



INEL-96/0191 (4th QTR)
INEL--96/0191
February 1997

**Idaho National
Engineering Laboratory
Radiological Control
Performance Indicator Report**

Fourth Quarter - Calendar Year 1996

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**Fourth Quarter
Calendar Year 1996**

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

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Assistant Secretary for Environment, Safety, and Health
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Radiological Control Performance Indicator Charter

The INEL Radiological Control Performance Indicator Report is provided quarterly, in accordance with Article 133 of the INEL 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 INEL 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 INEL 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 10rem 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 INEL 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 INEL Environmental Monitoring Report and the INEL National Emission Standard for Hazardous Pollutants (NESHAPs) - Radionuclide Annual Report.

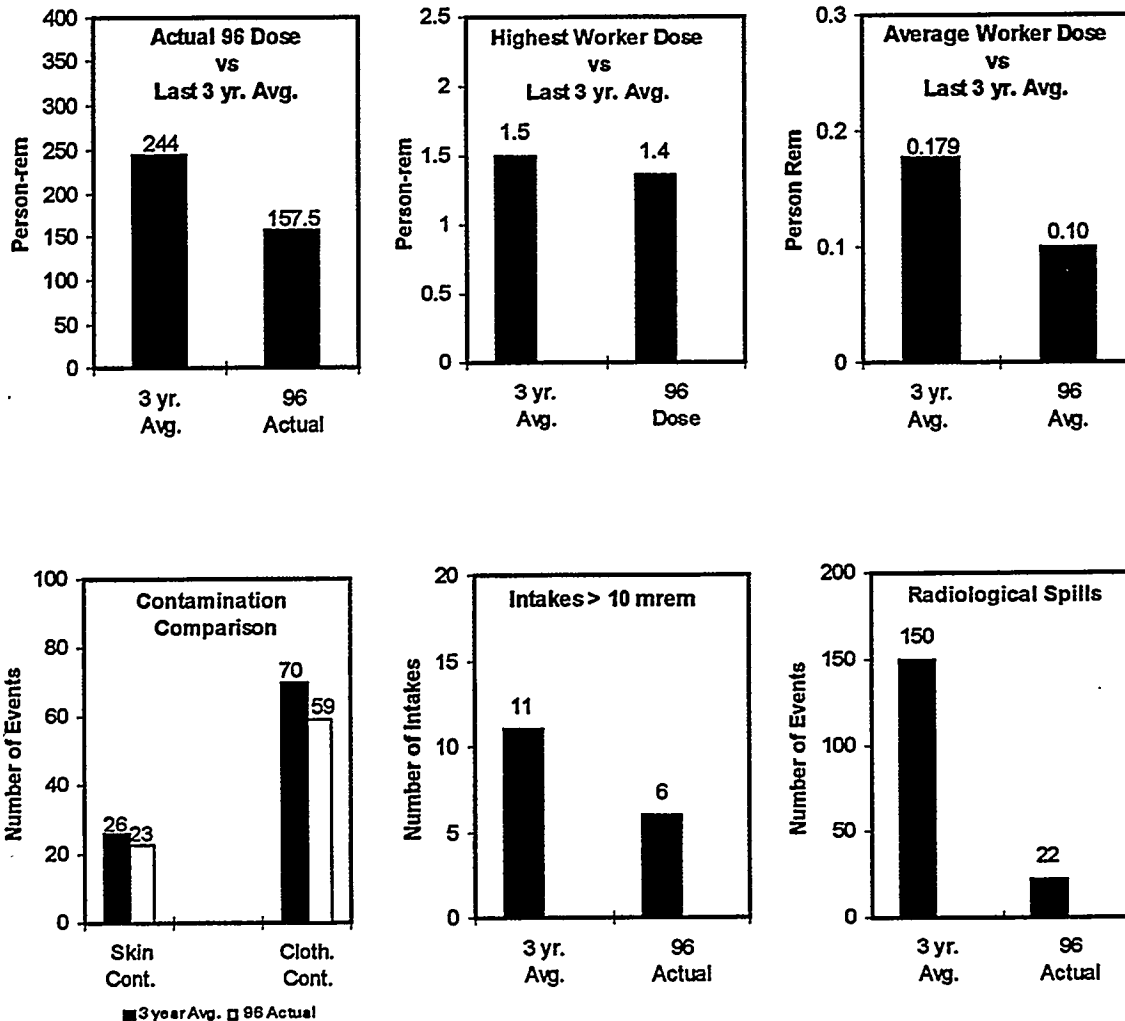
Executive Summary

Radiological Control Performance Indicator Report

Fourth Quarter 1996

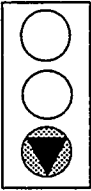
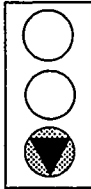
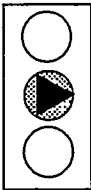
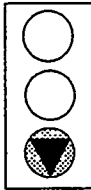
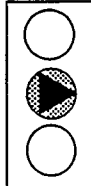
This document provides a report and analysis of the Radiological Control Program through the fourth quarter of calendar year 1996 (CY-1996) at the Idaho National Engineering Laboratory (INEL) under the direction of Lockheed Martin Idaho Technologies Company (LMITCO). This Performance Indicator Report is provided in accordance with Article 133 of the INEL Radiological Control Manual.

The Collective Penetrating Radiation Dose, 157.5 person rem, is within 2% of the ALARA goal; a credit to planning and personnel exposure control. These charts provide a quick look at this year's performance compared to the last three years.






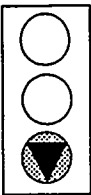
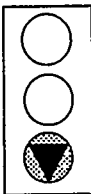
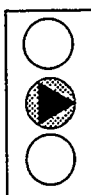
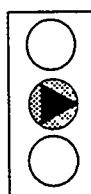
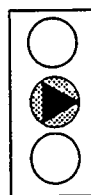
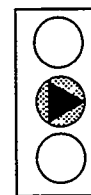

Radiological Performance at the INEL is improving based on the comparisons shown.

INEL Radiological Control Performance Indicator Overview
Fourth Quarter 1996

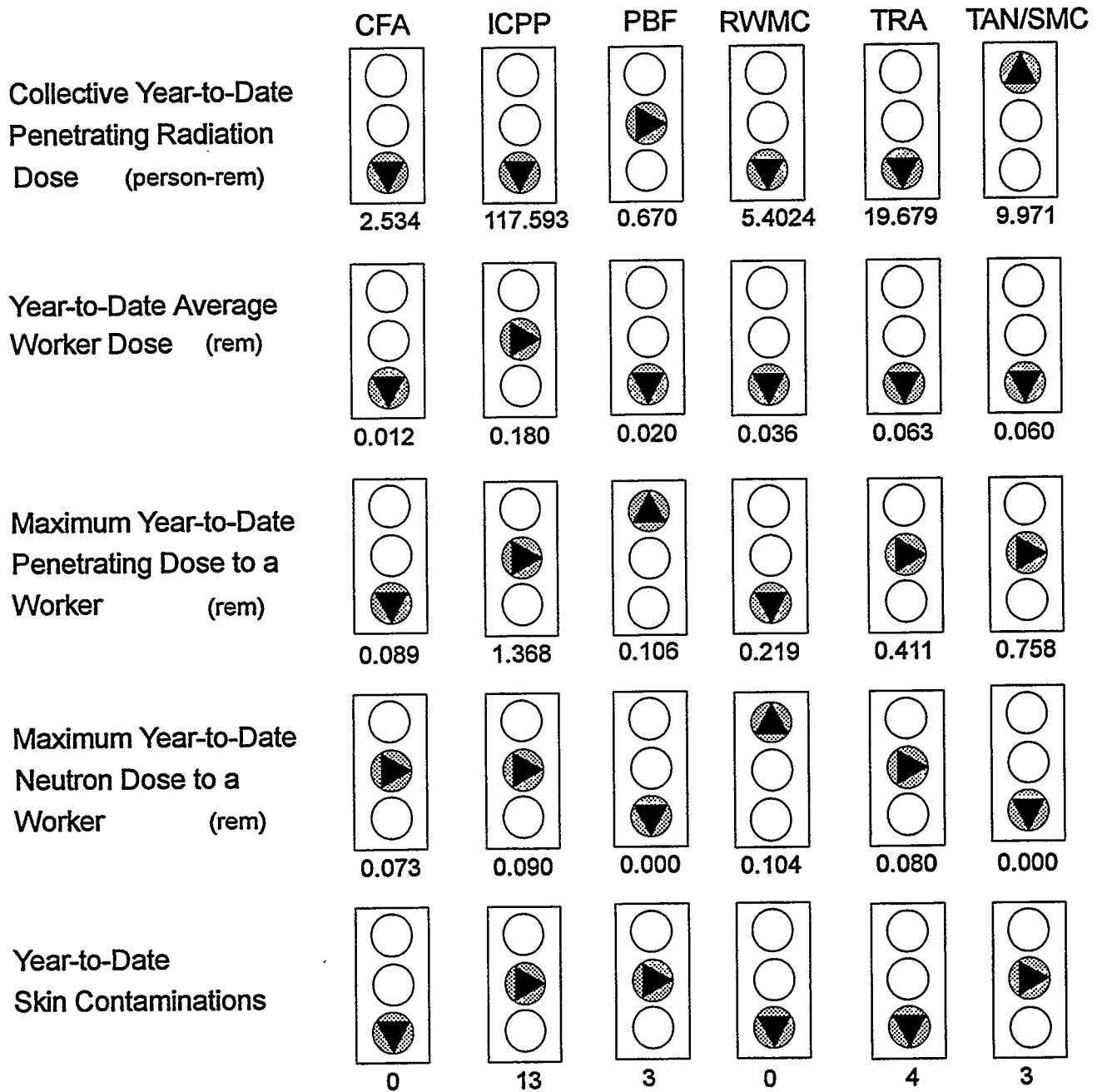
		<u>Actual</u>	<u>Goal or Average</u>
Collective Year-to-Date Penetrating Radiation Dose		157.543 person-rem	160 person-rem (Goal)
Year-to-Date Average Worker Dose		0.100 rem	0.179 rem (3 Year Average)
Maximum Year-to-Date Penetrating Dose to a Worker		1.368 rem	1.500 rem (Goal)
Maximum Year-to-Date Neutron Dose to a Worker		0.104 rem	0.125 rem (3 Year Average)
Year-to-Date Skin Contaminations		23	26 (3 Year Average)

Legend

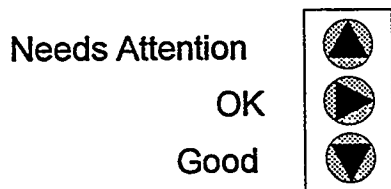
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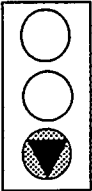
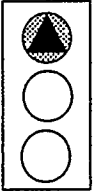
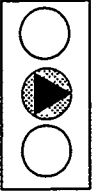
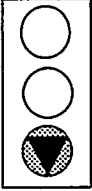
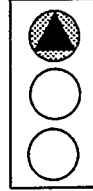
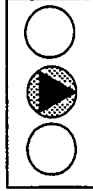
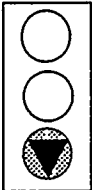
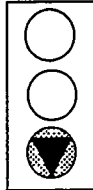
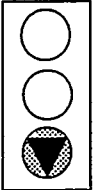
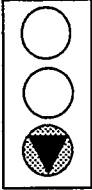
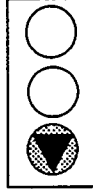
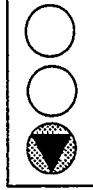
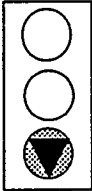
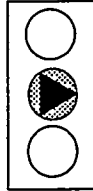
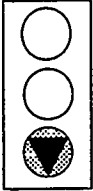
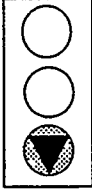
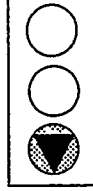
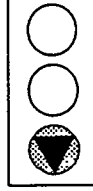
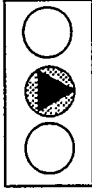
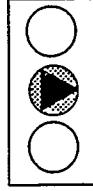
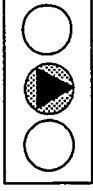
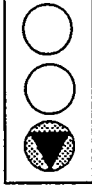
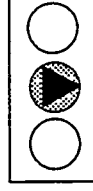
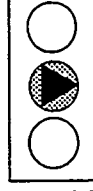
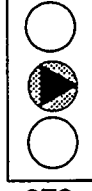
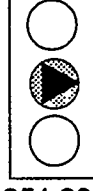
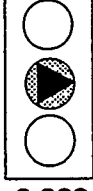
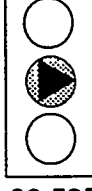
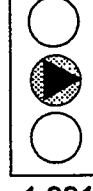
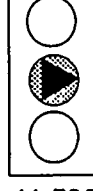
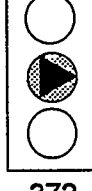

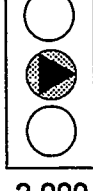
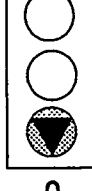
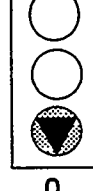
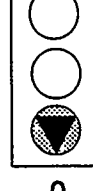
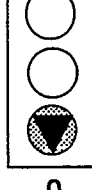
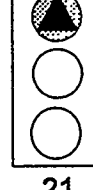
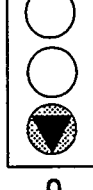
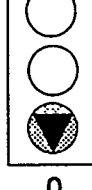

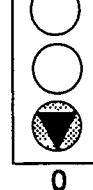
		<u>Actual</u>	<u>Goal or Average</u>
Year-to-Date Clothing Contaminations		59	70 (3 Year Average)
Year-to-Date Airborne Events		0	2 (3 Year Average)
Year-to-Date Radioactive Material Intakes		6	11 (3 Year Average)
Contamination Area		193,044 ft ²	203,700 ft ² (3 Year Average)
High Contamination Area		297,663 ft ²	301,475 ft ² (3 Year Average)
Airborne Radioactivity Area		85,084 ft ²	81,633 ft ² (3 Year Average)
Year-To-Date Spills		22	150 (3 Year Average)

INEL Facility Radiological Control Performance Indicator Overview Fourth Quarter 1996



Legend



	CFA	ICPP	PBF	RWMC	TRA	TAN/SMC
Year-to-Date Clothing Contaminations	 0	 34	 2	 0	 21	 2
Year-to-Date Airborne Events	 0	 0	 0	 0	 0	 0
Year-to-Date Radioactive Material Intakes	 0	 6	 0	 0	 0	 0
Contamination Area - ft ²	 14,105	 65,419	 7,378	 0	 52,516	 53,626
High Contamination Area - ft ²	 372	 251,961	 2,288	 29,525	 1,991	 11,526
Airborne Radioactivity Area - ft ²	 372	 82,712	 2,000	 0	 0	 0
Year-to-Date Spills	 0	 21	 0	 0	 1	 0

Radiological Control Performance Indicator Report Criteria

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

Collective Radiation Dose -

The INEL 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 INEL.

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 INEL 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 INEL 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 INEL Radiological Control Manual.

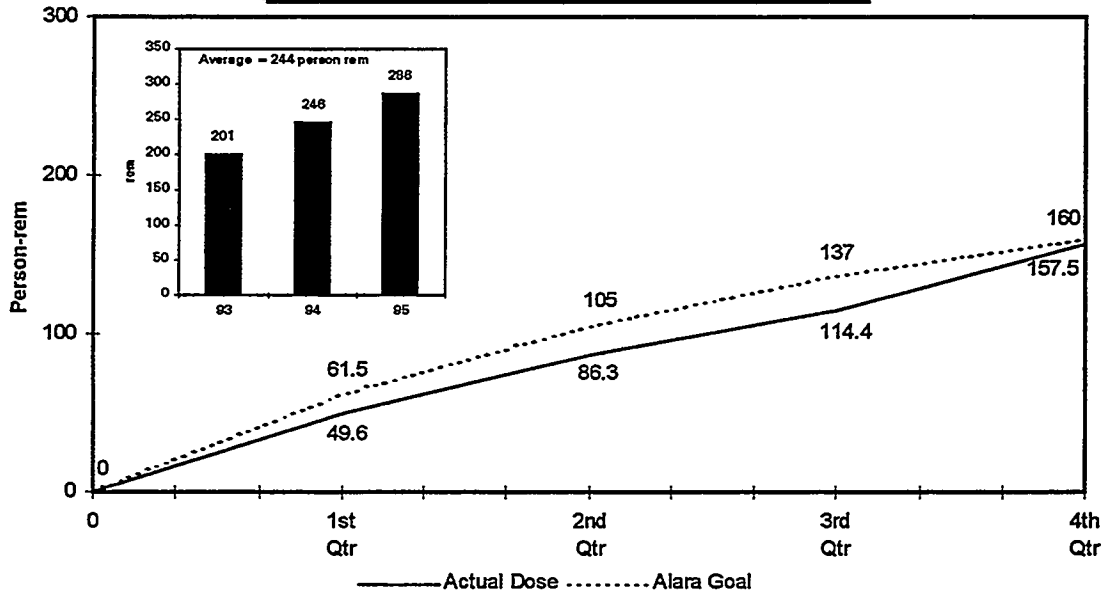
Airborne Radioactivity Area -

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

Radioactive Spills -

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

**INEL CY-96 Year to Date
Collective Penetrating Radiation Dose**



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

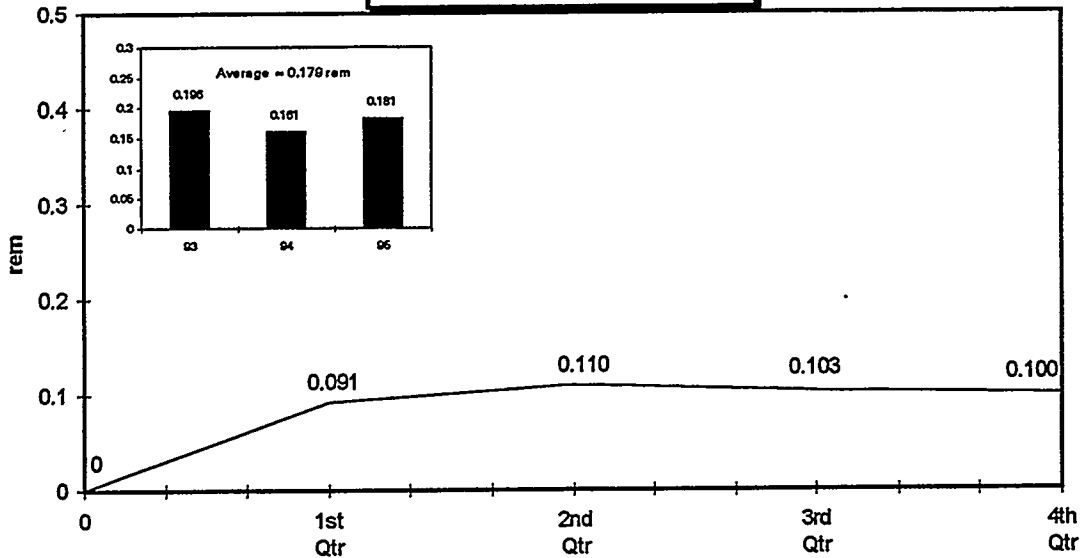
The ALARA goal for the INEL was adjusted during the second quarter from 236.4 to 174 person rem, during the third quarter to 169 person-rem, and during the fourth quarter to 160 person-rem to reflect dose reduction from use of ALARA protective measures and changes in work scope. Evaluations and adjustment to the yearly and quarterly goals are periodically performed to provide realistic values.

The INEL Performance Indicators continue to reflect a challenging, yet positive control of occupational radiation exposure.

The collective radiation exposure through the end of the fourth quarter was 157.543 person-rem. The collective exposure is within two percent of the year end fourth quarter ALARA goal.

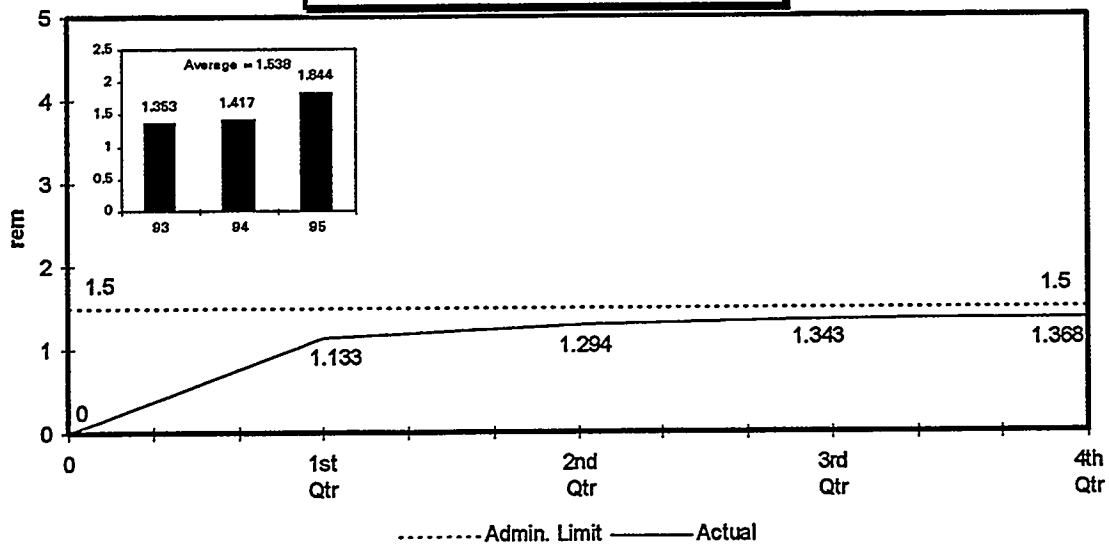
This chart and the charts on the following pages provide an indication of how well LIMITCO is performing as a company, and in the six specific facility areas.

**INEL CY-96 Year to Date
Average Worker Dose**



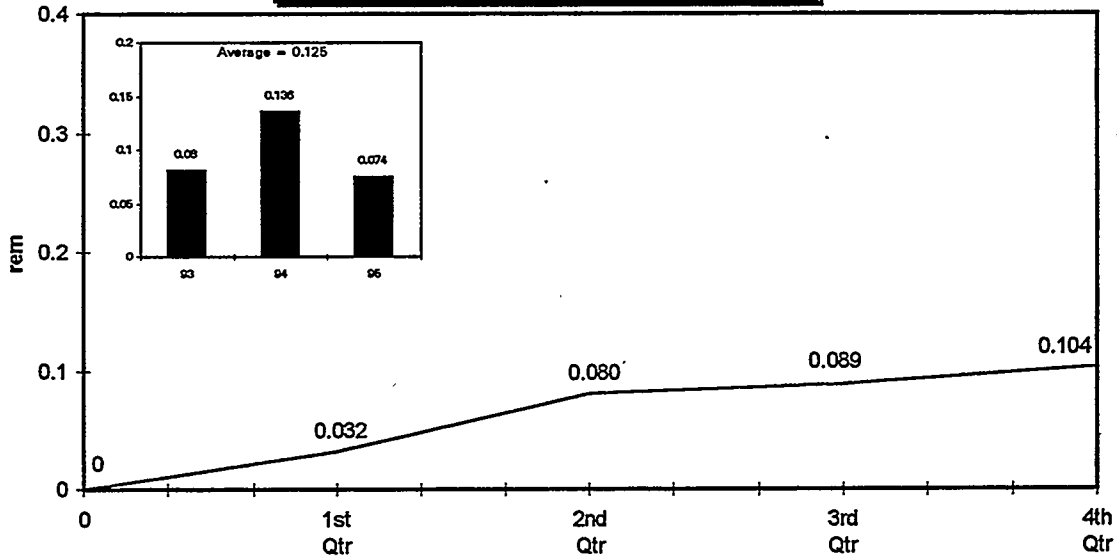
The Average Occupational radiation dose for the INEL workers through the end of the fourth quarter was 0.100 rem. Reducing average worker exposure is a positive indicator.

**CY-96 Maximum Year to Date
Penetrating Dose to a Worker**



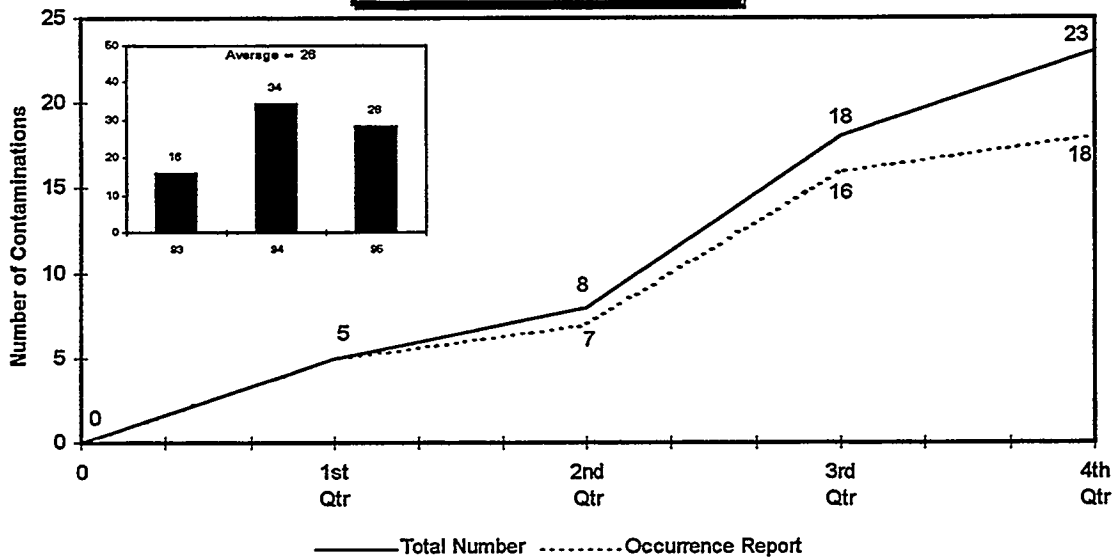
The Maximum penetrating radiation dose to a worker through the end of the fourth quarter was 1.368 rem. The dose resulted from activities associated with the ICPP NWCF turnaround projects.

