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Idaho National Engineering and Environmental Laboratory Radiological Control Performance Indicator Report

Third Quarter Calendar Year 1997

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Idaho National Engineering and Environmental Laboratory
Radiological Control
Lockheed Martin Idaho Technologies Company
Idaho Falls, Idaho 83415

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Radiological Control Performance Indicator Charter

The INEEL Radiological Control Performance Indicator Report is provided quarterly, in accordance with Article 133 of the INEEL Radiological Control Manual. Indicators are used to measure performance of the Radiological Control Program and as a motivation for improvement, not as goals in themselves. These indicators should be used by management as tools to focus priorities, attention, and adherence to As-Low-As-Reasonably-Achievable (ALARA) practices.

The ALARA Committees establish ALARA goals for the INEEL based on forecasts and goals provided by each facility organizational manager or supervisor.

Performance goals are realistic and measurable. Stringent goals are set at least annually to reflect expected workloads and improvement of radiological performance. Goals higher than previous goals may occasionally be set due to changes in work scope or mission.

The INEEL Radiological Control Performance Indicators consist of:

- Collective dose in person-rem.
- Average worker dose, maximum dose to a worker, and maximum neutron dose equivalent to a worker.
- Number of skin and clothing contaminations, including the number of contaminated wounds and facial contaminations.
- Number of radioactive material intakes resulting in a dose assessment of 10 mrem or more.
- Area of Contamination, High Contamination, and Airborne Radioactivity Areas, in square feet.
- Airborne radioactivity events and spills.

These indicators also provide tracking and trending for the previous three years.

Other Radiological Control indicators suggested in the Radiological Control Manual are tracked and trended in other reports.

- The Environmental Management Operations Support Department reports the volume and radioactivity content of radioactive waste in the INEEL Radioactive Waste Management Annual Report and on the Radioactive Waste Management Information System (RWMIS).
- Releases of liquid and airborne radioactivity discharges are reported by the Environmental Affairs Branch in the INEEL Environmental Monitoring Report and the INEEL National Emission Standard for Hazardous Pollutants (NESHAPs) - Radionuclide Annual Report.

Executive Summary
Radiological Control Performance Indicator Report
Third Quarter 1997

This document provides a report and analysis of the Radiological Control Program through the third quarter of calendar year 1997 (CY-97) at the Idaho National Engineering and Environmental Laboratory (INEEL) under the direction of Lockheed Martin Idaho Technologies Company (LMITCO). This Performance Indicator Report is provided in accordance with Article 133 of the INEEL Radiological Control Manual.

The INEEL collective occupational radiation exposure goal (deep dose) has been revised from 137 person-rem to 102.465 person-rem. Aggressive application of ALARA protective measures has resulted in a 66.834 person-rem deep dose compared to projected third quarter goal of 85.5 person-rem. Dose savings at the ICPP Tank Farm and rescheduling of some of the ROVER work account for most of the difference in the goal and actual dose year to date. Work at the ICPP Tank farm has resulted in about 14 rem dose savings. The RWMC has also reduced exposure by moving waste to new temporary storage facilities well ahead of schedule.

So far, year to date, there are two persons of 374 sampled assigned internal dose near 20 mrem CEDE for CY-97 from the SMC. There are several with final determinations pending. An incident at the TRA Hot Cell operating under a privatized contract with MAC-I, resulted in two additional persons with internal dose. These are not counted in LMITCo totals since MAC-I is a private entity.

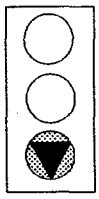
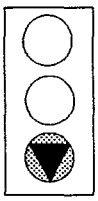
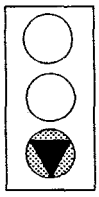
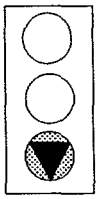
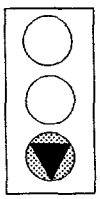
A numeric radiological performance Index (RPI) has been created that takes into consideration frequency and severity of undesirable events such as skin contaminations, clothing contaminations, etc. The RPI represents an approximation of cents lost per hour of radiological work performed.

RPI:	CY 1995	166
	CY 1996	143
	CY 1997 (Year to date)	104.5

Excluding the effects of work scope changes, the data supports improvement in Radiological Control.

The charts on the following pages provide detail of the third quarter performance for LMITCO. The six designated facility areas contributing to LMITCO's performance are shown to provide additional detail of the company achievements.

INEEL Radiological Control Performance Indicator Overview
Third Quarter 1997

		Actual	Goal or Average
Collective Year-to-Date Penetrating Radiation Dose		66.834 person-rem	102.465 person-rem (Goal)
Year-to-Date Average Worker Dose		0.062 rem	0.147 rem (3 Year Average)
Maximum Year-to-Date Penetrating Dose to a Worker		0.985 rem	1.500 rem (Goal)
Maximum Year-to-Date Neutron Dose to a Worker		0.077 rem	0.100 rem (3 Year Average)
Year-to-Date Skin Contaminations		9	28 (3 Year Average)

Legend

Needs Attention
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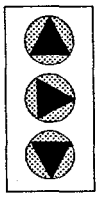
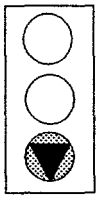
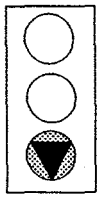
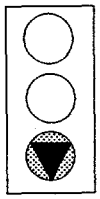
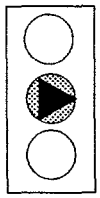
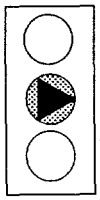
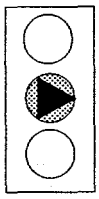
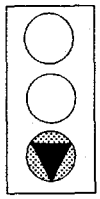
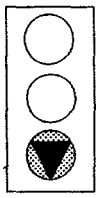
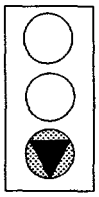
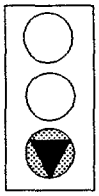
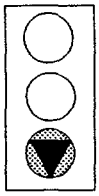
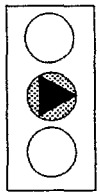
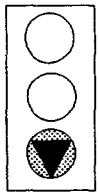
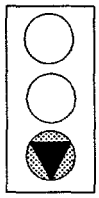
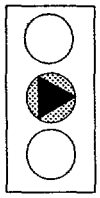
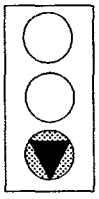
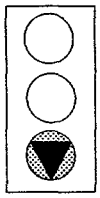
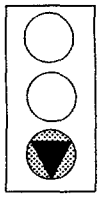
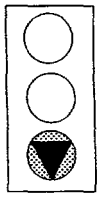


Compared to three yr. Avg/goal.

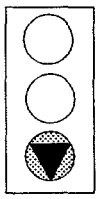
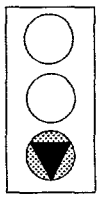
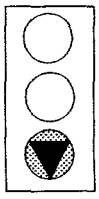
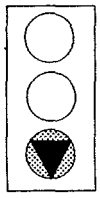
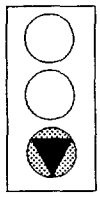
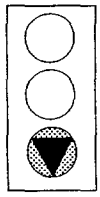
		Actual	Goal or Average
Year-to-Date Clothing Contaminations		18	52 (3 Year Average)
Year-to-Date Airborne Events		0	2 (3 Year Average)
Year-to-Date Radioactive Material Intakes		2	15 (3 Year Average)
Contamination Area		189,198 ft^2	198,248 ft^2 (3 Year Average)
High Contamination Area		297,901 ft^2	297,700 ft^2 (3 Year Average)
Airborne Radioactivity Area		84,712 ft^2	83,367 ft^2 (3 Year Average)
Year-To-Date Spills		5	32 (3 Year Average)

INEEL Facility Radiological Control Performance Indicator Overview
third Quarter 1997

	CFA	ICPP	PBF	RWMC	TRA	TAN/SMC
Collective Year-to-Date Penetrating Radiation Dose (person-rem)	 3.454	 40.155	 0.837	 2.461	 15.639	 4.362
Year-to-Date Average Worker Dose (rem)	 0.024	 0.101	 0.014	 0.028	 0.059	 0.034

Maximum Year-to-Date penetrating dose to workers is redundant to facility reports and is not repeated in this report.

Maximum Year-to-Date neutron dose is no longer reported for facilities in this report.

Year-to-Date Skin Contaminations	 0	 5	 1	 0	 4	 1

Legend

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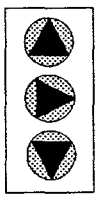
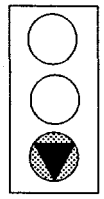
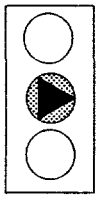
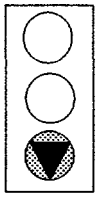
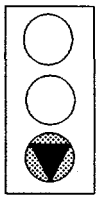
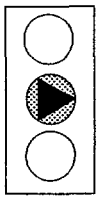
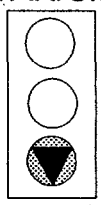
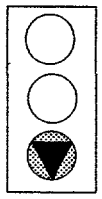
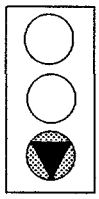
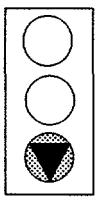
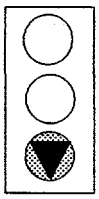
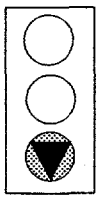
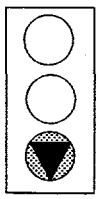
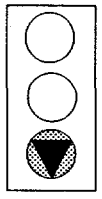
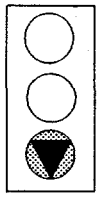
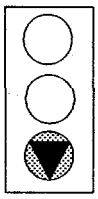
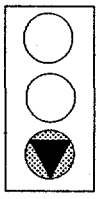
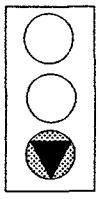
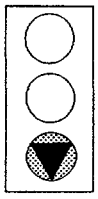
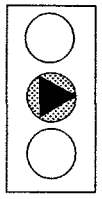
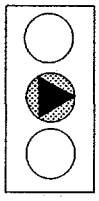
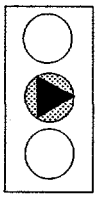
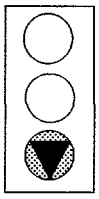
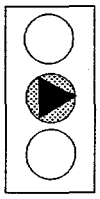
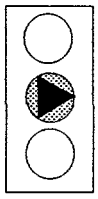
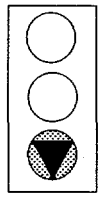
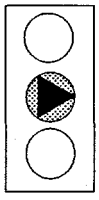
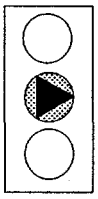
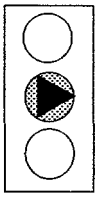
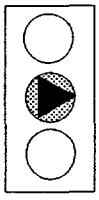
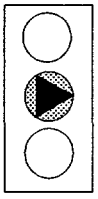
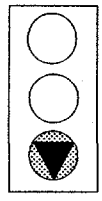
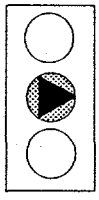
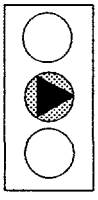
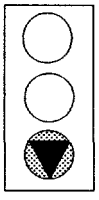
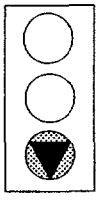
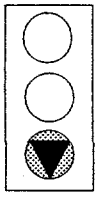
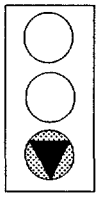
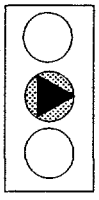
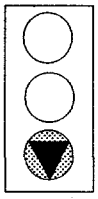
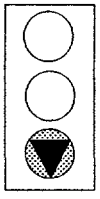
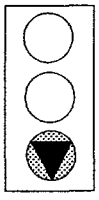
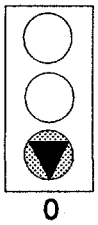
Good



Compared to three yr. Avg. or goal

	CFA	ICPP	PBF	RWMC	TRA	TAN/SMC
Year-to-Date Clothing Contaminations	 0	 11	 0	 0	 7	 0
Year-to-Date Airborne Events	 0	 0	 0	 0	 0	 0
Year-to-Date Radioactive Material Intakes	 0	 0	 0	 0	 0	 2
Contamination Area - ft^2	 14,105	 64,819	 7,378	 0	 49,670	 53,226
High Contamination Area - ft^2	 0	 251,961	 2,288	 29,525	 2,601	 11,526
Airborne Radioactivity Area - ft^2	 0	 82,712	 2,000	 0	 0	 0
Year-to-Date Spills	 0	 4	 0	 0	 1	 0

Radiological Control Performance Indicator Report Criteria

The INEEL Radiological Control Performance Indicator Report is comprised of a description of the indicator and the criteria used for measurement.

Collective Radiation Dose -

The INEEL collective total penetrating radiation exposure received and the associated quarterly and annual ALARA goals.

Average Worker Radiation Dose -

The average penetrating radiation dose based on collective dose and the total number of personnel receiving measured radiation exposure.

Maximum Radiation Dose to a Worker -

The highest penetrating radiation dose received by a worker at the INEEL.

Maximum Neutron Dose to a Worker -

This indicator reports the highest neutron radiation dose equivalent received by a worker.

Number of Skin Contaminations -

The total number of radioactive skin contaminations and the number of those contaminations resulting in an Occurrence Report, the number of facial contaminations, and the number of contaminated wounds.

Number of Clothing Contaminations -

The total number of radioactive clothing contaminations and the number of those contaminations resulting in an Occurrence Report.

Airborne Events -

The number of occupied facility areas not posted as Airborne Radioactivity Areas that exceed 10% Derived Air Concentrations (DAC).

Total Year-to-Date Intakes -

The number of positive bioassay results that indicate an intake of radioactive material and result in a dose assessment of 10 mrem or more from an INEEL occupational exposure. The total number of positive bioassays that resulted in an Occurrence Report are also tracked and trended.

Contamination Area -

The total area in square feet that falls within the description of a Contamination Area as defined in Table 2-3 of the INEEL Radiological Control Manual.

High Contamination Area -

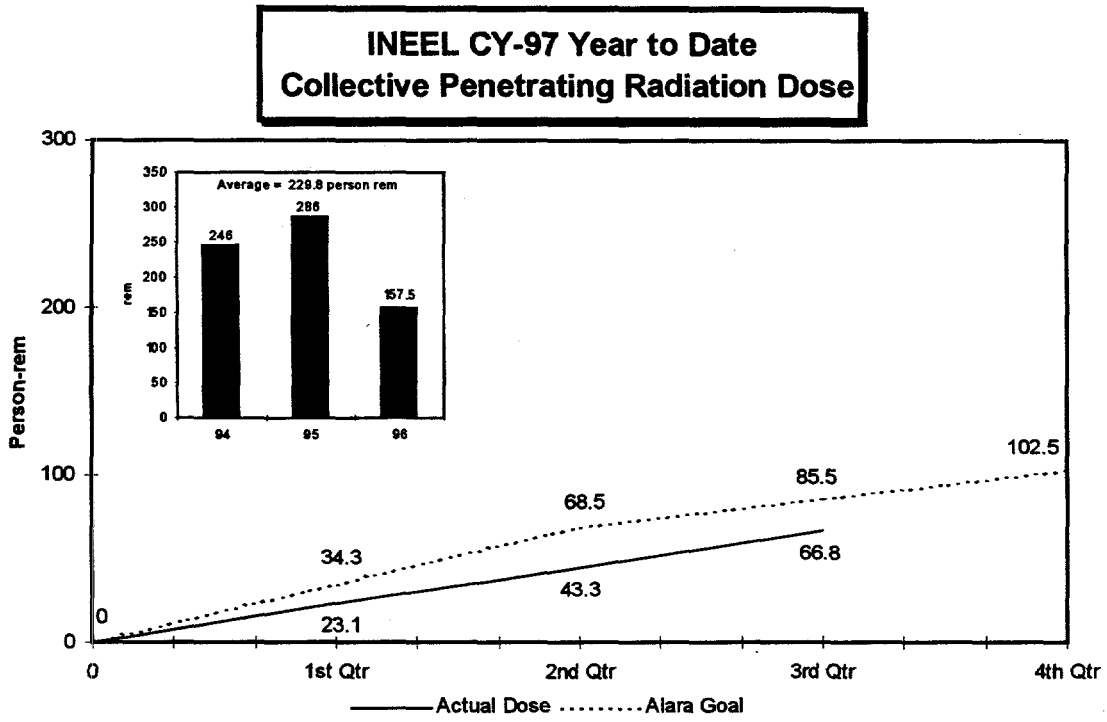
The total area in square feet that falls within the description of a High Contamination Area as defined in Table 2-3 of the INEEL Radiological Control Manual.

Airborne Radioactivity Area -

The total area in square feet that falls within the description of an Airborne Radioactivity Area as defined in Table 2-3 of the INEEL Radiological Control Manual.

Radioactive Spills -

The total number of radioactive spills at the INEEL. A spill is considered an inadvertent loss or release of radioactive contamination outside a Radiologically Controlled Area.



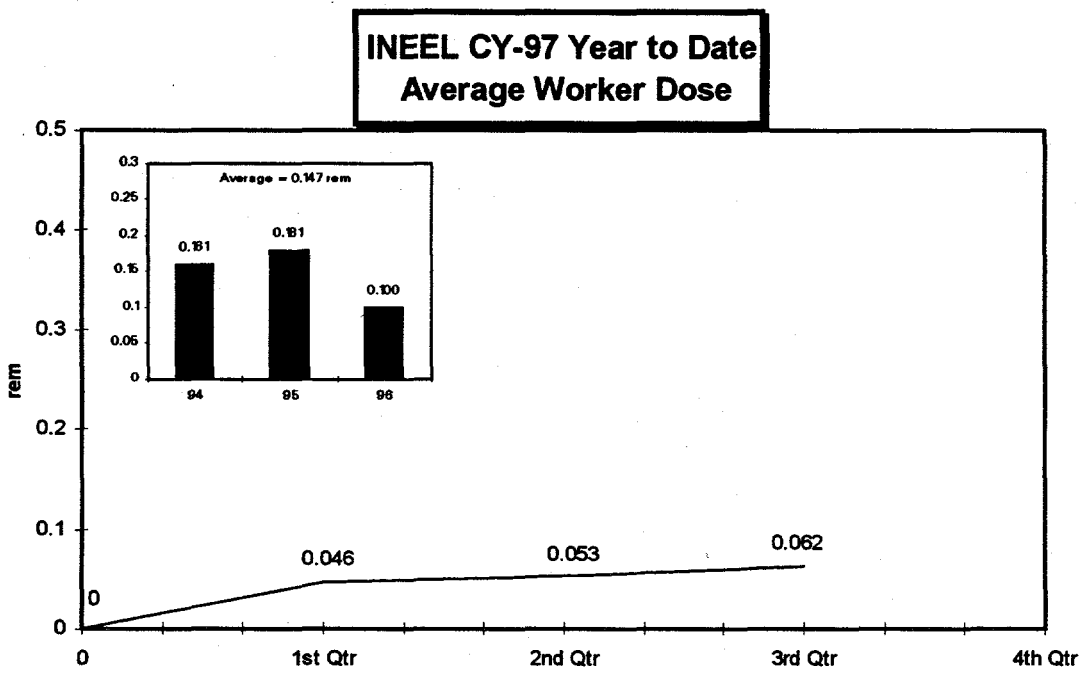
DOE and LIMITCO policy is to maintain occupational radiation exposure as low as reasonably achievable (ALARA). The above chart provides a comparison of the INEEL goal and the total year to date collective penetrating radiation dose.

The CY-97 ALARA goal has been revised to 102.465 person-rem. Reductions in work scope at the RWMC and ICPP are responsible for the revision. Evaluations and adjustment to the yearly and quarterly goals may be periodically performed to provide realistic values based on changes in work scope.

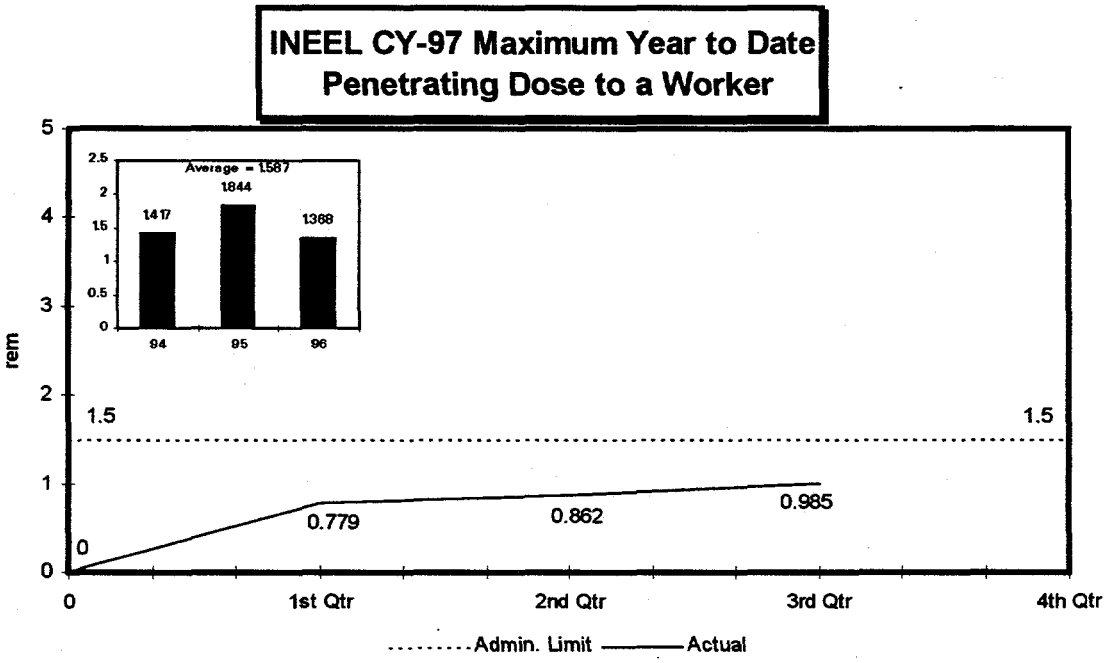
The collective radiation exposure through the end of the third quarter was 66.834 person-rem. The collective exposure is well below the goal primarily due to aggressive application of ALARA protective measures at the ICPP such as decontamination on the Tank Farm where results were more effective than anticipated. Valve box work savings were on the order of 14 rem due in part to use of mock ups, practice entry and egress in cold areas and a better coordinated radiological work ethic. Some ROVER work has been deferred, and completion of work well ahead of schedule at the RWMC accounts for additional exposure savings.

The INEEL Performance Indicators are designed to reflect a challenging, yet positive control of occupational radiological work.

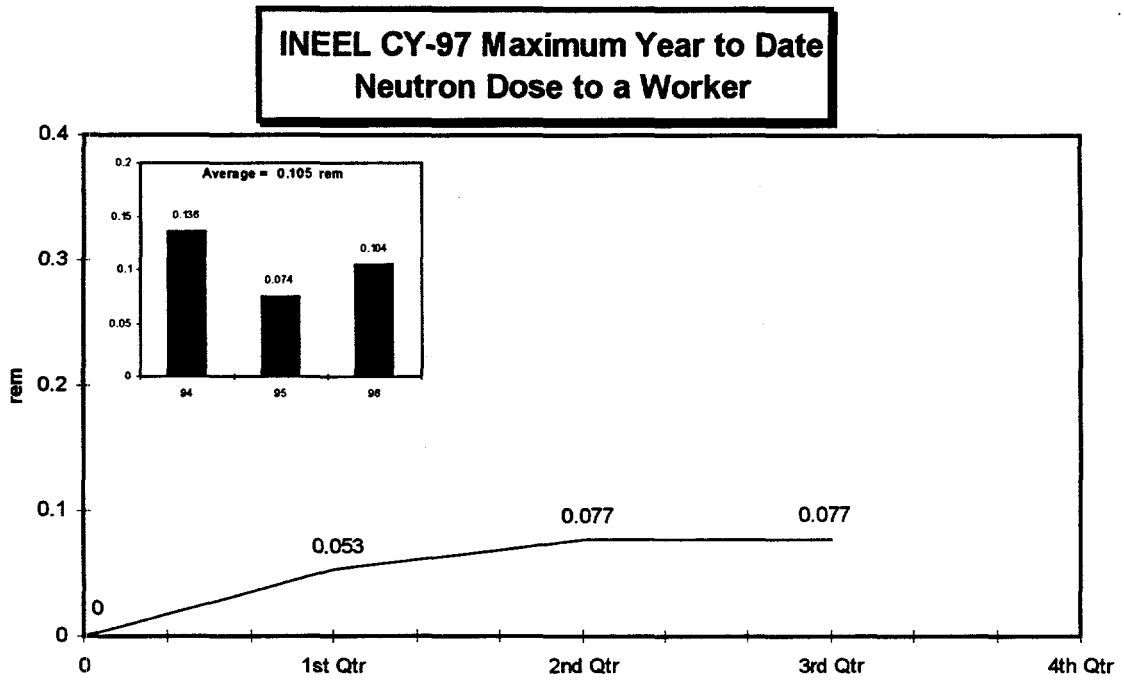
This chart and the charts on the following pages provide an indication of how well LMITCO is performing as a company. Following the company charts are charts showing the six specific facility areas and their performance in selected indicators.



