

January 11, 2002

The Honorable Patsy T. Mink
United States House of Representatives
Washington, D.C. 20515

Dear Congresswoman Mink:

I am responding on behalf of the U.S. Nuclear Regulatory Commission (NRC) to your letter of November 8, 2001, in which you requested information on NRC's actions relating to the possibility that individuals might collect tritium to build a nuclear weapon and to the government's actions to prevent individuals from collecting such materials. In your letter, you noted that one of your constituents informed you that volcanoes produce tritium.

Tritium is produced in the atmosphere naturally by cosmic rays. This natural tritium then falls to earth as rainfall and seeps into the ground. Although trace quantities of natural tritium might be released from volcanoes, we understand that volcanoes are not significant sources of tritium. In any event, the collection and concentration of natural tritium for use in nuclear weapons is not feasible. Tritium for use in nuclear weapons is produced from the irradiation of special targets in nuclear reactors.

Tritium alone is insufficient for assembling a fusion weapon. In such weapons, special nuclear material, such as plutonium or highly enriched uranium, is required to achieve the necessary energy for a fusion explosion. NRC has in place stringent regulatory requirements to ensure protection of special nuclear material used in the commercial nuclear industry from loss, theft, or diversion. In addition, the material in targets for tritium production, the equipment needed to produce this material, and the reactors needed to irradiate the targets are controlled by the NRC, the Department of Energy, and other agencies of the Executive branch.

If you have any questions, please contact me.

Sincerely,

/RA/

Richard A. Meserve