

June 21, 2005

**MEETING SUMMARY**

LICENSEE: AMERGEN ENERGY COMPANY, LLC  
FACILITY: OYSTER CREEK GENERATING STATION  
SUBJECT: SUMMARY OF MAY 12, 2005, ANNUAL ASSESSMENT MEETING WITH AMERGEN

On May 12, 2005, at 7:00 p.m., an Annual Assessment Meeting was conducted at the Ocean County New Jersey Administration Building, between the Nuclear Regulatory Commission (NRC) and the AmerGen Energy Company (AmerGen). The NRC requested the meeting with AmerGen management to discuss NRC's assessment of the safety performance of the Oyster Creek Generating Station for calendar year 2004.

The NRC presented and discussed its assessment of the safety performance of Oyster Creek Generating Station for the period between January 1 through December 31, 2004, as documented in our letter dated March 2, 2005. The NRC presentation included background on performance assessment results, an overview of calendar year 2005 planned inspections and oversight, and a discussion of general topics including an update on security. The NRC presentation is available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). As part of this regulatory performance meeting, AmerGen presented an overview of their performance at the facility.

Local officials, the public and the press observed this public meeting and were offered the opportunity to communicate with the NRC regarding AmerGen's performance and the role of the agency in ensuring safe plant operations at the end of the meeting. Enclosure 1 to this memorandum provides answers to questions asked at the end of the meeting by members of the public that were not fully answered during the meeting.

Sincerely,

**/RA/**

Ronald R. Bellamy, Ph.D., Chief  
Projects Branch 7  
Division of Reactor Projects

Attachments:

Enclosure 1: Meeting Questions and Answers

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## Meeting Questions & Answers

**Q. Could a hurricane remove the sheet metal exterior above the refueling floor and suck the water out of the spent fuel pool?**

A. The 100-year wind storm (i.e., a storm with the greatest intensity that can statistically be expected to occur) for Oyster Creek is postulated to have a wind speed of 100 mph for elevation between 0 to 50 feet, and 125 mph between 50 to 150 feet. This wind condition is from a postulated hurricane-type storm.

The refueling facility is located inside the Reactor Building, whose concrete portion (lower level) is constructed to withstand wind speed up to 300 plus mph, and the steel superstructure (upper level metal exterior above the refueling floor) can withstand wind speed up to 190 mph. Thus, the entire Reactor Building is expected to remain intact even in the 100-year wind storm. There is likely to be no effect on the spent fuel pool as a direct result of wind conditions. (References: (1) Oyster Creek Updated Final Safety Analysis Report, Section 3.8.4.5.4; (2) Letter, A. W. Dromerick (NRC) to J. J. Barton (GPU), 12/7/1992, Accession No. 9212110169.)

**Q. Can the side of the fuel pool be penetrated by an airliner, resulting in the release of radioactive materials? What about an airliner hitting the dry casks and penetrating the fuel assemblies? Why doesn't the reactor building have an airplane-resistant cover? Can you prove that the sheet metal covering above the reactor building refuel floor is airplane crash resistant.**

A. Significant releases due to a terrorist attack on a spent fuel pool are very unlikely. Further, it is highly unlikely that a significant release of radioactivity would occur from a dry spent fuel storage cask. If a radiation release did occur, there would be time to implement mitigating actions and offsite emergency plans.

The NRC considers spent fuel storage facilities to be robust so that in the event of a terrorist attack similar to those of September 11, 2001, no negative effect on the storage of radioactive materials would result. Spent fuel pools and dry storage casks do not have flammable material to fuel long-duration fires, unlike the structures that were destroyed on September 11, 2001.

The NRC is conducting a comprehensive evaluation that includes consideration of potential consequences of terrorist attacks using various explosives or other techniques on spent fuel pools and dry storage casks. As part of this reevaluation, the agency will consider the need for additional requirements to enhance licensee security and public safety.

