



# **Facility Operations**

## **Targeted Self-Assessment**

*Quarterly Report on Trends in PNNL Occurrences  
and  
Performance Analysis of Operations Information  
(3rd Qtr, FY'04)*

**October 1, 2004**

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## **Executive Summary:**

PNNL reportable occurrence activity for the third quarter of FY 2004 was above the historical average. There were 11 occurrences during the quarter with 6 occurring in the month of June. The PNNL quarterly average increased 2 tenths of a point to 8.6 occurrences per quarter, nearly 3 per month. The average for post re-engineered ORPS is 6 per quarter.

The control chart in this report (Figure 1) shows no adverse statistical trends in reportable occurrences from this quarter.

The PNNL "occurrences per 200,000 man-hours" chart (Figure 5) identifies a slightly above average rate of 1.2 occurrences per 200,000 man-hours versus the average of 1.0. When comparing this average to the other DOE National Laboratories (Figure 6), PNNL ranks average.

Final occurrence report submittals met all requirements this quarter with seven final reports submitted to ORPS.

## **Performance Assessment:**

The DOE occurrence reporting manual M 231.1-2 requires assessment of reportable and non-reportable events for recurring trends. This assessment found no trends or issues to elevate for potential categorization as SC-R occurrences (Figure 7).

This quarter's review focused on reportable and non-reportable data from ORPS, CAIRS, QPRs, RPRs, and 2400 Reports\*.

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- \* ORPS = Occurrence Reporting & Processing System
  - CAIRS = Computerized Accident/Incident Reporting System
  - QPR = Quality Problem Report
  - RPR = Radiological Problem Report
  - 2400 Reports = Notifications to PNNL Single Point of Contact

## **Scope:**

The Event Reporting Program Description establishes the minimum scope for this assessment, requiring that "the data include quarterly trends relative to category, nature of occurrence, and root cause". This assessment provides these conclusions through (Figure 1) a quarterly Control Chart of total reportable occurrences tabulated by quarter, (Figure 2) Significance Category, (Figure 3) Criteria Group totals, (Figure 4) Criteria Group percentages, (Figure 5) PNNL Occurrences normalized to 200,000 man-hours, and (Figure 6) a CY comparison against seven other DOE National Laboratories.

The performance analysis portion of this report looks at a larger cross section of facility, safety and environmental issues by combining CAIRS, QPR, RPR and 2400 Report data for analysis. A control chart summarizing the results from this analysis is presented in Figure 7. There were no non-reportable occurrences identified as recurring (SC-R).

