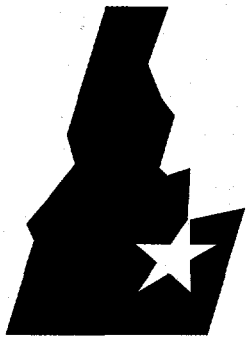

*Idaho National Engineering Laboratory*

INEL-95/0274 (3rd QTR)

December 1995



# Idaho National Engineering Laboratory Radiological Control Performance Indicator Report

## Third Quarter Calendar Year 1995

*Lockheed Idaho Technologies Company*

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# Idaho National Engineering Laboratory Radiological Control Performance Indicator Report

## Third Quarter - Calendar Year 1995

R. Reavis

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

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Prepared By: R. Reavis, Principal Engineer/Scientist — 12-1-95 Date

Approved By: G. L. Courtney, Manager, Radiological Control — 12/1/95 Date

## DISCLAIMER

# INEL RADIOLOGICAL CONTROL PERFORMANCE INDICATOR REPORT
## Third Quarter - 1995

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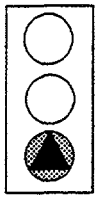
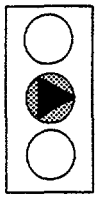
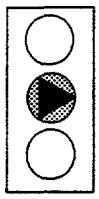
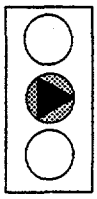
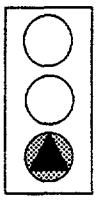
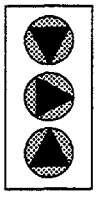
Third Quarter 1995

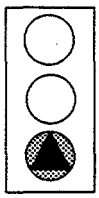
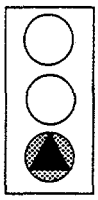
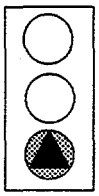
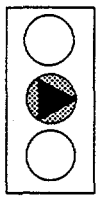
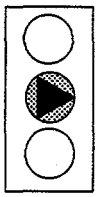
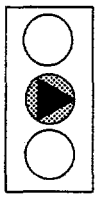
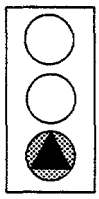
| | | Actual | Goal or Average |
|---|---|---|---|
| Collective Year-to-Date Penetrating Radiation Dose |  | 211.1 person-rem | 354 person-rem (Goal) |
| Year-to-Date Average Worker Dose |  | 0.149 rem | 0.149 rem (3 Year Average) |
| Maximum Year-to-Date Penetrating Dose to a Worker |  | 1.844 rem | * 1.5 rem (Goal) |
| Maximum Year-to-Date Neutron Dose to a Worker |  | 0.155 rem | 0.112 rem (3 Year Average) |
| Year-to-Date Skin Contaminations |  | 22 | 32 (3 Year Average) |

Legend

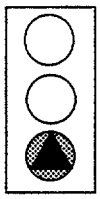
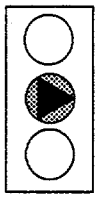
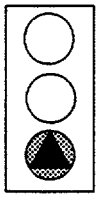
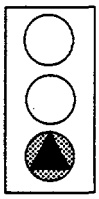
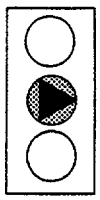
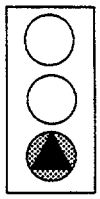
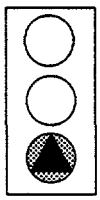
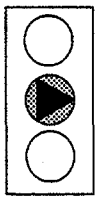
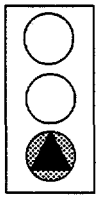
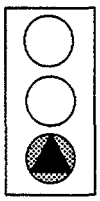
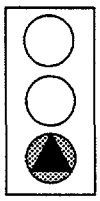
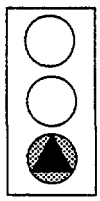
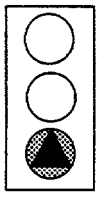
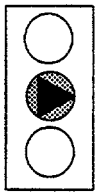
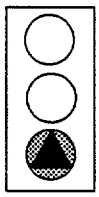
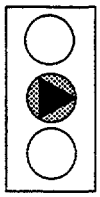
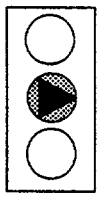
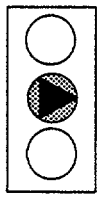
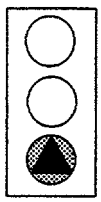
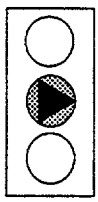
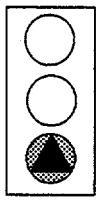
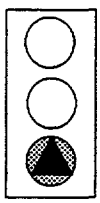
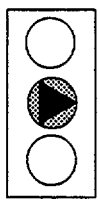
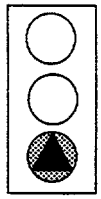
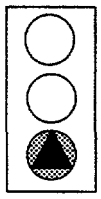
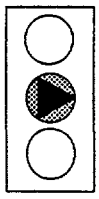
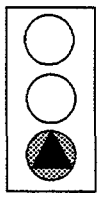
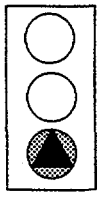
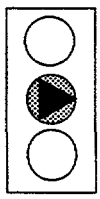
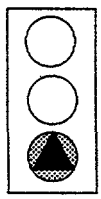
Needs Attention
OK
Good



* Some construction personnel associated with the ICPP Tank Farm Valve Box Upgrade Project have been approved to receive up to 2 rem of exposure during 1995.

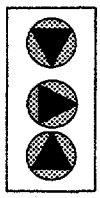
| | | Actual | Goal or Average |
|---|---|---|---|
| Year-to-Date Clothing Contaminations |  | 33 | 70 (3 Year Average) |
| Year-to-Date Airborne Events |  | 0 | 12 (3 Year Average) |
| Year-to-Date Radioactive Material Intakes |  | 6 | 11 (3 Year Average) |
| Contamination Area |  | 196,526 $ft^2$ | 200,610 $ft^2$ (3 Year Average) |
| High Contamination Area |  | 297,663 $ft^2$ | 304,418 $ft^2$ (3 Year Average) |
| Airborne Radioactivity Area |  | 84,312 $ft^2$ | 80,033 $ft^2$ (3 Year Average) |
| Year-To-Date Spills |  | 15 | 46 (3 Year Average) |

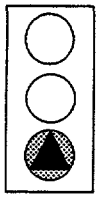
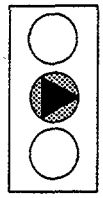
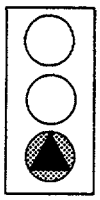
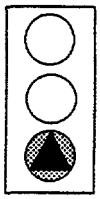
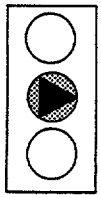
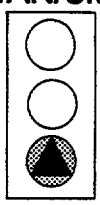
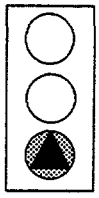
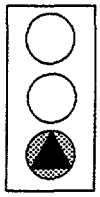
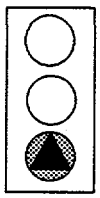
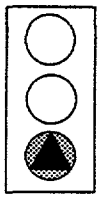
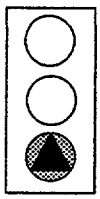
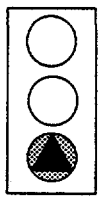
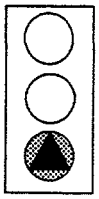
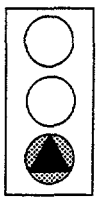
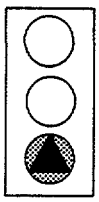
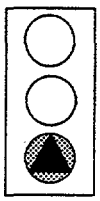
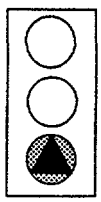
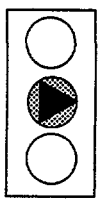
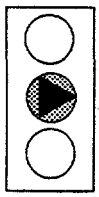
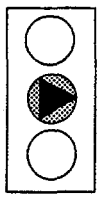
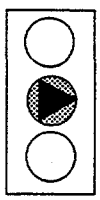
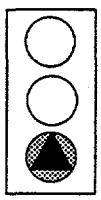
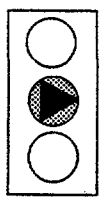
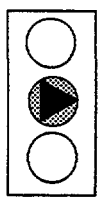
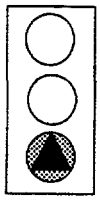
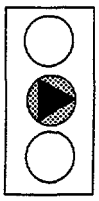
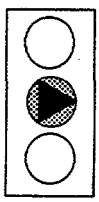
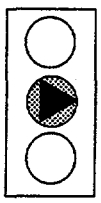
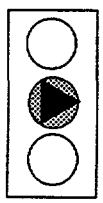
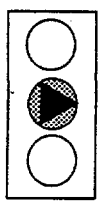
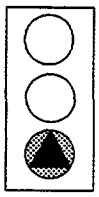
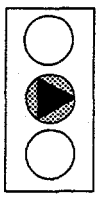
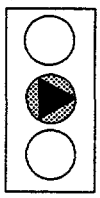
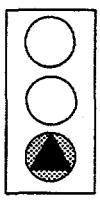
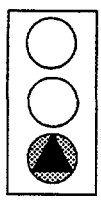
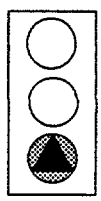
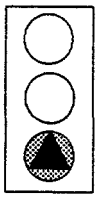
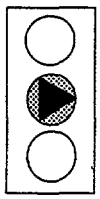
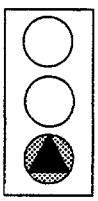
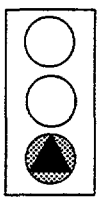
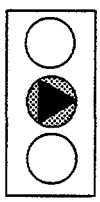
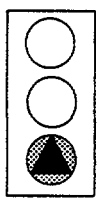
## INEL Facility Radiological Control Performance Indicator Overview
## Third Quarter 1995

| | CFA | ICPP | PBF | RWMC | TRA | TAN/SMC |
|---|---|---|---|---|---|---|
| Collective Year-to-Date Penetrating Radiation Dose (person-rem) |  2.754 |  172.0 |  0.407 |  8.657 |  22.24 |  5.085 |
| Year-to-Date Average Worker Dose (rem) |  0.025 |  0.214 |  0.015 |  0.065 |  0.090 |  0.059 |
| Maximum Year-to-Date Penetrating Dose to a Worker (rem) |  0.129 |  1.844 |  0.096 |  0.381 |  0.876 |  0.468 |
| Maximum Year-to-Date Neutron Dose to a Worker (rem) |  0.059 |  0.155 |  0.000 |  0.032 |  0.143 |  0.019 |
| Year-to-Date Skin Contaminations |  0 |  14 |  0 |  0 |  8 |  0 |

Legend

Needs Attention
OK
Good



| | CFA | ICPP | PBF | RWMC | TRA | TAN/SMC |
|---|---|---|---|---|---|---|
| Year-to-Date Clothing Contaminations |  0 |  16 |  0 |  0 |  17 |  0 |
| Year-to-Date Airborne Events |  0 |  0 |  0 |  0 |  0 |  0 |
| Year-to-Date Radioactive Material Intakes |  0 |  2 |  0 |  0 |  0 |  4 |
| Contamination Area - $ft^2$ |  17,105 |  65,319 |  7,378 |  0 |  52,475 |  54,249 |
| High Contamination Area - $ft^2$ |  372 |  251,961 |  2,288 |  29,525 |  1,991 |  11,526 |
| Airborne Radioactivity Area - $ft^2$ |  0 |  82,712 |  1,600 |  0 |  0 |  0 |
| Year-to-Date Spills |  0 |  11 |  0 |  0 |  3 |  1 |

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# Executive Summary
# Radiological Control Performance Indicator Report

## Third Quarter 1995

This document provides a report and analysis of the Radiological Control Program through the third quarter of calendar year 1995 (CY-1995) at the Idaho National Engineering Laboratory (INEL) under the direction of Lockheed Idaho Technologies Company (LITCO). The Radiological Control Performance Indicator Report is provided in accordance with Article 133 of the INEL Radiological Control Manual (INEL).

- Total INEL penetrating radiation exposure through the end of the third quarter was 211.1 person-rem (p-rem).
- Average penetrating radiation dose to an INEL radiation worker through the end of the third quarter was 0.149 rem.
- Maximum penetrating radiation dose to an INEL worker through the end of third quarter was 1.844 rem.
- Maximum neutron radiation dose to an INEL worker through the end of third quarter was 0.155 rem.
- The total number of INEL skin contaminations through the end of third quarter was twenty-two, fifteen of which resulted in Occurrence Reports (OR).
- The total number of INEL clothing contaminations through the end of the third quarter was thirty-three, of which sixteen resulted in ORs.
- Total number of airborne radioactivity events exceeding 10% Derived Air Concentrations (DAC) through the end of the third quarter was zero.
- Total number of radioactive material intakes assigned a dose of 10 mrem or more was six. No intakes met Department of Energy (DOE) Order 5000.3B reportable criteria.
- Total INEL Contamination Area was 196,526 square feet, total High Contamination Area was 297,663 square feet, and total Airborne Radioactivity Area was 84,312 square feet.
- The total number of radioactive spills was fifteen, of which eleven resulted in ORs.

# 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 as a measure of performance of the Radiological Control Program and as a motivation for improvement, not as a goal in themselves. These indicators should be used by management to assist in focusing priorities and 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 to a worker.
- The number of skin and clothing contaminations, including the number of contaminated wounds and facial contaminations.
- The number of radioactive material intakes resulting in a dose assessment of 10 mrem or more.
- The 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 (where information is available).

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

- The volume and radioactivity content of radioactive waste are reported by the Shipping and Material Management Department, found in the INEL Quarterly Waste Reduction Report and on the Radioactive Waste Management Information System (RWMIS).
- Releases of liquid and airborne radioactivity discharges are reported by the Environmental Protection Department in the INEL Environmental Monitoring Report and the INEL National Emission Standard for Hazardous Pollutants - Radionuclide Annual Report.

# 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 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 and those that resulted in a dose assessment of 10 mrem or greater are 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.

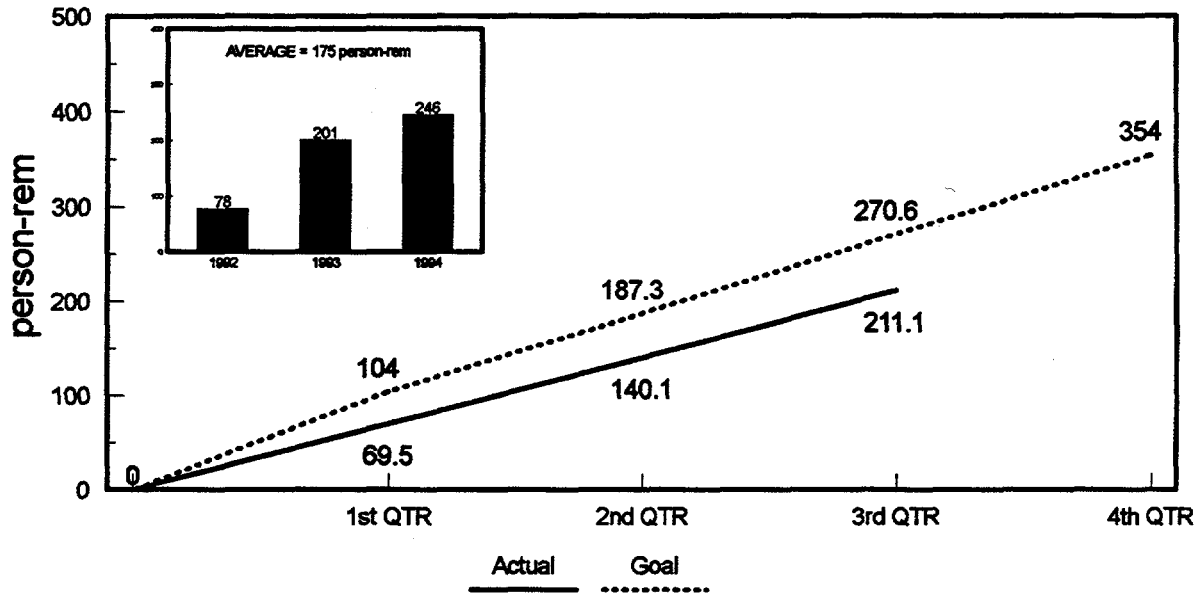
**Airborne Radioactivity Area -**

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 Collective Year-to-Date Penetrating Radiation Dose
## CY-95

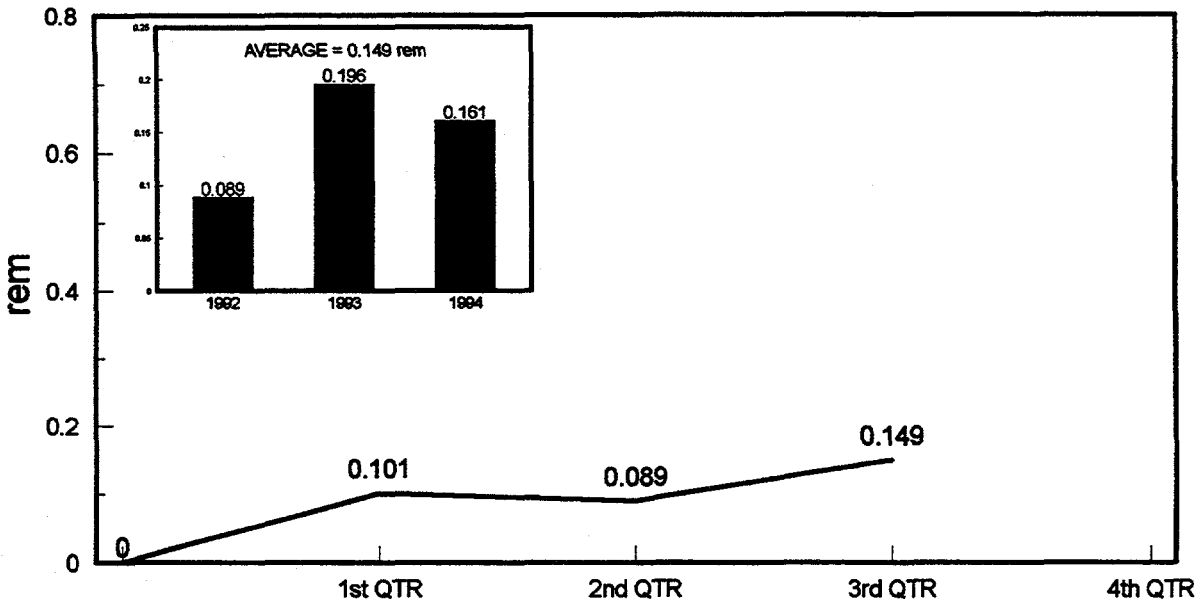



It is DOE and LITCO policy to maintain personnel radiation exposure ALARA. Measuring collective radiation exposure provides an indicator of the effectiveness of the Radiological Control and ALARA Programs.

The goal is adjusted quarterly to provide realistic values and was adjusted at the end of the first quarter from 424 person-rem to 354 person-rem. Changes in work schedules and scope resulted in a reevaluation and adjustment of the yearly and quarterly ALARA goals.

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 third quarter CY-1995 was 211.1 person-rem. This collective exposure represents 78% of the adjusted ALARA Goal of 270.6 person-rem through the end of the third quarter.

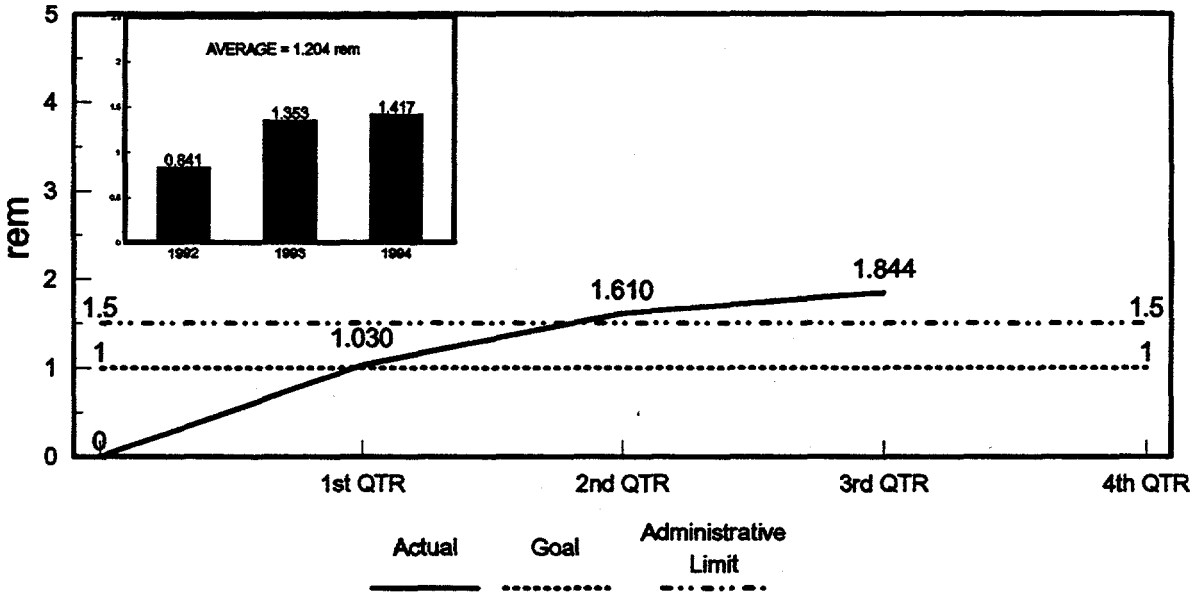
# INEL Year-to-Date Average Worker Dose
## CY-95




Tracking the average worker radiation exposure provides an indicator of the effectiveness of the Radiological Control and ALARA Programs and how well managers are managing their workers radiation exposure. Large increases are investigated, root causes determined and appropriate measures taken.

The average worker radiation exposure has increased from 0.089 rem to 0.149 rem by the end of the third quarter . Radiological work activities related to the ICPP Tank Farm and the High Level Liquid Waste Evaporator Projects, and lack of personnel resources contributed to the increases in exposures.

# INEL Maximum Year-to-Date Penetrating Dose to a Worker
## CY-95




The maximum penetrating radiation dose to a worker provides another indication of how well worker radiation exposure is being controlled. Managers should use these reports as an aid in administration of their workers radiation exposure.

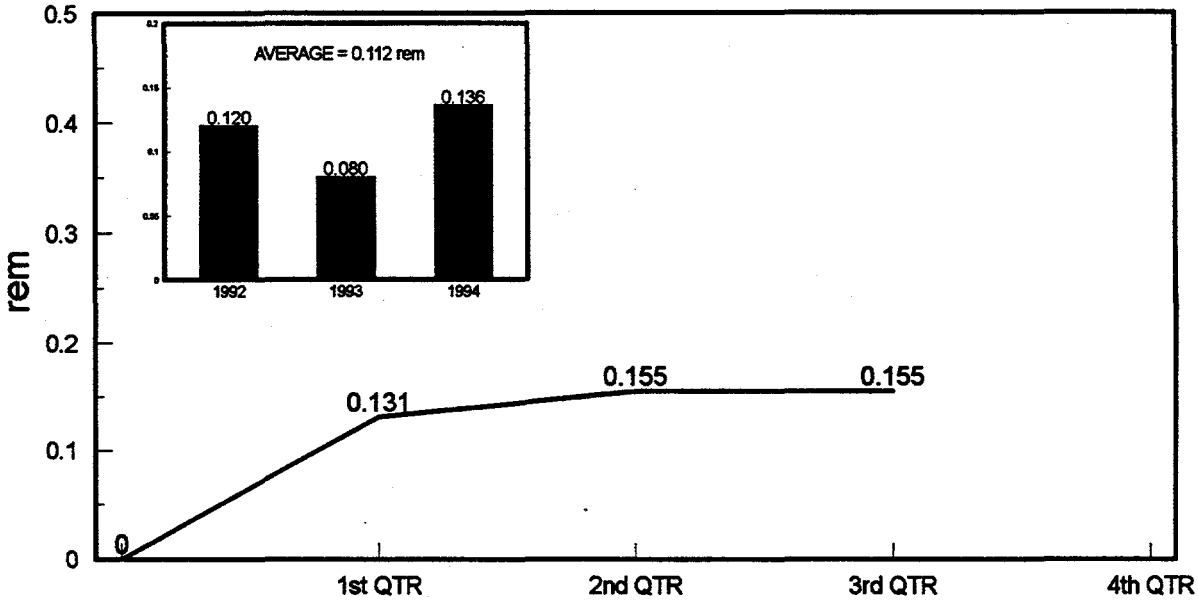
The maximum penetrating radiation dose to a worker through the end of the third quarter of 1995 was 1.844 rem. This individual was involved in construction activities related to the ICPP Tank Farm Upgrade Project.

Some construction personnel associated with the ICPP Tank Farm Valve Box Upgrade Project been approved to receive up to two rem of exposure due to the complexity and high body fields encountered.

Credit has been taken for the identification and justification of exposure extensions for approved personnel to exceed the 1.5 rem Administrative Control Level.

# INEL Maximum Year-to-Date Neutron Dose to a Worker

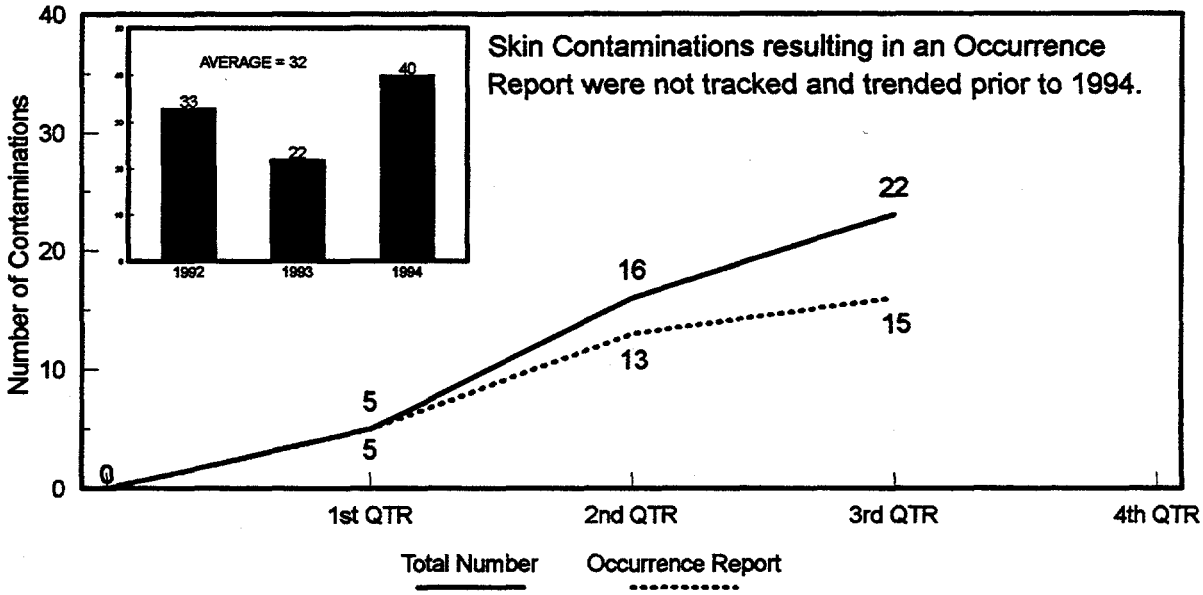
## CY-95




Tracking the maximum neutron radiation dose to a worker provides an indication of how well worker exposure to neutron radiation is managed. Quality factors of neutron radiation are not as well known as those of alpha, beta, and gamma radiation. Neutron radiation is included in the total penetrating radiation dose, but is also tracked separately.

The INEL maximum neutron radiation dose to a worker through the end of the third quarter was 0.155 rem. This individual was involved in inspection activities related to construction of the NWCF High Level Liquid Waste Evaporator Project.

# INEL Year-to-Date Skin Contaminations
## CY-95

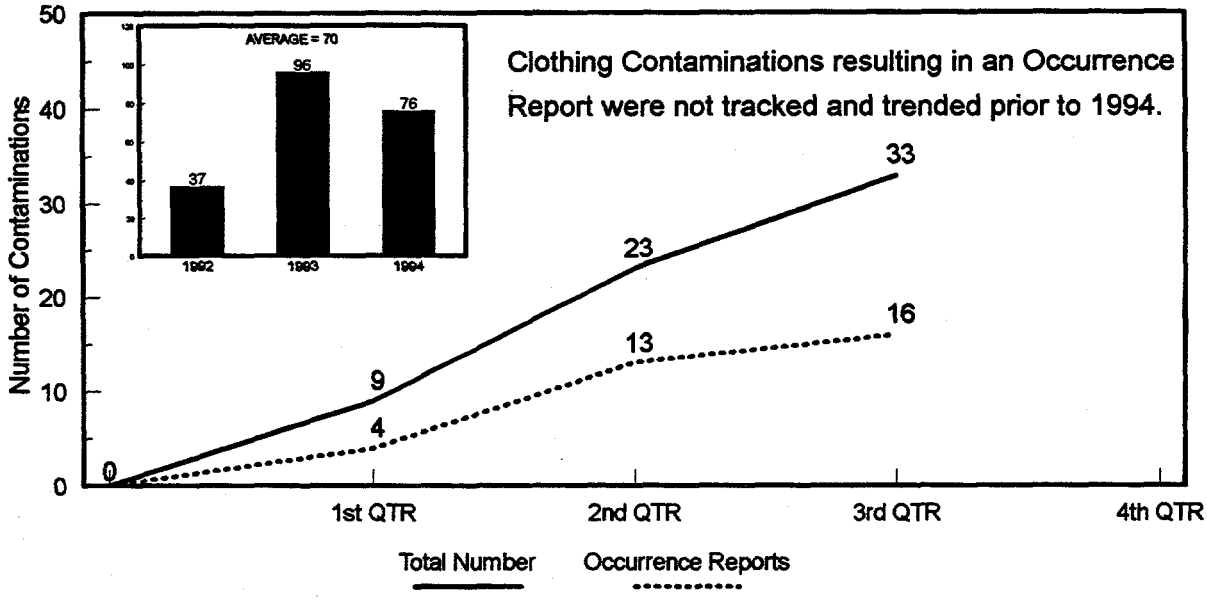



Skin contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled.

There were a total of twenty-two skin contaminations at the INEL through the third quarter. Of these, fifteen resulted in Occurrence Reports. Fourteen skin contaminations occurred at the ICPP and the remaining eight occurred at TRA.

There were three facial contaminations during the third quarter. There were no contaminated wounds.

# INEL Year-to-Date Clothing Contaminations
## CY-95

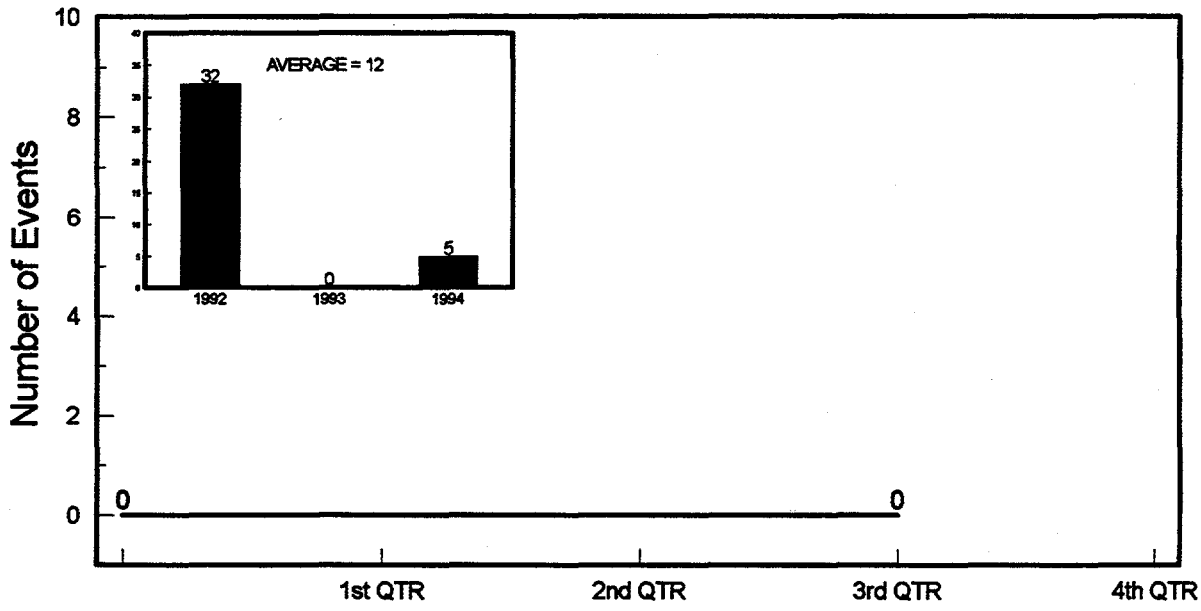



Clothing contamination events are a measure of the overall effectiveness of the radiolgical protection program, specifically, how well radioactive contamination is controlled and how well workers adhere to safe radiological work practices.

There were a total of thirty-three clothing contaminations at the INEL through the end of the third quarter. Of these, sixteen resulted in Occurrence Reports. At TRA seventeen clothing contaminations occurred of which ten were reportable. Sixteen clothing contaminations occurred at ICPP of which six were reportable.

