



Nuclear Environmental Engineering Section

Environmental Surveillance and Monitoring Program

The Bureau of Nuclear Engineering, within the New Jersey Department of Environmental Protection, operates and maintains an Environmental Surveillance and Monitoring Program (ESMP) for the four nuclear power generating stations in New Jersey.

The New Jersey Radiation Accident Response Act authorizes and directs the department to "develop and implement a comprehensive monitoring strategy which shall include, but not necessarily be limited to, the daily monitoring of levels of radioactivity in the environment" (N.J.S.A. 26:2D-43.g.). In addition, the department has signed a cooperative agreement with the U.S. Nuclear Regulatory Commission "to establish a collaborative program...to provide independent measurements of radioactivity and radiation levels in the environment around selected Commission licensed activities." The ESMP is the result of this legislative authority and the cooperative agreement with the NRC. Funding for this activity is provided through annual assessments against each electric utility that has an ownership or operating interest in a nuclear facility located in New Jersey.

The purpose of the ESMP is to monitor the various pathways by which people and the environment could be exposed to radiation. All ESMP data are collected from at and beyond the site boundaries of the nuclear generating stations. Samples are obtained for the determination of radioactivity in airborne and liquid effluent and in environmental samples such as crops, sediments/soils and fish. Direct radiation exposure measurements are taken as well.

During 1995, the scope of the monitoring program included continuous ambient radiation monitoring at twenty-six sites in the immediate vicinity of the power generating stations, the collection and analysis of 33 Thermoluminescent Dosimeters on a quarterly basis, and the collection and analysis of 1,200 environmental samples (air, surface water, potable water, crops, milk, shellfish, and sediment).

The specific objectives of the ESMP are:

1. To monitor pathways for entry of radioactive pollutants into the environment in order to identify potential exposures to the population from routine and accidental releases of radioactive effluent by the nuclear reactors; and,
2. To provide this information to members of the public and government agencies. This objective is accomplished, in part, by the publication and distribution of the environmental surveillance and monitoring reports.

To carry out these objectives, the Bureau of Nuclear Engineering:

- Monitors the nearby environment surrounding the nuclear power plants in New Jersey through one of the most advanced remote monitoring systems in the world called the Continuous Radiological Environmental Surveillance Telemetry (CREST) system. This system ensures that emergency response officials will be notified and aware of what is going on should a release occur.
- Performs a comprehensive ambient monitoring program which collects and measures 1,400 samples annually at the two nuclear power plant sites (one reactor at the Oyster Creek site; three reactors at the Salem/Hope Creek site) in New Jersey. Samples include soil, air, water, biological, and direct radiation detectors called Thermoluminescent Dosimeters (TLDs). This program is performed jointly with the United States Nuclear Regulatory Commission. An Annual Report of the findings is available at the local libraries in Toms River and Salem, New Jersey.

By developing and practicing a comprehensive monitoring strategy, the BNE ensures that New Jersey is protected from exposure to radioactive effluents discharge from the nuclear power plants during normal operations.

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