

December 6, 2001

Memorandum to: Peter Turcic
Director, Division of Energy Employees Occupational
Illness Compensation Program

From: Jeffrey L. Kotsch
Certified Health Physicist
Branch of Policies, Regulations & Procedures

Subject: Presence of Ionizing Radiation at Amchitka Nuclear Test Site

This memorandum addresses an issue related to the Special Exposure Cohort (SEC) of Amchitka Island workers. The specific issue concerns when a claimant could have been first exposed to ionizing radiation related to the Long Shot, Milrow, or Cannikin underground nuclear tests. A member of this SEC is defined in the Energy Employees Occupational Illness Compensation Program Act (EEOICPA), Section 3621(14)(B) as follows: “The employee was so employed before January 1, 1974, by the Department of Energy or a Department of Energy contractor or subcontractor on Amchitka Island, Alaska, and was exposed to ionizing radiation in the performance of duty related to the Long Shot, Milrow, or Cannikin underground nuclear tests.”

A review of available literature indicates that the first test, Long Shot, an 80 kiloton underground nuclear explosion detonated on October 29, 1965, leaked radioactivity into the atmosphere. Discharges of gaseous radioactivity from Long Shot were detected beginning with traces of radioiodine a month after the explosion. This initial detection was followed by krypton-85 in soil gas and tritiated surface water near surface ground zero of the Long Shot test a few months after the explosion (page 45 of “Physical and Biological Effects, Cannikin,” Atomic Energy Commission, NVO-123, 1973). Another study also indicated that there was some seepage of radioactivity near the surface at ground zero following the Long Shot test (page 13 of a GAO report, “Nuclear Health and Safety, Sites Used for Disposal of Radioactive Waste in Alaska,” GAO/RCED-94-130FS, July 1994).

Radioactive contamination on Amchitka Island occurred as a result of activities related to the preparation for the three underground nuclear tests and releases from Long Shot and Cannikin. This fact is documented in a number of reports, including DOE’s “Linking Legacies,” DOE/EM-0319, dated January 1997. Tables 4-4 and C-1, on pages 79 and 207, respectively, list Amchitka Island as a DOE Environmental Management site with thousands of cubic meters of contaminated soil resulting from nuclear testing.

Based on the above information, it is my professional opinion that radioactivity from the Long Shot underground nuclear test was released to the atmosphere a month after the detonation on October 29, 1965. As a result of these airborne radioactive releases, SEC members who worked on Amchitka Island, per the definition in EEOICPA, Section 3621(14)(B), could have been exposed to ionizing radiation from the Long Shot underground nuclear test beginning a month after the detonation, i.e., the exposure period could be from approximately December 1, 1965 through January 1, 1974 (the end date specified in EEOICPA, Section 3621(14)(B)).