

DEPARTMENT OF HEALTH SERVICES

4 P STREET
BOX 942732
SACRAMENTO, CA 94234-7320



May 26, 1998

M60050.002688
MCAS EL TORO
SSIC #5090.3

Commanding General
Attn.: Captain Jeff Matthews
Director, Environmental Engineering Division, (1AU)
U.S. Marine Corps Air Station - El Toro
P.O. Box 95001
Santa Ana, California 92709-5001

HISTORICAL RADIATION ASSESSMENT (HRA) FOR, MARINE CORPS AIR STATION (MCAS) EL TORO

Dear Captain Matthews:

Under an agreement with the U.S. Nuclear Regulatory Commission (NRC), the California Department of Health Services (DHS) has been designated as the agency responsible for administering programs to protect the citizens of California from unnecessary exposure to radioactive materials. DHS licenses and monitors compliance of byproduct materials use as defined by the Atomic Energy Act of 1954, and controls the use of naturally occurring radioactive materials (e.g., radium-226). Although the NRC has responsibility for monitoring facilities under federal jurisdiction, DHS becomes involved when a federal facility, such as MCAS El Toro, is undergoing closure in a plan to revert to State control. DHS has developed a guidance document (copy enclosed) for closing military facilities to ensure that the radiological history and remediation has been properly documented.

At present, DHS has information about radiological activities and potential radiological contamination only for Buildings 296 and 297 at MCAS – El Toro. This letter is to request that MCAS –El Toro provide us with the Historical Radiation Assessment (HRA) for all base property. In order for property transfer and reuse to occur timely with the scheduled base closure in July 1999, DHS requests that the questions in the DHS guidance be addressed and submitted for our review. Much of this information should already be available as a result of investigations for hazardous substances conducted by the Base Realignment and Closure (BRAC) Cleanup Team (BCT), and by the Navy's Radiological Affairs Support Office (RASO). It is our purpose to review any and all permits and survey documents in order to evaluate any radiological concerns at all industrial and administrative buildings, including warehouses, in soil and groundwater, and in piping systems, such as industrial wastelands, etc.

Please refer to the enclosed guidance and flowchart in order to gather and prepare documents for submittal to DHS. We look forward to working with you and assisting you in order to facilitate

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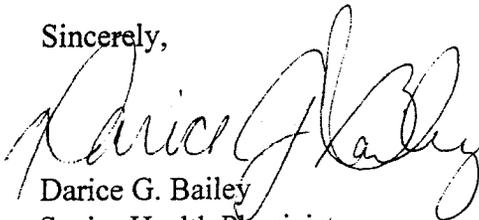
Captain Matthews

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cleanup efforts at MCAS El Toro. If you have any questions, or desire to meet with DHS, please call Deirdre Dement at (916) 324-1378.

Sincerely,



Darice G. Bailey

Senior Health Physicist

Division of Drinking Water and Environmental Management

Enclosure

cc: Mr. Joseph Joyce
BRAC Environmental Coordinator
U.S. Marine Corps Air Station - El Toro
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Santa Ana, California 92709-5001

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Mr. Glenn R. Kistner
Remedial Project Manager
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Ms. Patricia Hannon
Remedial Project Manager
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Mr. Jack Miller, REHS, Director
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DEPARTMENT OF HEALTH SERVICES

714/744 P STREET

BOX 942732

SACRAMENTO, CA 94234-7320

(916) 322-2308

August 11, 1995



To: Base Commanders
Interested Parties

Subject: Guidance For Radiological Cleanup/Remediation

The California Department of Health Services (Department) has been designated as the agency responsible for administering programs to protect the citizens of California from exposure to radioactive materials (Health and Safety Code §25600 et.seq.). As such, it is the Department's responsibility to ensure that military bases (both open and closing) do not pose a threat to the public from exposure to radioactive material. For closing bases, if the potential for radioactive contamination is not addressed during the base realignment and closure cleanup and transfer process, reuse of the base may be restricted by the Department until that potential is adequately addressed. Therefore, we are asking for your cooperation in investigating the potential for radioactive contamination by the most efficient means--concurrently with investigation for other hazardous materials.

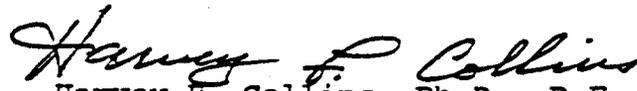
Enclosed with this letter is a list of questions that should be answered about each base to determine the potential for radiological contamination. Use this list as a guide in preparing documents for submittal to the Department. Some bases have already submitted documents which do not include all the necessary information. In those instances, the remaining information should be gathered and provided to the Department as soon as possible. In addition, we encourage you to utilize the radiation expertise that exists within each branch of the military. Several closing bases that are using this expertise are recognizing marked improvements in expediting the process of identifying and remediating radioactive contamination. Contacts for accessing this expertise are provided in Item 13 of the enclosure.

Also enclosed is a flowchart that illustrates the process of investigation, cleanup, and release of parcels with potential radiological contaminations.