**CY-96 INEL Maximum Year to Date
Neutron Dose to a Worker**



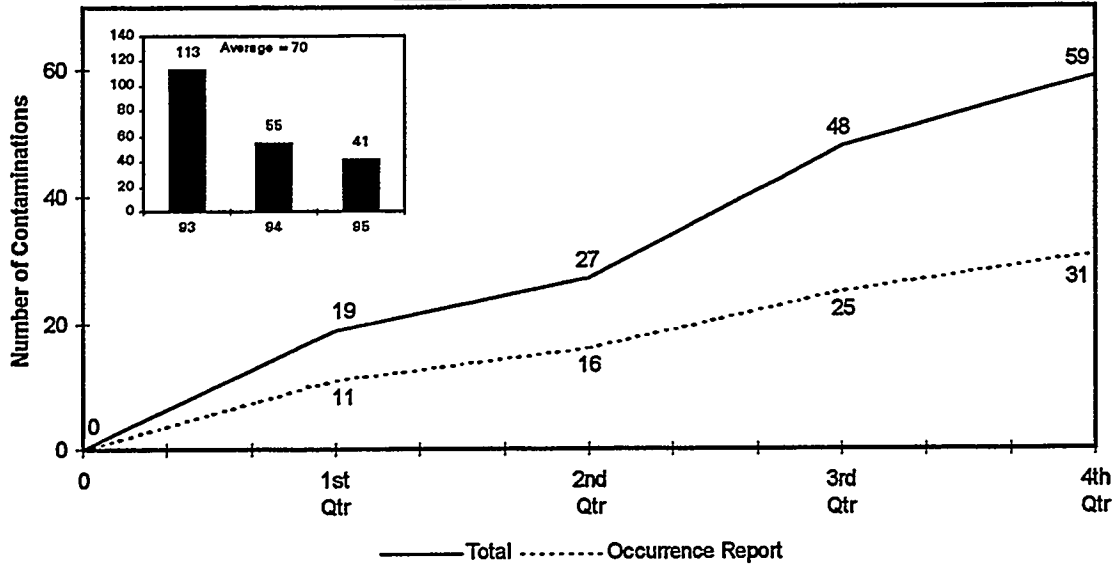
Neutron dose is included in the total penetrating radiation dose. It is shown here as a separate indicator to identify the maximum neutron dose to a worker. Through the end of the fourth quarter the maximum neutron dose is 0.104 rem. The second quarter number was reduced based on re-evaluation of the data.

**CY-96 INEL Year to Date
Skin Contaminations**



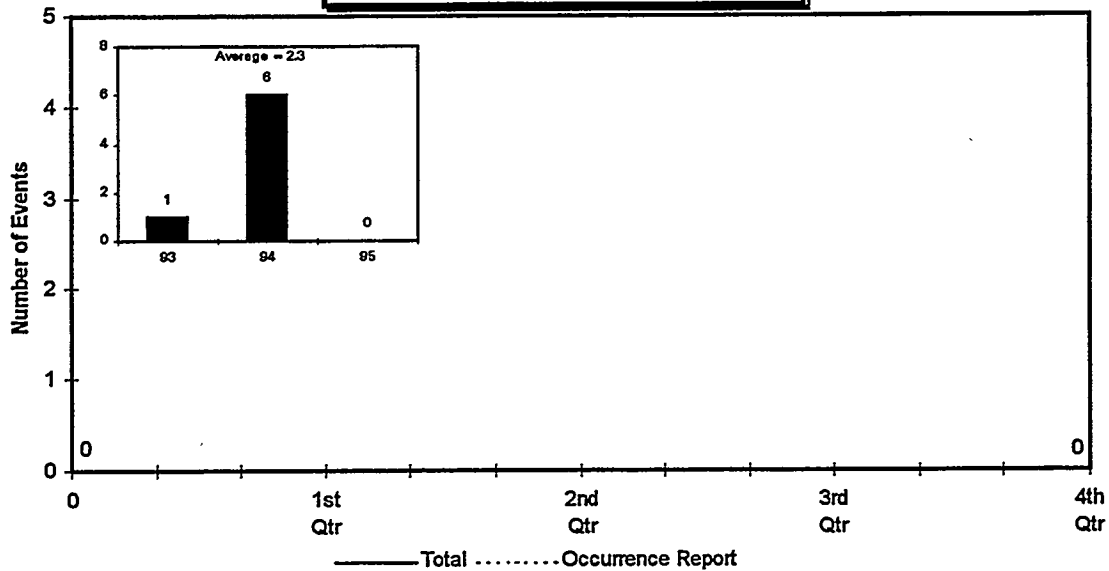
There were five skin contaminations at the INEL during the fourth quarter resulting in two ORs. There were no facial contaminations and no contaminated wounds.

INEL CY-96 Year to Date Clothing Contaminations



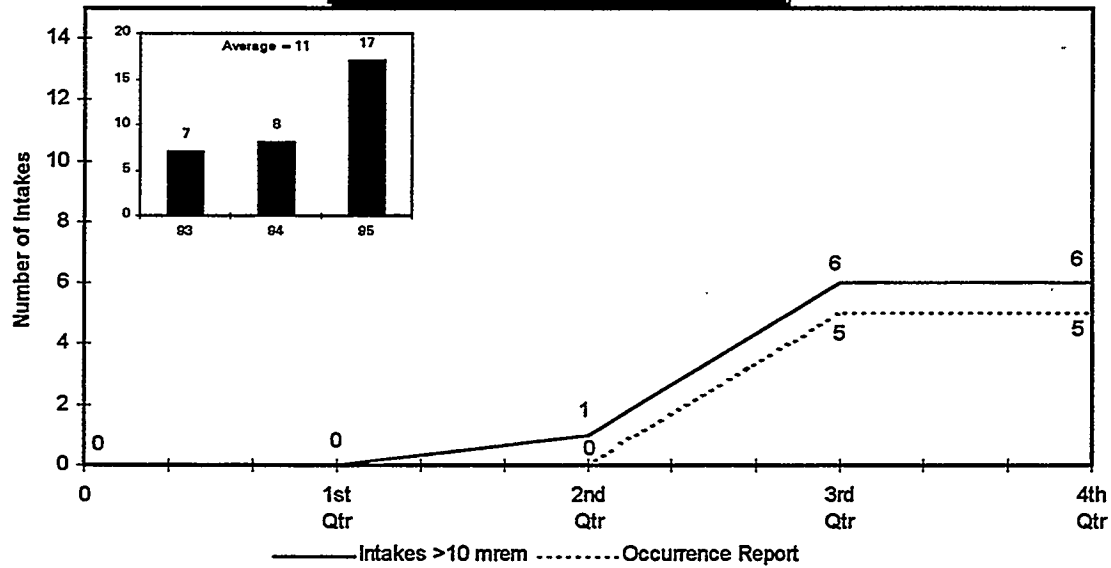
There were eleven clothing contaminations at the INEL during the fourth quarter. six resulted in ORs. Details are contained in the facility reports.

INEL CY-96 Year to Date Airborne Radioactivity Events



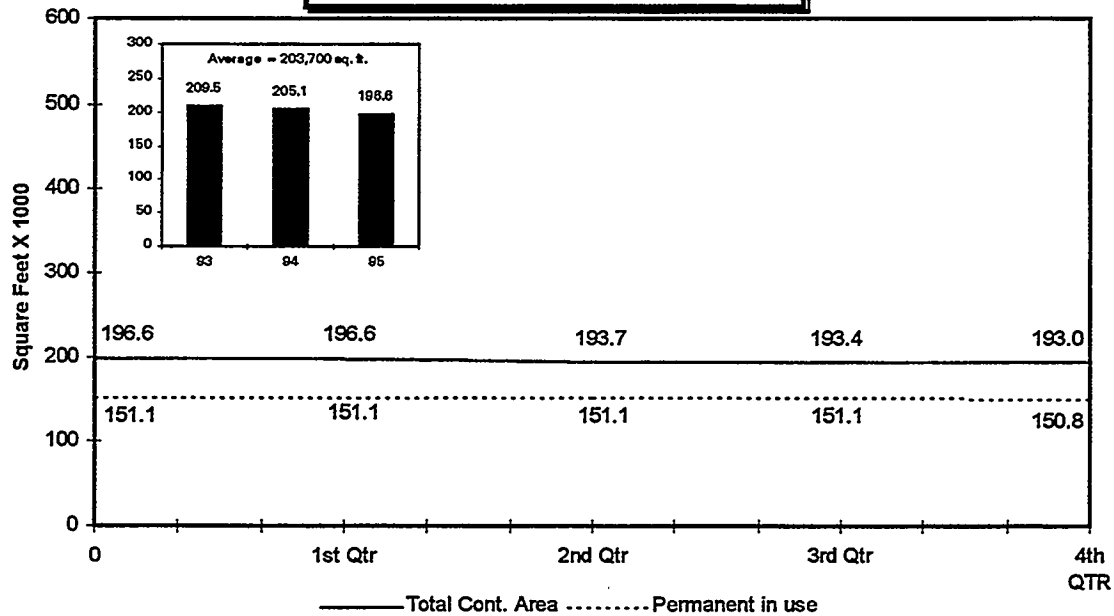
This indicator identifies the number of times airborne radioactivity exceeding 10 % of the DOE limit was detected and measured outside of posted Airborne Radioactivity Areas. There have been none identified through the fourth quarter.

INEL CY-96 Year to Date Radioactive Material Intakes



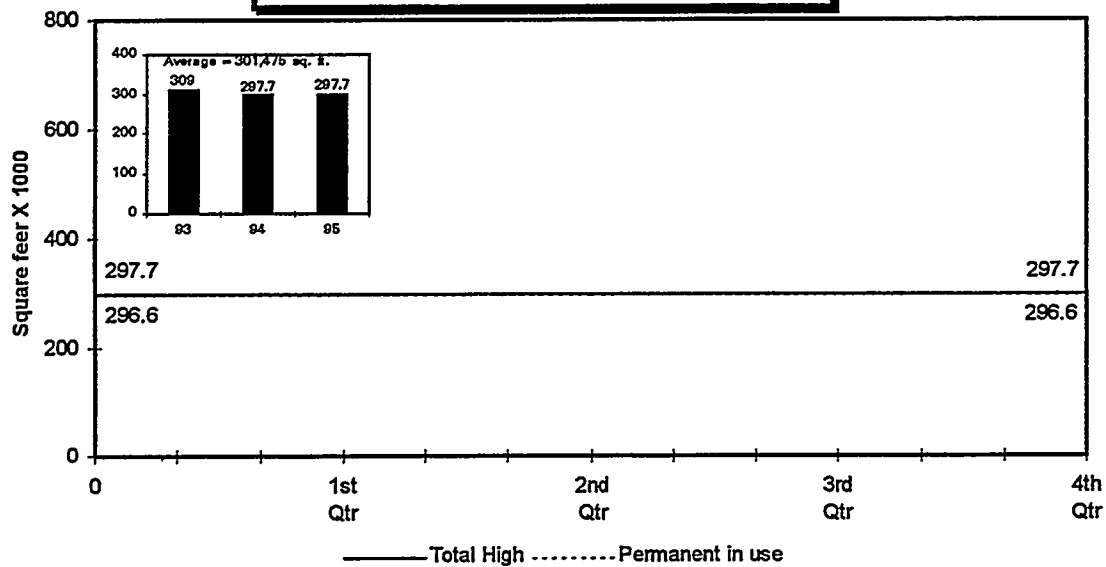
Radioactive material intakes depict the number of positive bioassays that result in a dose assessment of 10 mrem or greater. There were none during the fourth quarter. There are some outstanding assessments to be completed, and the dose, if any, will reflect in the quarter received.

INEL CY-96 Contamination Area



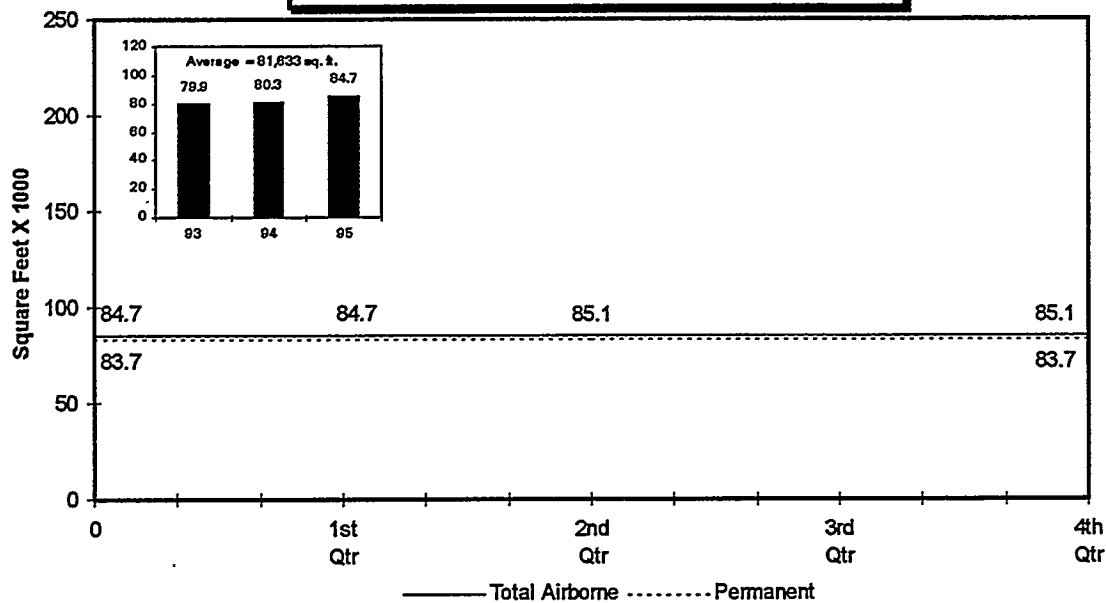
The total area designated as Contamination Area at the end of the fourth quarter was 193,044 square feet. 150,800 square feet is designated as permanent and in use Contamination Area.

INEL CY-96 High Contamination Area



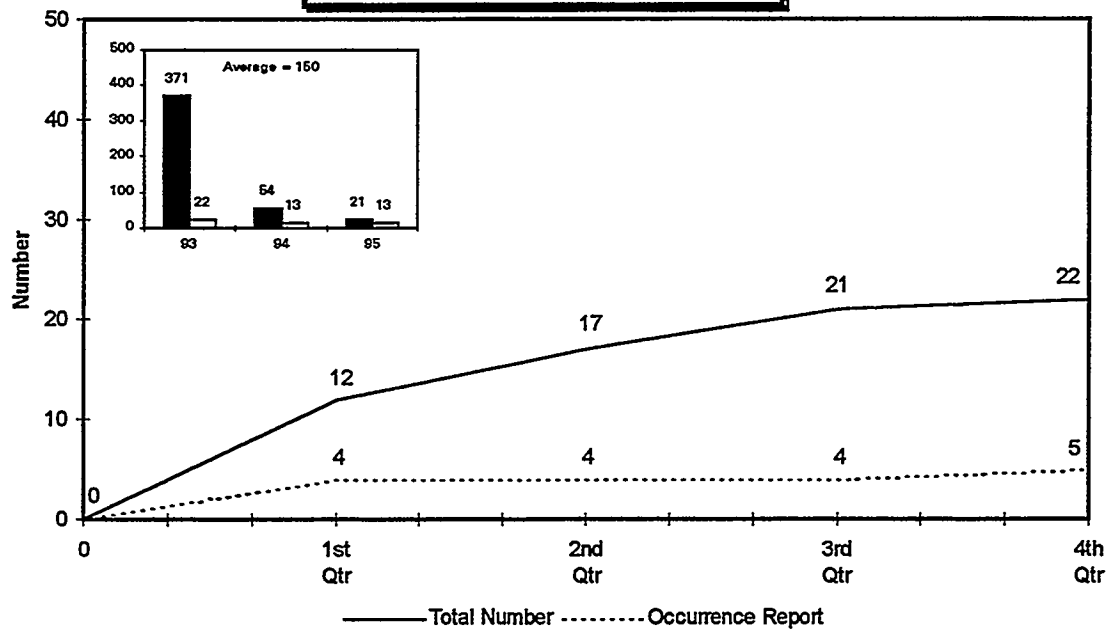
Total High Contamination Area at the end of the fourth quarter was 297,663 square feet. 296,641 square feet is designated as permanent and in use.

INEL CY-96 Airborne Radioactivity Area



The total Airborne Radioactivity Area at the INEL at the end of the fourth quarter was 85,084 square feet. 83,662 square feet is designated as permanent and in use.

INEL CY-96 Year to Date Spills



The INEL had one spills or loss of control of radioactive material during the fourth quarter. ICPP OR ID-LITC-FUELRCTR-1996-0009 contains the detail.

Central Facilities Area

The CFA Facility report also includes
other outlying area information

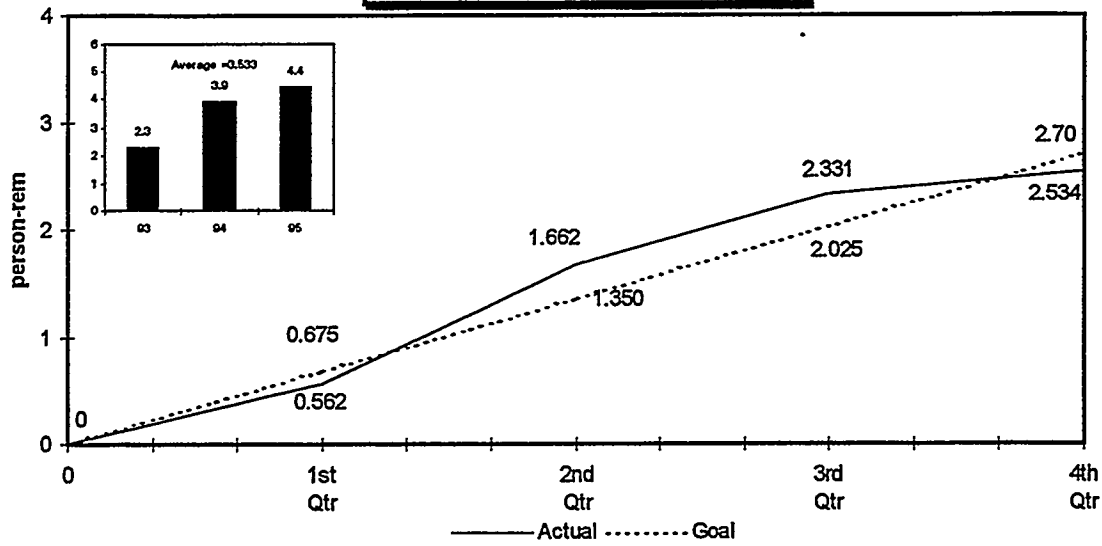
Summary

The major activities contributing to radiological exposure through the year have been Decontamination and Decommissioning, Environmental Restoration, sampling, and facility maintenance.

The Airborne Activity Area chart shows an increase during the second quarter. The increase was due to demolition activities of Hot Cell 2 at ARA I

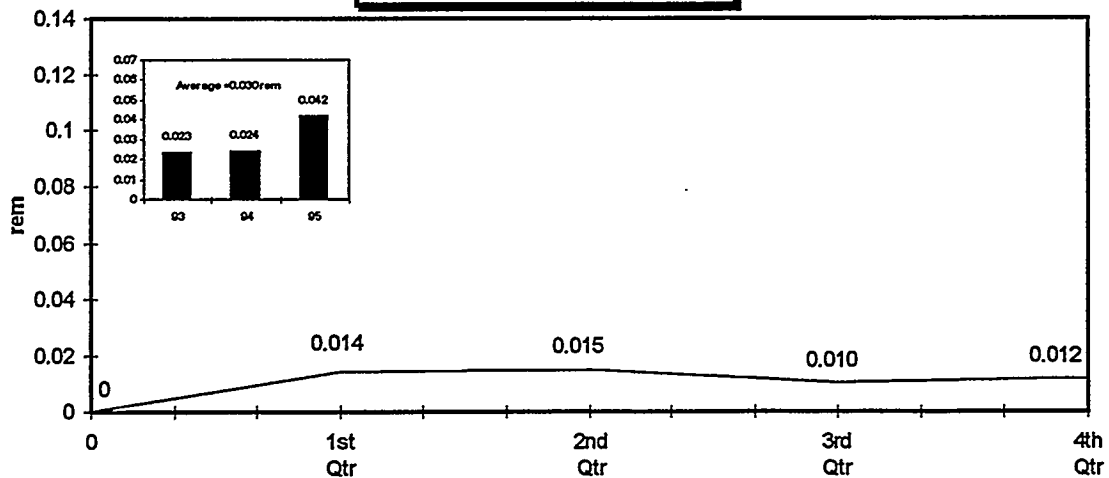


**CFA CY-96 Year to Date
Penetrating Radiation Dose**



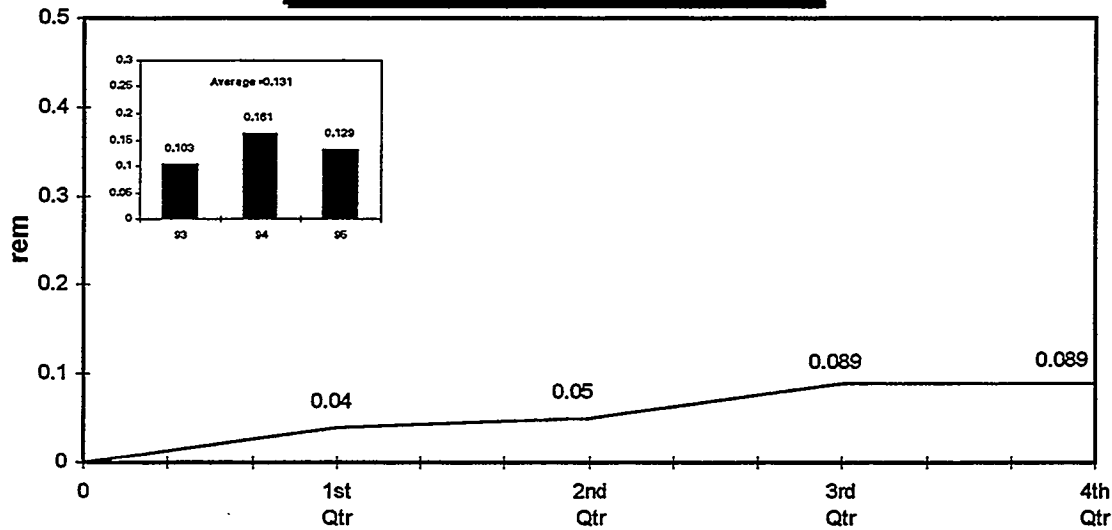
The collective penetrating occupational radiation exposure at CFA through the end of the fourth quarter is 2.534 person-rem. Major contributors have been Decontamination and Decommissioning (D&D), Environmental Restoration (ER), environmental monitoring, and facility maintenance.

**CFA CY-96 Year to Date
Average Worker Dose**



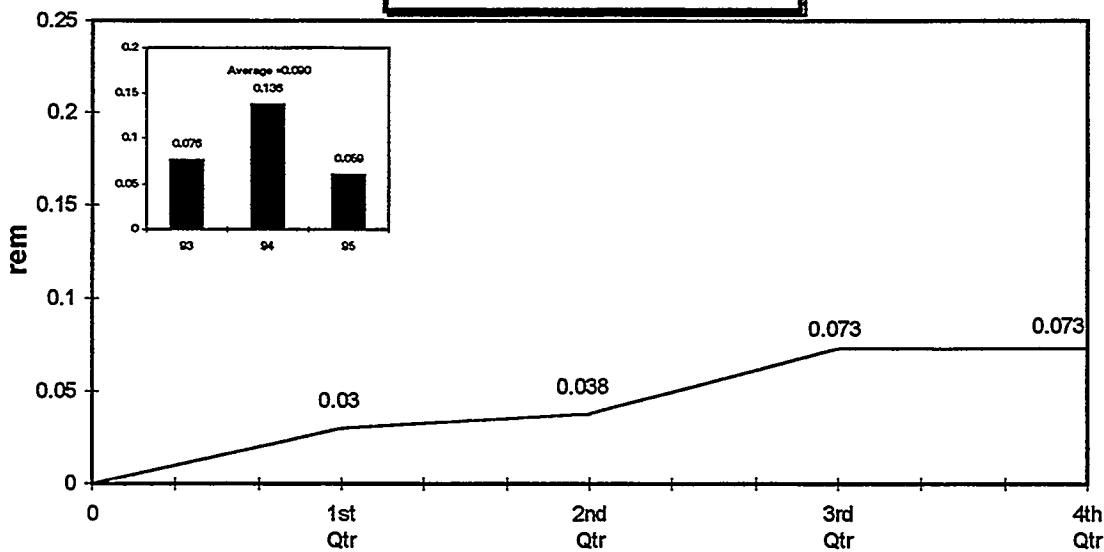
The CFA average worker dose through the end of the fourth quarter was 0.012 rem.

