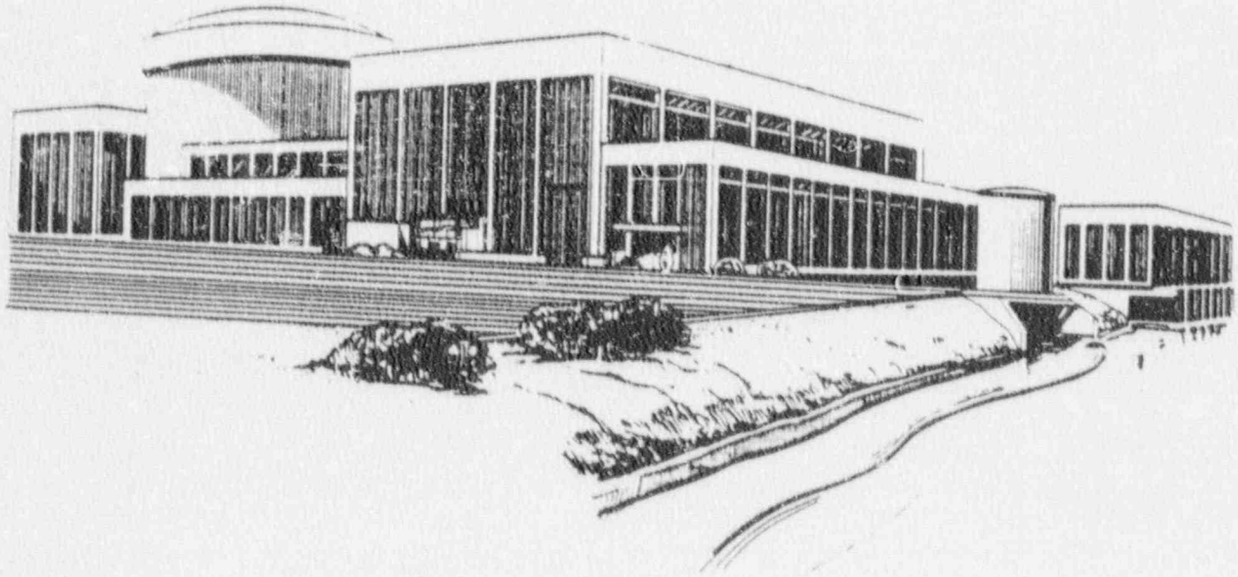
FORT CALHOUN STATION
PERFORMANCE INDICATORS

DECEMBER 1990



Prepared by:

Production Engineering Division
System Engineering
Test and Performance Group

OMAHA PUBLIC POWER DISTRICT

FORT CALHOUN STATION

PERFORMANCE INDICATORS

PREPARED BY:

PRODUCTION ENGINEERING DIVISION

SYSTEM ENGINEERING

DECEMBER 1990

Pursuit of excellence is an attitude...

it involves wisdom and sound judgment...

it is a lifetime, career-long commitment...

it is a way of life...it is doing the job

right the first time, every time. It is

inner-directed, not the result of external

pressure, it is our own self worth-who

we are and the pride and satisfaction

that comes from being the right kind of

person, not just in doing the right things.

James J. O'Connor

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NOTE: THE FORT CALHOUN STATION PERFORMANCE INDICATORS REPORT PROGRAM IS TAILORED TO ADDRESS THE AREAS WHICH ARE MOST MEANINGFUL TO THE PEOPLE USING THE REPORT. COMMENTS AND INPUT ARE ENCOURAGED. PLEASE REFER COMMENTS TO THE TEST AND PERFORMANCE GROUP. TO INCREASE PERSONNEL AWARENESS OF FORT CALHOUN STATION'S PERFORMANCE, IT IS SUGGESTED THAT YOU DISTRIBUTE THIS REPORT THROUGHOUT YOUR DEPARTMENT.

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PREFACE

PERFORMANCE INDICATORS
REPORT IMPROVEMENTS

Four indicators have been changed. One indicator is in the Maintenance Section, two of these indicators are in the Refueling Outage Section, and one of these indicators is in the Quality Assurance Section.

The Number of Out-of-Service Control Room Instruments Indicator found on page 65 has been changed. This indicator previously showed a Fort Calhoun goal of less than 7 out-of-service control room instruments. This indicator now shows a Fort Calhoun goal of less than 30 out-of-service control room instruments.

