

NUCLEAR THREAT RESPONSE SECTION FACT SHEET

The Bureau of Nuclear Engineering's Nuclear Threat Response Section (NTRS) operates a near real-time remote network of highly sensitive radiation detectors surrounding New Jersey's nuclear power plants. The Continuous Radiological Environmental Surveillance Telemetry system, or CREST, maintains ten monitoring stations around Artificial Island, site of Salem 1 and 2 and Hope Creek, and sixteen around Oyster Creek. The stations are located to maximize coverage of every available compass sector, from outside the fence line up to several miles away. Six CREST stations also continuously monitor the Independent Spent Fuel Storage Installations at Oyster Creek and Hope Creek, three at each site. Each CREST station includes a pressurized ion chamber, or PIC, filled with argon gas. The PIC is able to accurately detect changes in ambient gamma radiation levels, from normally occurring background radiation to what might be encountered during an emergency event at one of the nuclear generating stations.

Over the last several years, the radiation detectors used at each CREST site have been upgraded to the latest generation GE Reuter-Stokes monitor. The RSS-131 combines state-of-the-art electronics with time proven radiation measurement. In September 2007, the upgrade of all thirty-two CREST monitors was completed. This improves system reliability by eliminating obsolete electronics no longer supported by their manufacturer. For more information see http://www.gepower.com/prod_serv/products/oc/en/reuter_stokes/security_safeguards/rs131.htm

In February 2006, a contract was awarded to Envitech Ltd to provide a new central computer system to replace the DEP's Radiation / Air Quality System. The Air Pollution / Radiation Data Acquisition and Early Warning System supports both the Bureau of Nuclear Engineering and the Bureau of Air Monitoring in their ambient radiation and air quality data acquisition, respectively. The new system is designed with failover capability and multiple redundancies to ensure maximum reliability. It also has extensive alarm capabilities to notify staff of system failures and above normal environmental conditions, including ambient radiation levels, via text messages and email. Early in 2008, the latest version of Envitech's client software, Envista, was installed on NTRS office and laptop computers. This allows direct access to the system from each person's workstation. Additionally, staff now have secure access through the State Office of Information Technology to the Air Pollution / Radiation Data Acquisition and Early Warning System via wireless communications, allowing access to the system from anywhere with cellular phone coverage.

In September 2007, the BNE accomplished its first successful transmission of CREST data from a field monitoring site via wireless communications. Wireless communications is more reliable than deteriorating copper telephone cables with waning support from service providers whose focus has shifted to newer technologies. It also is substantially more cost effective at less than half the price of leased telephone lines. Additional CREST sites will migrate to wireless communications as resources and equipment are available.

To further increase system reliability, a secondary means of data transmission is being investigated for the CREST stations. A pilot test of dial-up telephone service to transmit data should wireless communications become unavailable is being designed as part of the contract with Envitech Ltd. The intent is for the central computer acquiring the data to automatically switch to dial-up communications if a CREST monitoring site does not provide the data via wireless transmission. A full CREST station has been set up at the BNE's office to test wireless

communication equipment, including failover to dial up telephone communications, prior to field deployment.

A paragraph with up-to-date information on Oyster Creek's onsite telephone cable replacement project will be added just prior to the public hearings.