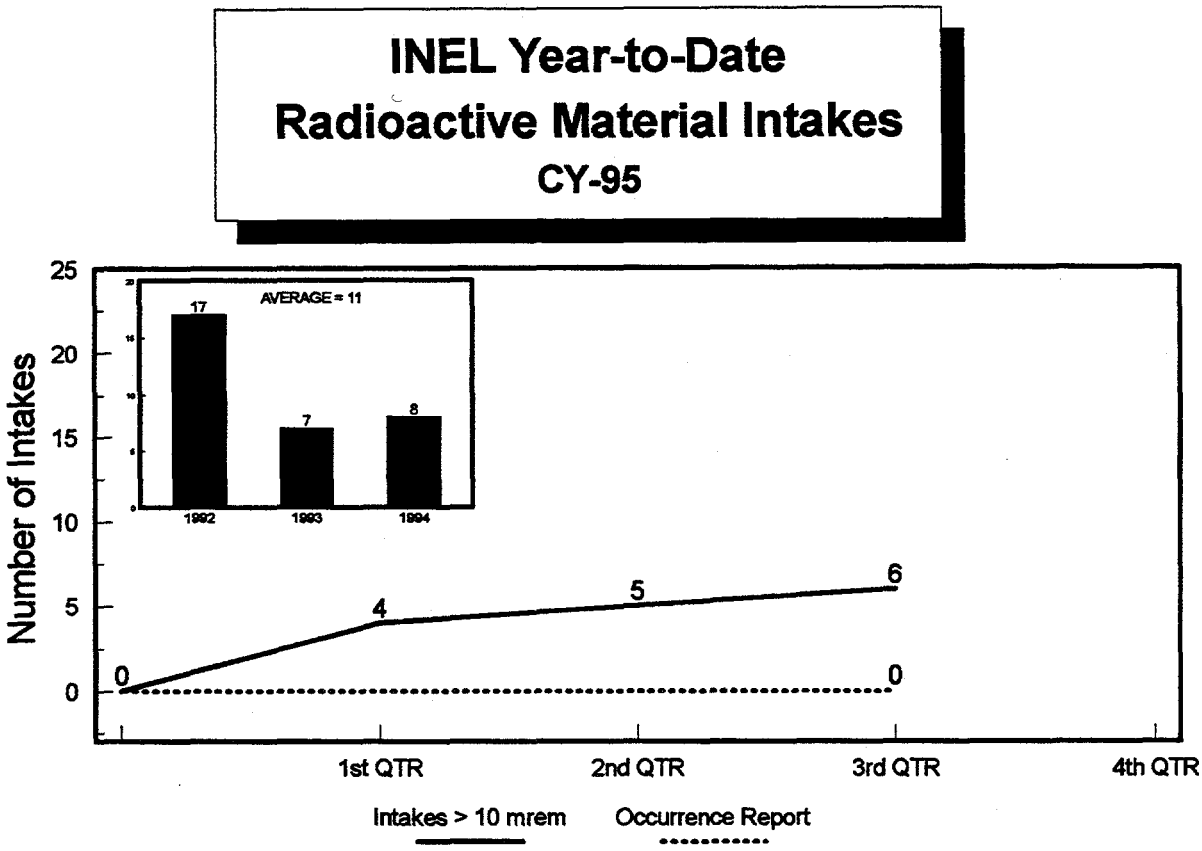
# INEL Year-to-Date Airborne Radioactivity Events

## CY-95




Air samplers monitor occupied facility areas to quantify concentrations of airborne radioactivity. The DOE unit of measure is a DAC. A DAC is the atmospheric concentration of a radionuclide which, if inhaled continually for one work year (2000 hours), would result in an internal dose of 5.0 rem Committed Effective Dose Equivalent (CEDE). An area which exceeds 10% of one DAC must be posted as an Airborne Radioactivity Area.

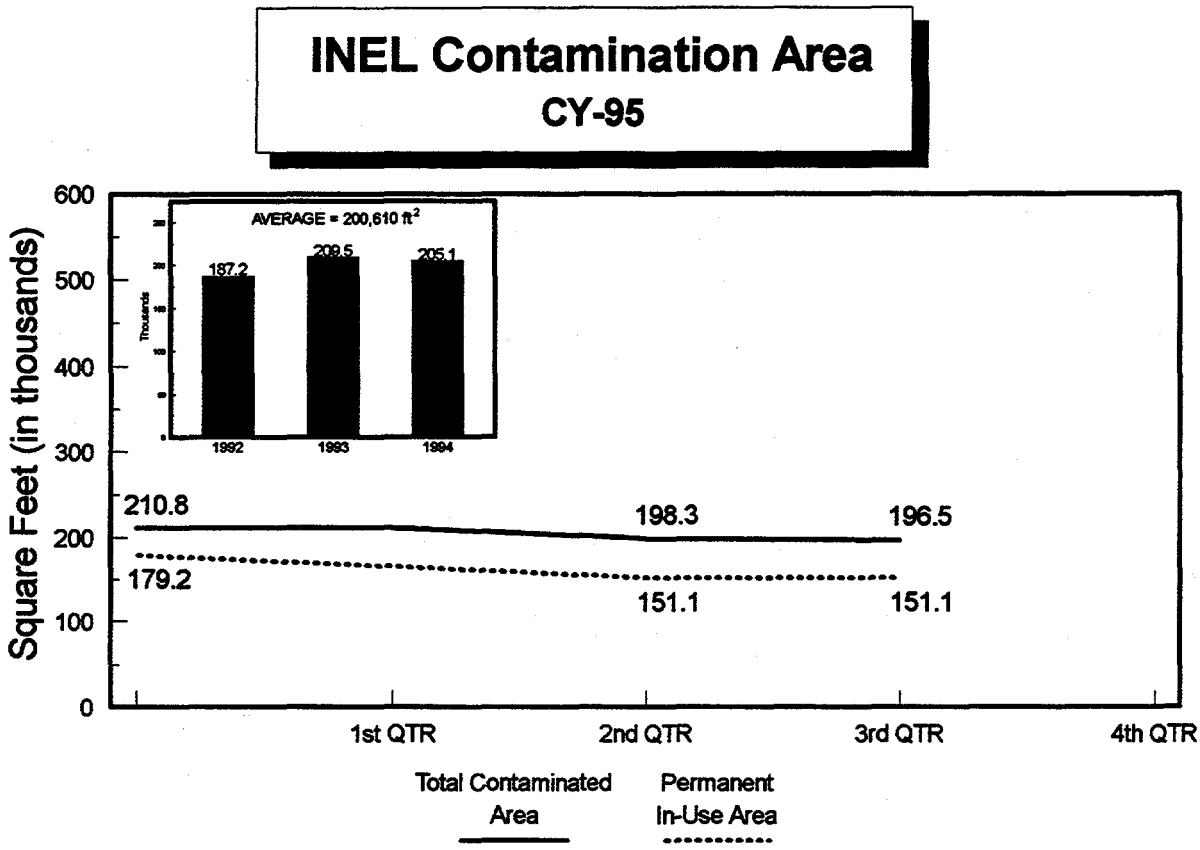
No airborne activity greater than 10% DAC was detected in areas not posted as Airborne Radioactivity Areas at the INEL during the third quarter.




This indicator depicts the total number of positive bioassay results that indicate an intake of radioactive material and result in an assigned CEDE of 10 mrem or greater. This is reported as the number of bioassays results that are assigned a dose of 10 mrem or greater and those that meet DOE Order 5000.3B reportable criteria.

The total number of positive bioassays resulting in a dose assessment of 10 mrem or more at the INEL through the third quarter was six. Of these positive indications, none were reportable in accordance with DOE Order 5000.3B reportable criteria.

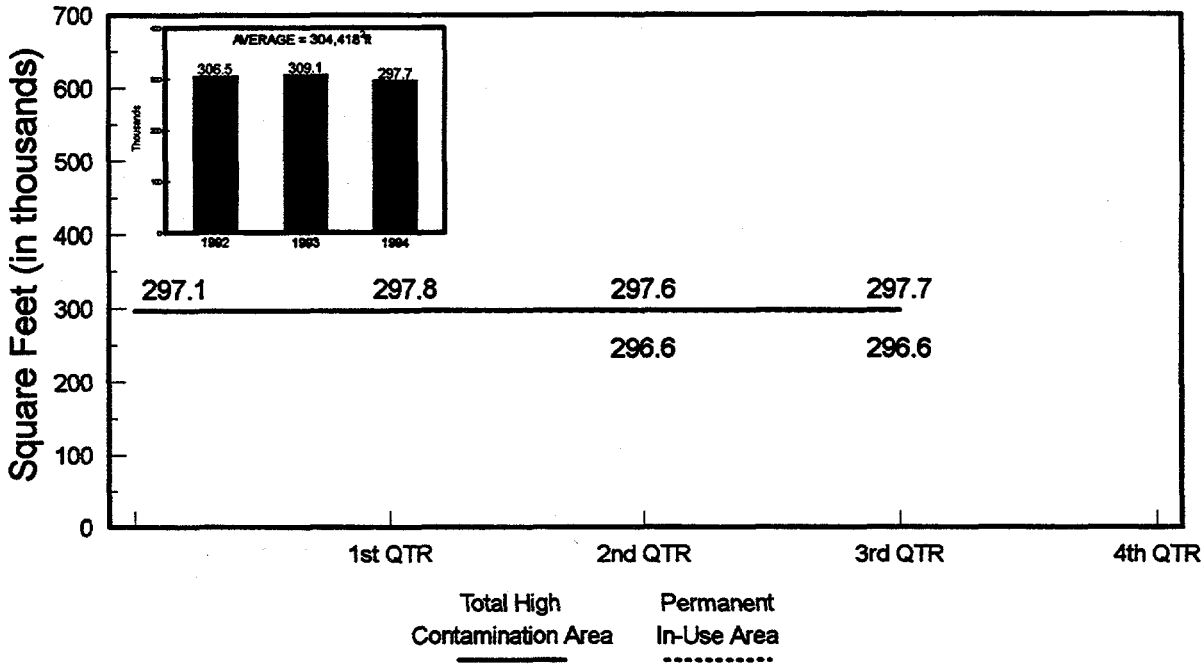
Four positive indications resulting in a dose assessment of 10 mrem or more were from SMC operations at TAN. Two positive indications which resulted in dose assessments 10 mrem or greater were from construction activities at ICPP. A total of 295 positive bioassays were investigated and resolved through the end of the third quarter.




This indicator is used to report the total area designated as Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual. Area is reported in units of square feet. The reported area is further separated into that area which is permanent and in-use. This establishes a baseline for future reporting and allows areas other than permanent and in-use to be evaluated for decontamination.

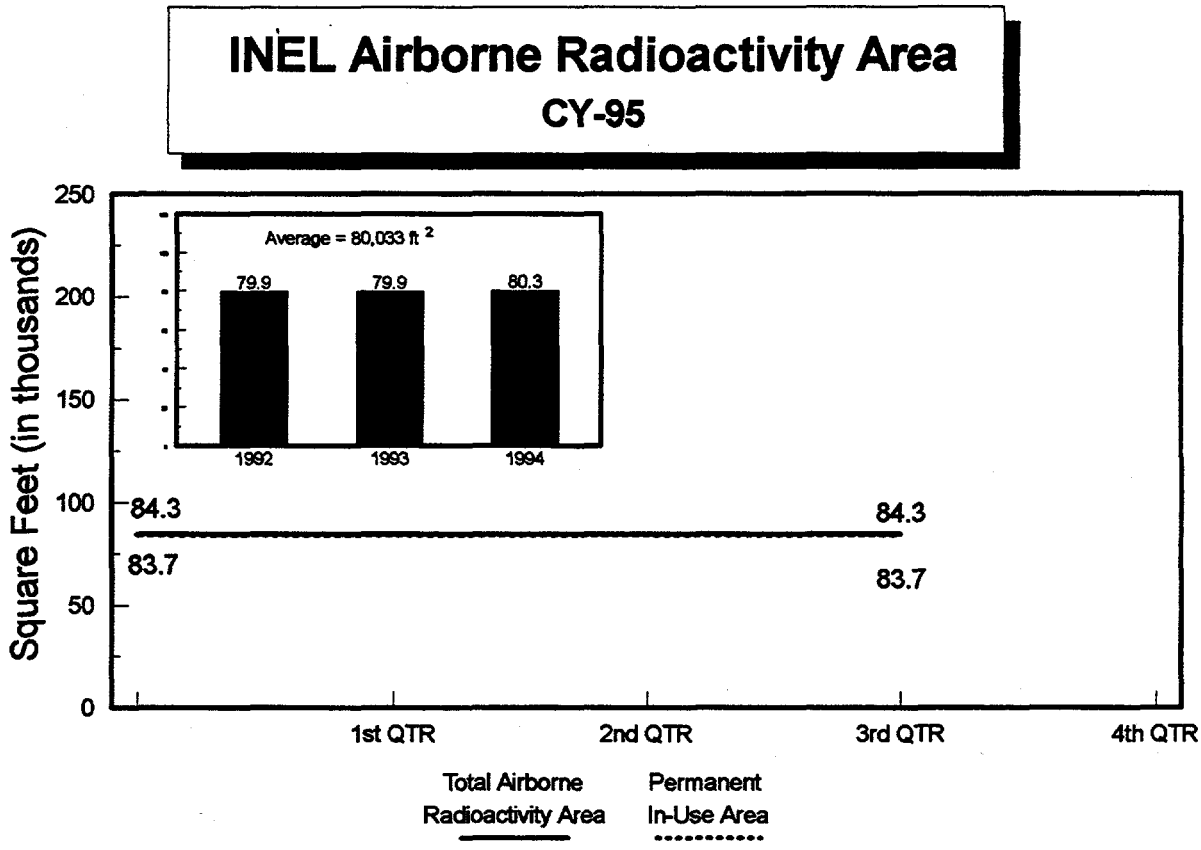
The total Contamination Area at the INEL at the end of the third quarter was 196,526 square feet. Of this area, 151,1234 square feet was designated as permanent and in-use. 28,100 square feet of Contamination Area was removed from the permanent and in-use listing and 12,500 square feet of Contamination Area has been successfully decontaminated and released.

# INEL High Contamination Area
## CY-95



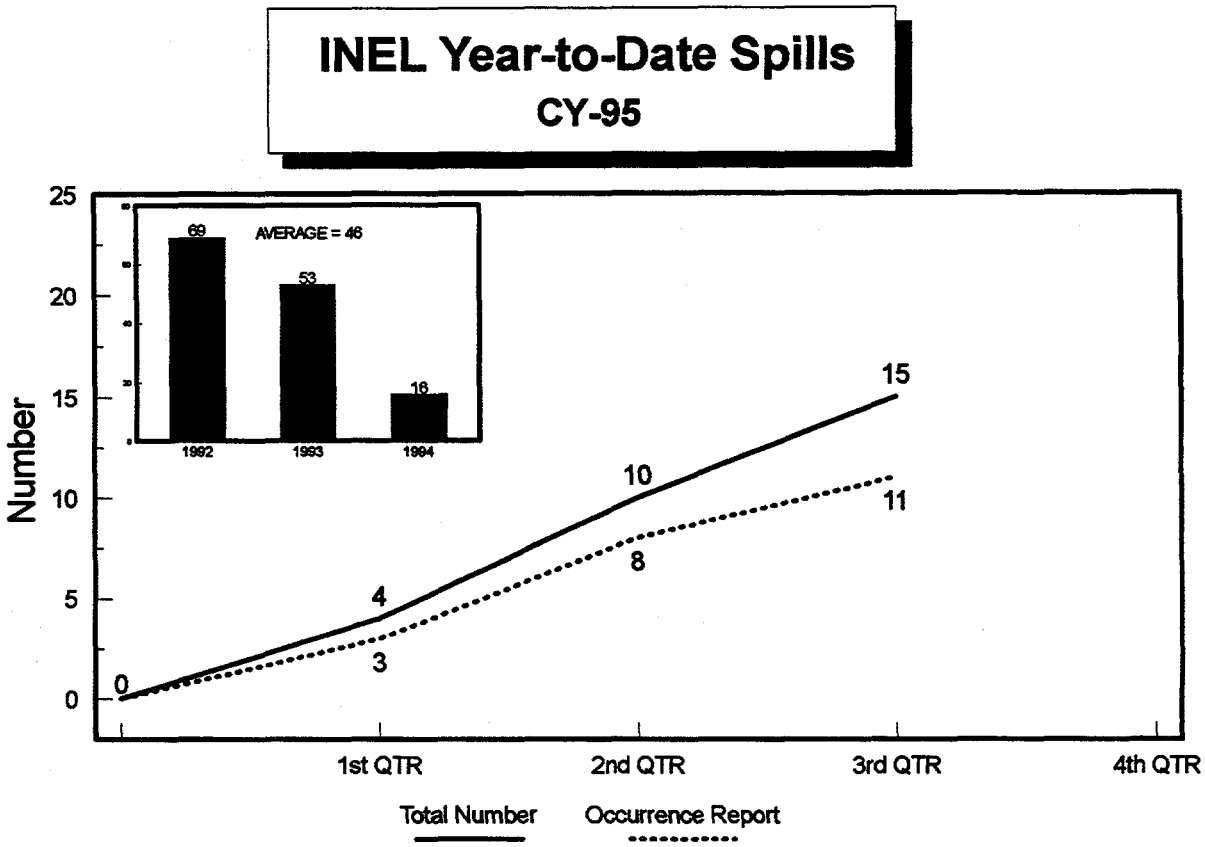

This indicator is used to report the total area designated as High Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual. Units of measure are reported in square feet. The reported area is further separated into that area which is permanent and in-use. This establishes a baseline for future reporting and allows areas other than permanent and in-use to be evaluated for decontamination.

The total High Contamination Area at the INEL at the end of the third quarter was 297,663 square feet. Of this area, 296,641 square feet was designated as permanent and in-use.



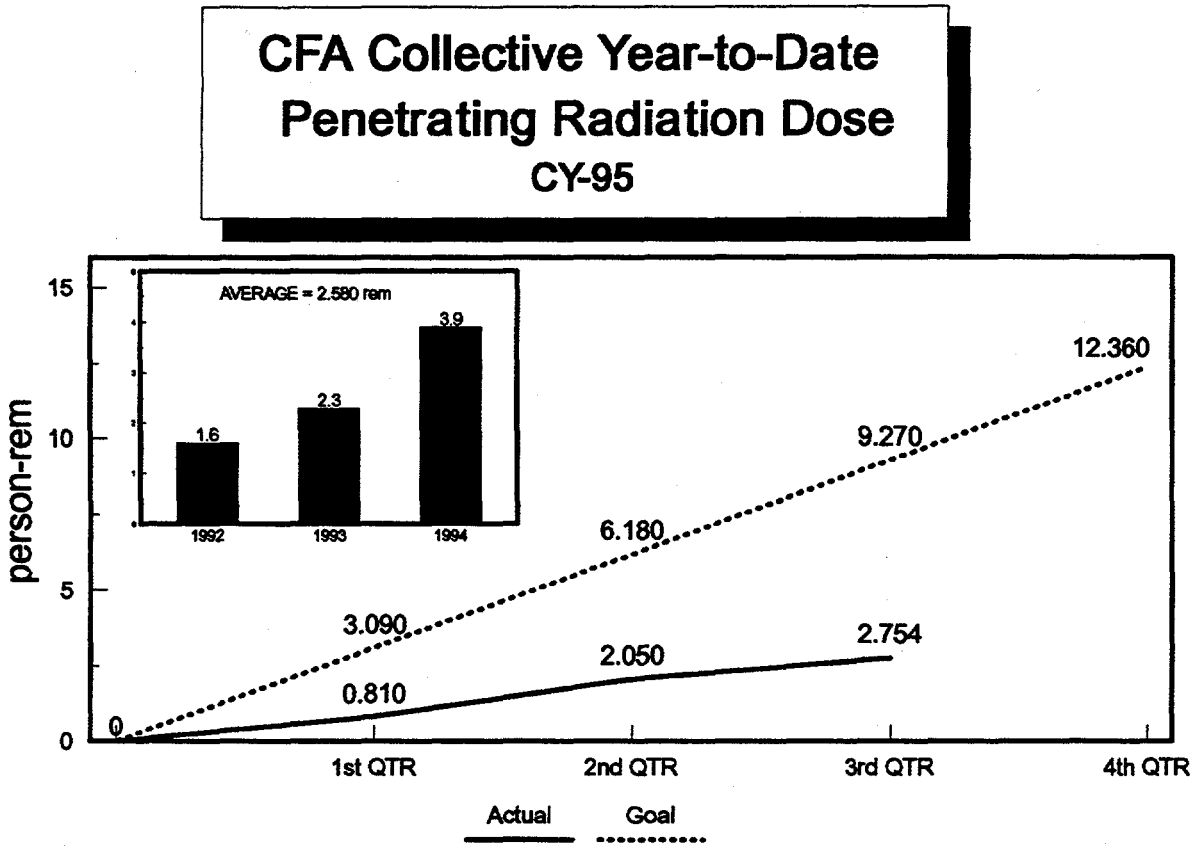

This indicator is used to report the total area designated as an Airborne Radioactivity Area as defined in Table 2-3 of the INEL RCM. These areas are reported in units of square feet. The reported areas are further separated into permanent and in-use areas. This establishes a baseline for future reporting and allows areas other than permanent and in-use to be evaluated for decontamination.

The total Airborne Radioactivity Area at the INEL during the third quarter was 84,312 square feet. Of this area, 83,662 square feet is designated as permanent and in-use.




This indicator is used to report inadvertent loss or release of radioactive material. It includes all events, as well as those losses or releases of radioactively contaminated material that meet DOE reportable criteria.

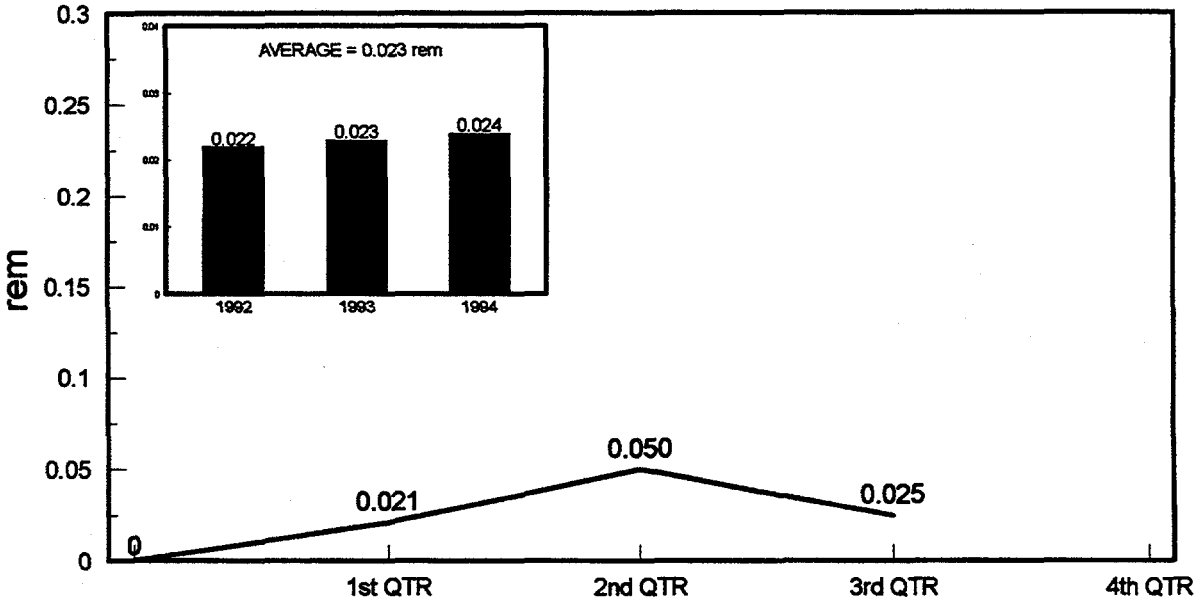
The INEL had fifteen loss of radioactive materials or spills through the end of the third quarter. Eleven of these spills resulted in Occurrence Reports. During the third quarter, five spills occurred at ICPP, three of which were reportable. Two spills occurred at TRA, both of which were non-reportable.




CFA collective radiation exposure through the end of the third quarter was 2.754 person-rem.

Major activities contributing to the radiation exposure include Decontamination and Decommissioning (D&D) activities and Environmental Restoration (ER) projects.

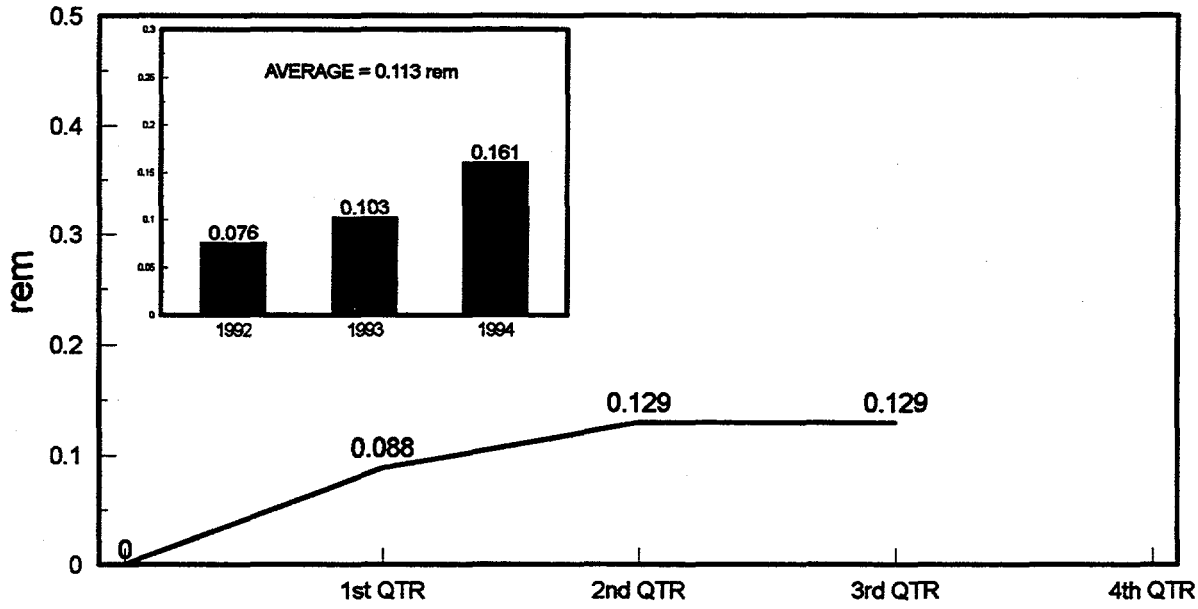
# CFA Year-to-Date Average Worker Dose
## CY-95




The average worker radiation exposure provides an indicator of the effectiveness of the Radiological Control and ALARA Programs.

The average CFA worker radiation exposure at the end of the third quarter was 0.025 rem. Major sources of exposure are related to D&D and ER activities.

# CFA Maximum Year-to-Date Penetrating Dose to a Worker
## CY-95

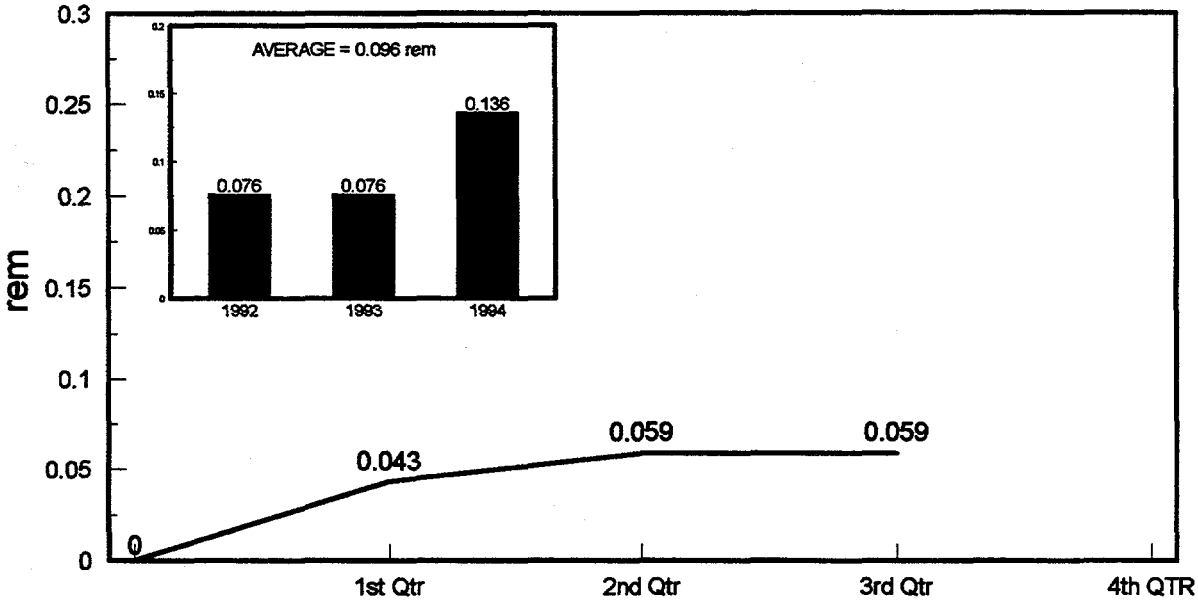



The maximum penetrating radiation dose to a worker provides another indication of how well worker radiation exposure is being managed.

The maximum penetrating radiation dose to a CFA worker through the third quarter was 0.129 rem.

# CFA Maximum Year-to-Date Neutron Dose to a Worker

## CY-95

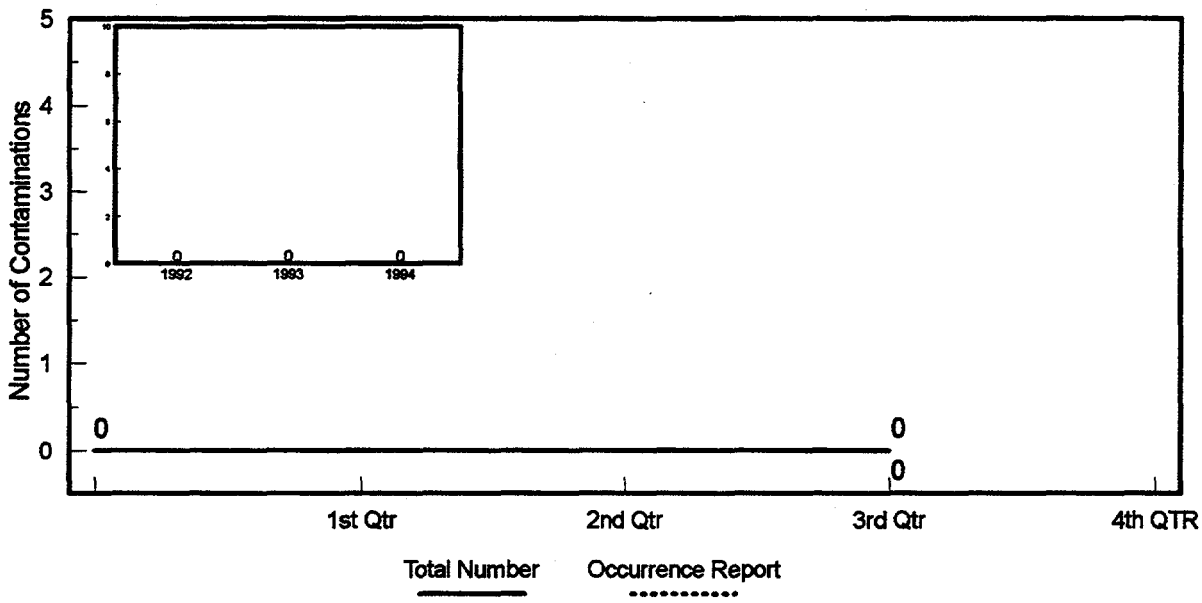



The maximum neutron radiation dose to a worker provides an indication of how well worker exposure to neutron radiation is managed.

The CFA maximum neutron radiation dose to a worker through the end of the third quarter was 0.059 rem.

# CFA Year-to-Date Skin Contaminations

## CY-95

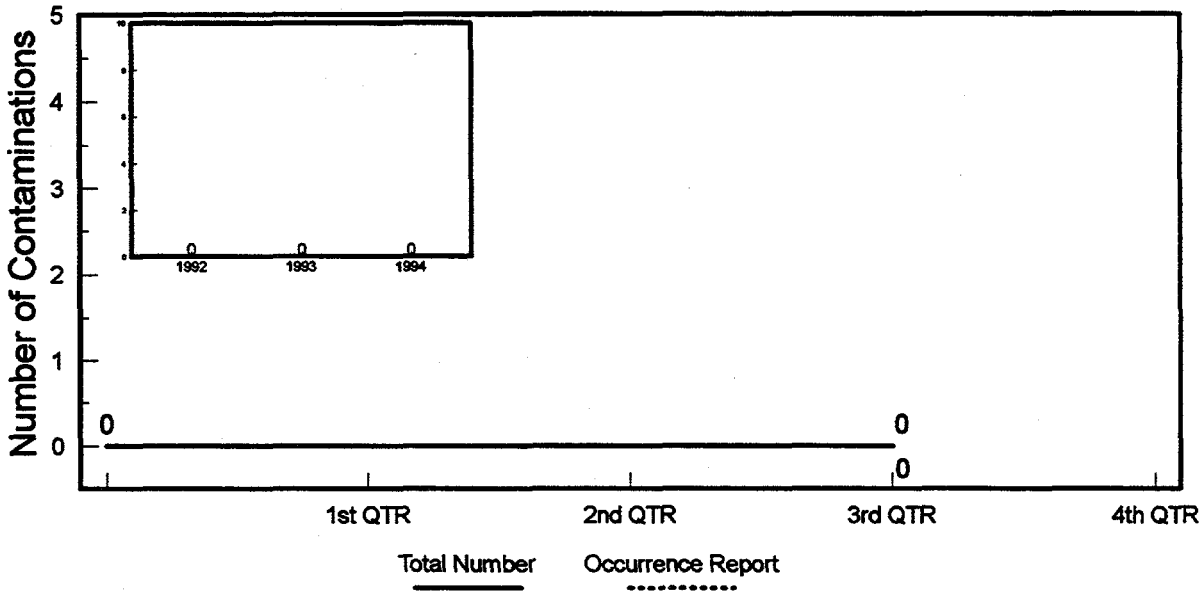



Skin contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled.