**Assessment Category:**

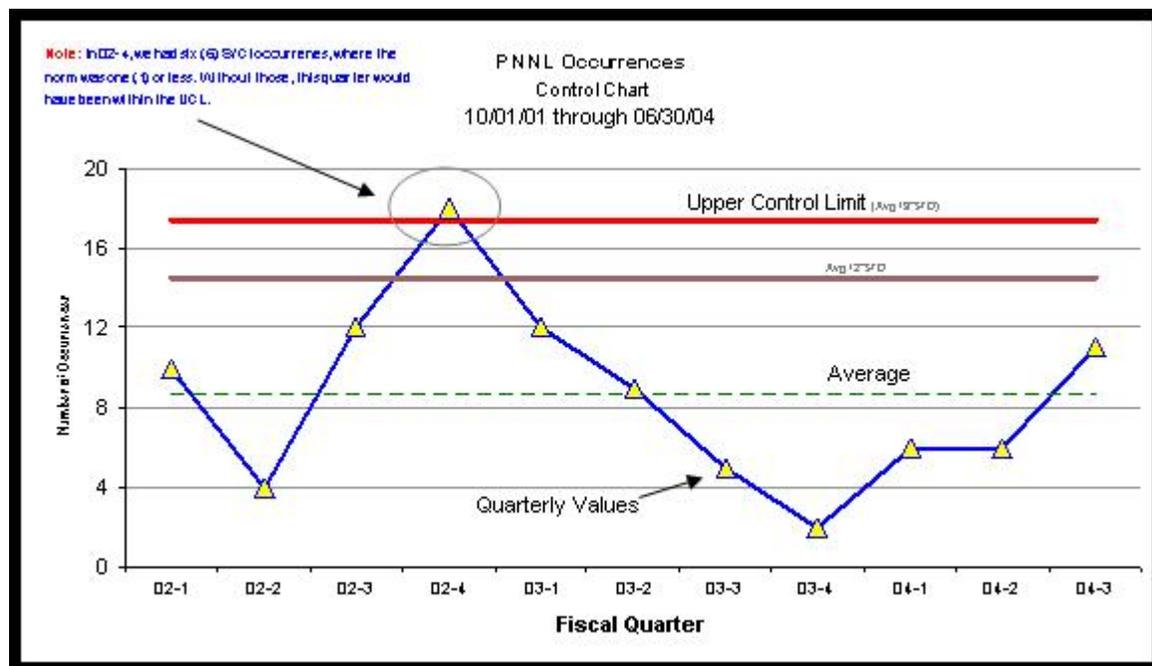
Event Reporting

**Performance Objectives:**

Identify and analyze trends in selected occurrence data and provide results to appropriate organizations and management, including the Price-Anderson Working Group.

**Results:**

Figure 1 is a control chart of total occurrences by quarter that is used to determine if a "statistically significant" trend has developed that requires management's attention. In Figure 1, the number of occurrences in the third quarter of FY 2004 was above the average (8.64) with 11 total occurrences. The Figure 1 control chart does not identify any statistically significant trend (e.g., above the Upper Control Limit) for the quarter.

**Figure 1**

Occurrences during the third quarter (4/1/04 - 6/30/04):

- [BOPER-2004-0004](#) Contamination Found Outside 306-W Building (306-W)
- [BOPER-2004-0005](#) S/CI Bolts Discovered in the 326 Building (326)
- [BOPER-2004-0006](#) Discovery of S/CI Bolts During Scheduled Maintenance (BRSW & RTL)
- [BOPER-2004-0007](#) Staff Member Trips on Stairs Resulting in Hairline Fracture to Arm (PSL)
- [BOPER-2004-0008](#) Staff Member Injures Wrist (EMSL)

- [BOPER-2004-0009](#) Contamination Offsite / Failure to Meet Offsite Shipping Requirements (LSL-II)
- [BOPER-2004-0010](#) Near Miss Involving Pressurized Tubing (338)
- [BOPER-2004-0011](#) S/CI Bolts Discovered in Three Tie Down Straps (305-B)
- [NUCL-2004-0004](#) Hazardous Waste Spill at the Radiochemical Processing Laboratory (RPL)
- [NUCL-2004-0005](#) S/CI Bolts Discovered at RPL
- [NUCL-2004-0006](#) Management Concern Related to Electrical Safety Hazard Analysis

Figure 2, provides a representation of occurrences relative to significance categories.

