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Mr. Chien Kao
California Department of Toxic Substances Control, Region 2
700 Heinz Avenue
Building F, Suite 200
Berkeley CA 94710

Subj: RESPONSE TO DEPARTMENT OF HEALTH SERVICE'S COMMENTS

Dear Mr. Kao:

The draft Final Parcel E Remediation Investigation was issued October 27, 1997. The Navy's response to agency comments on this report was issued October 7, 1998. On November 13, 1998 the California Department of Toxic Substances Control forwarded comments from the Department of Health Services on the Navy's response to agency comments. This letter forwards the Navy's responses to those additional comments, enclosure (1).

If you have any questions, please contact either Ms. Luann Tetrick, Code 62210, at (650) 244-2561, or the undersigned at (650) 244-2655. The Navy and the Naval Radiological Affairs Support Office would be happy to meet with you to discuss any questions or concerns you may have about the Navy's response to the Department of Health Services comments.

Sincerely,

RICHARD E. POWELL
Lead RPM/EIC for Hunters Point Shipyard
By direction

Encl: (1) Response to Department Of Health Service's Comments on The Navy's Response to Comments on the Draft Final Parcel E Remedial Investigation

Copies to:

California Department of Health Services (Sacramento) (Attn: Ms. Dierdre Dement)
U. S. Environmental Protection Agency (Attn: Ms. Claire Trombadore)
U. S. Environmental Protection Agency (Attn: Ms. Sheryl Lauth)
U.S. Environmental Protection Agency (Attn: Mr. Steve Dean)
Roy F. Weston, Inc. (Attn: Ms. Karla Brasaemle)
California Regional Water Quality Control Board (Attn: Mr. David Leland)
Tetra Tech EM Inc. (Attn: Mr. Jim Sickles) (w/o encl)

Blind copies (w/o encl):

622, 6221RP, 62210LT, 09CNP, 7024, 62A, A [REDACTED] (3 Copies, w/encl), R A S o
RF, Chron File: Ser 62210LT/L9060-1, Activity File: HPS

**NAVY'S RESPONSE TO DEPARTMENT OF HEALTH SERVICE'S COMMENTS ON THE
NAVY'S RESPONSE TO COMMENTS ON THE DRAFT FINAL PARCEL E REMEDIAL
INVESTIGATION**

This document presents the U.S. Department of the Navy's (Navy) response to comments from Department of Health Services (DHS) for the Department of Toxic Substances Control (DTSC) regarding the Navy's response to previous DHS comments. The previous DHS comments were regarding Attachment S1-C containing the Navy's responses to DHS's March 6, 1998 comments on the draft final Parcel E remedial investigation (RI) report for Hunters Point Shipyard (HPS), dated October 27, 1997, and the "Determination Discussion of Acceptable Concentrations of Residual Radioactivity Contamination at [HPS]," attachment S1-B. These comments have been addressed with the input and approval from Naval Radiological Affairs Support Office (RASO).

RESPONSE TO COMMENTS FROM DHS

General Comments

1. **Comment:** **The main problem DHS has with the submittal of the reports from running the RESRAD model and the tables showing dose rates per area for specific radionuclides is that it appears the Navy is asking DHS to agree to leaving "hot spots" far-exceeding levels considered "as low as is reasonably achievable" (ALARA) by DHS. As you know DHS cannot give final approval until the final report is presented. The concentrations shown in units of picocuries per gram and disintegrations per 100 square centimeters (pCi/g and dpm/100 cm²) of the various isotopes equivalent to 25 millirem per year (mrem/year) previously presented in draft NUREG 1549 have been deleted from the new revised draft dated July 1998. For determination of a "derived concentration guideline level" (DCGL) to use for MARRSIM and for determining dose per RESRAD modeling, DHS will accept the use of the default parameters contained in the RESRAD program unless specific justification can be demonstrated why alternatives to the default parameters are appropriate. (For example, the Cs-137 concentration equivalent to 25 mrem/year DHS derived from running "RESRAD 5.781" using default values was 10 pCi/g.)**

Response: Under the current Nuclear Regulatory Commission (NRC) policy, as described in U.S. Nuclear Regulatory Guide DG-4006 (DRAFT), 63 FR 64132, and NUREG 1549, the As Low As Reasonably Achievable (ALARA) value cannot be determined by reference to a list of "acceptable" concentration values; rather, it must be established by analysis of the specific conditions at the site. Therefore, with respect to the comment concerning levels considered ALARA by DHS, the Navy will also evaluate if the expense of further reductions in

residual radioactivity below 25 millirem per year to the average member of the critical population group is justified based on the benefits that accrue from collective averted dose in accordance with Regulatory Position 3.1 of DG-4006.

The Navy has submitted site-specific values based on the acceptable U.S. Department of Energy's RESidual RADioactive (RESRAD) material guidelines model, varying only the area of the source and the nuclide. Unless there are specific technical issues, the Navy must assume DHS and DTSC have no technical disagreement with the simplified approach for calculation of derived concentration guideline values (DCGL) proposed for these nuclides. If the agencies disagree with this approach, the Navy respectfully requests that the agencies provide their comments promptly.