The NRC believes that the best approach to dealing with threats from aircraft is through strengthening airport and airline security measures. Consequently, we continue to work closely with the appropriate Federal agencies to enhance aviation security and thereby the security of nuclear power plants and other NRC-licensed facilities. Shortly after the September 11, 2001 attacks, NRC, working with representatives of the Federal Aviation Administration (FAA) and Department of Defense (DOD), determined that a Notice to

Airmen (NOTAM), issued by the FAA, was the appropriate vehicle to protect the airspace above sensitive sites. This NOTAM strongly urged pilots to not circle or loiter over the following sites: nuclear/electrical power plants, power distribution stations, dams, reservoirs, refineries, or military installations or they can expect to be interviewed by law enforcement personnel.

Physically shielding (i.e., "airplane-resistant cover") vital nuclear or non-nuclear installations from attacks by large aircraft being used as missiles is not the approach adopted by the Federal government to protect the nation. With respect to potential terrorist attacks by air, Federal government efforts have increased substantially since September 11, 2001. Those efforts include enhanced airline passenger and baggage screening, strengthened cockpit doors, and the Federal Air Marshals program, among others. Federal law enforcement and intelligence agencies have increased efforts to identify and mitigate potential aircraft-related threats before they can be carried out. In more than one case, the DOD and FAA have acted to protect airspace above nuclear power plants in response to threats at the time thought to be credible but which were later determined to be non-credible. These and other government-wide efforts have improved protection against air attacks on all industrial facilities, both nuclear and non-nuclear.

In summary, the NRC, other agencies of the Federal government, the local governments, and the licensees have taken comprehensive and in-depth actions to enhance NRC's defense-in-depth philosophy, including against air attacks. These actions have resulted in significant improvement of nuclear plant security. For a more in-depth response, see letter, Chairman N. Diaz of NRC to Senator P. Domenici, dated March 14, 2005 (NRC Accession No. ML050280428).

**Q. Why can't I hear the sirens in my area and why hasn't the issue been corrected even though I have raised the concern in the past?**

A. The NRC contacted State Office of Emergency Management and AmerGen officials about this concern. Both were very familiar with prior complaints about detection of the sirens in certain areas. They have indicated that all such complaints were reviewed and found that the siren coverage was acceptable. They noted that under certain situations, individuals may not hear the siren because of background noise within individual homes. However, that problem does not negate the determination made by the State that the sirens provide adequate coverage. The NRC also contacted the appropriate State officials to assess whether or not coverage problems were identified during the June 2, 2005, annual test of the sirens and were informed that there were none during this recent test.

**Q. How can the public get the NRC to change its regulations in the area of license renewal?**

A. The requirements and procedure to petition for rulemaking (i.e., to issue, amend, or rescind any regulation) are set forth in 10 CFR §2.802. Members of the public who wish

to petition the NRC to change its rules are encouraged to visit the NRC website at the below listed link. Additional guidance and support in the rulemaking process are included at this location.

<http://www.nrc.gov/what-we-do/regulatory/rulemaking/public-involvement.html>

In addition, as discussed at the meeting, members of the public can also request changes in the regulations for license renewal through their congressional representatives.

**Q. Why don't the current General Design Criteria (GDC) apply to Oyster Creek? How is it permissible to renew the license of a plant that could not be licensed by the NRC under the current GDC?**

- A. A Renewed Operating License will not be issued until the NRC is satisfied that all applicable statutory and regulatory requirements are, and will continue to be met, by Oyster Creek. Should the licensee not comply with the appropriate statutes, regulations, and conditions of the operating license, the NRC maintains the authority to modify, suspend, or revoke the license.