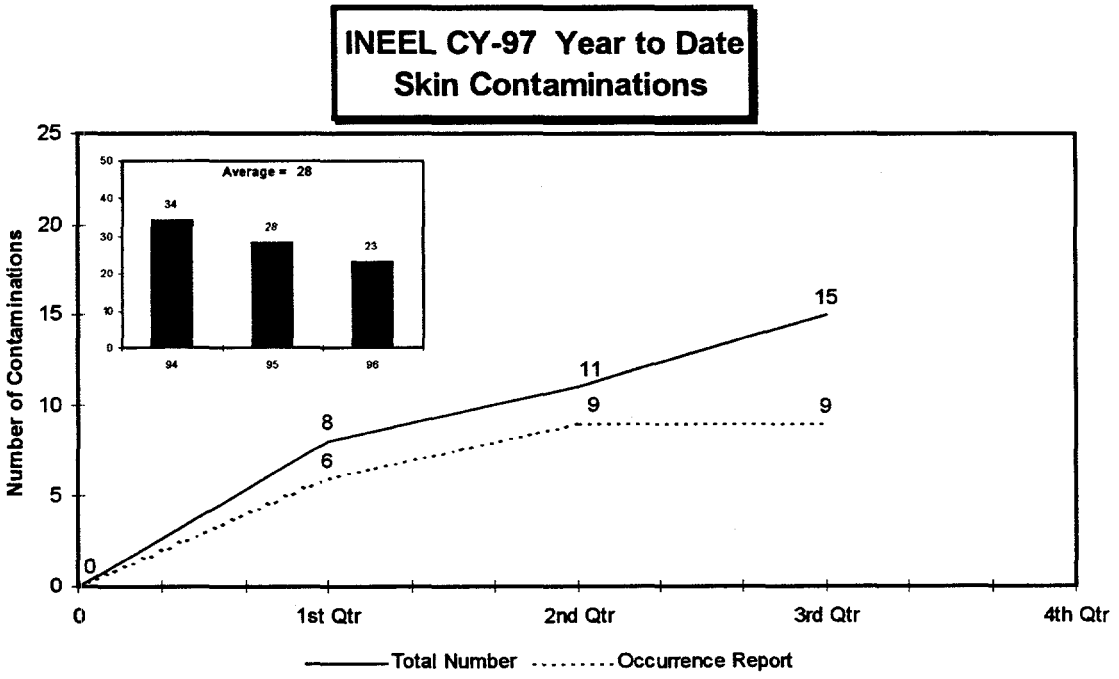
The Average Occupational radiation dose for INEEL workers through the end of the third quarter was 0.062 rem based on 1081 workers who received dose greater than 10 mrem.



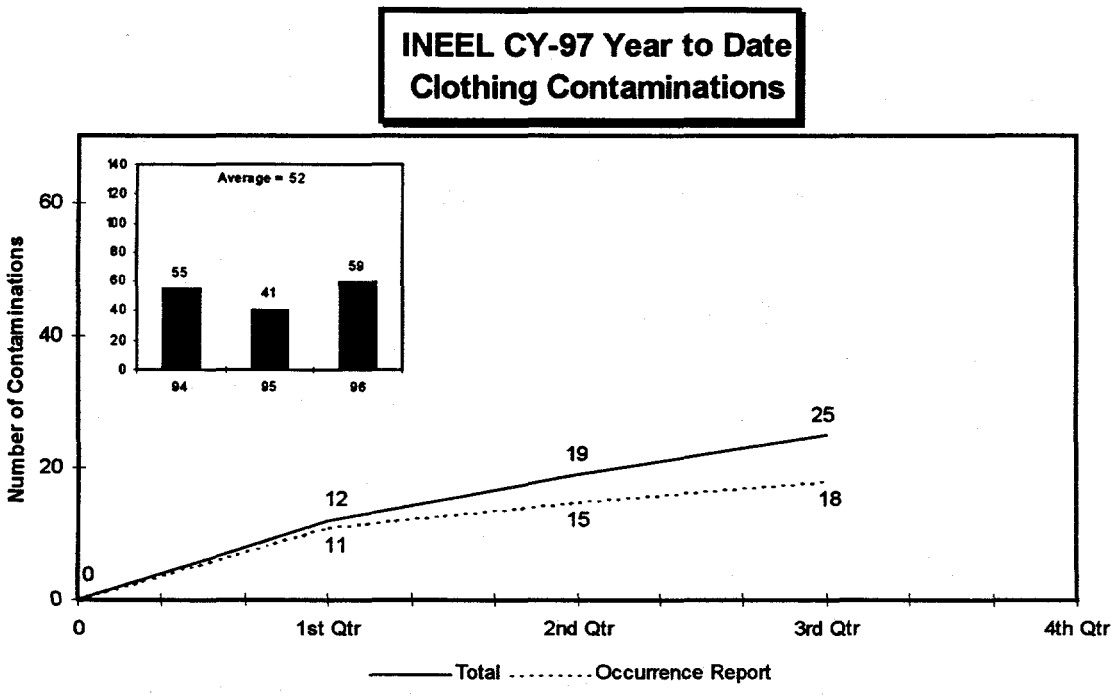
The Maximum penetrating radiation dose to a worker through the end of the third quarter was 0.985 rem. The dose resulted from activities associated with the ICPP during the first nine months of this year.



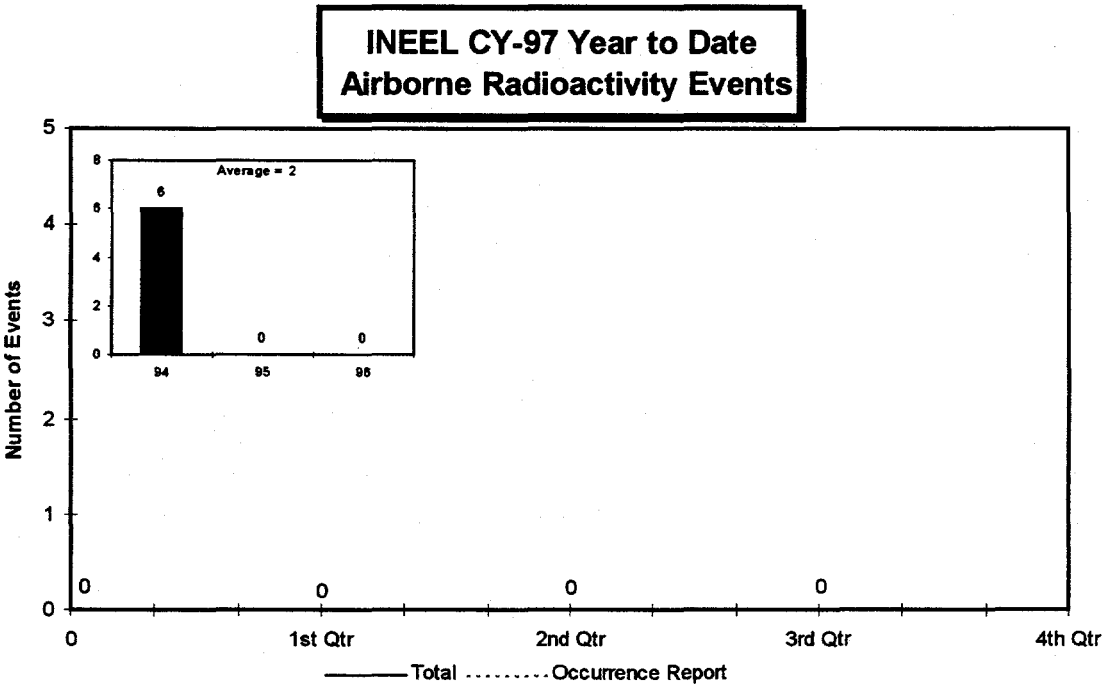
Neutron dose is included in the total penetrating radiation dose. It is shown here as a separate indicator to identify the maximum neutron dose to a worker. Through the end of the third quarter the maximum neutron dose is 0.077 rem. A worker at the PBF using a neutron source to evaluate cadmium thickness in fuel storage racks received this dose.



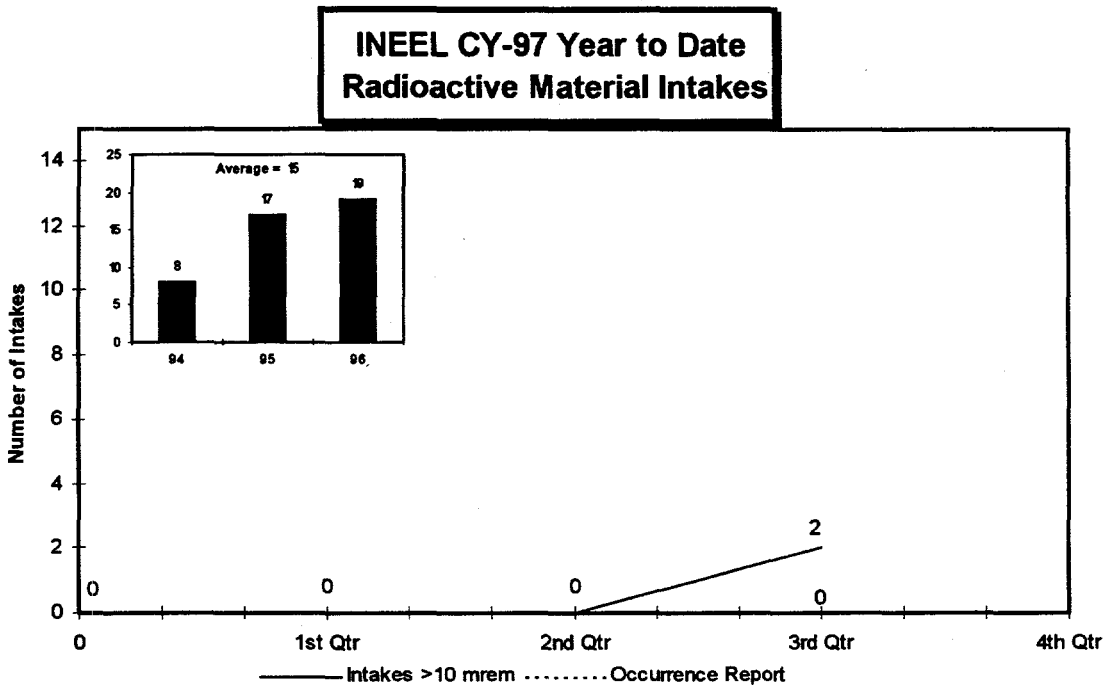
There were four skin contaminations at the INEEL during the third quarter. None were ORs. None of the events resulted in facial or wound contamination. This is well below the year to date average.



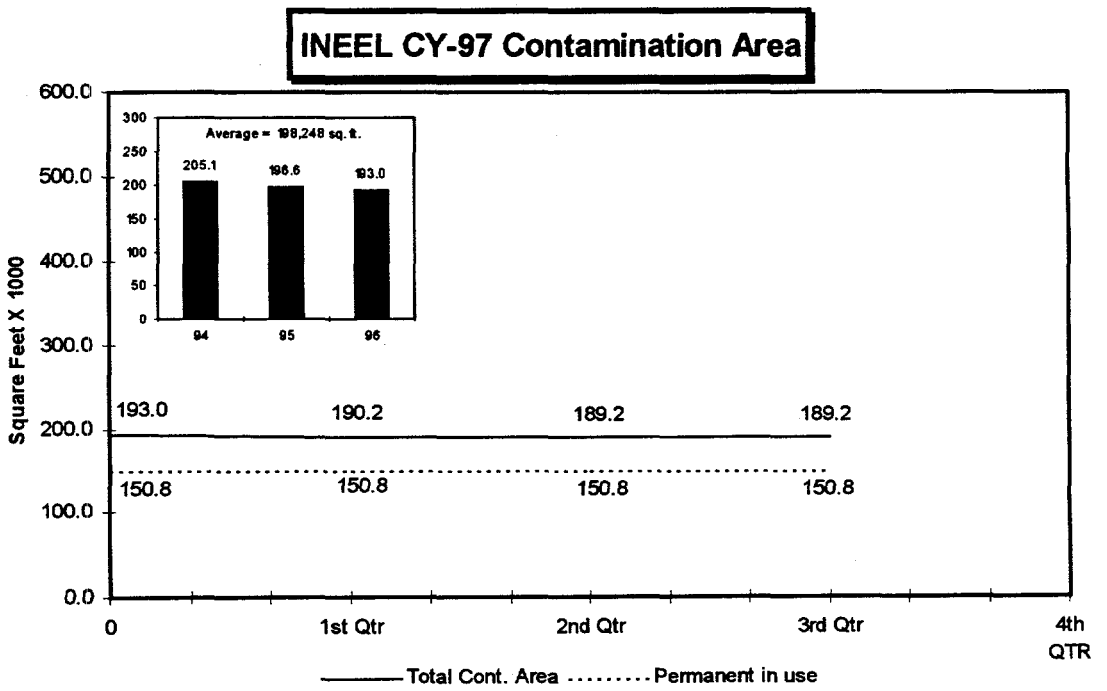
There were six clothing contaminations at the INEEL during the third quarter. Three resulted in ORs. This improves on prior performance and is below year to date averages. Details are contained in the facility report sections.



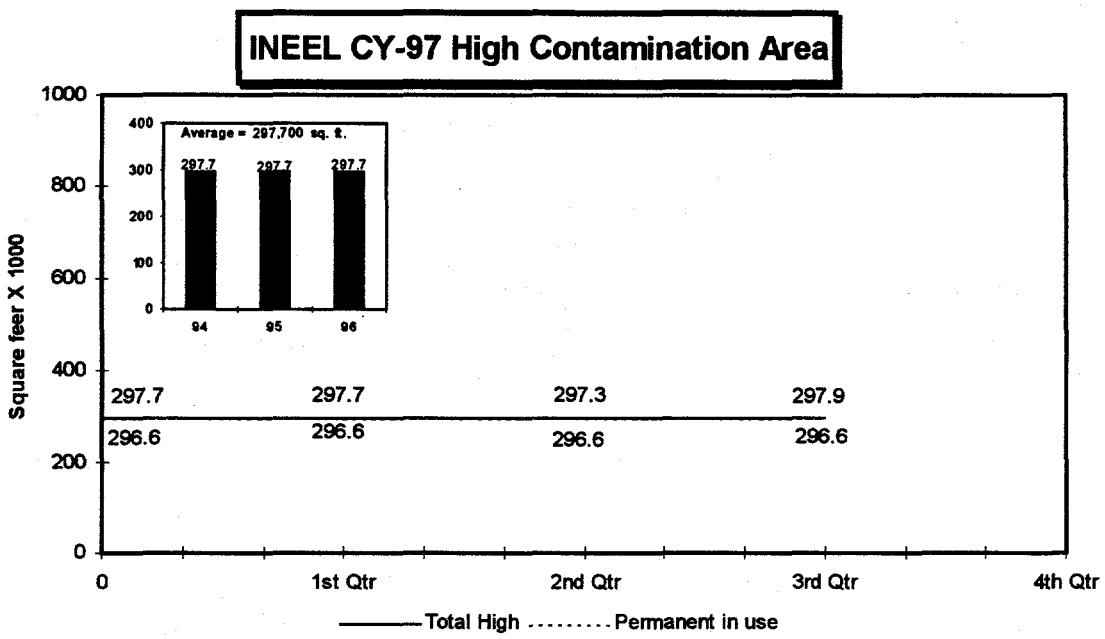
There have been no airborne radioactivity events attributable to LMITCo. MAC-I (the TRA Hot Cell) had one event not depicted by this chart since they are a privatized organization.



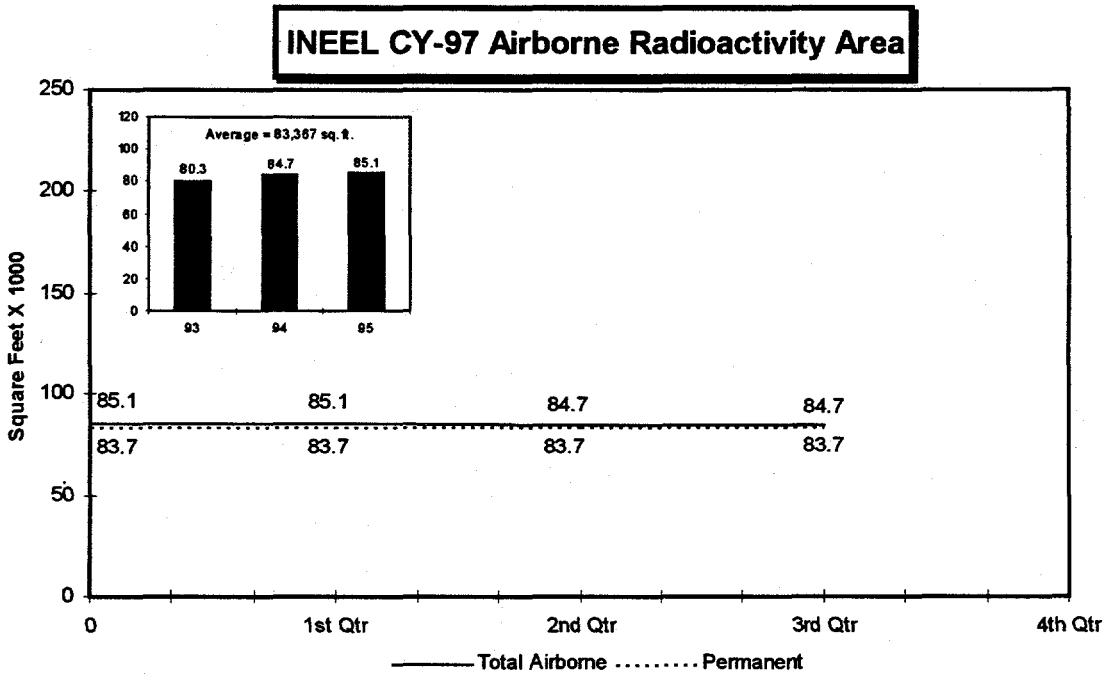
Radioactive material intakes depict the number of positive bioassays that result in a dose assessment of 10 mrem or greater. Two were reported during the third quarter from routine SMC activities. SMC routinely has some internal low levels of radioactivity. An event at the TRA Hot Cell resulted in two employees receiving about 10 mrem CEDE not accounted to LMITCo due to privatization of MAC-I.



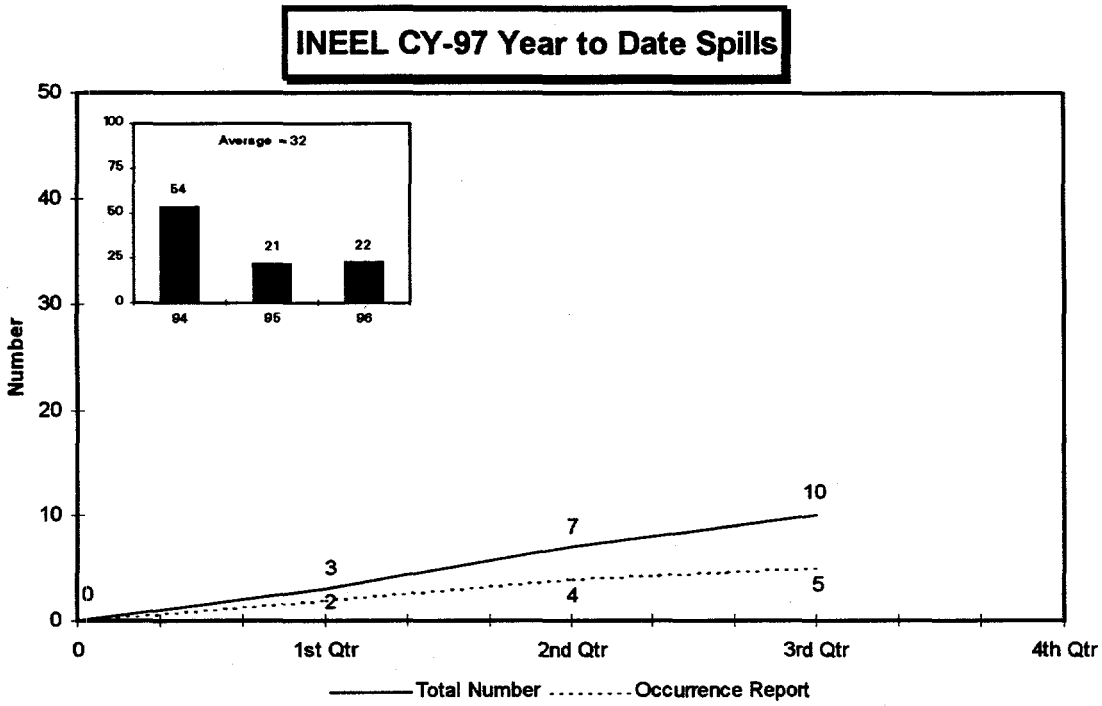
The total area designated as Contamination Area at the end of the third quarter was 189,198 square feet. 150,800 square feet is designated as permanent and in use Contamination Area.



Total High Contamination Area at the end of the third quarter was 297,901 square feet. 296,641 square feet is designated as permanent or in use, such as the sizing facility at WERF. The increase is from an area within the TRA.



The total Airborne Radioactivity Area at the INEEL at the end of the third quarter was 84,712 square feet. 83,662 square feet is designated as permanent and in use.



The INEEL had three spills considered to be loss of control of radioactive material during the third quarter. One was an OR. The year to date comparison with ORs from previous years is much improved.

The three-year average noted on this chart represents only those spills that were reportable as ORs in prior report years.

Central Facilities Area

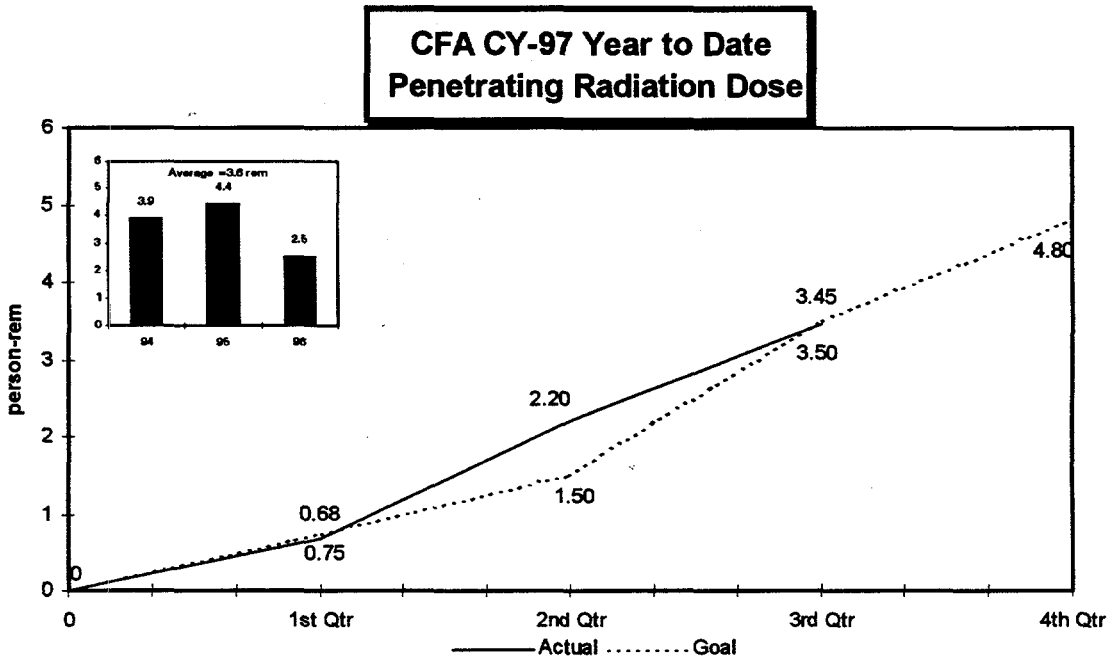
The CFA Facility report also includes
other outlying area information

Summary

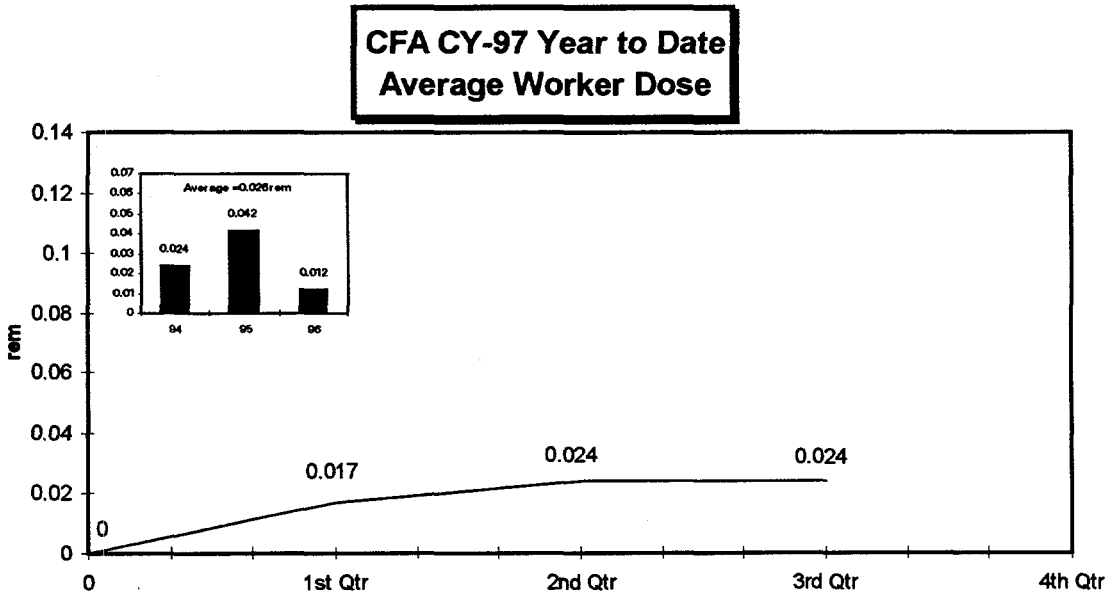
1. The major activity contributing to radiological exposure so far this year has been Decontamination and Decommissioning. Environmental Restoration, sampling, and facility maintenance have added minimal additional dose.

