



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS UNITED STATES AIR FORCE



MEMORANDUM FOR U.S. Nuclear Regulatory Commission  
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FROM: HQ AFMOA/SGP  
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Bolling AFB, DC 20332-5113

SUBJECT: Reply to Notice of Violation, Docket No. 030-28641, License No. 42-23539-01AF

- References:
- (a) US NRC Ltr, "Notice of Violation (NRC Inspection Report 030-28641/93-10)", 11 Feb 94
  - (b) HQ AFMOA/SGPR Ltr, "Report on Loss of Strontium-90 Sources, USAF Radioactive Materials Permit No. 42-30168-1AFP, Docket No. 030-90032", 8 Dec 93

The following is the U.S. Air Force response to the "Notice of Violation" cited in reference (a) above. On 7 March 1994, a verbal request for extension of submission of this report was made to U.S. Nuclear Regulatory Commission (NRC), Region IV. Ms. Linda McLean of Region IV verbally granted an extension until 25 March 1994.

In response to the **Severity Level III Violation**, the United States Air Force views the loss of control of any radioactive materials as a serious event and a failure of our responsibility to control licensed radioactive material. The loss of control of the four Strontium-90 sources at Brooks AFB is regrettable event on an otherwise outstanding track record of source control on the part of the Air Force. As the licensee in possession of these sources at the time of their loss, the United States Air Force accepts full responsibility for this event.

In May of 1993 the United States Air Force Human Systems Center (HSC) at Brooks AFB, Texas, recognized the need to improve the radiation safety program. To accomplish this, the HSC commander directed the following actions be taken:

- a. An appropriately staffed and equipped base radiation safety office be established within the Environmental Management Directorate.
- b. The amendment of all three Brooks AFB Radioactive Material Permits to reflect the HSC commander as the permittee and the Base Radiation Safety Officer (RSO) as the Permit RSO.

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c. Oversight of the base radiation safety program be provided by the Base Radiation Safety Committee and the HSC Environment, Safety, and Occupational Health Committee which is chaired by the HSC commander.

d. A comprehensive audit of all permit activities be conducted by the RSO with the results of these audits reported back to senior management.

These actions formed the basis for a comprehensive, centrally managed, base radiation safety program having a high level of management involvement and commitment.

As a result of the comprehensive audit of USAF Radioactive Material Permit number 42-30168-1AFP, the RSO determined that four strontium-90 sealed sources, with a nominal activity of 400 microcuries each, could not be accounted for. The RSO promptly reported this apparent loss to the Air Force Radioisotope Committee Secretariat who, in turn, immediately reported it to NRC Region IV. HSC has fully implemented the aforementioned corrective actions to correct the previous procedural and oversight deficiencies which contributed to the loss.

The Air Force viewed the investigation of this event as a highly significant activity and the determination of the root cause as being a critical part. Immediately upon the discovery of the loss, the RSO began to investigate the events surrounding the loss. On 12 October 1993, the HSC commander directed that this investigation be turned over to the Air Force Material Command Inspector General. This action was taken to signify the importance with which this investigation was viewed, remove any hint of conflict of interest, and involve a professional investigator in the process. Based upon the results of these investigations, it is our belief that the root cause leading to the loss of these sources was a failure to maintain control of the sources by virtue of storing them in an unrestricted area. These investigations also identified several potentially contributing causes to the loss of the sources. These included procedural deficiencies in the source inventory process, questions as to whether the permit RSO was afforded sufficient time to attend to his radiation safety duties, and weaknesses in the management oversight of the radiation safety program. The licensee feels that through the efforts of HSC and the Air Force Material Command Inspector General, the root cause of this event has been identified and the corrective actions taken definitively addresses the root cause. A detailed investigation report (reference b.) discussing investigation findings and corrective actions was provided to NRC Region IV on 8 December 1993.

In response to this incident, the Air Force Radioisotope Committee conducted a review of its licensed activities to determine if this was an isolated incident, or if there was a more wide-spread problem related to the control of licensed material. A review was conducted of NRC inspection reports, Air Force Inspector General inspection reports, and incident reports received in calendar year 1993. Based upon this review, it was concluded that the Air Force currently is not experiencing an identifiable negative trend related to the loss of control of radioactive materials. To ensure that such a trend does not develop in the future, the Radioisotope Committee will continue to track all such incidents.

In addition, the Air Force Inspection Agency has been requested to focus on the following issues during their future inspections of permittees:


- a. The ability of the RSO to commit the time and effort necessary to the radiation safety program.
- b. The development and implementation of local radiation safety policies and procedures.
- c. The involvement of management in the direction and oversight of the radiation safety program.
- d. The development and execution of sealed source inventory procedures.
- e. The development and execution of source control procedures.

The Air Force Radioisotope Committee will continue to review inspection findings and take appropriate action in the event adverse trends are identified.

In response to the **Severity Level IV Violation**, although there does not appear to be a specific regulatory requirement in Title 10 related to source inventories for users such as Armstrong Laboratory, we believe that it is good practice to include such a condition. Therefore, permit number 42-30168-1AFP has been amended accordingly.

The Air Force reaffirms the commitment made in its 1985 application that, "When practical, the wording, style, and content of permits will approximate that of licenses issued by the NRC; however, conditions of use on permits will not be less restrictive than those required by the NRC." As information related to the wording, style, and content of permits is received from the NRC, it will be reviewed by the Air Force Radioisotope Committee and, where appropriate, adopted for future use.

Please direct specific questions regarding this response to LtCol Donnelly,  
HQ AFMOA/SGPR, 8901 18th Street, Brooks AFB, TX, 78235-5217, (210) 240-3331.

  
JACQUELINE MORGAN, Colonel, USAF, MC  
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cc:  
Regional Administrator, US NRC Region IV