There were no skin contaminations at the CFA areas during the third quarter.

# CFA Year-to-Date Clothing Contaminations

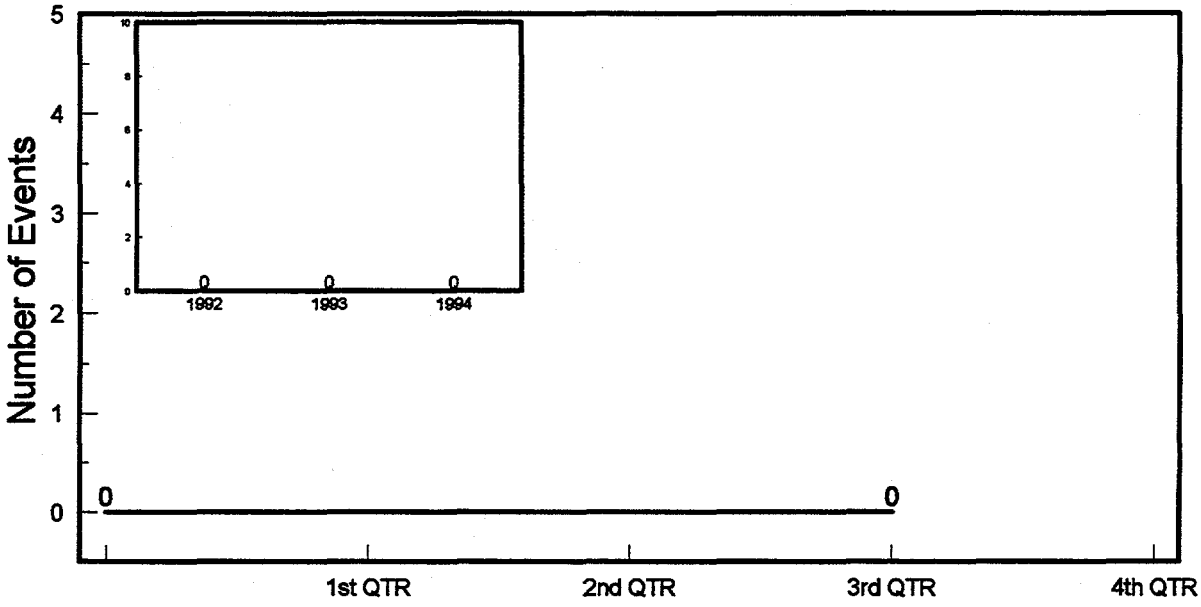
## CY-95




Clothing contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled and how well workers adhere to safe radiological work practices.

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

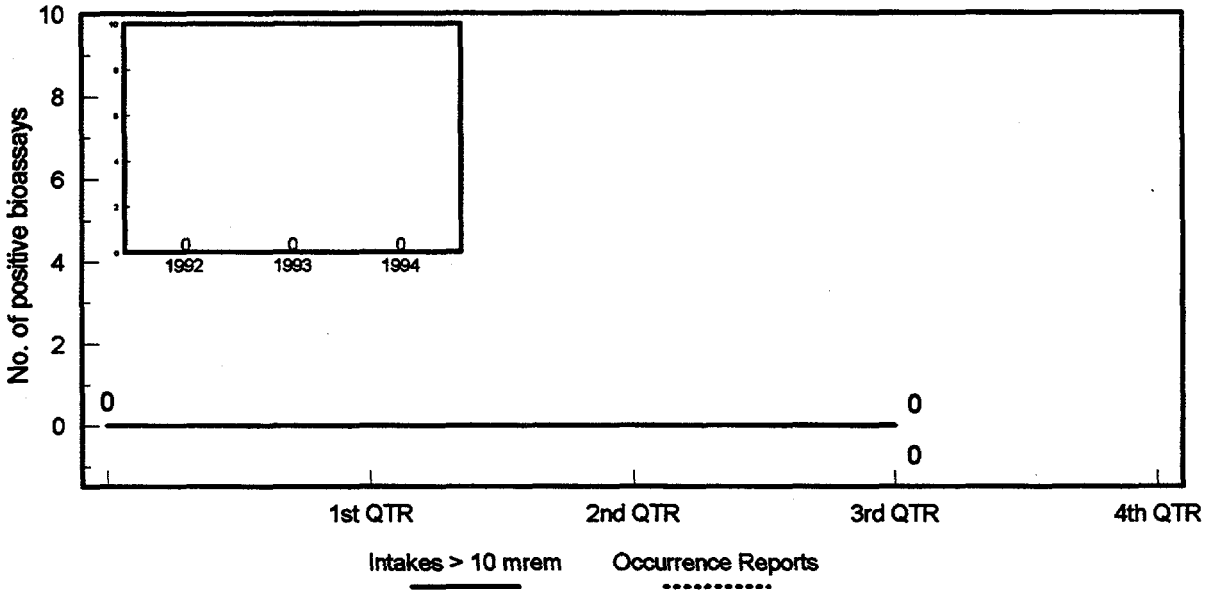
# CFA Year-to-Date
# Airborne Radioactivity Events
## CY-95




Air samplers monitor occupied facility areas to quantify concentrations of airborne radioactivity. The DOE unit is a DAC. An area which exceeds 10% of one DAC must be posted as an Airborne Radioactivity Area.

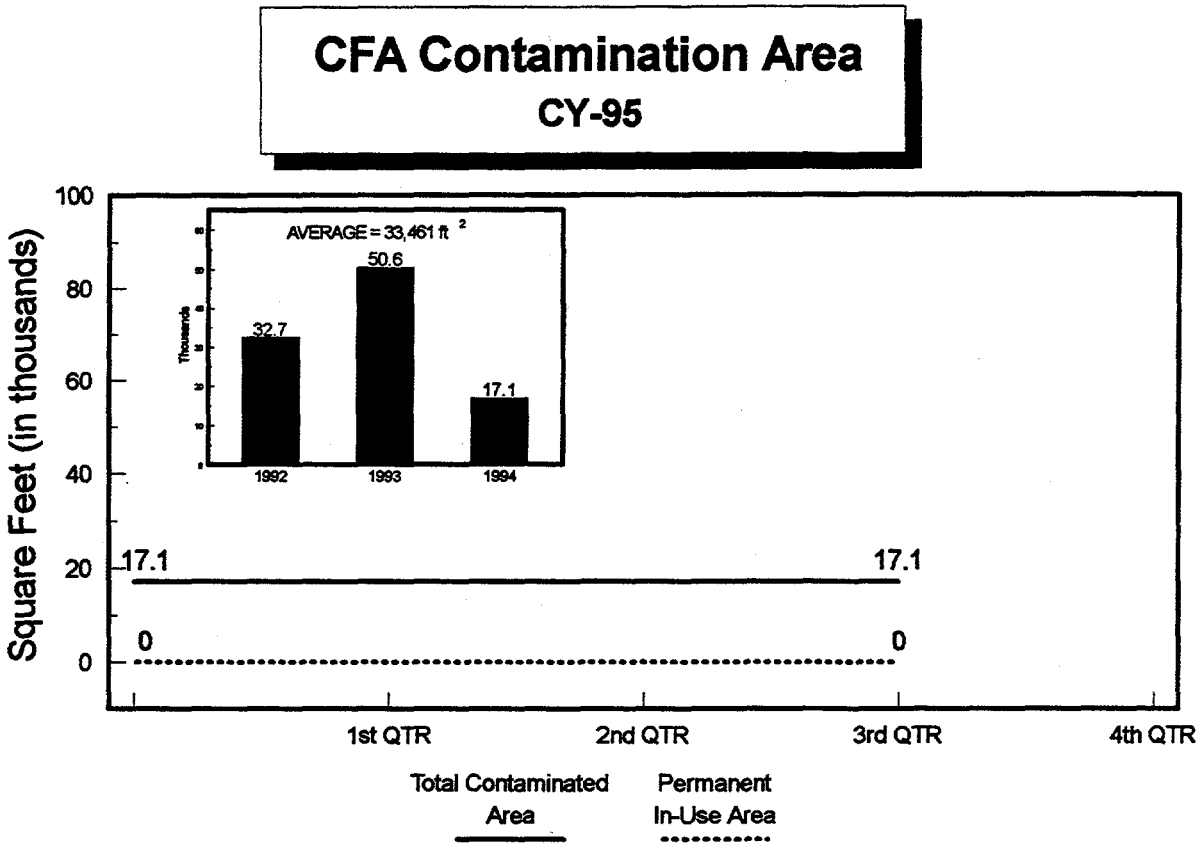
No airborne activity greater than 10% DAC was detected at the CFA areas during the third quarter.

# CFA Year-to-Date Radioactive Material Intakes
## CY-95




This indicator depicts the number of positive bioassay results that indicate an intake of radioactive material and result in a dose assessment of 10 mrem or greater from a CFA occupational exposure during work activities.

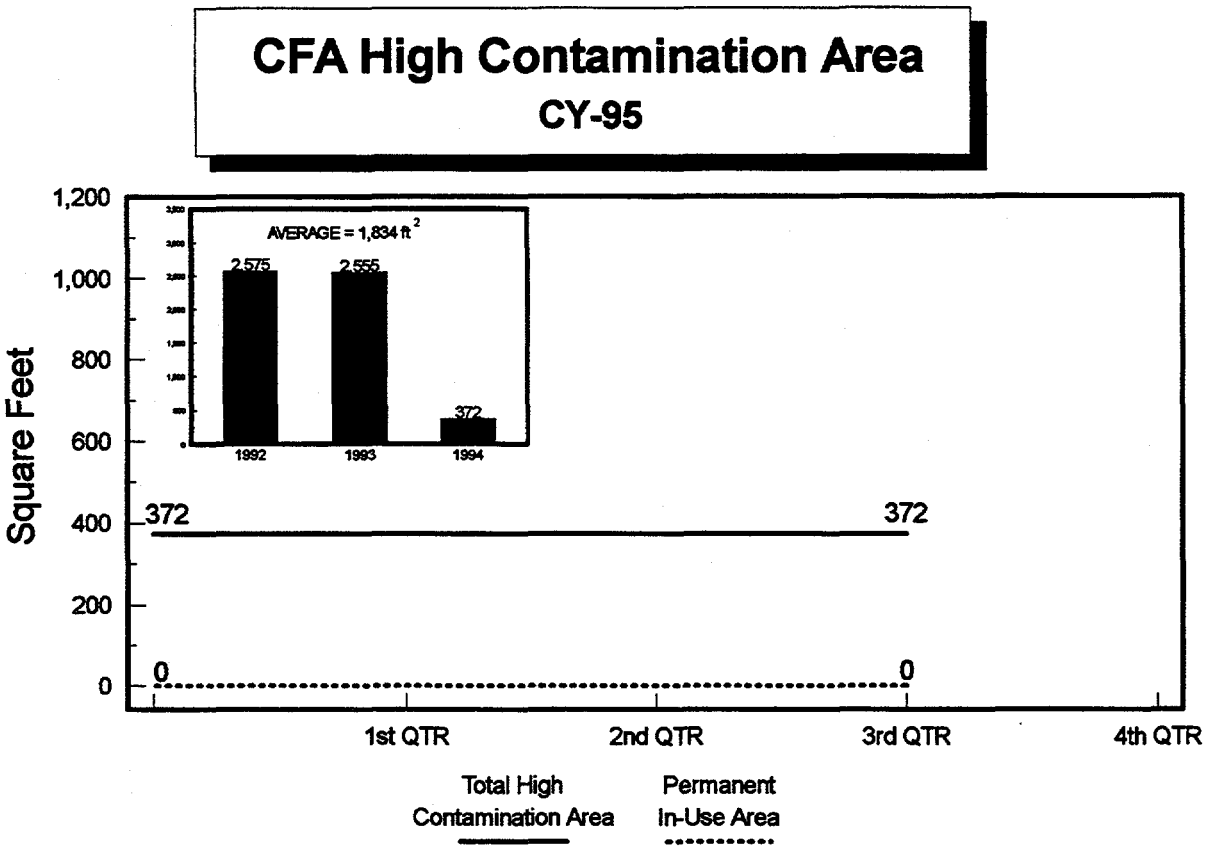
There were no positive bioassays indicating an intake of radioactive material that resulted in a dose assessment of 10 mrem or greater at the CFA areas during the third quarter.




This indicator is used to report the total area designated as Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual.

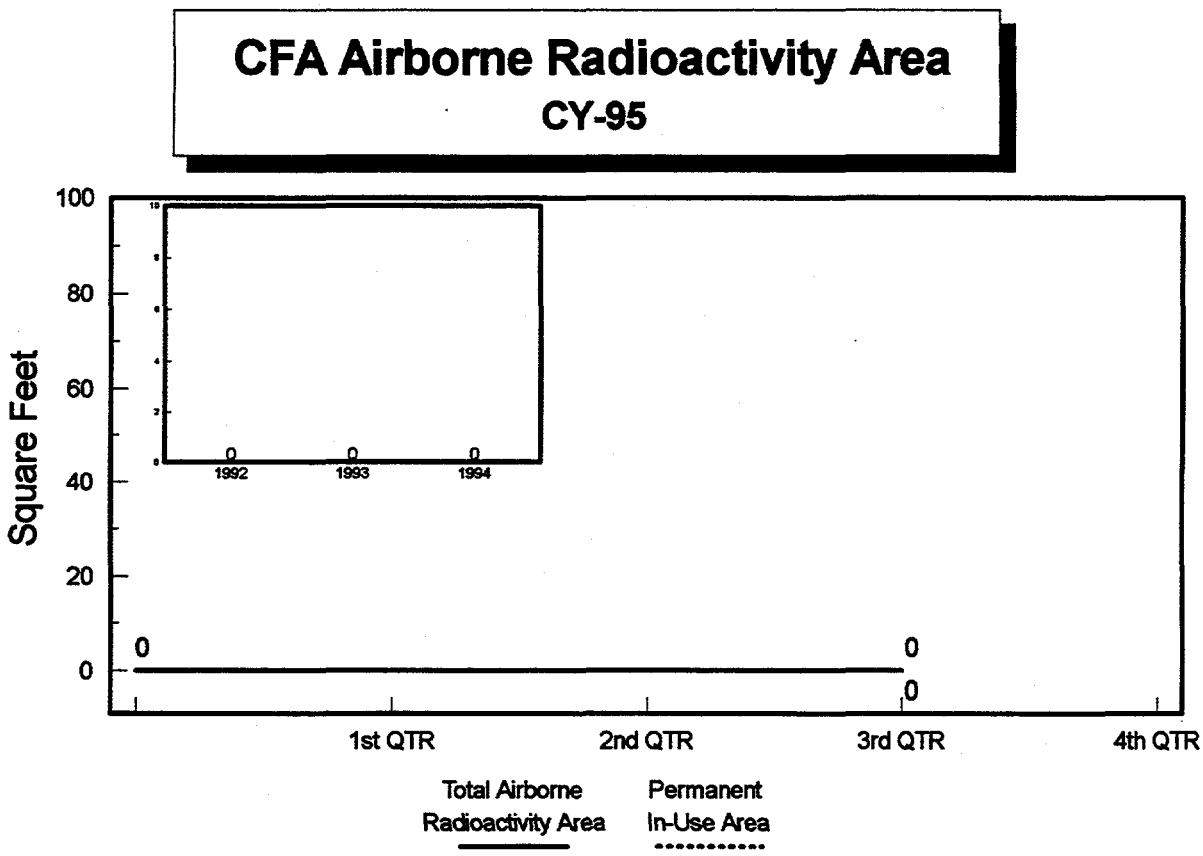
The total Contamination Area at the CFA areas at the end of the third quarter was 17,105 square feet. None of this area was designated as permanent and in-use.

Contaminated soil clean-up efforts are on going at the CFA areas. An area of 118,760 square feet is currently being decontaminated and is scheduled to be released to a clean area in October 1995.



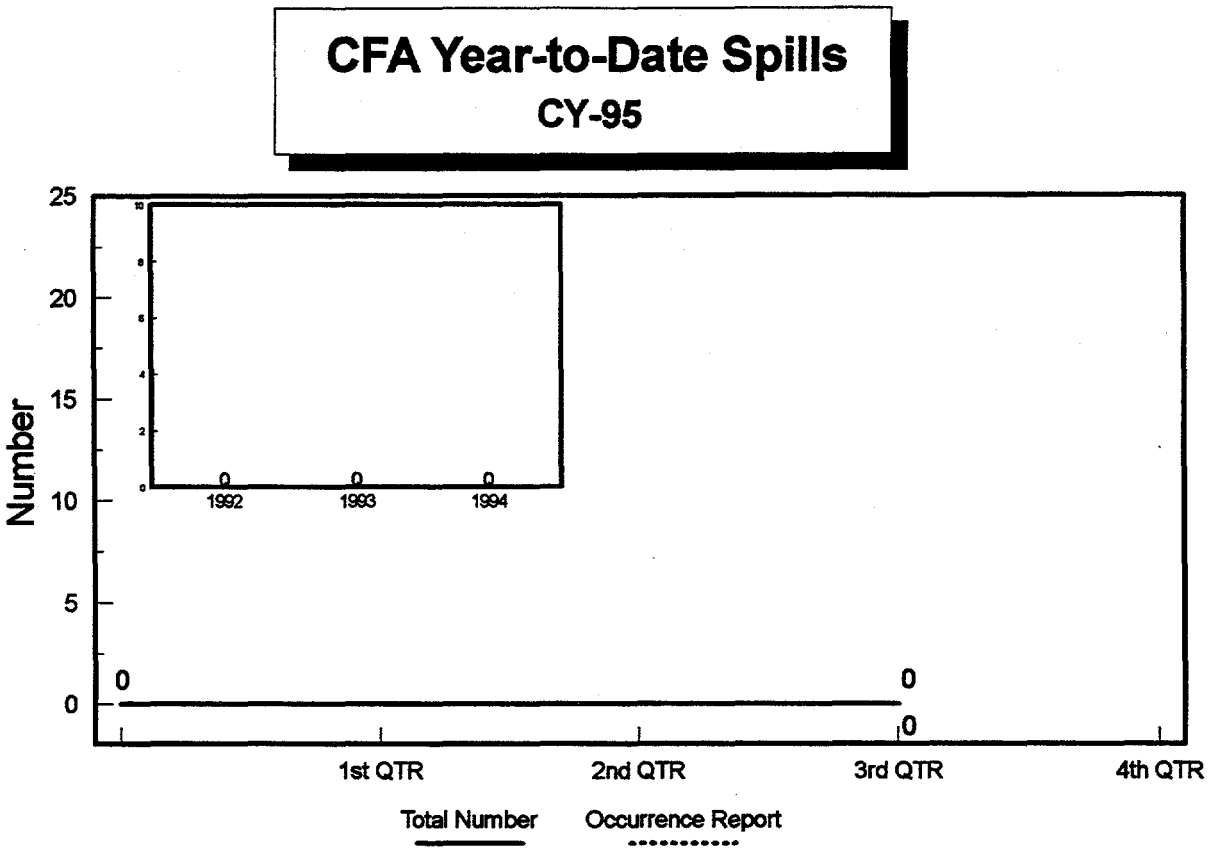

This indicator is used to report the total area designated as High Contamination Area as described in Table 2-3 of the INEL Radiological Control Manual.

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




This indicator is used to report the total area designated as Airborne Radioactivity Area as described in Table 2-3 of the INEL Radiological Control Manual.

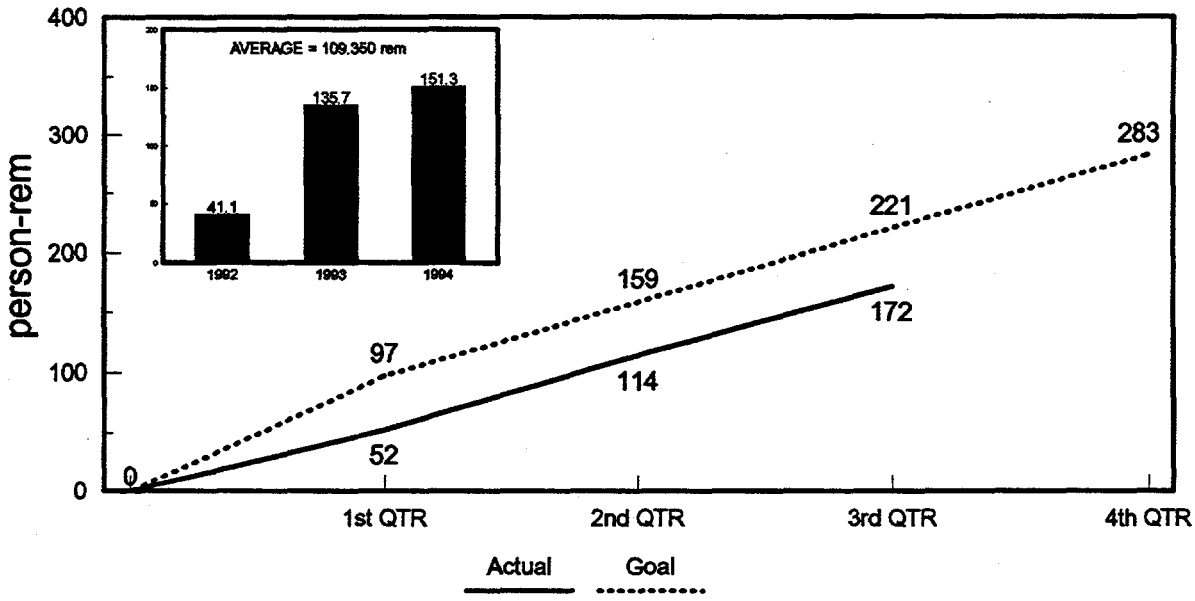
The total Airborne Radioactivity Area at the CFA area at the end of the third quarter was zero square feet.




This indicator is used to report inadvertent loss or release of radioactive material.

The CFA areas had no radioactive spills or loss of radioactive contaminated material through the end of the third quarter.

# ICPP Collective Year-to-Date Penetrating Radiation Dose
## CY-95

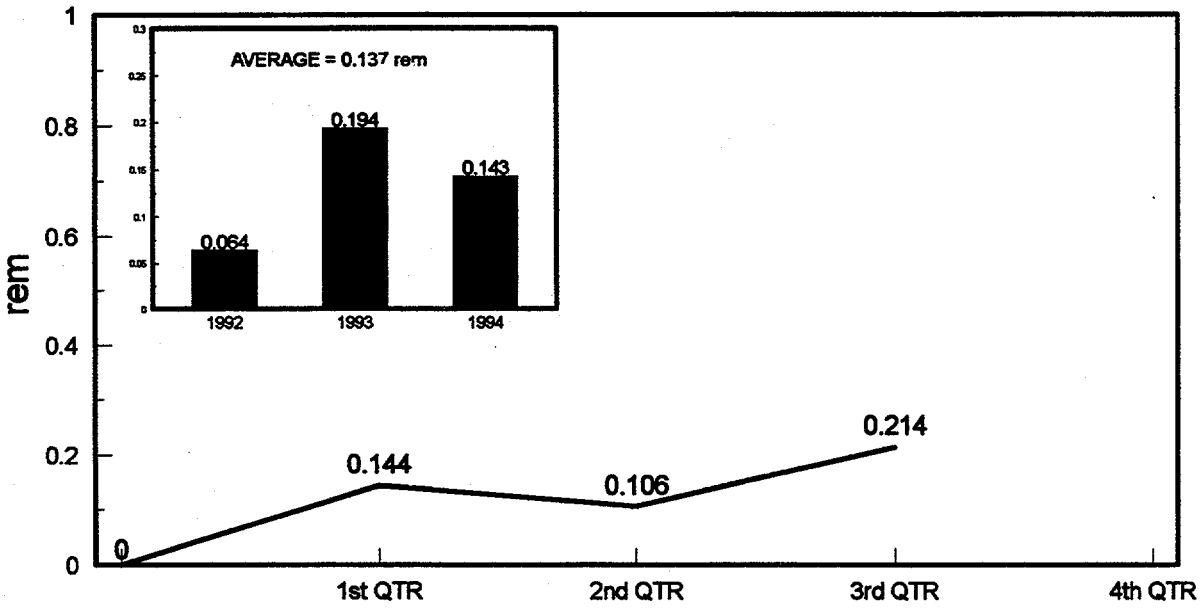



The ICPP collective radiation exposure for the third quarter was 171.993 person-rem. The ICPP ALARA goal for CY-95 is 283 person-rem, of which 221 person-rem were forecast through the end of third quarter.

Major contributors to the ICPP third quarter penetrating radiation exposure include Tank Farm construction activities during which personnel received 26 person-rem, and the CPP-659 Blend and Hold Cell construction during which personnel received 11 person-rem.

The ALARA goal is adjusted quarterly to provide realistic values and was adjusted at the end of the first quarter from 353 person-rem to 283 person-rem due to changes in work schedules and work scope at the ICPP.

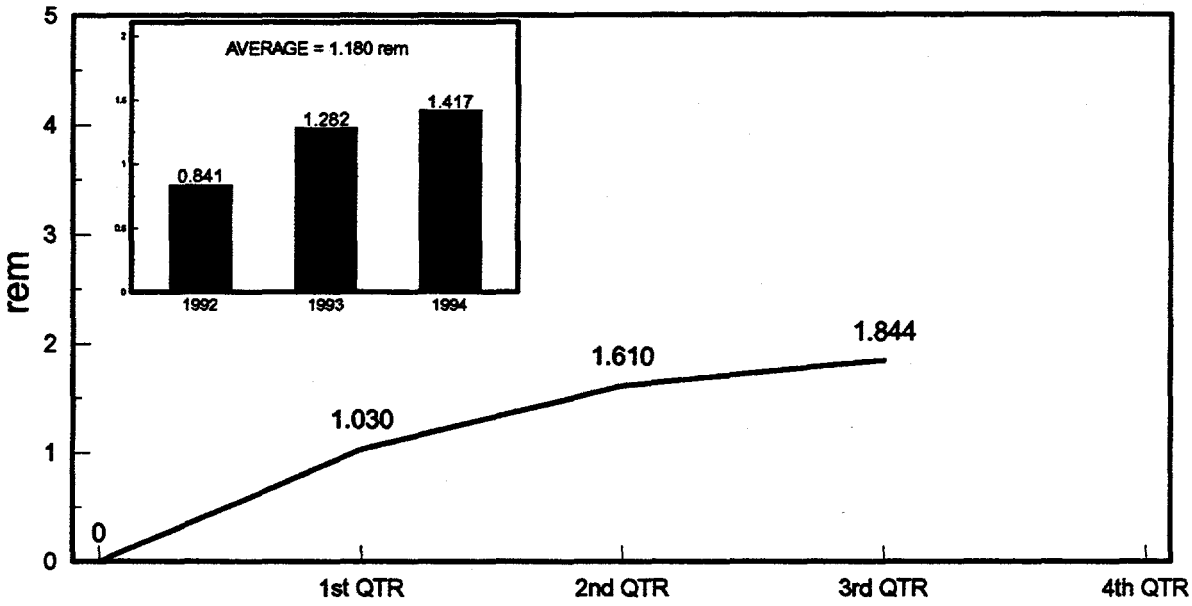
# ICPP Year-to-Date Average Worker Dose
## CY-95




The average worker radiation exposure provides an indicator of the effectiveness of the Radiological Control and ALARA Programs.

The average ICPP worker radiation exposure at the end of the third quarter increased from 0.106 rem to 0.214 rem. The exposure increase is due to an increase in work activities occurring on the Tank Farm and the NWCF Turnaround Project.

# ICPP Maximum Year-to-Date Penetrating Dose to a Worker
## CY-95

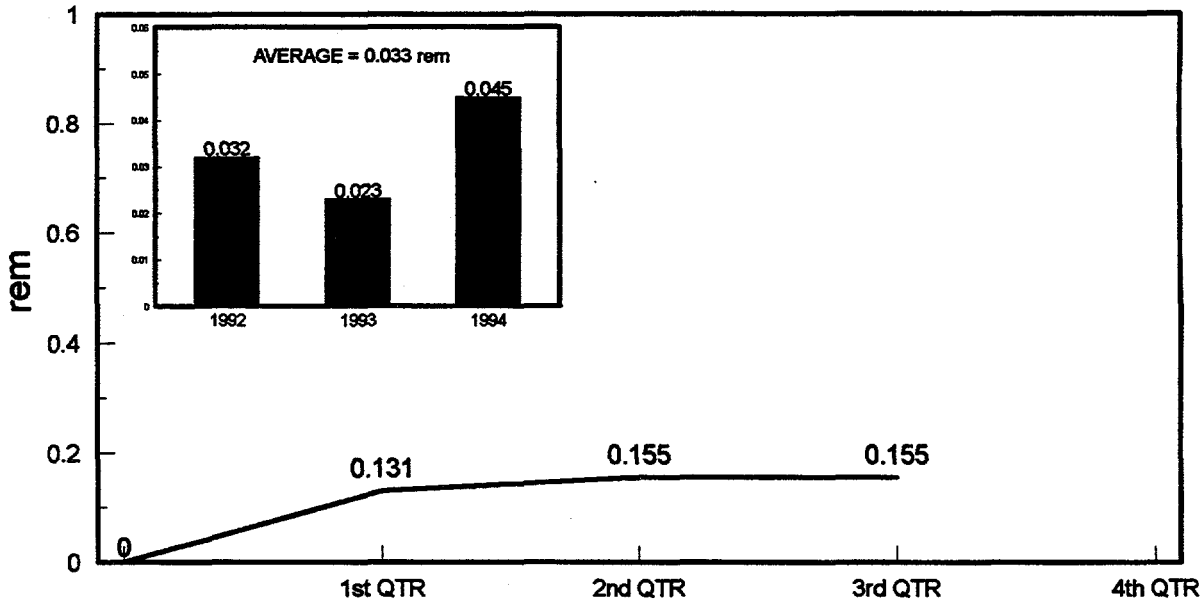



The maximum penetrating radiation dose to a worker provides another indication of how well worker radiation exposure is being managed.

The maximum penetrating radiation dose to an ICPP worker through the third quarter was 1.844 rem. This individual was involved in construction activities related to the Tank Farm Valve Box Upgrade Project.

Some construction personnel associated with the ICPP Tank Farm Valve Box Upgrade Project have been approved to receive up to 2 rem of exposure due to the complexity and high body fields encountered. Credit has been taken for the identification and justification of exposure extensions for approved personnel to exceed the 1.5 rem Administrative Control Level.

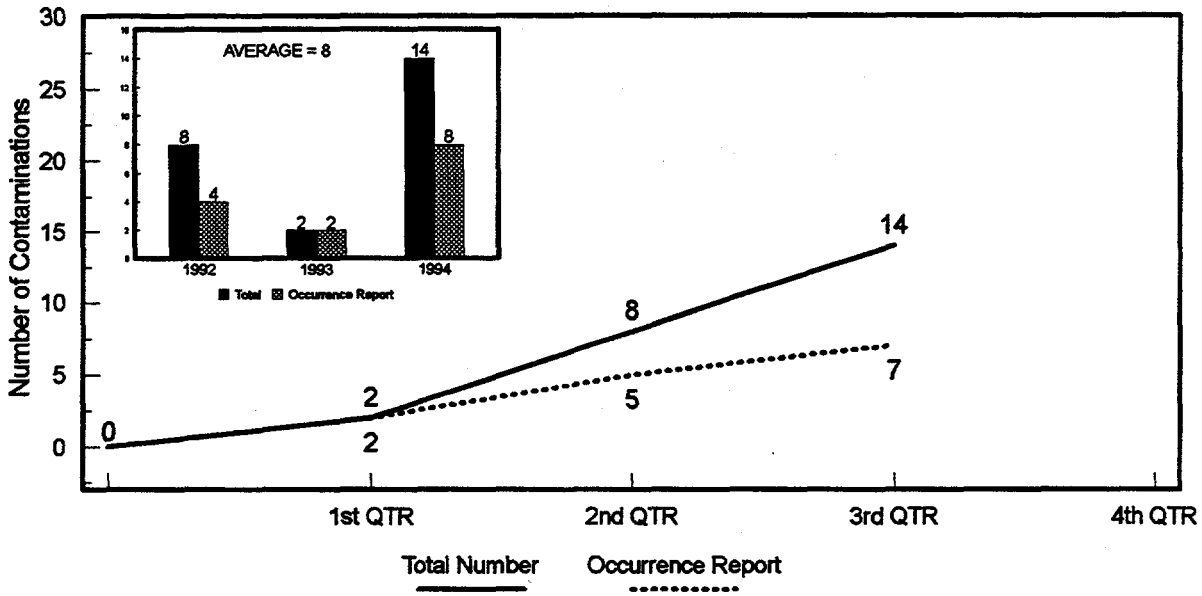
# ICPP Maximum Year-to-Date Neutron Dose to a Worker
## CY-95




The maximum neutron radiation dose to a worker provides an indication of how well worker exposure to neutron radiation is managed.

The ICPP maximum neutron radiation dose to a worker through the end of the third quarter was 0.155 rem.