2. Work scope at the CFA is basically similar to that of last year. However, D&D at ARA I has proven to be more difficult than originally planned resulting in increased work scope in the hot cell area. The ALARA committee and CFA RadCon evaluated the increased scope. Based on the evaluation, approval was given to increase the CFA ALARA goal by 1.8 person-rem. The revised goal is 4.8 person-rem

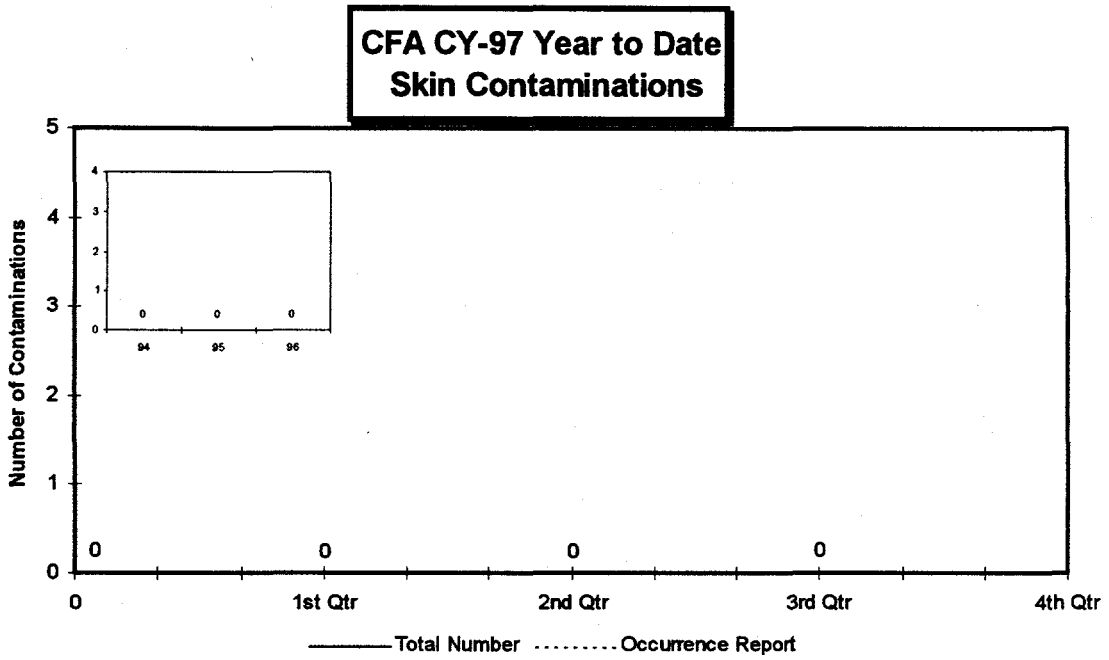
3. The ARA-1 Hot Cell 2 area was decontaminated to levels as low as practicable and remaining contamination was fixed with paint. This effort reduced High Contamination Areas and Airborne Radioactivity Areas by 372 square feet during the second quarter.



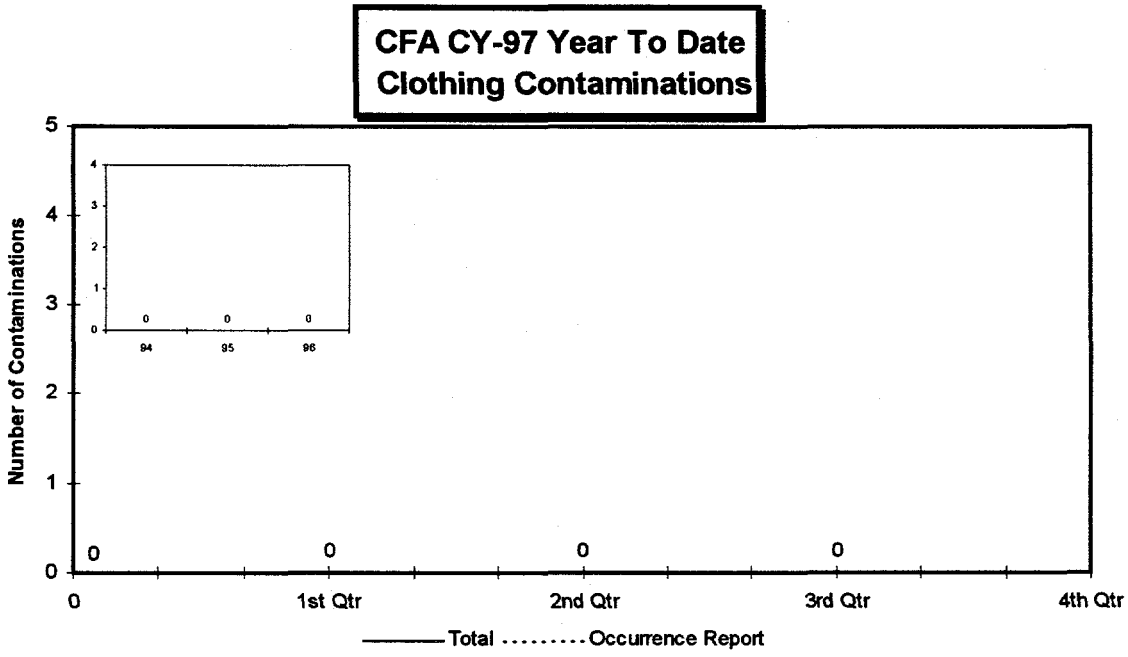
The collective penetrating occupational radiation exposure at CFA through the end of the third quarter is 3.454 person-rem. The major contributor has been Decontamination and Decommissioning (D&D) at ARA. The effort has resulted in significantly more scope than originally planned. Therefore the ALARA goal was reviewed and increased by 1.8 person-rem.



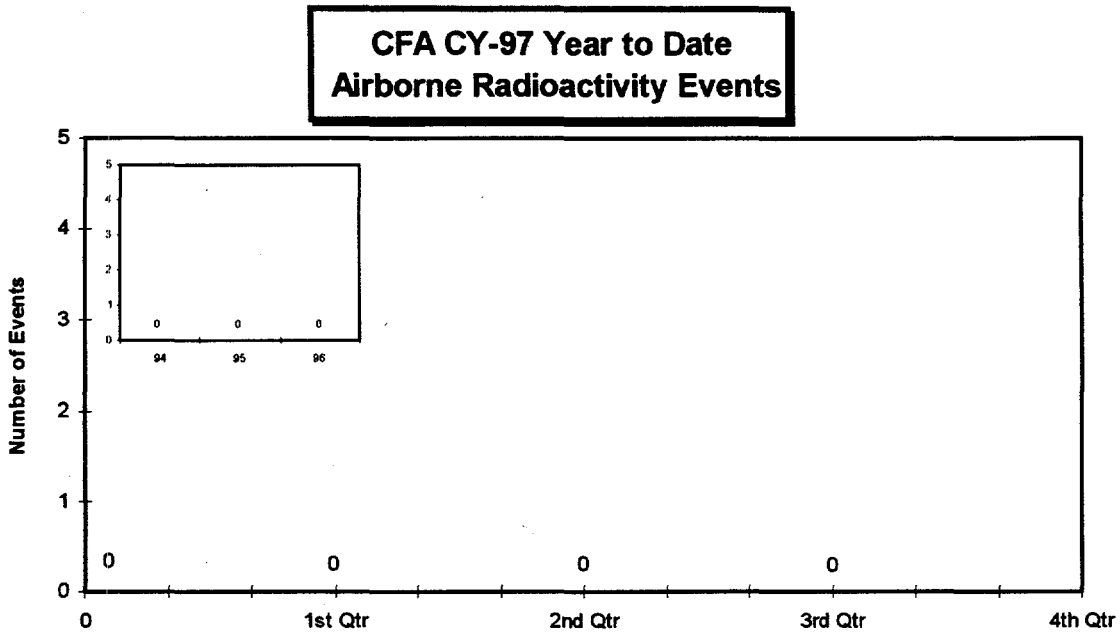
The CFA average worker dose through the end of the third quarter was 0.024 rem evaluating dose from 144 workers with dose greater than 10 mrem.



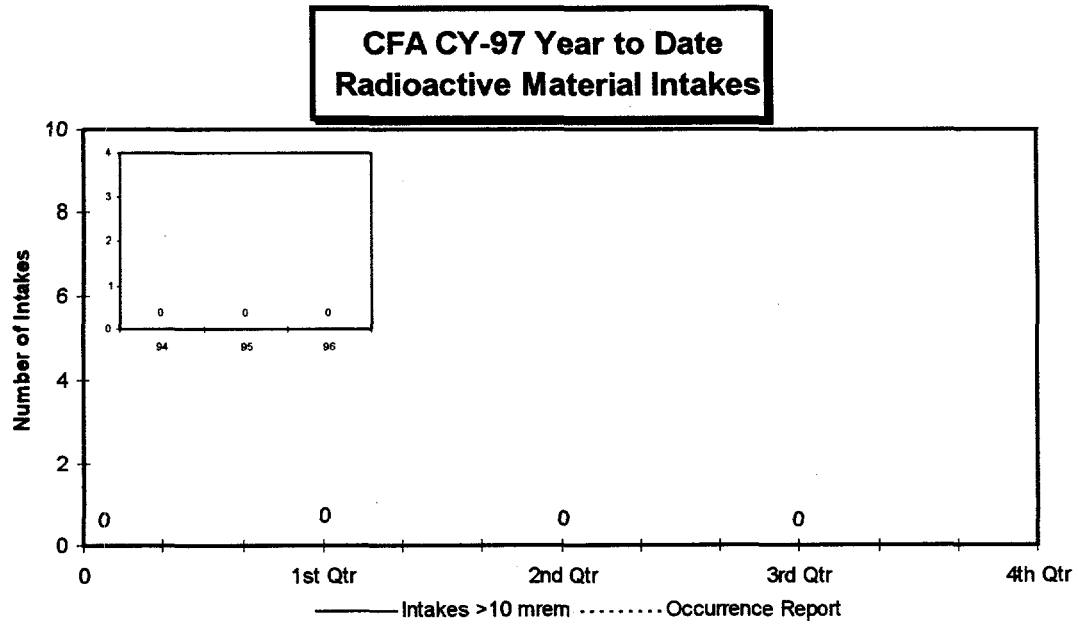
There were no skin contaminations at CFA areas through the end of the third quarter



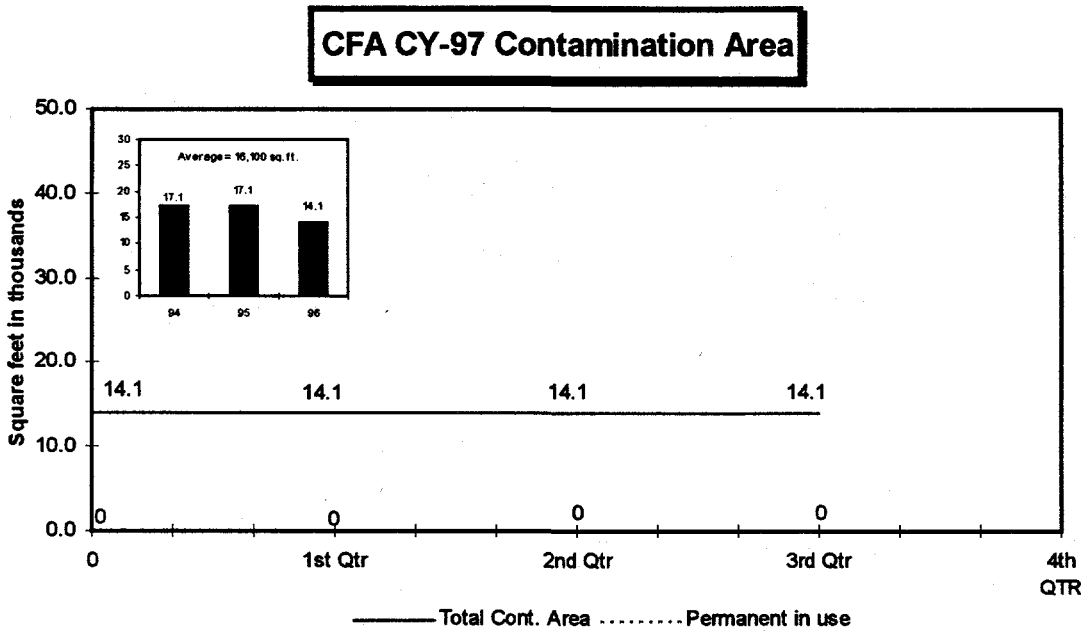
There were no clothing contaminations at CFA areas through the end of the third quarter.



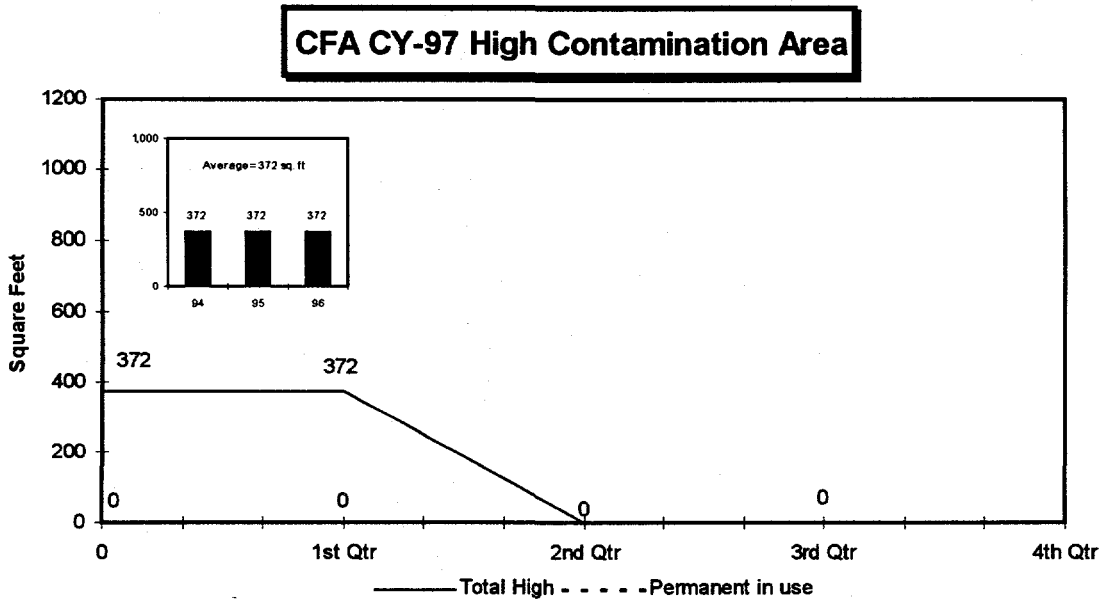
There has been no airborne radioactivity detected that was greater than 10 % DAC at CFA areas through the end of the third quarter.



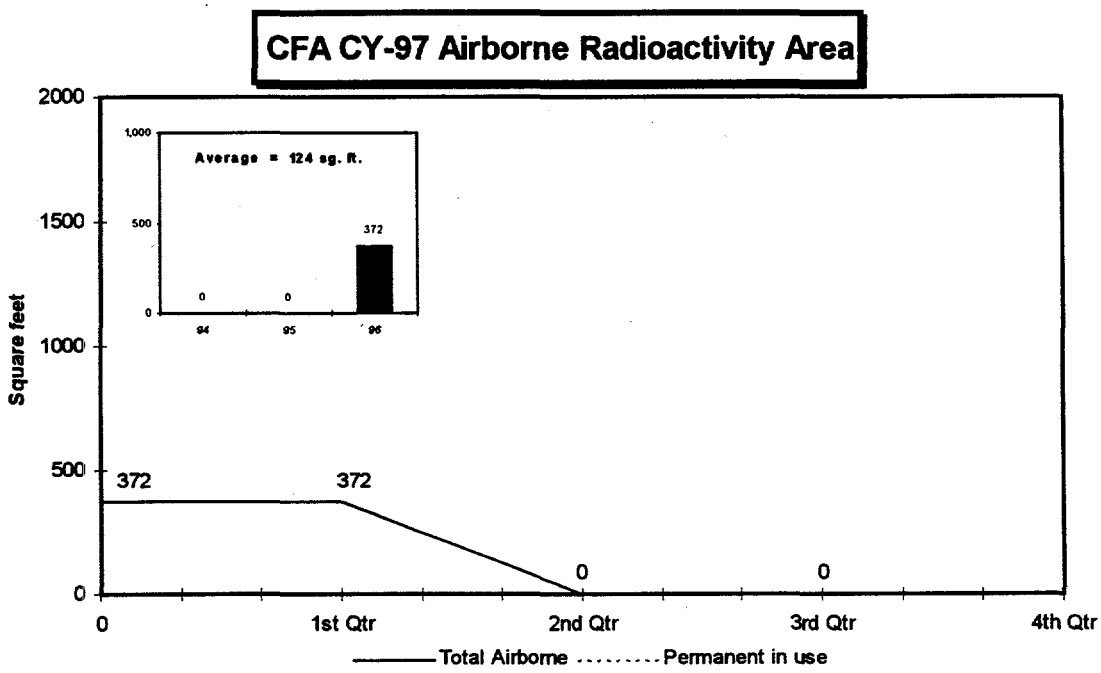
There were no positive bioassays indicating a radioactive material intake that resulted in a dose assessment of 10 mrem or greater at CFA through the end of the third quarter.



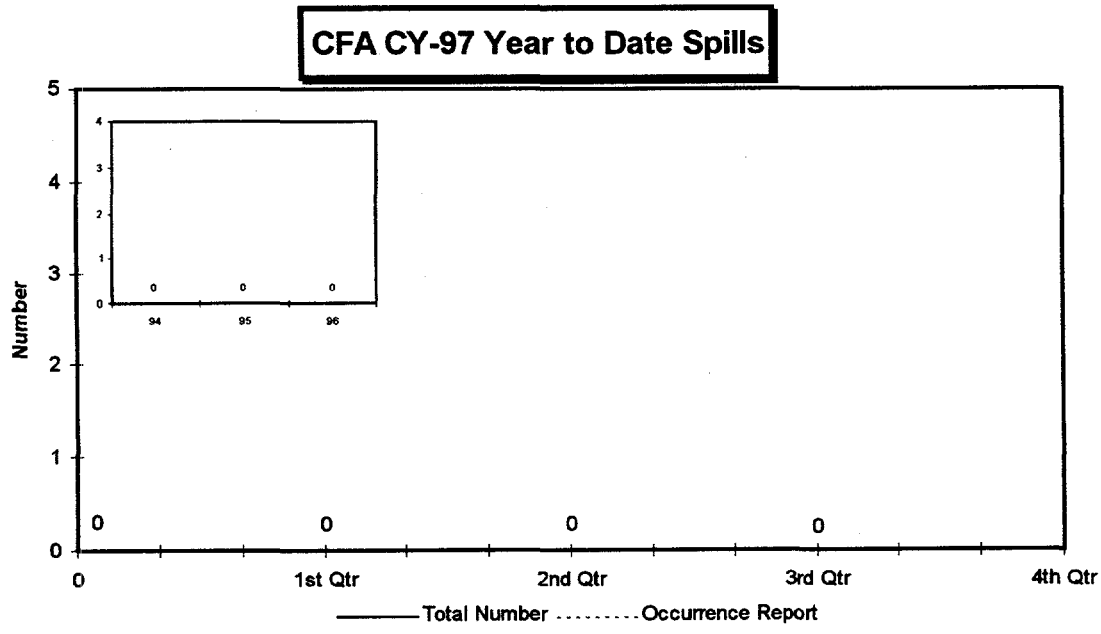
The total Contamination Area at CFA at the end of the third quarter was 14,105 square feet. None of this area was designated as permanent and in use.



The 372 square foot High Contamination Area at CFA (ARA 1 Hot Cell 2) was decontaminated during the second quarter. Any remaining contamination was fixed with paint.



The 372 square foot Airborne Radioactivity Area at ARA I Hot Cell 2 was eliminated during the second quarter due to decontamination of the cell.



CFA had no radioactive spills or loss of control of radioactive material during the third quarter.

Idaho Chemical Processing Plant

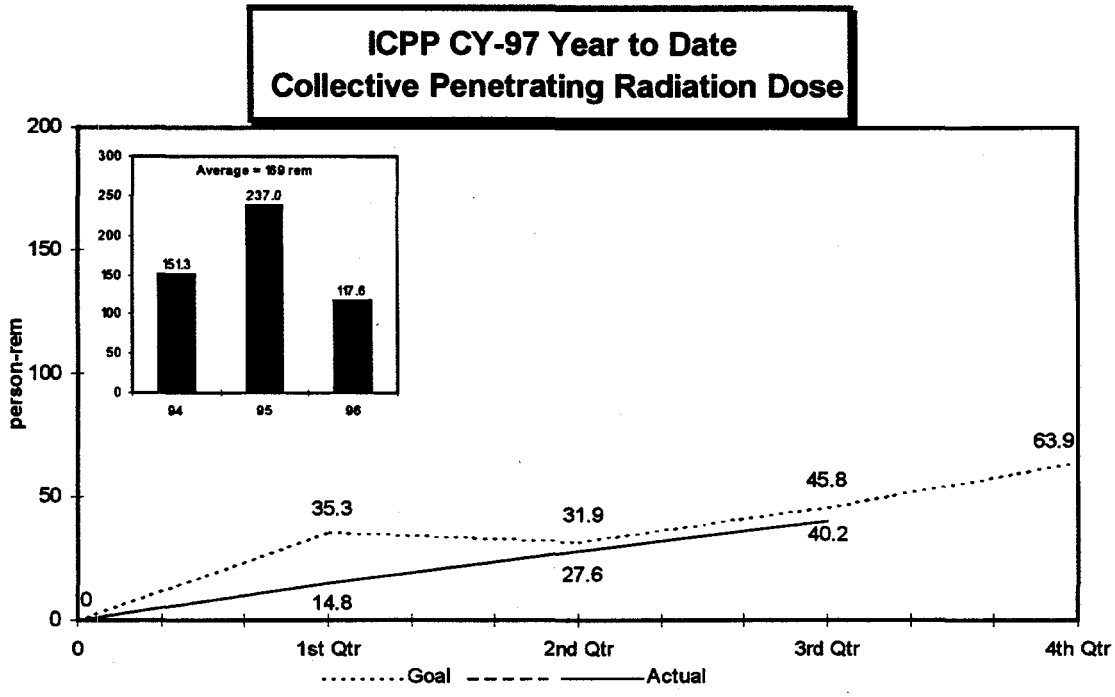
SUMMARY

1. Major contributors to third quarter occupational radiation exposure were activities related to the CPP-640 ROVER project and the CPP-604 North Evaporator project.