Relative to the applicability of the General Design Criteria (GDC) to Oyster Creek, the NRC frequently updates its regulations as a result of improvements to technology and based on operating experience. When requirements are changed, the NRC applies a rigorous evaluation standard to determine if the safety benefit of the new requirements justifies imposing the changes on existing licensees. For example, Oyster Creek was designed and constructed before the GDC were promulgated by the Atomic Energy Commission on July 11, 1967. The final GDC were made a part of the NRC's regulations on February 20, 1971. When the final GDC were approved, the NRC stressed that the final GDC were not new requirements and were promulgated to more clearly articulate the licensing requirements and practice in effect at that time. Each plant licensed before the final GDC were formally adopted, including Oyster Creek, was evaluated by the NRC on a plant-specific basis, and was determined to be safe. The NRC further determined that imposing the final GDC on these plants would provide little or no safety benefit while requiring an extensive commitment of resources. In other cases, the Commission has imposed new regulations on nuclear facilities based on the substantial increase in safety that would be provided (e.g., environmental qualification of electrical equipment).

As part of the application for a full-term operating license, the design of Oyster Creek was evaluated against the GDC in 1971. In addition, conformance with the GDC was again evaluated as part of the Systematic Evaluation Program in 1983. (References: OCNCS Final Safety Analysis Report, Section 3.1; NUREG-0822 and supplements, "Integrated Plant Safety Assessment Systematic Evaluation Program;" and, NUREG-1382, "Safety Evaluation Report Related to the Full-Term Operating License for Oyster Creek Nuclear Generating Station.").

For license renewal, the NRC has confidence that its regulatory process is adequate to ensure that the licensing bases of all currently operating plants provides and maintains an acceptable level of safety. Each plant's specific licensing basis will have to be maintained during the renewal term in the same manner and to the same extent as during the original licensing term. Additionally, an applicant for license renewal must demonstrate that plant aging will be managed and that potential impacts on the environment have been evaluated in accordance with the requirements contained in 10 CFR Parts 54 and 51.

**Q. What is the NRC and AmerGen doing in response to Oyster Creek exceeding its incidental take of endangered biological species in 2004?**

- A. 32 sea turtles have been captured at the OCNCS during more than 35 years of operation. Nineteen turtles were alive at the time of capture (5 of 7 loggerheads; 11 of 21 Kemp's ridleys; 3 of 4 Atlantic greens) and safely returned to the wild. However, during 2004, eight Kemp's ridleys were "takes," of which five were alive and released into the ocean. (This exceeded the incidental takes of five loggerheads, four Kemp's ridleys, and 2 greens allowed under the current Biological Opinion (dated July 12, 2001) issued by NOAA Fisheries for the Endangered Species Act.) Amergen has indicated that the causes of death for the remaining three turtles were indeterminate; the turtles may have died before impingement, or their deaths could have been causally-related to OCNCS operations. The dead turtles were all found on the trash bars on an intake structure - two on the Dilution Water System intake structure and one on the Circulating Water System intake structure.

In light of the number of takes exceeding those specified in the 2001 Biological Opinion by NOAA Fisheries, and in accordance with the requirements of the Endangered Species Act, the NRC has reinitiated formal consultation with NOAA Fisheries (see letter, P. T. Kuo (NRC) to Ms. P. Kurkul (NOAA Fisheries), dated March 29, 2005; NRC Accession No. ML050900162). This review is ongoing and results will be published in the future. Persons who want a status update on this issue may contact the NRC Project Manager, Peter Tam (301-415-1451).

**Q. Since Oyster Creek has a limited insurance policy in the event of a nuclear accident, and homeowners policies exempt nuclear incidents from coverage, who pays in the event of a large radiological accident at Oyster Creek?**

- A. Nuclear plant accident insurance is specified by the Price Anderson Act, which requires each licensee to have in effect a coverage of \$300 million. In addition, the Act also requires that, should an accident occur at a nuclear plant, all commercial power reactor licensees (100 plus) in the nation will each contribute \$97.8 million in retroactive premium toward that accident, resulting in a pool of over \$10 billion to cover that accident. If the accident costs more than this amount, the U.S. Congress can evaluate additional actions.