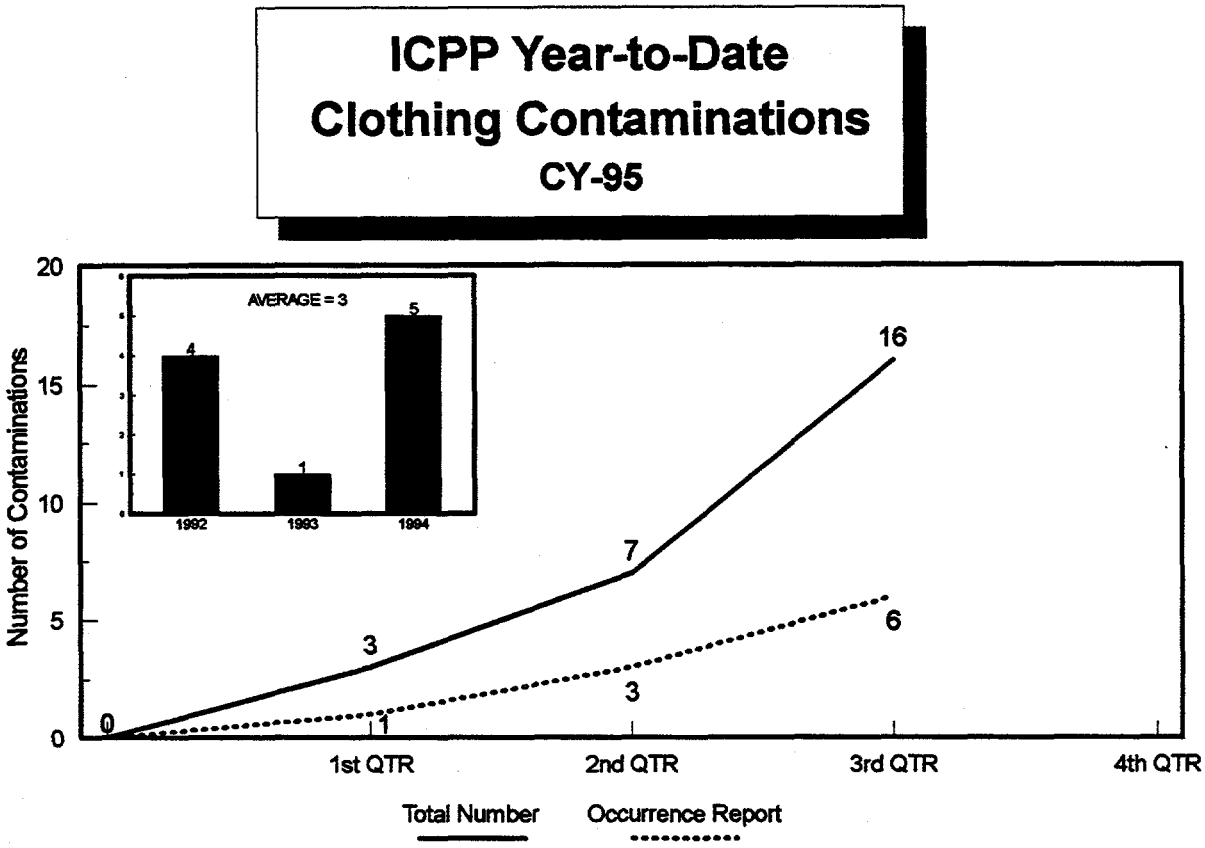
# ICPP Year-to-Date Skin Contaminations
## CY-95




Skin contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled.

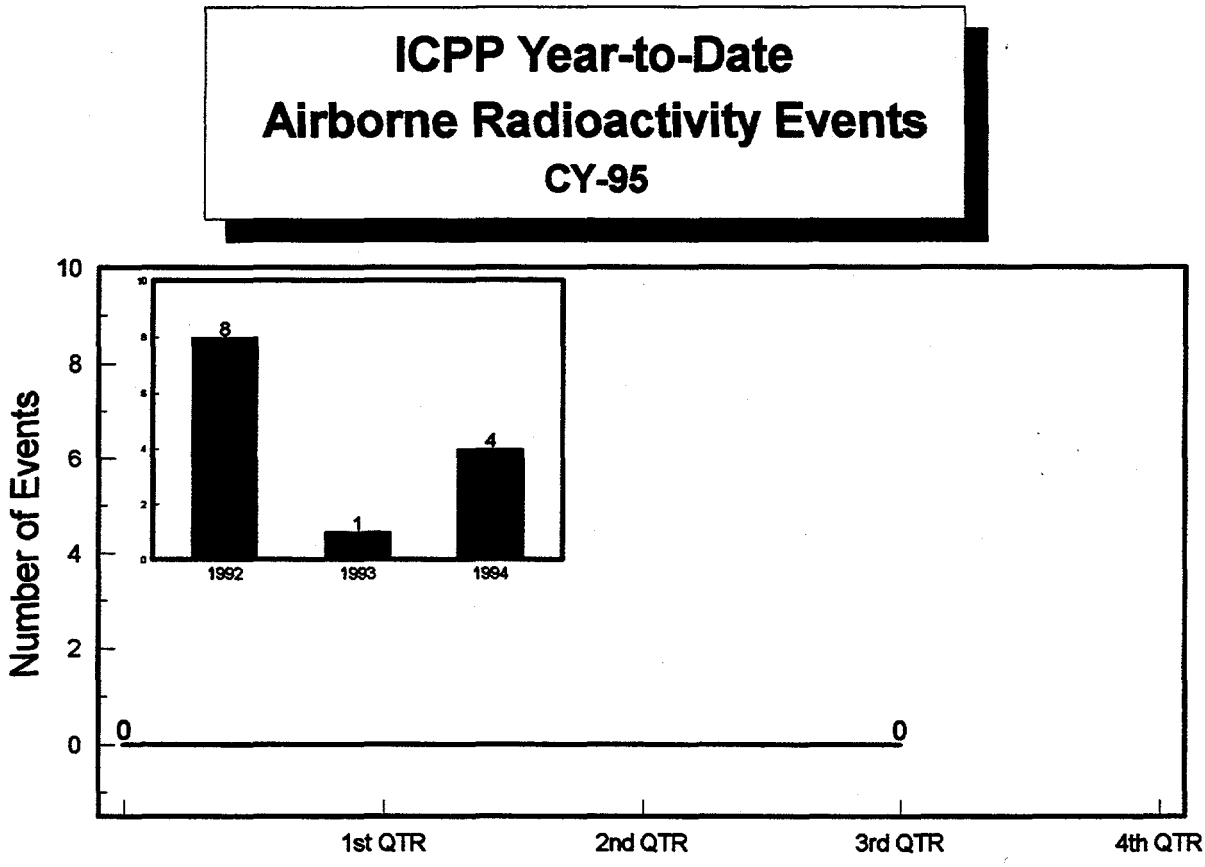
Six skin contaminations, two resulting in ORs occurred during the third quarter at the ICPP. Third quarter reportable skin contamination information is contained in ORs ID-LITC-WASTEMNGT-1995-0024, ID-LITC-WASTEMNGT 1995-0031.

There were three facial contaminations and no contaminated wounds at the ICPP through the third quarter.




Clothing contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled and how well workers adhere to safe radiological work practices.

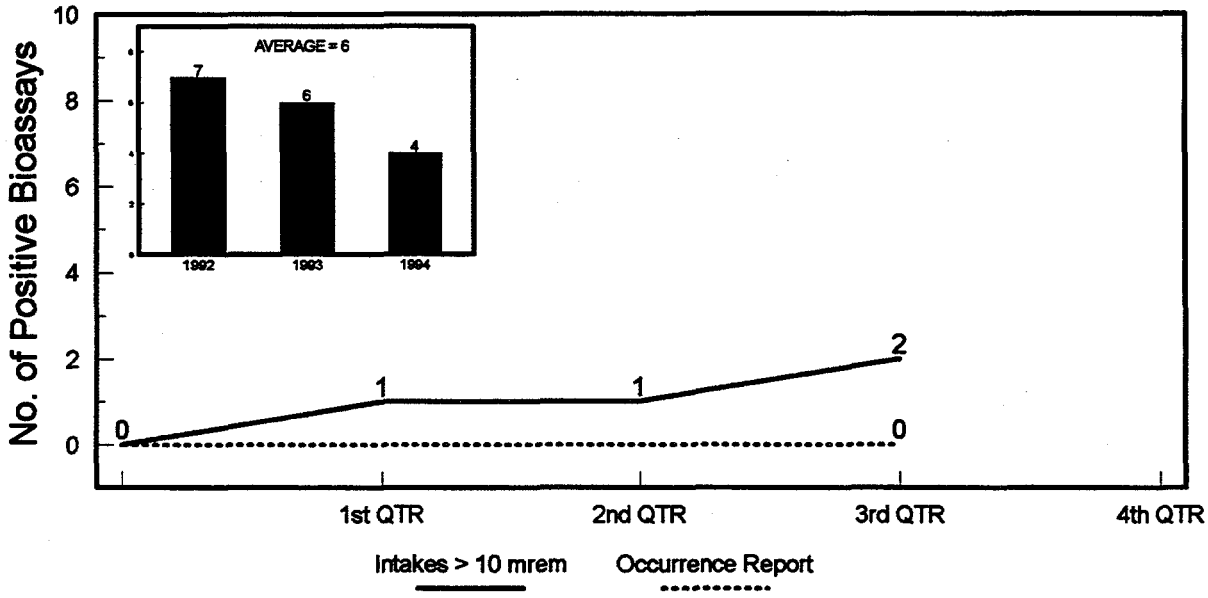
Nine clothing contaminations, three resulting in Occurrence Reports, occurred during the third quarter at the ICPP. Third quarter reportable clothing contamination information is contained in ORs ID-LITC-WASTEMNGT-1995-0025, ID-LITC-PHASEOUT-1995-0004 and ID-LITCO-LANLORD-1995-0024.




Air samplers monitor occupied process and laboratory areas to quantify concentrations of airborne radioactivity. The DOE unit is a DAC. An area which exceeds 10% of one DAC must be posted as an Airborne Radioactivity Area.

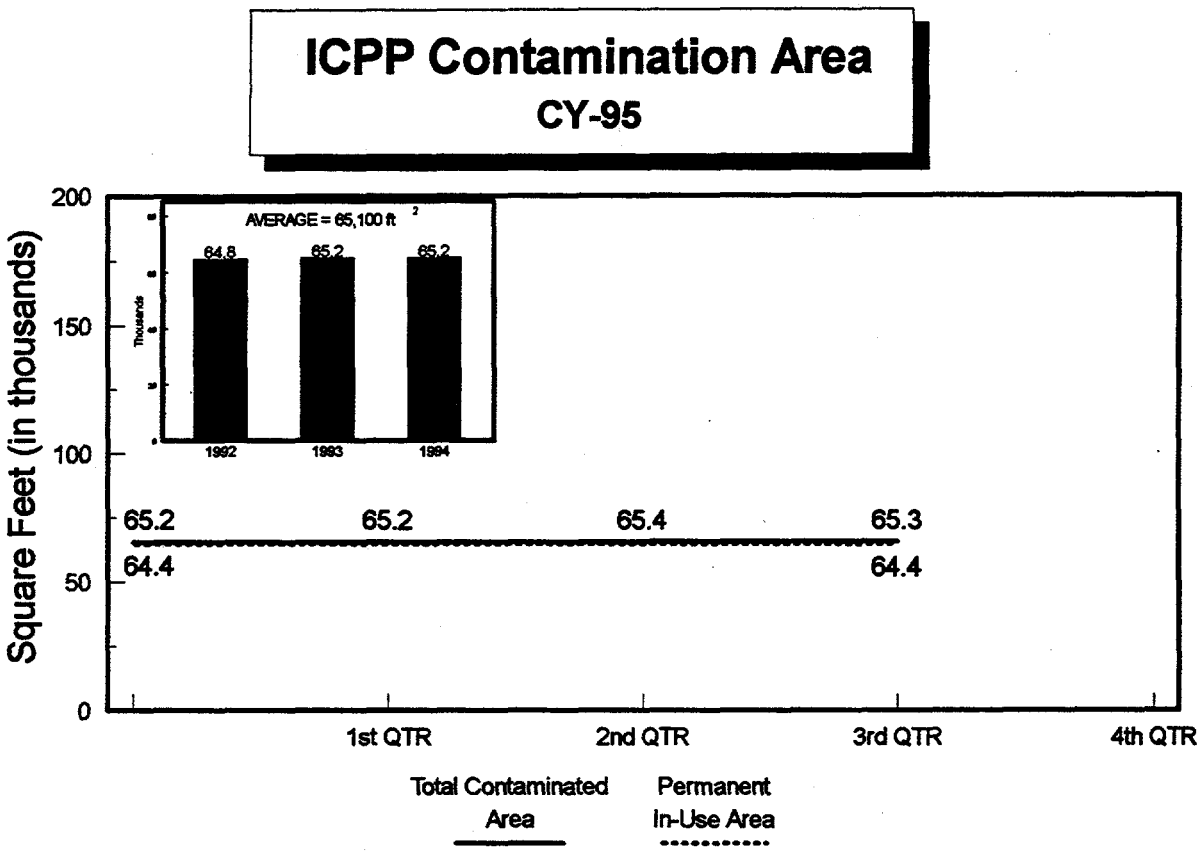
No airborne activity greater than 10% DAC was detected in ICPP areas not posted as Airborne Radioactivity Areas during the third quarter.

# ICPP Year-to-Date Radioactive Material Intakes
## CY-95




This indicator depicts the number of positive bioassay results that indicate an intake of radioactive material and result in a dose assessment of 10 mrem or greater from an ICPP exposure during occupational work activities.

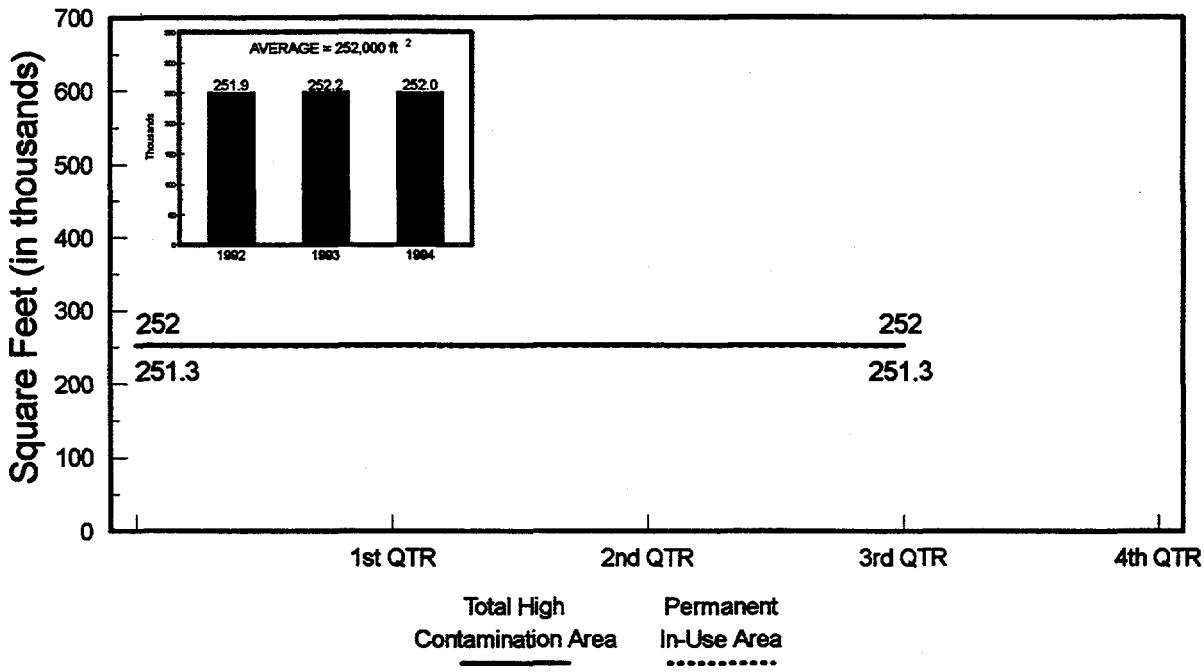
There was one positive bioassay indicating an intake of radioactive material that resulted in a dose assessment of 10 mrem or greater at the ICPP during the third quarter.




This indicator is used to report the total ICPP area designated as Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual.

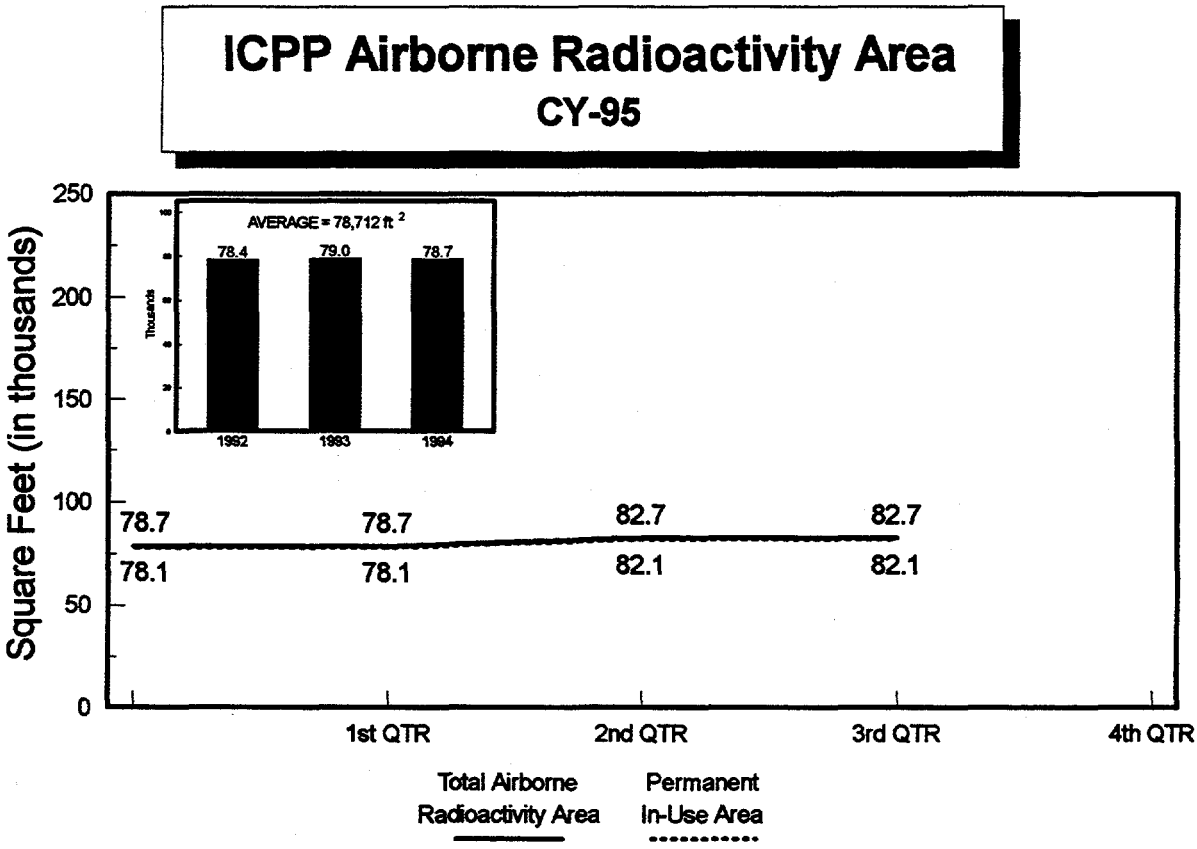
The total Contamination Area at the ICPP at the end of the third quarter was 65,319 square feet. Of this area, 64,452 square feet was designated as permanent and in-use.

# ICPP High Contamination Area
## CY-95



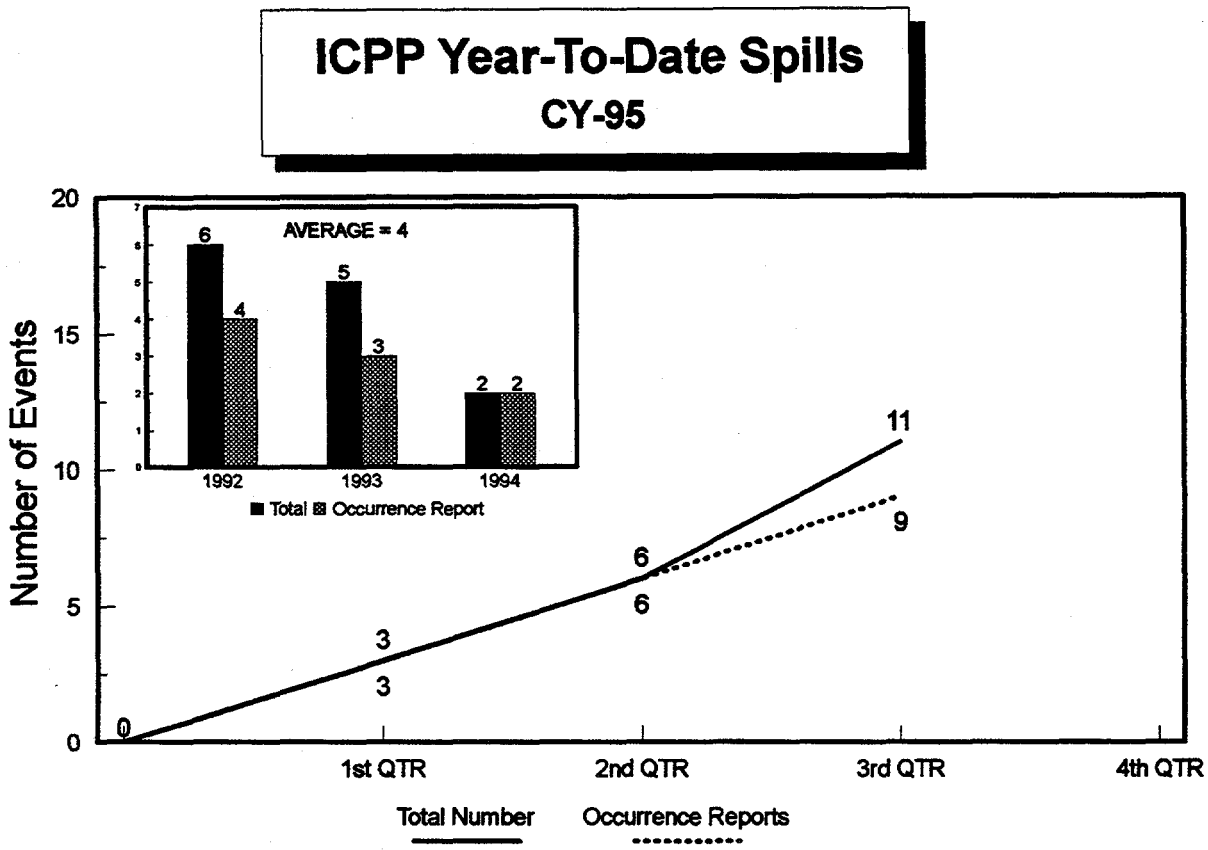

This indicator is used to report the total ICPP area designated as High Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual.

The total High Contamination Area at the ICPP during the third quarter was 251,961 square feet. Of this area, 251,311 square feet was designated as permanent and in-use.




This indicator is used to report the total ICPP area designated as Airborne Radioactivity Area as defined in Table 2-3 of the INEL Radiological Control Manual.

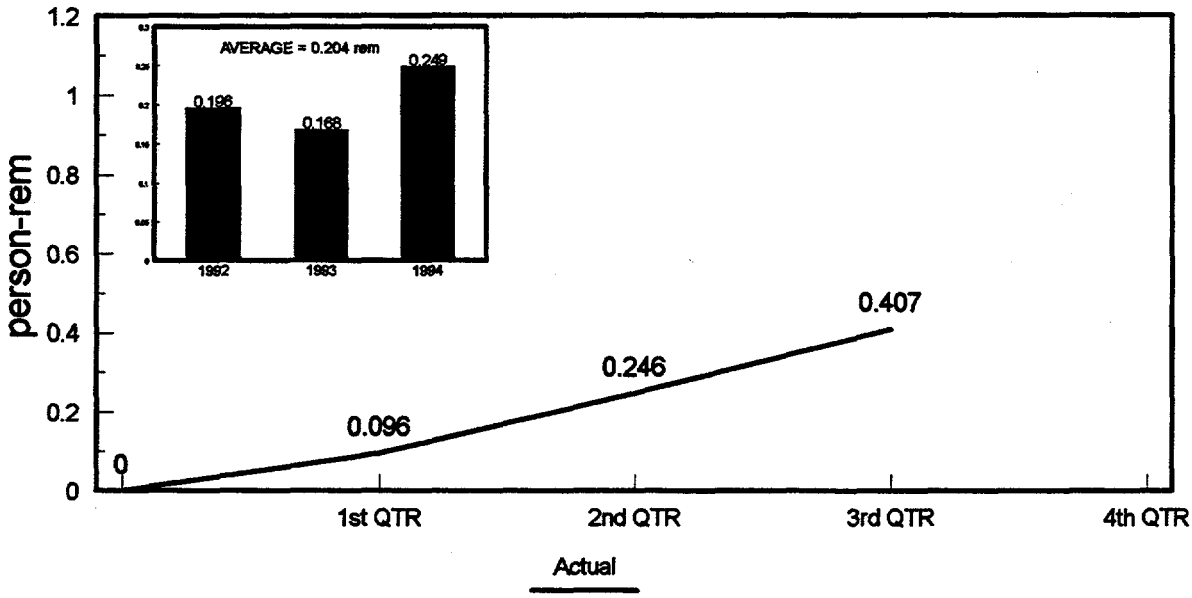
The total Airborne Radioactivity Area at the ICPP at the end of the third quarter was 82,712 square feet. Of this area, 82,062 square feet was designated as permanent and in-use.




This indicator is used to report inadvertent loss or release of radioactive material.

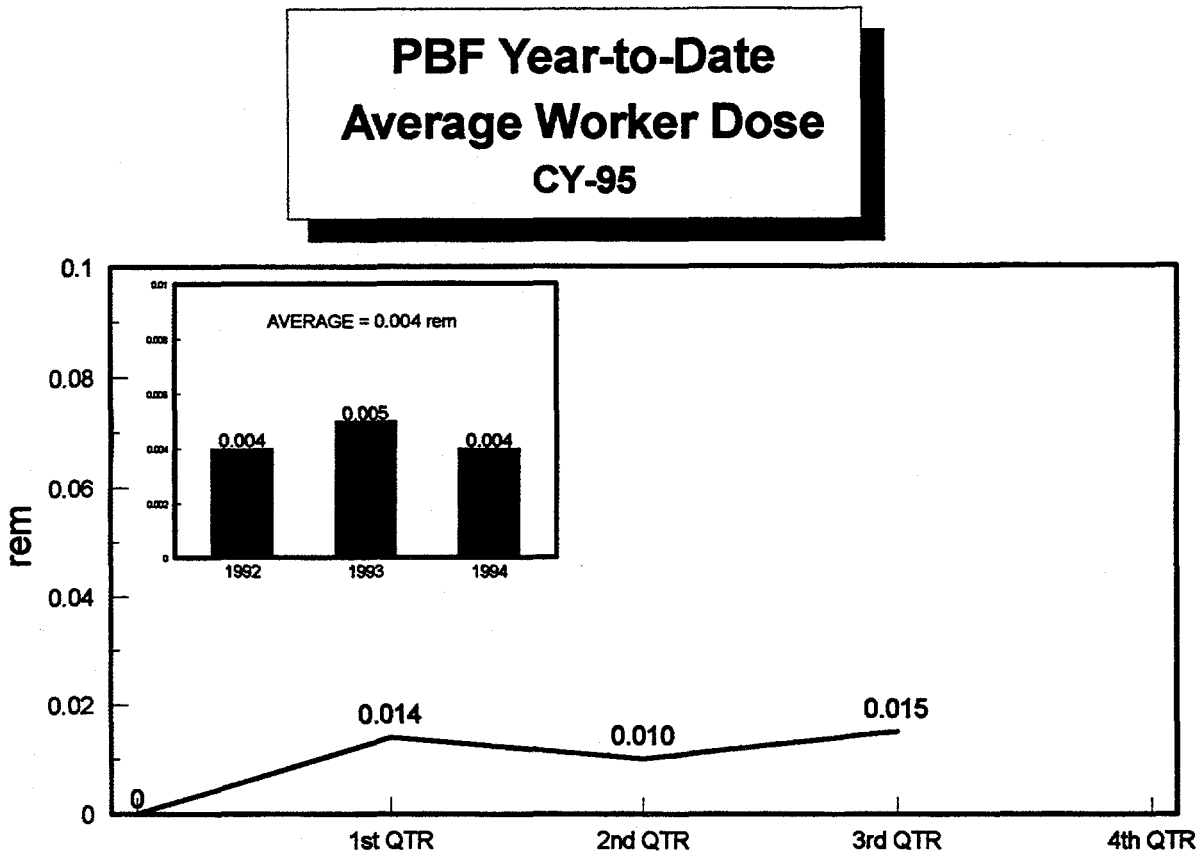
The ICPP had five loss or releases of radioactive contaminated materials during the third quarter, of which three resulted in Occurrence Reports. Third quarter reportable spill information is contained in ORs ID-LITC-LANDLORD-1995-0021, ID-LITC-LANDLORD-1995-0022, and ID-LITC-WASTEMNGT-1995-0030.

# PBF Collective Year-to-Date Penetrating Radiation Dose
## CY-95




PBF, WERF, and WROC collective radiation exposure through the third quarter was 0.407 rem.

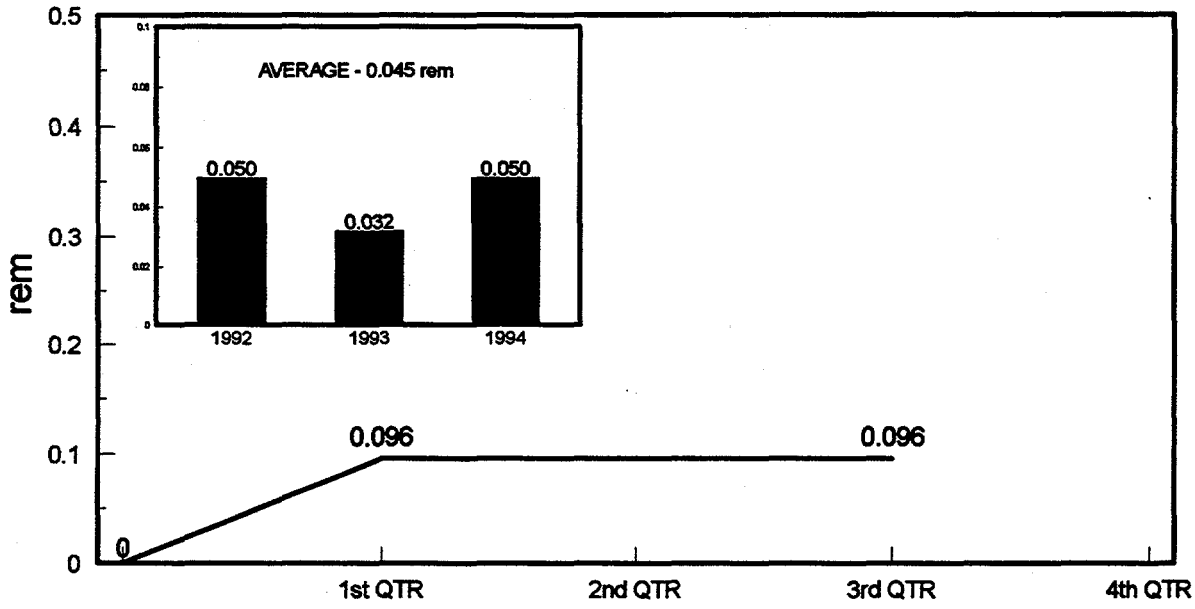
Major contributors to the third quarter penetrating radiation at PBF, WERF and WROC were from waste sizing and from waste shipping and receiving operations.




The average worker radiation exposure provides an indicator of the effectiveness of the Radiological Control and ALARA programs.

The average PBF/WERF/WROC worker radiation exposure at the end of the third quarter was 0.015 rem. The major sources of exposure were related to waste sizing, shipping and receiving.

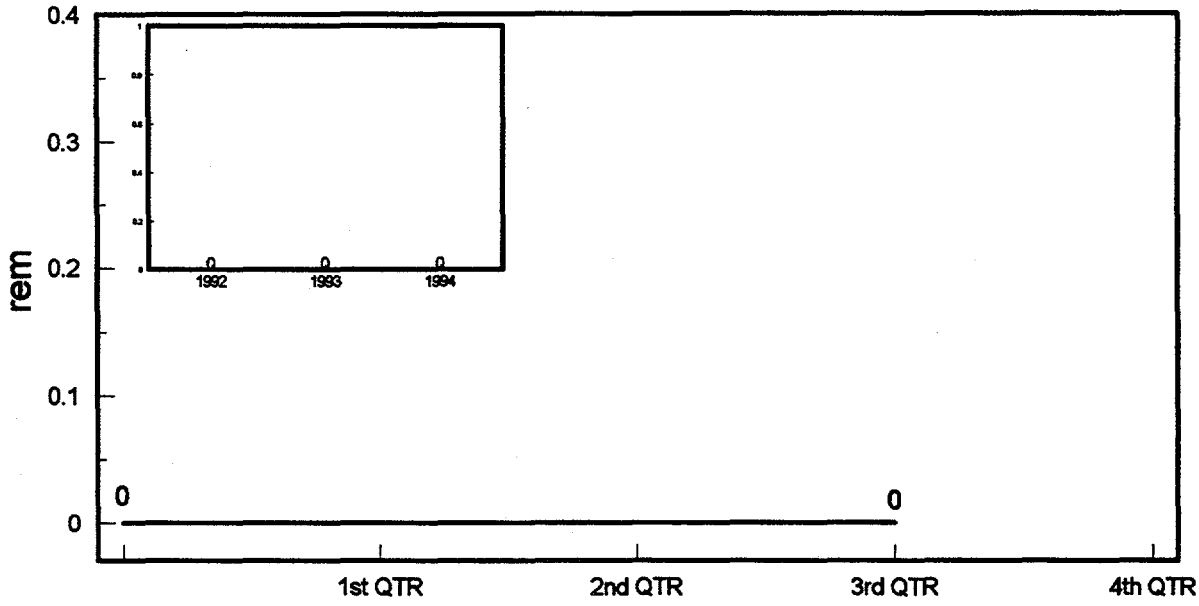
# PBF Maximum Year-to-Date Penetrating Dose to a Worker
## CY-95




The maximum penetrating radiation dose to a worker provides another indication of how well worker radiation exposure is being managed.