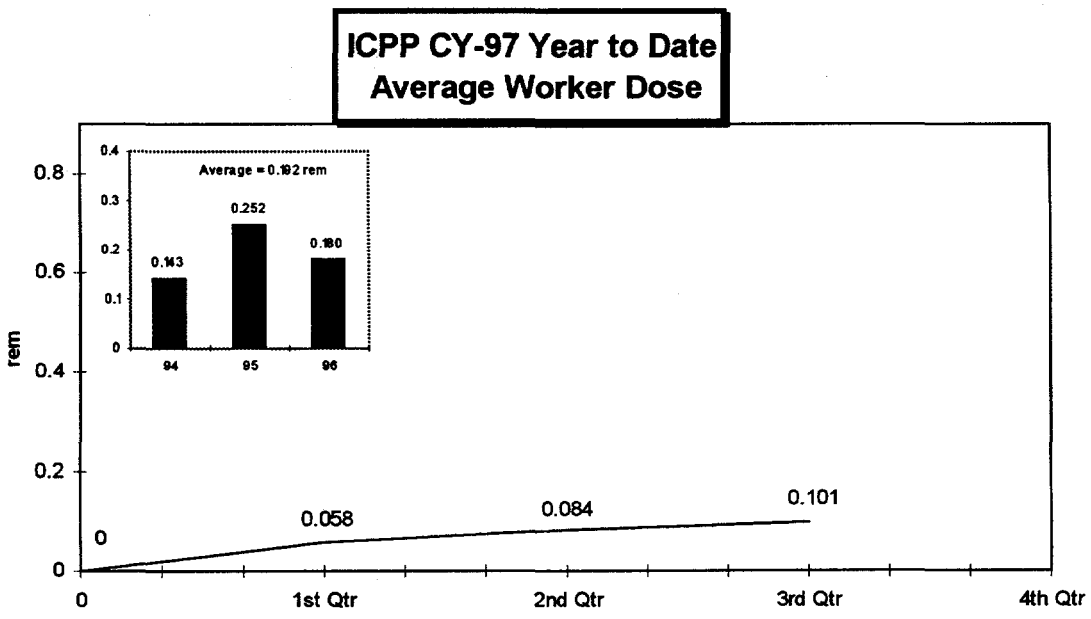
2. Details of the one clothing contamination that occurred during the third quarter are contained in OR ID-LITC-WASTEMNGT-1997-0017. The contamination was on modesty clothing measuring 40,000 disintegrations per minute (dpm).

3. There were no reportable skin contaminations during the third quarter. There was one non-reportable contamination to the hands of a radiographer. The beta contamination measured 4000 dpm.

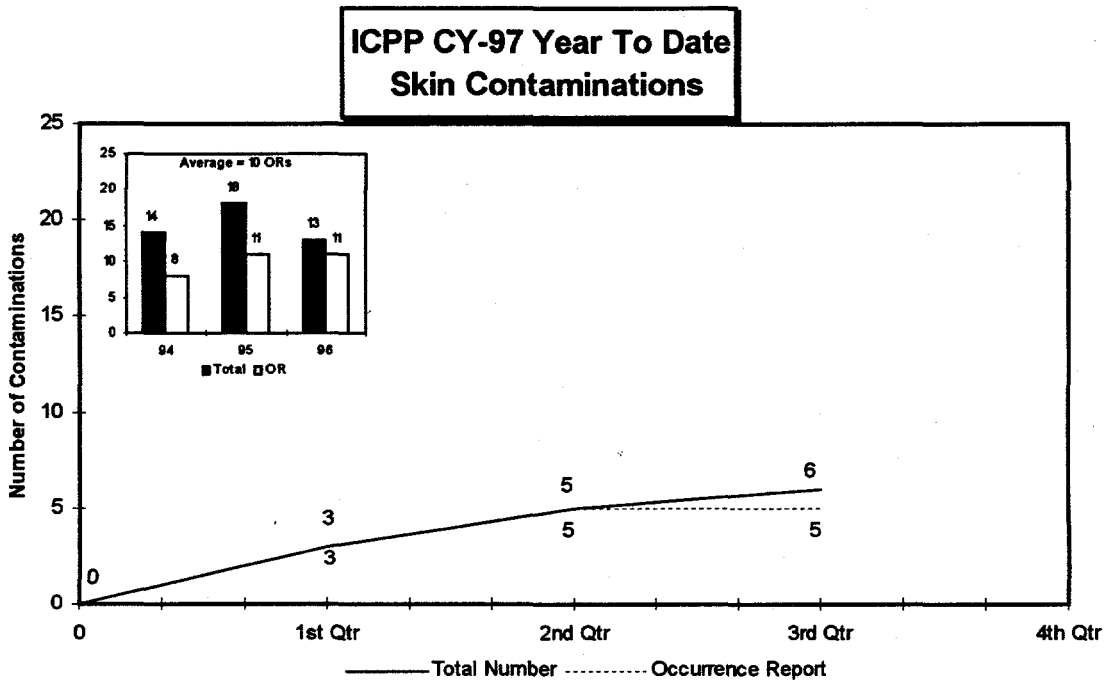
4. There were no reportable spills during the third quarter.



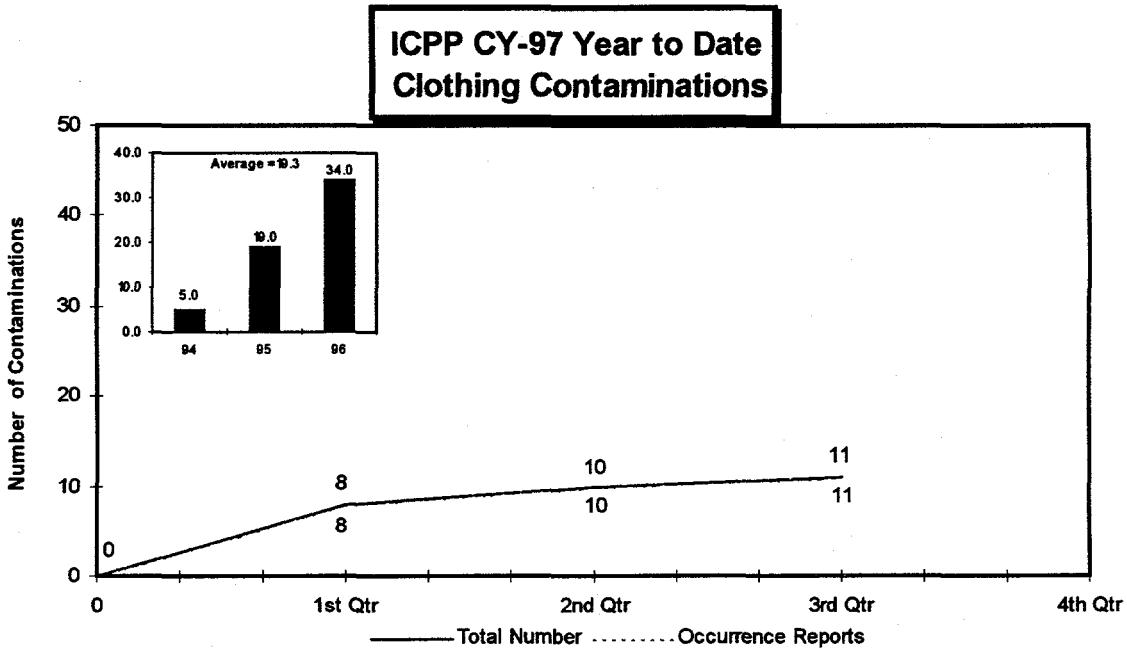
The ICPP collective penetrating occupational radiation exposure through the end of the third quarter was 40.155 person-rem. Decontamination and shielding on the Tank Farm, startup of NWCF, and some work being deferred or cancelled have contributed to an adjustment of the ICPP goal to 63.865 rem. The deferred work accounts for the dip in the goal line.



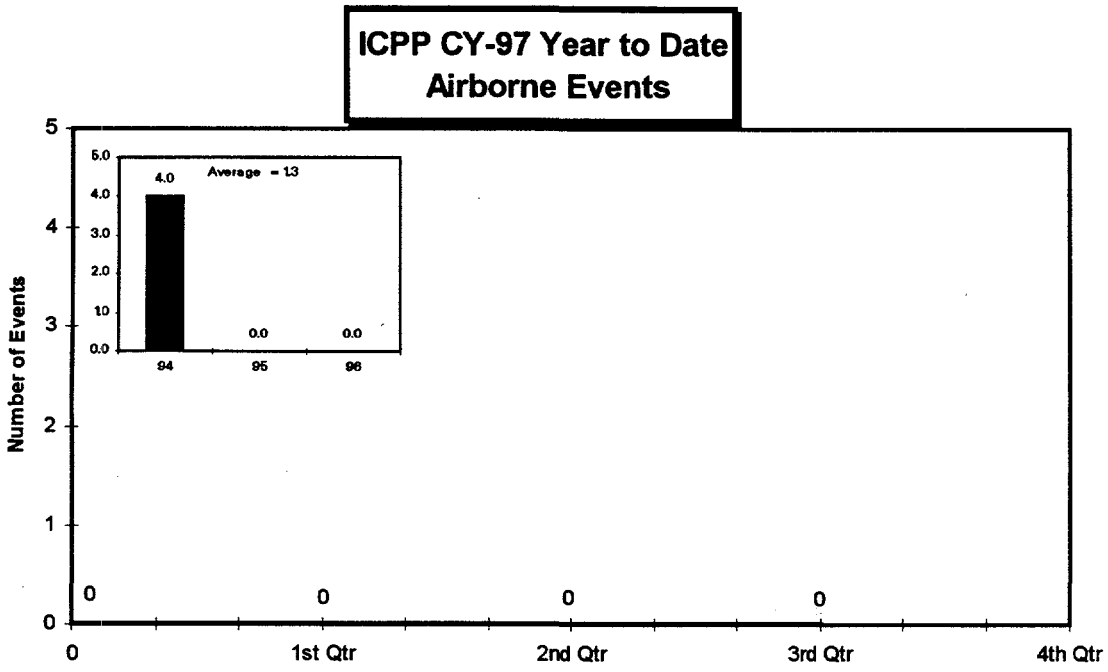
The average worker dose for the ICPP through the end of the third quarter was 0.101 rem resulting from 399 workers receiving dose greater than 10 mrem.



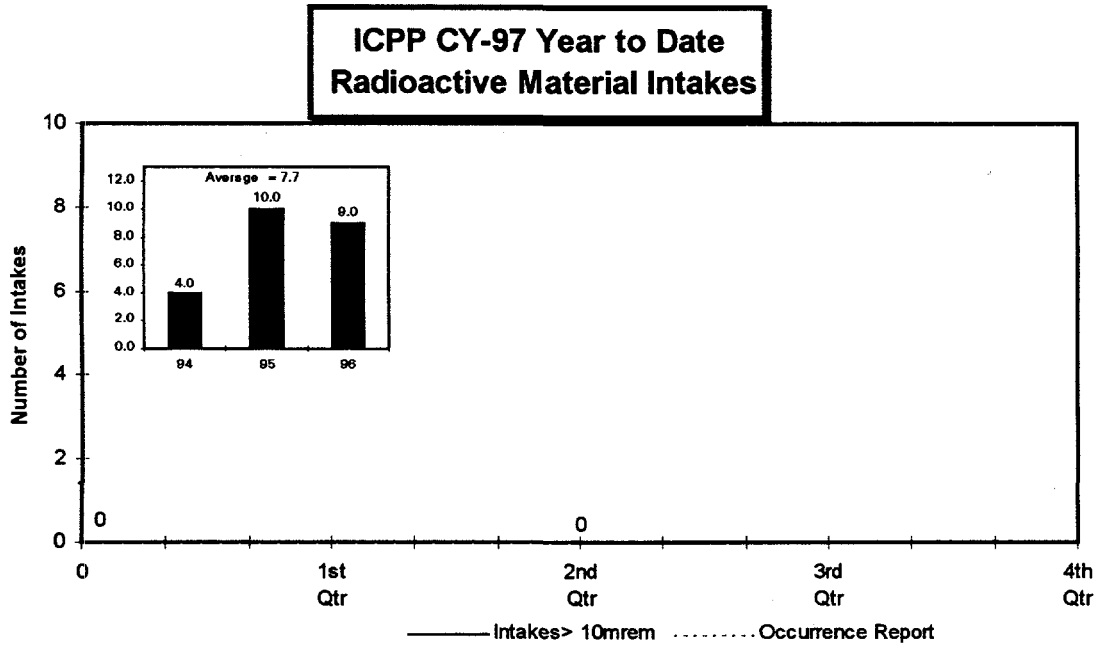
The ICPP had one non-reportable skin contamination during the third quarter. There were no facial contaminations or contaminated wounds.



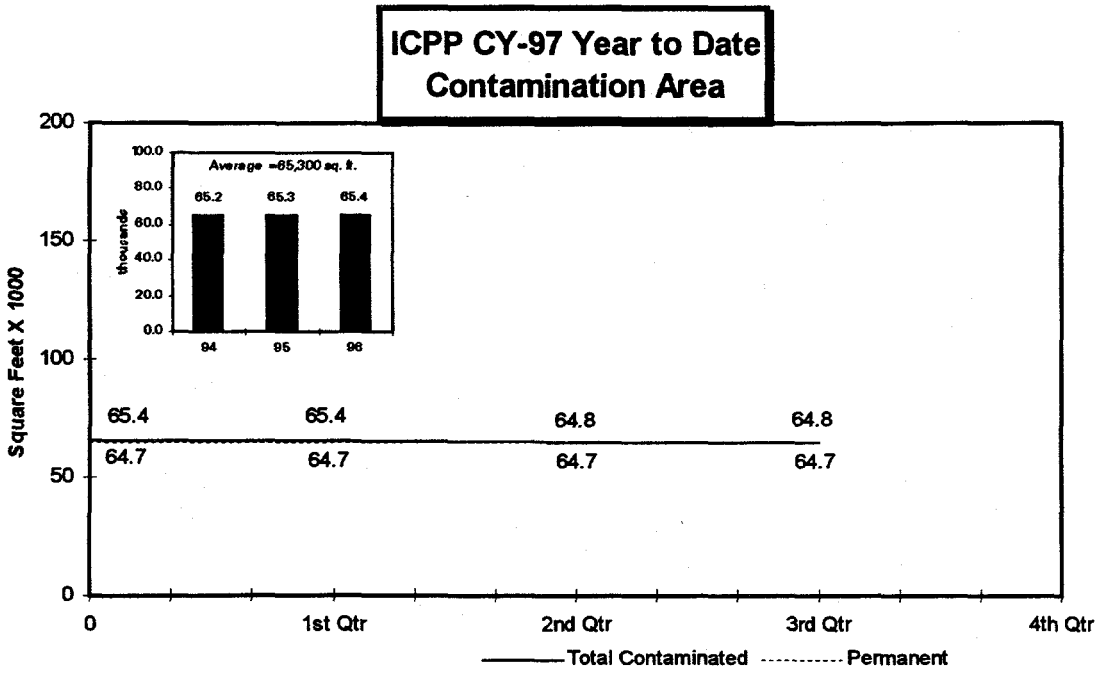
One clothing contamination was reported during the third quarter at the ICPP. Detail is contained on OR ID-LITC-WASTEMNGT-1997-0017.



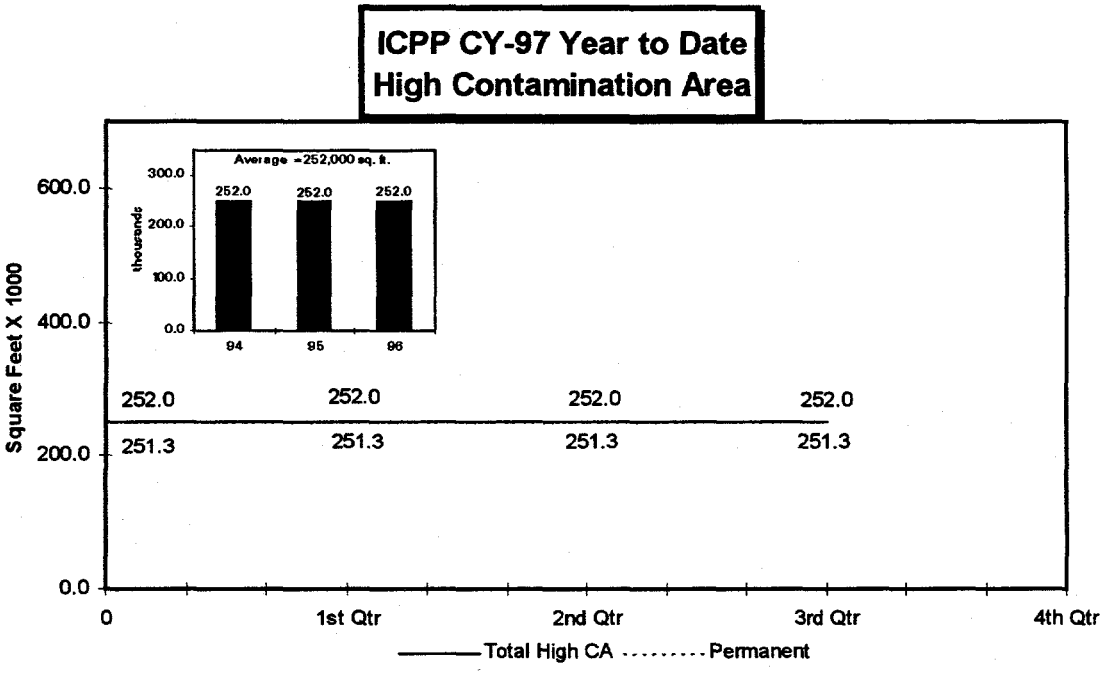
No airborne activity greater than 10 % DAC in unposted areas was detected in ICPP areas during the third quarter.



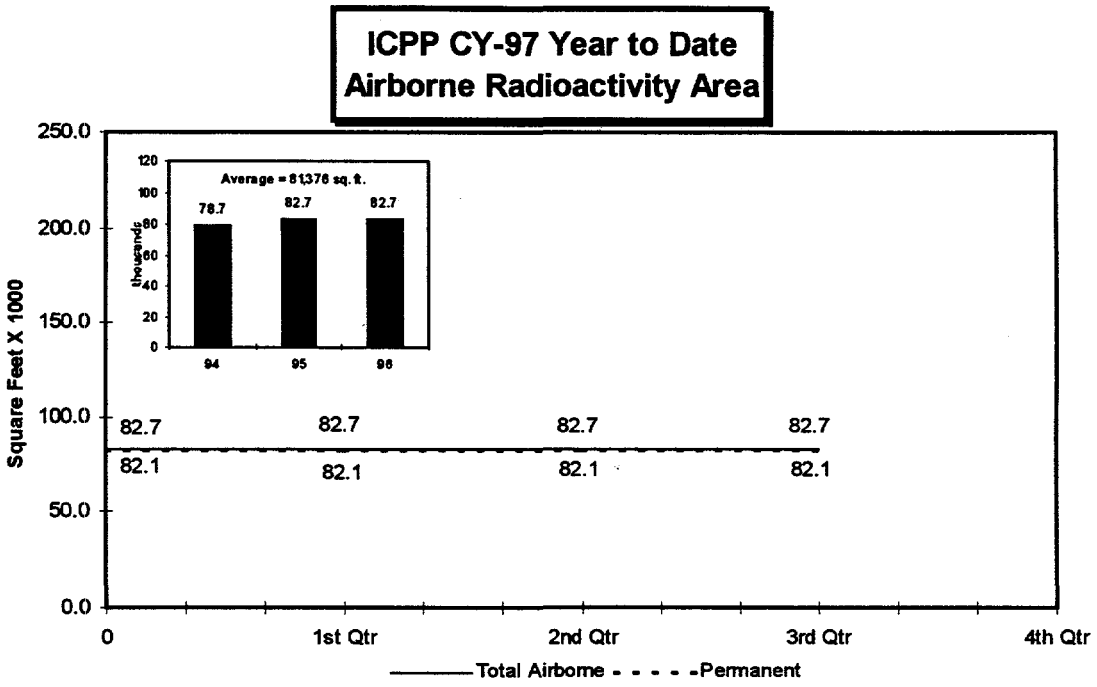
There have been no bioassays completed during the third quarter at the ICPP that have resulted in a dose assessment of 10 mrem or greater. There are three routine bioassays currently under investigation.



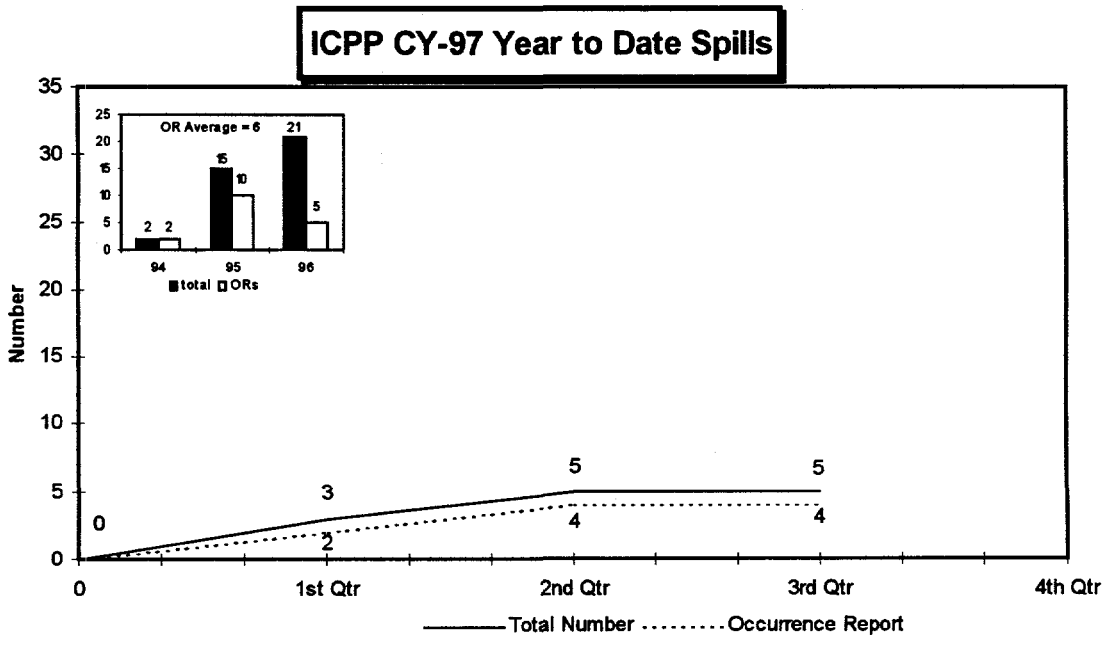
Total Contamination Area at the ICPP at the end of the third quarter remains at 64,819 square feet. The reduction in the second quarter is due to decontamination of about 600 square feet of the WCF decontamination makeup room. 64,684 square feet is designated as permanent and in-use.



The total High Contamination Area at the ICPP remains at 251,961 square feet at the end of the third quarter. 251,311 square feet are designated as permanent and in-use.



Total Airborne Radioactivity Area at the ICPP at the end of the third quarter remains at 82,712 square feet. 82,062 square feet is designated as permanent and in-use.



There were no spills or loss of control of radioactive material during the third quarter.

