

5090
Ser 612.4/L8010
23 Oct 1997

Mr. Thomas P. Lanphar
Project Manager
Office of Military Facilities
Department of Toxic Substances Control
Region 2
700 Heinz Ave. Suite 200
Berkeley, CA 94710-2737

Subj: RESPONSE TO DEPARTMENT OF TOXIC SUBSTANCES CONTROL AND
DEPARTMENT OF HEALTH SERVICES COMMENTS ON THE PRE-DRAFT
RADIATION SURVEY REPORT AT THE NAVAL AIR STATION, ALAMEDA,
ALAMEDA, CA, DATED FEBRUARY 1997

Dear Mr. Lanphar:

Enclosed are responses to DTSC and DHS comments dated April 21, 1997, April 16, 1997 and
May 20, 1997 on the Pre-draft Radiation Survey Report for NAS Alameda dated February 1997.
The draft document incorporating your comments will be submitted soon for your review.

If you have any questions, please contact me at (650) 244-2549, Fax (650) 244-2774.

Sincerely,

ORIGINAL SIGNED BY

GEORGE KIKUGAWA
Remedial Project Manager
By direction of
the Commanding Officer

Encl: (1) Responses to DTSC and DHS comments on the Pre-draft Radiation Survey Report

Copies to:

NAS Alameda (Attn: Mr. Steve Edde)
U.S. EPA (Attn: Mr. James Ricks)
RASO (Attn: LCDR Lino Fragoso)
TTEMI (Attn: Messrs. Duane Balch/Neal Hutchison)

Blind copies to:

703.35 (CG), 702.36 (TB), 612.4 (GK), 612.11 (DW)
Chron, RF
Writer: George Kikugawa, 1831.2GK, X2549
Admin. Records (Three copies)
Act. File: NAS ALAMEDA (File: LGK.DOC) ab

**RESPONSE TO DTSC's COMMENTS
ON THE PRE-DRAFT RADIATION SURVEY REPORT
DATED FEBRUARY 1997 FOR NAVAL AIR STATION ALAMEDA**

This document presents the Navy's responses to comments from the California Environmental Protection Agency, Department of Toxic Substances Control, Region 2, dated April 21, 1997, on the Pre-draft Radiation Survey Report for Naval Air Station (NAS) Alameda, dated February 1997.

Comment No. 1: Page 6-2, Section 6.3, Sites 1 and 2

Based on the data presented in this report and Figures 1 and 2 of the Radiation Survey and Field Sampling Work Plan, the DTSC concludes that the Navy has not established extent of radium contamination at these two sites.

Response: The Navy plans additional surface (walkover) surveys for IR Sites 1 and 2 during the early part of 1998. A workplan will be submitted to the regulatory agencies for review and comment which will include delineation of all areas to be surveyed. Intrusion into the landfill may result in greater risk to human health and the environment than other alternatives; therefore, no attempt will be made to evaluate contamination which cannot be identified from the surface.

Comment No. 2: Site 1

The Navy recommends further surveys of the remainder of Site 1; however, the extent of these surveys are not identified. Although the Navy has redefined the location of disposal cells of the 1943-1956 landfill at Site 1, the Navy has not demonstrated that the extent of contamination is limited to the disposal cell locations. Figure 1 in the Radiation Survey and Field Sampling Work Plan shows anomalies 8, 9, 10, 11, and 22, at or beyond the boundary of the surveyed area. The extent of the future 100% survey at Site 1 must extend east to runway 13 and south to runway 7. The area east of runway 13 should also be surveyed; however, a 100% survey is not requested at this time.

Response: See response to comment 1.

Comment No. 3: Site 2

The DTSC has recently learned from the Navy that the extent of the Site 2 landfill extends beyond the berm at the north east corner of the landfill. This area was not surveyed. This area must be surveyed in the future.

Response: See response to comment 1.

**RESPONSE TO THE DEPARTMENT OF HEALTH SERVICE's COMMENTS
ON THE PRE-DRAFT RADIATION SURVEY REPORT
DATED FEBRUARY 1997 FOR NAVAL AIR STATION ALAMEDA**

This document presents the Navy's responses to comments from the Department of Health Services, dated April 16, 1997, on the Pre-draft Radiation Survey Report for Naval Air Station (NAS) Alameda, dated February 1997.

General Comments:

Comment No. 1: **The Department of Health Services (DHS) would like to meet with Navy representatives to discuss the options presented in this report's CONCLUSIONS AND RECOMMENDATIONS (Section 6.0). DHS comments on the conclusions and recommendations for Sites 1 and 2, the Former Radioactive Waste Storage Shack Area, Building 5, Building 400, and Related Storm Sewer and Drain Lines will be provided after the meeting.**

Response: Comment noted.

Specific Comments:

Comment No. 1: **Page 4-5, Section 4.3.2.1**

What is the definition of an anomaly as determined for the scan survey?