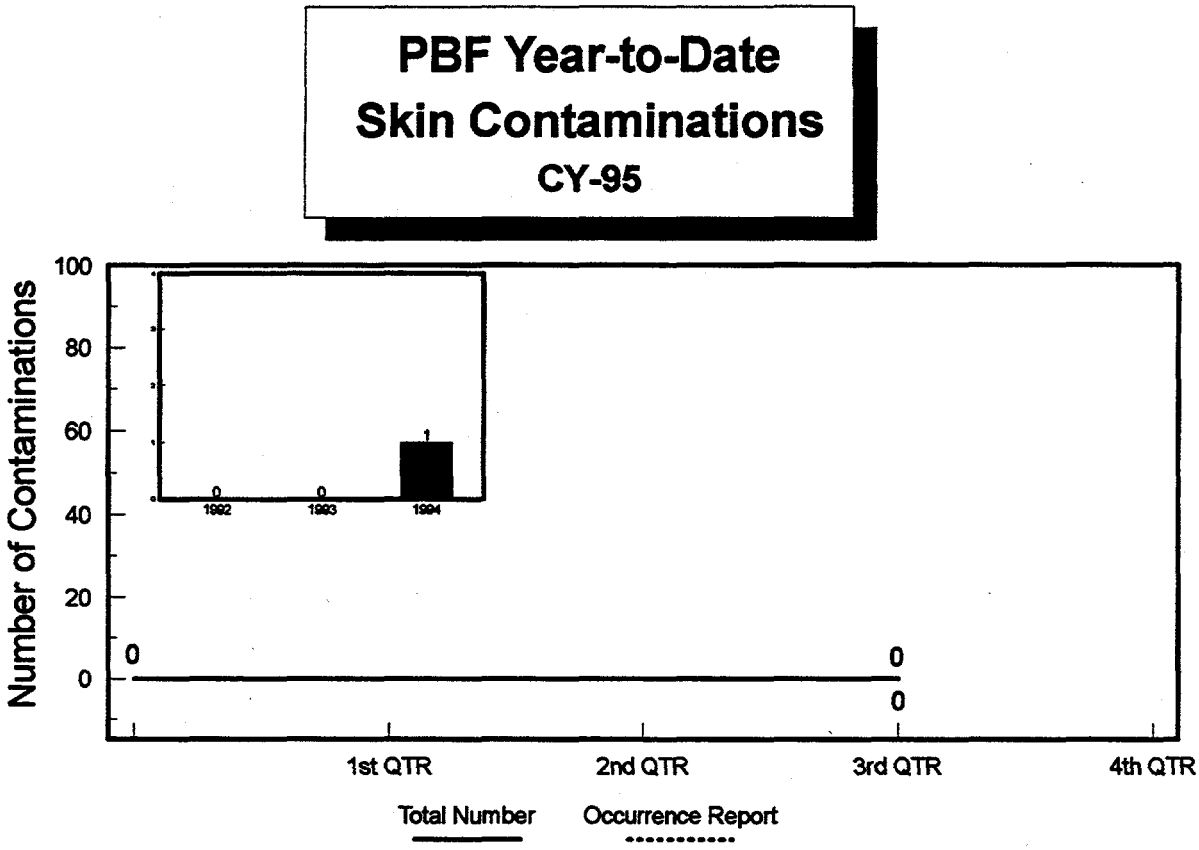
The maximum penetrating radiation dose to a PBF/WERF/WROC worker through the third quarter was 0.096 rem.

# PBF Maximum Year-to-Date Neutron Dose to a Worker
## CY-95




The maximum neutron radiation dose to a worker provides an indication of how well worker exposure to neutron radiation is managed.

The PBF/WERF/WROC maximum neutron radiation dose to a worker through the end of the third quarter was zero rem.

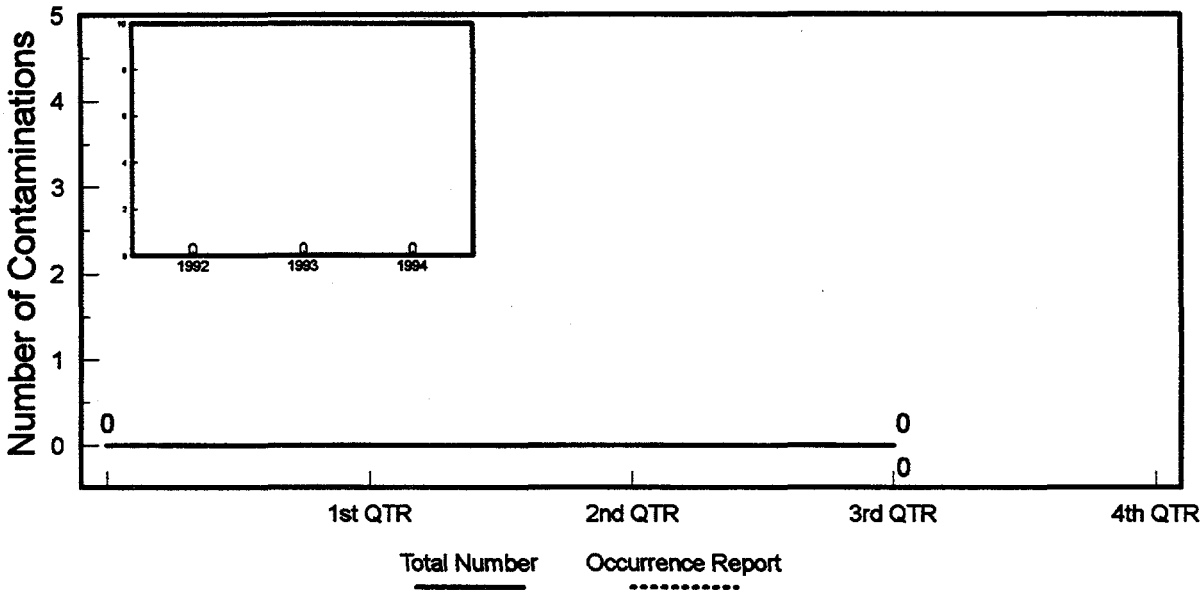



Skin contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled.

There were no skin contaminations at PBF, WERF, or WROC during the third quarter.

# PBF Year-to-Date Clothing Contaminations

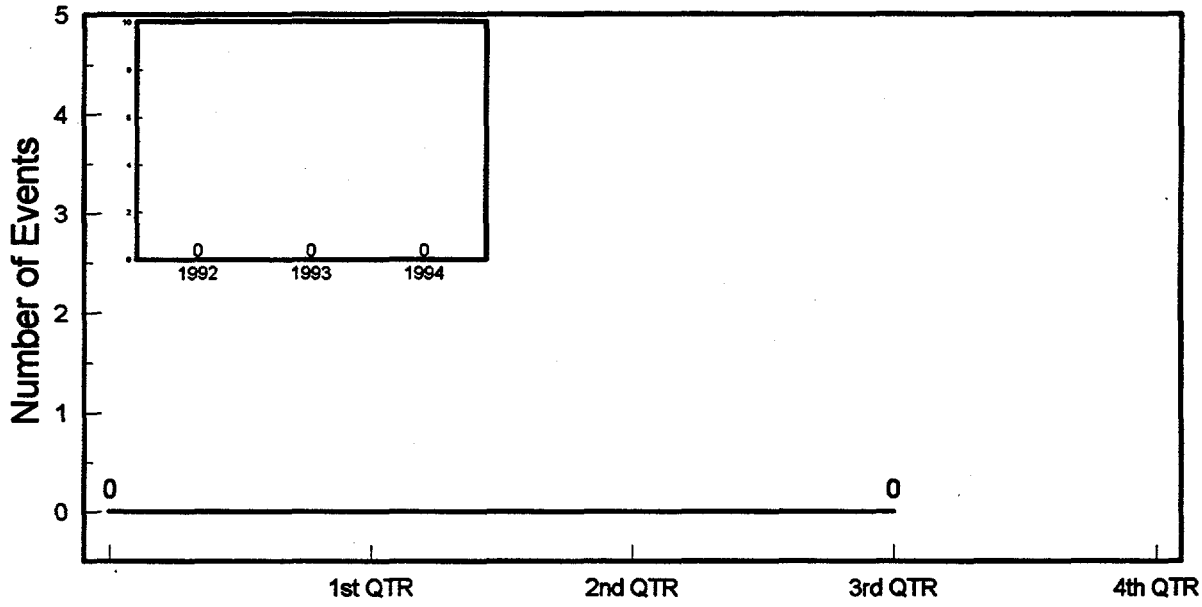
## CY-95




Clothing contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled and how well workers adhere to safe radiological work practices.

There were no clothing contaminations at PBF, WERF, or WROC through the end of the third quarter.

# PBF Year-to-Date
# Airborne Radioactivity Events
## CY-95

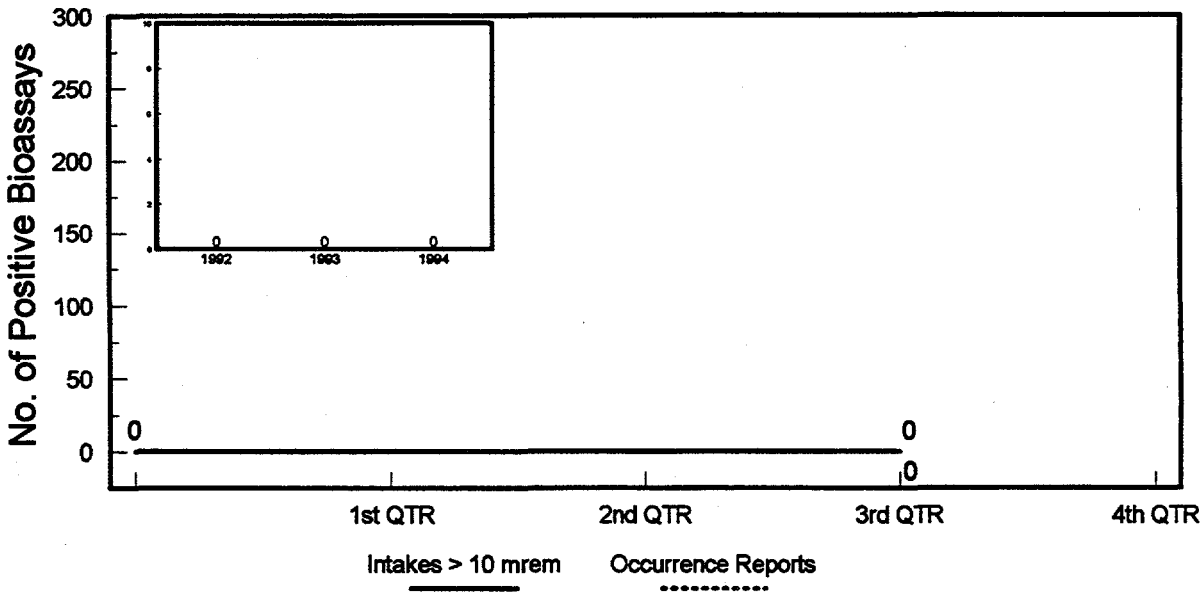



Air samplers monitor occupied process and laboratory areas to quantify concentrations of airborne radioactivity. The DOE unit is a DAC.
An area which exceeds 10% of one DAC must be posted as an Airborne Radioactivity Area.

No airborne activity greater than 10% DAC was detected at PBF, WERF, or WROC areas not posted as Airborne Radioactivity Areas during the third quarter.

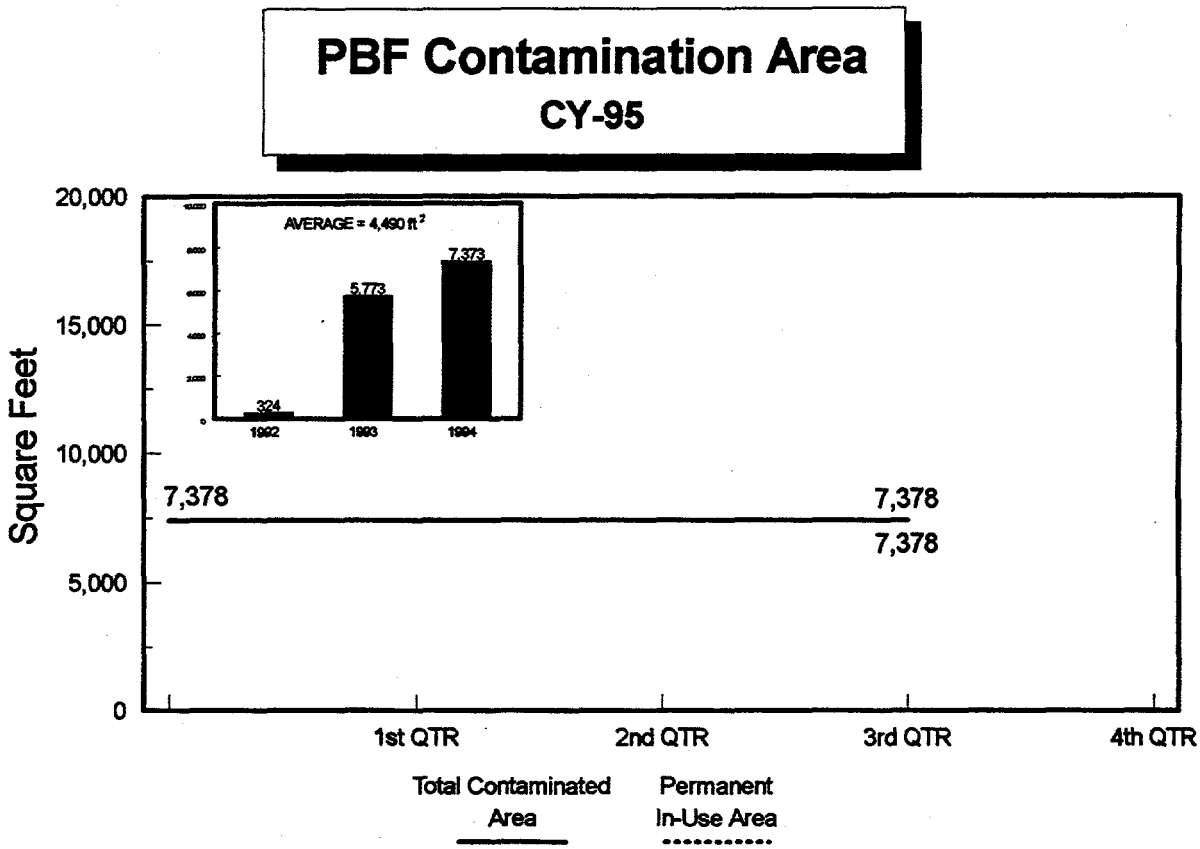
# PBF Year-to-Date Radioactive Material Intakes

## CY-95



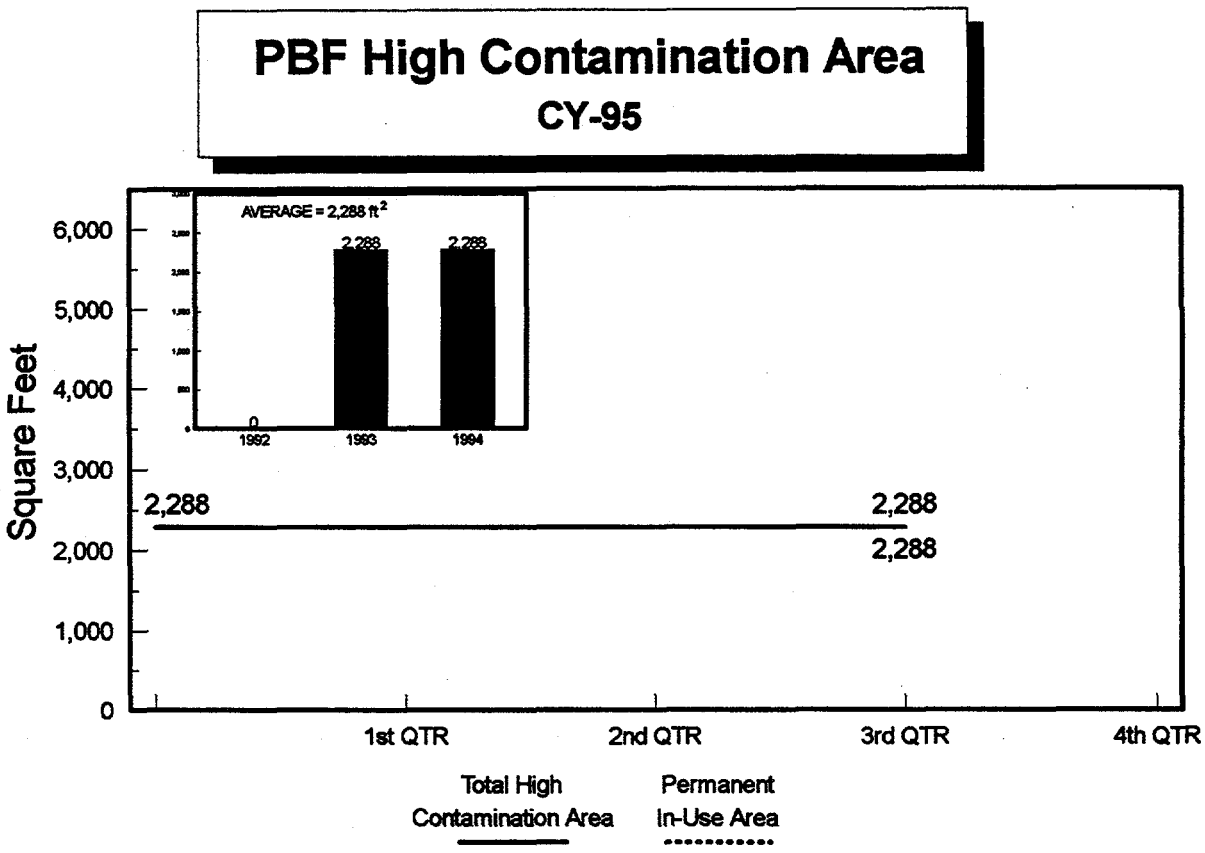

This indicator depicts the number of positive bioassay results that indicate an intake of radioactive material and result in a dose assessment of 10 mrem or greater from a PBF, WERF, or WROC occupational exposure during work activities.

There were no positive bioassays indicating an intake of radioactive material that resulted in a dose assessment of 10 mrem or greater at PBF, WERF or WROC during the third quarter.



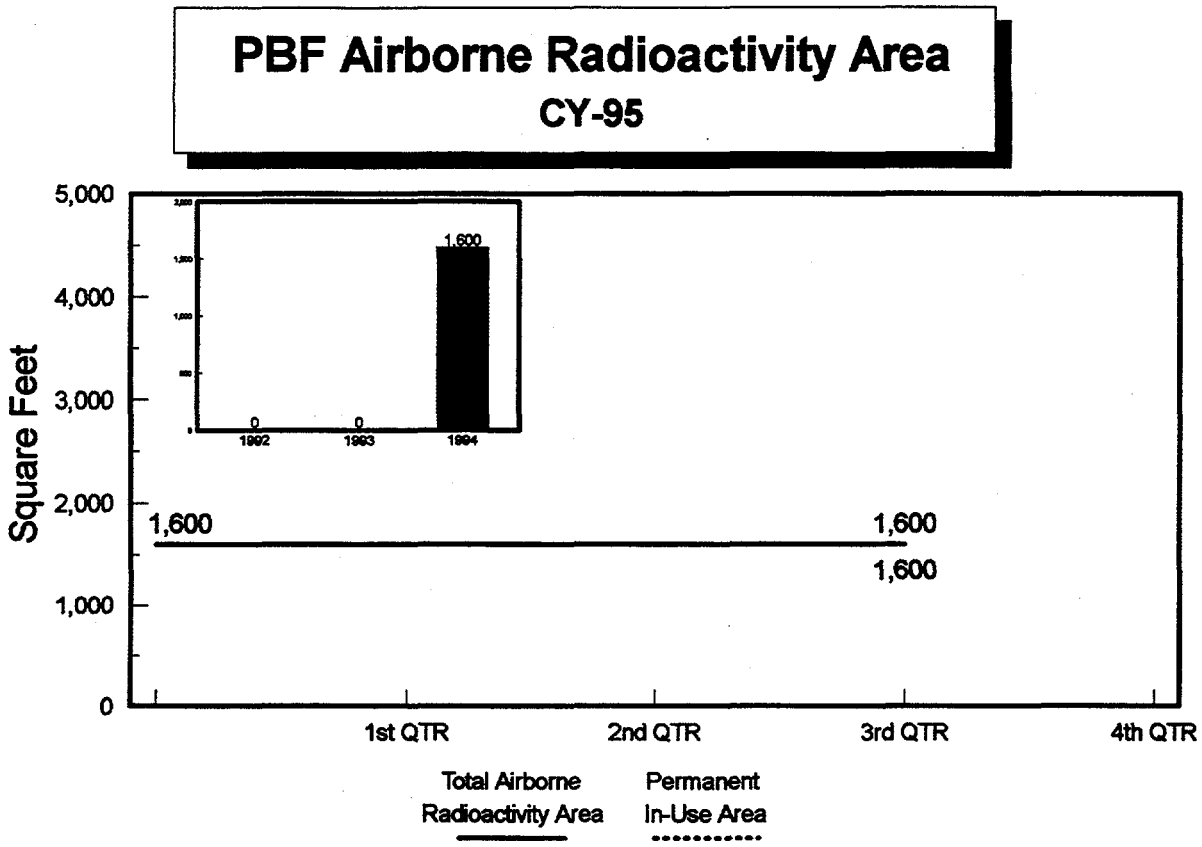

This indicator is used to report the total area designated as Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual.

The total Contamination Area at PBF, WERF, and WROC at the end of the third quarter was 7,378 square feet. All of this area was designated as permanent and in-use.



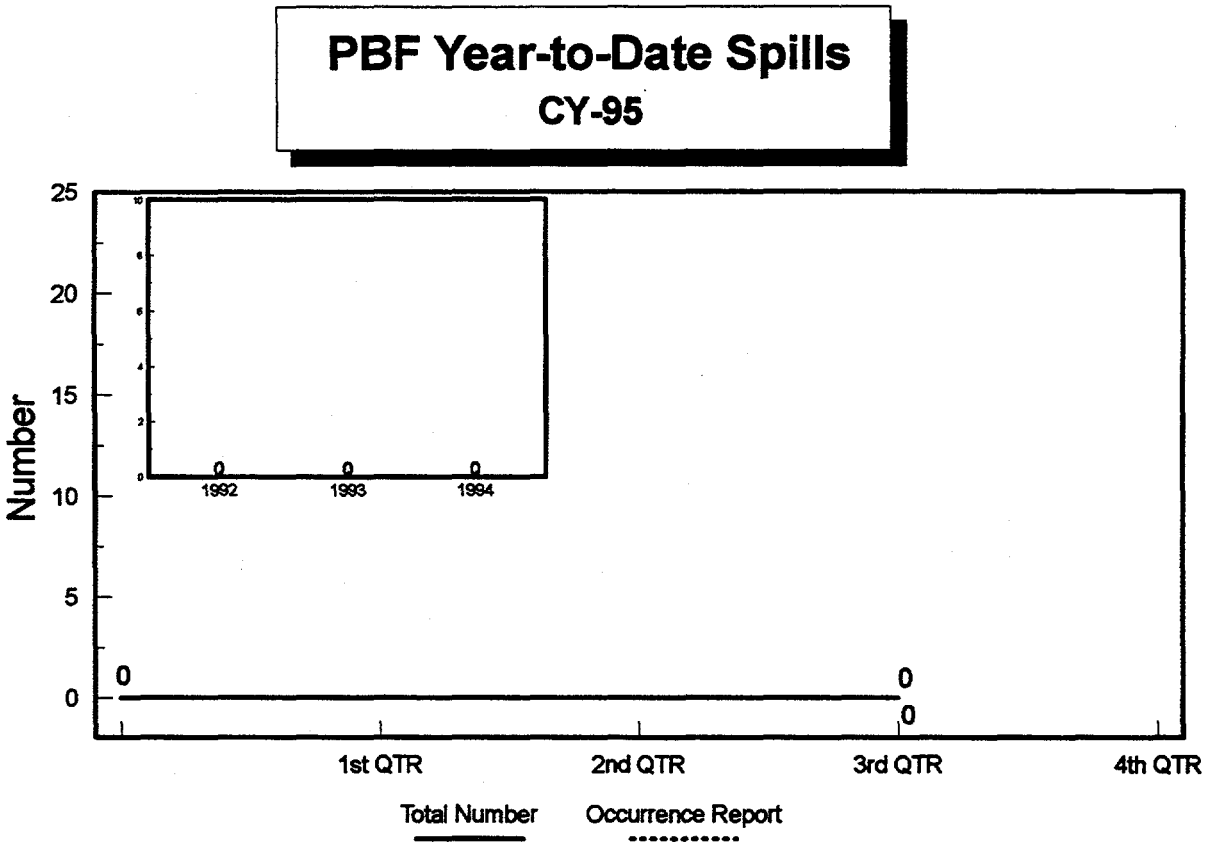

This indicator is used to report the total area designated as High Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual

The total High Contamination Area at PBF, WERF, and WROC at the end of the third quarter was 2,288 square feet. All of this area was designated as permanent and in-use.




This indicator is used to report the total area designated as Airborne Radioactivity Area as defined in Table 2-3 of the INEL Radiological Control Manual.

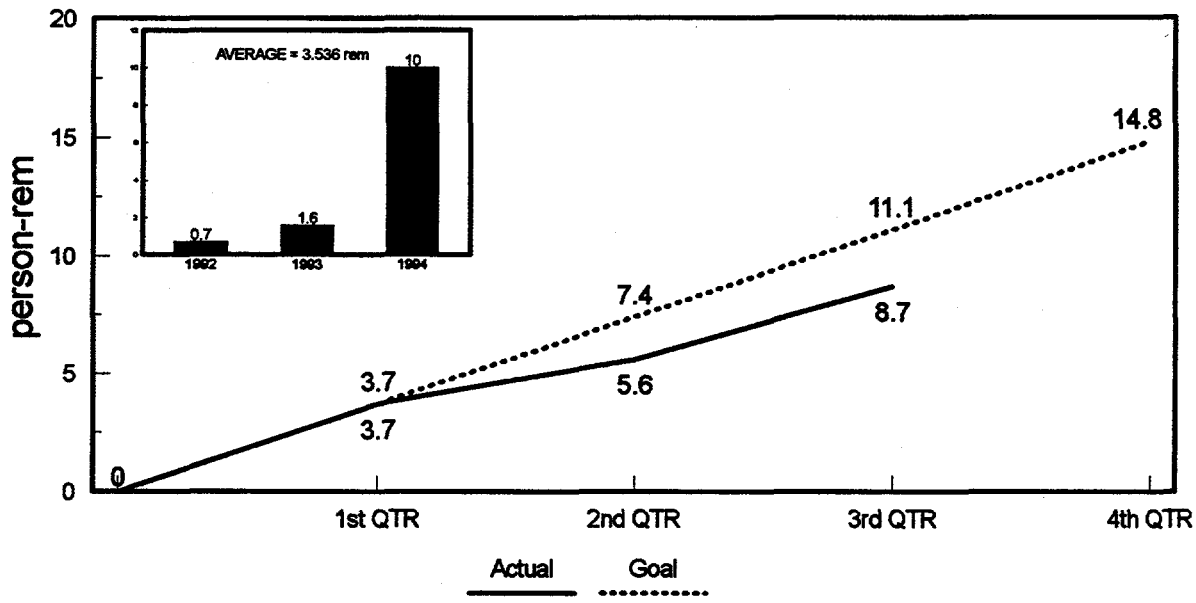
The total Airborne Radioactivity Area at PBF, WERF, and WROC at the end of the third quarter was 1600 square feet. All of this area was designated as permanent or in-use.




This indicator is used to report inadvertent loss or release of radioactive material.

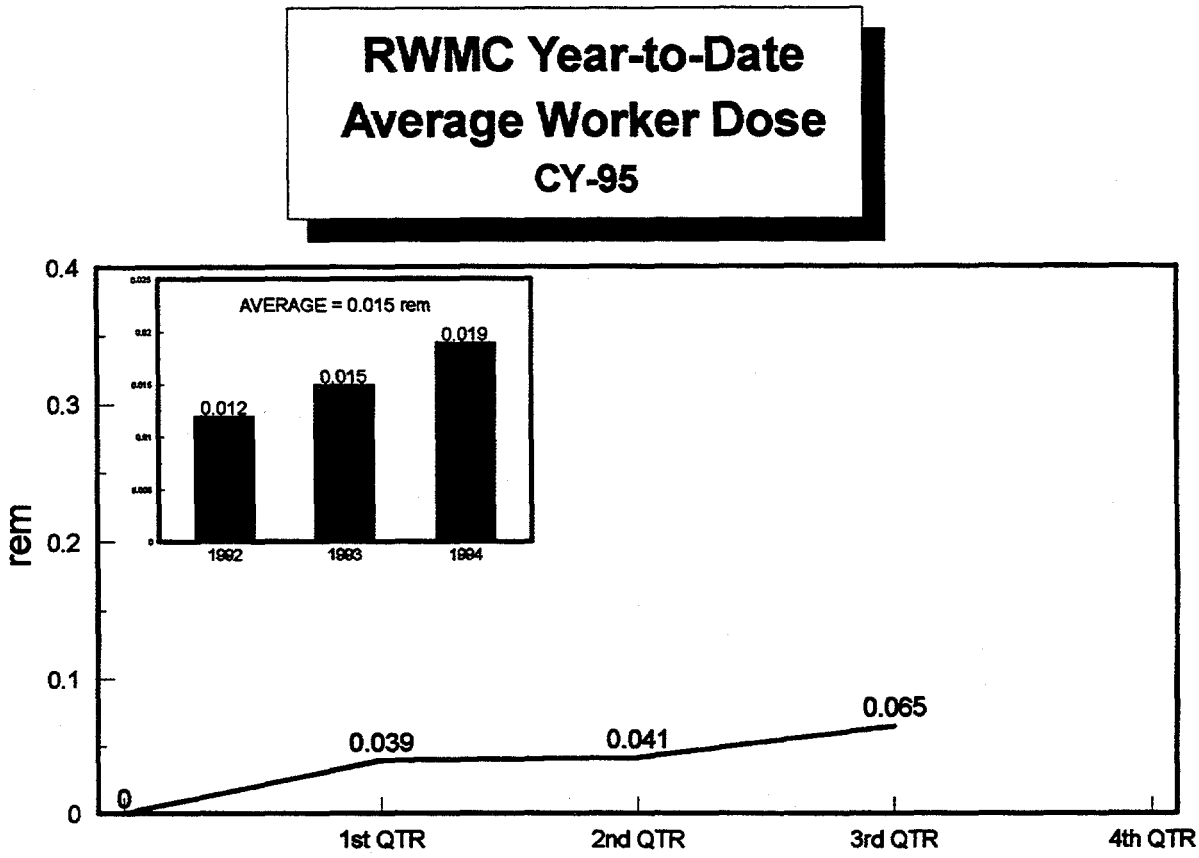
There were no radioactively contaminated spills at PBF, WERF, or WROC through the end of the third quarter.

# RWMC Collective Year-to-Date Penetrating Radiation Dose
## CY-95




The RWMC collective radiation exposure for the third quarter was 8.657 rem.

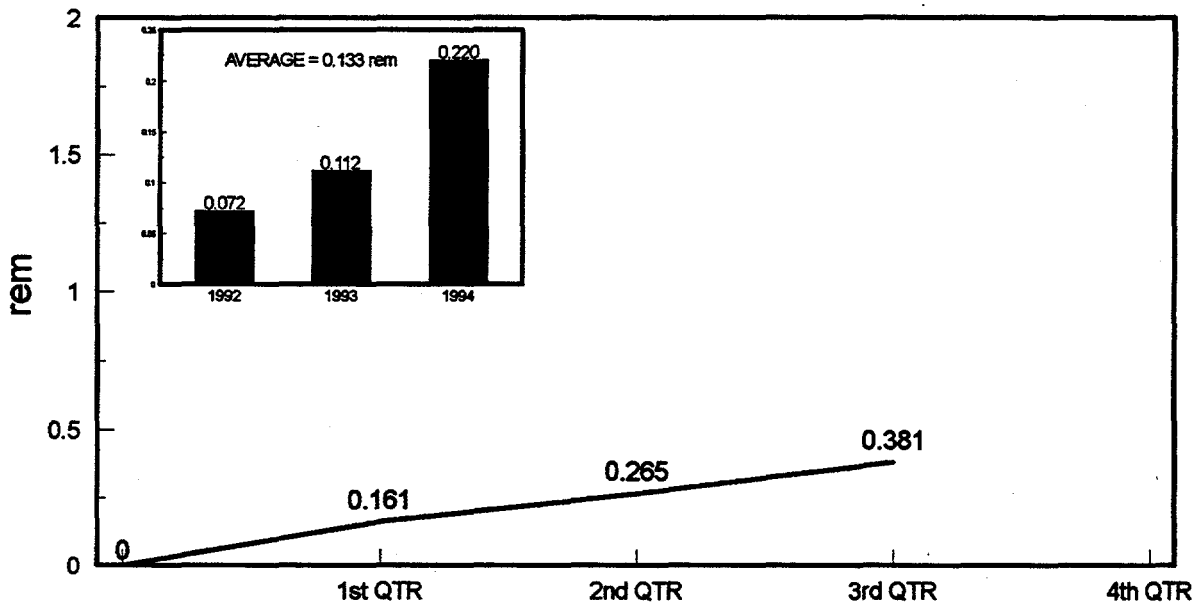
The major contributor to the third quarter RWMC penetrating radiation exposure was waste transfers from C&S to WSF-628 and low-level waste disposal operations.