The MWO Overall Status (1991 Refueling Outage) Indicator found on page 146 has been changed. The outage MWR backlog has been added to this indicator. The MWR backlog is the number of MWR's which have been identified for the 1991 Refueling Outage, but have not yet been converted to MWO's.

The Overall Project Status (1991 Refueling Outage) Indicator found on page 148 has been changed. The number of projects for which detailed schedules have been submitted has been added to this indicator.

The Violations per 1000 Inspection Hours Indicator found on page 151 has been changed. A new data source has been accepted for this indicator. This new data source will supply data which can be more easily compared to the rest of the nuclear industry. The graph for this indicator has also been changed to reflect the new data.

PURPOSE

This program titled "Performance Indicators" is intended to provide selected Fort Calhoun plant performance information to OPPD's personnel responsible for optimizing unit performance. The information is presented in a way that provides ready identification of trends and a means to track progress toward reaching corporate goals. The information can be used for assessing and monitoring Fort Calhoun's plant performance, with emphasis on safety and reliability. Some performance indicators show company goals or industry information. This information can be used for comparison or as a means of promoting pride and motivation.

SCOPE

In order for the Performance Indicator Program to be effective, the following guidelines were followed while implementing this program:

Select the data which most effectively monitors Fort Calhoun's performance in key areas.

Present the data in a straight forward graphical format using averaging and smoothing techniques.

Include established corporate goals and industry information for comparison.

Develop formal definitions for each performance parameter. This will ensure consistency in future reports and allow comparison with industry averages where appropriate.

Comments and input are encouraged to ensure that this program is tailored to address the areas which are most meaningful to the people using the report.

1990 PERFORMANCE SUMMARY

GOALS MET:

Indicator	Page Number	1990 Goal	1990 Performance
Unplanned Automatic Reactor Scrams While Critical	29	1 Scram	0 Scrams
Personnel Radiation Exposure (Cumulative) *	41	287 man-rem	275.9 man-rem
Volume of Low-level Solid Radioactive Waste *	43	5000 cubic feet	4310.1 cubic feet
Ratio of Preventive to Total Maintenance *	61	60%	63.2%
Preventive Maintenance Items Overdue *	63	1.2%	1.0%
Number of Out-of-Service Control Room Instruments	65	30 instruments	29 instruments
Maintenance Overtime	67	18.1%	32.1%
Maintenance Work Order Backlog (Corrective Non-Outage)	69	500 MWO's	329 MWO's
Decontaminated Auxiliary Building *	97	85%	85.9%

* Indicators that track performance for Safety Enhancement Program (SEP) Items.

1990 PERFORMANCE SUMMARY (CONTINUED)

GOALS NOT MET:

Indicator	Page Number	1990 Goal	1990 Performance
Forced Outage Rate	27	2.4%	9.7%
Unplanned Automatic Safety System Actuations	31	0 actuations	1 actuation
Gross Heat Rate	35	10,200 BTU/KWH	10,304 BTU/KWH
Equivale.. Availability Factor	37	65.4%	56.6.
Fuel Reliability Indicator	39	1 nanocuries/gram	1.4 nanocuries/gra..
Disabling Injury Frequency Rate *	45	0.31%	0.48%
In-Line Chemistry Instruments Out-of-Service	88	6 instruments	7 instruments
Total Skin and Clothing Contaminations *	95	150 contaminations	237 contaminations
Temporary Modifications (Excluding Scaffolding) *	127	15 temp. mods.	23 temp. mods.

* Indicators that track performance for Safety Enhancement Program (SEP) Items.

1990 PERFORMANCE SUMMARY (CONTINUED)

Indicator	Page Number	1990 Performance	Industry Performance
Forced Outage Rate **	27	9.7%	0.25%
Unplanned Automatic Reactor Scrams While Critical **	29	0 Scrams	0 Scrams
Unplanned Automatic Safety System Actuations **	31	1 actuation	0 actuation
Gross Heat Rate **	35	10,304 BTU/KWH	9,935 BTU/KWH
Equivalent Availability Factor **	37	56.6%	82.5%
Fuel Reliability Indicator **	39	1.4 nanocuries/gram	0.04 nanocuries/gram
Personnel Radiation Exposure (Cumulative) * **	41	275.9 man-rem	166 man-rem
Volume of Low-level Solid Radioactive Waste * **	43	4,310.1 cubic feet	3,072 cubic feet
Disabling Injury Frequency Rate * **	45	0.48	0.0
Corrective Maintenance Backlog Greater than 3 Months Old	59	52.6%	45.8%
Preventive to Total Maintenance *	61	63.2%	57.7%
Preventive Maintenance Items Overdue *	63	1.0%	1.2%

* Indicators that track performance for Safety Enhancement Program (SEP) Items.
** Industry upper ten percentile figures for industry performance are shown for these indicators. Industry upper quartile figures for industry performance are shown for the other indicators.