**Figure 2**

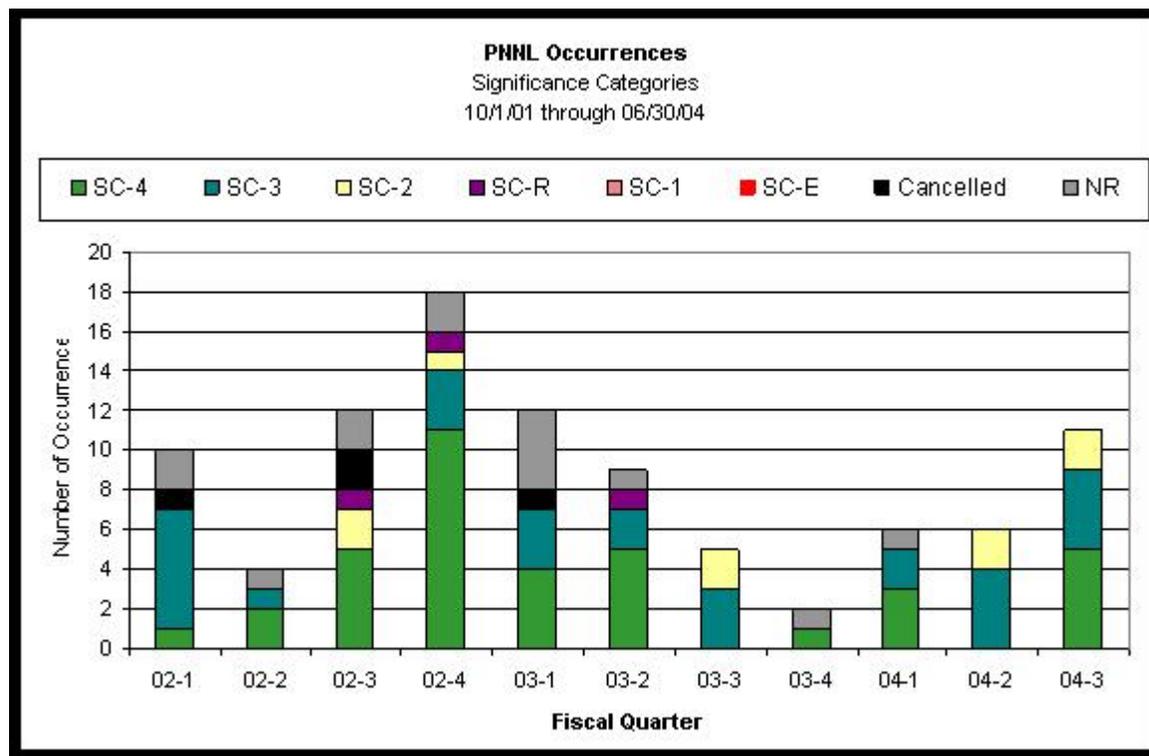


Figure 2 shows that the leading significance category of our occurrences is at the SC-4 level (39%). Figure 2 includes past occurrences (before 11/3/03) compared to the new criteria and significance categories. NR defines occurrences that would have been categorized as Not Reportable after November 3, 2003. As a percent of total, the various significance categories rank as follows: SC-4 = 48%, SC-3 = 36%, SC-2 = 12% and SC-R = 4%. This percent of total is comparable to what DOE predicted earlier when performing back-fit analysis (SC-4 = 45%, SC-3 = 36%, SC-2 = 16% and SC-1 = 3%).

In Figure 3 the occurrences are graphed according to their criteria groups. The NR's noted above are included as an element of the bar chart to show the total reporting, and as a yellow background area to show their quarterly values separately and distinctly.