The average worker radiation exposure provides an indicator of the effectiveness of the Radiological Control and ALARA Programs.

The average RWMC worker radiation exposure at the end of the third quarter was 0.065 rem. The major source of exposure was related to waste transfers from C&S to WMF-628 and from low-level disposal operations.

# RWMC Maximum Year-to-Date Penetrating Dose to a Worker
## CY-95

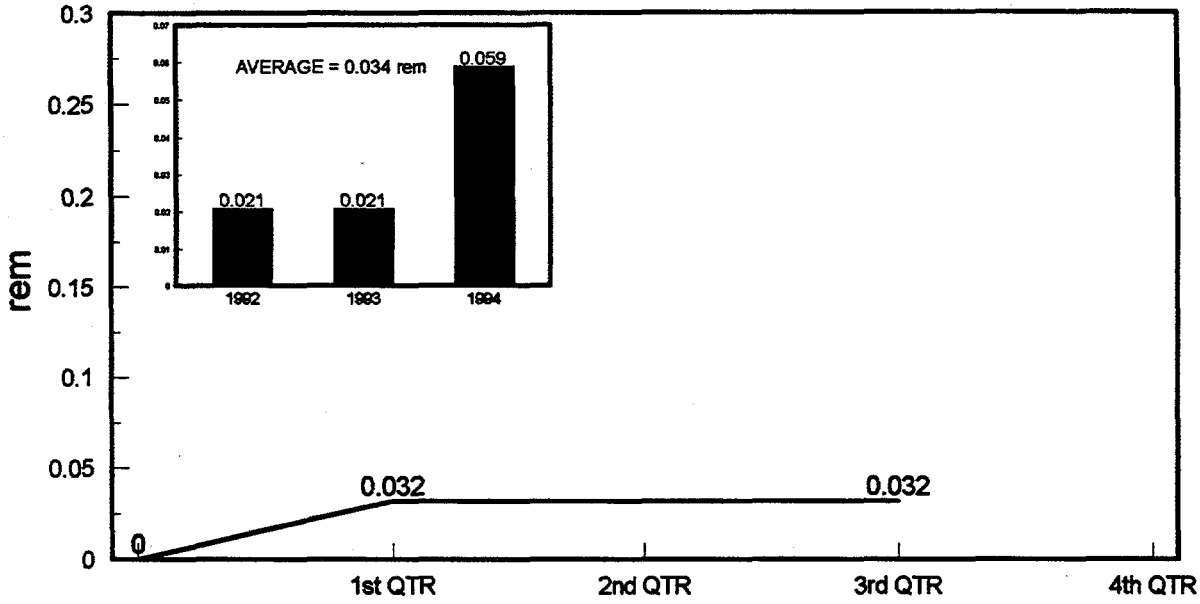



The maximum penetrating radiation dose to a worker provides another indication of how well worker radiation exposure is being managed.

The maximum penetrating radiation dose to a RWMC worker through the third quarter was 0.381 rem.

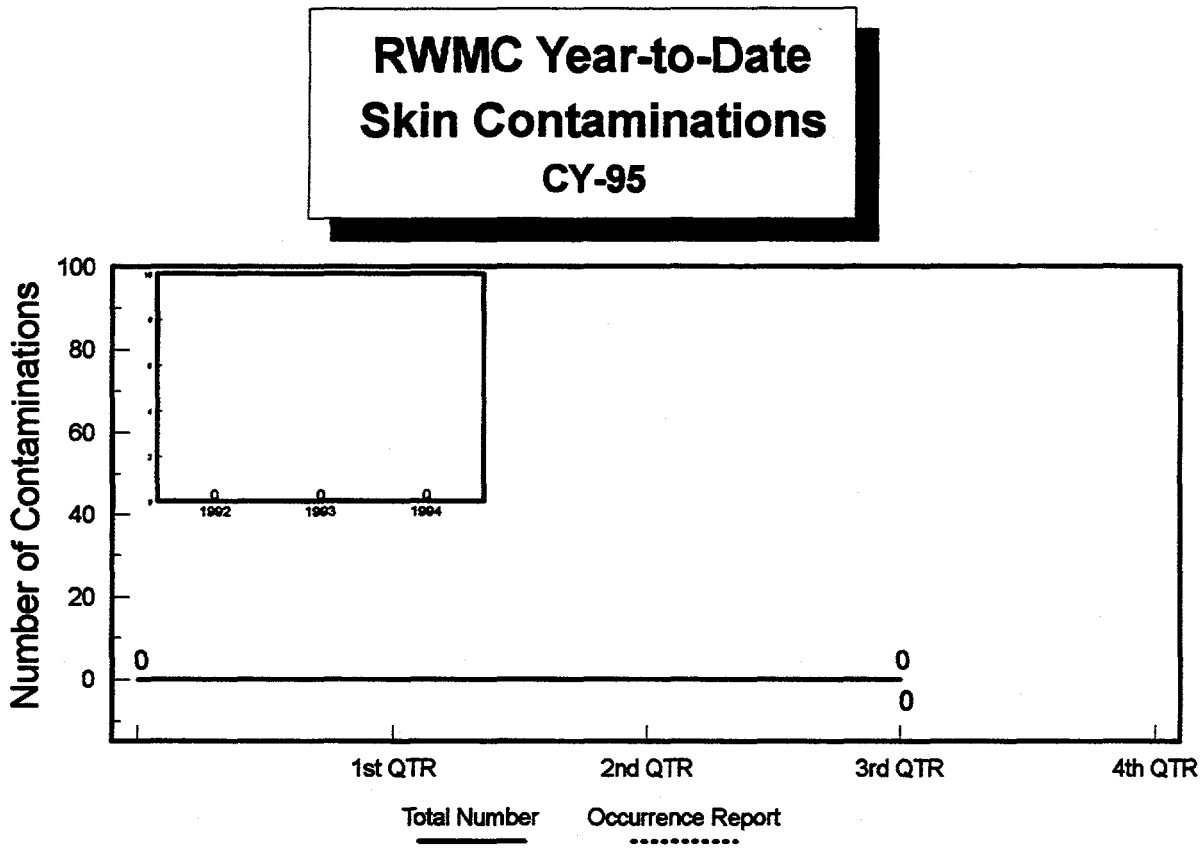
# RWMC Maximum Year-to-Date Neutron Dose to a Worker

## CY-95




The maximum neutron radiation dose to a worker provides an indication of how well worker exposure to neutron radiation is managed.

The RWMC maximum neutron radiation dose to a worker through the end of the third quarter was 0.032 rem.

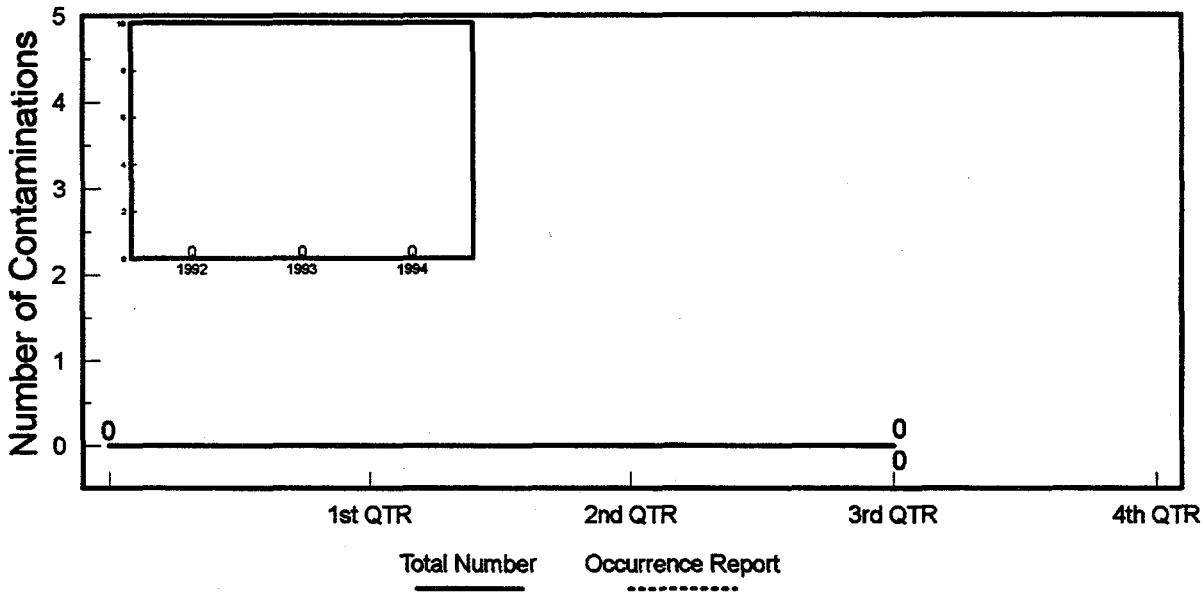



Skin contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled.

There were no skin contaminations at RWMC during the third quarter.

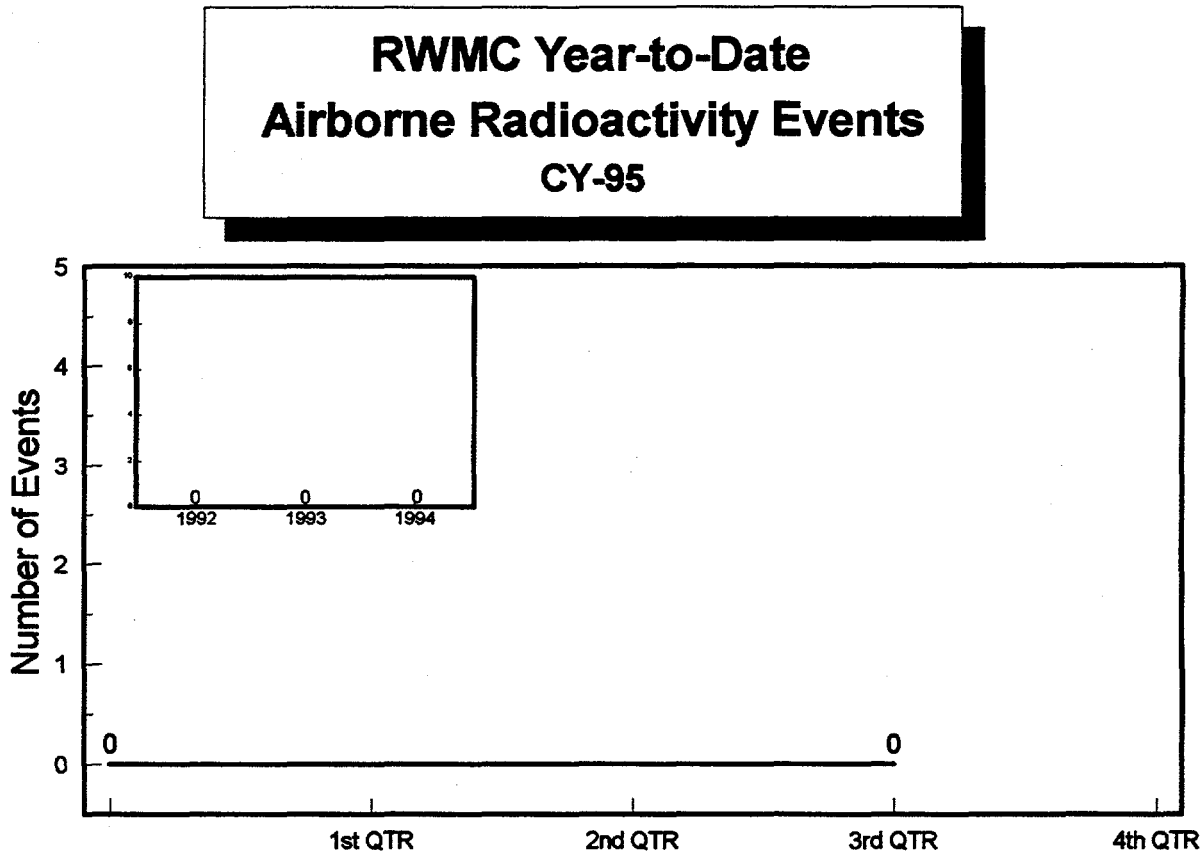
# RWMC Year-to-Date Clothing Contaminations

## CY-95



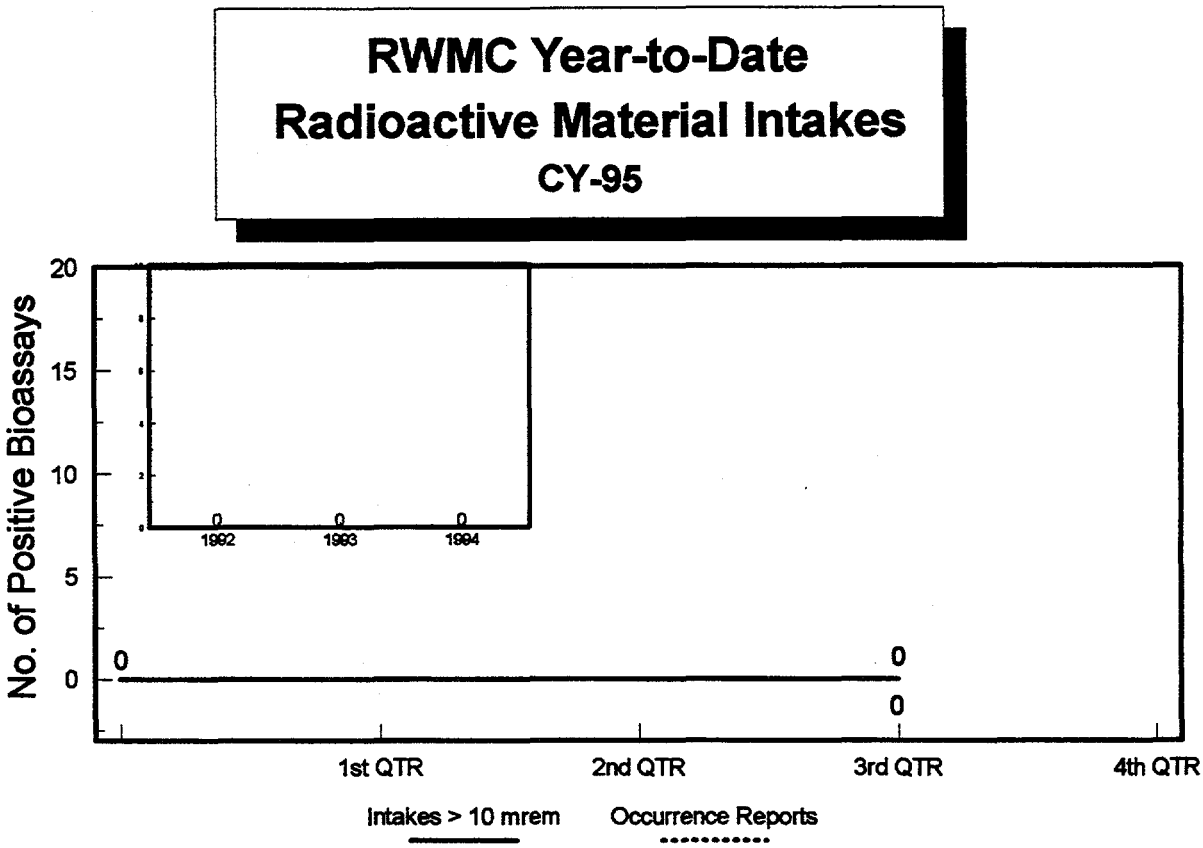

Clothing contamination events are measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled and how well workers adhere to safe radiological work practices.

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



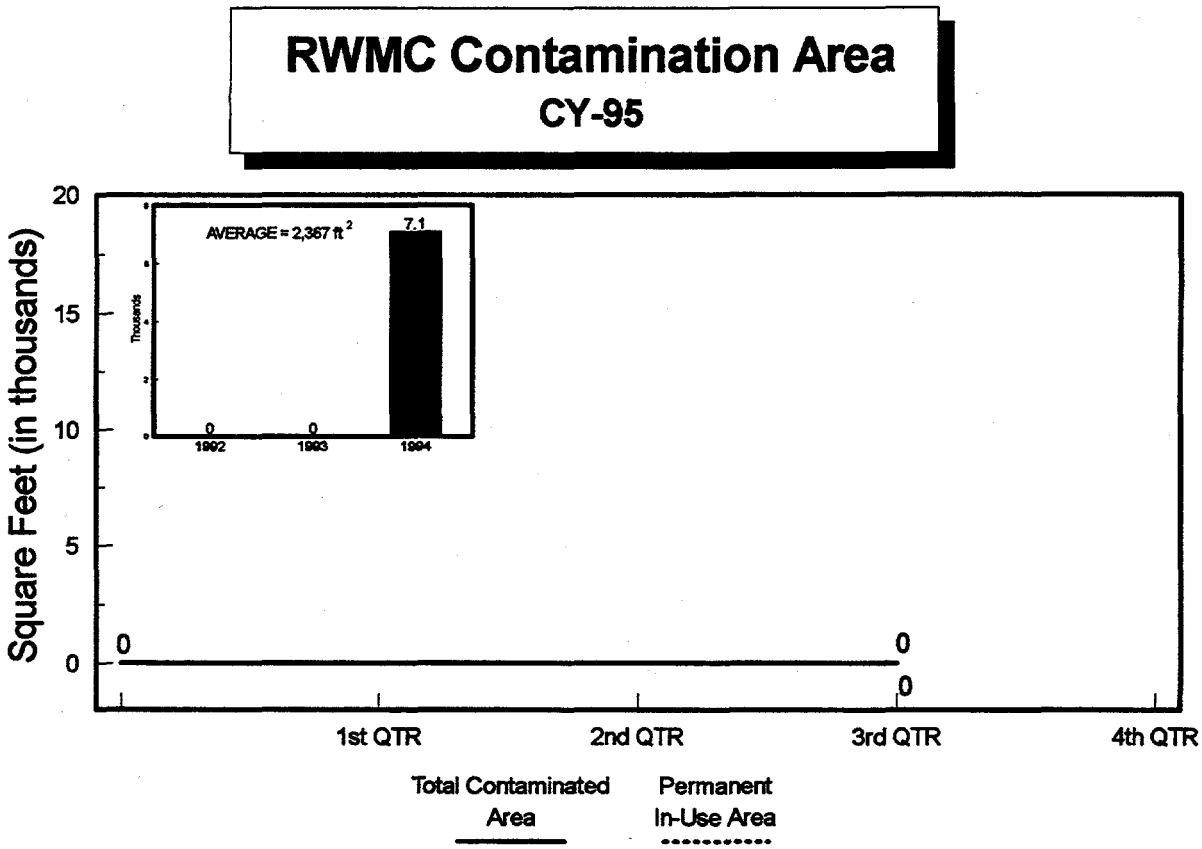

Air samplers monitor occupied process and laboratory areas to quantify concentrations of airborne radioactivity. The DOE unit is a DAC. An area which exceeds 10% of one DAC must be posted as an Airborne Radioactivity Area.

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



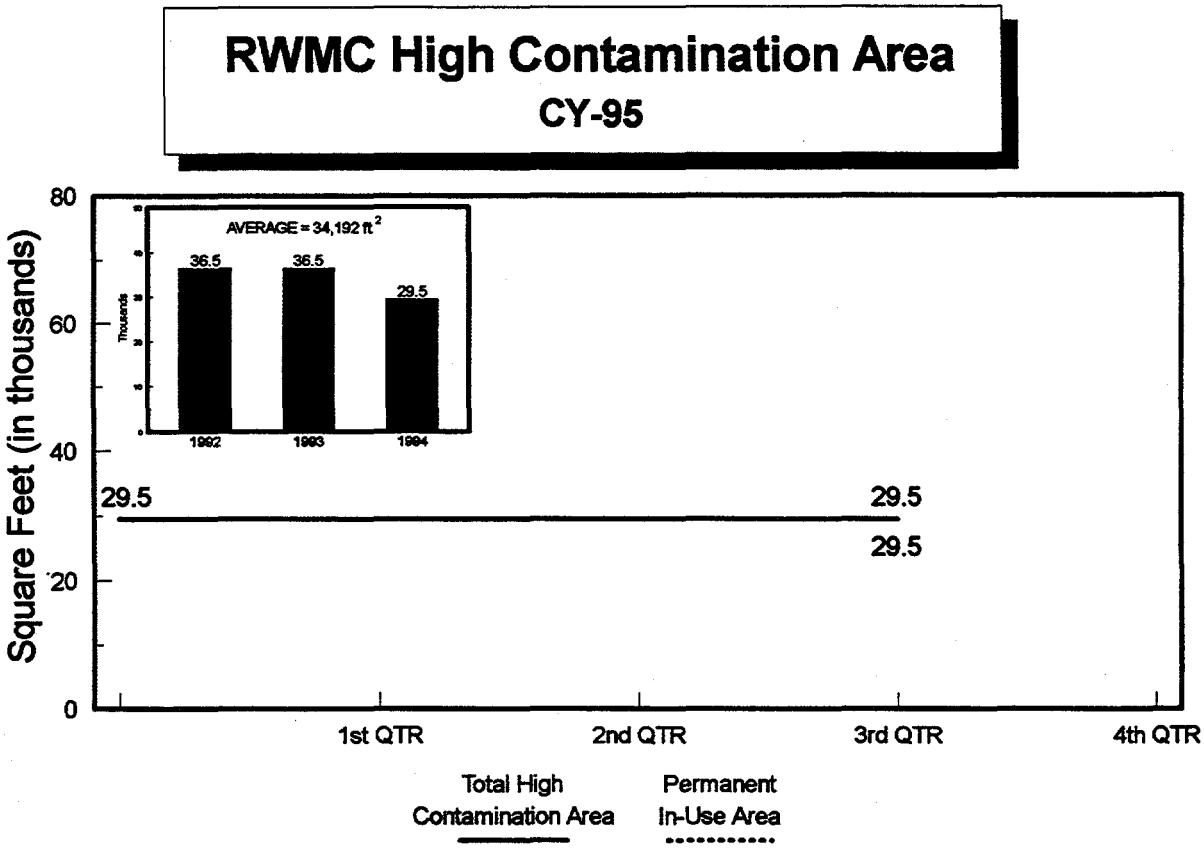

This indicator depicts the number of positive bioassay results that indicate an intake of radioactive material and result in a dose assessment of 10 mrem or greater from an RWMC exposure during occupational work activities.

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



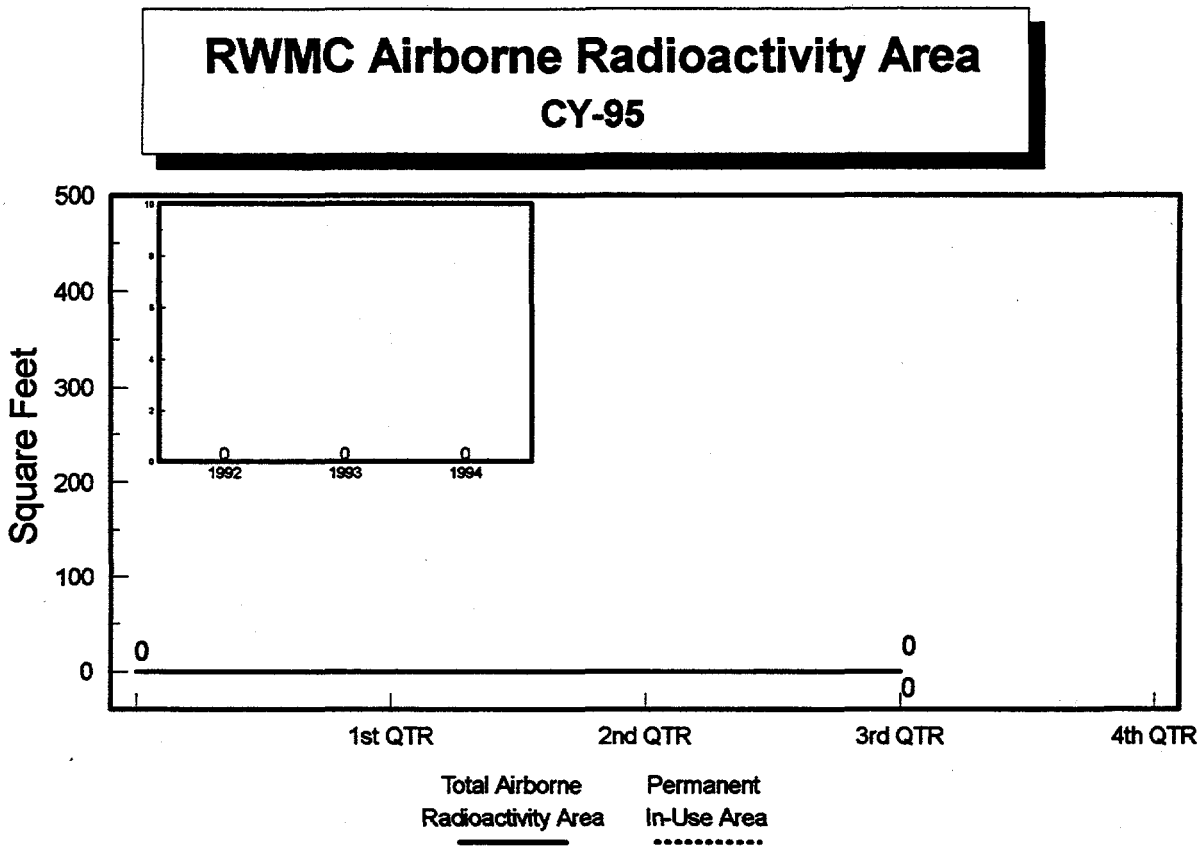

This indicator is used to report the total area designated as Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual.

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



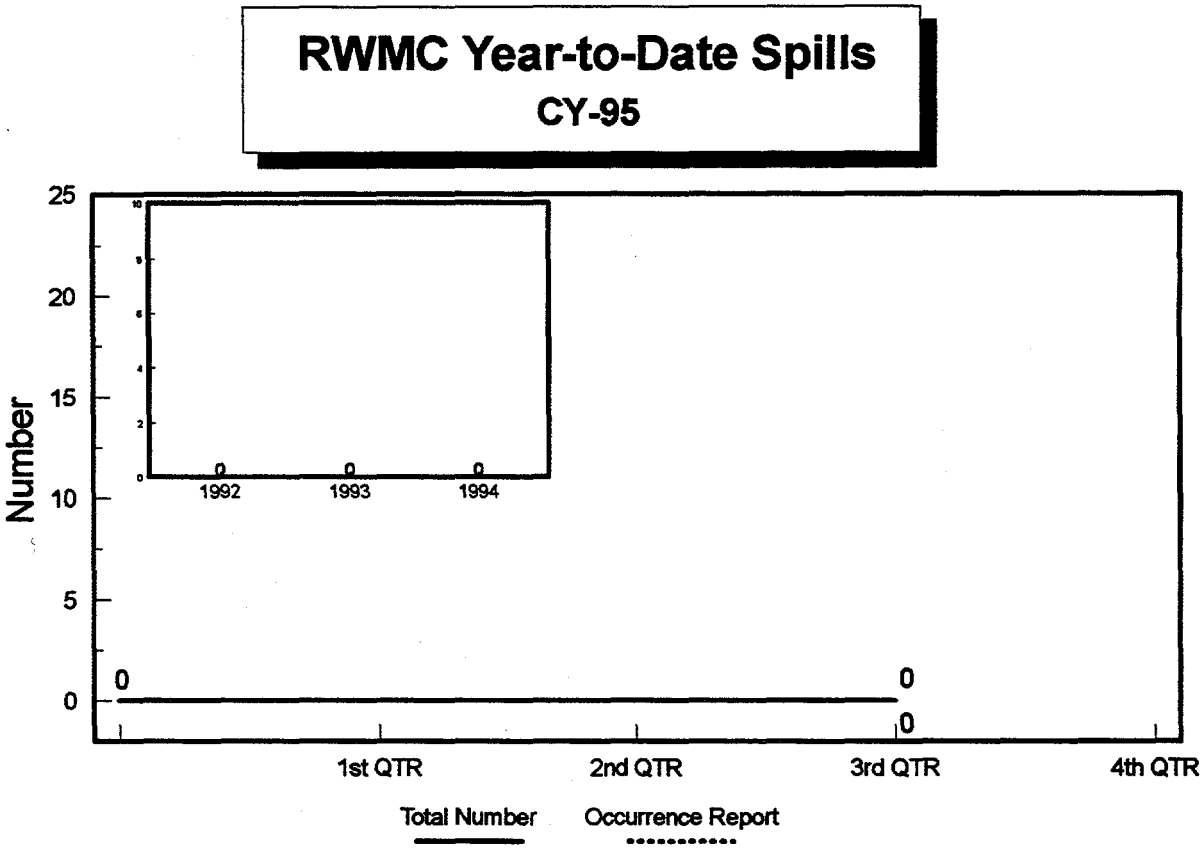

This indicator is used to report the total area designated as High Contamination Area as defined in Table 2-3 of the INEL Radiological Conrol Manual

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




This indicator is used to report the total area desigated as Airborne Radioacitivity Area as defined in Table 2-3 of the INEL Radiological Control Manual.

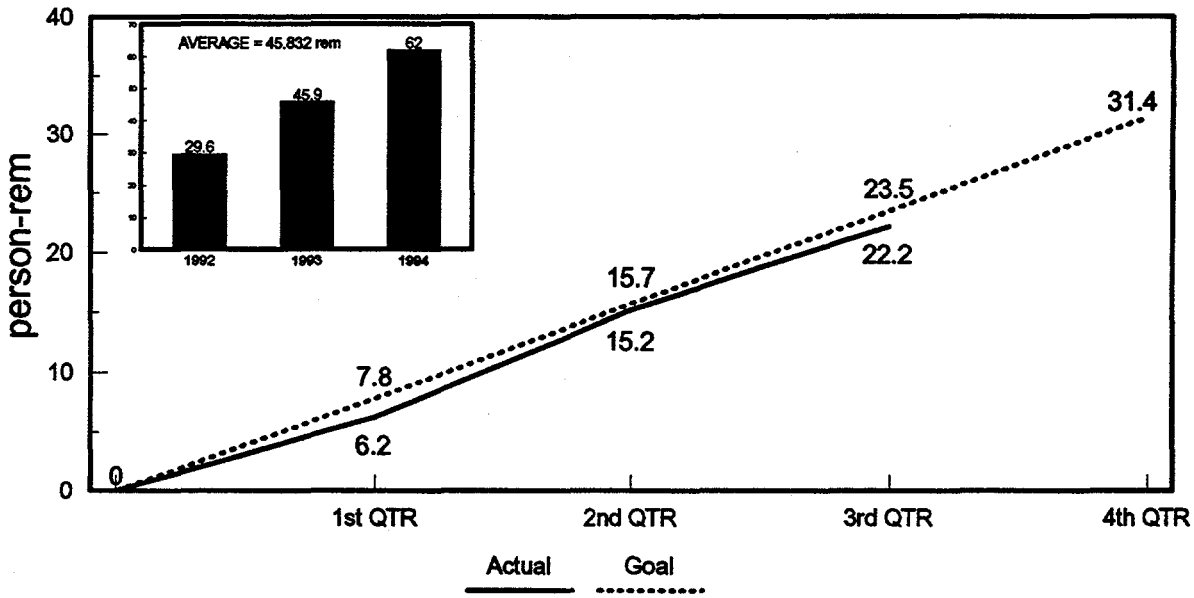
The total Airborne Radioactivity Area at RWMC at the end of the third quarter was zero square feet.




This indicator is used to report inadvertent loss or release of radioactive material.

RWMC had no radioactively contaminated spills through the end of the third quarter.

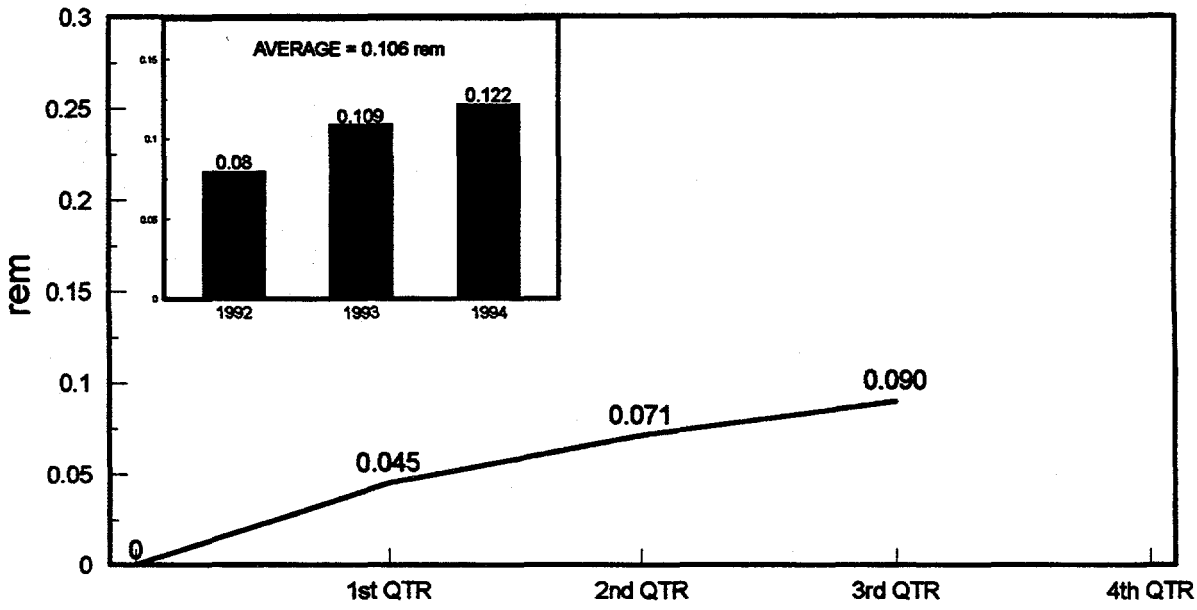
# TRA Collective Year-to-Date Penetrating Radiation Dose
## CY-95




TRA collective radiation exposure through the end of the third quarter was 22.240 person-rem.

