USEPA Region 9 evaluation of Hunters Point Naval Shipyard radiation cleanup standards
August 25, 2016

The Hunters Point Naval Shipyard (HPNS) is a former military base in San Francisco, California. It was used by the Navy as a naval submarine and ship repair facility from 1945 until 1974 and was also the site of the Naval Radiological Defense Laboratory from 1948 to 1969. In 1989, U.S. EPA placed the Shipyard on its National Priorities List, which is a list of federal Superfund sites in the United States.

The Navy is the lead agency responsible for the investigation and cleanup of HPNS. As part of the process, EPA and its state regulatory agency partners (the California Department of Public Health and the California Department of Toxic Substances Control) oversee and enforce Navy compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (commonly called the Superfund law) to ensure the cleanup at HPNS protects human health and the environment. The Navy and regulatory agencies work together to decide how to address the contamination. The Navy also gathers community input through a public process.

EPA uses the best available science to develop guidance for cleaning up sites, such as HPNS, that are contaminated with radioactive materials. EPA's goal for the HPNS cleanup is to ensure that the community is protected from exposure to radiation and that the site can be used for work, recreation, and residential purposes.

EPA assesses the health effects of radiation at a site by calculating the "excess cancer risk" posed by radioactive contamination. Excess cancer risk is the additional probability that a person exposed to contamination will develop cancer over a lifetime. Superfund regulations in the National Contingency Plan have defined the protective range of excess cancer risk as a probability that a person exposed to radioactive and chemical contaminants will have between an additional one in ten thousand and a one in a million chance of developing cancer (technically known as the 10^{-4} to 10^{-6} cancer risk range). When calculating this range, EPA uses assumptions about exposure that are much higher than most people's actual exposure. This means that EPA overestimates risk to most people to make sure that cleanups are sufficiently protective.

EPA reviews the Navy's cleanup report for each survey unit (small area of land or part of a building) of HPNS using the current version of the EPA risk model to make sure that radiation levels are within the protective 10^{-4} to 10^{-6} cancer risk range. This ensures that any land that is transferred to the City of San Francisco for new use meets appropriate levels for protectiveness with regard to radiation. To provide additional protection, the Navy is installing a protective cover over the whole site. The Navy is also developing a plan, which EPA will review, that ensures the Navy or City will maintain and inspect the cover indefinitely.

EPA's risk models have changed over time as radiation science continues to improve. EPA has incorporated the latest models into its review process to ensure the HPNS cleanup continues to be protective of human health and the environment. EPA has reviewed the Navy's past HPNS cleanup reports, applying the current EPA risk model, and found that the Navy's earlier work had achieved the cleanup level needed to protect human health and the environment.

University of California at Santa Cruz Presentation

On April 21, 2016, a small group of faculty and students from the University of California at Santa Cruz gave a presentation about the HPNS cleanup at an Environmental Justice Task Force Meeting held in the Bayview-Hunters Point neighborhood. The presentation had some inaccuracies and left out some relevant information, as noted below.

The presentation criticized EPA's reliance on 2006 cleanup standards.

- In fact, EPA uses the latest version of EPA's risk model to review each Navy radiation cleanup report for individual sections of the site as they are drafted. ("Latest version" refers to whichever version is current at the time that EPA reviews each report.)

The presentation suggested that the Navy should be using standards with exposure scenarios that reflected only one end of the range that EPA considers protective.

- In fact, the Navy and EPA assessments of cleanup needs are already based on scenario assumptions of exposure that are higher than would be realistic. In part, this is because the assumptions of exposure do not take into account the protective cover. In addition, EPA considers the protective range to refer to a probability that a person exposed to radioactive and chemical contaminants will have between one in ten thousand and one in a million greater chance of developing cancer. The presentation did not reflect this complete range. Finally, the Navy routinely cleans up radiation to levels within the protective range, even with the current version of worst case scenario assumptions.

The presentation criticized the fact that the Navy's documents reference several different cleanup requirements

- In fact, Navy cleanup documents showed requirements from multiple agencies that might apply to particular cleanups. The Navy must meet requirements specific to each of those agencies – including the most strict. Some of the standards that the Navy must meet may be less strict than EPA's, but the Navy still referenced them in the documents to show that by complying with stricter standards, they also meet other requirements. The final cleanup requirements were selected in several Records of Decision that were presented in a series of public meetings, allowed at least 30 days for public comment, and then finalized.

For any questions, about the Navy's cleanup, please contact Derek Robinson, Base Realignment and Closure Environmental Coordinator, at

For any questions about the USEPA's oversight role, please contact Lily Lee, Cleanup Project Manager, at 415-947-4187 or lee.lily@epa.gov.