1990 PERFORMANCE SUMMARY (CONTINUED)

Indicator	Page Number	1990 Performance	Industry Performance
Number of Out-of-Service Control Room Instruments	65	29 instruments	7 instruments
Total Skin and Clothing Contaminations	95	237 contaminations	129 contaminations

* Indicators tha track performance for Safety Enhancement Program (SEP) Items.
** Industry upper ten percentile figures for industry performance are shown for these indicators. Industry upper quartile figures for industry performance are shown for the other indicators.

ADVERSE TREND REPORT

The Adverse Trend Report explains the conditions under which certain indicators are showing adverse trends. An indicator that is defined as AN ADVERSE TREND IS ONE IN WHICH THE DATA REPRESENTED FOR THREE CONSECUTIVE MONTHS IS SHOWING A DECLINE IN PERFORMANCE for that particular indicator. Indicators which show an apparent three month decline, but are not considered an adverse trend, will display an explanation which defines the reason why an adverse trend does not exist.

Forced Outage Rate - Page 27

The forced outage rate for the Fort Calhoun Station has been increasing since July of 1990. One forced outage occurred in the month of August 1990 and was due to seal problems encountered in reactor coolant pump RC-3A. Another forced outage occurred in September 1990 and continued into October 1990. This forced outage was due to design basis questions concerning containment cooling capabilities. A third forced outage occurred in the month of November 1990 and was due to an Instrument Air System line failure in the Turbine Building. A fourth forced outage occurred in the month of December and was due to a Control Element Drive Mechanism (CEDM) housing leak.

Recordable Injury Cases Frequency Rate - Page 133

The recordable injury frequency rate has been increasing since September 1990. This increase in the frequency rate is due to 12 recordable injury cases which have occurred during 1990.

INDICATORS NEEDING INCREASED MANAGEMENT ATTENTION

This section lists the indicators which show inadequacies as compared to the OPPD goal and indicators which show inadequacies as compared to the industry upper quartile. The indicators will be compared to the industry upper quartile as relevant to that indicator.

Forced Outage Rate - Page 27

The forced outage rate for year end 1990 was reported as being higher than the Fort Calhoun goal of 2.4%. The rise in the forced outage rate during the month of August was due to seal problems encountered in reactor coolant pump RC-3A. These problems resulted in 172.6 forced outage hours. During the month of September and October the plant was shutdown due to design basis questions concerning containment cooling capabilities. This forced outage resulted in 212.0 forced outage hours being reported. In November another forced outage occurred due to an Instrument Air System line failure in the Turbine Building. This forced outage resulted in 60.3 forced outage hours being reported. In December a forced outage occurred due to a CEDM housing leak. This forced outage resulted in 404.3 forced outage hours being reported. During 1990 a total of 849.2 forced outage hours have been reported. These reported hours result in a year end forced outage rate of 9.7%. The goal of 2.4% was based on approximately 210 forced outage hours.

Unplanned Safety System Actuations - (INPO Definition) - Page 31

The Fort Calhoun Station has experienced an unplanned safety system actuation during 1990. This unplanned actuation was a start and load of DG-2 due to an inadvertent trip of backup lockout relay 86/2BF5. The Fort Calhoun goal for unplanned safety system actuations during 1990 was set at zero actuations.

Gross Heat Rate - Page 35

The monthly gross heat rate for the months of August, September, October, November, and December were reported as being above the Fort Calhoun monthly goal. These high monthly gross heat rates were due to four forced shutdowns of the plant which occurred during August, September, November, and December.

The year to date gross heat rate was above the goal of 10,200 BTU/KWH. The gross heat rate values for January and February were high due to the fact that the first stage of the high pressure turbine was removed during the months of January and February. During May startup from the 1990 Refueling Outage caused the gross heat rate to be high. During July, August, September, October, November, and December various derates, and four forced outages caused the gross heat rate values for these months to be higher than the Fort Calhoun goal.

Equivalent Availability Factor - Page 37

The monthly EAF for December was below the goal of 93% due to the forced outage which occurred during December involving a Control Element Drive Mechanism (CEDM) housing leak. The year to date EAF was reported as below the year to date goal of 65.4% due to various power fluctuations which occurred during the month of June and due to forced outage hours which occurred during the months of August, September, October, November, and December.