The major contributor to the third quarter TRA penetrating radiation was from ATR 107 B-1 outage and normal reactor operations.

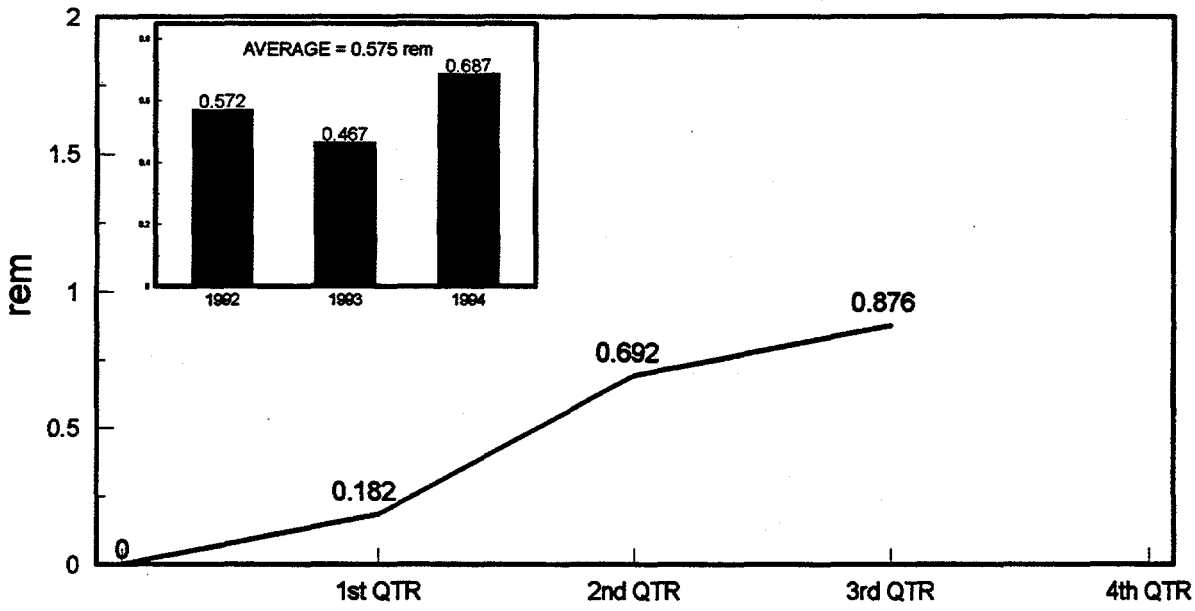
# TRA Year-to-Date Average Worker Dose
## CY-95




The average worker radiation exposure provides an indicator of the effectiveness of the Radiological Control and ALARA Programs.

The average TRA worker radiation exposure at the end of the third quarter was 0.090 rem. Major sources of exposure were related to ATR 106 B-1, 106 B-2,107 A-1, and 107 B-1 outages and normal reactor operations.

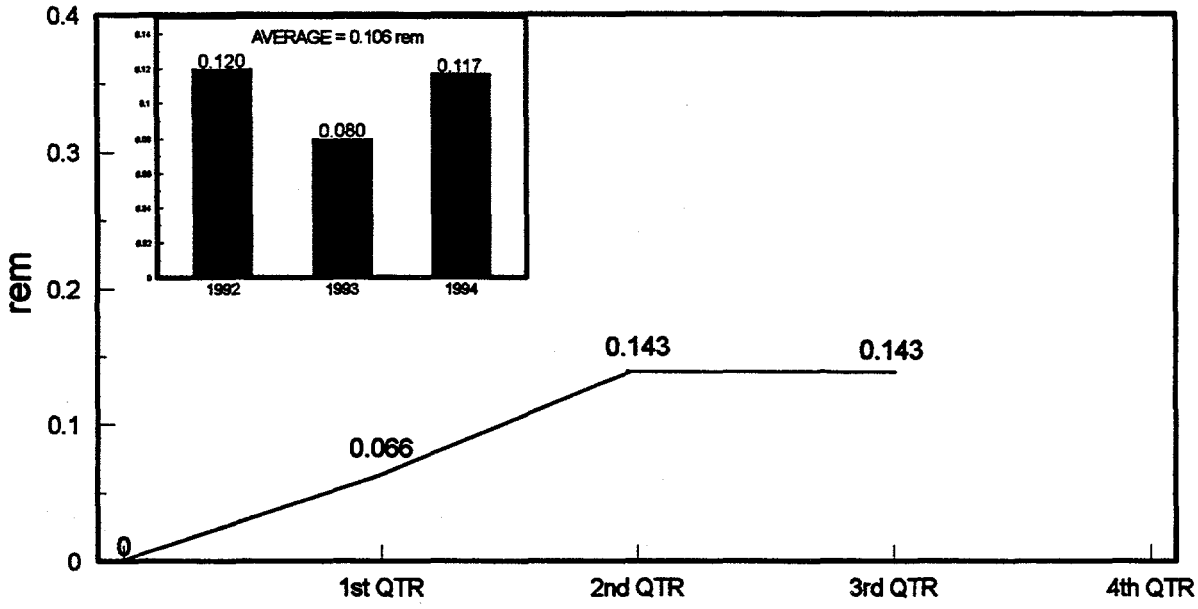
# TRA Maximum Year-to-Date Penetrating Dose to a Worker
## CY-95




The maximum penetrating radiation dose to a worker provides another indication of how well worker radiation exposure is being managed.

The maximum penetrating radiation dose to a TRA worker through the third quarter was 0.876 rem.

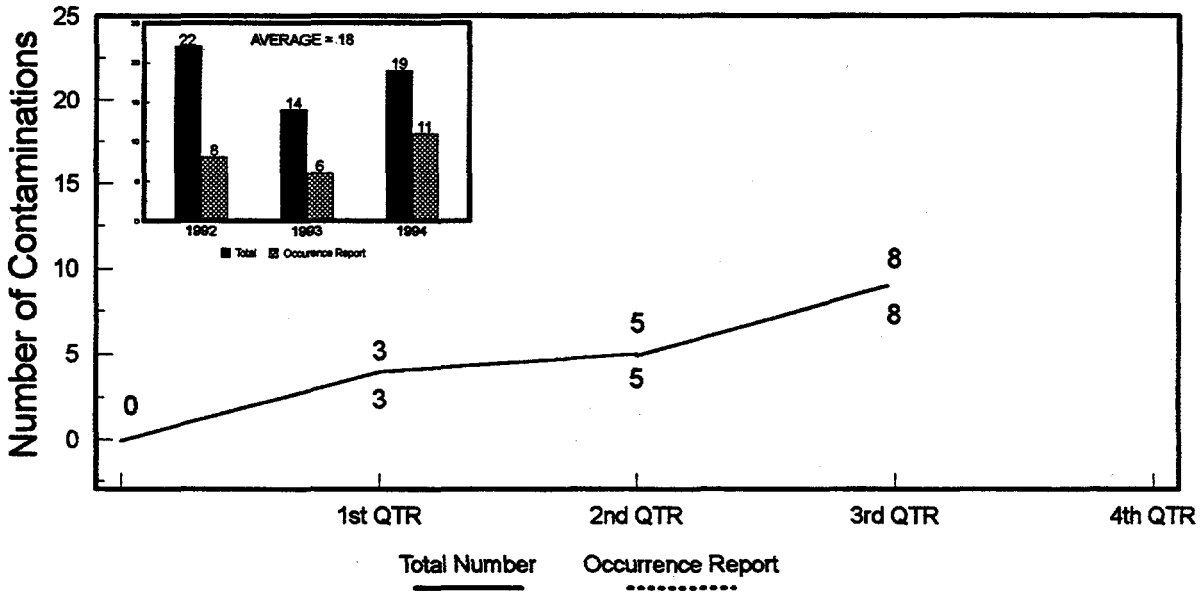
# TRA Maximum Year-to-Date Neutron Dose to a Worker
## CY-95




The maximum neutron radiation dose to a worker provides an indication of how well worker exposure to neutron radiation is managed.

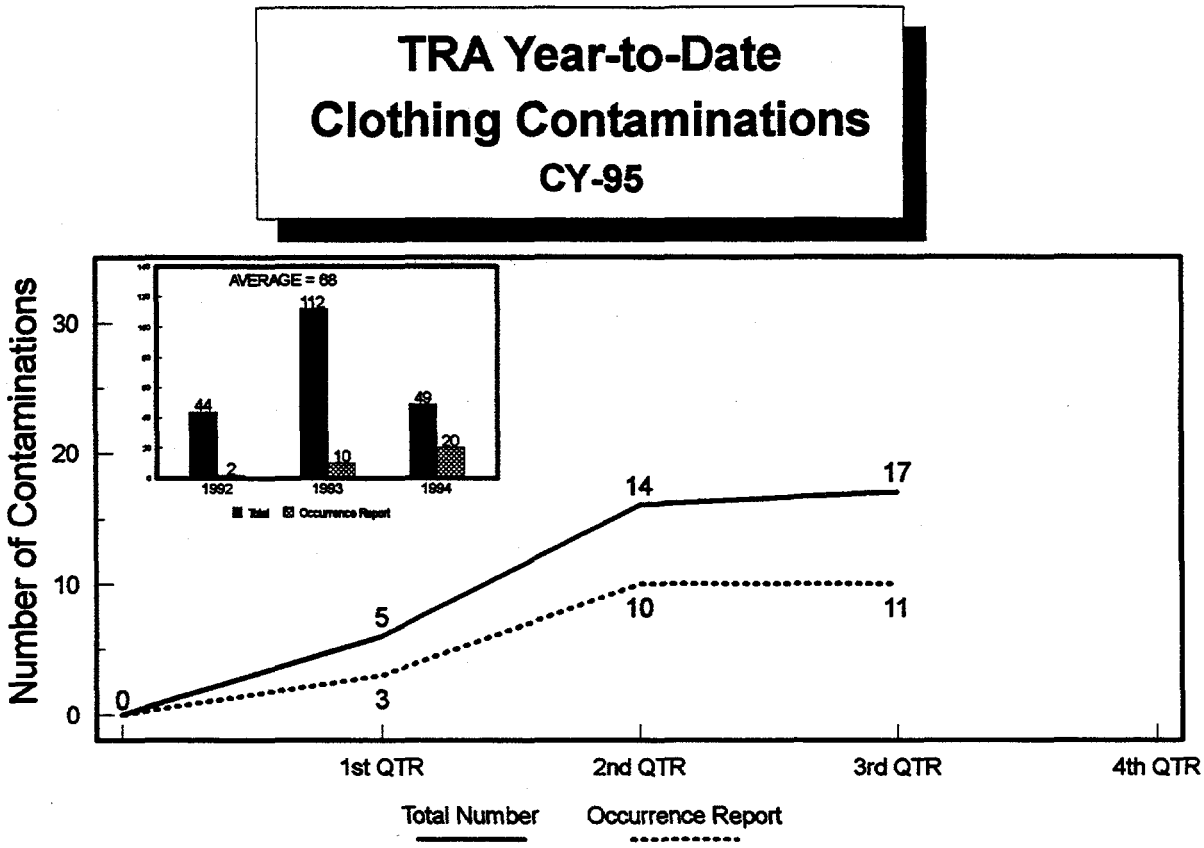
The TRA maximum neutron radiation dose to a worker through the end of the third quarter was 0.143 rem.

# TRA Year-to-Date Skin Contaminations
## CY-95




Skin contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled.

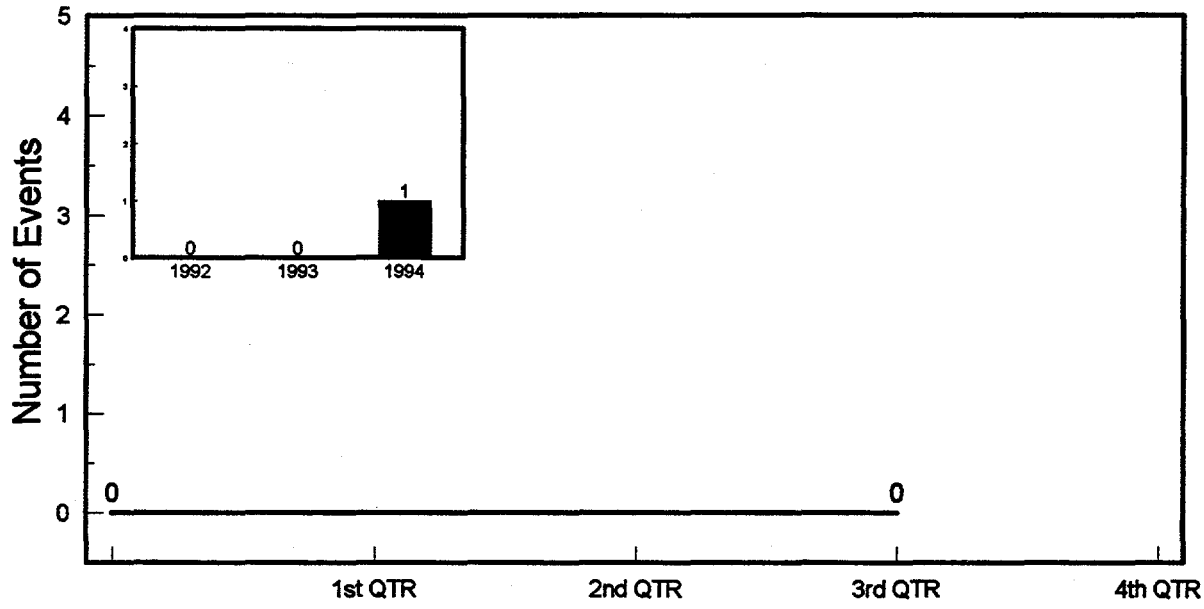
There was three reportable skin contaminations at TRA during the third quarter. The third quarter reportable skin contamination information is contained in OR ID-LITC-ATR-1995-0026, 1995-0028, and 1995-0033.




Clothing contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled and how well workers adhere to safe radiological work practices.

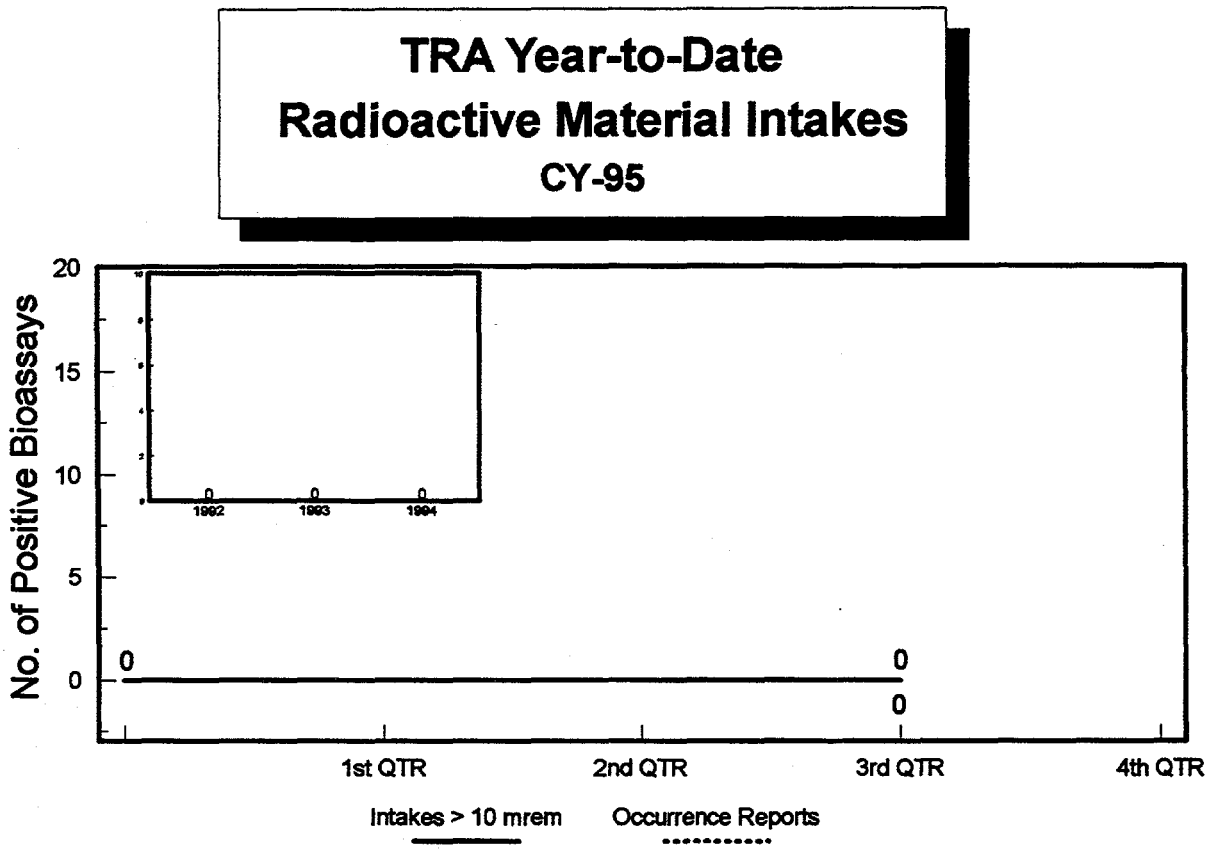
There was one reportable clothing contamination at TRA during the third quarter. Information is provided in ID-LITC-ATR-1995-0029.

# TRA Year-to-Date
# Airborne Radioactivity Events
## CY-95



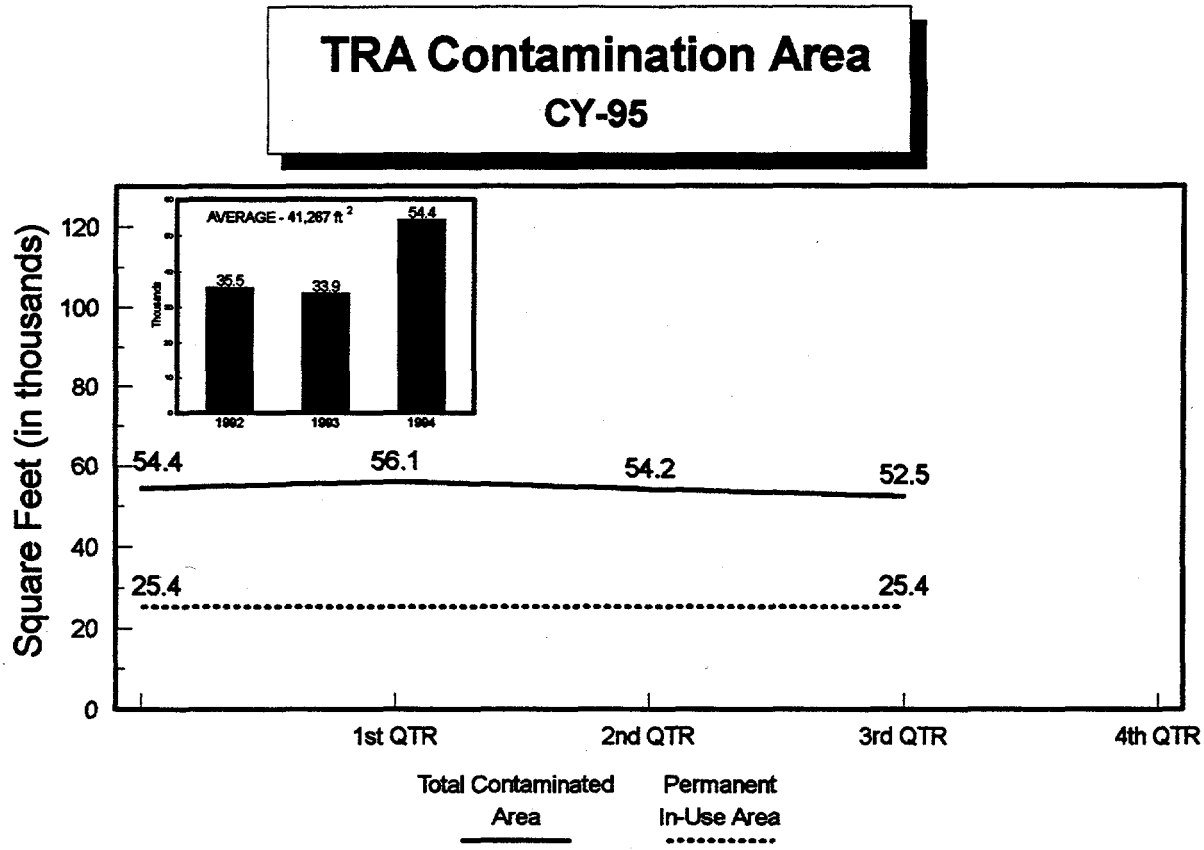

Air samplers monitor occupied process and laboratory areas to quantify concentrations of airborne radioactivity. The DOE unit is a DAC. An area which exceeds 10% of one DAC must be posted as an Airborne Radioactivity Area.

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




This indicator depicts the number of positive bioassay results that indicate an intake of radioactive material and result in a dose assessment of 10 mrem or greater from a TRA exposure during occupational work activities.

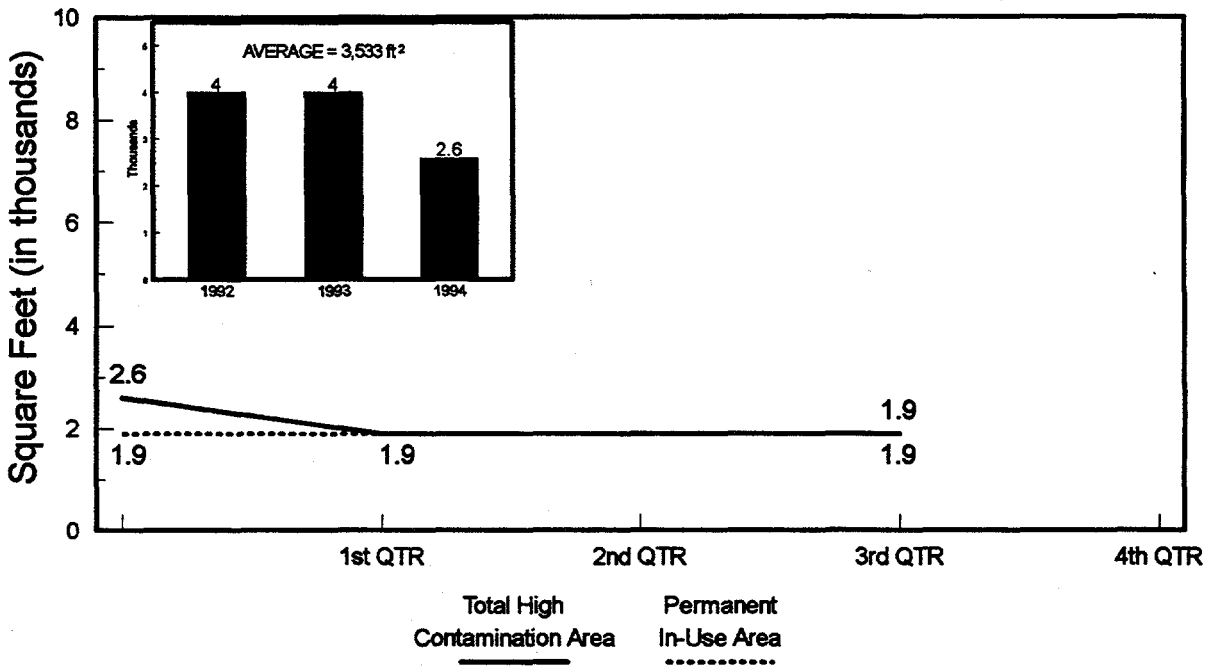
There were no positive bioassays indicating an intake of radioactive material that resulted in a dose assessment of 10 mrem or greater at TRA during the third quarter.




This indicator is used to report the total area designated as Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual.

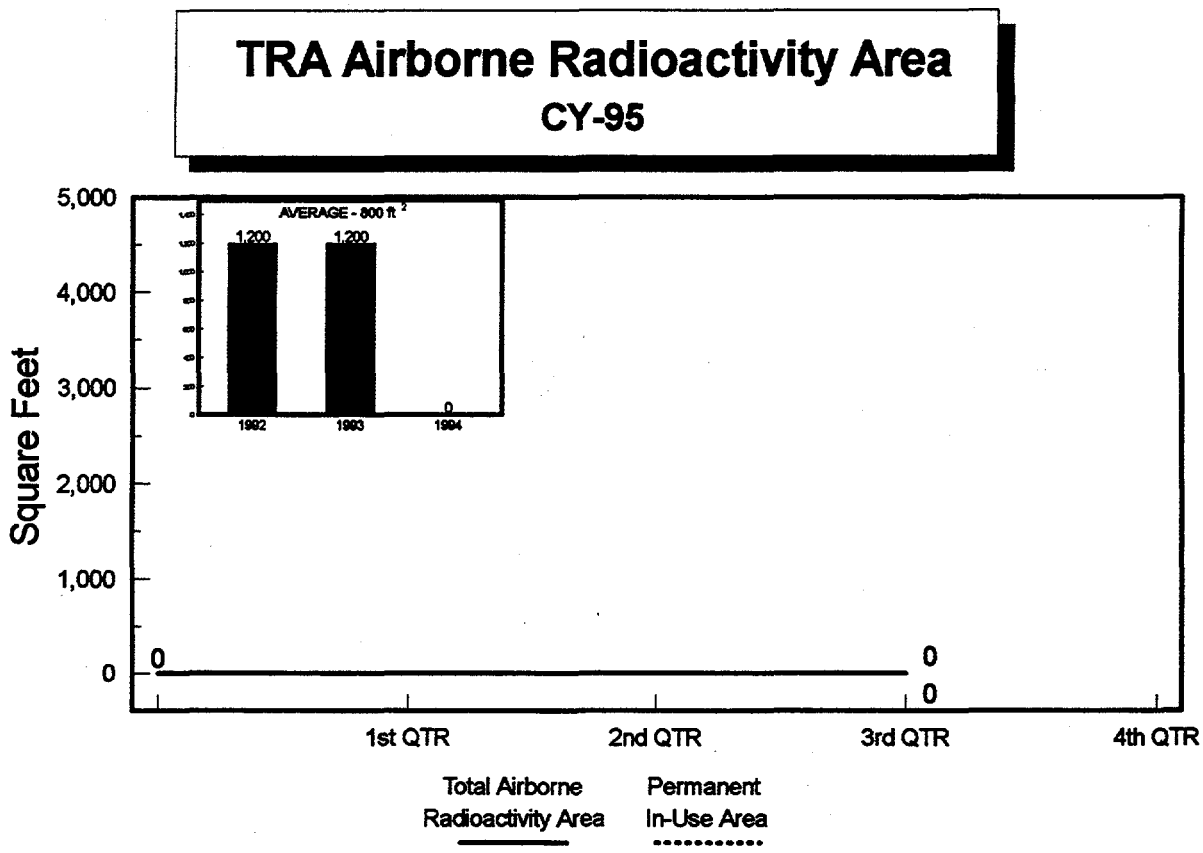
The total Contamination Area at TRA at the end of the third quarter was 52,475 square feet, of which 25,355 square feet was designated as permanent and in-use.

# TRA High Contamination Area
## CY-95



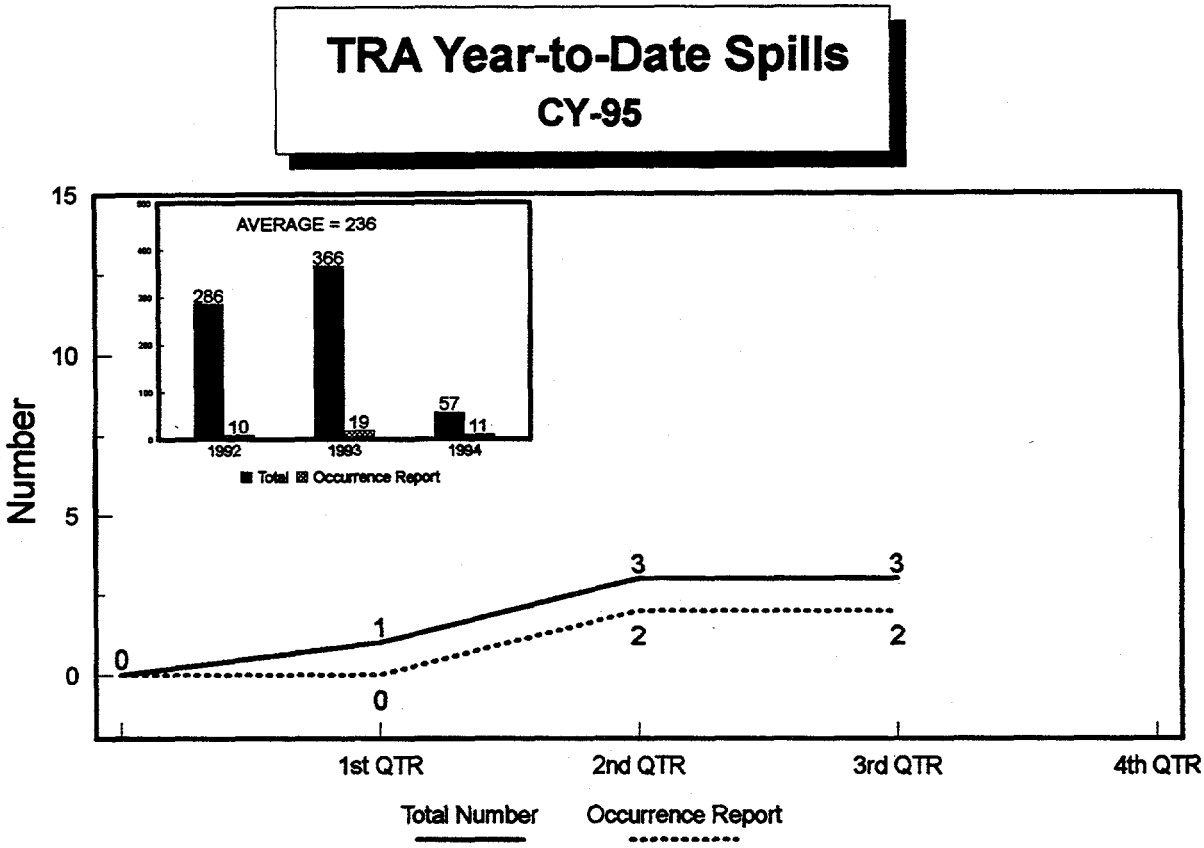

This indicator is used to report the total area designated as High Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual.

The total High Contamination Area at TRA at the end of the third quarter was 1,991 square feet. All of this area was designated as permanent and in-use.




This indicator is used to report the total area designated as Airborne Radioacitivity Area as defined in Table 2-3 of the INEL Radiological Control Manual.

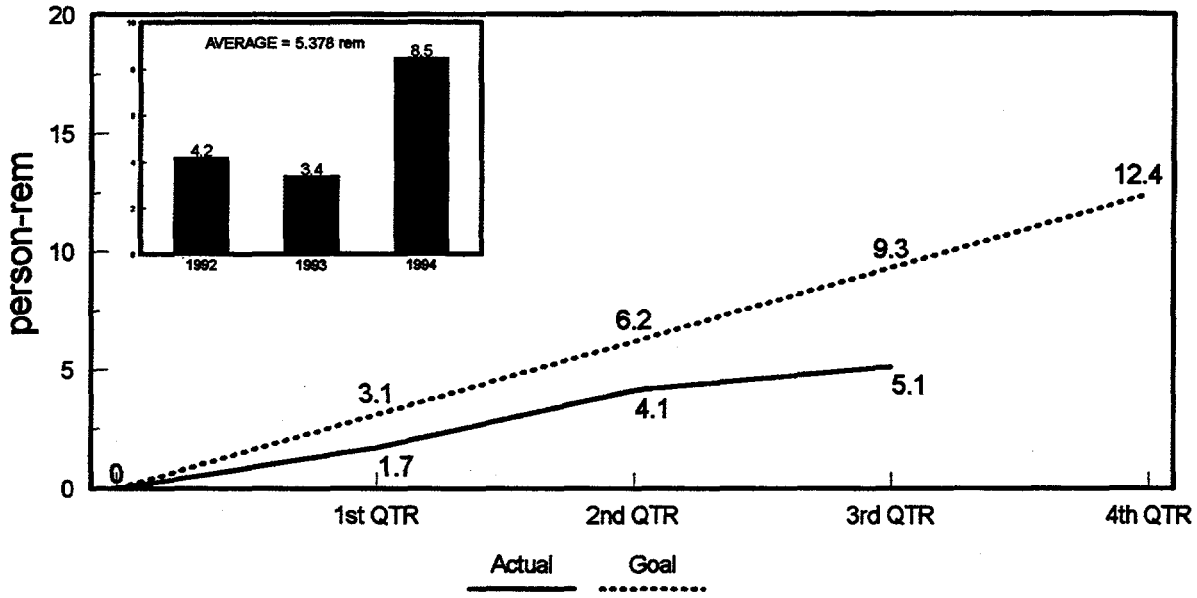
The total Airborne Radioactivity Area at TRA at the end of the third quarter was zero square feet.




This indicator is used to report inadvertent loss or release of radioactive material.

No loss or release of radioactive contaminated materials occurred during the third quarter at TRA.

