

December 8, 1992
POEF-160-92-634



Steve Pullins

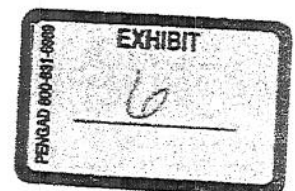
X-326 Performance Indicator Review

Health Physics reviews the results from the urinalysis program for the purpose of evaluating trends developing that affect the overall safe operation of the plant site. Any time an individual submits a routine sample with results greater than 4.0 dpm/100 ml, Health Physics requests the individual submit another sample to confirm the intake or evaluate the severity of the problem.

In June, it was noted that the instances of positive bioassay samples had increased. (A positive bioassay sample is defined as detectable, not necessarily exceeding the flag level.) At first this was attributed to the return of the hourly workers, resulting in a greater number of individuals submitting samples. After evaluating the data for several months, this does not appear to be the case.

The air card data for the X-326 was also evaluated to determine if the same trends were occurring. After reviewing this data, the following items are noted:

1. The percentage of positive bioassay samples for the entire plant site has doubled since the first of the year. (See Graph 1992 Bioassay Program Summary.)
2. The percentage of positive bioassay samples for individuals assigned to the X-326 has almost tripled. This increase was first noted in June with a major occurrence of positive bioassay samples happening in August. (See Graph 1992 Bioassay Program Summary and the Bioassay Summary which shows the yearly summary from 1989 through October 1992.)
3. The "blank" urine results from the X-710 lab have risen from 0.4 dpm/100 ml to 1.1 dpm/100 ml. (See Graph 1992 Bioassay Program Summary.) The "blank" urine specimens are collected from individuals assigned to the X-710 whose duties do not regularly require entry to radiological areas, essentially "non-radiation workers."
4. The X-326 1992 Air Card Program Summary (graph attached) shows a significant increase during August and September, from 0.03% of the Derived Air Concentration (DAC) to 0.2% of the DAC.



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DAC is calculated by dividing the ALI (ALI or Annual Limit of Intake equates to an internal exposure of 5,000 millirem) by standard mans occupational breathing rate and expressed in microcurie/milliliter. From the RadCon Manual, an area with an airborne radioactivity concentration of 10% of the DAC would require respiratory protection.

If an individual were to work in an airborne radioactivity concentration of 2% of the DAC for the work year, the intake of radioactivity would equate to 100 millirem Committed Effective Dose Equivalent, CEDE.

Since 1989, PORTS has not had any single individual with a committed internal dose equal to 100 millirem; however, another increase in the air concentration of the same magnitude noted in August in the X-326 would greatly increase the possibility.

The air card data for October indicates the levels may be returning to normal. This trend is inconclusive, since it appears some of the data has not been entered in the data base.

A very rough calculation indicates a possible 70 dpm/100 cm² alpha contamination based on the air sample results. While this level of contamination is significantly less than DOE and detection limits for hand held survey equipment (recent routine surveys indicate no detectable removable contamination), it could be the reason we are having instances of Berthold hand and/or foot contaminations.

The following occurrences also indicate the X-326 radiological conditions have degraded to a point that the HEU Suspension Project should be re-evaluated.

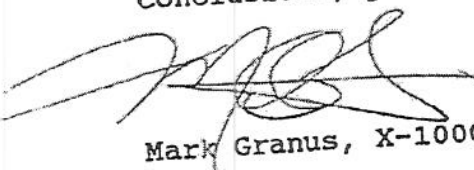
1. The X-326 Berthold results indicate 110 instances of detectable contamination from November 18 through December 1 (also refer to Item 4 of this section).
2. Instances of removable contamination in the ventilation ducts. (Attached are a number of surveys which indicate removable contamination in the X-326 ventilation ducts.) Due to facility design, this condition can exist in all process buildings, but is highlighted due to the higher assays in the X-326.

8. Increase the amount of HP technician coverage and thoroughly characterize removable contamination levels in the building. All swipes taken during this characterization that are not detectable by normal counting methods should be counted in a low background proportional counter to determine actual contamination values.

NOTE: This can only be accomplished by sacrificing support within other cascade and support facilities.

9. Re-evaluate the policy of, or use of, sweeping compounds and sweeping machines on a continuing basis.

If you have any further questions concerning this data or these conclusions, please do not hesitate to contact me.



Mark Granus, X-1000, MS-5020, PORTS (5975)

MWG:JFThompson:rf

Attachments (5)

cc/att: Records Management
Bill Strunk
File-Health Physics - RC