UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NOV 6 1980

The Honorable Gerry E. Studds
United States House
of Representatives
Washington, D. C. 20515

Dear Congressman Studds:

Thank you for forwarding to us the inquiry from your constituent, William A. Caswell, concerning monitoring the radiation received by residents living near nuclear power plants. While it appears that Mr. Caswell's principal concern is measuring radioactivity levels in the body, radiation is also received from radioactive materials external to the body. In fact, in most instances, external radiation exposure is the greatest contributor to the dose received by individuals.

There is no simple, inexpensive device which would monitor the internal radioactivity levels in residents living near nuclear power plants. Past experience has shown that emissions of radioactive materials from the routine operation of nuclear power reactors are generally too low to result in any measurable increase in the internal radioactivity levels of nearby residents. Internal levels of certain radioactive materials can be monitored by measuring radiation emitted from within the body by a technique known as whole-body counting, requiring sophisticated, expensive instruments. Such monitoring was done on approximately 750 residents living within three miles of the Three Mile Island Nuclear Station following the March 28, 1979 accident. No abnormal radioactivity levels attributable to radionuclides from either the accident or the normal operation of the Three Mile Island plant were found.

There are relatively inexpensive devices that can be used to monitor radiation doses from external sources such as noble gases and other radionuclides. These devices, called thermoluminescent dosimeters (TLD's), are used in the vicinity of nuclear power stations, such as the Pilgrim Nuclear Power Station, to measure radiation levels around the facility. In addition to the thermoluminescent dosimeters placed by licensees, subsequent to the TMI-2 accident the NRC also has increased the number of TLD's that it has placed around operating nuclear reactors, including the Pilgrim site.

Rather than monitor individual residents, we require nuclear reactor licensees to monitor effluents, both prior to release and during release. We also require environmental surveillance programs to measure external doses and the radioactivity levels in air, water, and foods. A copy of the effluent

and environmental surveillance requirements for the Pilgrim Nuclear Power Station is enclosed. The results obtained from the environmental surveillance program would be available in the local public document room. The local public document room for the Pilgrim Nuclear Station is located at:

Plymouth Public Library
North Street
Plymouth, Massachusetts 02360
617-746-1923

Mr. Caswell might also be interested in knowing that the issue of radiation monitoring around nuclear facilities is one of the agenda topics for the Federal Radiation Policy Council. A statement of the issues that will be considered in this regard is enclosed. If Mr. Caswell wishes to provide comments to the Radiation Policy Council he may send them to:

Mr. Carl R. Gerber, Executive Director
Radiation Policy Council Staff
c/o Office of Science and Technology Policy
Executive Office of the President
New Executive Office Building
Room 3105
Washington, D. C. 20500.

Sincerely,

E Kevin Connell
for William J. Dircks
Executive Director for Operations

Enclosures:
1. Portions of Pilgrim Technical Specifications (2 copies)
2. RPC Agenda Item