**Figure 3**

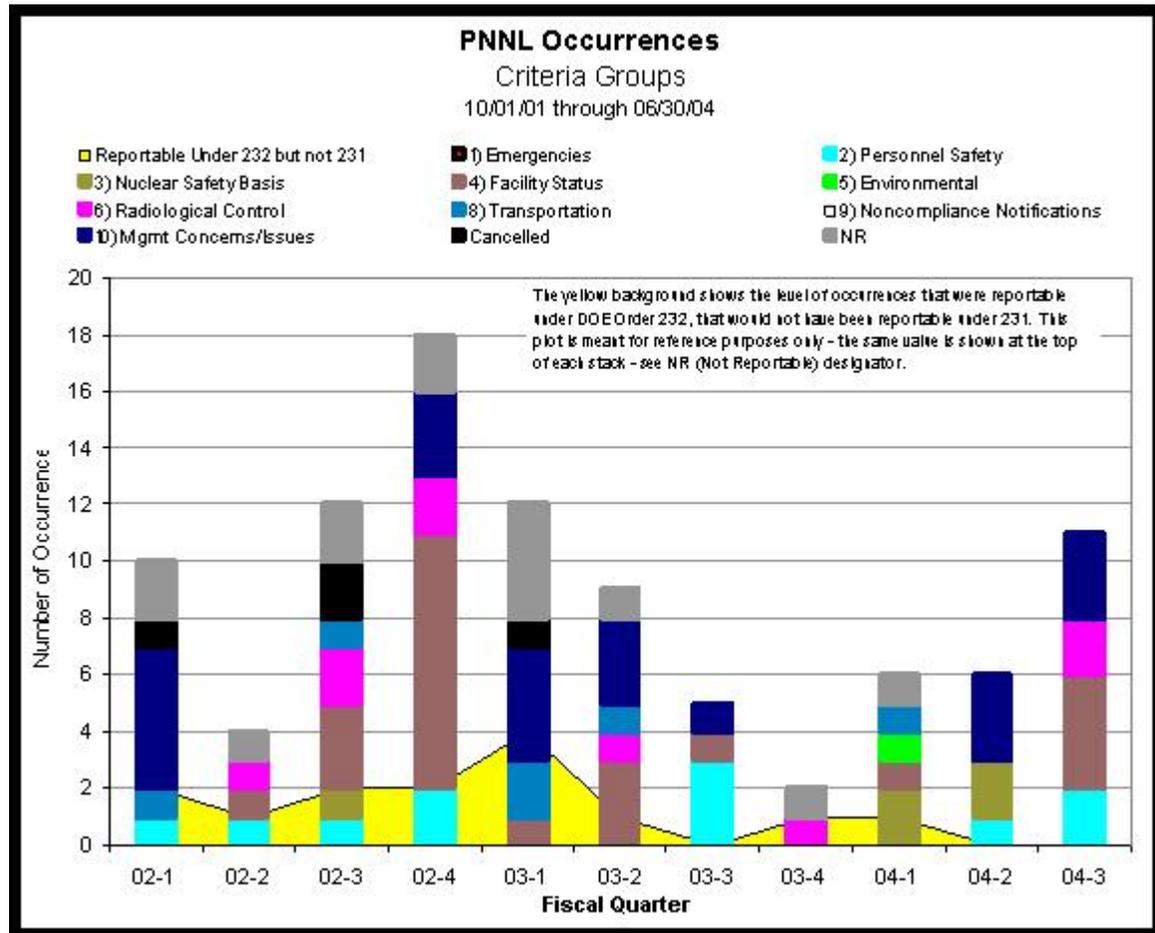


Figure 4 represents the total PNNL occurrences by criteria group.

Facility Status occurrences were in the majority at 25%, followed by Management Concerns at 23%. Personnel Safety (12%), Radiological (9%), Transportation (6%), Nuclear Safety Basis (5%) and Environmental (1%) comprise the remainder of the occurrences this quarter. There were no occurrences this quarter in the Emergencies and Noncompliance criteria groups.

