of the actions taken in response to the accident at the Fukushima Dai-ichi reactors in Japan, the NRC is requiring each plant to complete flooding hazard re-evaluations. Due to the complexity of analyzing the tsunami hazard for a coastal site such as Oyster Creek, their response is due by March 2015.

**6. Finally, I ask that the NRC request the release of Exelon data on the analysis of the cracks, precursors to cracks and pinhole leaks that were observed in the reactor nozzle and cooling system. We all need to know whether the system has been weakened or compromised and that everything is being done to assure safety for New Jerseyans.**

Licensees are required to perform various inspections and tests of the reactor coolant system piping during refueling outages. The NRC verifies the licensee's compliance with these requirements by performing a subsequent inspection. The NRC inspected the non-destructive testing and repair activities associated with indications identified on a specific weld on reactor vessel control rod drive injection nozzle (N9), as well as a small leak that was observed during the plant operational pressure test on a reactor head penetration flange (N7B). In both cases, the NRC inspector verified that the repair, the welding activities, and applicable non-destructive examination activities were completed successfully in accordance with American Society of Mechanical Engineers Code requirements. Based on our inspections, the NRC is confident that the flaws in the reactor coolant system have been identified and repaired successfully, and the reactor coolant system is not weakened or compromised. These conclusions are documented in our publicly available inspection report, which is attached for your reference. We trust that this publicly available inspection data and report address your concern about safety issues

being addressed. Accordingly, we do not plan to ask Exelon to release their data regarding these issues.

Attachment: As stated