Response: The definition of an anomaly for the scan survey is based on the background count rate, over similar types of surfaces, in an area that is considered to be free of radiation contamination (background area). An anomaly is defined as any difference above background radiation levels which could be identified considering the detector, ratemeter response time, scanning mode, and similar factors. Identification of an anomaly does not attach any attribute related to the health or risk significance of the anomaly, only the ability to detect it. The critical level is the term used to define the point at which a measurement is identified as different from the distribution of background and identified as an anomaly.

For each detector used, a static value for the critical level is established, considering local background radiation levels. In scanning mode, the surveyor will stop and count for a fixed interval when a possible anomaly is noted from an increase in audible count rate. As discussed on page 3-3, a careful surveyor can normally observe a 50 percent (factor of 1.5) increase on a ratemeter in slow response mode when scanning. This becomes the operative definition for an anomaly. The report has been revised to include this information.

Specific Comments (Continued):

Comment No. 2: **Page 4-25, Section 4.7**

Was there any analysis done on sediments found in storm sewer or drain lines? What is the result of sampling at Outfalls F, FF, and R? Will sampling be conducted in the Seaplane Lagoon where these outfalls are located?

Response: Sediments from within the storm sewer lines have not been analyzed for radiation contamination. For the purposes of ecological risk assessment, sediment samples at the outfalls in the Seaplane Lagoon have been collected and analyzed for radiological contamination. The results of sampling near Outfalls F, FF, and R will be presented in the ecological risk assessment report. Although no increased concentrations of radium above the normal range of background levels have been identified in sampling to date, the Navy is continuing to investigate this issue.

Comment No. 3: **Page 6-1, Section 6.1**

DHS agrees with the recommendation that no further surveys are required at Pier 3.

Response: This area will be authorized for free release from radiological restrictions by the Navy Radiological Affairs Support Office (RASO).

Comment No. 4: **Page 6-2, Section 6.2**

DHS agrees with the recommendation that no further surveys are required at Ramp 1 and Adjacent Parking Apron 4.

Response: This area will be authorized for free release from radiological restrictions by RASO.

**RESPONSE TO THE DEPARTMENT OF HEALTH SERVICE'S
ADDITIONAL COMMENTS ON THE PRE-DRAFT RADIATION SURVEY REPORT
DATED FEBRUARY 1997 FOR NAVAL AIR STATION ALAMEDA**

This document presents the Navy's responses to additional comments from the Department of Health Services, dated May 20, 1997, on the Pre-draft Radiation Survey Report for Naval Air Station (NAS) Alameda, dated February 1997.

General Comments:

Comment No. 1: The Department of Health Services (DHS) met with Navy representatives on April 23, 1997, and discussed the options presented in this report's CONCLUSIONS AND RECOMMENDATIONS (Section 6.0). DHS comments on the conclusions and recommendations for Sites 1 and 2, the Former Radioactive Waste Storage Shack Area, Building 5, Building 400, and Related Storm Sewer and Drain Lines are provided below.

Response: Comment noted.

Comment No. 2: Currently DHS uses "Guidance for Cleanup of Radioactivity on Closing Military Bases for Unrestricted Public Use of Property", dated April 5, 1994 (herein referred to as the "DHS guidance document") for determining the adequacy of survey reports and decommissioning plans as they relate to public health. This guidance will be used until federal decommissioning regulations are published in the federal register.

Response: Comment noted.

The Navy believes that Federal Register: July 21, 1997 (Volume 62, Number 139, 39057) U.S. Nuclear Regulatory Commission, Radiological Criteria for License Termination, Action: Final Rule 10 CFR Parts 20, which will become effective on August 20, 1997, is a suitable federal standard meeting the relevant and appropriate requirement set forth in the NCP (Title 40 CFR 300).

Specific Comments:

Comment No. 1: Page 6-1, para. 2

"General basis for recommendations are predicated on the following principles: (1) removal actions should be taken where there is high potential for human contact with intact radium sources (as identifiable from the surface) or human contact with highly elevated soil activity; and (2) removal actions should be considered where there are situations where radiation does (sic) to exposed personnel (non-occupationally qualified radiation workers) would exceed 15 millirem per year, based on realistic scenarios."

Specific Comments (Continued):

In reference to the first principle used as a general basis for recommendations, if discrete radioactive items cannot be removed, then unrestricted public use is not an option for the property in question, and licensing by DHS would be required if the property is not under exclusive federal jurisdiction or ownership.

In reference to the second principle, the DHS guidance recommends that diffuse radioactive contamination be removed to levels that would minimize the cancer risk to the exposed population for unrestricted public use, i.e., exposure would not result in a 70-year lifetime cancer risk in excess of 10⁻⁶ to 10⁻⁴. For diffuse radium contamination, 40 CFR 192 is used as the cleanup standard for unrestricted use.

Response:

The recently promulgated rule, Radiological Criteria for License Termination, Action: Final Rule 10 CFR Parts 20, which will become effective on August 20, 1997 specifically addresses multiple pathways of exposure and multiple (radioactive) contaminants, and therefore may be relevant and appropriate for this site.