Power Burst Facility

Waste Reduction Operations Complex

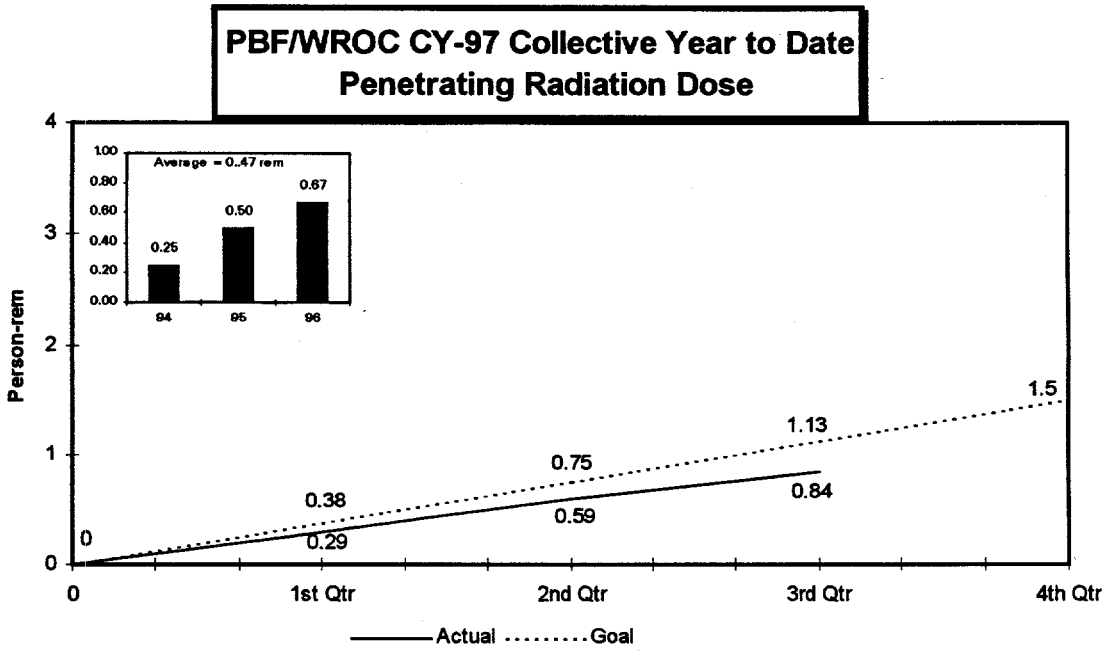
Waste Experimental Reduction Facility

(PBF/WROC)

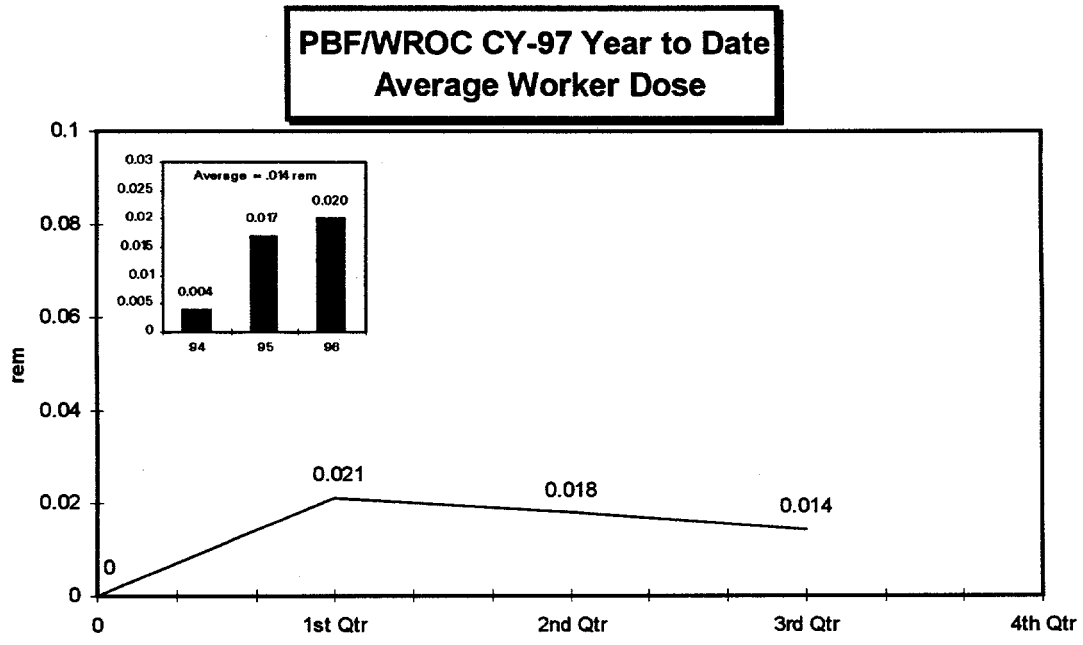
Summary

1. Major contributors to the third quarter occupational radiation exposure in the PBF/WROC reporting area were working with mixed waste, sizing and compaction of low level waste, incineration, routines, and instrument calibrations.

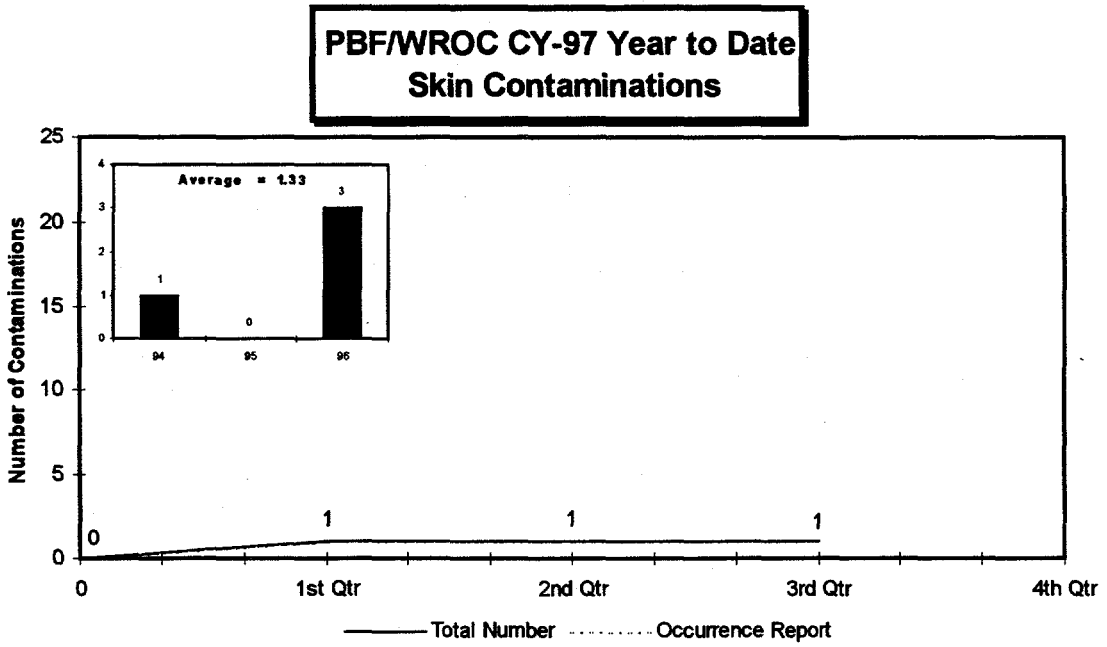
2. The only skin contamination occurred at the WERF during the first quarter and was classified as an OR. Detail is contained in OR ID-LITC-WERF-1997-0001



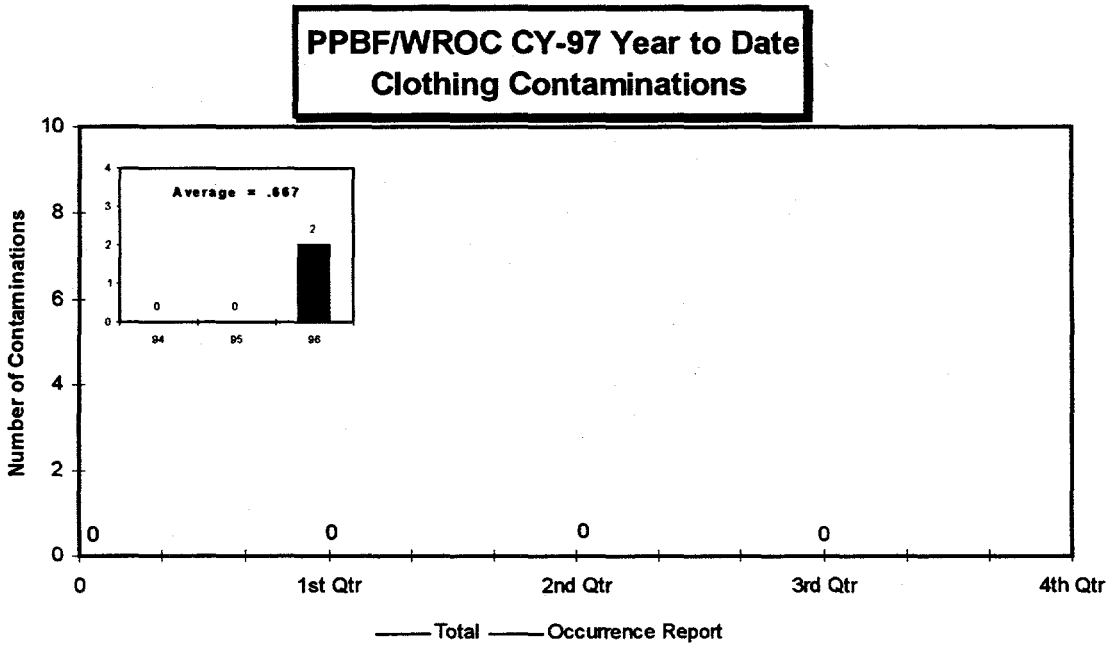
PBF/WROC collective penetrating radiation exposure through the end of the third quarter was 0.837 person rem.



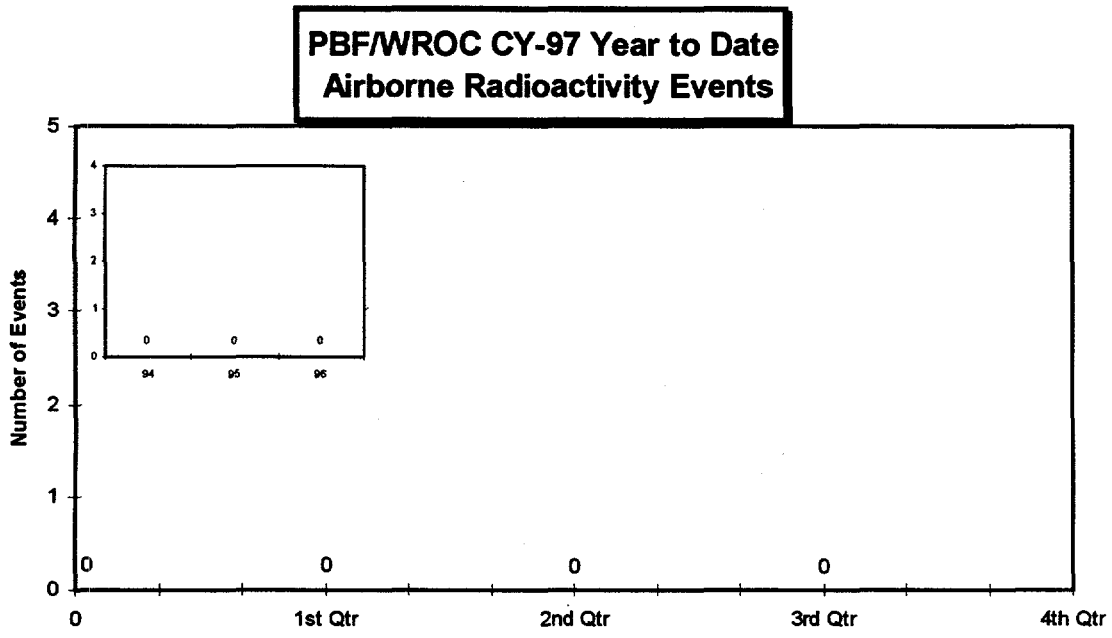
The PBF/WROC average worker dose through the end of the third quarter was 0.014 rem. Average dose is based on a comparison of workers who receive measurable dose.



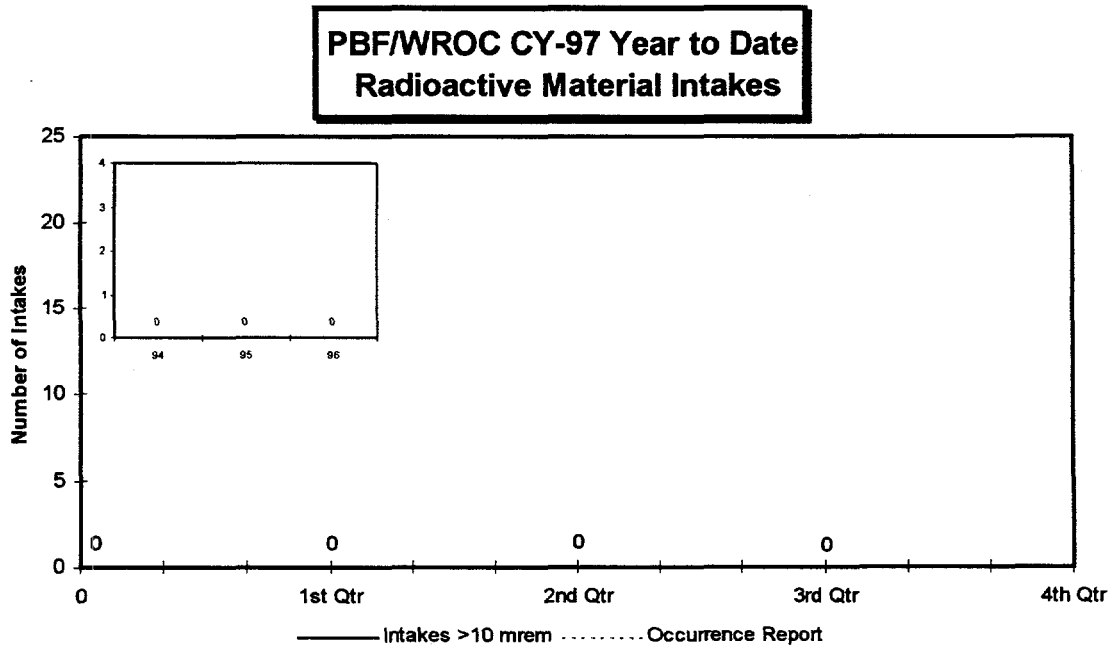
There were no skin contaminations at the PBF/WROC area during the third quarter.



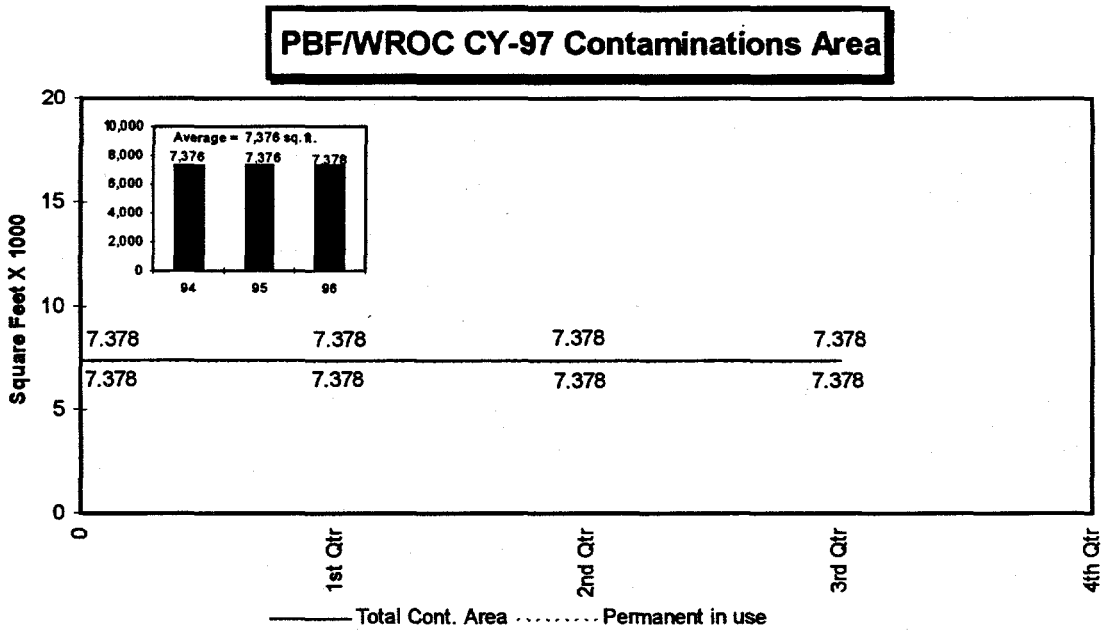
There were no clothing contaminations at the PBF/WROC area during the third quarter



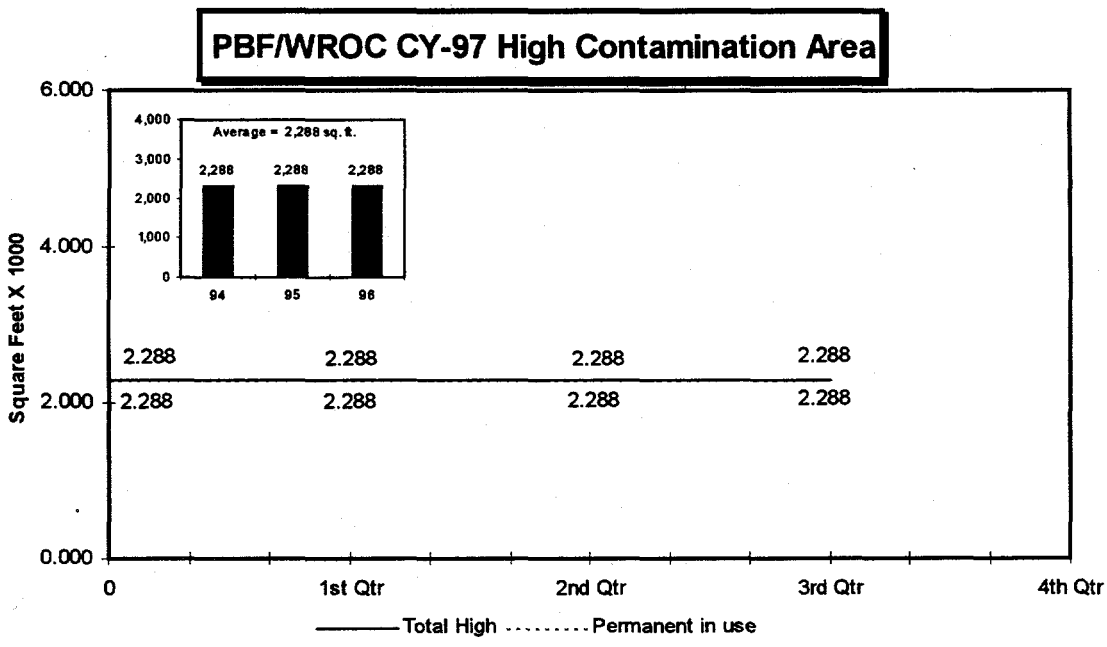
There have been no airborne activity events greater than 10 % DAC detected at the PBF/WROC area through the third quarter.



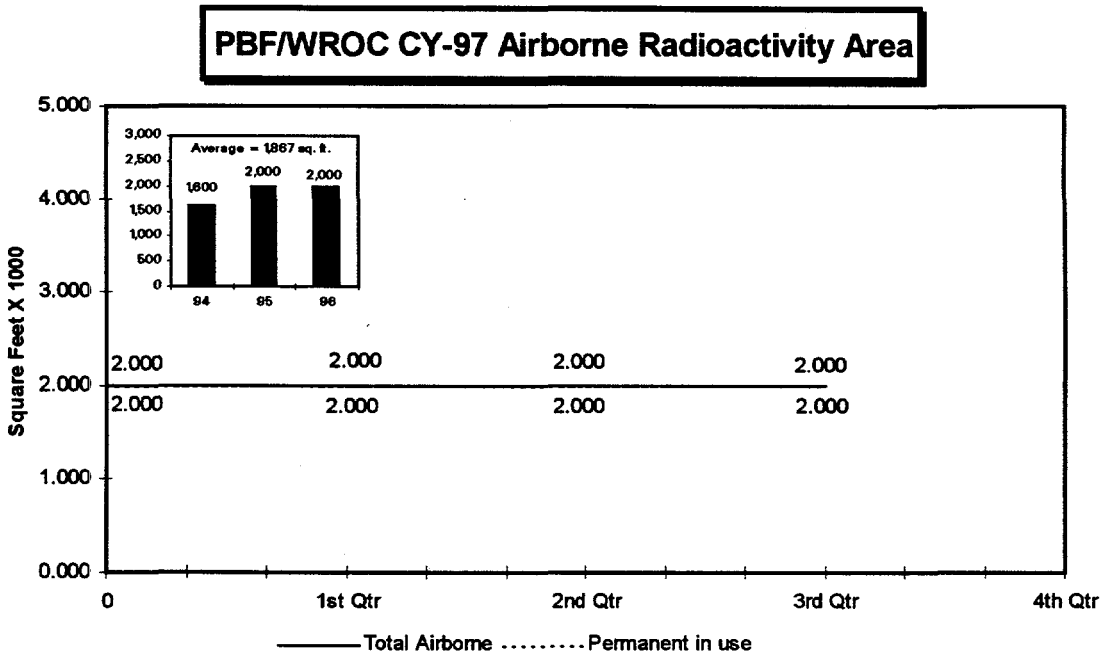
There were no positive bioassays indicating radioactive material intakes that resulted in a dose assessment of 10 mrem or greater in the PBF/WROC area.



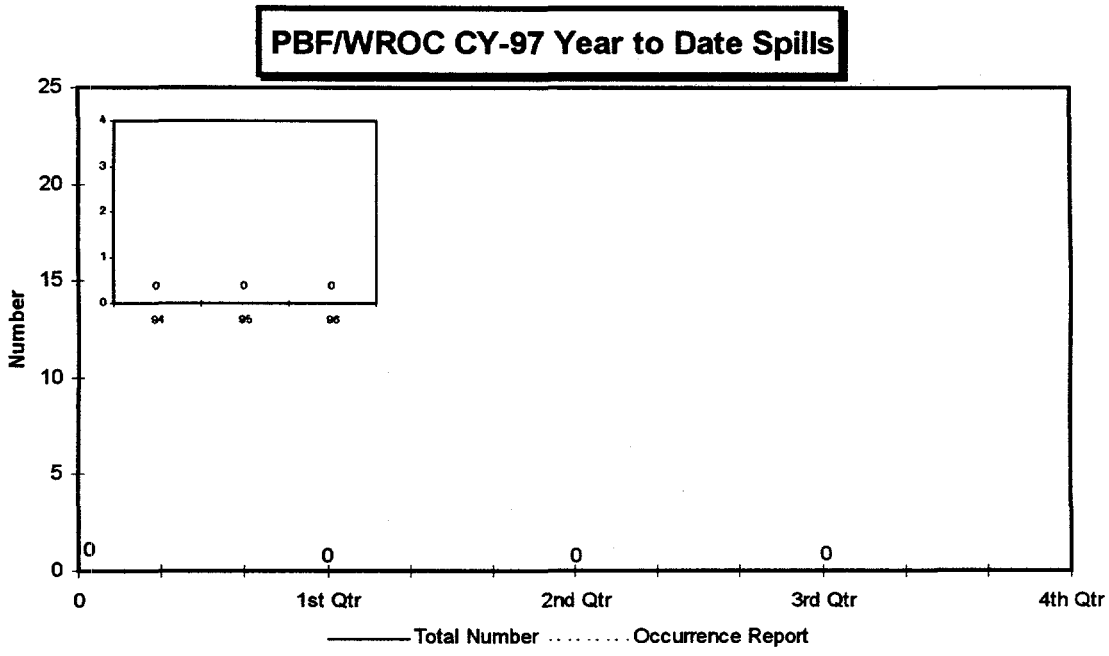
The third quarter Contamination Area for the PBF/WROC area remains at 7,378 square feet. All of this is considered permanent and in-use.



The total High Contamination Area through the end of the third quarter at the PBF/WROC area remains at 2,288 square feet. All of this is considered permanent and in use.



The total Airborne Radioactivity Area at PBF/WROC at the end of the third quarter remained at 2000 square feet. All of this area is designated as permanent and in-use.



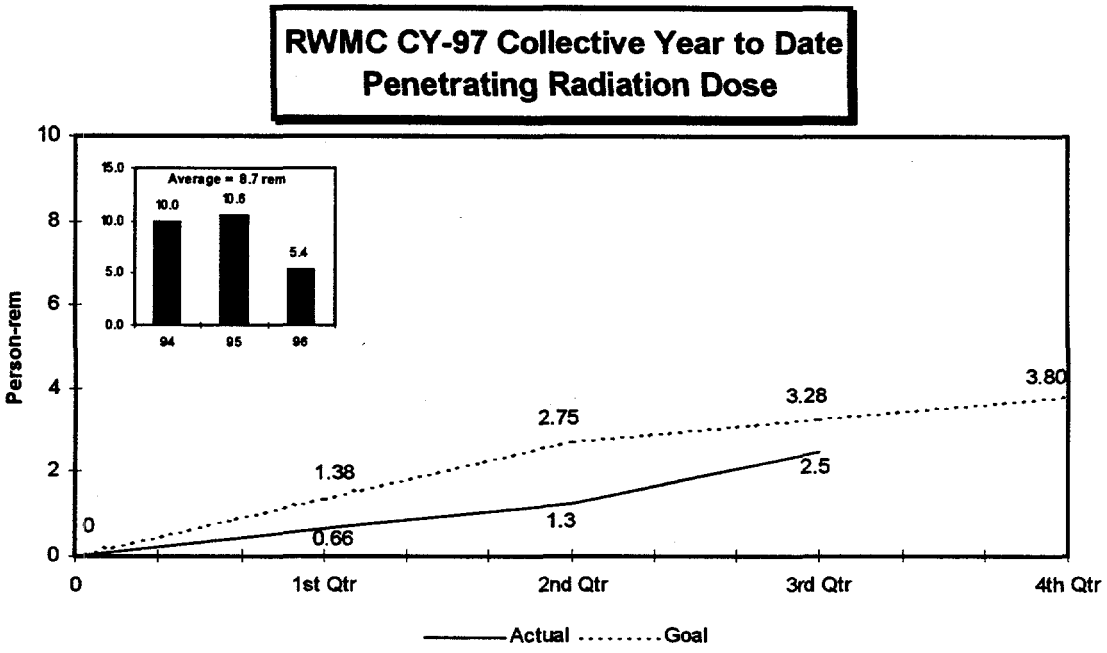
There have been no spills at PBF/WROC through the end of the third quarter.