**Figure 4**

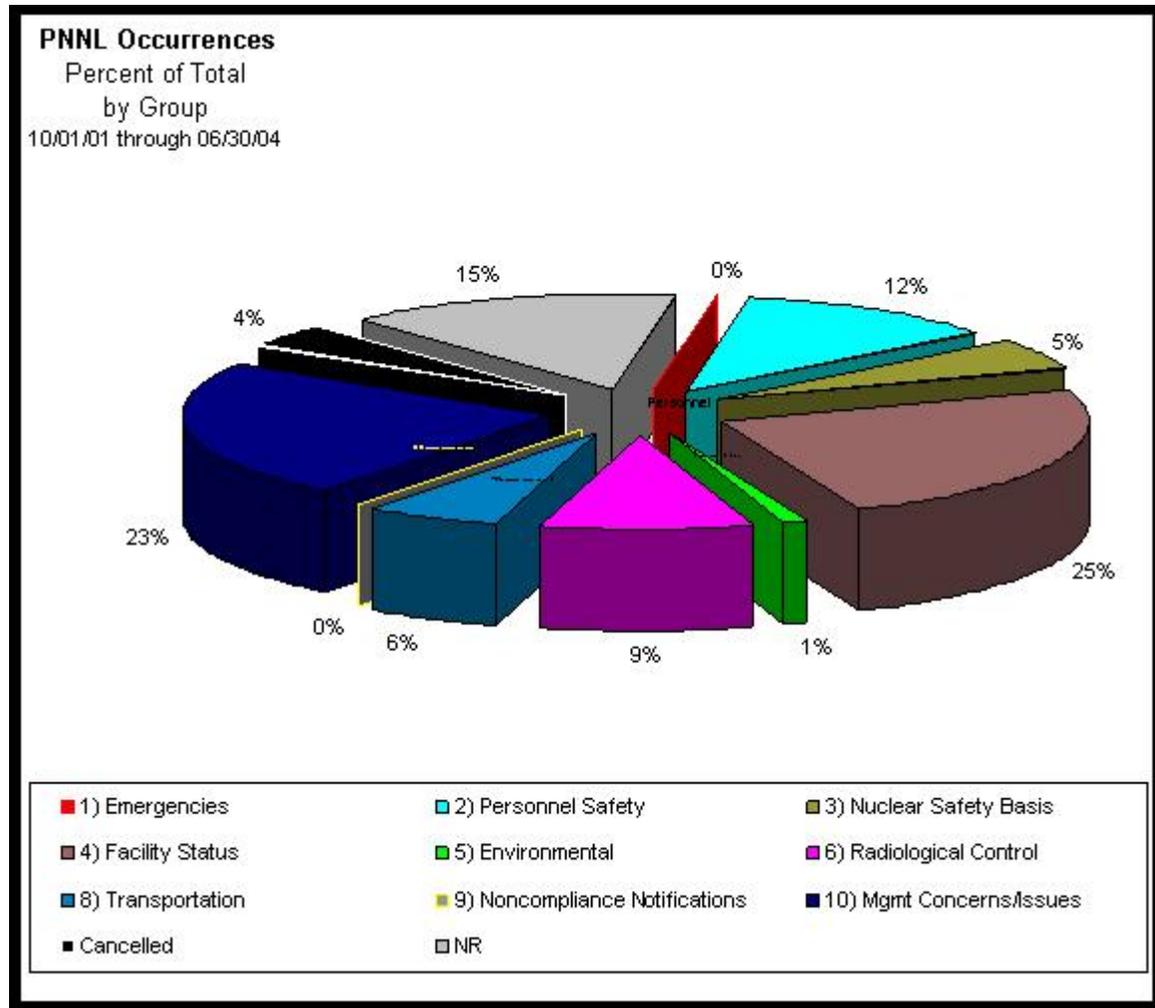


Figure 5 represents the number of occurrences per 200,000 man-hours worked.

The number of occurrences remains low, averaging just 1.0 occurrence per quarter and 1.2 for the last quarter.