With respect to values published by the NRC in Draft NUREG-1549, NRC has recently published acceptable screening levels for unrestricted release for 14 radionuclides (63 FR 64132 et. seq., November 18, 1998) derived from its Decontamination and Decommissioning (DandD), Version 1 code. It should be noted that values derived from using default input parameters are screening values; that is, they are highly conservative guidelines that may be applied without further justification or analysis (similar to the preliminary remediation goals [PRG] used by the U.S. Environmental Protection Agency under the Superfund program). The lead agency (or responsible party) always has the option of using a site-specific analysis to develop more site-specific remedial action guidelines that typically will be higher than screening values. The Navy will continue to develop screening values using default values from RESRAD or DandD codes, as is appropriate to the specific situation. In accordance with U.S. Nuclear Regulatory Guide DG-4006 (DRAFT), the Navy will perform site-specific dose assessments before deciding on remedial actions in cases where screening calculations indicate that remediation might be needed. In such cases, site-specific parameters (such as the size of the affected area, depth of affected area, and media of affected area) will be justified and supported in the dose assessment.

According to DG-4006, approval of proposed remedial guidelines should be obtained before the remedial action is taken (DG-4006, Regulatory position 1.1). Following remediation, the principal issue to be evaluated is whether the derived concentration guideline has been satisfied.

The Navy will base its decision to remediate these areas based on the following factors:

- The affected areas with consideration of size, vertical extent, and concentration exceeding the DCGL

- Where the DCGL is satisfied, the cost to remediate the affected areas does not exceed the discounted benefit of collective averted dose in accordance with DG-4006.

Specific Comments

1. **Comment:** Attachment S1-C, Page S1-C-2, Response to Comment 2. DHS is only using the 5 pCi/g (considered a health-based standard) value from 40 CFR 192 as a maximum level of Ra-226 residual contamination above background in soil after cleanup to ALARA levels. The State of California does not consider the other values presented in 40 CFR 192 applicable to this site. DHS is still using Radiological Health Branch (RHB) Policy No. IPM-88-2, dated December 1, 1997 with Attachment A as a guide to determine that cleanup to ALARA levels in buildings have been met.

Response: It is the Navy's understanding of the California Radiation Control Law that a primary objective of the governing law is consistency ("compatibility with the standards and regulatory programs of the federal government") with federal requirements, Health and Safety Code Section 114965. Accordingly, the Navy will continue to use federal standards and guidance and the National Oil and Hazardous Substances Pollution Contingency Plan process to select cleanup standards. Examples of such promulgated standards are 10 CFR 20 and 40 CFR 192. Current federal guidance documents include the U.S. Nuclear Regulatory Guide DG-4006 for evaluation of ALARA levels. Because RHB Policy IPM-88-2 has not been promulgated, it is classified as a to-be-considered document and would receive less consideration than promulgated state standards.

In addition, 40 CFR 192 allows for averaging of residual radioactivity, such that, for small areas, considerably higher soil concentration values may be determined to be acceptable levels of residual radioactivity. ALARA levels may turn out to be higher or lower than 5 picoCuries per gram, depending on the cost to remediate and the collective averted dose. Further, where the activity is contained in a medium other than soil, 40 CFR 192 does not appear to be particularly relevant.

2. **Comment:** Attachment S1-C, Page S1-C-2, Response to Comment 3. DHS' has "generally accepted" compliance with the RHB Policy No. IPM-88-2 to demonstrate that residual radioactivity requirements have been met at commercial sites licensed under DHS license rather than the proposed 5 microrem per hour ($\mu\text{rem}/\text{hour}$). DHS cannot agree that 9,000 counts per minute (cpm) are equivalent to 10 $\mu\text{rem}/\text{hour}$ or 10 $\mu\text{rem}/\text{hour}$ above background would be acceptable for releasing the site. If the Navy chooses to use data calculated to 5 $\mu\text{rem}/\text{hour}$ or reading given in cpm for guidance in removal of contaminated asphalt or concrete it may not be acceptable

for DHS approval unless substantiated with analytical data. The following lists some of the information needed to substantiate this data for the final report:

- a. Analytical results given in picocuries per gram for asphalt samples taken at background locations with comparison data from 2 x 2 scintillation detector reading taken at 1 meter above the ground surface.
- b. Analytical results given in picocuries per gram for concrete samples taken at background locations with comparison data from the 2 x 2 scintillation detector readings taken at 1 meter above the ground surface.
- c. The concentrations of the isotopes that relate to 9,000 cpm in concrete and asphalt.
- d. The cpm readings taken at the surface versus readings taken at 1 meter above the ground surface, and how counts per minute relate to dpm or pCi/g for the different isotopes.
- e. A survey made at a distance of one meter above ground surface may not provide adequate detection limits or the capability of finding small areas of elevated activity. The Navy needs to specify how they selected this survey distance, the detection limits of the method, and how the detection limits were determined.

Response:

Characterization of these sites was conducted under a DHS-approved characterization plan. As a result of this characterization work, several elevated areas or anomalies were identified. The Navy believes that the residual radioactivity concentrations in these areas meet the 25 millirem per year criteria and that further remediation is not required based on the analysis submitted. Because the NRC evaluation criteria have evolved from the time of DHS approval of the survey work plan, a site-specific dose and ALARA analysis will be provided to support this position.