**CFA CY-96 Maximum Year to Date
Penetrating Dose to a Worker**



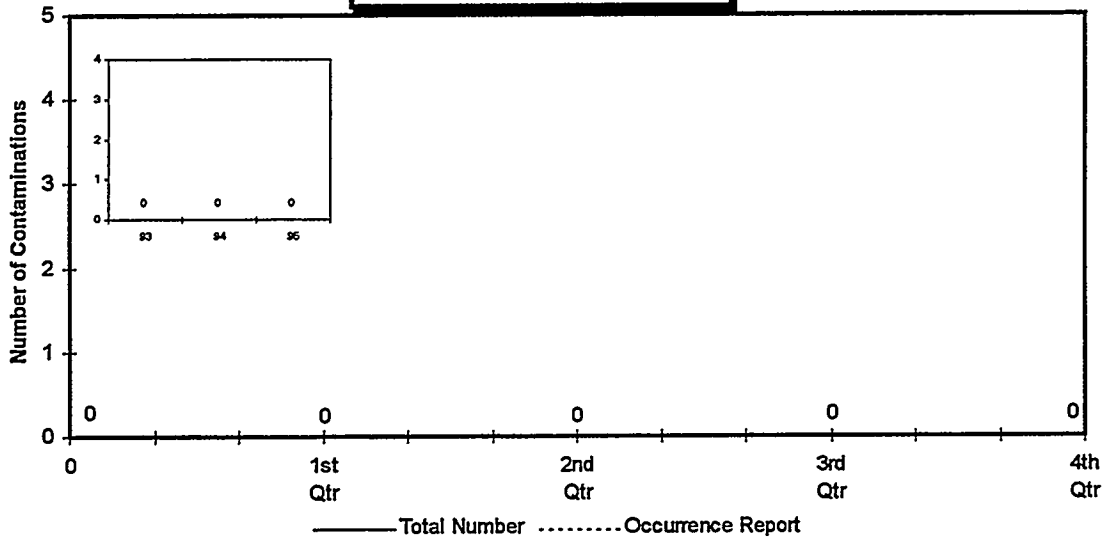
The maximum penetrating radiation dose to a CFA worker through the end of the fourth quarter was 0.089 rem.

**CFA CY-96 Year to Date
Neutron Dose to a Worker**



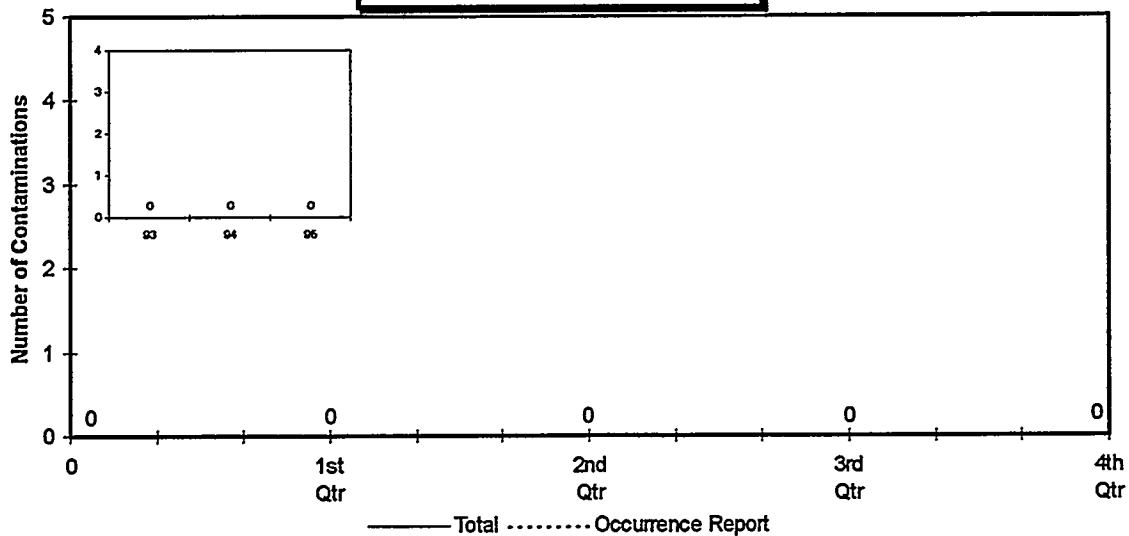
Maximum neutron dose through the end of the fourth quarter was 0.073 rem, primarily from calibration of neutron instrumentation at the Health Physics Instrument Laboratory.

**CFA CY-96 Year to Date
Skin Contaminations**



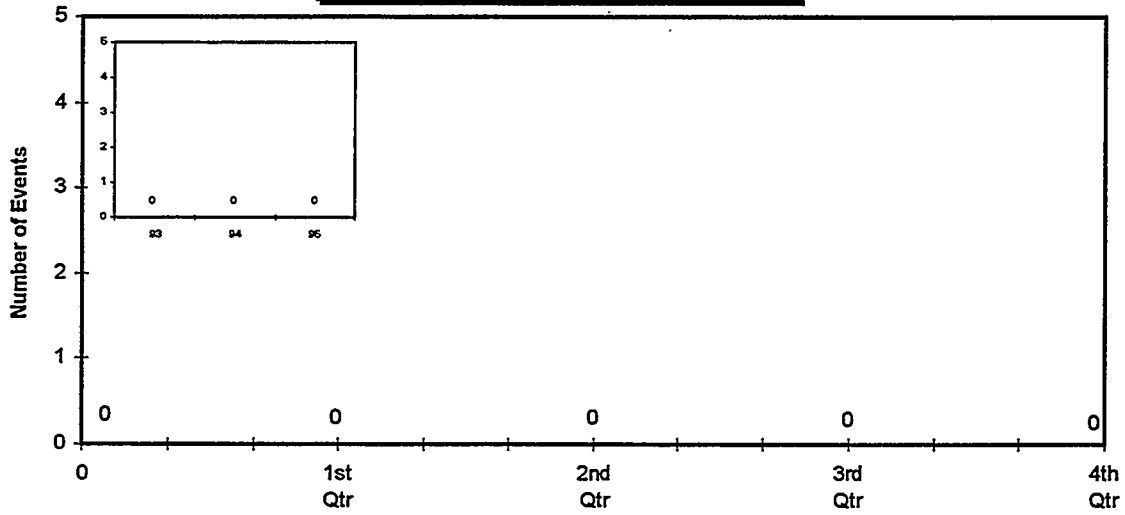
There were no skin contaminations at CFA areas through the end of the fourth quarter

**CFA CY-96 Year To Date
Clothing Contaminations**



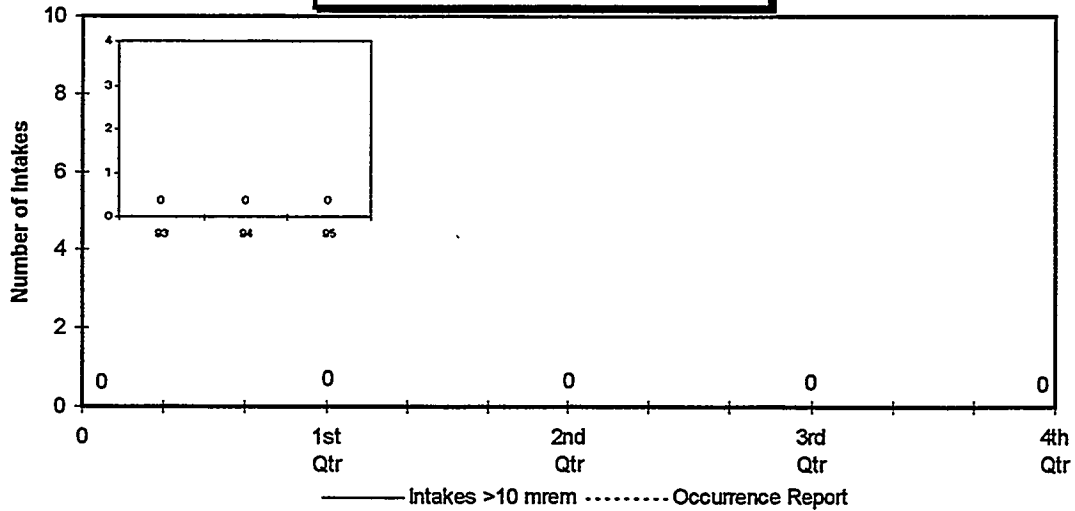
There were no clothing contaminations at CFA areas through the end of the fourth quarter.

**CFA CY-96 Year to Date
Airborne Radioactivity Events**



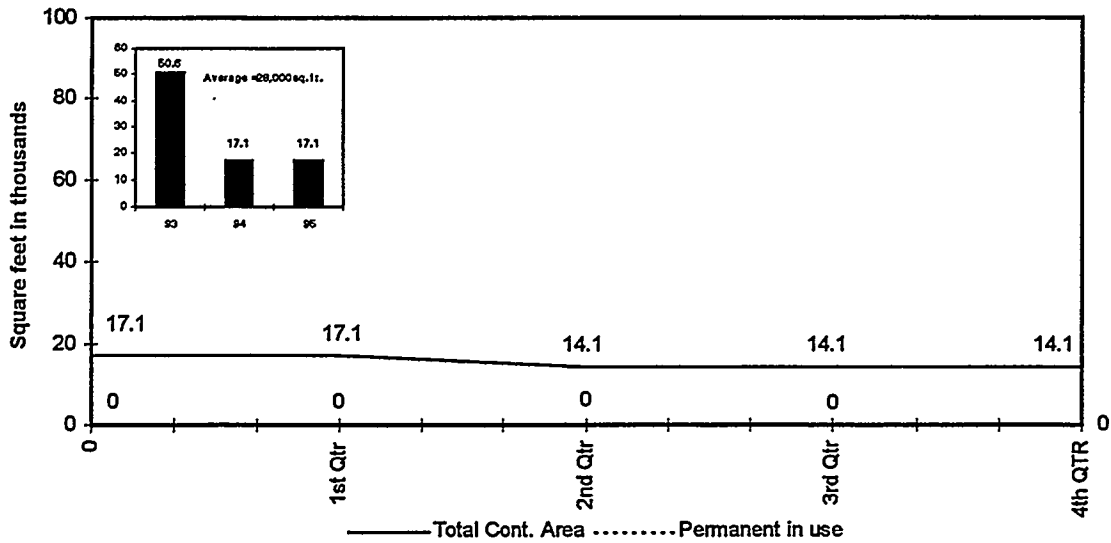
There has been no airborne activity detected that was greater than 10 % DAC at CFA areas through the end of the fourth quarter.

**CFA CY-96 Year to Date
Radioactive Material Intakes**



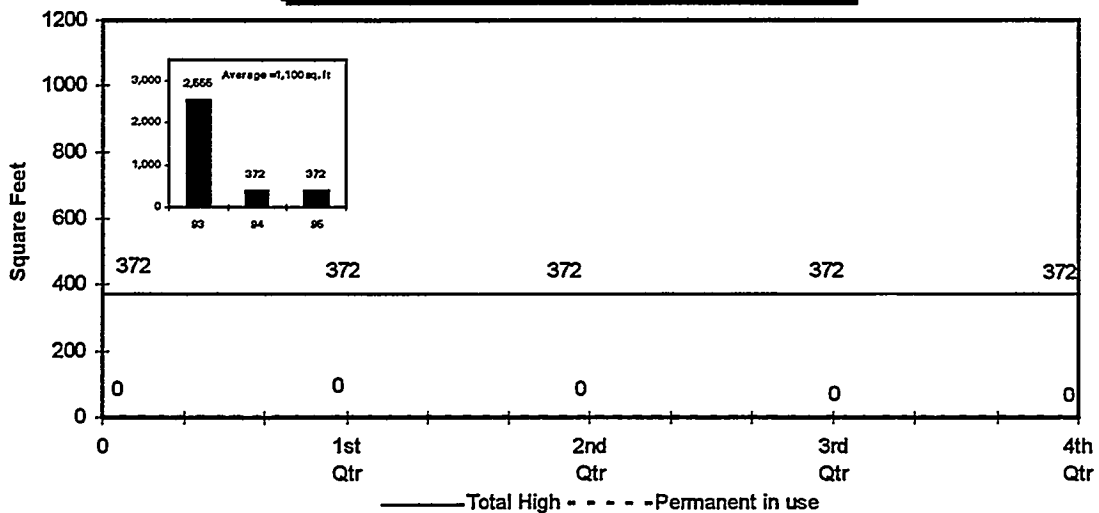
There were no positive bioassays indicating a radioactive material intake that resulted in a dose assessment of 10 mrem or greater at CFA through the end of the fourth quarter.

CFA CY-96 Contamination Area



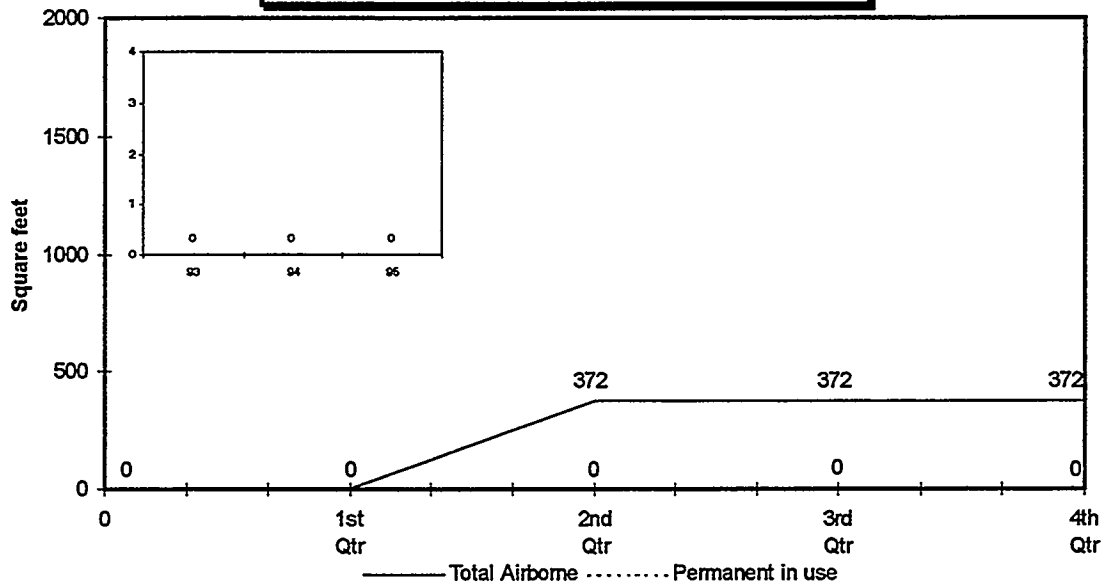
The total Contamination Area at CFA at the end of the fourth quarter was 14,105 square feet. None of this area was designated as permanent and in use.

CFA CY-96 High Contamination Area



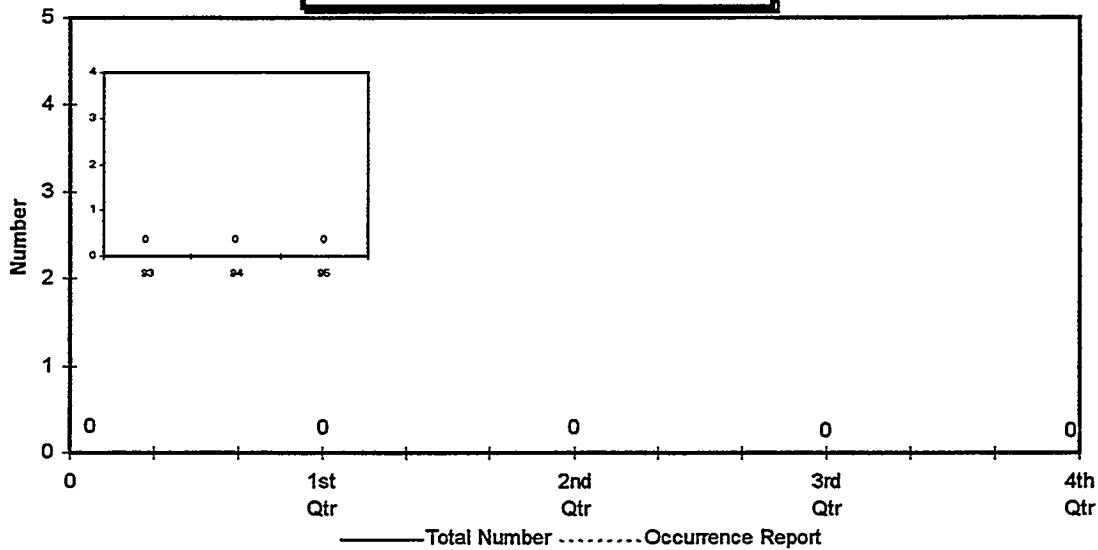
The total High Contamination Area at CFA at the end of the fourth quarter was 372 square feet. None of this was designated as permanent and in use.

CFA CY-96 Airborne Radioactivity Area



The total Airborne Radioactivity Area at CFA at the end of the fourth quarter was 372 square feet. The increase was due to demolition of Hot Cell 2 at ARA I. None is designated as permanent and in use.

CFA CY-96 Year to Date Spills



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

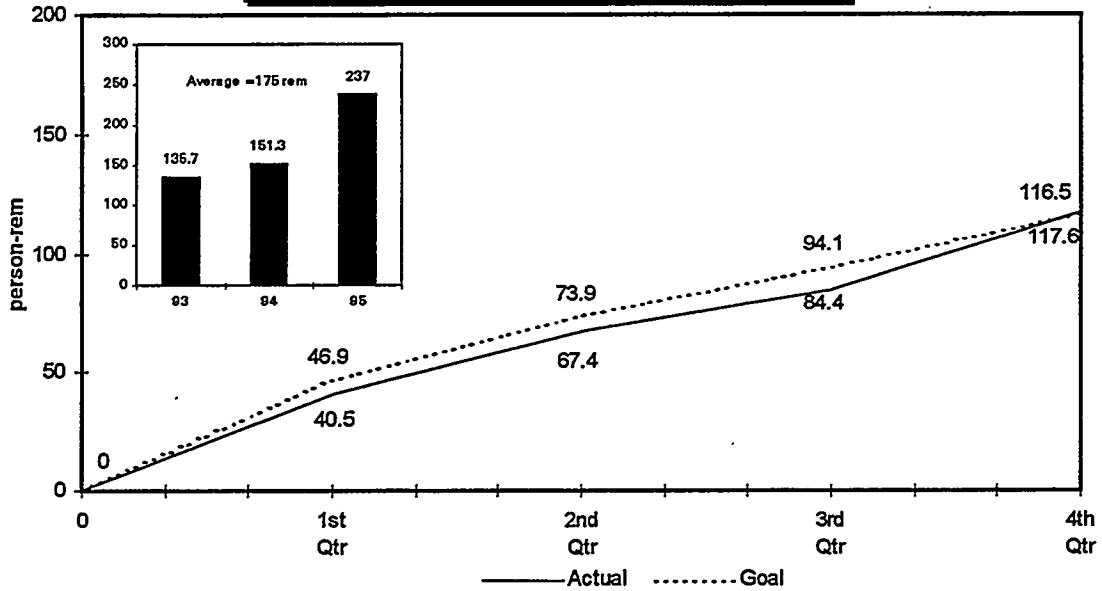
Idaho Chemical Processing Plant

SUMMARY

1. Major contributors to fourth quarter occupational radiation exposure were the NWCF turnaround projects, the ROVER demolition project, the 604 N Evaporator project, and the Vessel 106 vault liner project.
2. Work scope at the ROVER project was changed during the fourth quarter, reducing the ALARA goal by 9 person-rem. The new ICPP goal is 116.5 person-rem.
3. Details of the clothing contaminations during the fourth quarter are contained in ORs ID-LITC-PHASEOUT-1996-0009, and ID-LITC-FUELCSTR-1996-0012.
4. One non-reportable skin contamination occurred during the fourth quarter at the ICPP.
5. There was one spill during the fourth quarter. Detail is contained in OR ID-LITC-FUELCSTR-1996-0009.

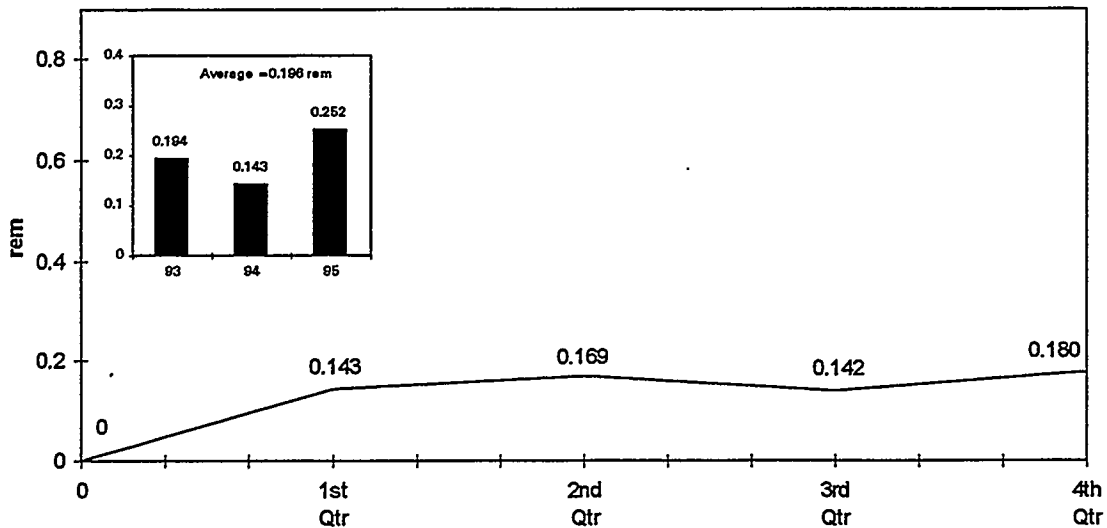


**ICPP CY-96 Year to Date
Collective Penetrating Radiation Dose**



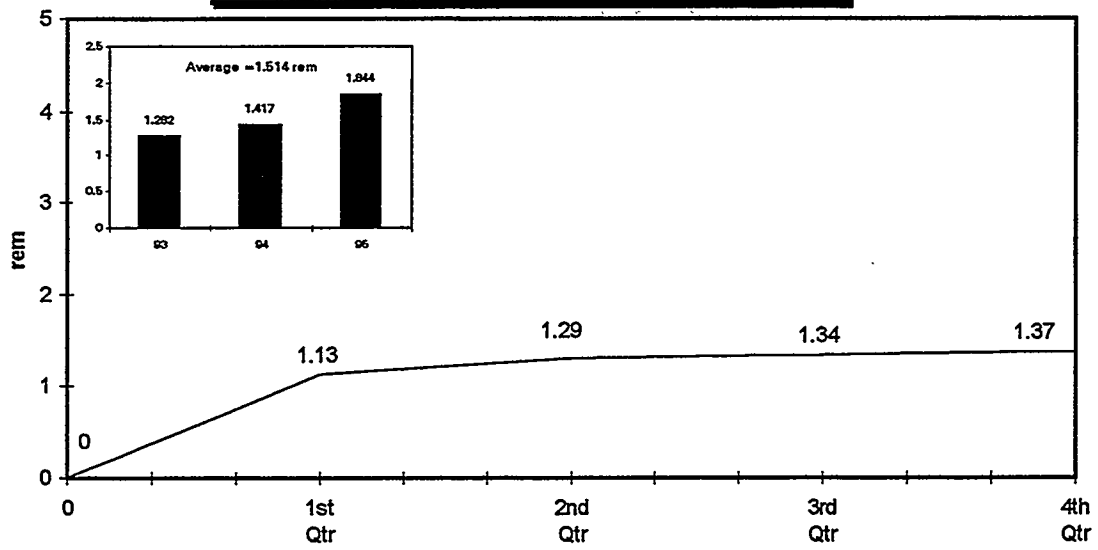
The ICPP collective penetrating occupational radiation exposure through the end of the fourth quarter was 117.593 person-rem. Work scope change at ROVER reduced the ALARA goal by 9 person rem.

ICPP CY-96 Year to Date Average Worker Dose



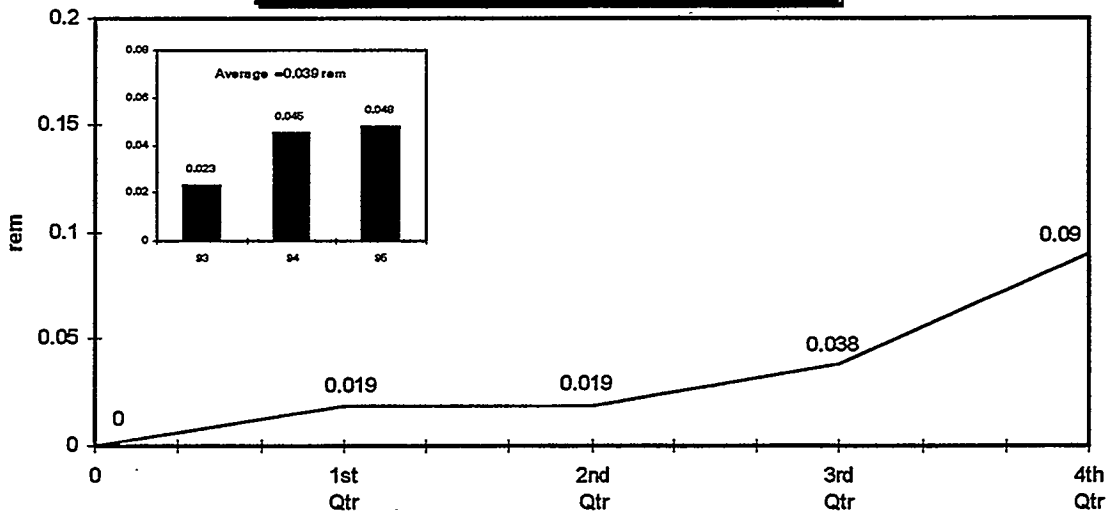
The average worker dose for the ICPP through the end of the fourth quarter was 0.180 rem.