**Q. Request for details about the New Jersey Department of Environmental Protection (DEP) radiation monitoring program.**

- A. The New Jersey Department of Environmental Protection has an environmental radiation monitoring program for all the nuclear power plants in New Jersey. At Oyster Creek, DEP employs two types of monitors, a remote, real-time monitor and a Thermoluminescent Dosimeter (TLD) detector-based, cumulative monitor. The state has expertise in managing this program to best evaluate the environmental impact of radiation releases from the site. Based on this expertise, the DEP has located their detectors and monitors to best evaluate radioactive releases from the site. There are 16 real-time monitors located offsite around Oyster Creek and TLDs are generally co-located at these same positions. The most remote monitor is about 3 miles from the site. DEP provides a monthly report of the evaluation of the environmental monitoring system, which is available at the local public library.

If you have any questions about the state environmental monitoring program, you can contact the DEP at 609-984-7700.

**Q. When was the drywell liner repaired? Where can I find a report or a description of how it was repaired?**

- A. The drywell liner was repaired over several years, beginning with the initial discovery of the corrosion in 1986, and the subsequent root cause determination and extent-of-condition review. The source of the water that caused the corrosion was identified as coming from an equipment storage area used during refueling operations. This area is normally dry but is flooded with water during refueling. The liner of this storage area and the adjacent reactor cavity are now coated with a sealant before every refueling outage to prevent water leakage onto the drywell liner. In 1992, the sand in the sandbed region of the drywell liner was removed (lowest portion of the drywell liner and the area where the most significant corrosion was identified). Once the sand was removed, the external surface of the carbon steel, drywell liner was cleaned of corrosion and coated with a corrosion-resistant epoxy. This arrested the corrosion in the sandbed area. Also, drains in the sandbed area were cleared to ensure that proper drainage occurs to remove any water from the liner area. These drains are monitored to detect water leakage that could corrode the liner. Since the repair in 1992, no significant leakage has been observed. NRC inspectors reviewed portions of these activities in late 1992, as discussed in NRC Inspection Report 05000219/92-25.

For the liner portion above the sandbed region, the licensee determined that the corrosion was minor and that the leakage source was eliminated when the coatings were applied to the equipment storage pool and reactor cavity during refueling outages. The licensee determined that the most appropriate repair for this area would be an analysis of the design capability. As a result of this analysis, the licensee applied for a change to the license that reduced the design pressure of the drywell from 62 psig to 44 psig. This was approved by the NRC in License Amendment Number 165, dated September 13, 1993. This provided additional margin for the containment liner capability to withstand the affects of the corrosion. Based on analysis and monitoring of

the corrosion in the area above the sandbed, the licensee has concluded that the corrosion rates have been insignificant since adopting the measures to prevent the leakage from the equipment storage area.

**Q. When was the containment liner last inspected? What percentage was inspected? Was any section left out?**

- A. The licensee has visually inspected the coating applied to the liner in the sandbed region in 1996, 2000, and 2004. The visual inspection determined that the coating repair is in very good condition. For regions above the sandbed, ultrasonic inspections have been periodically completed for the areas that exhibited the worst corrosion in 1992, 1996, 2000, and 2004. No significant degradation has been identified for the regions above the sandbed. The licensee monitoring also includes the need to conduct further detailed inspections if other sources of water are identified.

The licensee inspection program focuses on the worst corrosion locations with respect to measured thicknesses of the drywell liner. These locations were selected for inspection based on extensive drywell thickness measurements performed during the initial corrosion investigation (1986 through 1991). These locations exhibited the worst metal loss and were selected to monitor for any long-term degradation.