Radioactive Waste Management Complex

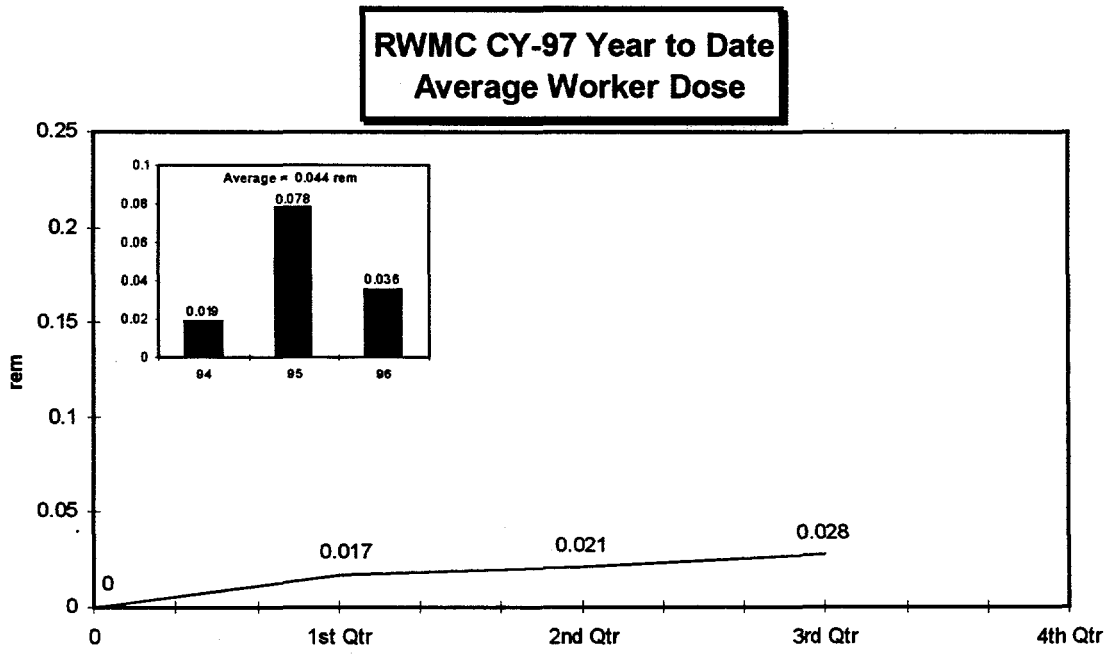
Summary

1. Major contributors to the third quarter RWMC occupational radiation exposure have been from waste transfers to new storage modules and low-level disposal operations. The increase in the rate of penetrating radiation dose from the 2nd to 3rd quarter is attributable to special projects at the RWMC. These include inspection of the Bettis waste containers in the facility containment tent and installation of lysimeters in the active disposal pits of the SDA.

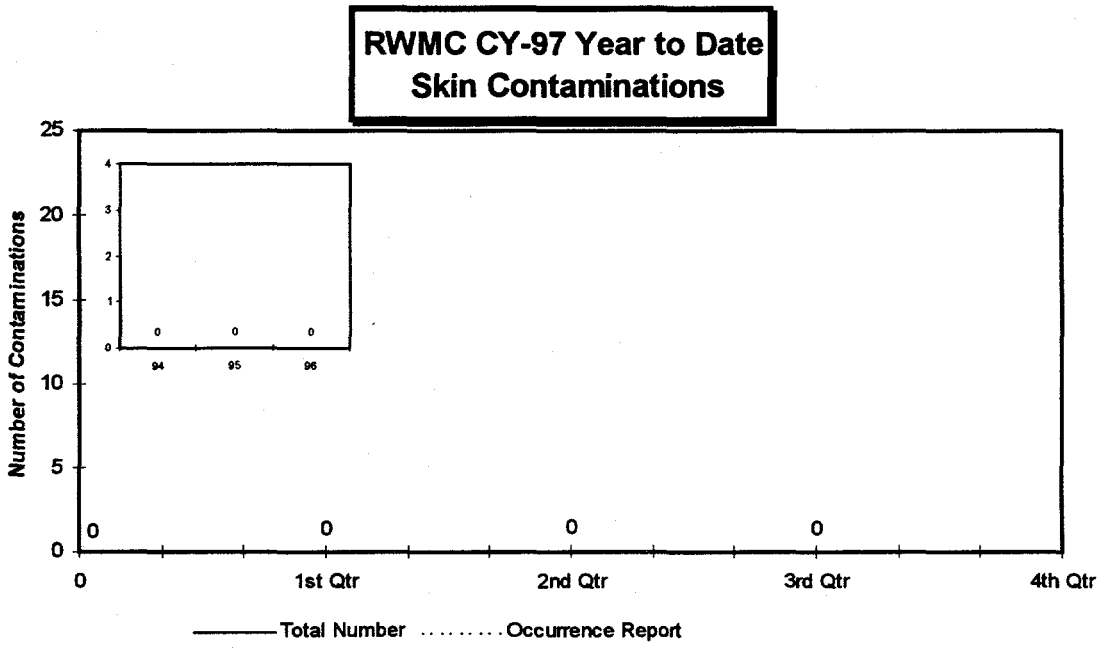
2. The HCA area at the RWMC is under a protective tarp covering the waste stack at the TSA-RE. This area will remain a permanent HCA until retrieval operations begin in that area.



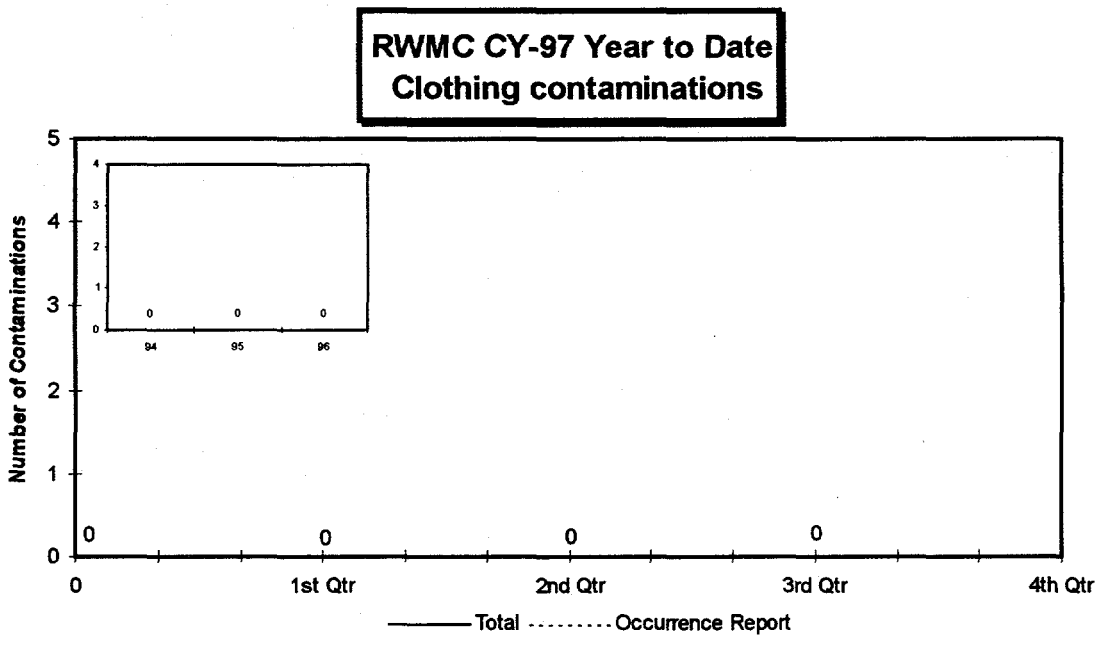
The RWMC collective penetrating radiation exposure through the end of the third quarter was 2.461 person-rem. Due to work scope reductions, the goal has been revised to 3.80 rem. Third quarter increase is due to special projects-See the RWMC summary on page 35.



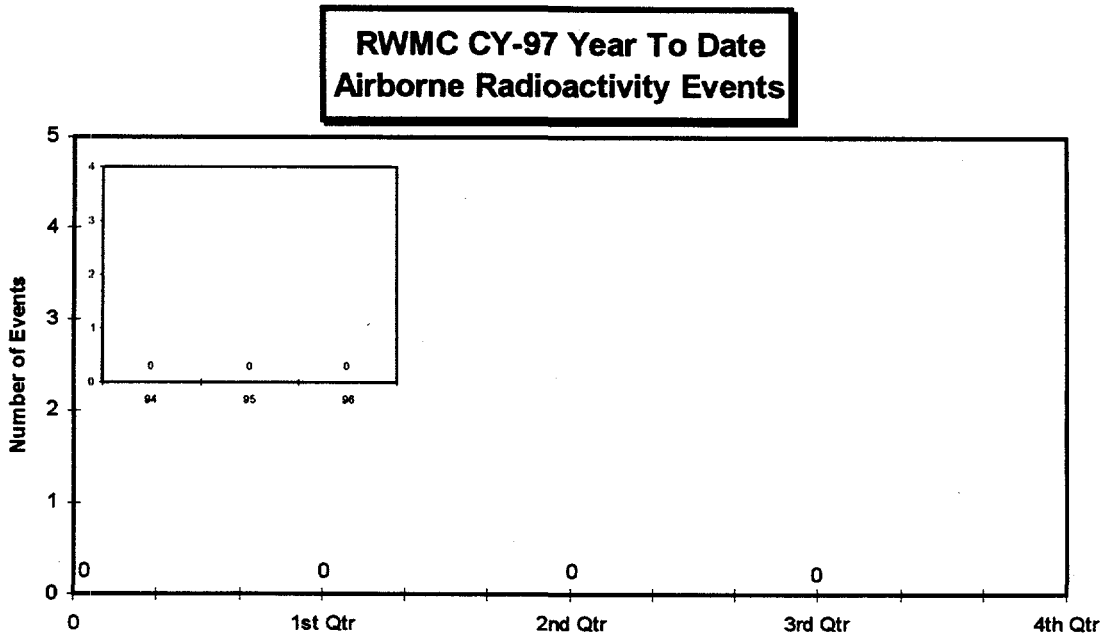
The average worker dose at the RWMC through the end of the third quarter was 0.028 rem



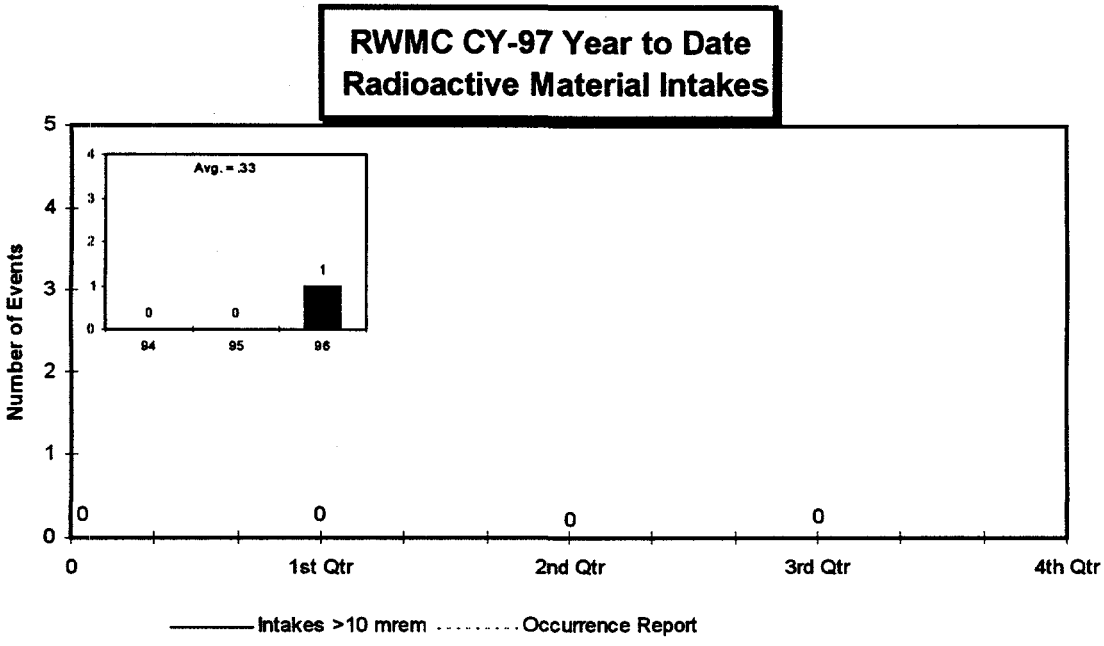
RWMC year to date skin contaminations remain at zero through the end of the third quarter.



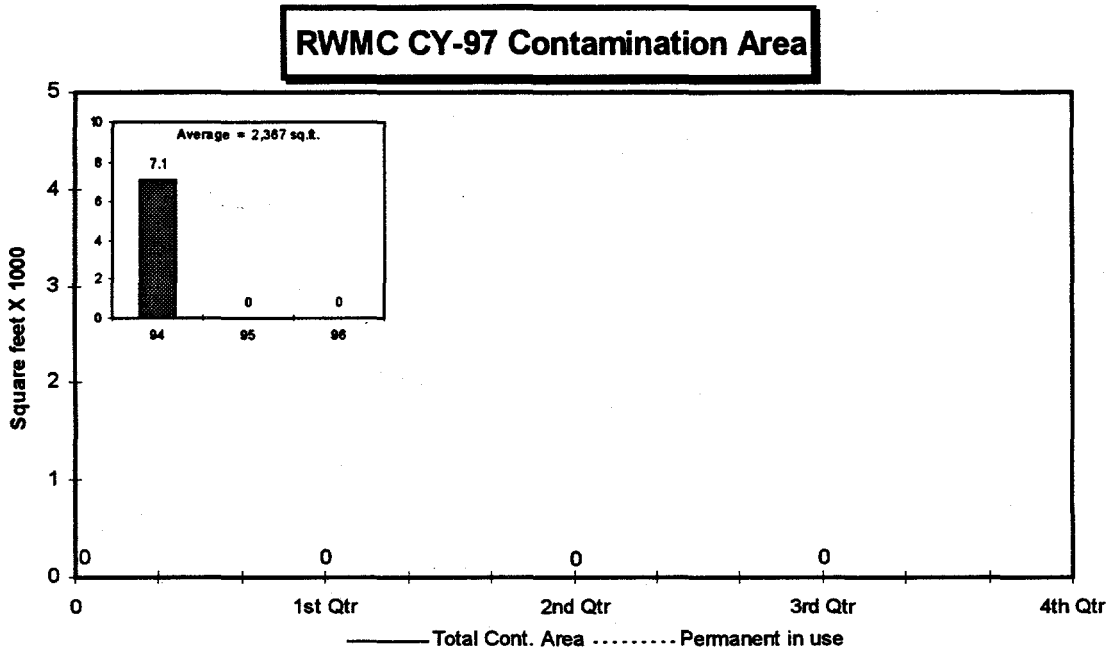
There were no clothing contaminations at the RWMC through the end of the third quarter.



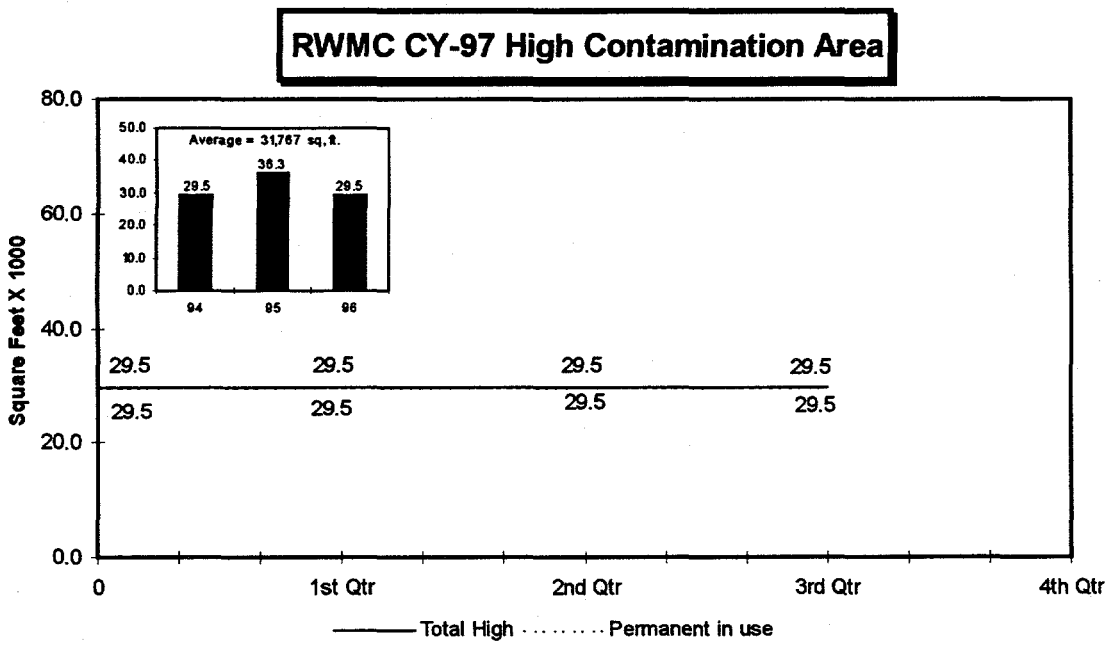
No airborne activity greater than 10 % DAC was detected at RWMC in areas not posted as Airborne Radioactivity Areas through the third quarter.



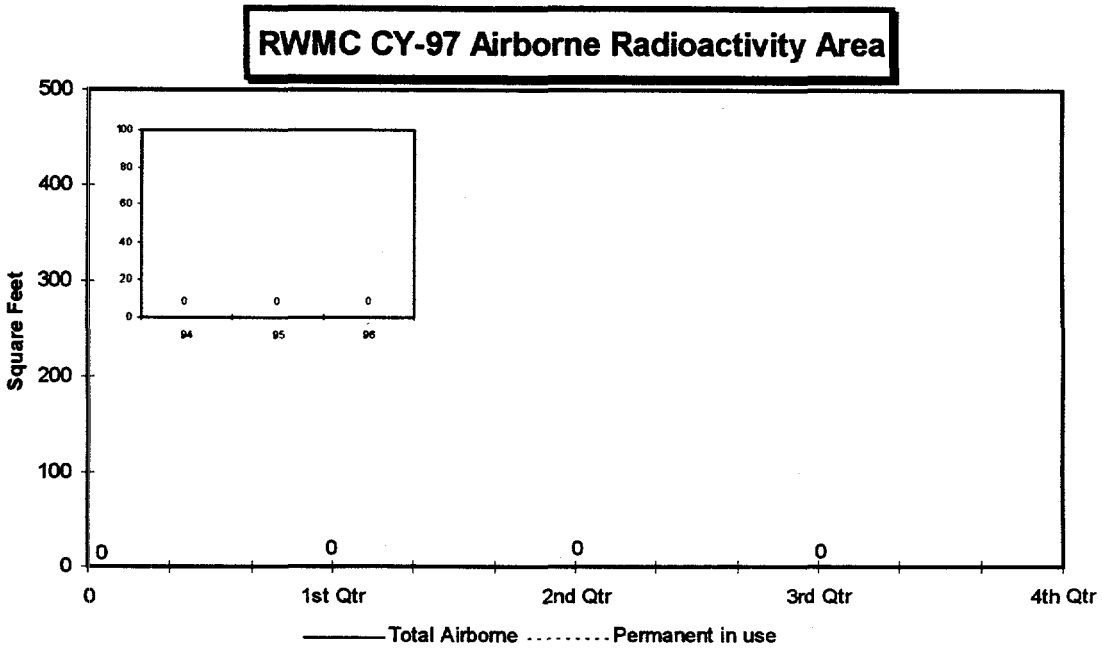
In the last quarter of 1996, final analysis of one positive bioassay indicated an uptake of 43 mrem CEDE as shown on the revised chart. There have been no positive bioassays year to date indicating an intake of radioactive material that resulted in a dose assessment of 10 mrem or greater at the RWMC. The '96 uptake is attributed to movement of TRU barrels.



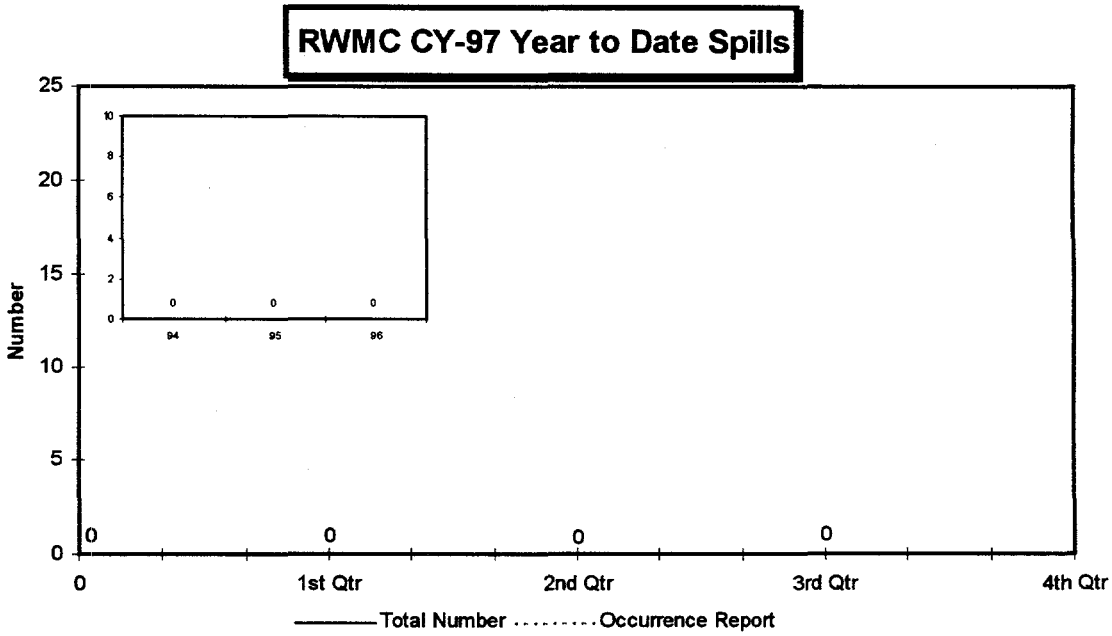
The total Contamination Area at the RWMC through the end of the third quarter remains at zero square feet.



The total High Contamination Area at the RWMC through the end of the third quarter was 29,525 square feet. All of this area is designated as permanent and in-use.



The total Airborne Radioactivity Area at the RWMC at the end of the third quarter remains at zero square feet.



There were no spills or loss of control of radioactive material during the third quarter at the RWMC.

Test Reactor Area

Summary

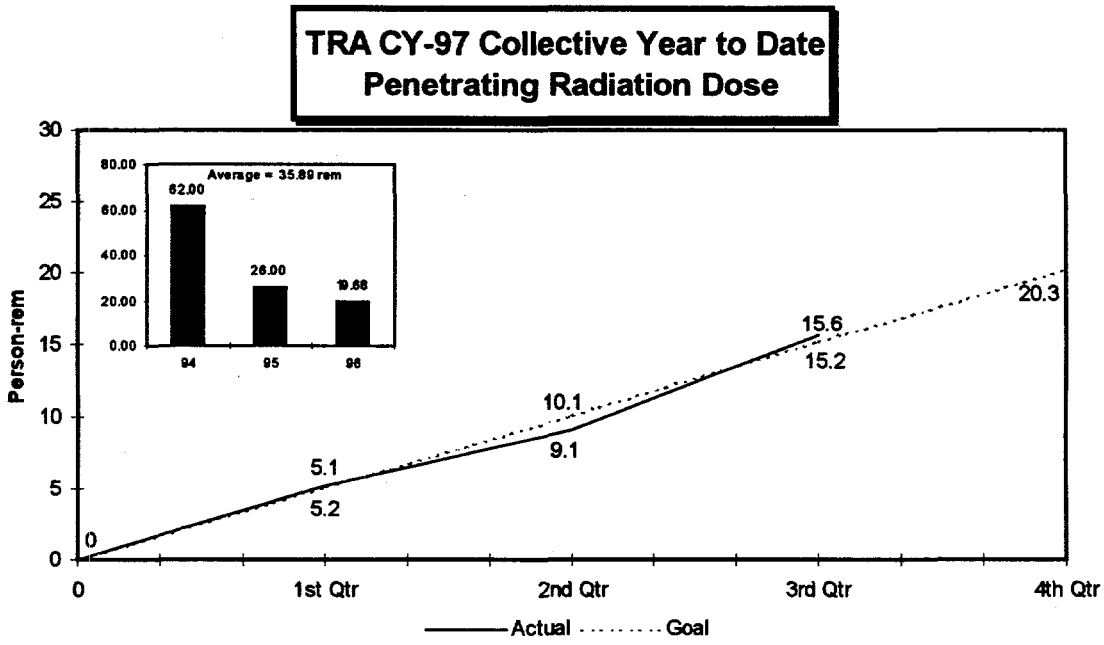
1. Outages at the Advance Test Reactor within the Test Reactor Area are responsible for the major portions of dose and the contamination events during the third quarter. Total Penetrating dose for the report has deleted the total MAC Isotopes (MAC-I) dose through the third quarter. MAC-I dose is 4.382 person-rem year to date.