**ICPP CY-96 Year to Date
Maximum Penetrating Dose to a Worker**



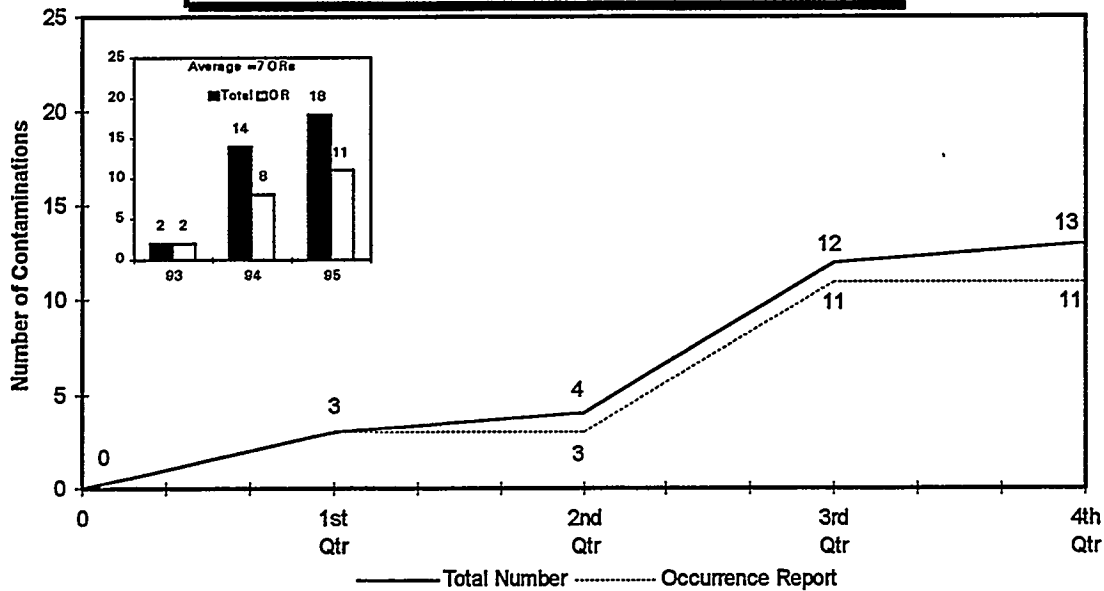
The ICPP maximum penetrating radiation dose to a worker through the end of the fourth quarter was 1.368 rem.

**ICPP CY-96 Year to Date
Maximum Neutron Dose to a Worker**



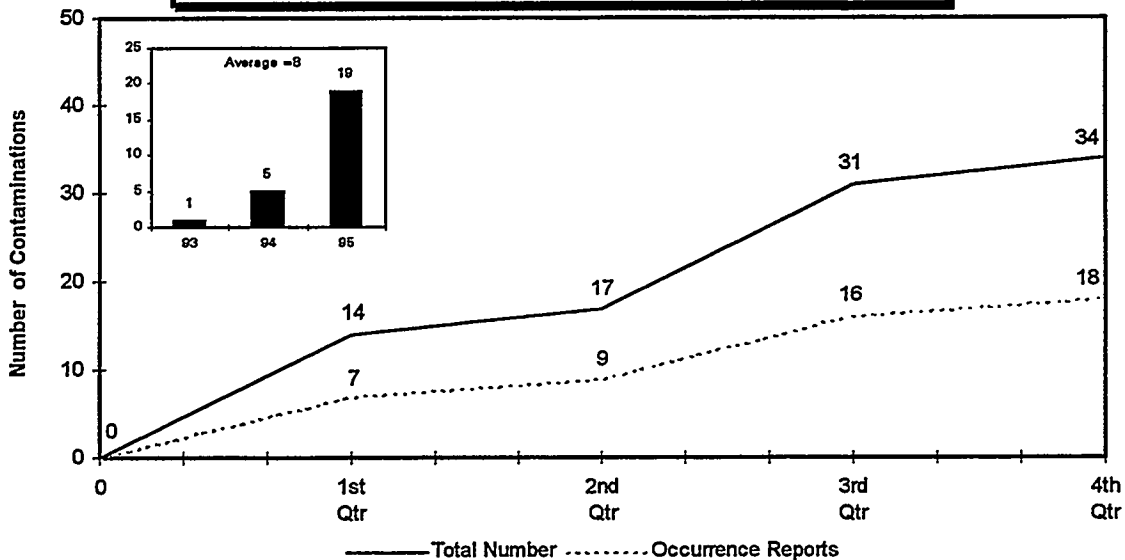
The ICPP maximum neutron radiation dose to a worker through the end of the fourth quarter was 0.090 rem.

ICPP CY-96 Year to Date Skin Contaminations



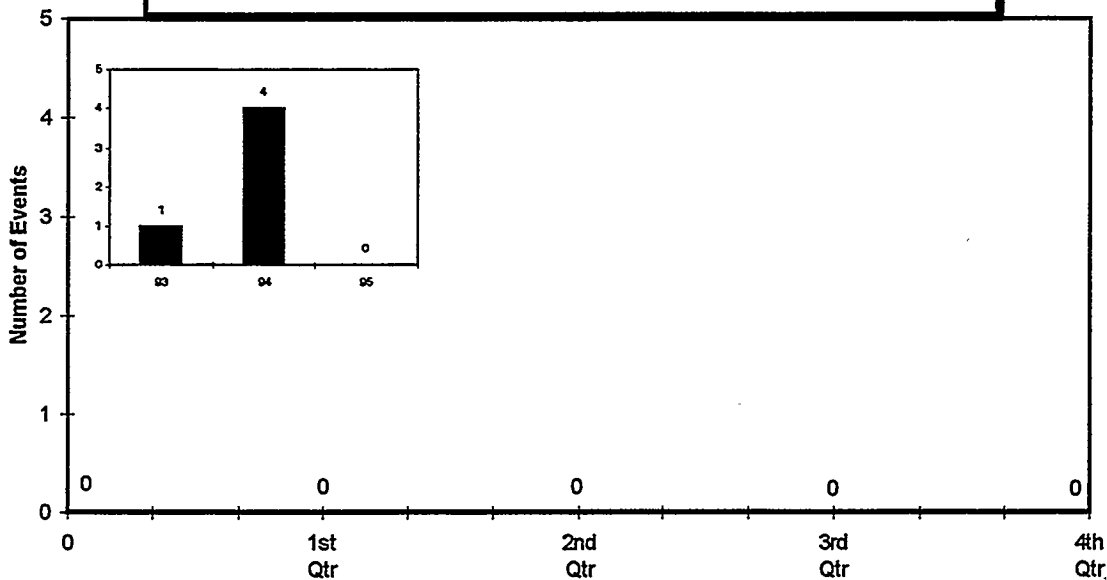
The ICPP had one non-reportable skin contamination during the fourth quarter on the hands of a scientist at RAL. There were no facial contaminations or contaminated wounds.

ICPP CY-96 Year to Date Clothing Contaminations



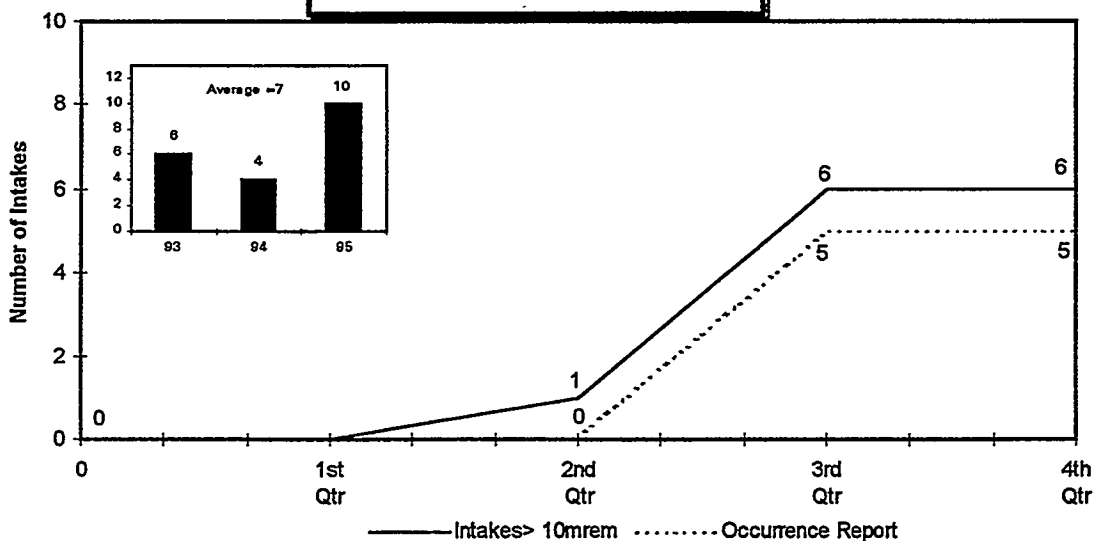
Three clothing contaminations were reported during the fourth quarter at the ICPP. Two resulted in ORs.

ICPP CY-96 Year to Date Airborne Radioactivity Events



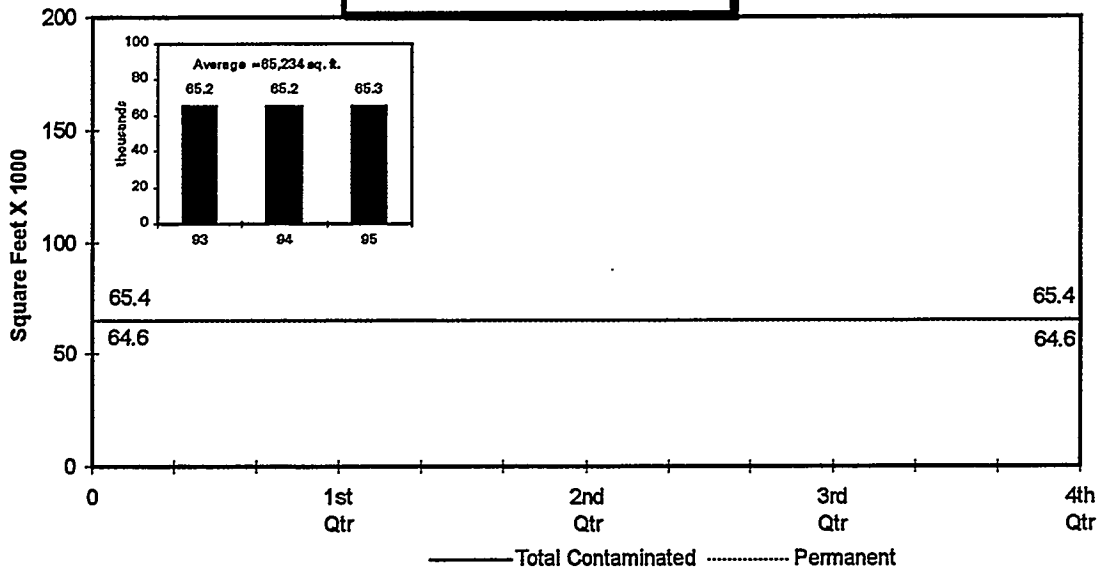
No airborne activity greater than 10 % DAC in unposted areas was detected in ICPP areas during the fourth quarter.

ICPP CY-96 Year to Date Radioactive Material Intakes



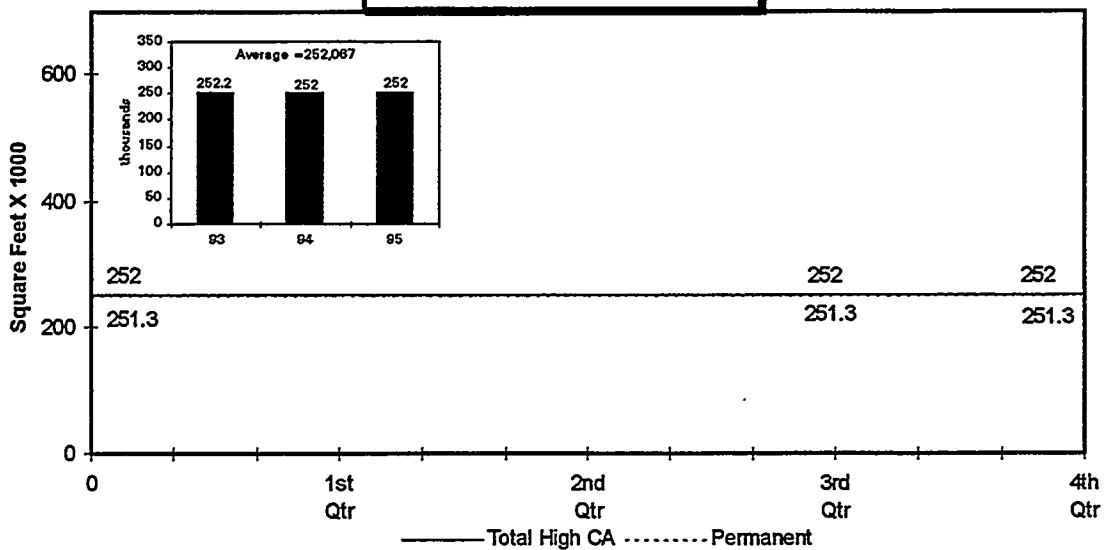
There have been no additional bioassays during the fourth quarter at the ICPP that have resulted in a dose assessment of 10 mrem or greater.

**ICPP CY-96 Year to Date
Contamination Area**



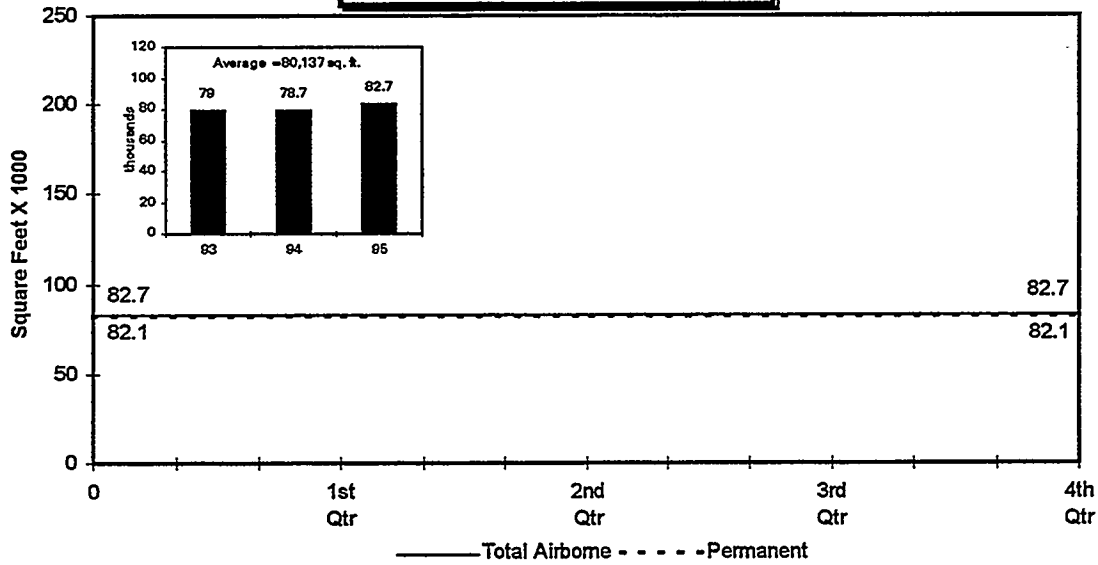
Total Contamination Area at the ICPP at the end of the fourth quarter remains constant at 65,419 square feet. 64,684 square feet is designated as permanent and in-use.

**ICPP CY-96 Year to Date
High Contamination Area**



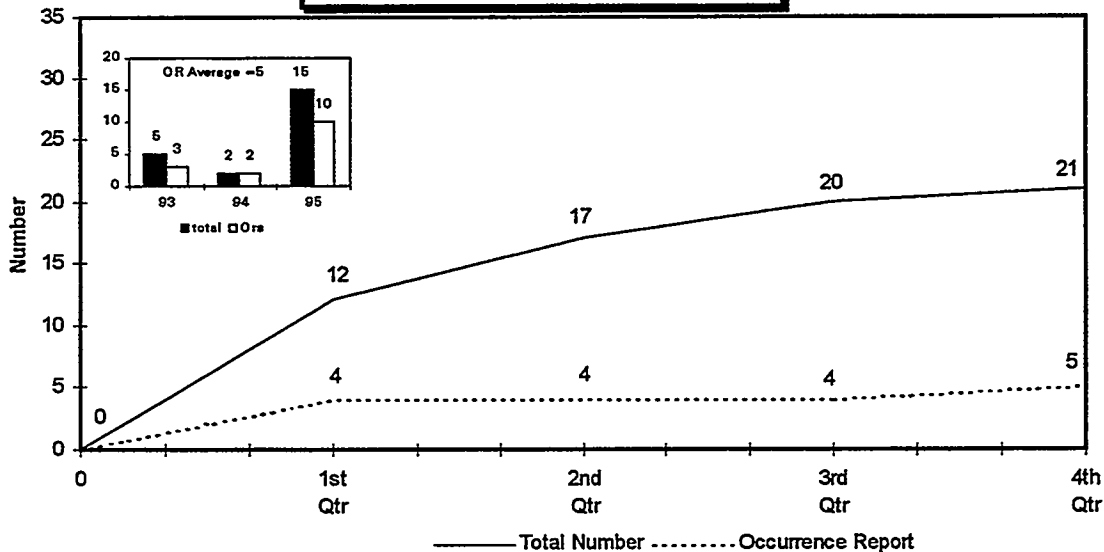
The total High Contamination Area at the ICPP remains at 251,961 square feet at the end of the fourth quarter. 252,311 square feet is designated as permanent and in-use.

ICPP CY-96 Year to Date Airborne Radioactivity Area



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

ICPP CY-96 Year to Date Spills



The ICPP had one reportable spill or loss of control of radioactive material during the fourth quarter. Detail is in OR ID-LITC-FUELCSTR-1996-0009.

Power Burst Facility

Waste Reduction Operations Complex

Waste Experimental Reduction Facility

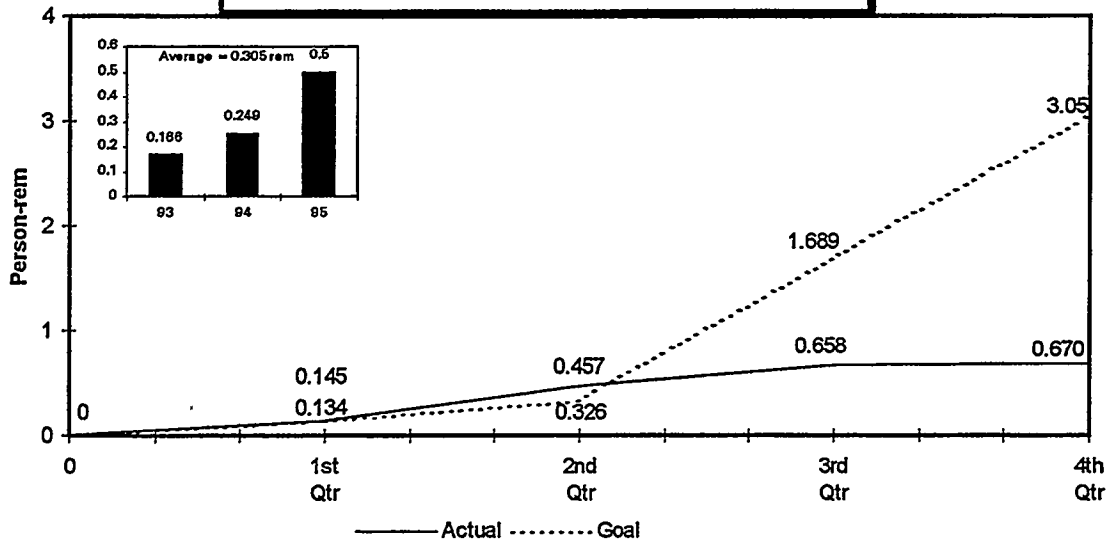
(PBF/WROC)

Major contributor to the fourth quarter occupational radiation exposure in the PBF/WROC reporting area were the repackaging of mixed waste, sizing low level waste, waste inventory, incineration, and receiving and shipping of mixed waste.

Fuel rack inventory work planned at the PBF was not completed during the fourth quarter resulting in the actual dose to personnel being much lower than expected (work scope change).

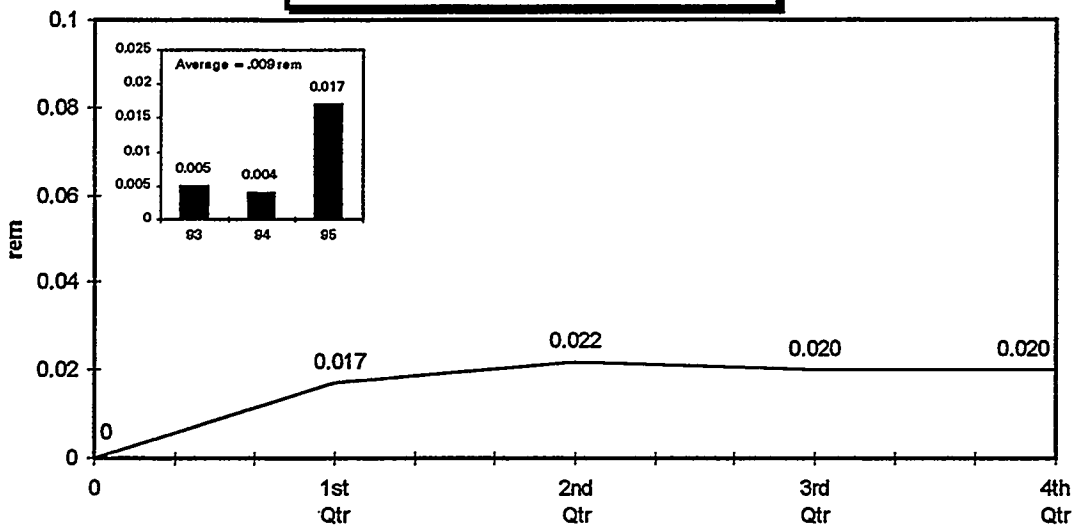


**PBF/WROC CY-96 Collective Year to Date
Penetrating Radiation Dose**



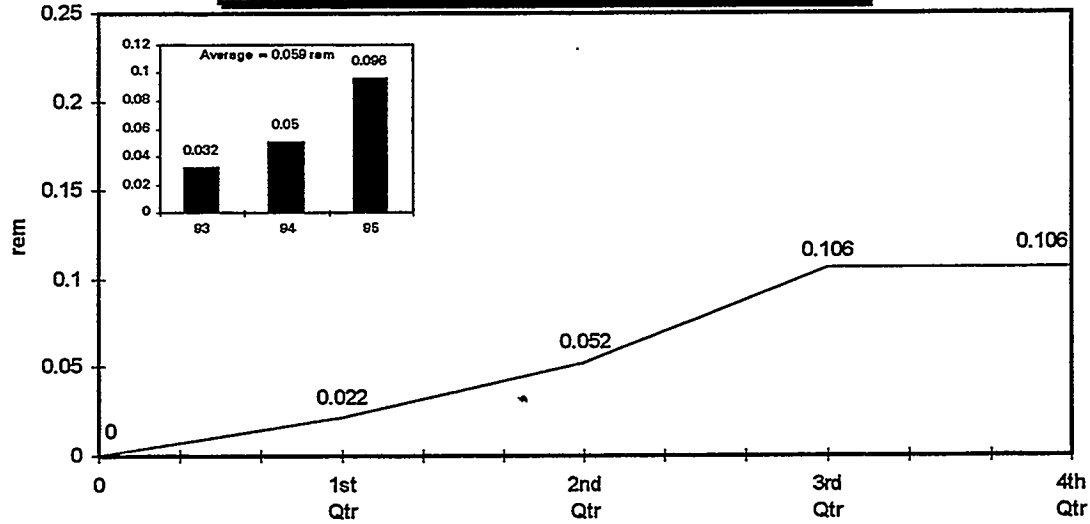
PBF/WROC collective penetrating radiation exposure through the end of the fourth quarter was 0.670 person rem. Work scope at the PBF was changed resulting in doses lower than expected.

**PBF/WROC CY-96 Year to Date
Average Worker Dose**



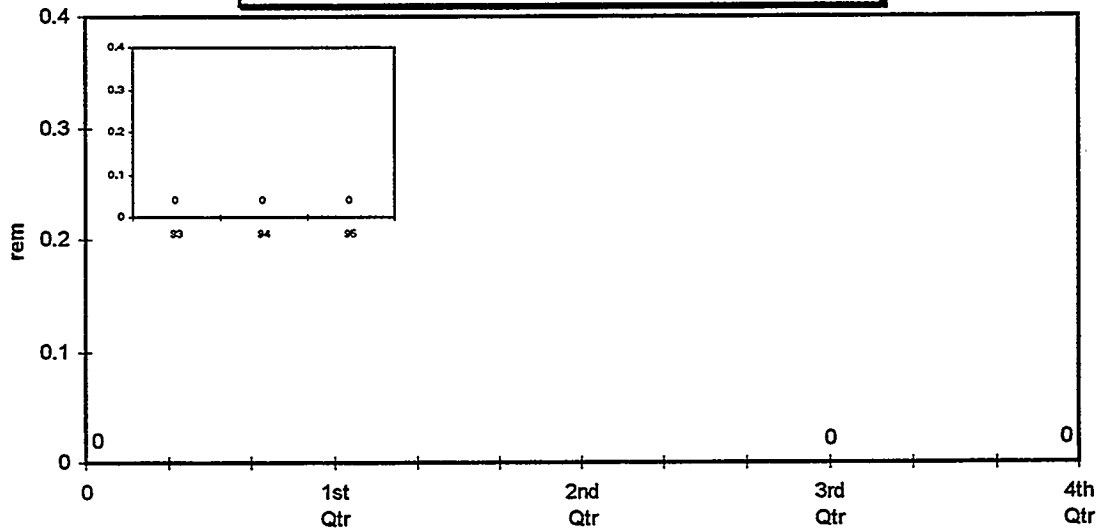
The PBF/WROC average worker dose through the end of the fourth quarter was 0.020 rem.