**Q. Please confirm that it is true that Oyster Creek was granted a legal exemption to the timeliness filing provision for license renewal and why?**

- A. The licensee applied for the exemption in accordance with the provisions of 10 CFR 50.12. The licensee's reasons for applying for the exemption were set forth in the letter, J. A. Benjamin to NRC, dated August 10, 2004 (Accession No. ML042250155). The NRC granted the exemption on December 22, 2004 (Accession No. ML042960164), stating that it allows "the submittal of the Oyster Creek license renewal application with less than 5 years remaining prior to expiration of the operating license while maintaining the protection of the timely renewal provision in 10 CFR 2.109(b)." The exemption was granted contingent on two conditions: (1) on or before July 29, 2005, AmerGen must submit a sufficient license renewal application for OCNGS which the NRC finds acceptable for docketing in accordance with the regulations; and, (2) to ensure timely completion of the review process, AmerGen must provide any requested information as necessary to support the completion of the NRC safety and environmental reviews in accordance with the review schedule issued by the NRC. The technical and legal bases for the NRC approval of this exemption request are described in the exemption, dated December 22, 2004.

**Q. Would the NRC license a new nuclear reactor with the same design as Oyster Creek? If not, then why?**

- A. NRC's issuance of a license is the culmination of a lengthy review of highly technical issues against the current regulatory requirements and guidance documents, and is contingent on the resulting finding that the applicant has met, and will continue to meet,

all applicable statutory and regulatory requirements. The NRC staff review of the Oyster Creek Operating License has already determined that the design was acceptable and resulted in the issuance of the Operating License. NRC oversight of the operation of Oyster Creek is continuous and evaluates the licensee's adherence to the provisions of the NRC regulatory requirements and the Operating License. Please see the above answer to the General Design Criteria Question for more details.

**Q How does the NRC address the safety of parts of the nuclear plant that are inaccessible and can't be inspected?**

A. All systems and components that are specifically required by regulations and plant Technical Specifications to be inspected must be inspected by the licensee. NRC's inspectors ensure that the licensee has done all such inspections and effected remedial actions on all findings of non-compliance. Certain components may have areas inaccessible to physical inspection. For these, the licensee may apply for relief in accordance with the provisions of 10 CFR 50.55a. Typically, such requests are approved based on alternate means to verify the component acceptability. In all cases, NRC's granting of relief is based on a technical review of the licensee's justification for the relief request. For an example of a relief regarding inaccessible areas, see letter, R. J. Laufer to C. M. Crane of AmerGen, dated February 2, 2005 (Accession No. ML050050476).

**Q What will AmerGen do with the additional spent fuel generated at Oyster Creek during the license renewal period?**

A. The spent fuel pool and the onsite Independent Spent Fuel Storage Installation (ISFSI) are the NRC-approved storage locations for spent fuel generated at Oyster Creek. Until such time that spent fuel can be deposited in a long-term storage facility, storage is limited to these NRC-approved locations at Oyster Creek. The ISFSI can be expanded, if necessary, to have sufficient capacity in conjunction with the spent fuel pool for spent fuel generated during the refueling process.

**Q Is the NRC's focus to keep the Oyster Creek plant operational?**

A. NRC is authorized and appropriated resources by the U.S. Congress to make sure nuclear facilities are operated safely. The NRC neither promotes nor advocates the construction, licensing, or re-licensing of nuclear power plants. However, NRC is charged to ensure that if those decisions are made, the plants will be operated safely. The NRC's focus is to ensure that Oyster Creek is safe. Any decision to keep Oyster Creek operational lies entirely with its management.

- Q. **With the changing demographics of the residents of Ocean County, is the evacuation plan for Oyster Creek adequate?**
- A. The Federal Emergency Management Agency (FEMA) has the responsibility to review offsite evacuation plans, and provide input to the NRC. The NRC, in accordance with 10 CFR 50.54, uses the FEMA input in arriving at an overall determination of the adequacy of emergency preparedness for each nuclear power plant. FEMA has been requested to review the present state of offsite emergency preparedness for Oyster Creek, and once the NRC has received the results of their evaluation, a response to this issue will be provided.