**Figure 5**

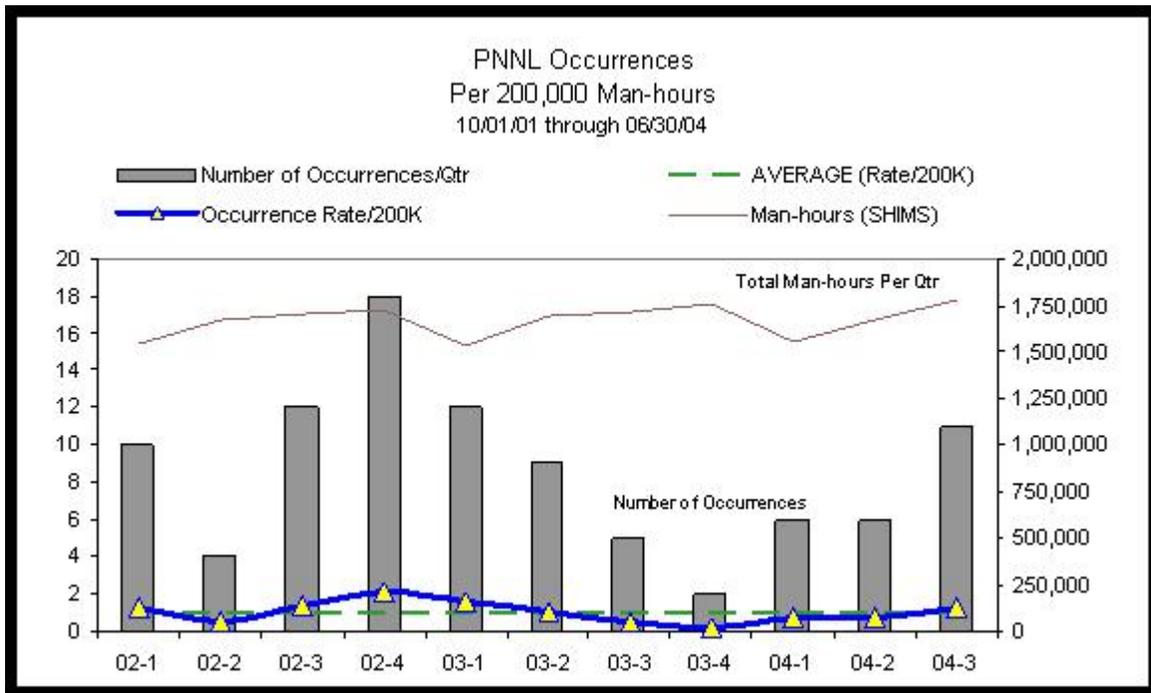
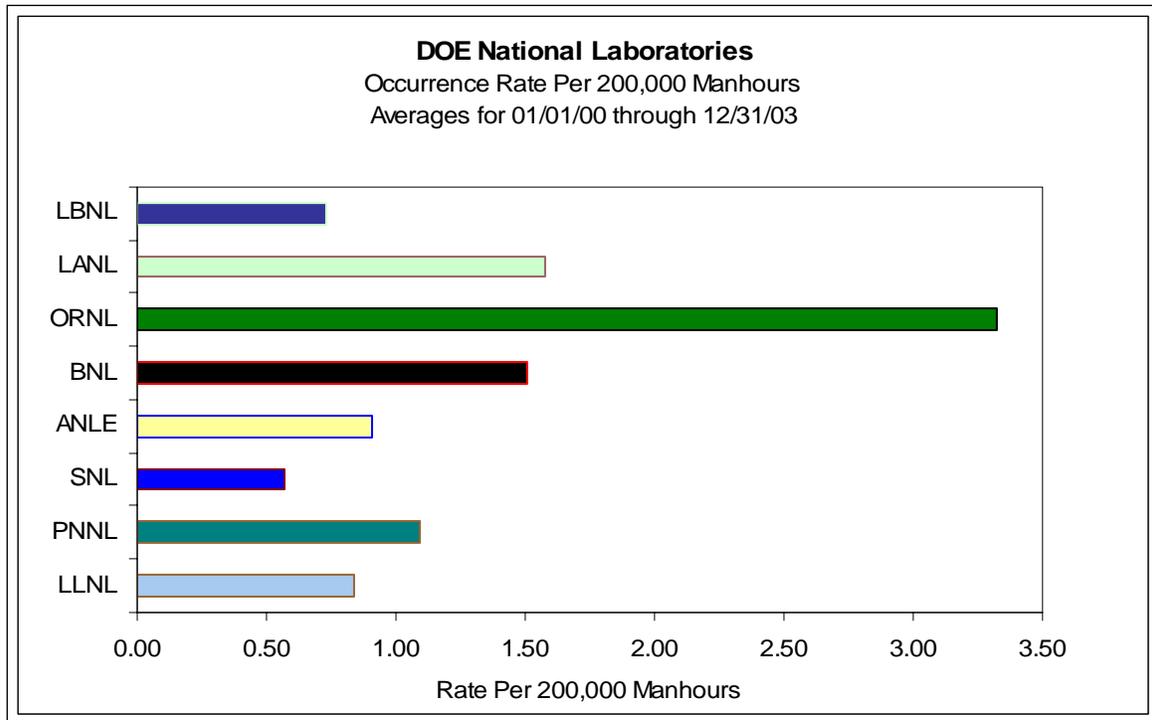


Figure 6 compares our occurrence incident rate per 200,000 man-hours to other DOE National Laboratories.

PNNL rates average in this data comparison. Three of these Labs have higher occurrence rates (BNL, ORNL and LANL) and four have lower (ANL-E, LBNL, LLNL and SNL).

**Figure 6**



**Performance Analysis:**

DOE M 231.1-2, paragraph 5.8, Performance Analysis and Identification of Recurring Occurrences, states, "Each contractor...must perform ongoing, but as a minimum quarterly, analyses of events during a 12-month period to look for trends. This periodic performance analysis must evaluate occurrences of all significance categories plus contractor-/operator-determined non-reportable events in order to prevent serious events from occurring. Quarterly performance analysis results must be reported to contractor and DOE line management in order to achieve improvements."