PBF/WROC CY-96 Maximum Year to Date Penetrating Dose to a Worker



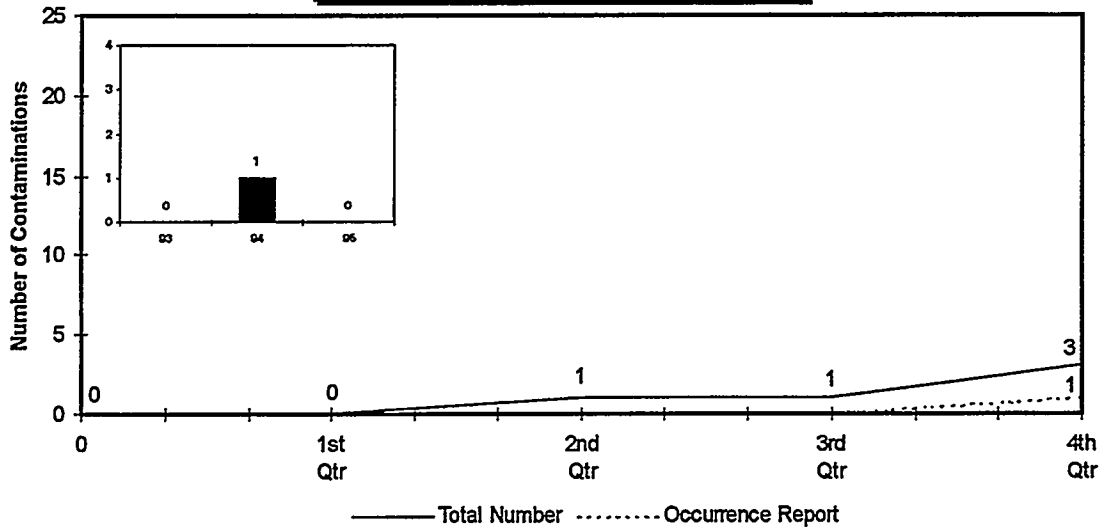
The maximum penetrating radiation dose to a PBF/WROC worker through the end of the fourth quarter was 0.106 rem.

PBF/WROC CY-96 Maximum Year to Date Neutron Dose to a Worker



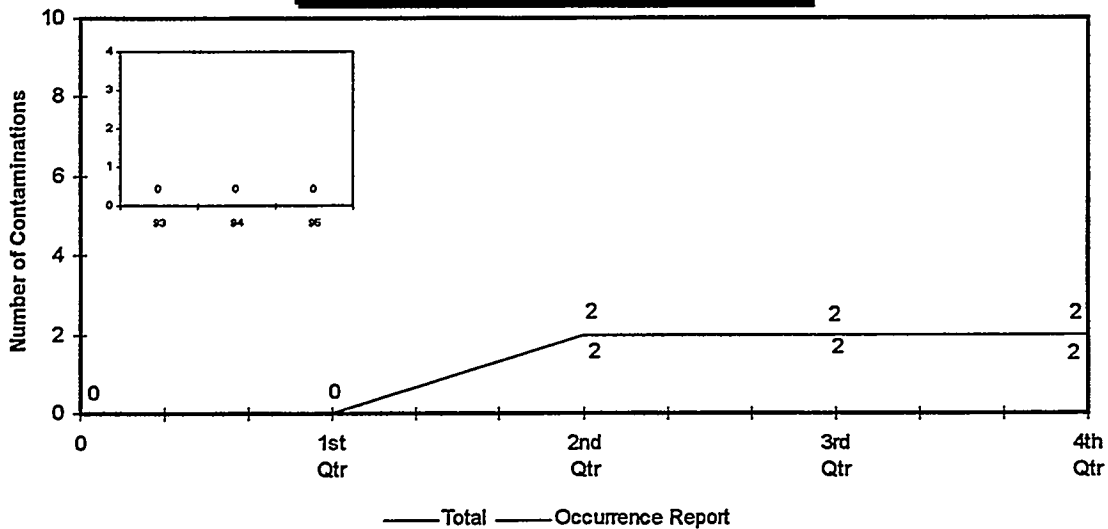
The maximum neutron radiation dose to a worker at the end of the fourth quarter remains at zero rem.

**PBF/WROC CY-96 Year to Date
Skin Contaminations**



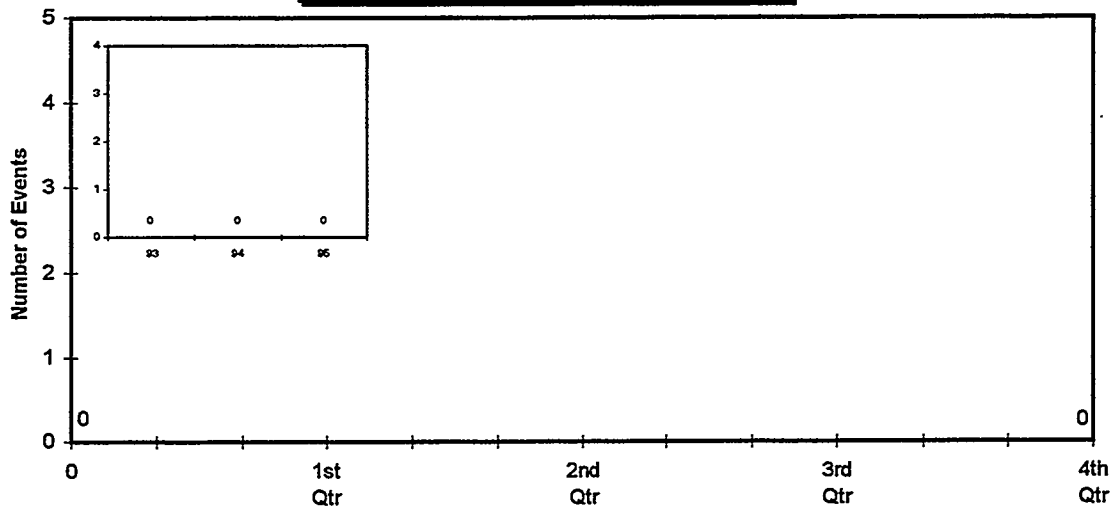
There were two skin contaminations at the PBF/WROC areas during the fourth quarter. Both occurred at WERF. The events were closely related and one report ID--LITCWERF-1996-0006 provides the details. The work process has been modified to resolve the concerns.

**PPBF/WROC CY-96 Year to Date
Clothing Contaminations**



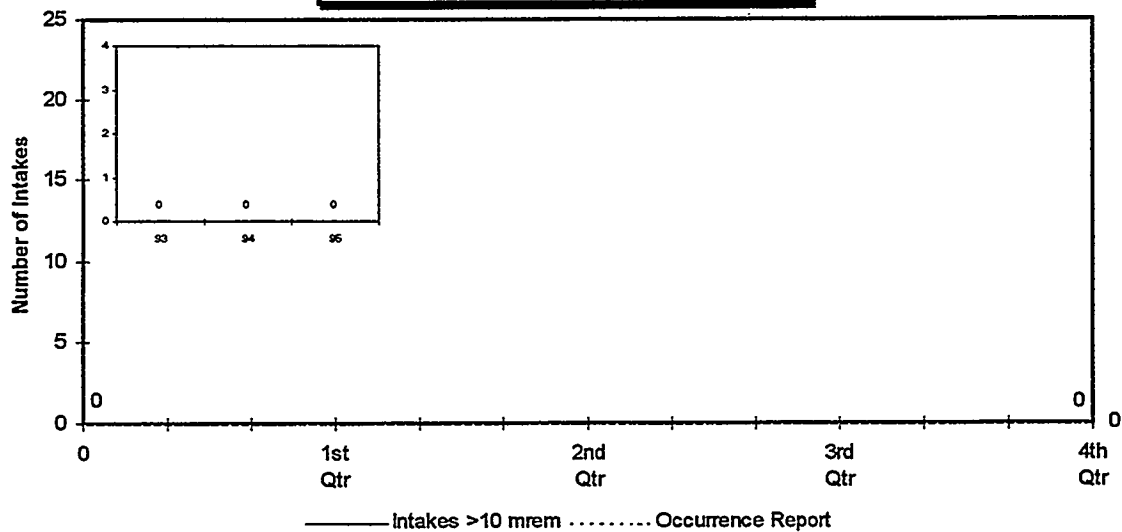
There were no additional clothing contaminations at the PBF/WROC area during the fourth quarter

**PBF/WROC CY-96 Year to Date
Airborne Radioactivity Events**

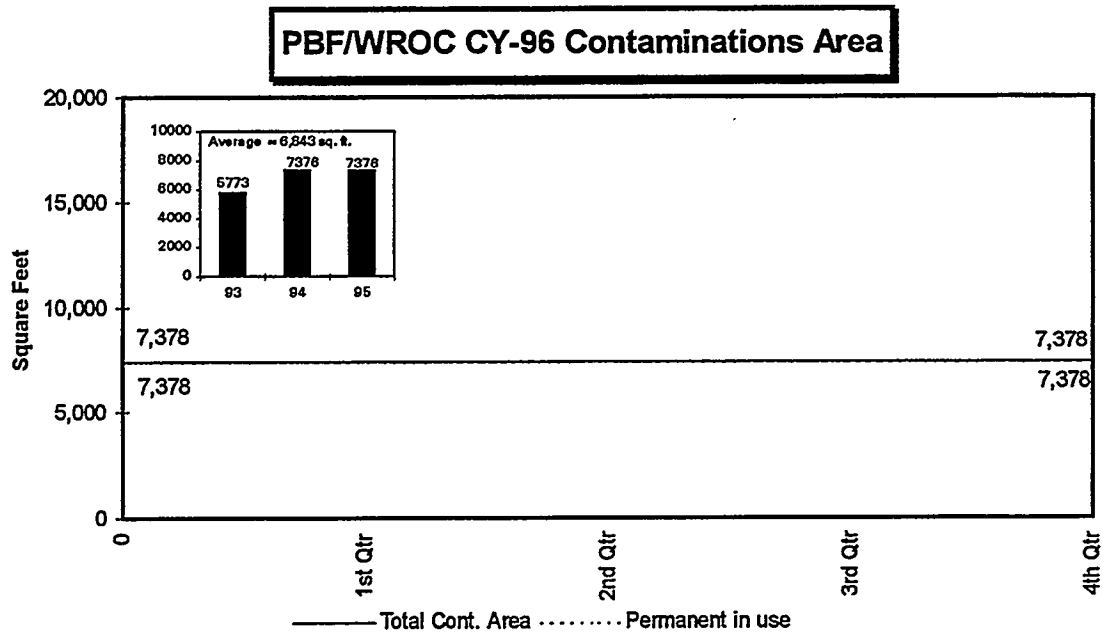


There have been no airborne activity events greater than 10 % DAC detected at the PBF/WROC area through the fourth quarter.

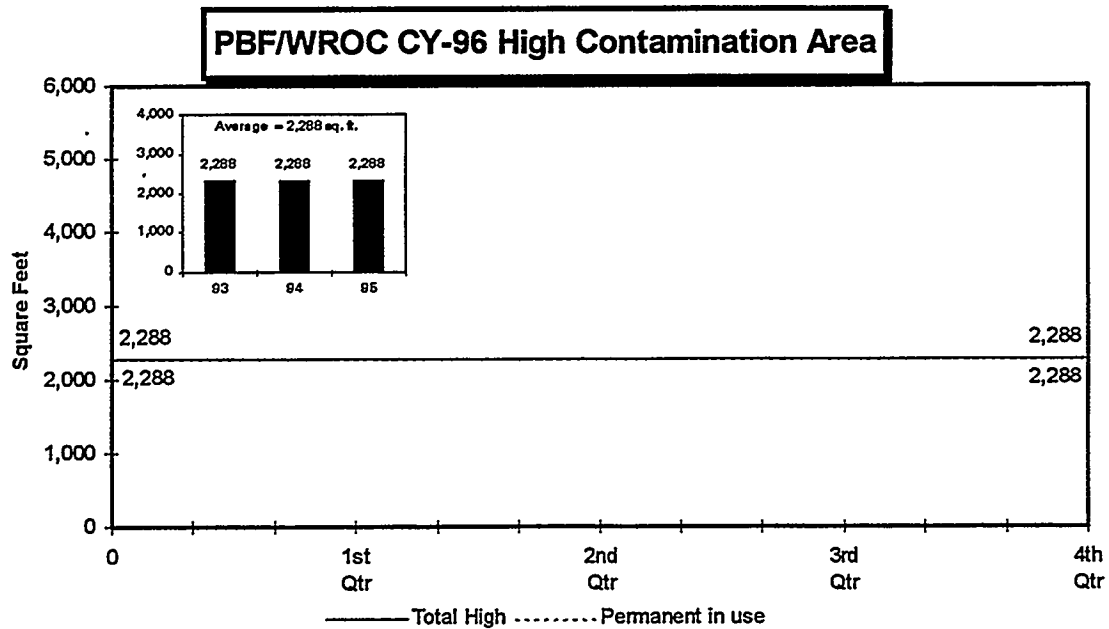
**PBF/WROC CY-96 Year to Date
Radioactive Material Intakes**



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.

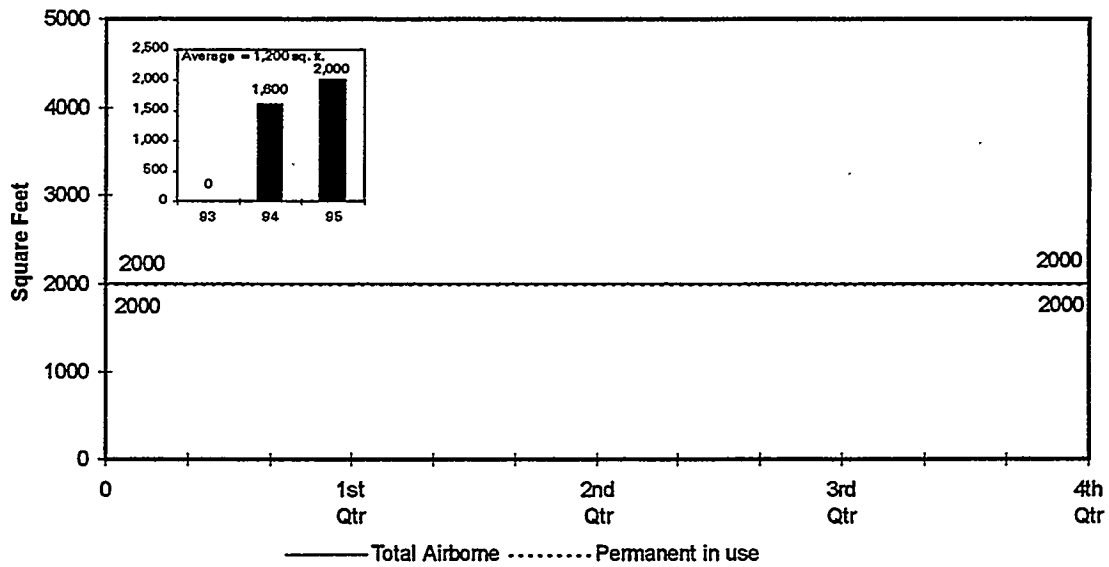


The fourth quarter Contamination Area for the PBF/WROC area remains at 7,378 square feet. All of this is considered permanent and in-use.



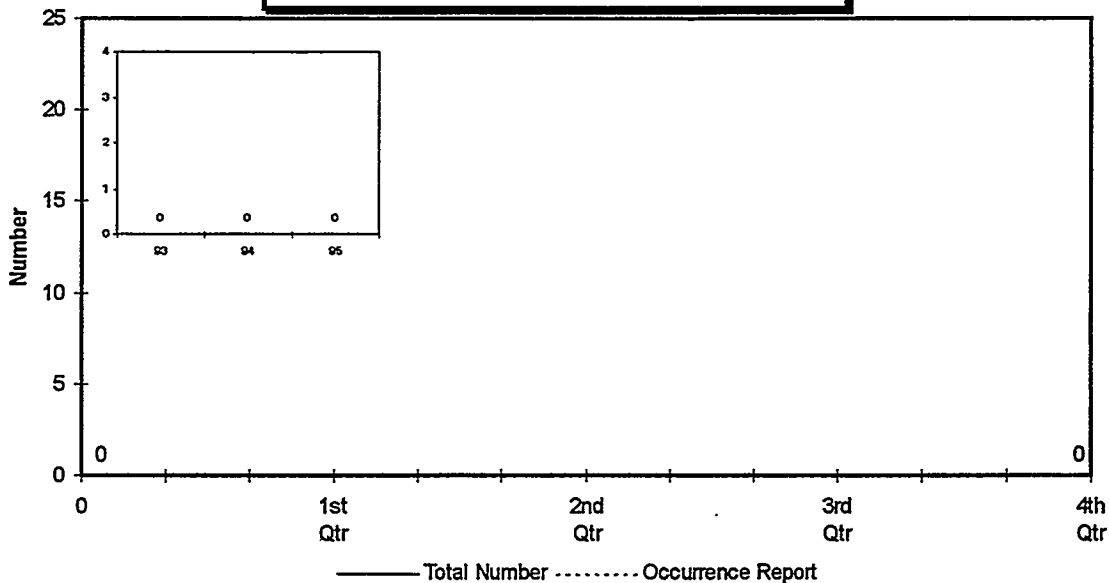
The total High Contamination Area through the end of the fourth quarter at the PBF/WROC area remains at 2,288 square feet.

PBF/WROC CY-96 Airborne Radioactivity Area



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

PBF/WROC CY-96 Year to Date Spills



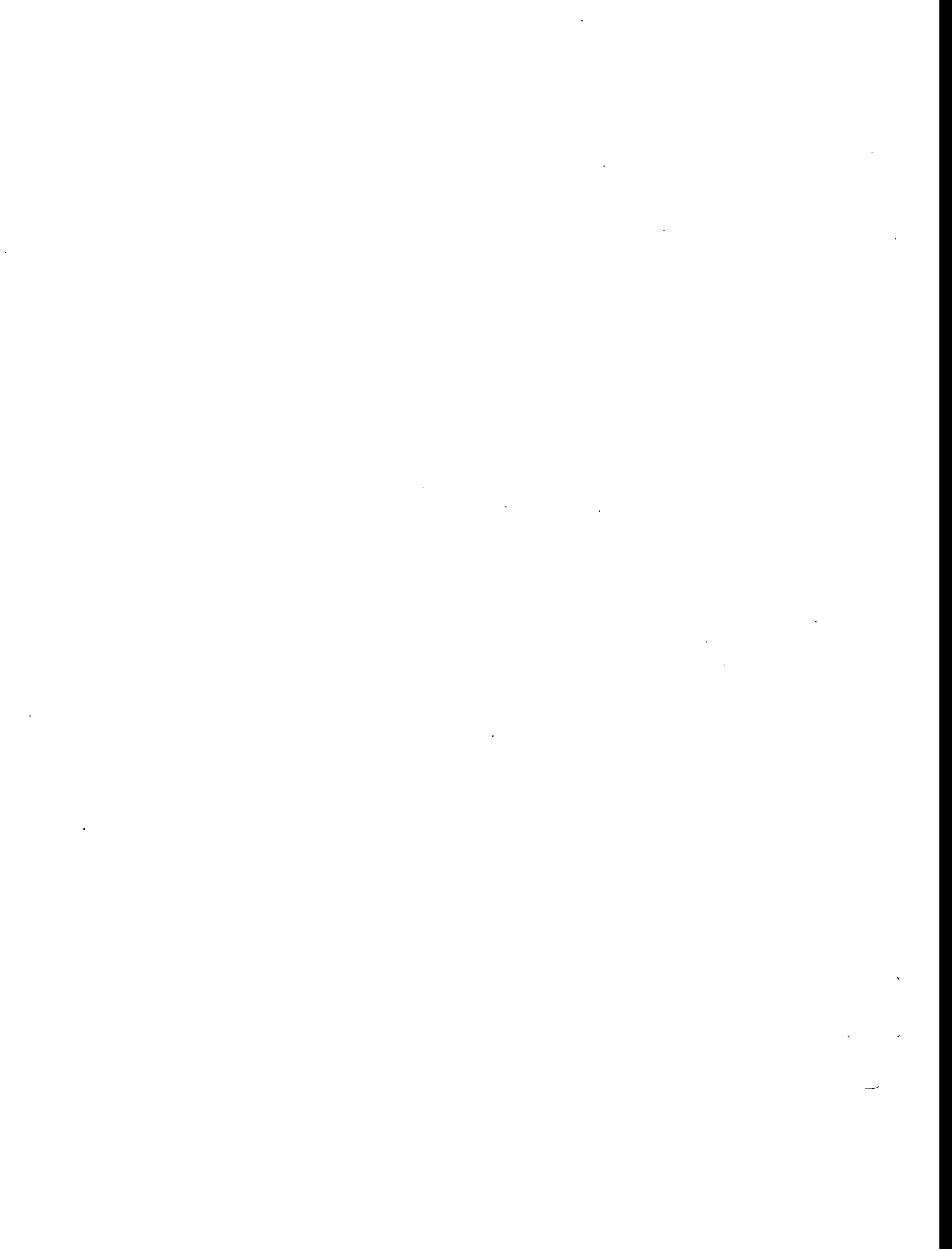
There were no spills or loss of control of radioactive material at PBF/WROC through the end of the fourth quarter.

Radioactive Waste Management Complex

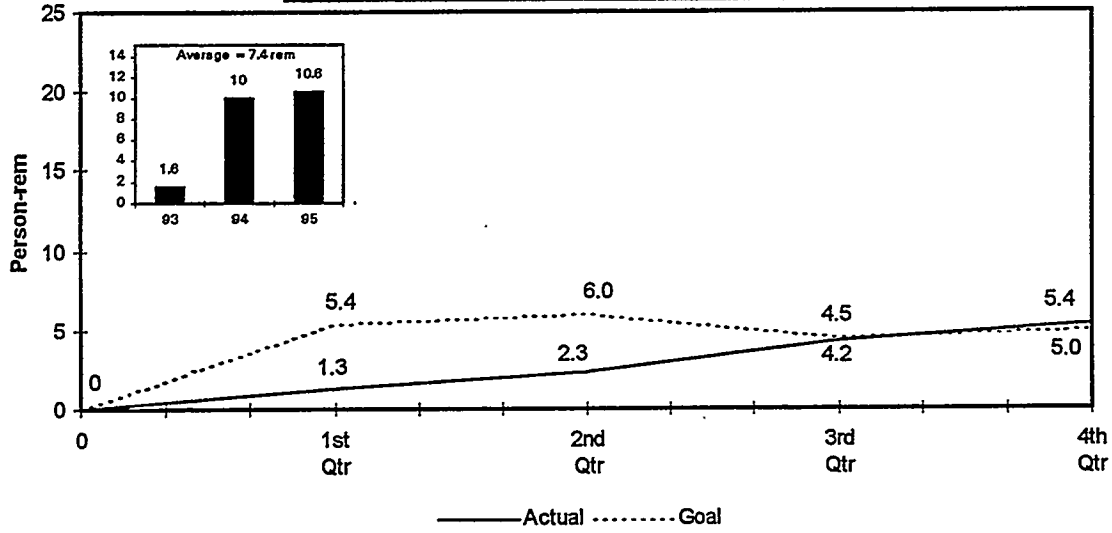
Major contributors to the fourth quarter RWMC occupational radiation exposure have been from waste transfers to new storage modules and low-level disposal operations.

During the third quarter, RWMC reduced its ALARA goal to 5 rem based on reduction of scope and implementation of additional ALARA protective measures.

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.

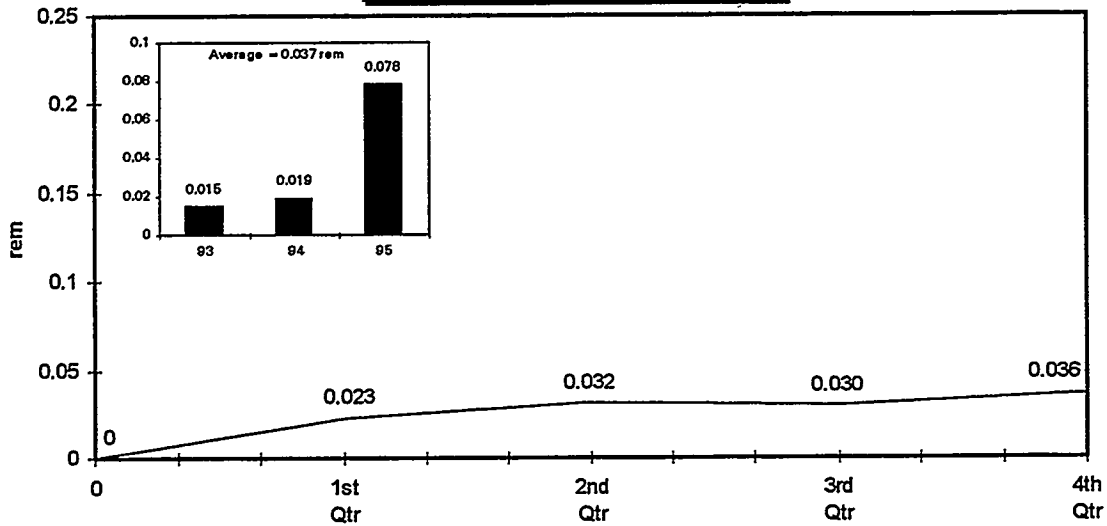


**RWMC CY-96 Collective Year to Date
Penetrating Radiation Dose**



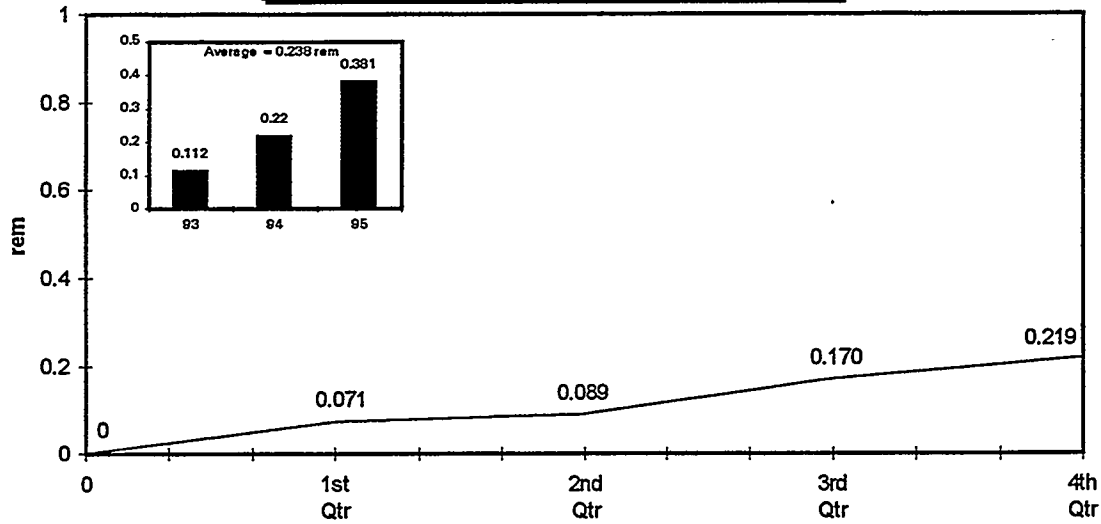
The RWMC collective penetrating radiation exposure through the end of the fourth quarter was 5.402 person-rem. The goal was adjusted downward in the third quarter to reflect work scope and ALARA protective measures.