2. This report has been modified to show TRA dose without the MAC-I hot cell dose. The hot cell is under a separate contract and tracks their own dose. The MAC-I dose was not considered in the original ALARA goal.

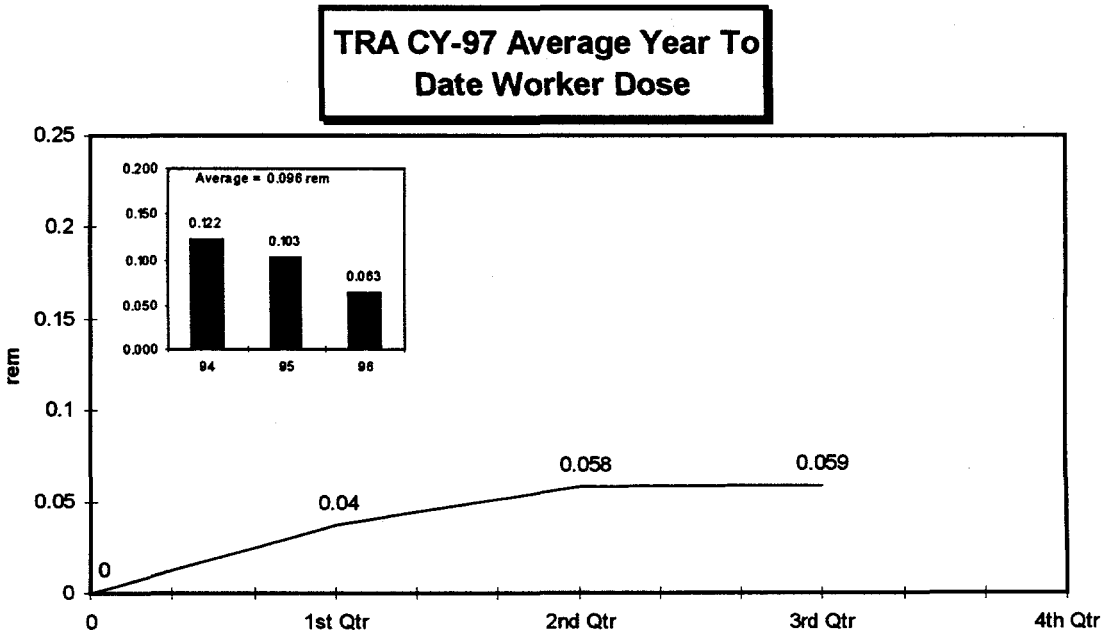
3. There were five skin contaminations at TRA during the third quarter. One of the five was an OR reported on OR # ID-LITC-1997-TRA-0017. This event occurred from work in the ATR.

4. Five clothing contaminations resulted in one OR, ID-LITC-ATR-1997-0017. This OR included clothing contamination for two individuals.

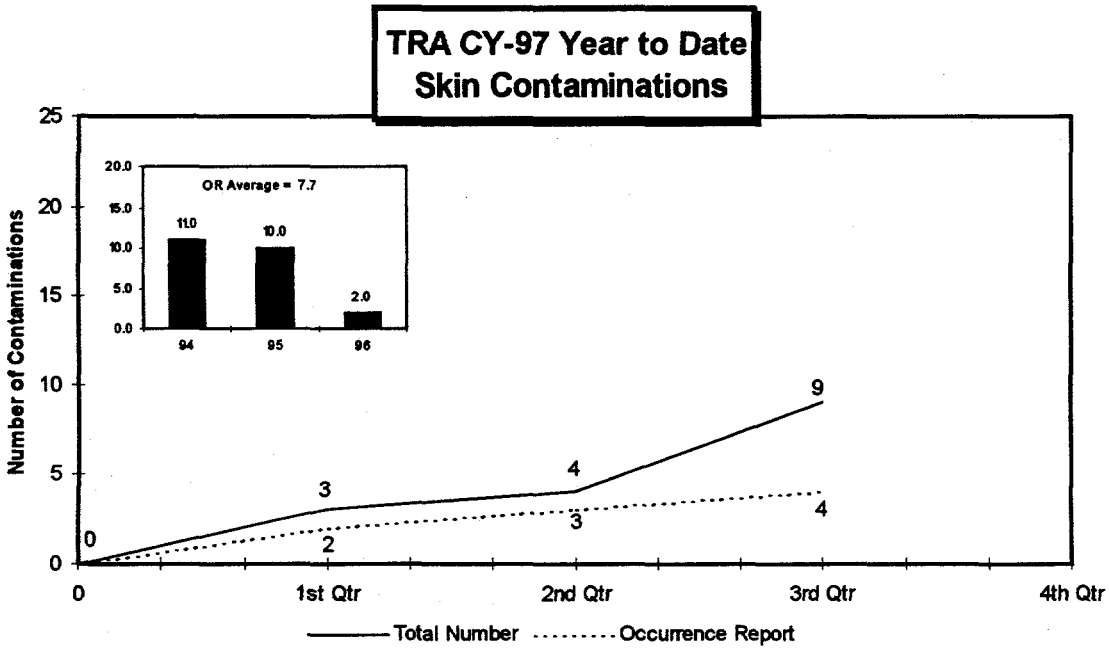
5. In addition, there was an airborne activity event at MAC-I resulting in six skin contaminations including three clothing contaminations. Eleven persons were given whole-body counts and five were determined to have received uptakes. Three were less than 10 mrem CEDE and two were estimated at 10 mrem CEDE. These are not included in the TRA totals due to the contract separation. Details are in OR LITCO-TRA-1997-0021



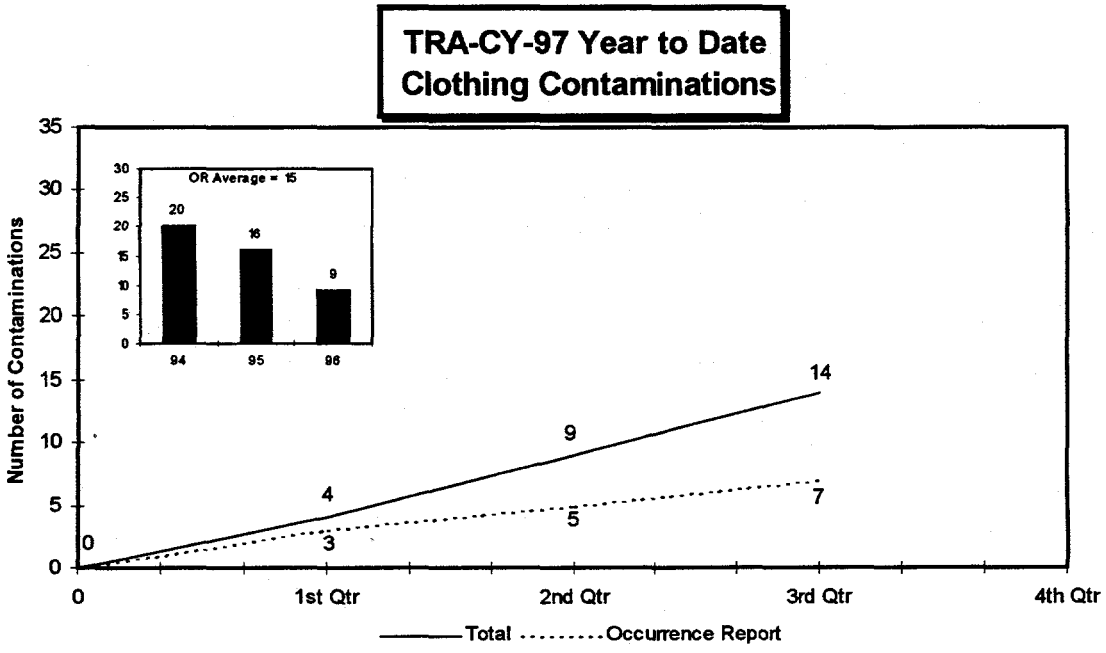
Collective penetrating radiation dose through the end of the third quarter at the TRA was 15.639 person-rem. The total DOES NOT include dose from MAC Isotopes (TRA Hot Cell), since they are a privatized company. The MAC-I was not considered when the ALARA goal was established.



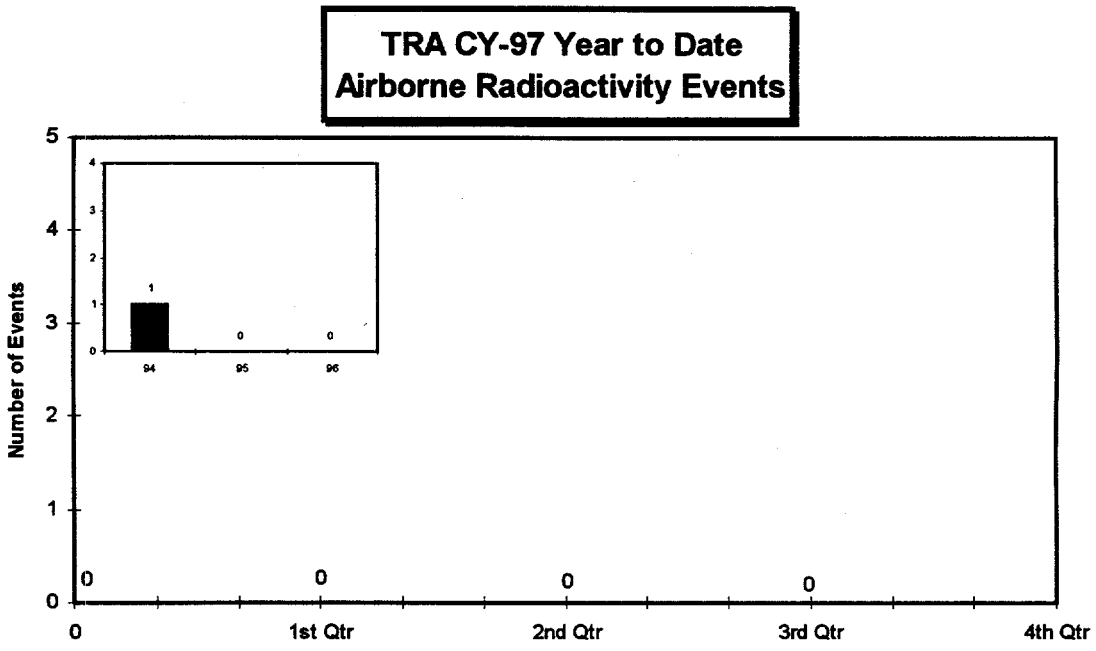
The average worker dose at the TRA through the end of the third quarter was 0.059 rem based on 263 workers with dose greater than 10 mrem.



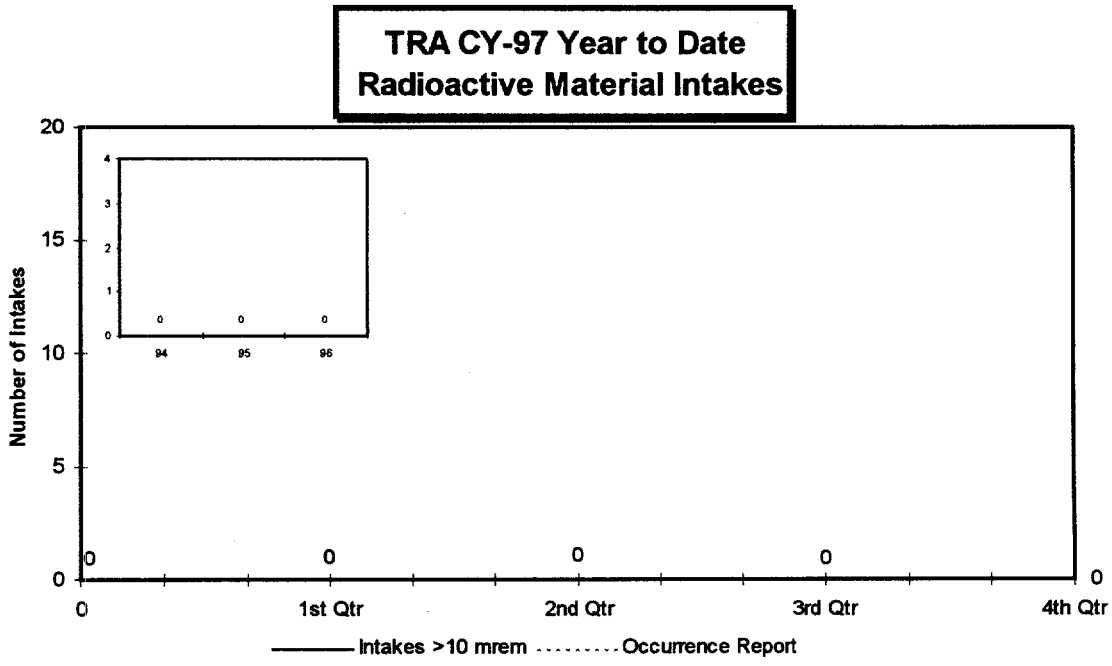
There were five skin contaminations at the TRA during the third quarter. One was an OR listed on OR LITC-1997-0017. There were no contaminated wounds or facial contaminations. MAC-I had one event with six contaminations listed on OR LITCO-TRA-0021. These are not shown on this chart.



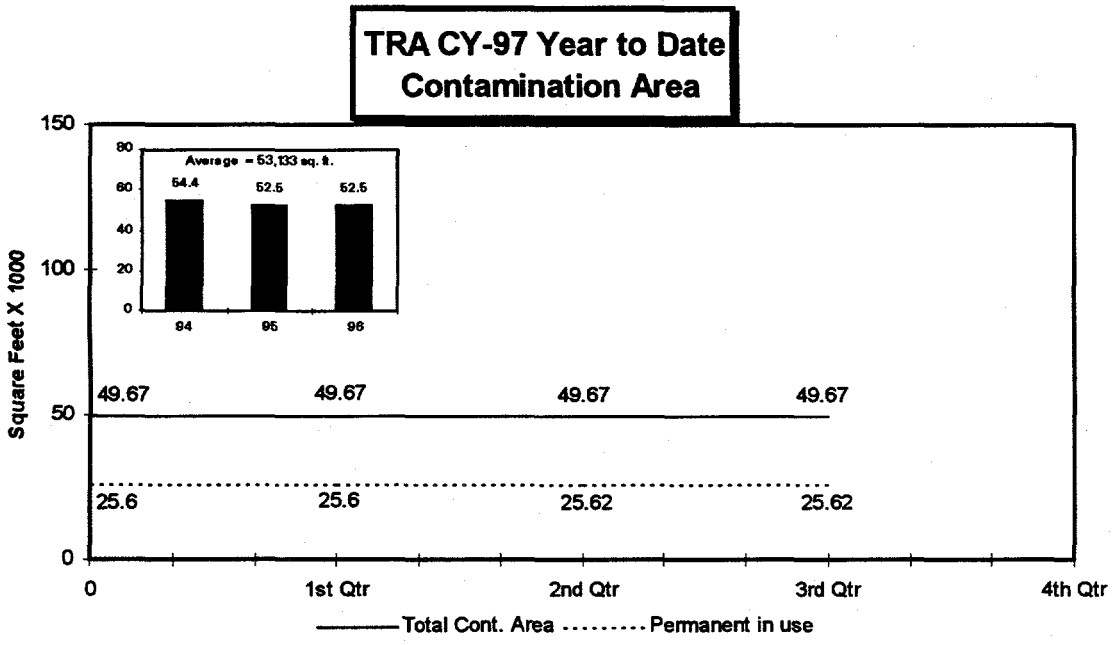
There were five clothing contaminations at the TRA during the third quarter. Two are listed on one OR. See details in the summary as listed at the beginning of the TRA section.



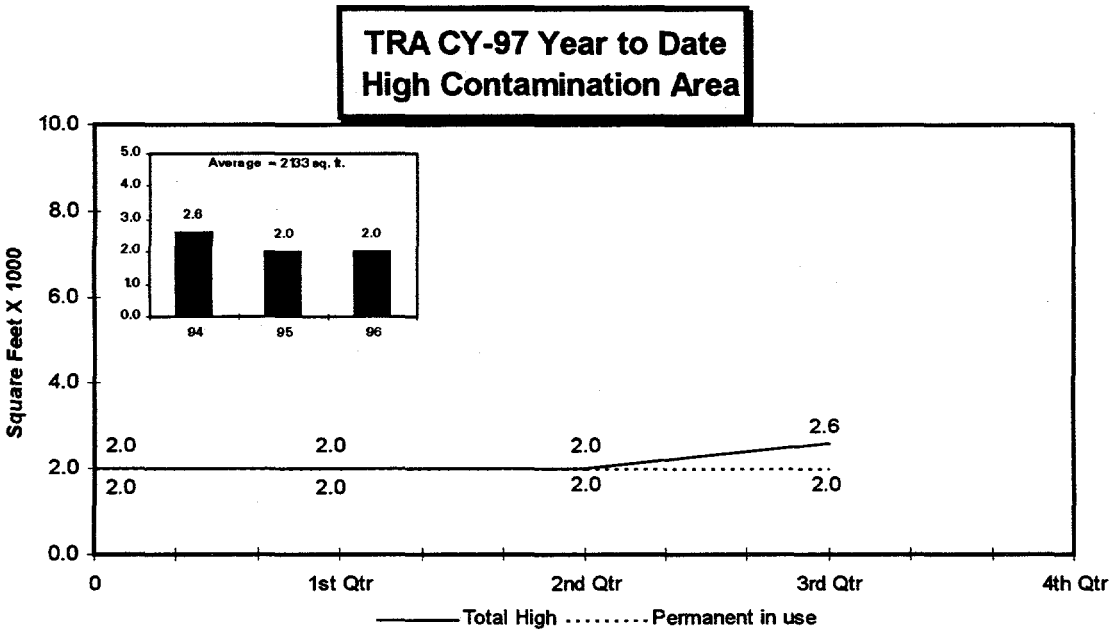
No airborne activity greater than 10 % DAC was detected at the TRA in areas not already posted as Airborne Radioactivity Areas during the third quarter. This does not include the MAC-I event. The MAC-I event is not charged against TRA. See details in the summary for TRA.



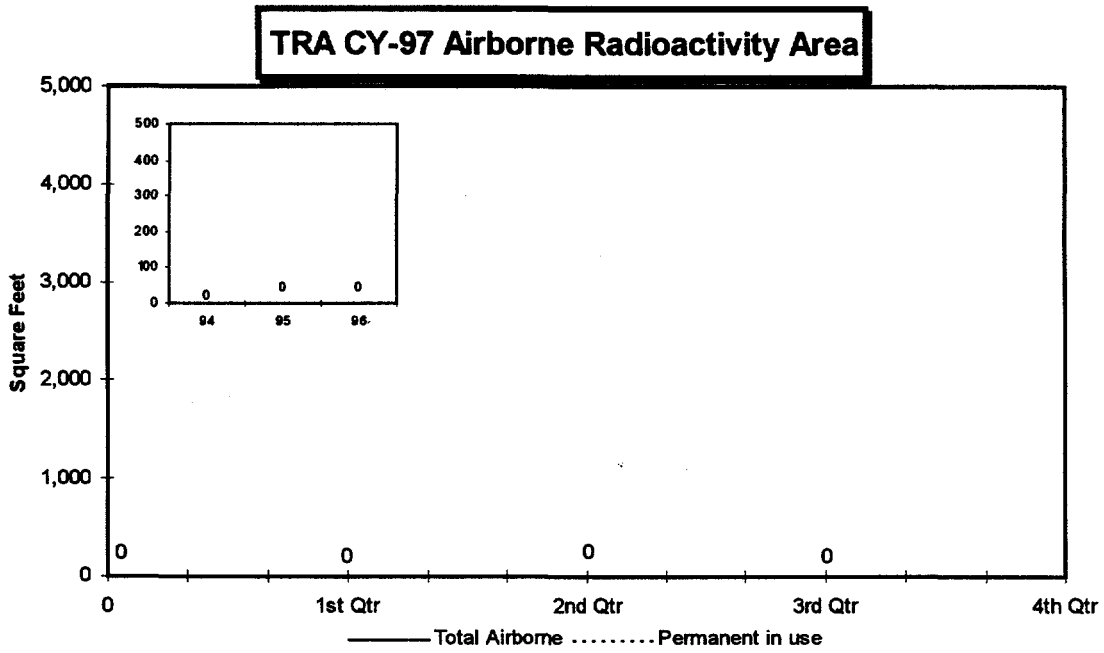
There were no positive bioassays indicating an intake of radioactive material that resulted in a dose assessment of 10 mrem or greater at the TRA during the third quarter. See details covering the MAC-I event in the TRA summary.



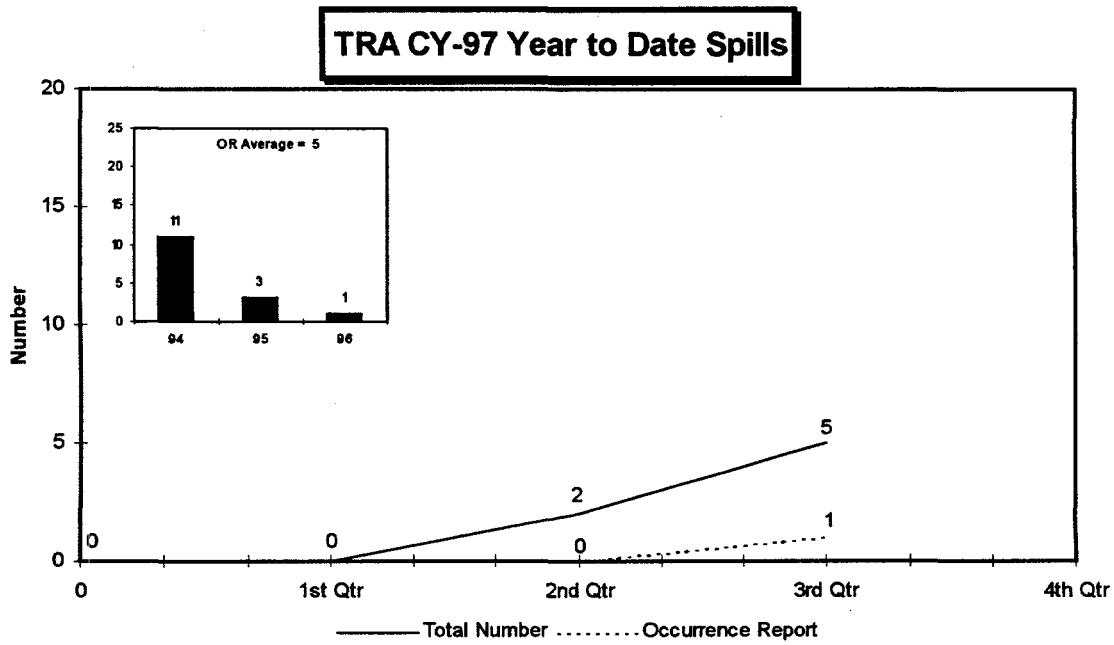
Total Contamination Area for the TRA remains at 49,670 square feet. 25,619 square feet is designated as permanent and in-use.



Total High Contamination Area for the TRA at the end of the third quarter was 2,601 square feet. 1,991 square feet of this area is designated as permanent and in-use. The chart shows rounded values.



Total Airborne Radioactivity Area at the TRA at the end of the third quarter remains at zero square feet.



There were three spills or loss of control of radioactive material at the TRA during the third quarter. One event was reportable and is listed on OR LITCO-1997-0017.