This analysis and trending evaluated incidents categorized as reportable through ORPS and non-reportable incidents such as calls to the PNNL single point of contact (375-2400), CAIRS reports, QPRs and RPRs.

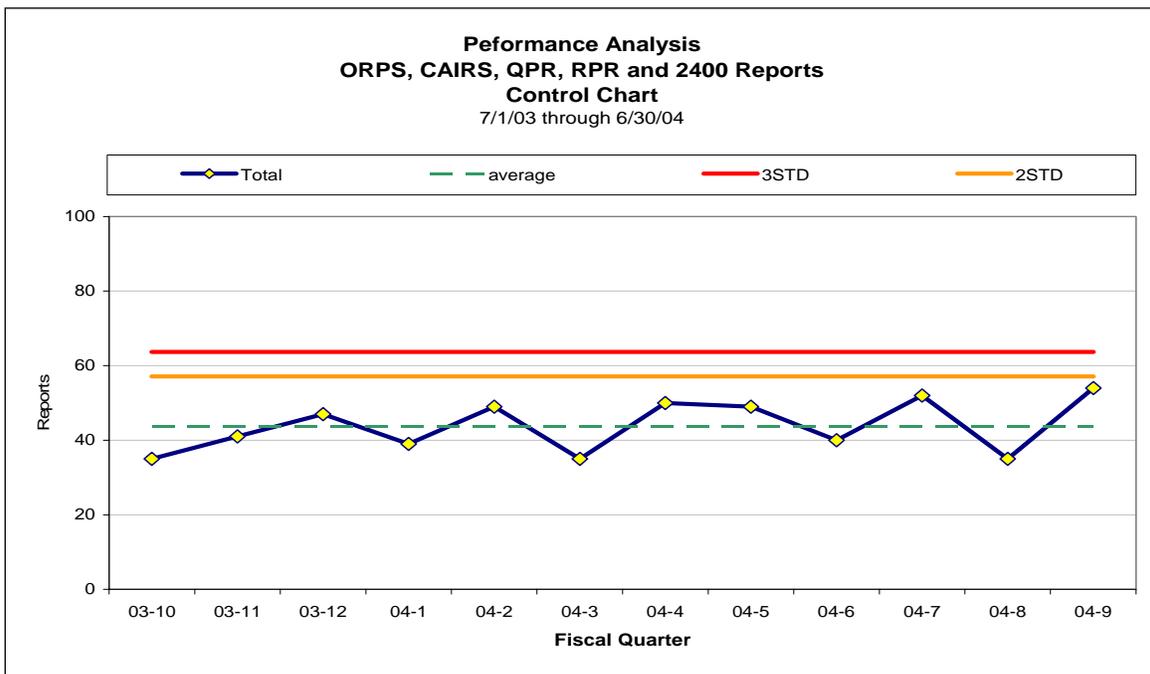
During the past 12 months there have been 25 ORPS reports (occurrences), 45 CAIRS reports, 61 QPRs, 118 RPRs, and 290 other calls that did not merit reporting through one of those four reporting systems. ORPS reports included 6 RPRs, 5 QPRs, and 3 CAIRS reports.

Note: The Trend report analyzes reportable occurrence data from 10/01/01 through 06/30/04. The Performance Analysis; however, covers all reportable and non-reportable events for just the prior 12 month period ending 03/31/04.

Figure 7 represents the Performance Analysis and Trending Report Control Chart.

This control chart indicates that there are no statistically significant or noteworthy trends in these data streams suggesting further management consideration for SC-R categorization. The analysis included review of each subgroup (ORPS, CAIRS, QPR, RPR and 2400 Reports), to see if any of them individually or collectively produced any trends of concern and none were found.

**Figure 7**



**Conditions:** None

**Assessment Rating:**

Select	Rating Criteria	Rating
X	Performance in the assessment category generally meets or exceeds requirements and performance expectations. May have deficiencies.	Green
	Serious deficiencies (compliance and performance) exist.	Yellow
	Significant improvement is required.	Yellow
	Immediate action is required to mitigate hazards and/or to protect the environment and safety and health.	Red
	Significant programmatic breakdowns exist.	Red