**RWMC CY-96 Year to Date
Average Worker Dose**



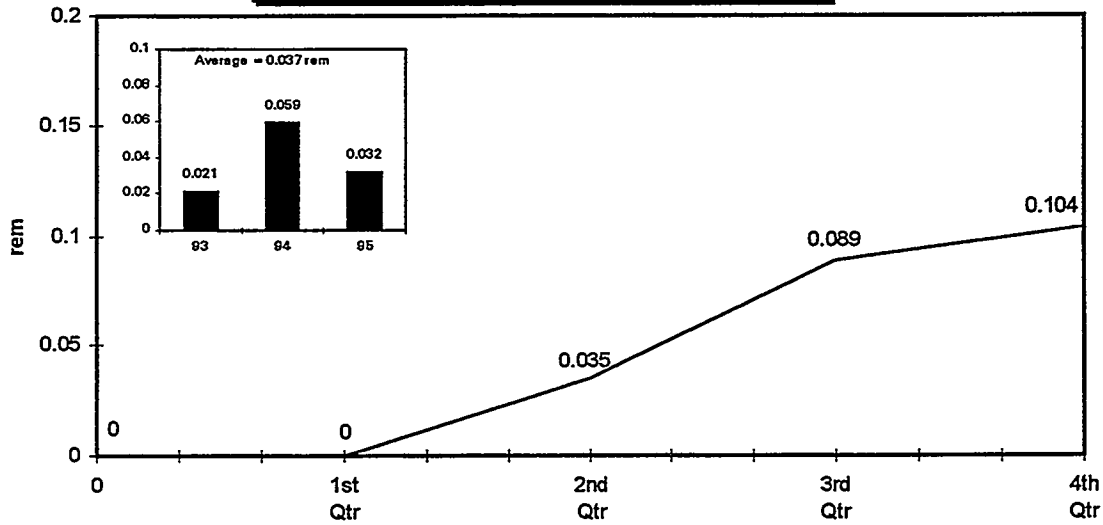
The average worker dose at the RWMC through the end of the fourth quarter was 0.036 rem

RWMC CY-96 Maximum Year to Date Penetrating Dose to a Worker



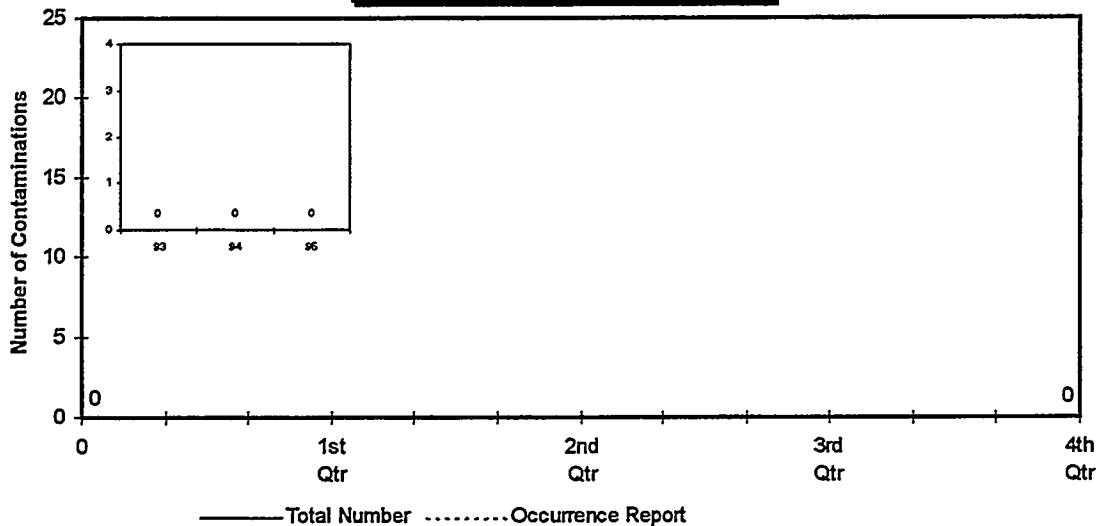
The RWMC maximum penetrating radiation dose to a worker through the end of the fourth quarter was 0.219 rem.

RWMC CY-96 Maximum Year to Date Neutron Dose to a Worker



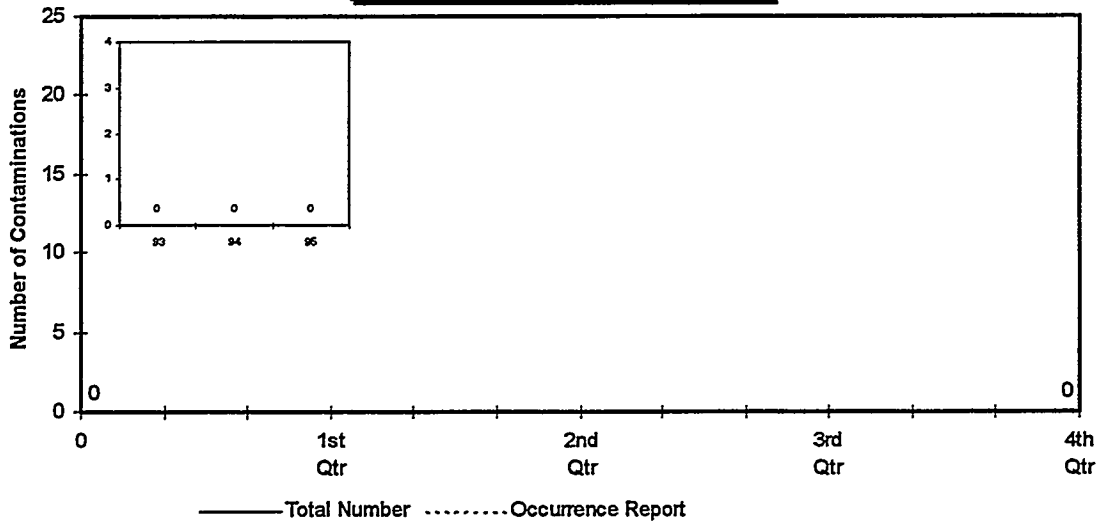
The RWMC maximum neutron radiation dose to a worker through the end of the fourth quarter was 0.104 rem.

**RWMC CY-96 Year to Date
Skin Contaminations**



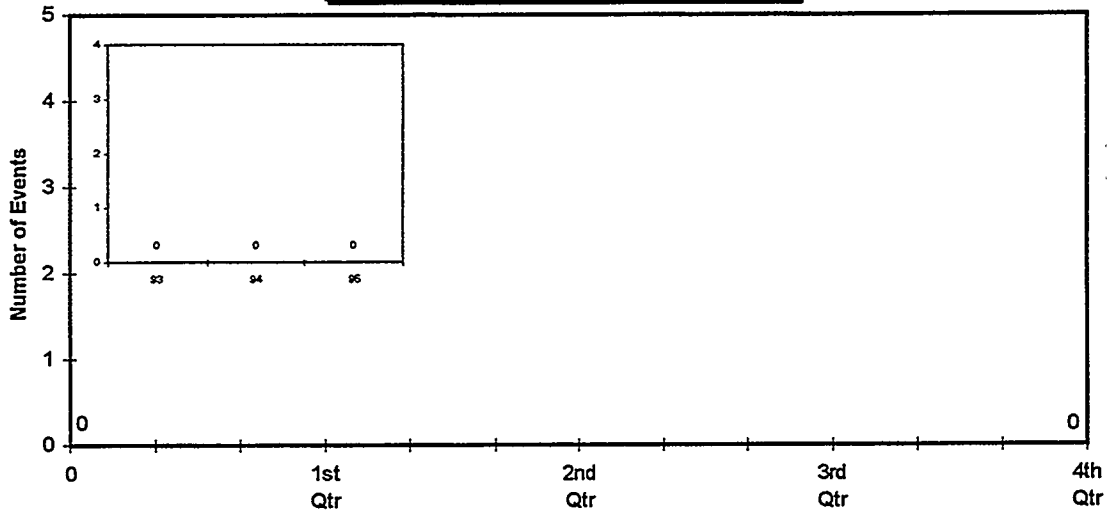
RWMC year to date skin contaminations remain at zero through the end of the fourth quarter.

**RWMC CY-96 Year to Date
Skin Contaminations**



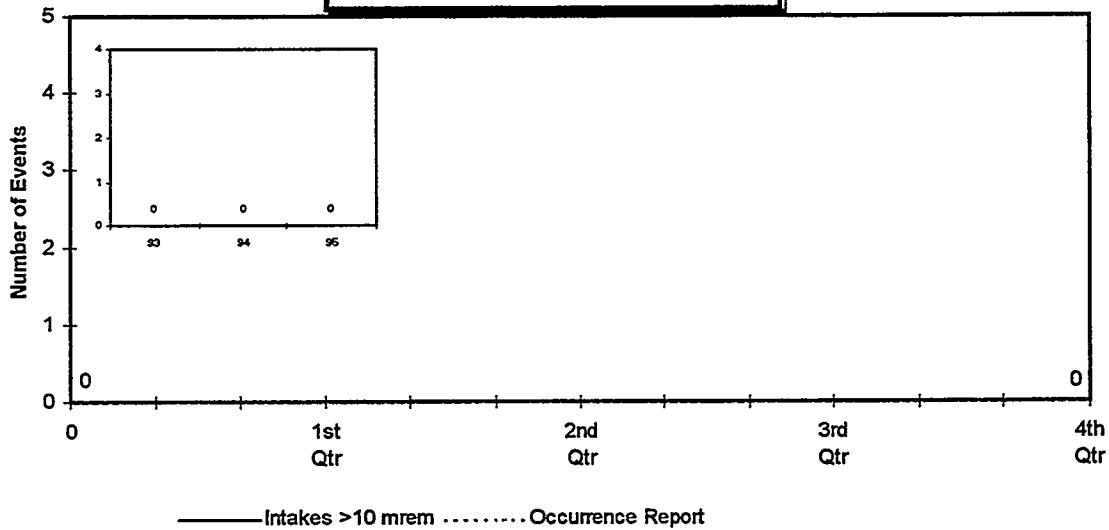
There were no clothing contaminations at the RWMC through the end of the fourth quarter.

**RWMC CY-96 Year To Date
Airborne Radioactivity Events**



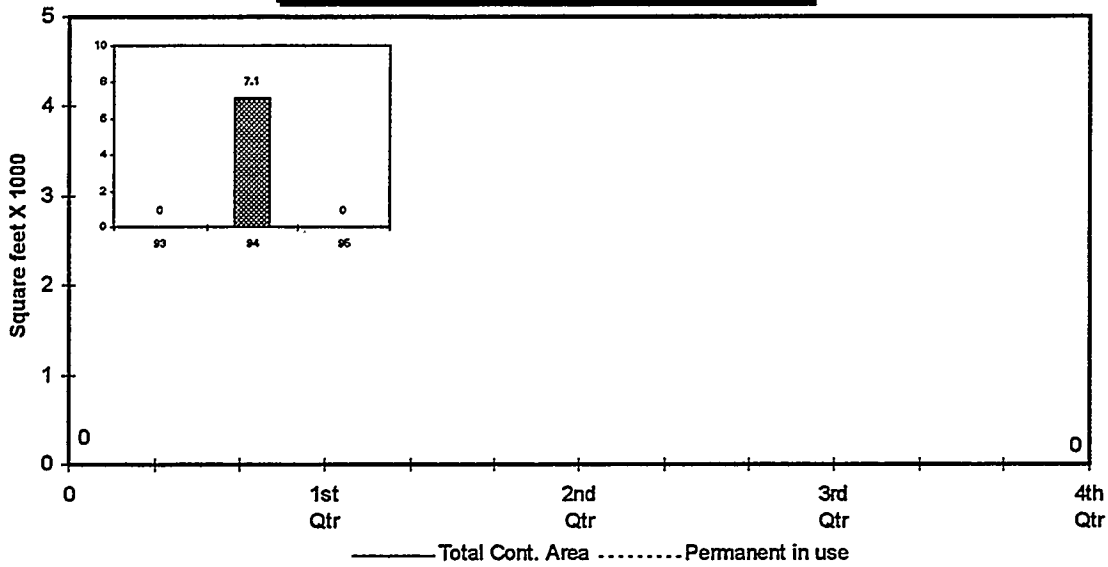
No airborne activity greater than 10 % DAC was detected at RWMC in areas not posted as Airborne Radioactivity Areas through the fourth quarter.

**RWMC CY-96 Year to Date
Radioactive Material Intakes**



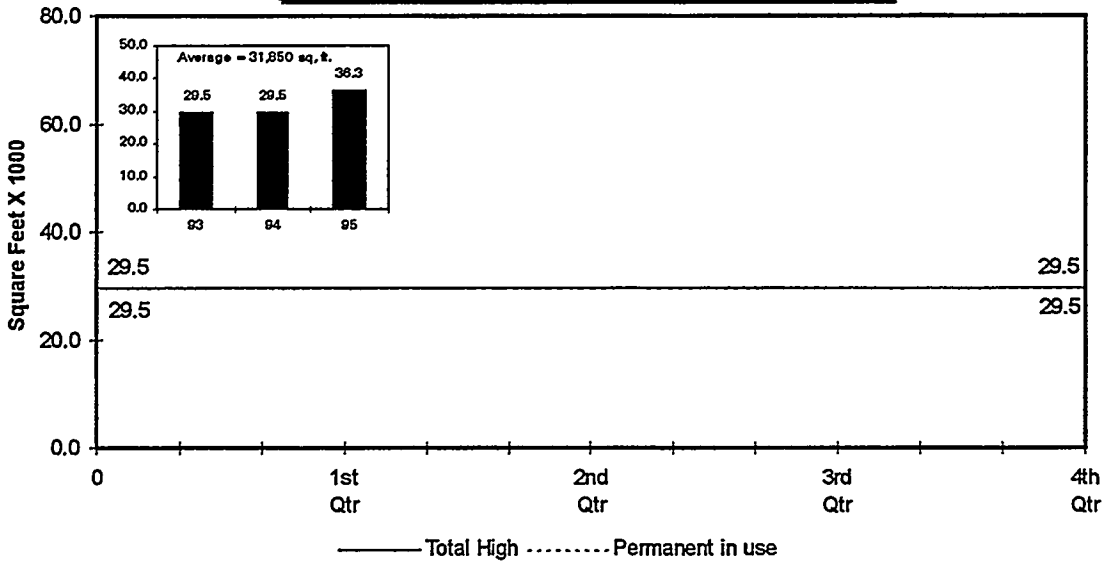
There were no positive bioassays indicating an intake of radioactive material that resulted in a dose assessment of 10 mrem or greater at the RWMC through the end of the fourth quarter.

RWMC CY-96 Contamination Area



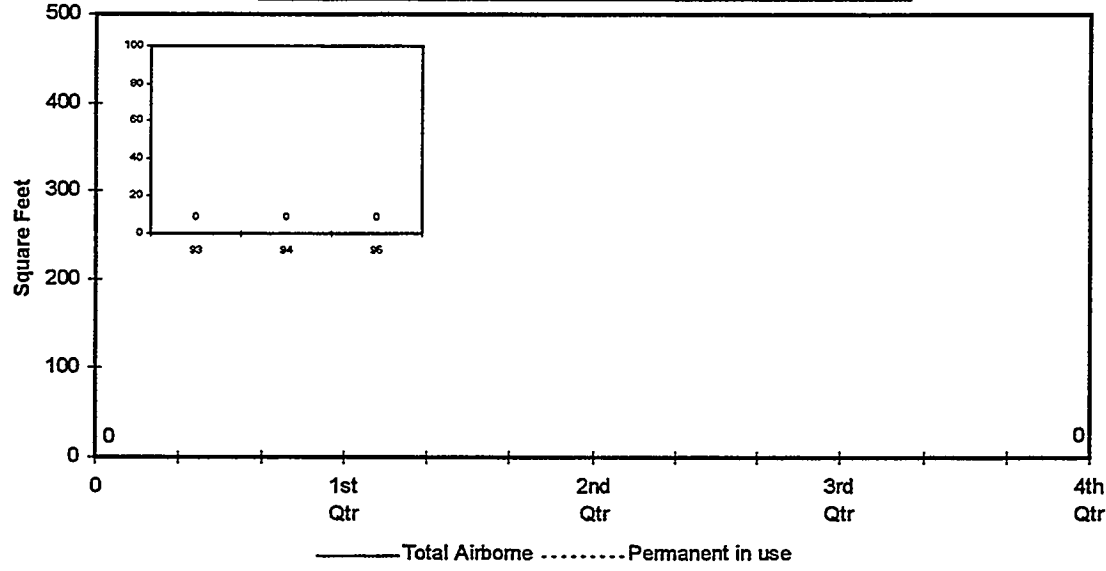
The total Contamination Area at the RWMC through the end of the fourth quarter remains at zero square feet.

RWMC CY-96 High Contamination Area



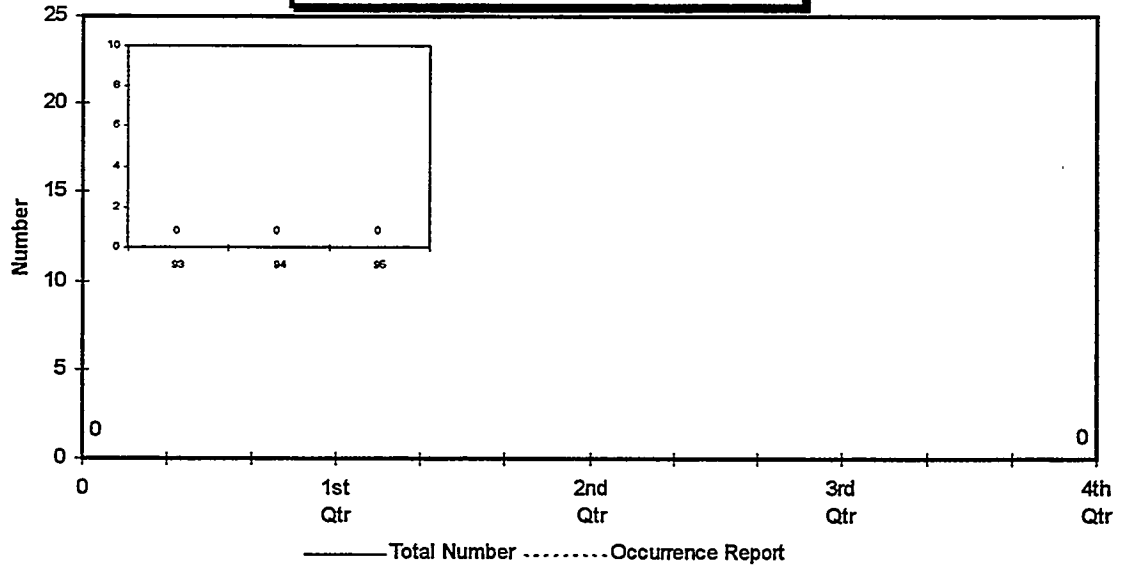
The total High Contamination Area at the RWMC through the end of the fourth quarter was 29,525 square feet. All of this area is designated as permanent and in-use.

RWMC CY-96 Airborne Radioactivity Area



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

RWMC CY-96 Year to Date Spills



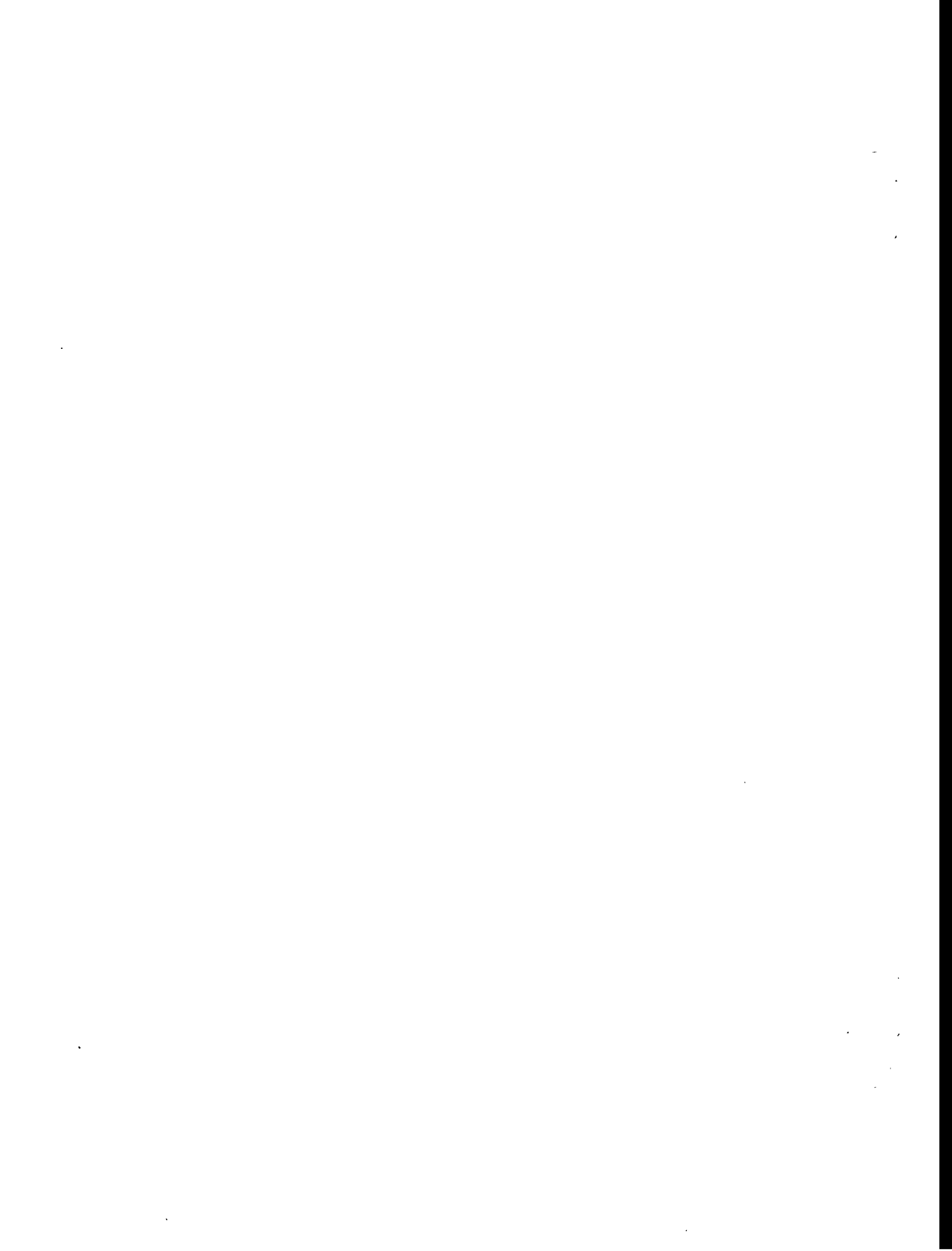
There were no spills or loss of control of radioactive material during the fourth quarter at the RWMC.

Test Reactor Area

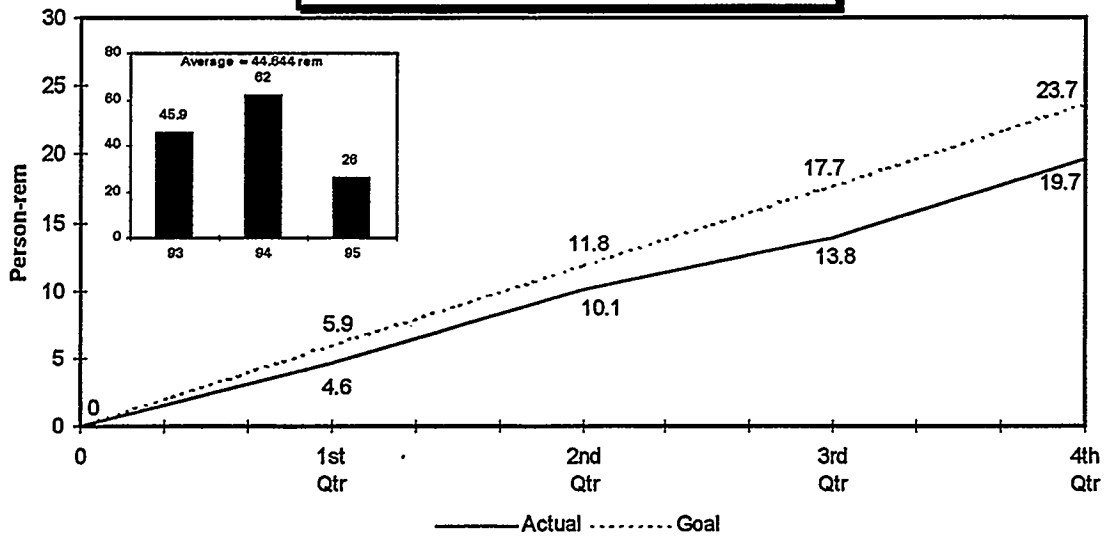
Outages at the Test Reactor Area are responsible for the major portions of dose and the contamination events during the third quarter.

There were two skin contaminations at TRA. One was reportable. Detail is contained in OR ID-LITC-ATR-1996-0025.