Base Commanders
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The Department provides radiological support to the California Environmental Protection Agency to address problems at military facilities identified in the Defense State Memorandum of Agreement through an interagency agreement with the Department of Toxic Substances Control (DTSC). The Department's activities at bases must be coordinated through DTSC.

Should you have questions regarding this letter, please contact Rufus Howell of the Environmental Management Branch at (916) 322-2040 or your DTSC contact.


Harvey F. Collins, Ph.D., P.E., Chief
Division of Drinking Water and
Environmental Management

Enclosures

California Department of Health Services
Information Needed for the Radiological Evaluation
of Military Bases

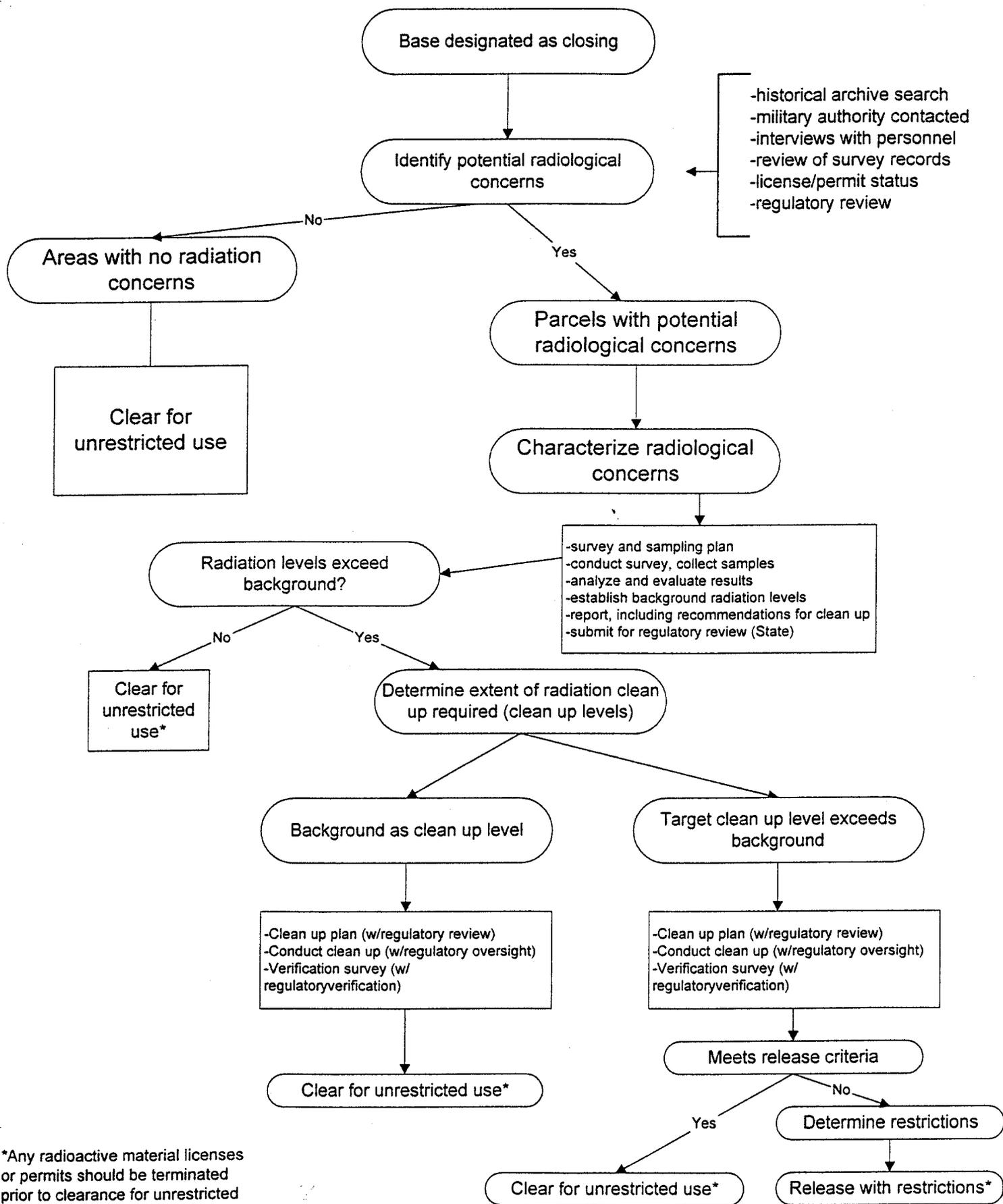
Information the California Department of Health Services needs for radiological evaluation of military bases:

1. What were the types and quantities of radionuclides used, stored, or disposed of at your facility? The response should include copies of the current license with any amendments, or a summary of those documents. The response should also address uses of nonlicensed radioactive material (e.g., radium-226) and its disposition.
2. How long has your facility been licensed to use radioactive material? How often did your facility utilize radionuclides during a typical work week, and over what period of time were they used?
3. How were radioactive materials used at your facility? What were the protocols and procedures required for their use and what were the details of the protocols and procedures? What was the extent of the past and present radiological surveillance program? Examples of documentation supporting the radiological surveillance program should be provided.
4. How did utilization of radioactive material change over time? When did you begin controlling uses of nonlicensed radioactive material?
5. Discuss and provide data for the ambient radiologic background of your facility within all relevant environmental media. What are the details of your past and present environmental monitoring program?
6. Did your facility release any radioactive material to the environment? What data support your response? If releases did occur, what were the details of such releases, and what was your course of action to correct the problem?
7. Have you buried nonlicensed radioactive material at your facility? What is the supporting documentation for this response?
8. What were the requirements for training users of radioactive material at your facility? What was the chain of command for your radiation safety program? Were personnel monitoring devices used at your facility as part of the radiation safety program?
9. Have any of the individuals in your radiation safety program been interviewed regarding the past and present use of radioactive material? What positions did the interviewees hold in the radiation safety program and for how long?
10. What is your current inventory of sources of radioactive material and their utilization? What remediation is ongoing, or proposed, at your facility?
11. What were and are your plans for the disposition of licensed and unlicensed radioactive sources? What is the potential for mixed waste (radioactive and hazardous wastes) at your facility?

12. In addition to a narrative description of your facility's use of radioactive material, provide a table that identifies each radionuclide, the approximate quantity (in standard units of millicuries or microcuries) per item, as well as the total activity for the inventory of items, the purpose, the years during which the radionuclide was utilized, the location of use, storage, or disposal; whether the source was sealed or unsealed, whether its presence was authorized by a specific license or not licensed; and the disposition of the radionuclide (*e.g.*, decayed on site, disposed of on site, stored on site, transferred off site, destination if transferred).

13. Have you contacted your military service branch's experts in radiologic matters for help in answering questions you have or resolving issues that concern you? Please identify the organization and specific staff contacted. These contacts would include the Air Force's Armstrong Laboratory at Brooks Air Force Base in San Antonio, Texas, telephone (210) 596-3305; the Army's Environmental Hygiene Agency at the Aberdeen Proving Ground, Maryland, (410) 671-3526; the Army Corps of Engineers in Omaha, Nebraska, (402) 221-7401; and the Navy's Radiological Affairs Support Office in Yorktown, Virginia, (804) 887-4695.

Base Cleanup Process for Environmental Radioactivity



*Any radioactive material licenses or permits should be terminated prior to clearance for unrestricted use

Table 2-1. Examples of sources of radioactivity on military bases.

The Department of the Army's Corps of Engineers distributed to its regional commands a memorandum (dated December 8, 1993) addressing awareness of radioactive materials used at DOD facilities. That memorandum pointed out that the DOD has issued over 2800 different types of instruments and articles containing radioactive materials, and that radioactive contamination may exist in materials in base supply warehouses, or in shops used for the manufacture, repair or maintenance of such articles. The memorandum also points out that "during the 1940s, 1950s, and 1960s, on-base burial, sometimes in radioactive waste disposal cells and often in on-base landfills, was a reasonable and acceptable disposal technique." That memo plus other information from DOD point out a number of sources of radioactivity that may be found on military bases:

- a. Radium dials, gauges, and illuminators were used extensively in military applications, and represent the most common and the greatest radioactive health and environmental hazard found on bases. Examples include luminous dials on a variety of components used in navigation and communication, and on watch dials, weapons sights, and compasses. To illustrate this point, about half a million deck markers (each with about 20 microcuries of radium-226 or strontium-90) were made for and used by the Navy in 1952. The decommissioning of the Battleships Iowa, Missouri, and New Jersey resulted in the removal of about 1,200 radium-226 components from each vessel. As another example, the equipment utilized for mobile ground control approach (GCA) radar systems contained extensive amounts of radium-226 in readily accessible components such as knobs, dials, and gauges. Some of this GCA equipment had a component that contained up to 5,000 microcuries of radium-226.
 - b. Depleted uranium used in armor and armor piercing ordnance, as well as in shipping containers for use in sealed source radiography.
 - c. Tritium as a source of illumination, especially for exit signs.
 - d. Thorium as a component in lenses to enhance the optical quality, and in magnesium-thorium metal used for machinery, aircraft and rocket parts, plus welding rods used in thick metal welding.
 - e. Hospital and research facilities used tritium and carbon-14 in liquid scintillation counting. Liquid scintillation counting fluids contain xylene or toluene which are hazardous wastes.
 - f. Washdown areas for contaminated equipment (e.g., aircraft and ships) used in association with or in monitoring above-ground nuclear weapons tests.
 - g. Calibration sources for radiation survey instruments.
 - h. Hospital sources used in diagnostic techniques and for radiation therapy procedures, plus sources used in research facilities.
 - i. Sources used in radiography.
 - j. Gauges used to measure the level, thickness, or the density of an object of interest.
 - k. Sources known as commodities which are used extensively as components for weapons systems and within navigation and communication equipment.
 - l. Low-level radioactive waste from reactor and primary plant maintenance and repair, weapons processing, and associated with some of the sources mentioned above.
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