# TAN/SMC Collective Year-to-Date Penetrating Radiation Dose
## CY-95

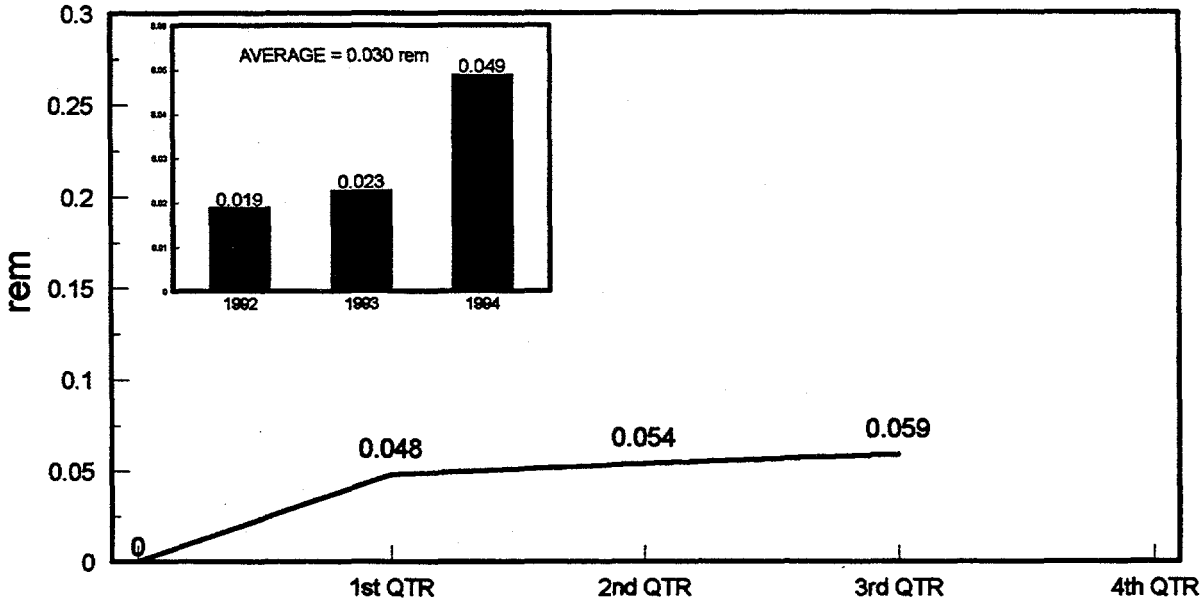



TAN and SMC collective radiation exposure for the third quarter was 5.085 rem.

Major contributors to the third quarter penetrating radiation at TAN/SMC were from waste tank inspections and surveys, and normal operations at TAN.

# TAN/SMC Year-to-Date Average Worker Dose

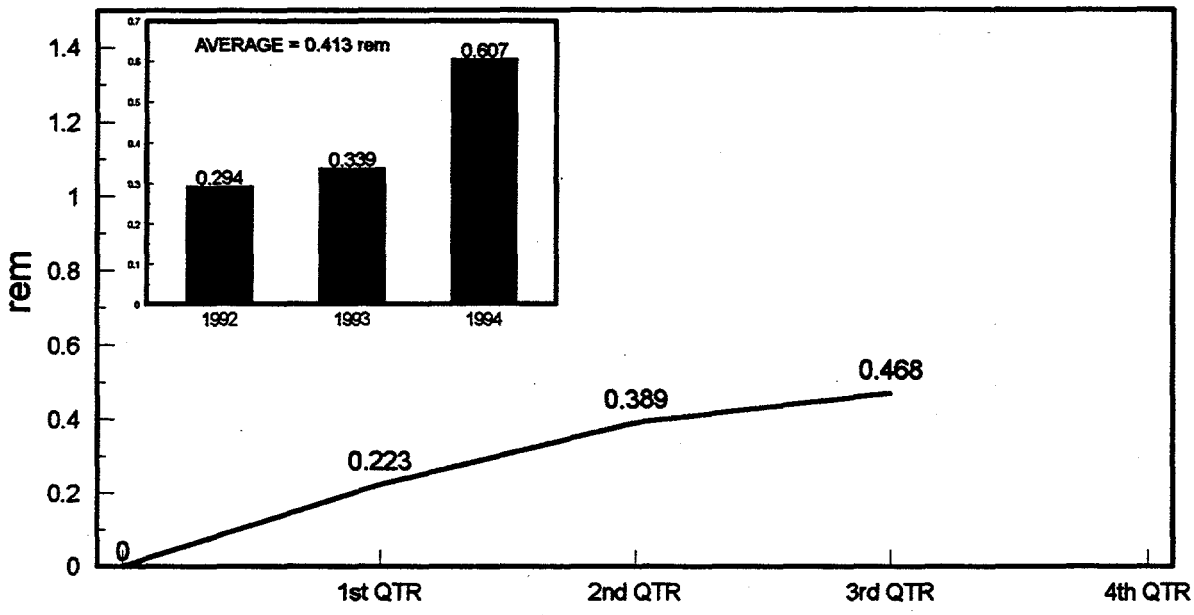
## CY-95




The average worker radiation exposure provides an indicator of the effectiveness of the Radiological Control and ALARA Programs.

The average TAN/SMC worker radiation exposure at the end of the third quarter was 0.059 rem.

# TAN/SMC Maximum Year-to-Date Penetrating Dose to a Worker
## CY-95

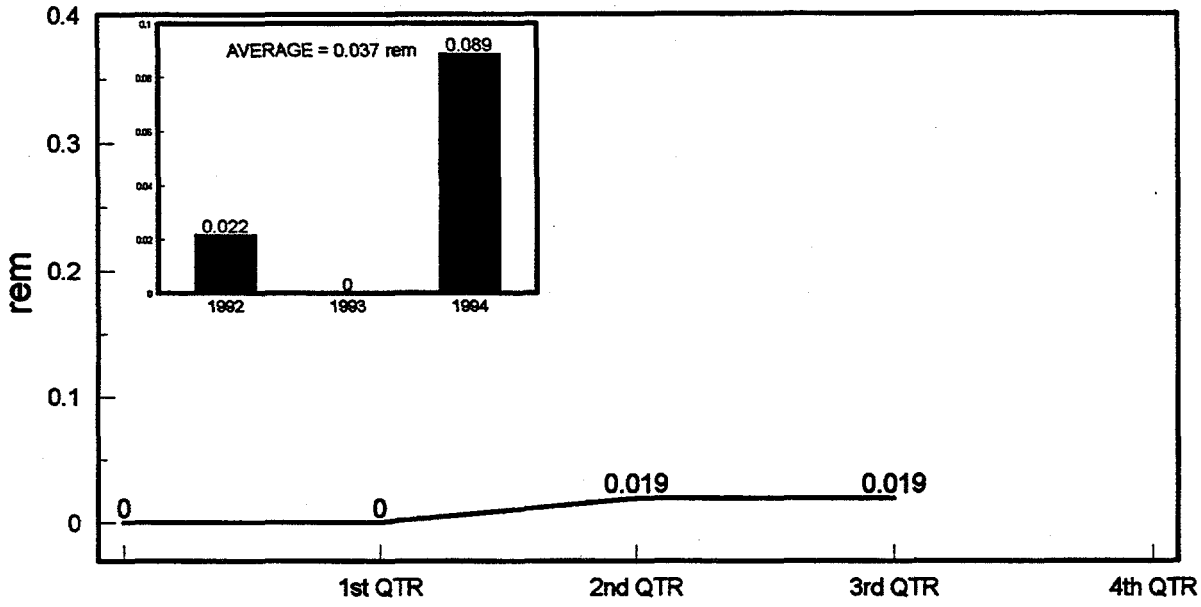



The maximum penetrating radiation dose to a worker provides another indication of how well worker radiation exposure is being managed.

The maximum penetrating radiation dose to a TAN/SMC worker through the third quarter was 0.468 rem.

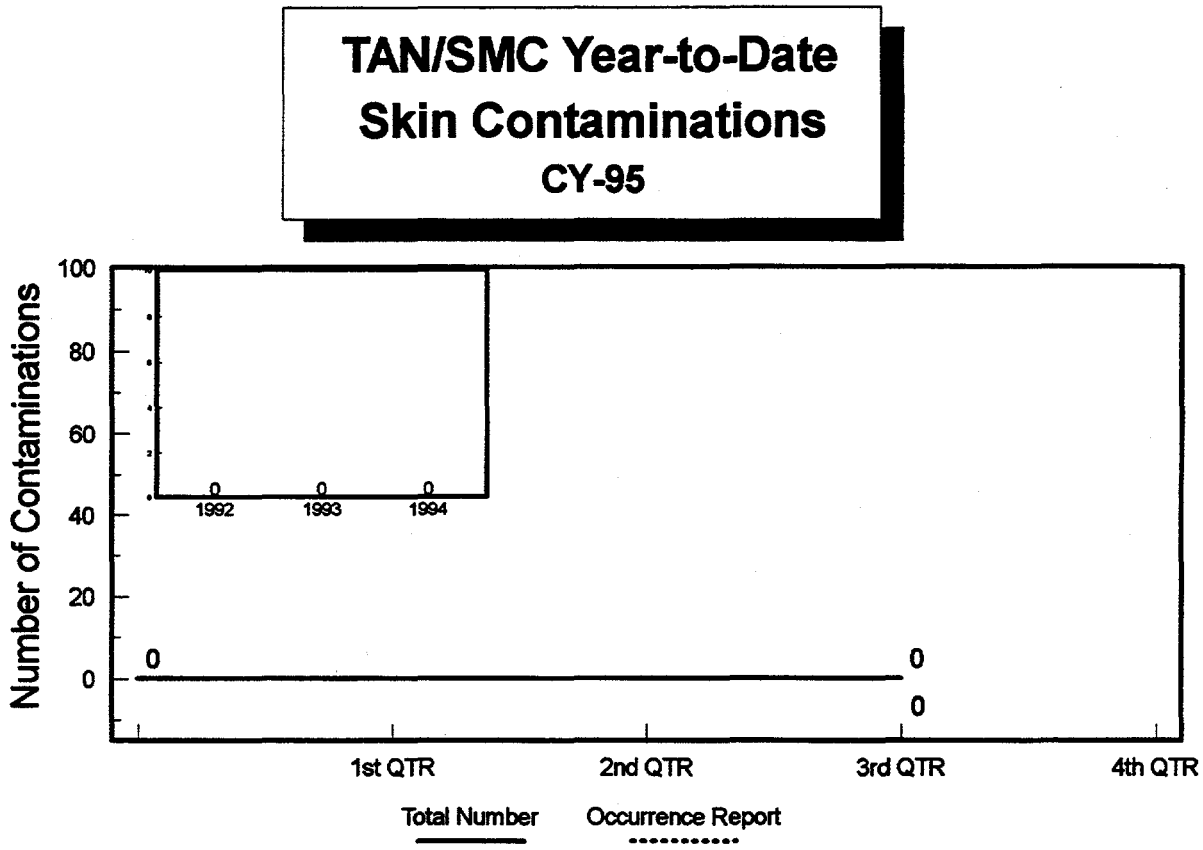
# TAN/SMC Maximum Year-to-Date Neutron Dose to a Worker

## CY-95



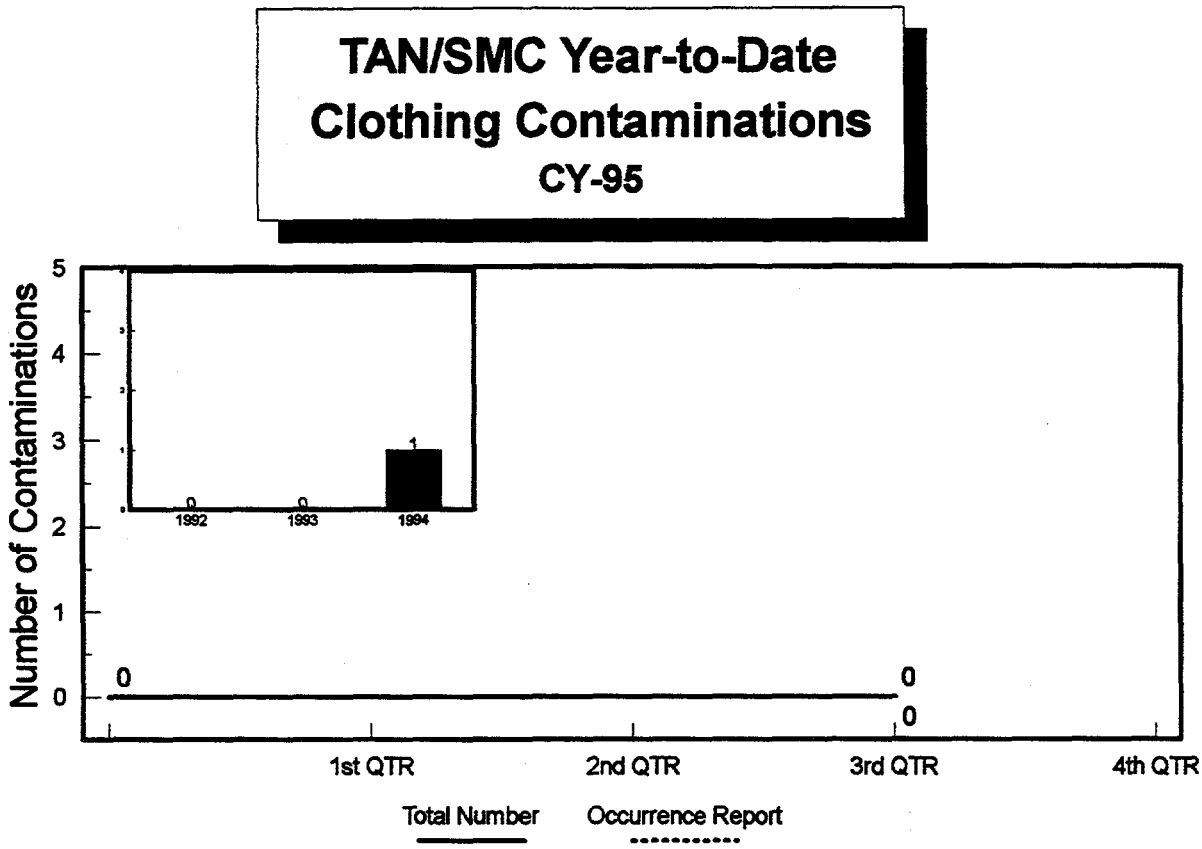

The maximum neutron radiation dose to a worker provides an indication of how well worker exposure to neutron radiation is managed.

The TAN/SMC maximum neutron radiation dose to a worker through the end of the third quarter was 0.019 rem.




Skin contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled.

There were no skin contaminations at TAN or SMC during the third quarter.

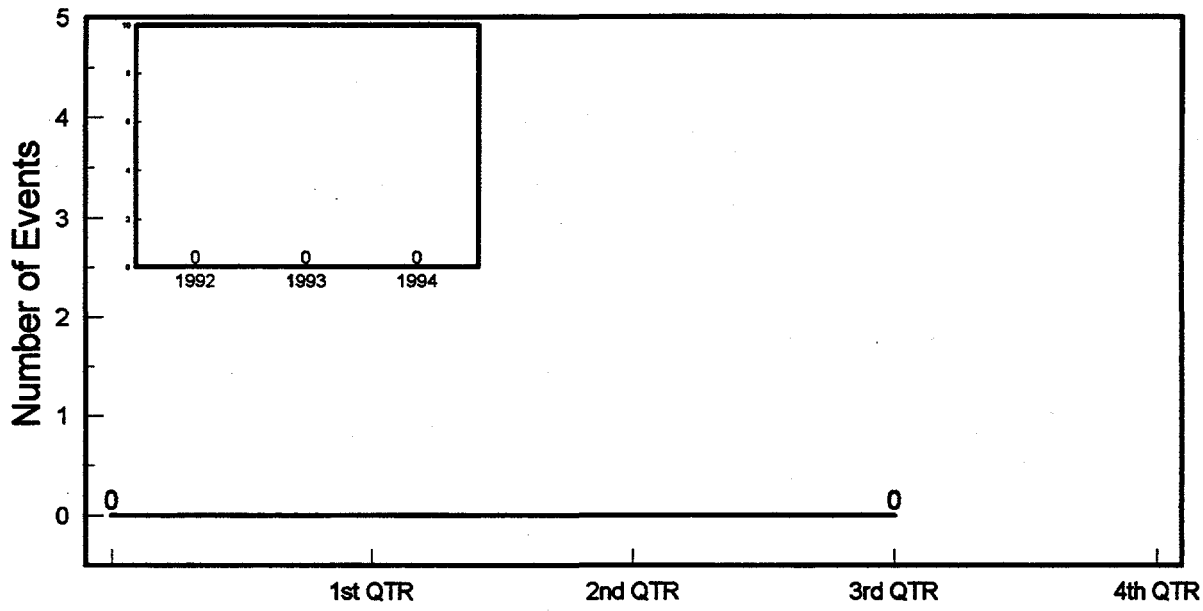



Clothing contamination events are a measure of the effectiveness of the radiological protection program, specifically, how well radioactive contamination is controlled and how well workers adhere to safe radiological work practices.

There were no clothing contaminations at TAN or SMC through the end of the third quarter.

# TAN/SMC Year-to-Date Airborne Radioactivity Events

## CY-95

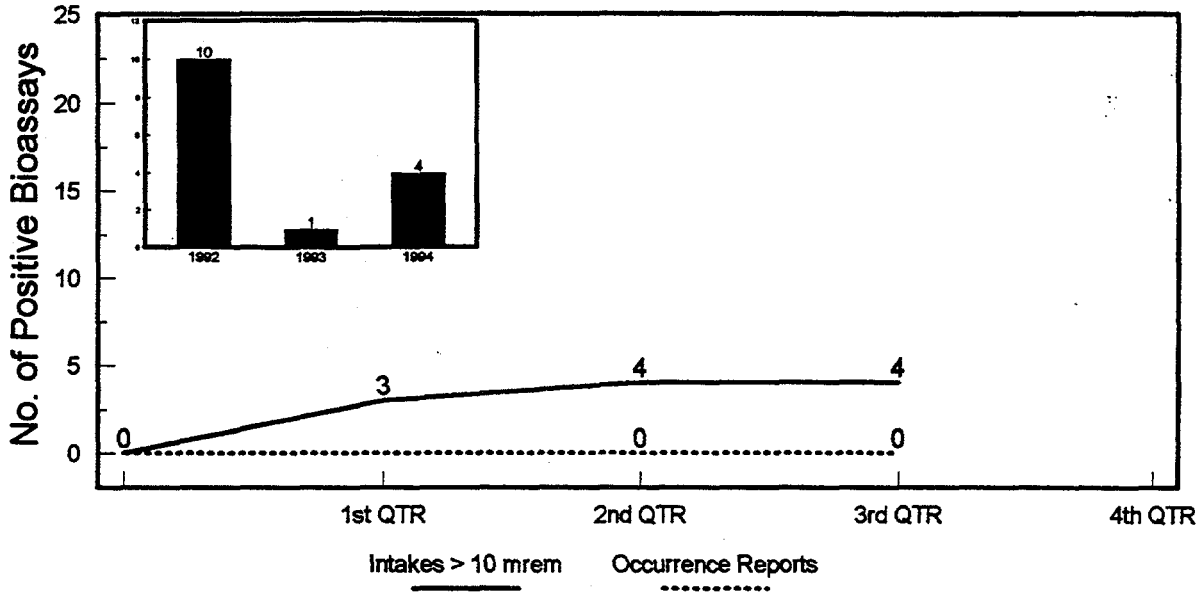



Air samplers monitor occupied process and laboratory areas to quantify concentrations of airborne radioactivity. The DOE unit is a DAC. An area which exceeds 10% of one DAC must be posted as an Airborne Radioactivity Area.

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

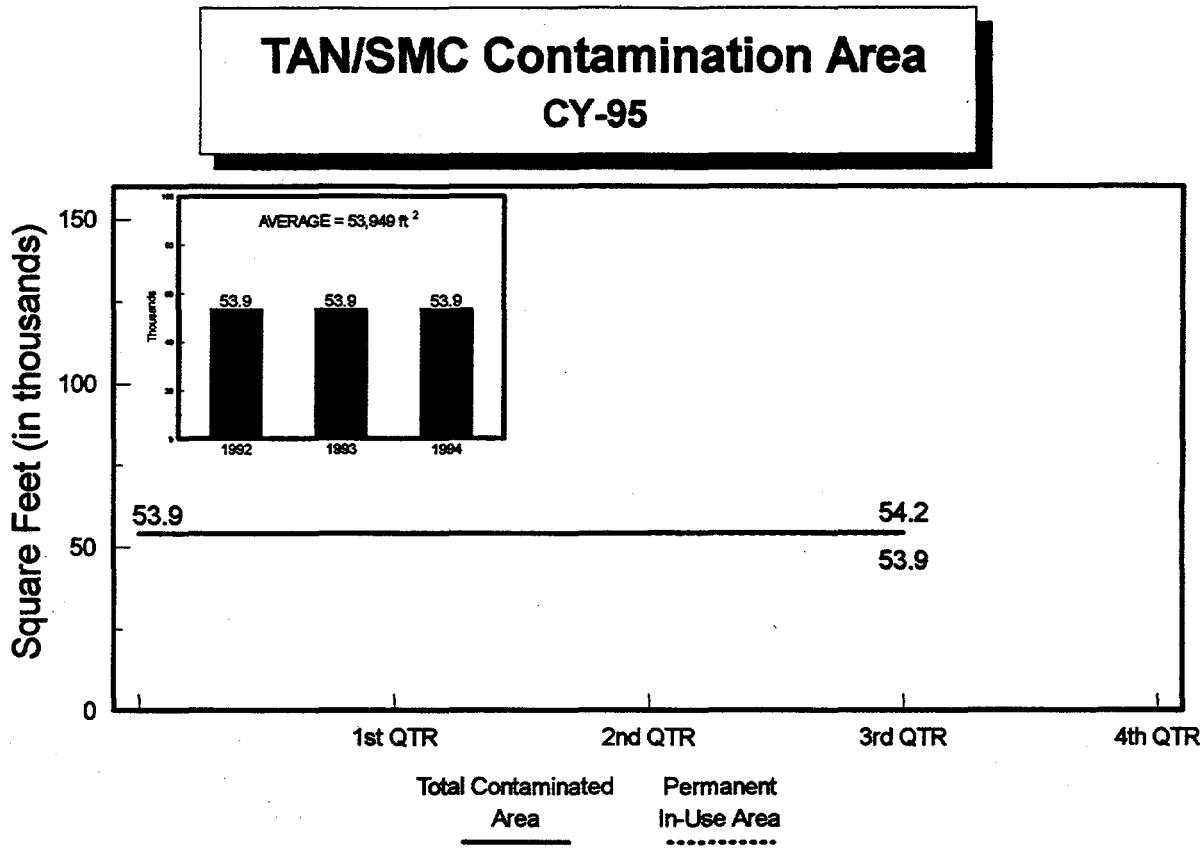
# TAN/SMC Year-to-Date Radioactive Material Intakes

## CY-95



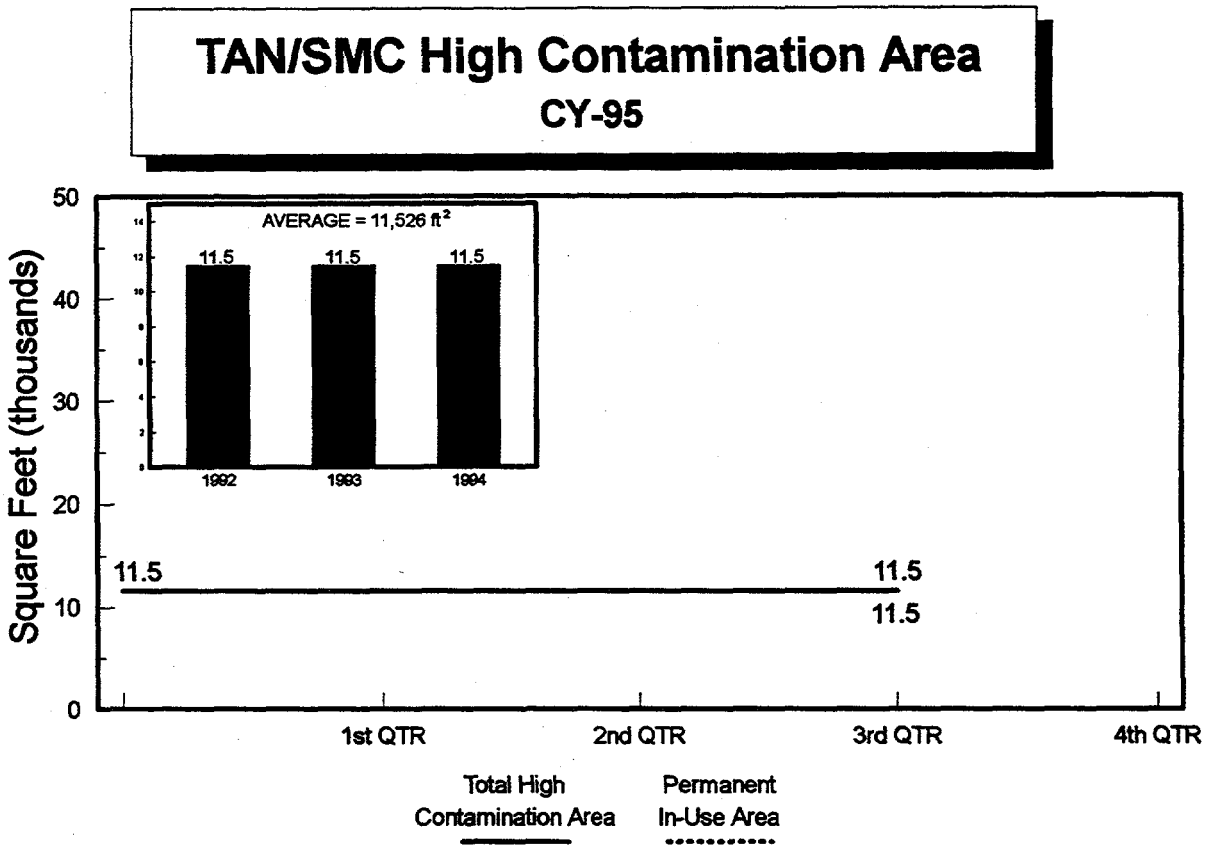

This indicator depicts the number of positive bioassay results that indicate an intake of radioactive material and result in a dose assessment of 10 mrem or greater from TAN/SMC exposure during occupational work activities.

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



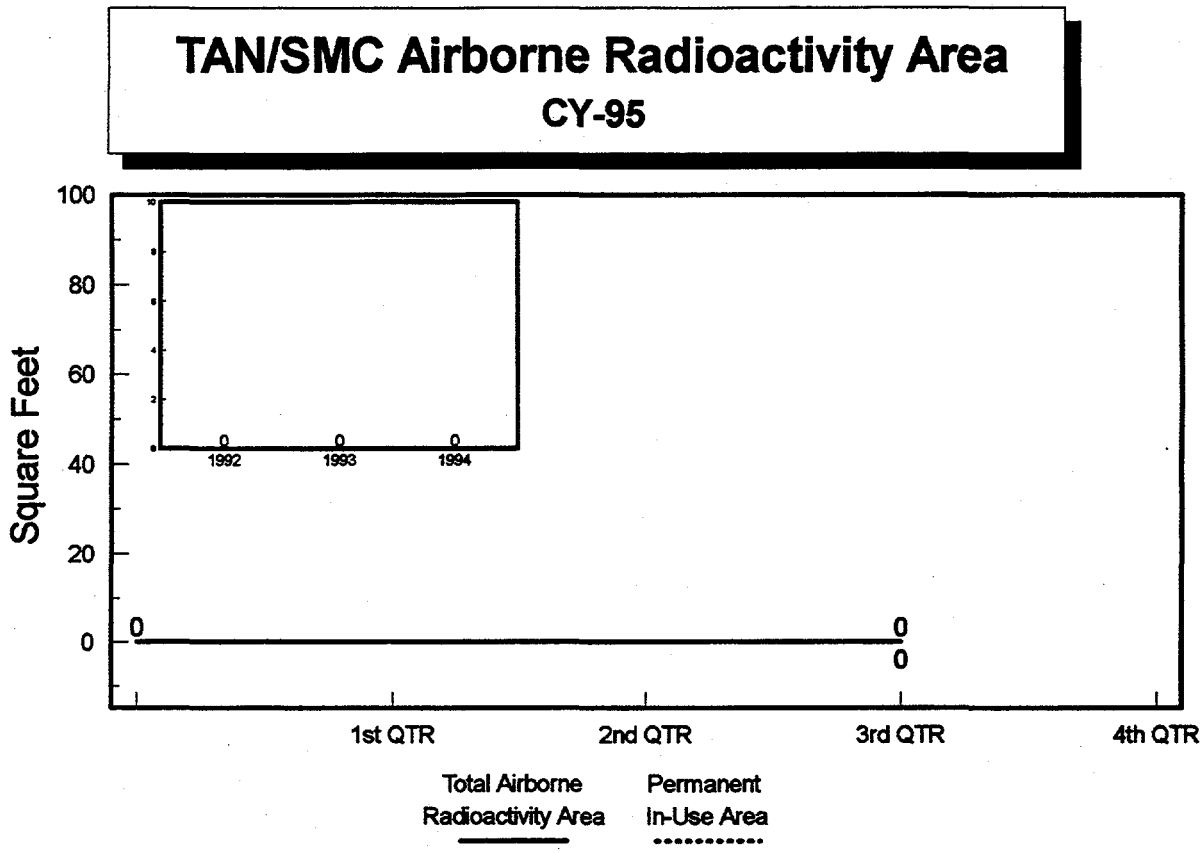

This indicator is used to report the total area designated as Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual.

The total Contamination Area at TAN and SMC at the end of the third quarter was 54,249 square feet. Of this area, 53,949 square feet was designated as permanent and in-use.



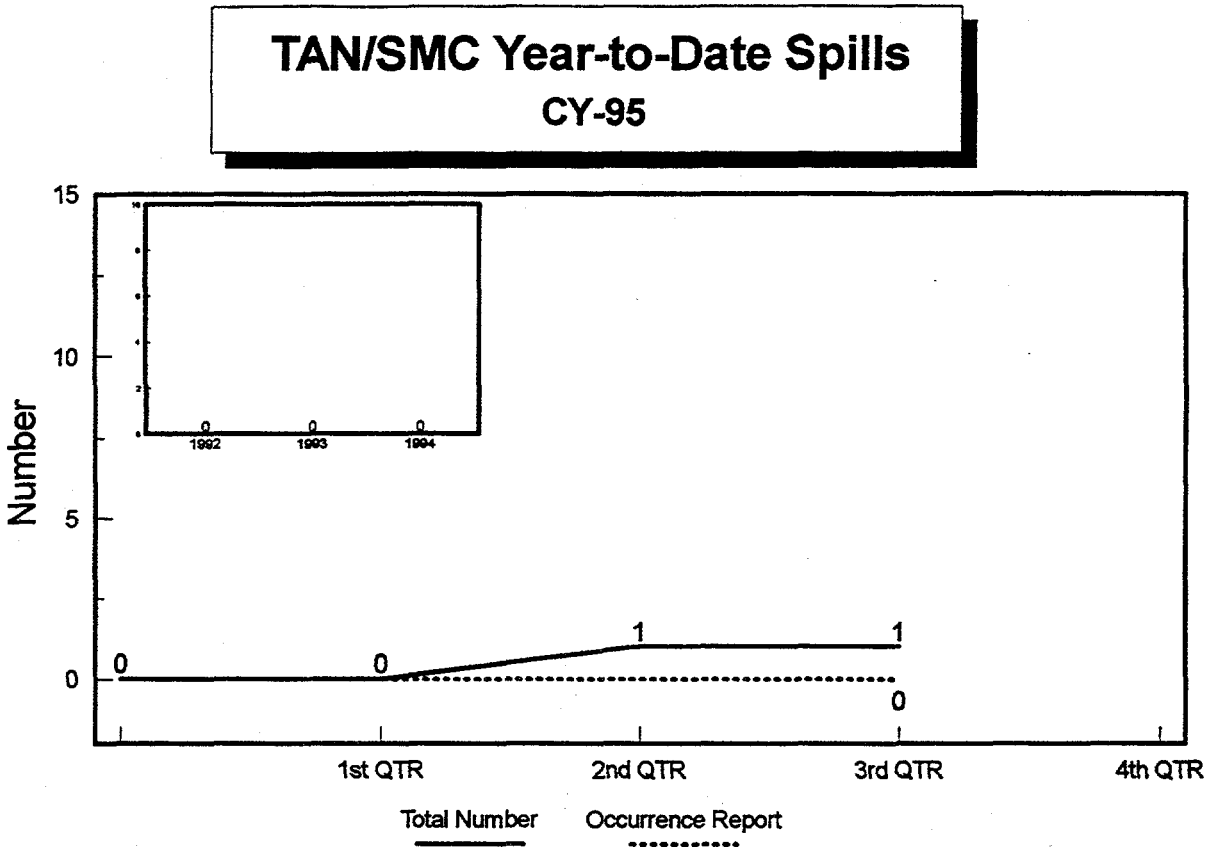

This indicator is used to report the total area designated as High Contamination Area as defined in Table 2-3 of the INEL Radiological Control Manual

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




This indicator is used to report the total area designated as Airborne Radioactivity Area as defined in Table 2-3 of the INEL Radiological Control Manual.

The total Airborne Radioactivity Area at TAN and SMC at the end of the third quarter was zero square feet.




This indicator is used to report inadvertent loss or release of radioactive material.

There was no loss or release of radioactive contaminated material from TAN/SMC at the end of the third quarter.