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Subject: Blue Alert: Inadequate Hazard Control Procedures

Title: Inadequate Procedures Used During Transuranic Waste Project Ventilation Activities

Identifier: Formal Lessons Learned Report, 1998-KO-SNL-0001

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Lessons Learned Statement: It is important that workers and radiation protection staff agree on and understand adequate hazard controls. Differing opinions on the adequacy of hazard controls should be brought to the attention of management to promote effective review and resolution of the situation. Radiation Work Permits (RWP) need to clearly state what actions need to be taken to address worker concerns. Instead of qualifiers such as "if possible" state required action(s). If practical, add a hold point to contact the team supervisor where an action cannot be implemented. If potential dose estimates are needed during job planning, consult Internal Dosimetry for an examination of monitoring needs.

Discussion: The Direct Cause for this February 1997 incident was a defective or inadequate procedure.

(1) The RWP special instructions for this work allowed workers to remain in the containment-like structure when the Continuous Air Monitor (CAM) activated, because the CAM alarm was set at a much lower level (stated in the RWP) than required for exiting the area. Additionally, the RWP contained ambiguous instructions on where to locate the CAM head, resulting in its placement outside of the enclosure where work was performed. The Radiation Protection Program Manager issued a directive to clarify CAM activation responses.

(2) The RWP work package was not effectively closed out; the event went undiscovered for several months. This resulted in unanalyzed air monitoring samples and subsequent loss of the samples. To ensure proper transfer, a chain-of-custody form should be used to identify the samples and document the transfer of those samples to the counting lab. The RWP work package must be reviewed throughout the course of the job to ensure that required functions are performed, documented, progress is reviewed and important information is complete.

Analysis: RWPs should reflect the actual work conditions and controls. The physical configuration of the work site should be accurately described, including diagrams, etc. The RWP for this work did not include an accurate description of engineering controls (containment-like structure) being used to control potential airborne contamination. Had the engineering control been defined as a containment device, an ALARA review would have been triggered. In addition, the Radiation Protection Operations (RPO) procedures for ALARA reviews and developing RWPs are not consistent, which contributed to the use of the enclosure without an ALARA review.

This analysis identifies procedural improvements regarding the proper placement of CAM heads when engineering controls (such as work enclosures) are used, as well as, the need to define containment device and provide associated guidelines. All RWPs (both existing and newly generated), must have a

documented ALARA review or a written justification of why an ALARA review is not required. If workers or the radiation protection staff realize that the work or controls are not accurately described, they should request that the RWP be updated before work is continued and contact the Site ALARA Coordinator for a disposition and additional instructions or guidelines.

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