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Subject: Blue Alert- Year 2000 Failure of Stack Monitor Computer

The following Lesson Learned is issued on behalf of the Project Hanford Lessons Learned Program. If you have any questions, please contact John Bickford at (509) 373-7664; e-mail [PHMC\\_Lessons\\_Learned@rl.gov](mailto:PHMC_Lessons_Learned@rl.gov) .

**Title- Year 2000 Failure of Stack Monitor Computer**

Date November 22, 1999 Identifier 1999-RL-HNF-0047

**Lessons Learned Statement-** Equipment certified by vendors to be year 2000 (Y2K) compliant may fail in unexpected ways, especially when the installed software version has not been certified or the specific unit has not been tested. Some vendor Y2K certifications may not specify which version of software must be installed in a piece of equipment to make it compliant.

**Discussion of Activities-** On November 3, 1999, an instrument technician was attempting to adjust the time-of-day in a stack monitor computer to adjust for the change to standard time. The displayed date was January 2, 2000. An attempt to correct the date resulted in an error message. When the new time was entered, the application locked up and quit responding. The backup monitor, an analog system with no date function, was immediately activated. Facility radioactive material movements were placed on hold temporarily while backup monitoring was implemented. There was no adverse impact to health, safety, or general operations. This monitor was NOT mission-critical equipment since a separate chart recorder with the correct date is installed in the system to produce a record copy of effluent activity.

**Analysis-** A review of monitor computer records showed that the monitor began incrementing an extra month on each rollover from the tenth to the eleventh of the month, beginning in September 1999. This error may be related to the date 9/9/99, since the error first began occurring following the change from 9/9/99, i.e., when September 10th incremented to October 11th. When the displayed date of November 10th was reached, it then incremented an additional month to December 11th. By November 3, 1999, the displayed date was January 2nd. This specific unit was not tested for Y2K compliance since it was the primary monitor in active service. Instead, an identical backup unit was tested and found to be Y2K compliant. A third identical unit is in active service and was not tested, but has not exhibited the behavior of the affected monitor. Vendor certification of the equipment listed the EG&G Berthold Aerosol Monitor LB150D as Y2K compliant for both active rollover and powered down states. Testing explicitly included 9/9/99, leap year handling/progression, 1999/2000/2001 rollovers, etc. No version specific information/condition was provided as part of the vendor certification, however. The vendor revealed that the version 3.0 ROM boot chip in all three units has exhibited some abnormal behavior in some circumstances. They recommend upgrade to the latest version chip, which is a direct plug-in replacement of the existing chip. This is being done.

**Recommended actions-** Facilities with EG&G Berthold model LB150D Aerosol Monitors should check the version of installed ROM to ensure the version is 3.42 or later. Facilities should take appropriate precautions and have contingency plans in place in the event of failure of vital systems even if they have been certified as Y2K compliant.

Estimated Savings/Cost Avoidance N/A

Priority Descriptor BLUE/Information

DOE Functional Category Information Technology

Hanford Functional Category N/A

Work Activity Facility Maintenance|

Hazard Radiological

ISM Core Function Perform Work

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References None