Accordingly, the scoping document and action memorandum under development will incorporate an ARAR analysis which will consider 10 CFR 20 versus 40 CFR 192 as suitable relevant and appropriate requirements to be applied to the remedy selection process.

Comment No. 2:

Page 6-1, para. 4. "Alternatively, isolation of structures may be appropriate where high remediation costs exceed benefits under conditions where . . ."

If structures or systems are isolated that contain radium, then specific licensure by the Department may be required for property that is not under exclusive federal jurisdiction or ownership. Complete characterization (including any contamination resulting from migration) would be required before licensing could be considered. For diffuse radium in isolated systems, concentrations of less than 5 pCi/g (or 15 pCi/g if deeper than 15 cm) would not require a license and the property could be released for unrestricted use.

Removal of all contamination is the Department's preferred option, and may end up being less costly and less time consuming than characterizing the amount of radioactive material left in place. An adequate characterization of the amount of material that may be in the isolated system and the amount of material that could have migrated to soil over the history of use may be difficult to delineate to the satisfaction of the Department.

Specific Comments (Continued):

Response: The Navy plans to work with the DHS to develop final guidance consistent with federal regulations for residual activity levels and for an acceptable characterization workplan.

Any Navy removal action will meet either the 5 pCi/gram standard for surface soils, including an increased numerical value to apply to the standard using averaging for areas less than 100 square meters, or 15 pCi/gram for soils below 15 centimeters in depth, also with averaging for smaller areas. Exceptions will be identified on a case-by-case basis.

Comment No. 3: **Page 6-2, para. 2. Sites 1 and 2**

DHS agrees that further 100% surveys of the remainder of Site 1 should be conducted and that all identified discrete sources be removed. If Site 1 landfill is capped, and the property is transferred so that it is no longer exclusive federal jurisdiction or ownership, then specific licensure by DHS would be required. Characterization of the entire contents of the landfill would be required to complete the licensing process.

For the Site 1 jogging trail, no further action may be recommended if all discrete sources are removed and the radium concentrations do not exceed 40 CFR 192 levels. Discrete sources that are at a depth that makes them undetectable by a surface scan would also require removal. Is it known how the sources found on the jogging trail near the storm sewer drainage grate arrived at that location? Is the jogging track area located within the boundaries of the Site 1 landfill? If yes, then the jogging track would require characterization and specific licensure.

Response: It is not known how the sources were deposited at the jogging trail. The landfill presumptive remedy will be applied to this site. Under the presumptive remedy, a complete characterization is not required. Intrusion into the landfill may result in greater risk to human health and the environment than other alternatives; therefore, no attempt will be made to evaluate contamination which cannot be identified from the surface.

The ARAR analysis which considers applicability of 10 CFR 20 versus 40 CFR 192 will be discussed in the relevant documents supporting the remedy selection (see response to Comment No. 1).

Comment No. 4: **Page 6-3, para. 1. Former Radioactive Waste Storage Shack Area**

DHS recommends that discrete sources be removed and that contaminated soil be excavated and removed to levels consistent with 40 CFR 192. A remediation plan should be prepared discussing how this will be accomplished.

Specific Comments (Continued):

Response: Comment noted. The Navy is in the process of preparing a remediation plan for this site.

Comment No. 5: **Page 6-4, para. 2. Building 5**

As discussed in the April 27 meeting, all contamination in Building 5 should be remediated. Concerning the abandonment in place of contaminated subterranean lines, see the discussion above under Specific Comment #2.

Response: Comment noted.

Comment No. 6: **Page 6-5, para 2. Building 400**

Concerning the abandonment in place of contaminated subterranean lines, see the discussion above under Specific Comment #2.

Response: Comment noted.

Comment No. 7: **Page 6-6, para. 1. Storm Sewer Lines and Manholes**

DHS agrees with the recommendation that readily accessible areas within the storm sewer lines and manholes be decontaminated to levels acceptable for release for unrestricted use. For any residual contamination in the lines, see the discussion above under Specific Comment #2.

Response: Comment noted. The Navy is studying the matter further.

Comment No. 8: **Page 3-3**

The “background equivalent activity” was not part of the methodology proposed in the work plan. How was this factor derived? Please verify that the MDAs were calculated in accordance with the work plan. Any changes in the methodology should be justified.

Response: Background equivalent activity (BEA) is simply a term which refers to applying the activity conversion factor to the measured background count rate. It is the activity of the nuclide that will, in the particular geometry used, produce a response of the instrument that is equal to its background reading. In the context of walkover surveys, for a count rate of 900 cpm, which corresponds to one microrentgen per hour, the BEA is 1 μ R/hr.

Specific Comments (Continued):

Refer to NCRP Report No. 58, A Handbook of Radioactivity Measurements Procedures, NCRP 1985, for additional information on this subject.

MDAs were calculated in accordance with the workplan..