Eight clothing contaminations resulted in four ORs. ID-LITC-ATR-1996-0024, 0023, 0030, and 0032

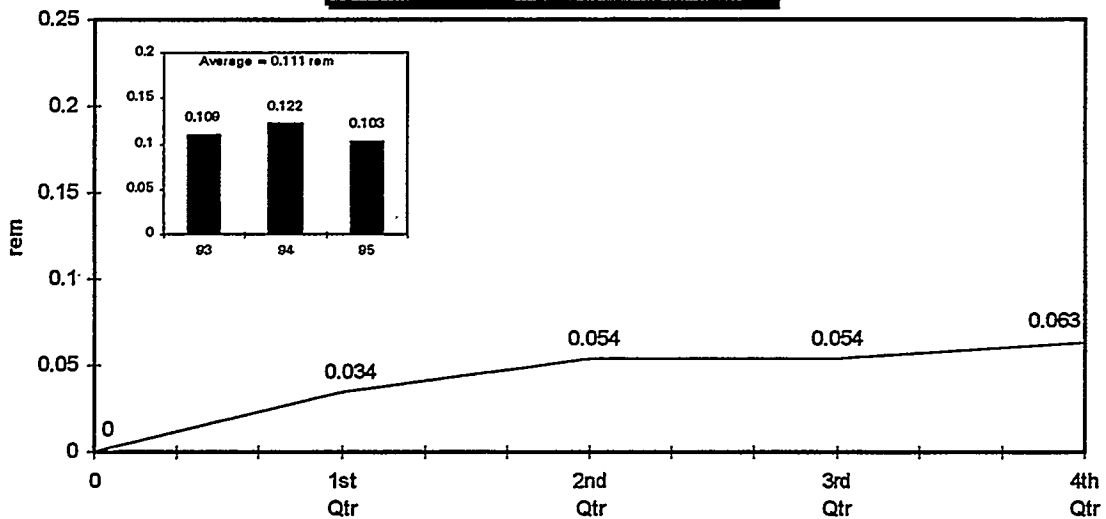


**TRA CY-96 Collective Year to Date
Penetrating Radiation Dose**



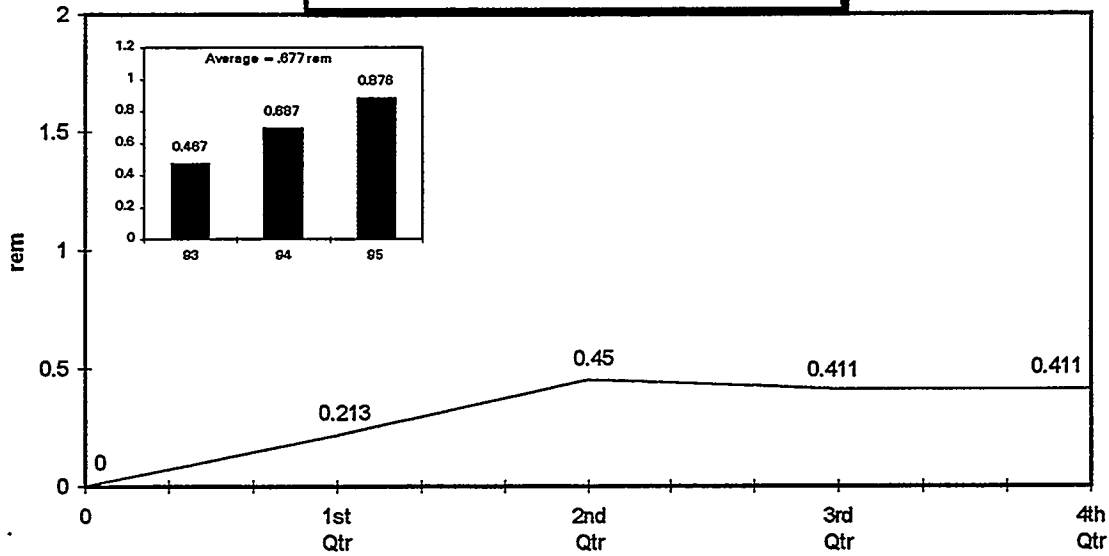
Collective penetrating radiation dose through the end of the fourth quarter at the TRA was 19.679 person rem.

**TRA CY-96 Average Year To
Date Worker Dose**



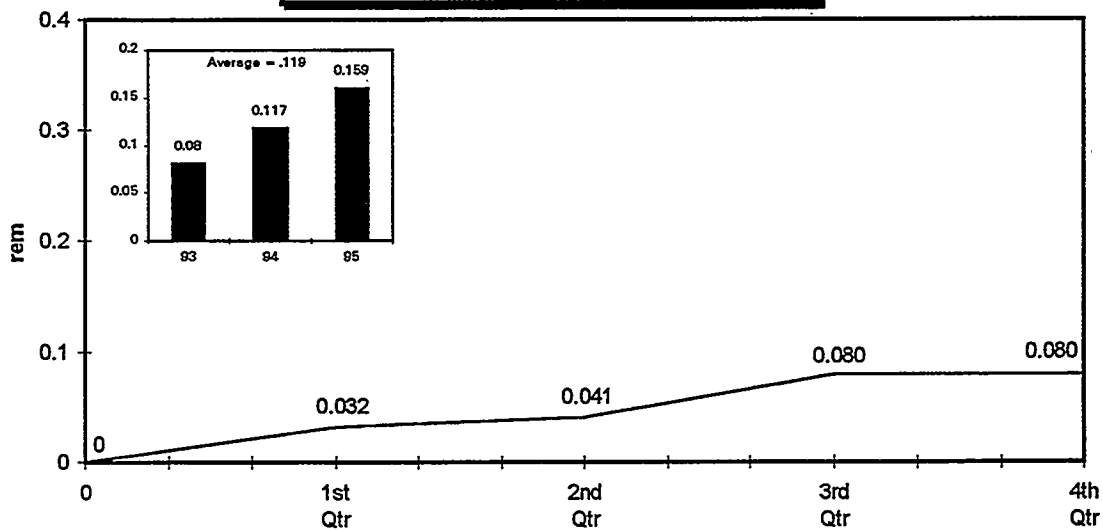
The average worker dose at the TRA through the end of the fourth quarter was 0.063 rem.

TRA CY-96 Maximum Year to Date Penetrating Dose to a Worker



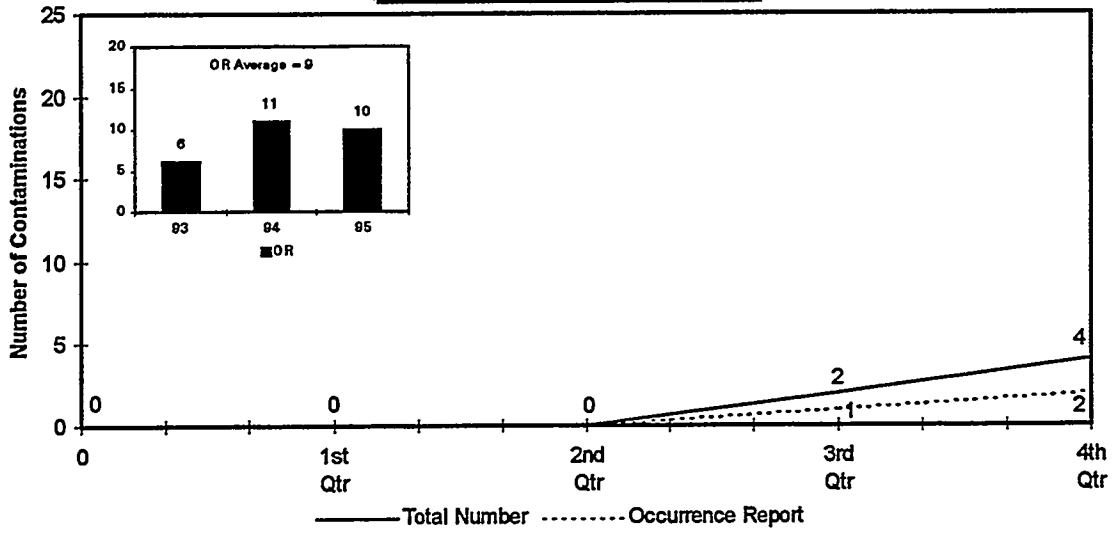
The maximum penetrating radiation dose to a TRA worker through the end of the fourth quarter was 0.411 rem.

TRA CY-97 Maximum Year to Date Neutron Dose to a Worker



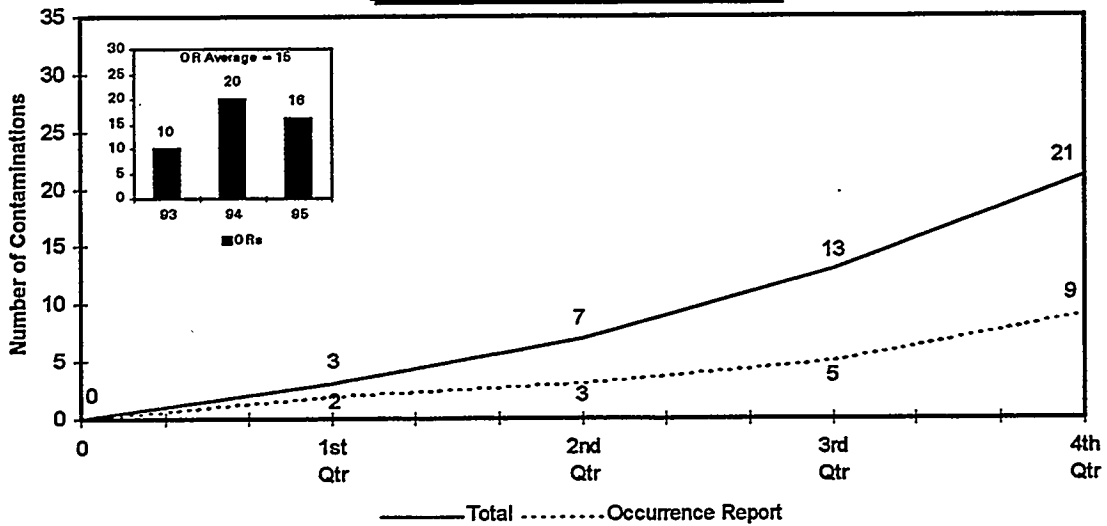
The TRA maximum neutron radiation dose to a worker through the end of the fourth quarter was 0.080 rem.

**TRA CY-96 Year to Date
Skin Contaminations**



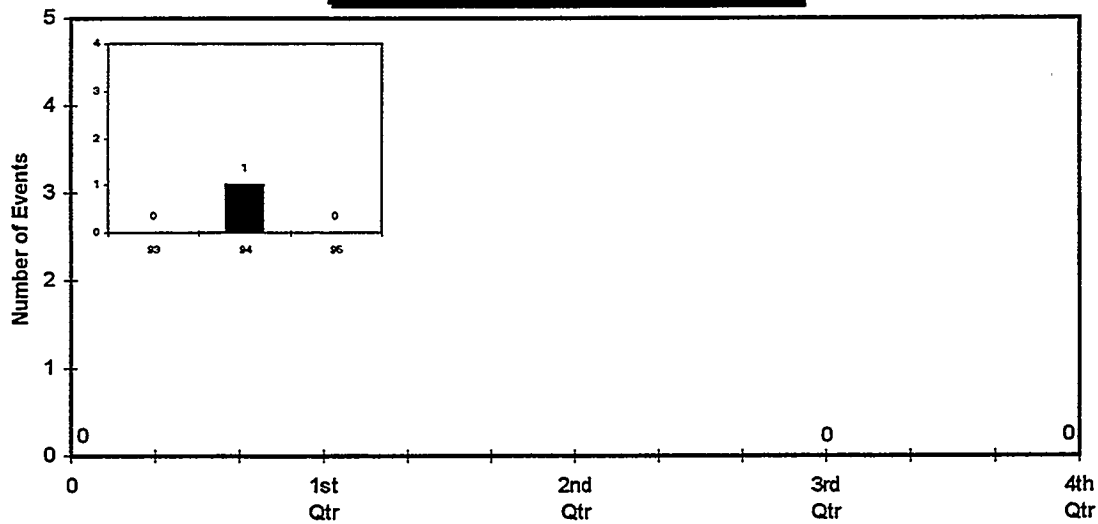
There were two skin contaminations at the TRA during the fourth quarter, one of which resulted in an OR, OR-LITC-ATR-1996-0025. There were no contaminated wounds or facial contaminations

**TRA-CY-96 Year to Date
Clothing Contaminations**



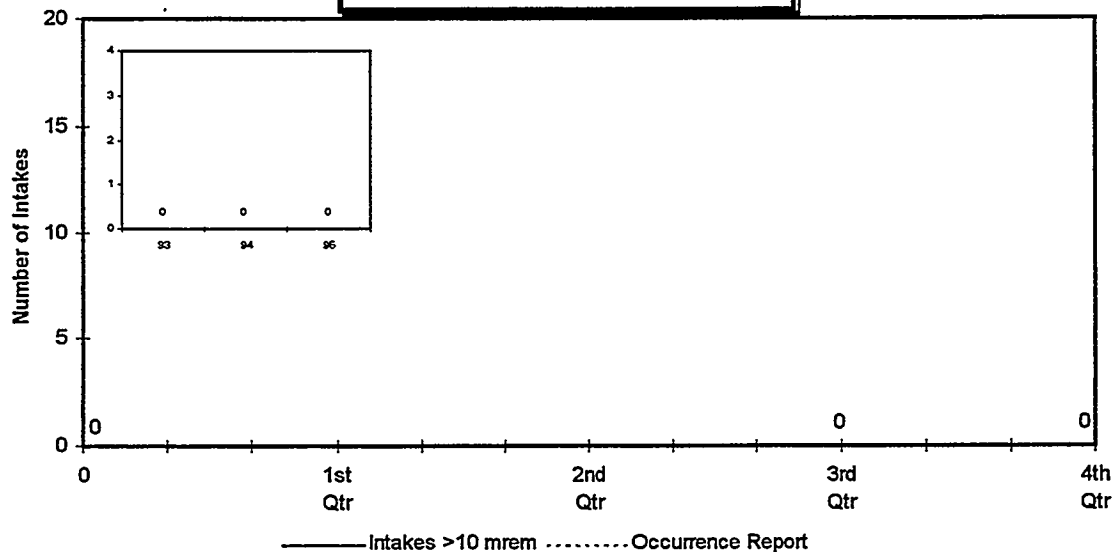
There were eight clothing contaminations at the TRA during the fourth quarter. four resulted in ORs, ID-LITC-ATR-1996-0023, 0024, 0030, and 0032.

**TRA CY-96 Year to Date
Airborne Radioactivity Events**



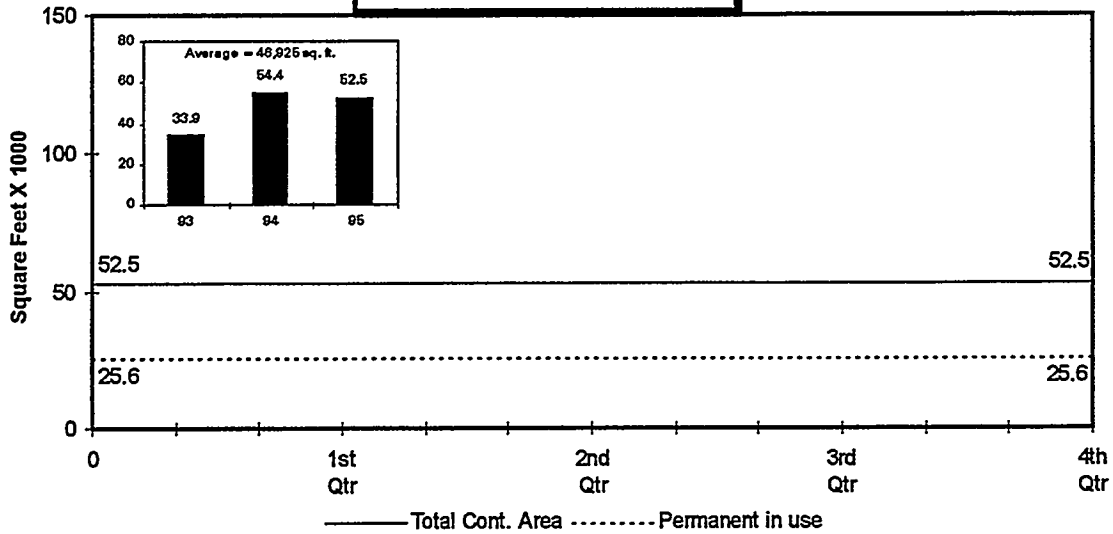
No airborne activity greater than 10 % DAC was detected at the TRA in areas not already posted as Airborne Radioactivity Areas during the fourth quarter

**TRA CY-96 Year to Date
Radioactive Material Intakes**



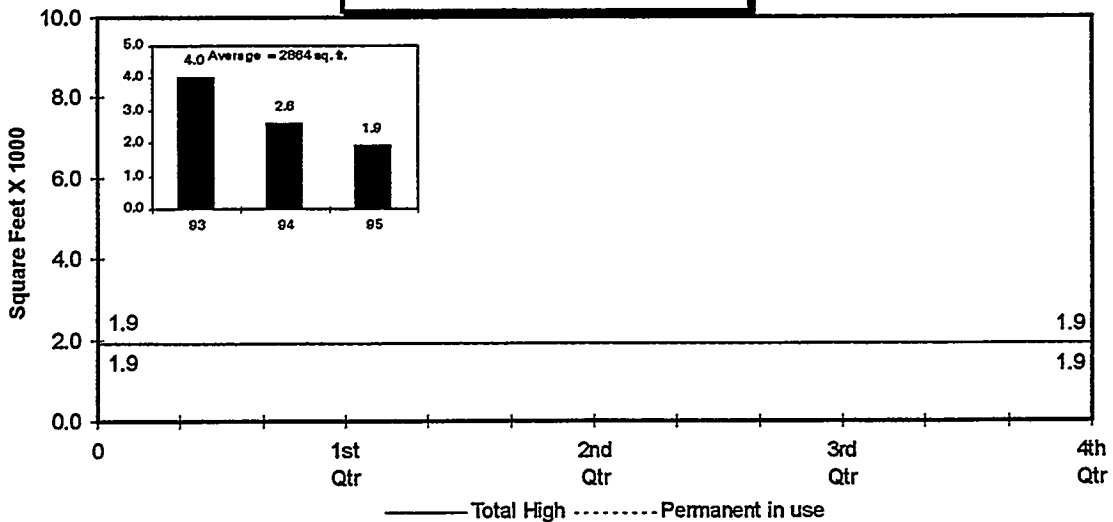
There were no positive bioassays indicating an intake of radioactive material that resulted in a dose assessment of 10 mrem or greater at the TRA during the fourth quarter.

TRA CY-96 Year to Date Contamination Area



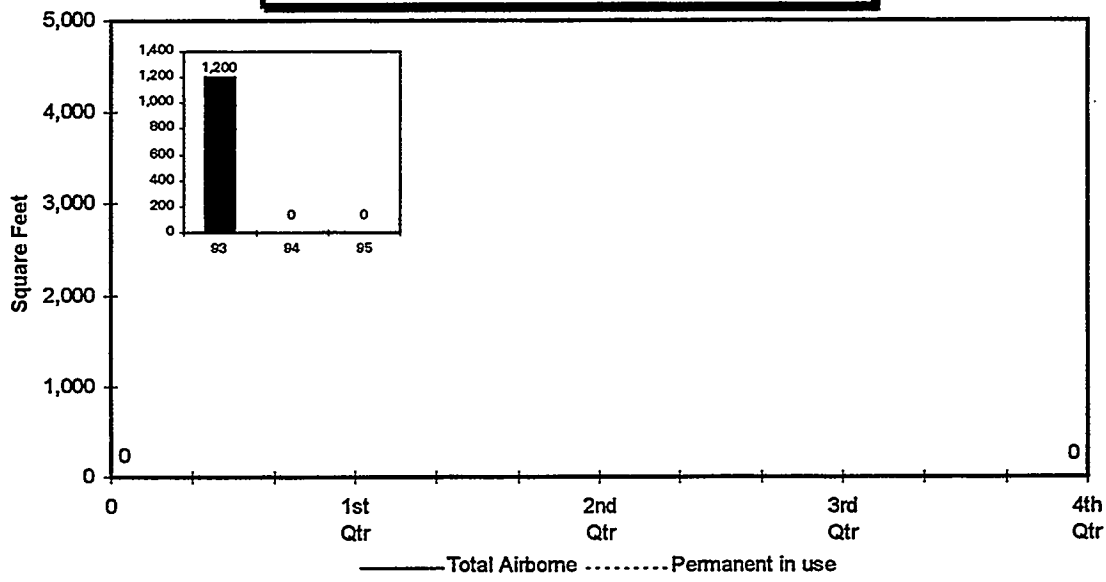
Total Contamination Area for the TRA remained constant through the fourth quarter at 52,516 square feet. 25,619 square feet is designated as permanent and in-use.

TRA CY-96 Year to Date High Contamination Area



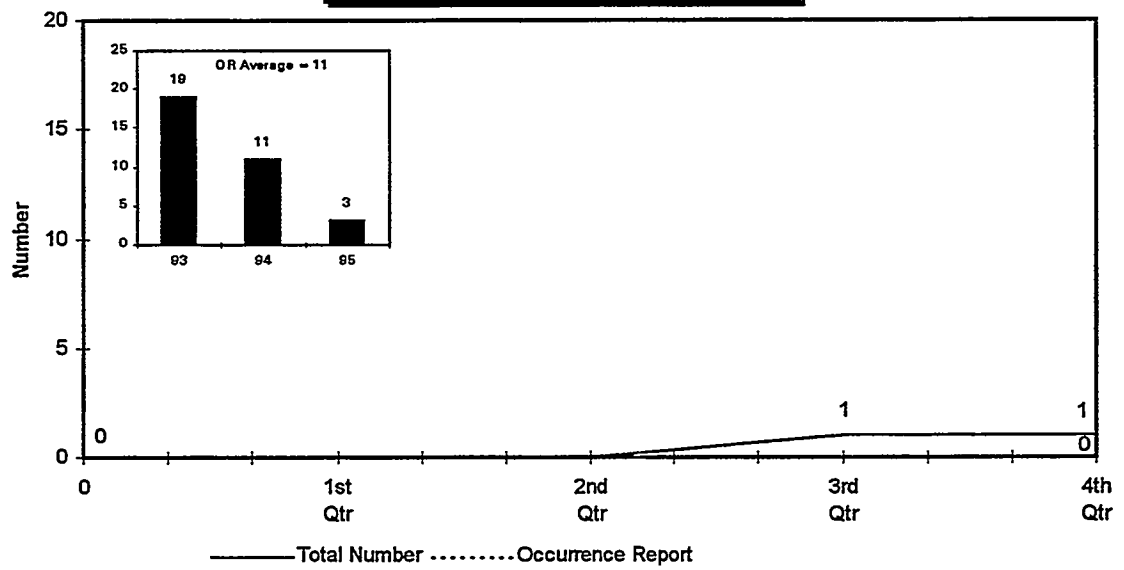
Total High Contamination Area for the TRA at the end of the fourth quarter was 1,991 square feet. All of this area is designated as permanent and in-use.

TRA CY-96 Airborne Radioactivity Area



Total Airborne Radioactivity Area at the TRA at the end of the fourth quarter was zero square feet.

TRA CY-96 Year to Date Spills

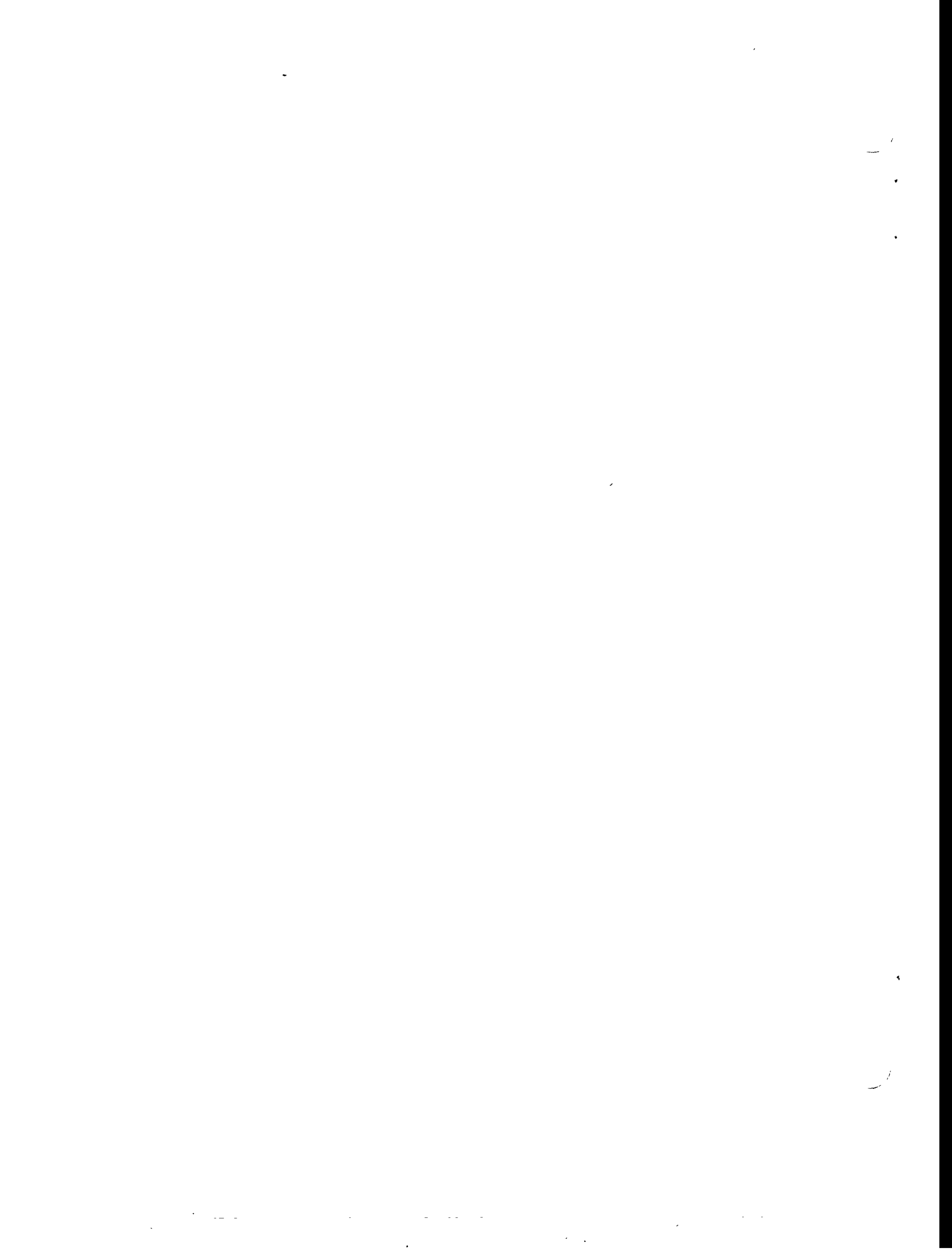


There were no spills or loss of control of radioactive material at the TRA during the fourth quarter.