Test Area North
&
Specific Manufacturing Capability

Summary

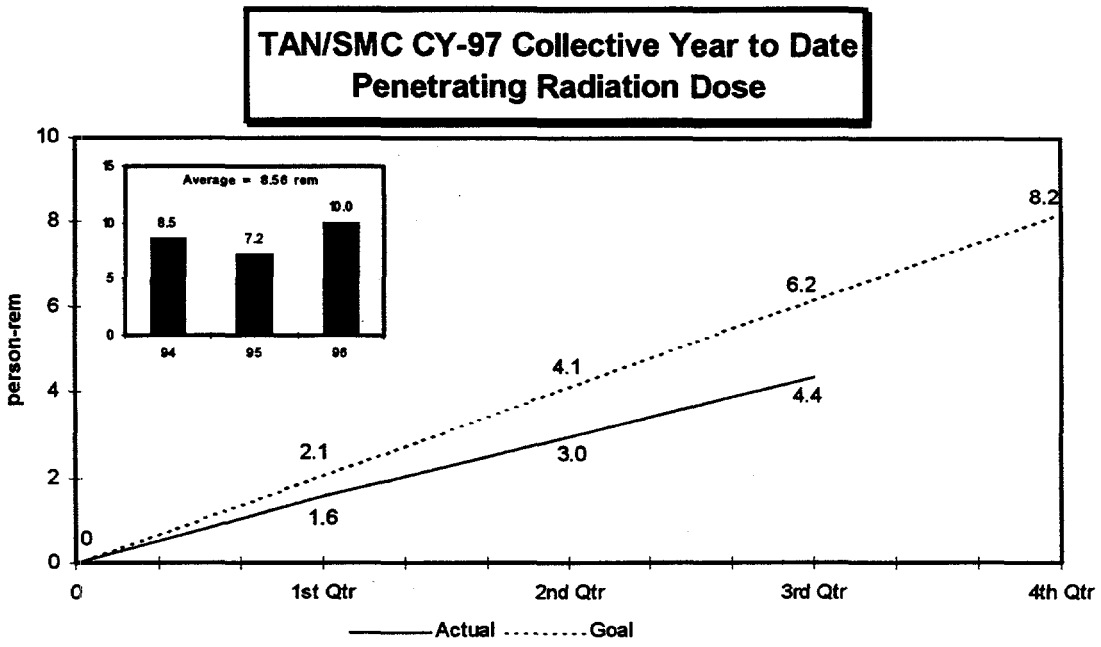
1. TAN hot shop work, handling repackaging, and shipment of hot waste, cask disassembly, ER remediation activities, and pool cleaning and vacuuming account for dose at TAN Ops. For SMC, routine armor manufacturing and routine activities account for the dose contribution.

2. The dose evaluations for CEDE for CY-96 were increased from zero to nine during the first quarter. These are included in the 1996 total and show on the three-year average chart.

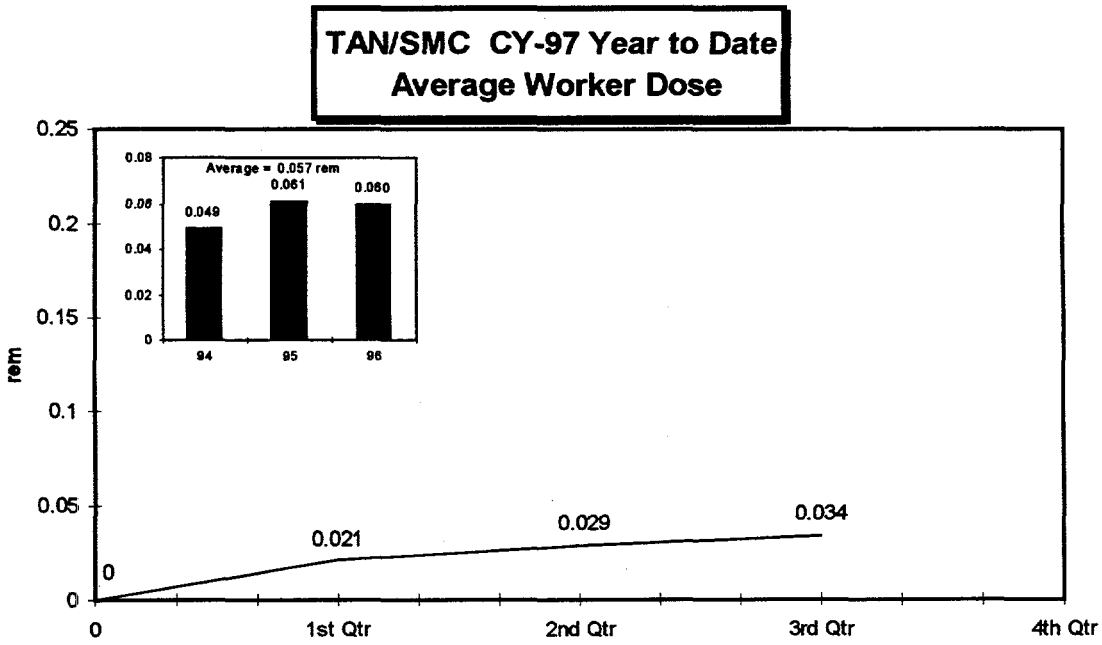
3. There was one contaminated individual at the TAN hot shop during the first quarter. The event was not classified as a recordable event.

4. A four hundred square foot Contamination Area at the SMC was decontaminated reducing the total Contamination Area by that amount.

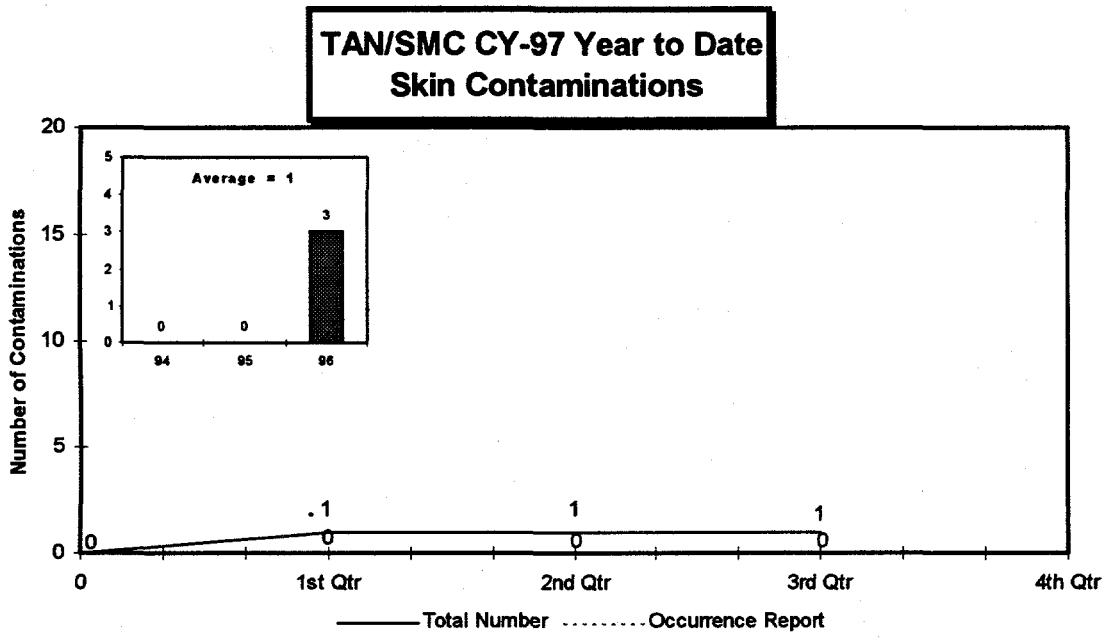
5. Two individuals on routine urine bioassay were assessed with dose > 10 mrem CEDE. This is normal, since some SMC workers receive acute and chronic internal intakes of low level U-238.



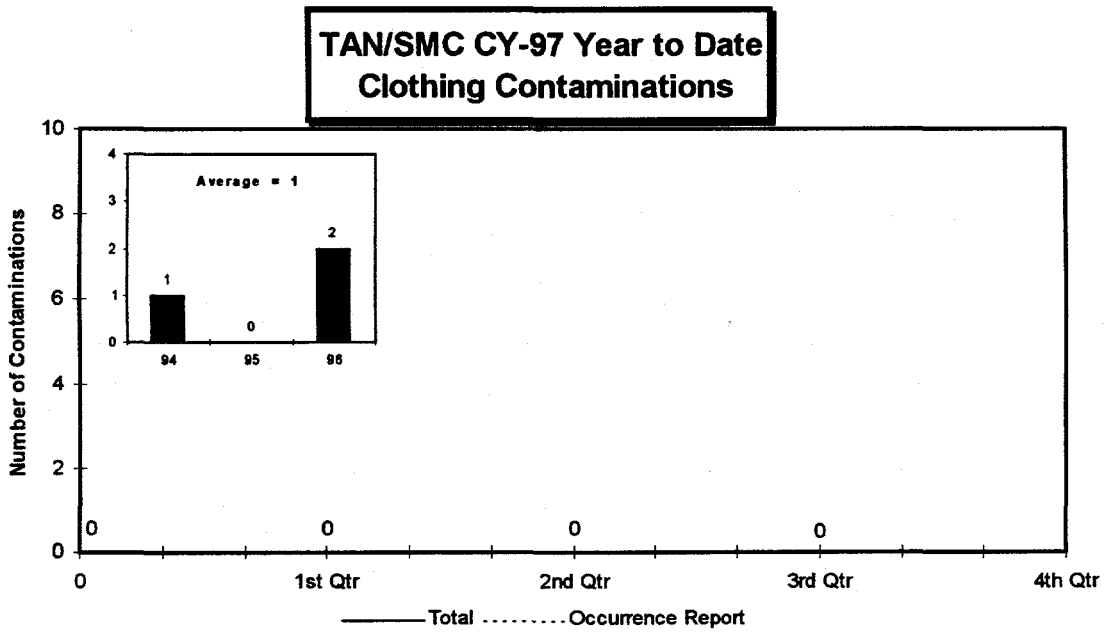
TAN and SMC collective penetrating radiation dose through the end of the third quarter was 4.362 person-rem. Work scope is consistent with that of past years.



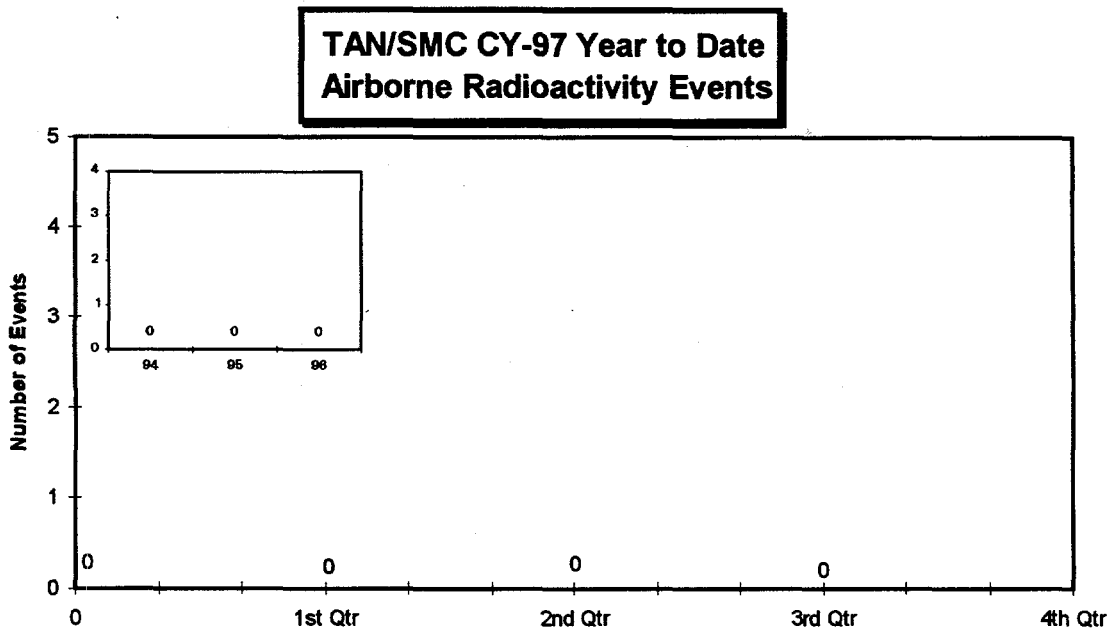
The average worker dose at the TAN/SMC through the end of the third quarter was 0.034 rem based on 128 workers who received dose greater than 10 mrem.



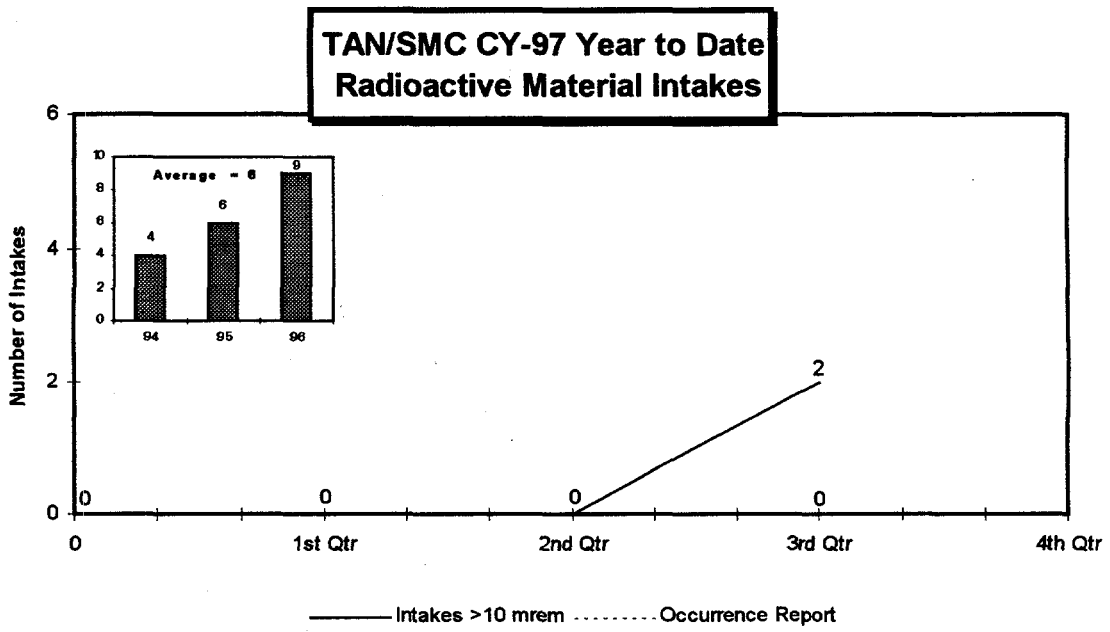
There were no reportable skin contaminations at TAN/SMC during the third quarter. No facial contaminations or contaminated wounds occurred during the quarter.



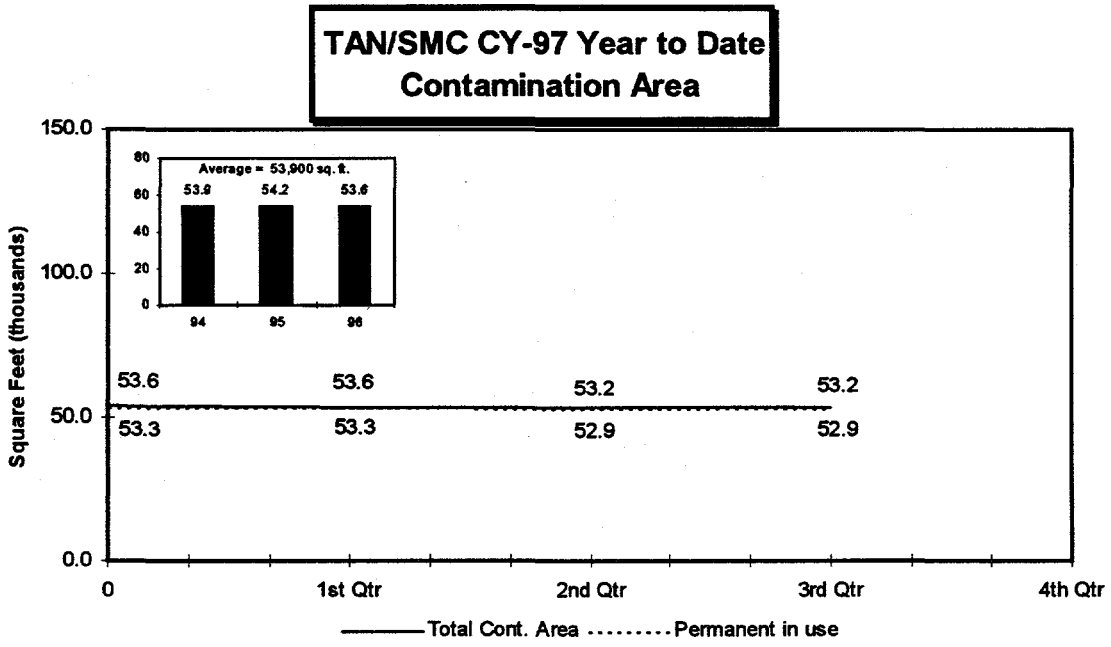
No clothing contaminations have occurred at TAN/SMC year to date.



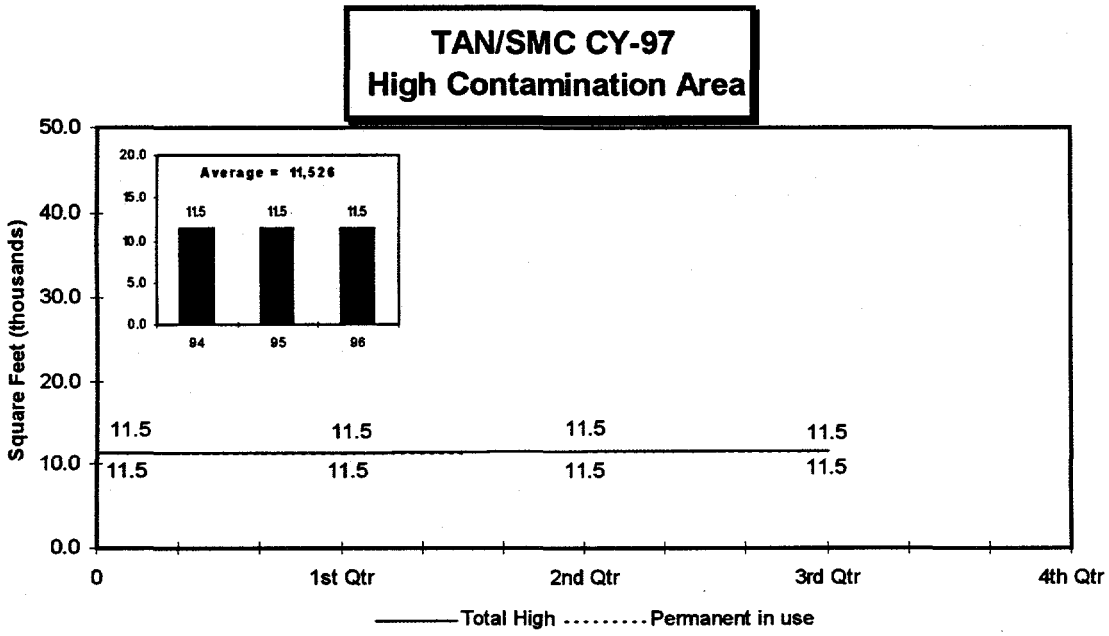
No airborne activity event greater than 10 % DAC was detected at TAN/SMC in areas not posted as Airborne Radioactivity Areas during the third quarter.



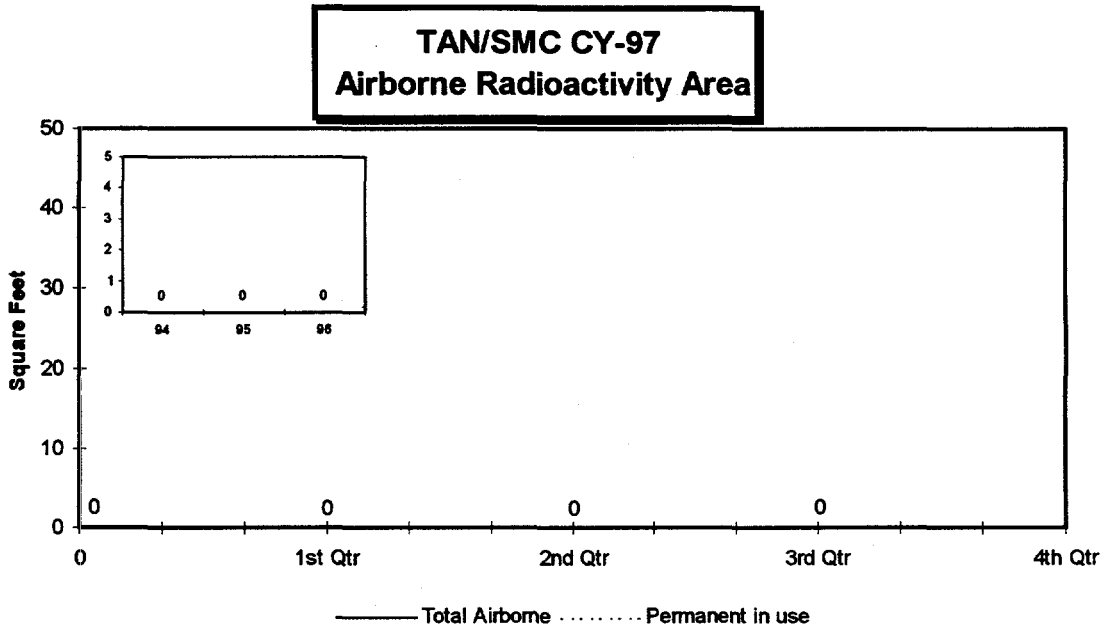
Two employees (of 347 sampled) received positive bioassays indicating intakes of radioactive material that were verified to have been 10 mrem or greater at TAN/SMC during the third quarter. Some employees receive acute and chronic internal uptakes of low level U-238.The internal CEDE ALARA goal is 60 mrem and SMC is well below the goal.



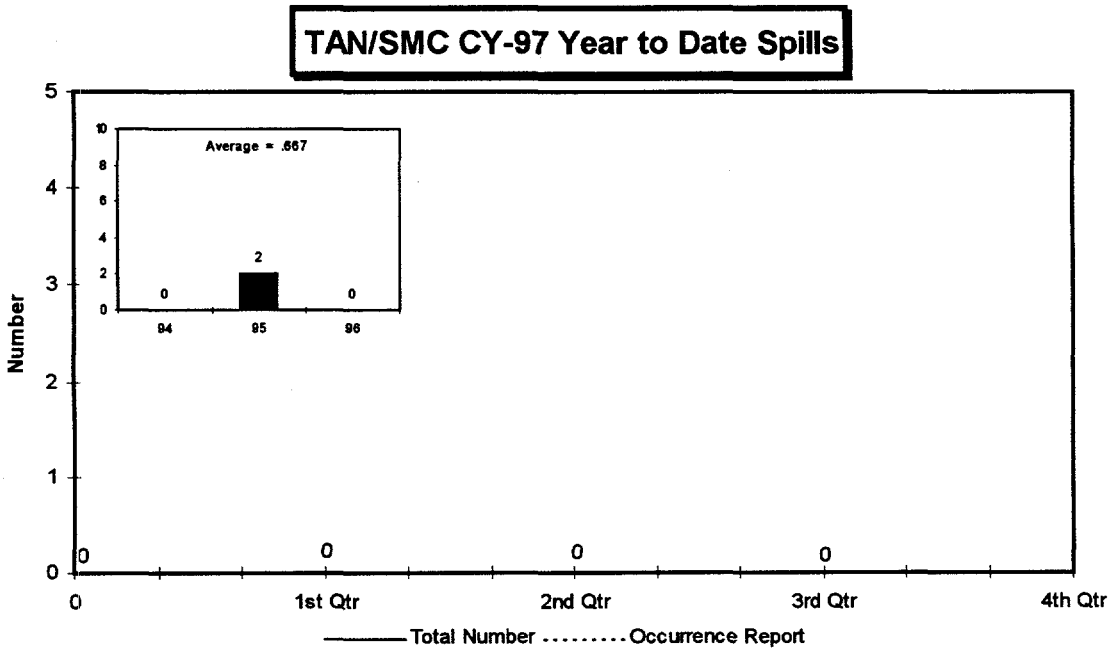
The total Contamination Area at TAN/SMC at the end of the third quarter was 53,226 square feet. 52,926 square feet was designated as permanent and in-use. A 400 square foot area was decontaminated at the SMC during the second quarter.



The total High Contamination Area at TAN/SMC at the end of the third quarter remains constant at 11,526 square feet. All of this area is designated as permanent and in-use.



Total Airborne Radioactivity Area at TAN/SMC was zero through the end of the third quarter.



There were no spills or loss of control of radioactive material at TAN/SMC during the third quarter.