

EXECUTIVE SUMMARY

The North Carolina Radiation Protection Section (NCRPS) conducts a radiological environmental surveillance program in the environs of major nuclear facilities and the statewide environment. From 1986 through 2008, the NCRPS has monitored the offsite environment around the facilities listed below. Previously this monitoring was performed under a contract with the Nuclear Regulatory Commission (NRC) until that program was terminated by the NRC for budgetary reasons in 1997.

During the 2008 calendar year, the RPS's environmental monitoring program continued at Progress Energy's Brunswick Nuclear Plant (BNP), Shearon Harris Nuclear Plant (HNP), Duke Energy's McGuire Nuclear Station (MNS) and Global Nuclear Fuels Uranium Fuel Fabrication Plant (GE) in Castle Hayne.

Cooperation between the NCRPS and licensees continued during 2008. An overview for each plant is discussed in the individual plant summaries. Statewide environmental monitoring results, results of monitoring around other facilities, and a series of technical appendices are included in this report. These appendices list applicable minimum detectable activity (MDA) values for the program and sample analysis procedures at the N.C. State Laboratory for Public Health (SLPH).

The overall RPS monitoring program continues to be adjusted in light of state funding restrictions. A recurring problem during the last year has been the unavailability of some sample analysis results from the SLPH Radiochemistry Laboratory. Improving the timeliness of analytical results has been the subject of ongoing meetings between the SLPH and RPS.

The state's current budget difficulties have made equipment maintenance and repair at the SLPH difficult. In 2008, due to the failure of two High Purity Germanium (HPGe) detectors, routine monthly composite gamma isotopic analysis of air particulate samples was temporarily discontinued. Composite gamma isotopic analysis of air particulate did not resume in 2009 because SLPH has not yet purchased replacement HPGe detectors.

In May of 2008, the SLPH transitioned from the existing sample analysis database to a new enterprise-level Laboratory Information Management System (LIMS). The database transition complicated the data compilation process and is the direct cause of most of the missing analysis results in the 2008 Environmental Report. It is hoped that these common efforts between the State Lab and RPS will achieve better results during in the future.

Finally, the RPS is reorganizing and streamlining its environmental monitoring program due to staff and budget reductions. From 2008 and forward, the section will no longer directly collect samples at the N.C. State University (NCSU) Pulstar Research Reactor in Raleigh, NC. However, NCSU's Environmental Health and Safety group will continue to conduct an environmental monitoring program for Pulstar, and the RPS staff will review the annual radiological environmental operation reports it publishes. Future program revisions will be discussed in the RPS' Environmental Sampling Plan annual document.

Finally, the RPS has not released a complete environmental report since 2002. From 2008 forward, the section plans to publish an environmental report on an annual basis as a part of its commitment to fulfill the requirements of GS 104E9, part of the North Carolina Radiation Act:

The Department of Environment and Natural Resources is authorized...to develop and maintain a statewide environmental radiation program for monitoring the radioactivity levels in air, water, soil, vegetation, animal life, milk, and food as necessary to ensure protection of the public and the environment from radiation hazards.

For data collected from 2003 to 2007, please contact the N.C. Radiation Protection Section directly.

ACKNOWLEDGEMENTS and ATTRIBUTION:

It is not possible to thank all of the individuals involved in the completion of this report. However, the RPS staff does wish to recognize the various county, city and other public agencies assisting in sample collection. Others giving their assistance in the collection of samples include Progress Energy, Duke Energy and PCS Phosphate. With the exception of thermoluminescent dosimetry, all other samples were prepared and analyzed by the following staff members of the State Public Health Radiochemistry Laboratory: Roger Brown (Supervisor), Brenda Nichols, Brenda Beasley, Zhong Zhang and Teresa Bryant. Sample collection and report compilation were performed by the following RPS staff: Patrick Cox (Brunswick & GNF), William Jeffries (statewide) and Chris Fidalgo (Harris, McGuire, Catawba and PCS). Data, Quality Assurance review and compilation of the report appendices was performed by Bernard D. Dusenbury, Jr., CHP, also a RPS staff member.