



DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON, DC 20350-2000

IN REPLY REFER TO

5104
Ser N455C/N5U9011379
06 July 2005

U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406
(ATTN: Ms. O. Masnik-Bailey)

G-7

03029462

Subj: REQUEST TO AMEND LICENSE No. 45-23645-01NA TO EXEMPT
VAPOR AND AEROSOL DETECTORS UNDER 10 CFR 30.20

Ladies and Gentlemen:

We request an amendment to the Navy's Master Materials License (MML) No. 45-23645-01NA, authorizing an exemption to the licensing limitations of the Chemical Agent Monitor's (CAM) Sealed Sources Device and Registry (SSDR) No. NR-1129-D-103-S, and the Automatic Chemical Agent Detector Alarm's (ACADA) SSDR No. NR-1129-D-101-S. The result of this amendment will be that CAMs and ACADAs under these SSDRs are exempted under 10 CFR 30.20, the same as other vapor and aerosol detectors. In addition, we request that leak testing of the CAMs, be performed in accordance with the limitations and considerations of use in the Sealed Source Device Registry, NR-1129-D-103-S. The effect of this request will be that leak testing of the CAMs will be performed when the ion mobility spectroscopy (IMS) cell is removed, reinstalled or replaced, vice the current six-month cycle. The ACADAs are already being leak tested under the above limitation vice the six month cycle.

Naval CAMs and ACADAs are managed under a Naval Radioactive Material Permit (NRMP) No. 13-00164-T1NP issued to the Naval Surface Warfare Center, Crane Division, IN. Marine Corps CAMs and ACADAs are managed under NRMP No. 10-67004-T1NP issued to Marine Corps Logistics Command, Albany, GA. The end users, Navy ships and Marine Corps units are not required to hold individual NRMPs for use of the CAMs and ACADAs. The theft or loss of these chemical detectors is immediately reported to the Naval Criminal Investigative Service. The small number of CAMs and ACADAs that are unaccounted during inventory time is because the material is either being prepared for deployment, it is in transit or it is in the theater of operations. These

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unaccounted CAMs and ACADAs are usually found after they are returned to storage or sent back for maintenance.

The IMS cells found in the CAMs and ACADAs has a 10 milliCurie nickel-63 source that is plated on to a brass ring. This source is then housed inside an aluminum-alloy cylinder, which is then included with the electronics into an outer aluminum-alloy case. All of the CAMs and ACADAs use the same source and type of aluminum-alloy housing regardless of manufacturer. Because the radiation levels found on the outside of the case are negligible, and the sturdy construction of the CAM and ACADA case and the source housing, it is unlikely that loss of control would risk public health and safety. This statement is reinforced by the risk analysis in NUREG/CR-6642 of June 1999, Risk Analysis and Evaluation of Regulatory Options for Nuclear Byproduct Material Systems, which states in page 4-22 that "accident risks are very low and essentially non-existent for beta gauges. . .due to the nature of the radiological hazard and/or the source strengths used."

Furthermore, as evident in section 2.15 of NUREG-1717 of June 2001, Systematic Radiological Assessment of Exemptions for Source and Byproduct Materials, these CAMs and ACADAs contain the same isotope and in equivalent quantities as other chemical detectors that are exempt under 10 CFR 30.20. Thus the results from the dose assessment presented in tables 2.15.6 and 2.15.7 of NUREG-1717 are applicable to the CAMs and ACADAs and show that the doses to the public from these chemical detectors, containing either Am-241 or Ni-63, are less than dose limits in 10 CFR 30.27. Overall, the safety assessment presented in NUREG-1717 shows that CAMs and ACADAs meet the requirements in 10 CFR 32.26 for exemption under 10 CFR 30.20. Included in this safety analysis is the assumption that 10,000 detectors containing Am-214 and 10,000 detectors containing Ni-63 are distributed annually, with a useful life of 10 years. The Navy agrees with both of the above references in that the risk associated with loss of control of these commodities would have minimal impact on public health and safety.

The Navy and Marine Corps have always strived and have been largely successful in complying with the conditions of the Master Materials License. However, during Operation Enduring Freedom and Operation Iraqi Freedom it has become apparent that the peacetime conditions of the MML are not suitable for the dynamic and ever-changing situations that our troops and supply systems are being challenged. The physical inventory of CAMs and ACADAs used in over 300 commands worldwide and by troops

deployed in over 120 countries is labor intensive, costly, and considering the small risk to public health and safety licensing limitations are unnecessary.

The Navy and Marine Corps therefore requests your approval in amending MML No. 45-23645-01NA to exempt CAMs and ACADAs under 10 CFR 30.20. We ask that, if this request is approved, that this determination supercede the amendment request forwarded in our letter 5104, Ser 455CN5U9011372 of 30 June 2005, Amend Condition 17.B of the Navy's Master Materials License No. 45-23645-01NA. If this exemption request is denied, we ask that our 30 June 2005 amendment request remain active.

Sincerely,



M. S. BOENSEL
Rear Admiral(sel),
United States Navy
Chairman
Naval Radiation Safety Committee

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