

The committee also considered additional occupational groups at risk for radiation exposure in uranium mining and milling operations, specifically, core drillers and geologists. The committee concludes that core drillers and geologists who worked in the underground mines should be considered in the same category as uranium miners. They worked side by side with the miners collecting samples to assay the ore bodies, and they would have been subject to the same exposures as the miners.

Core Drillers and Geologists Working on the Surface

Many core drillers and geologists were involved in exploratory work on the surface. Using drilling and other techniques, they sampled the subsurface soil to locate and define the extent of ore bodies. The committee could not locate sufficient sampling data on their work environment to evaluate the magnitude of possible exposures. Their work generated dust loading, but much of the material drilled through is overburden rather than uranium ore, so in general the dust would not be expected to have radionuclide concentrations as high as the ore itself. Exposure to radon and its decay products would be expected to be relatively low because the work was on the surface.

Such exposure to airborne dust could lead to a nonradiation hazard and give rise to some forms of nonmalignant respiratory disease, such as silicosis. The severity of those exposures depends highly on the type of soil that is being drilled and the resulting air concentrations. Crystalline silica in particular has a low threshold limit value time-weighted average as recommended by the American Conference of Governmental Industrial Hygienists (ACGIH, 2004), but the committee is not aware of any epidemiologic studies that indicated an increased incidence of nonmalignant respiratory disease among the workers in question.

Conclusion. The committee concludes that there is no convincing evidence that radiation exposure of core drillers and geologists performing exploratory work in uranium areas resulted in adverse health effects. The committee proposes that the National Institute for Occupational Safety and Health or another appropriate government agency conduct a hazard assessment of the conditions in which exploratory core drillers and geologists worked and determine whether there was a significant risk of exposure to hazards linked to RECA-compensable diseases. If so, the committee proposes that these workers be considered for inclusion under RECA.

Additional Populations Environmentally at Risk for Radiation Exposure

Nuclear Testing: Downwinders and Onsite Participants

The committee reviewed the locations where nuclear-weapons tests were performed. The current RECA downwinder population is concentrated in the area around the NTS, and the 1997 NCI ¹³¹I report (NCI, 1997) dealt with emissions from the NTS.

In RECA, Congress found that fallout from atmospheric nuclear tests exposed people to radiation that is presumed to have caused an excess of cancer and that this risk was borne by these people to serve the national security interests of the United States. The United States has

conducted nuclear-weapons tests in areas other than the NTS, and populations exposed to fallout from these tests may also be considered as possible candidates for RECA compensation if Congress so chooses. The tests in question include the Trinity test near Alamogordo, New Mexico, and the Pacific tests. Onsite participants in the tests are already included under RECA, but RECA coverage may be extended to the downwinder populations in those areas.

Over the last several years, there has been a concern about the health effects associated with radioactive fallout that reached Guam during the testing of nuclear weapons in Micronesia. The Pacific Association for Radiation Survivors was formed. In 2002, a blue ribbon panel was authorized by the government of Guam, submitted the *Committee Action Report on Radioactive Contamination in Guam between 1946 and 1958*.

In March 2004, Robert Celestial provided written and oral testimony to the committee indicating that Guam did receive fallout from nuclear-weapons testing in the Pacific. He included statements from retired Navy Lt. Bert Schreiber, who testified that “the Geiger counters were off scale” in November 1952. In addition to this, various support ships deployed at Bikini Atoll during Operation Crossroads were sent to Guam and elsewhere for decontamination.

In April 2004, the congressional delegation from the Pacific Island Territory of Guam submitted a petition to Congress to amend RECA to include Guam in the jurisdiction of downwinders and onsite participants.

The committee initiated an independent assessment of the radiologic consequences related to the weapons tests in the Pacific to people living on Guam. The details of the assessment are presented in Appendix C.

Conclusions. As a result of its analysis, the committee concludes that Guam did receive measurable fallout from atmospheric testing of nuclear weapons in the Pacific. Residents of Guam during that period should be eligible for compensation under RECA in a way similar to that of persons considered to be downwinders.

The committee concludes that that available evidence does not show that the general population of Guam was subjected to unwarranted radiation exposure resulting from the decontamination of naval vessels. Persons who have proof of their employment by a federal agency or its contractor in the process of decontaminating ships affected by fallout are already eligible for compensation as onsite participants under RECA.

Uranium Mining and Milling Materials Used for Construction or Other Purposes

The committee received testimony about the use of pre-December 31, 1971, uranium mine tailings and overburden in home construction. The experience with the use of uranium mill tailings in construction of homes and other buildings in uranium-mining areas indicates the potential hazard of this practice especially given that most people spend most of their time at home and many live in the same homes for decades. Others spend much time working in buildings that may contain tailings. Consequently, even a relatively small exposure rate could lead to an appreciable lifetime exposure.