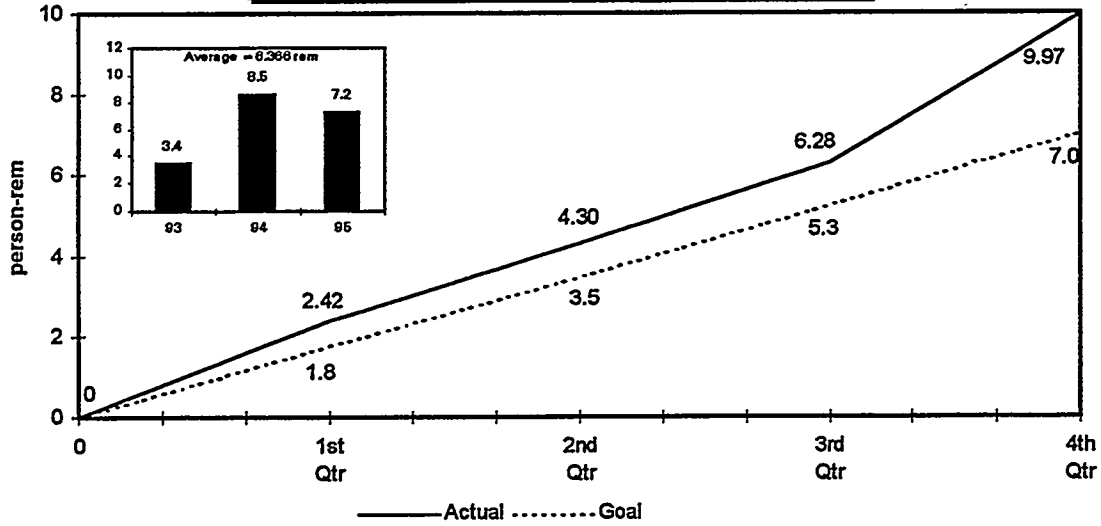
Test Area North & Specific Manufacturing Capability

Summary

1. TAN hot cell decontamination and filter change out, handling and shipment preparation of Dry Rod Consolidation Technology (DRCT) project fuel assembly containers, cask disassembly, V tank inspections, routine armor manufacturing and routine activities account for the dose contribution at TAN/SMC.
2. Higher than expected exposures were experienced with the DRCT project.
3. There are 6 indications of positive bioassay currently undergoing evaluation for dose assessment. These will not be included in the charts until they are validated.

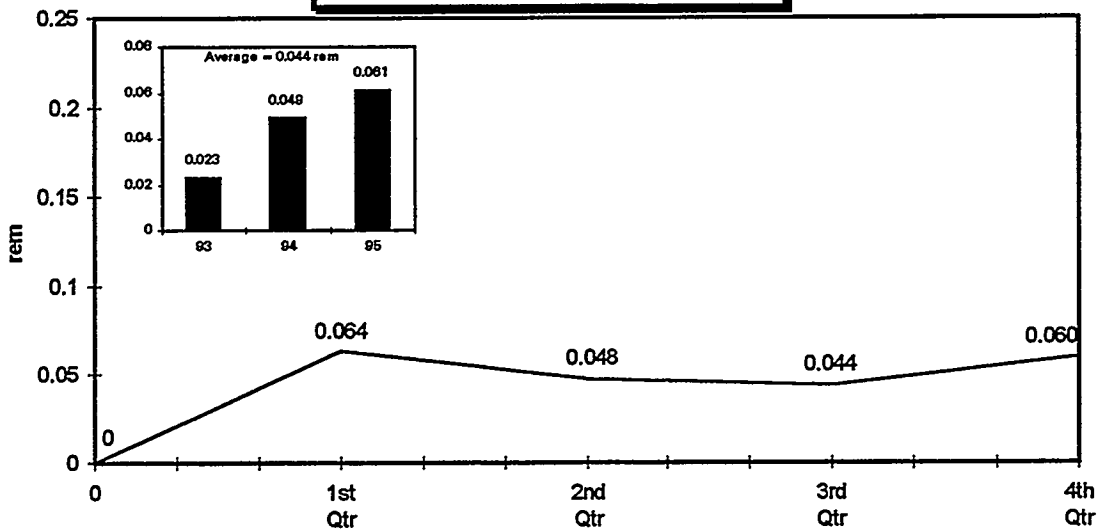


**TAN/SMC CY-96 Collective Year to Date
Penetrating Radiation Dose**



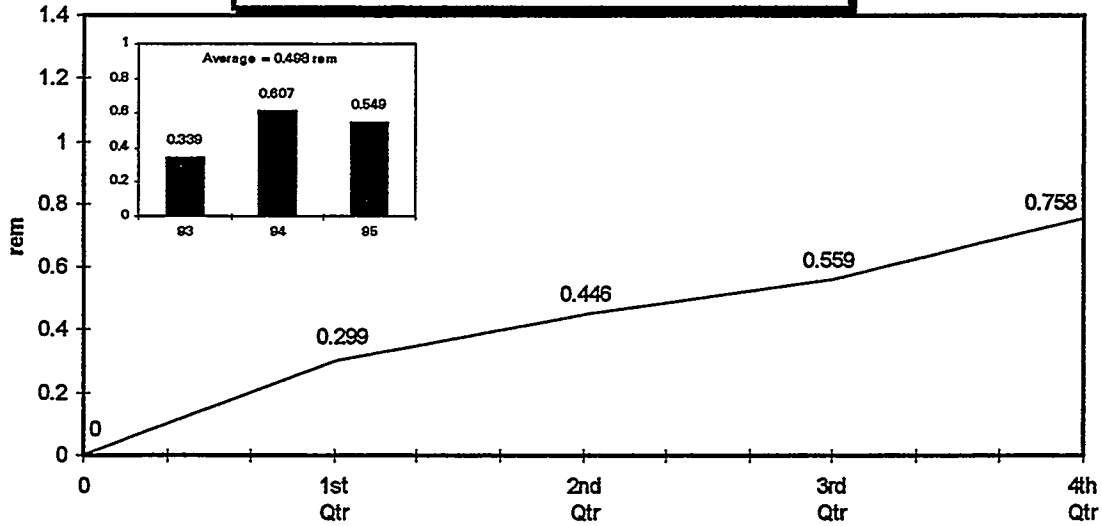
TAN and SMC collective penetrating radiation dose through the end of the fourth quarter was 9.971 person-rem. Higher than expected exposure resulted from problems associated with the DRCT project.

**TAN/SMC CY-96 Year to Date
Average Worker Dose**



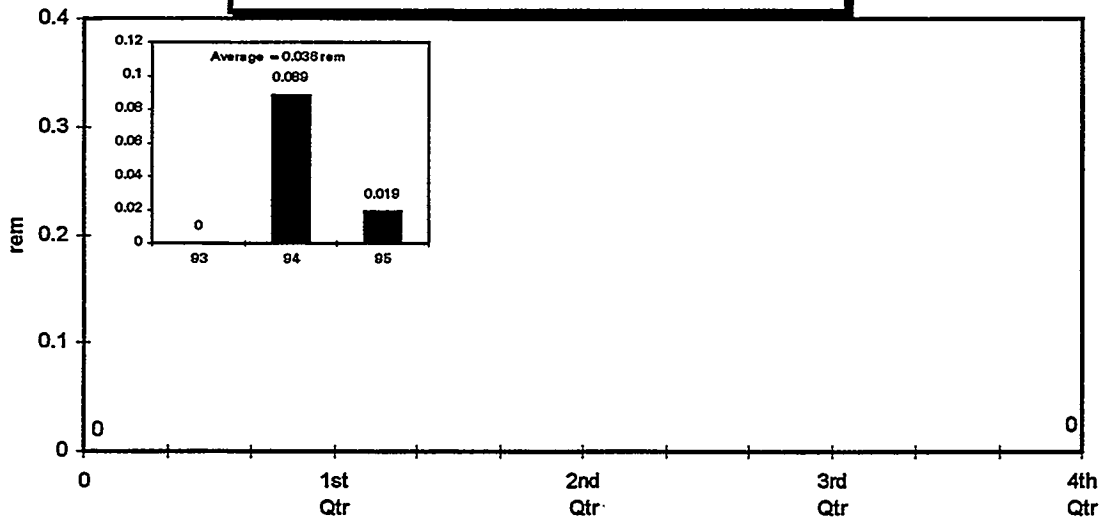
The average worker dose at the TAN/SMC through the end of the fourth quarter was 0.060 rem.

TAN/SMC CY-96 Maximum Year to Date Penetrating Dose to a Worker



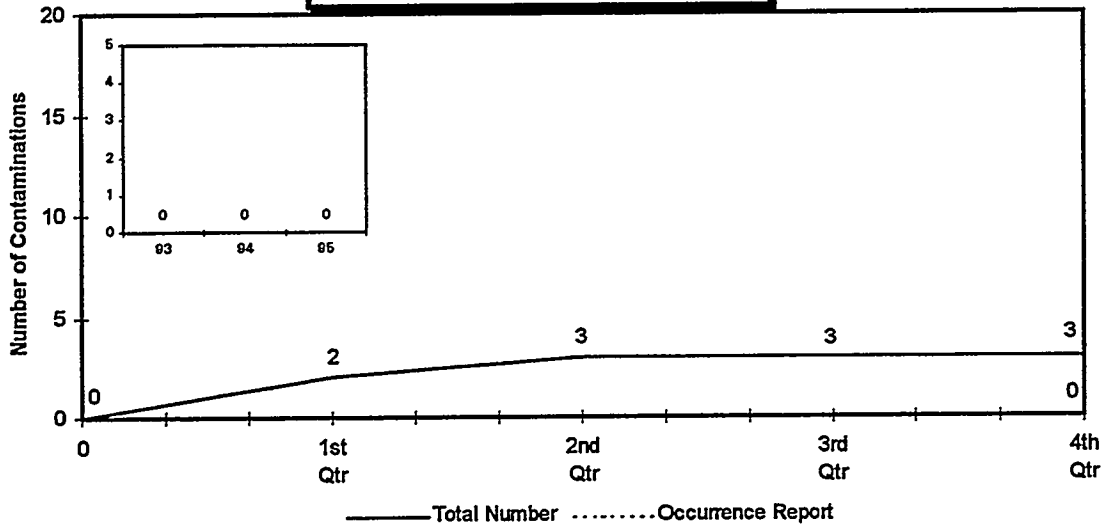
The year to date maximum penetrating radiation dose to a worker through the end of the fourth quarter at TAN/SMC was 0.758 rem.

TAN/SMC CY-96 Maximum Year to Date Neutron Dose to a Worker



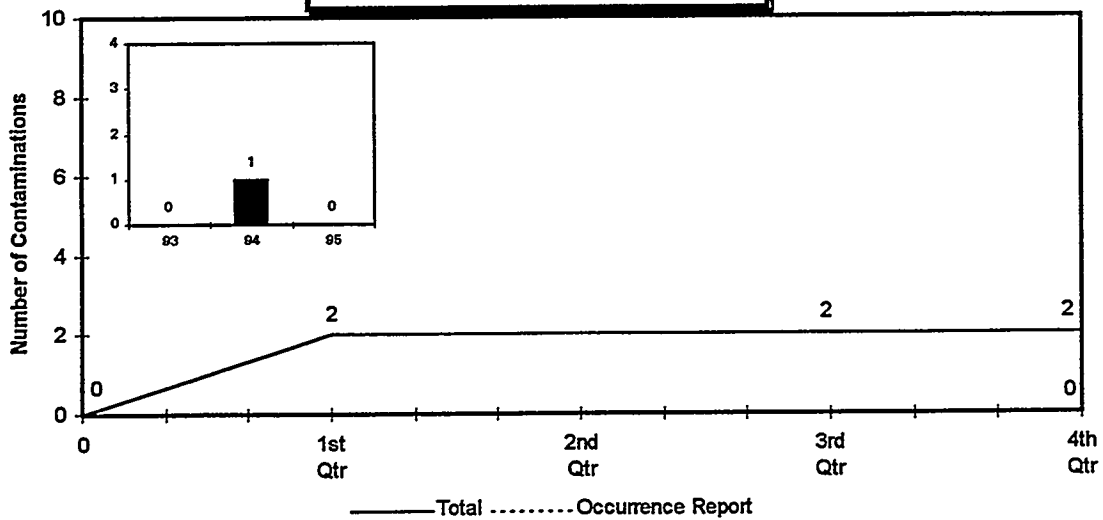
The TAN/SMC maximum neutron dose to a worker through the end of the fourth quarter was zero rem.

**TAN/SMC CY-96 Year to Date
Skin Contaminations**



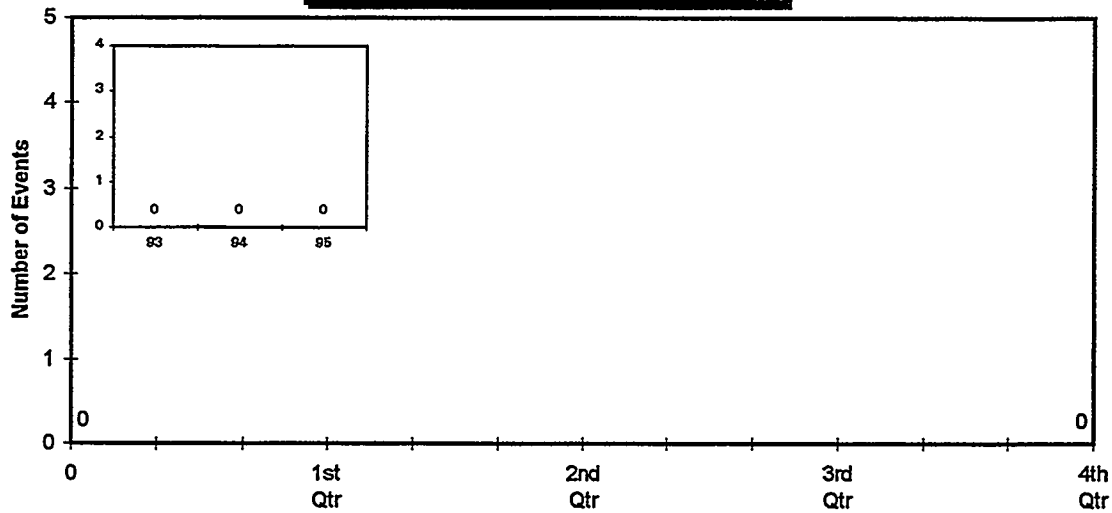
There were no additional skin contaminations at TAN/SMC through the end of the fourth quarter. No facial contaminations or contaminated wounds occurred during the quarter.

**TAN/SMC CY-96 Year to Date
Clothing Contaminations**



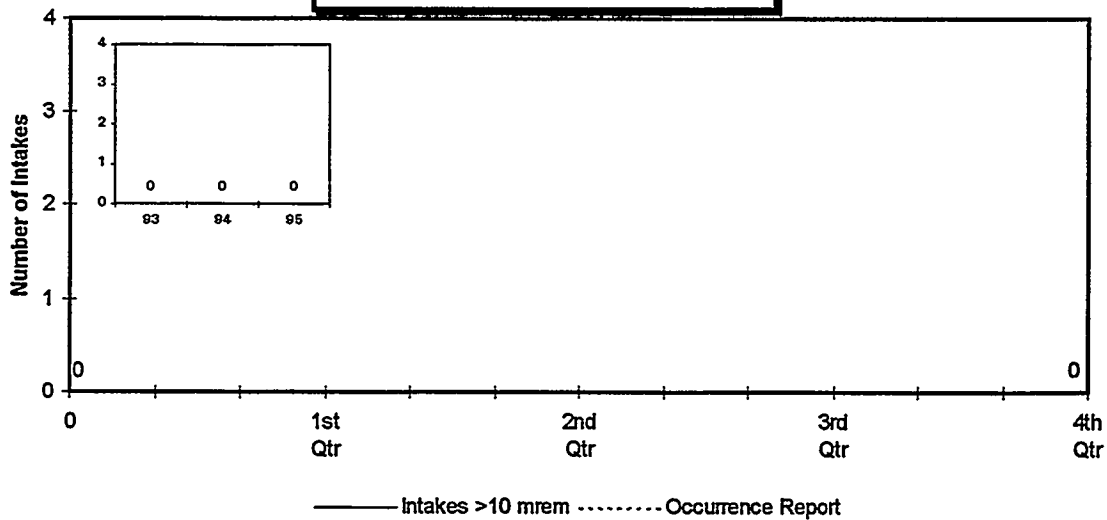
No additional clothing contaminations have occurred at TAN/SMC during the fourth quarter.

**TAN/SMC CY-96 Year to Date
Airborne Radioactivity Events**



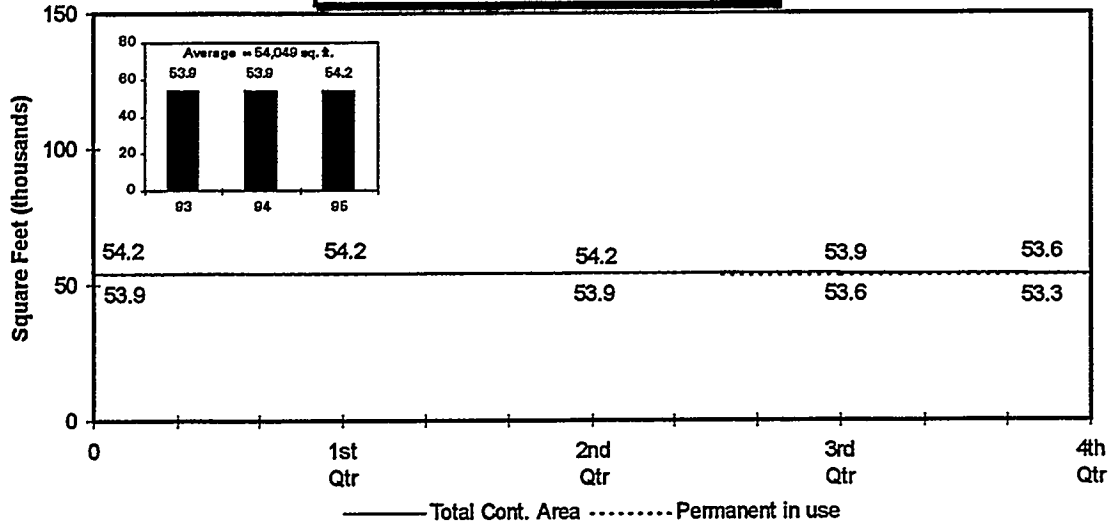
No airborne activity event greater than 10 % DAC was detected at TAN/SMC in areas not posted as Airborne Radioactivity Areas during the fourth quarter.

**TAN/SMC CY-96 Year to Date
Radioactive Material Intakes**



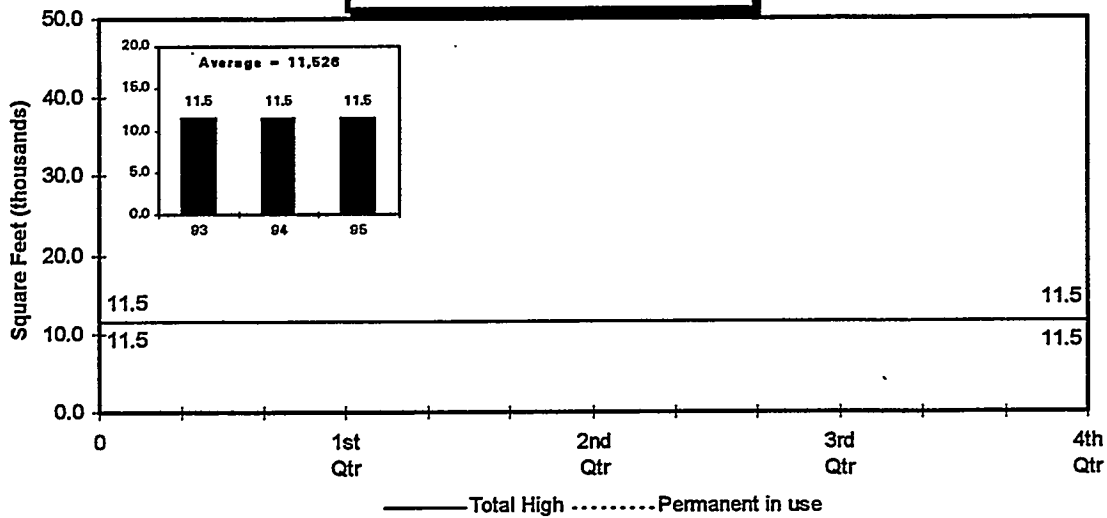
There were no positive bioassays indicating intakes of radioactive material that were verified to have been 10 mrem or greater at TAN/SMC during the fourth quarter.

TAN/SMC CY-96 Year to Date Contamination Area



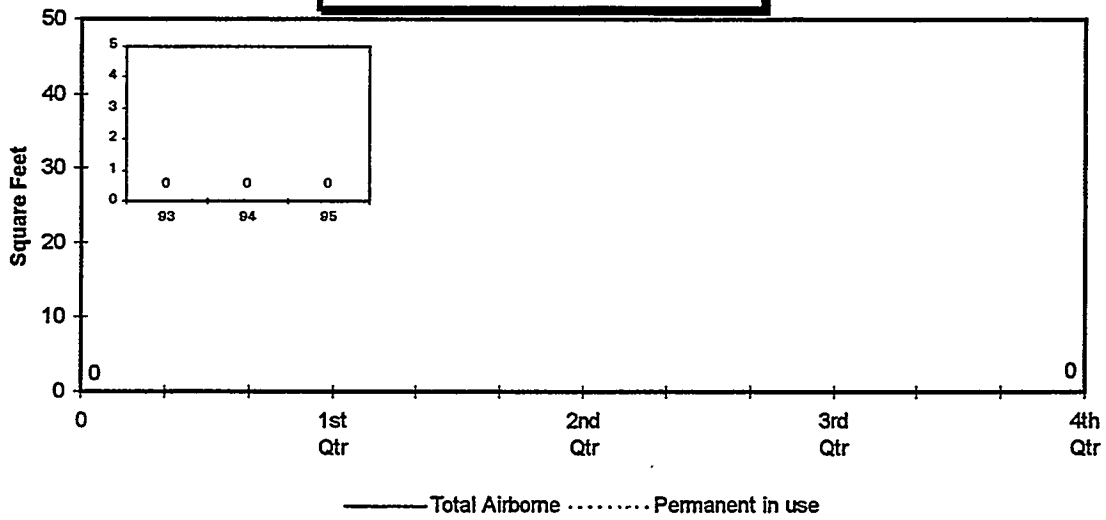
The total Contamination Area at TAN/SMC at the end of the fourth quarter was 53,626 square feet. 53,326 square feet was designated as permanent and in-use.

TAN/SMC CY-96 High Contamination Area



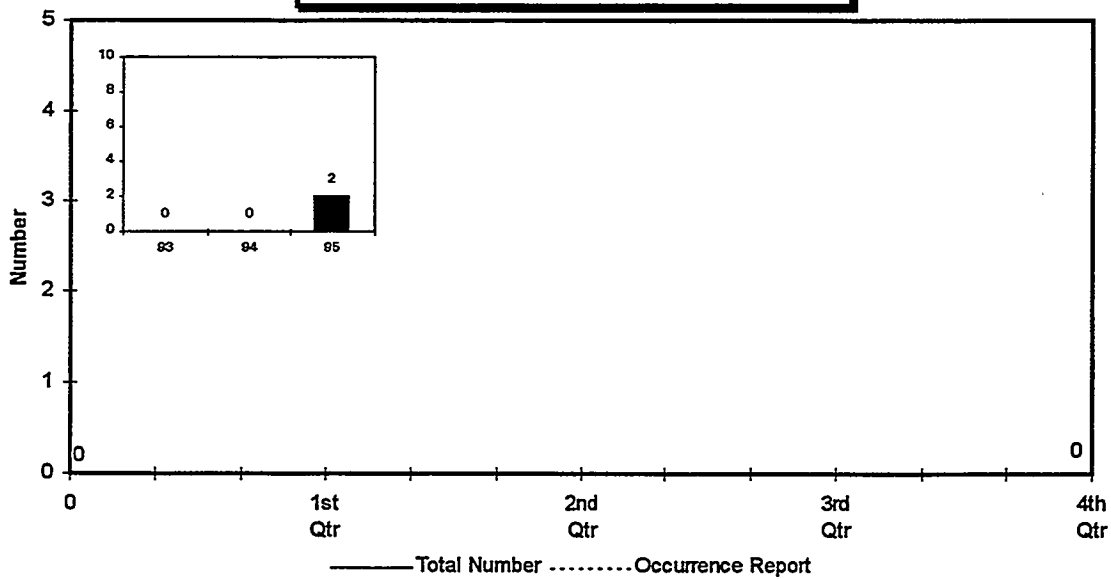
The total High Contamination Area at TAN/SMC at the end of the fourth quarter was 11,526 square feet. All of this area was designated as permanent and in-use.

**TAN/SMC CY-96
Airborne Radioactivity Area**



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

TAN/SMC CY-96 Year to Date Spills



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