USES OF RADIOACTIVE MATERIAL AT HUNTERS POINT ANNEX

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PURPOSE

The purpose of this fact sheet is to provide a summary of radiological activities that occurred at Hunters Point Annex (HPA) and the cleanup actions that have already taken place or are planned for the near future. It is worth noting that radioactivity levels at HPA remain below levels that would be a health hazard to HPA workers or the local community.

THE RADIOLOGICAL INVESTIGATION PROCESS

As part of our efforts to close and transfer HPA, the Navy has been researching historical records regarding past radiological activities at the base. This research includes activities performed at the San Francisco Naval Shipyard and Naval Radiological Defense Laboratory (NRDL). Reviews and site investigations have been ongoing for several years; results to date are summarized below.

INDUSTRIAL ACTIVITIES AT THE SAN FRANCISCO NAVAL SHIPYARD (SFNSY)

The San Francisco Naval Shipyard was established in 1939. As early as the 1940s, the shipyard repaired and refurbished gauges and dials that contained radium paint. Some gauges and dials were disposed of with the normal trash and then placed in the industrial landfills at HPA.

Other uses of radioactivity at the shipyard included standard industrial radiography ("x-rays" of pipe welds or other material). SFNSY also had radioactive sources to calibrate instruments used to measure levels of radioactivity and radiation exposure to workers and the public.

SHIPS ASSOCIATED WITH ATOMIC TESTING

Between 1946 and 1948, ships arrived at San Francisco following the OPERATION CROSSROADS atomic bomb testing in the South Pacific. Many of the target and support ships were decontaminated at HPA. Other ships passed through San Francisco while enroute to other locations. All ships were initially decontaminated at Bikini or Kwajelein Atoll. Careful radiological monitoring of ships indicated that the remaining radioactivity present after initial decontamination was primarily confined to the hull and salt-water piping. The level of radioactivity presented little hazard to personnel aboard. Ships were placed into drydocks at HPA for decontamination studies after they were found resistant to decontamination techniques that used water blasting. Many methods of decontamination were attempted, including washing the affected area with various acid solutions. It was finally determined that sandblasting was the only satisfactory method. Environmental considerations were included in these procedures to ensure that radioactive materials and solutions were controlled and properly disposed.

NAVAL RADIOLOGICAL DEFENSE LABORATORY

In 1946 a group of civilian and military personnel were sent to the San Francisco Naval Shipyard (now HPA) to arrange for the decontamination and disposal of the ships that had returned from "Operation Crossroads." Shortly after their arrival, the group was designated as the Naval Radiological Defense Laboratory (NRDL). In 1951 the laboratory became a separate command and at its peak had about 700 employees. Their mission also shifted from managing the decontamination of the Operation Crossroads ships to the study and research of nuclear weapons effects. The research conducted at NRDL was critical in developing procedures to protect our military forces in case of nuclear war. To carry out these studies, the laboratory possessed a varied inventory of radioactive materials. A committee of scientists and radiation safety personnel strictly controlled radioactive material. The committee reviewed and approved all uses of the radioactive material in the laboratory.

From 1954, the possession and use of radioactive material at NRDL was authorized and regulated by the Atomic Energy Commission (AEC), the predecessor of the Nuclear Regulatory Commission (NRC). Upon closure of NRDL in 1969, all licensed radioactive material was transferred to another authorized activity or to a licensed disposal site. As part of the closure process, NRDL performed extensive surveys to identify areas that required cleanup to meet Federal safety limits. The AEC performed confirmatory surveys and in February 1970 determined that levels of radioactivity were safe.

HEALTH AND ENVIRONMENTAL STUDIES

From 1966 to 1995, the Navy performed environmental monitoring of the bay sediment, harbor water, and marine life at and near Hunters Point. In 1989, the Environmental Protection Agency (EPA) reported the results of environmental samples at HPA, having analyzed for tritium and gamma-emitting radionuclides. The only non-naturally occurring radioactive material found by either agency was traced to fallout from previous worldwide weapons testing.

In 1994 the Agency for Toxic Substances and Disease Registry (ATSDR) evaluated radioactivity levels at the landfills at HPA. They concluded that the elevated level of radiation found in these areas was due to the disposal of gauges and dials. ATSDR concluded that there was no apparent health risk and that all past and present radiation exposures are not of public health concern.

PAST INVESTIGATIONS AND CLEANUP ALREADY PERFORMED

The Navy has worked closely with the EPA,NRC, and state regulatory agencies for many years in the cleanup process at HPA. In 1978, the Navy conducted surveys of Buildings 815, 816, and 364 to ensure they were safe before leasing them to commercial activities. Some areas with low levels of radioactivity were found and cleaned up. The Nuclear Regulatory Commission (NRC) reviewed the final surveys of these buildings and concluded they were safe for unrestricted use.

From 1991 through 1993, the Navy conducted surface and subsurface radiation surveys of the Industrial Landfill Area (IR-01/21), the Bay Fill Area (IR-02), the Submarine Base Area, and the Waste Oil Disposal Area to determine if radium from dials and gauges was present in these areas. The surveys discovered numerous radium dials and gauges in the Bay Fill Area. Only a few dials and gauges were found in the Industrial Landfill Area. No radium containing devices were found in the Submarine Base Area or the Waste Oil Disposal Area. The results of these investigations are contained in reports, which have been provided to the regulatory agencies for review.

In 1997, the Navy began to investigate the use, storage, and disposal of radioactive material from past operations at NRDL, to determine if prior cleanup efforts would meet today's new, more stringent Federal safety guidelines. This investigation did reveal several isolated areas in and/or around some buildings that contained low levels of radiation. Currently, work is underway to clean up these areas.

HISTORICAL RADIOLOGICAL ASSESSMENT

The Navy's historical research, along with actual site investigations, will result in a Historical Radiological Assessment (HRA) for HPA. Volume I of the HRA, published in August 2000, describes the limited use of Drydock 4 for maintenance on nuclear-powered ships and demonstrates there is no detectable residual radioactivity at HPA from those ships. A draft of Volume II of the HRA, covering all other radiological activities at HPA, is scheduled for review this summer.

The primary objectives of Volume II of the HRA are:

1. Determine which areas (if any) could affect human health or the environment.
2. Identify all areas with possible radiological contamination.
3. Provide an assessment of the likelihood that the contaminants could move within or away from the site.
4. Identify additional action items needed to determine if areas are safe for future use prior to release.

The HRA represents a "snapshot" of the current radiological conditions at HPA, and will be used as a road map to ensure that all potential areas are thoroughly investigated.

CONCLUSION

The Navy is continuing to investigate areas where radioactive material was used or potentially disposed of at HPS. We are committed to these cleanup efforts and will keep regulatory agencies and the public informed of our progress.

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