Fuel Reliability Indicator (FRI) - Page 39

The FRI has been above the Fort Calhoun goal of 1.0 nanocuries/gram. The FRI value for December using the actual plant letdown rate was reported as 2.39 nanocuries/gram.

Disabling Injury Frequency Rate (Lost Time Accident Rate) - Page 45

The year end disabling frequency rate was reported as being above the Fort Calhoun goal of 0.31%. The year end rate increased during December due to 2 disabling injuries being reported during the month. During 1990 a total of 3 disabling injuries were reported.

Daily Thermal Output - Page 47

The daily thermal output was reported below the Fort Calhoun goal of 1495 thermal megawatts from December 14, 1990, through December 31, 1990. The reason for this increase in the daily thermal output was due to a forced outage which occurred during December and was a result of a CEDM housing leak.

Corrective Maintenance Backlog Greater Than 3 Months Old (Non-Outage) - Page 59

The percentage of open corrective non-outage MWO's older than 3 months old is currently above the industry quartile value of 45.8% due to 173 open MWO's that are older than 3 months old.

Ratio of Preventive to Total Maintenance - Page 61

The ratio of preventive to total maintenance was reported below the Fort Calhoun goal of 60% and below the industry upper quartile value of 57.7% for the month of December 1990. The reason for this decrease in the ratio of preventive to total maintenance was the increased attention put forth by Maintenance to complete the required corrective maintenance associated with the forced outage which occurred in December 1990.

Number of Out-of-Service Control Room Instruments - Page 65

The number of out-of-service control room instruments has been above the industry upper quartile value of 7 out-of-service control room instruments since November of 1989.

Percent of Completed Scheduled Maintenance Activities - Page 70 (Electrical Maintenance)

The percent of completed maintenance activities for Electrical Maintenance was reported below the Fort Calhoun goal of 80% for 3 of the 5 scheduled weeks which ended in December 1990.

Percent of Completed Scheduled Maintenance Activities - Page 71 (Pressure Equipment)

The percent of completed maintenance activities for Pressure Equipment was reported below the Fort Calhoun goal of 80% for 1 of the 5 scheduled weeks which ended in December 1990.

Percent of Completed Scheduled Maintenance Activities - Page 72 (General Maintenance)

The percent of completed maintenance activities for General Maintenance was reported below the Fort Calhoun goal of 80% for 1 of the 5 scheduled weeks which ended in December 1990.

Percent of Completed Scheduled Maintenance Activities - Page 73 (Mechanical Maintenance)

The percent of completed maintenance activities for Mechanical Maintenance was reported below the Fort Calhoun goal of 80% for 2 of the 5 scheduled weeks which ended in December 1990.

Check Valve Failure Rate - Page 80

The Fort Calhoun check valve failure rate as of the end of August was above the industry check valve failure rate. The reason for the high check valve failure rate is that the plant is performing maintenance on check valves which have not been tested for failures before. The check valve failure rate is expected to decrease as the check valves are maintained and monitored through the Check Valve Program.

Secondary System Chemistry Performance Index - Page 83

The CPI value for the Fort Calhoun Station has been above the industry upper quartile value of 0.24 since the first CPI value was taken after startup in May of 1990. Part of the reason for the high CPI values is the fact that the Fort Calhoun Station has been involved in various derates and forced outages since startup in May. Another reason for the high CPI values is the fact that the Fort Calhoun Station uses morpholine to control PH. The use of morpholine also raises the CPI values.

In-Line Chemistry Instruments Out-of-Service - Page 88

There were 7 out-of-service chemistry instruments at the end of December. The Fort Calhoun goal is to have less than 6 out-of-service chemistry instruments. Six (6) out-of-service chemistry instruments make up 10% of all the chemistry instruments counted for this indicator.

Total Skin and Clothing Contaminations - Page 95

The total number of skin and clothing contaminations has been above the Fort Calhoun goal of 150 contaminations since the month of April 1990. The total number of skin and clothing contaminations has been above the industry upper quartile value of 129 contaminations since the month of March 1990. The high number of skin and clothing contaminations during the months of March and April 1990 was due to increased activity in the Radiation Controlled Area (RCA) associated with the 1990 Refueling Outage.

Temporary Modifications (Excluding Scaffolding) - Page 127

The number of temporary modifications which are installed in the plant is currently above the Fort Calhoun goal of 15 temporary modifications.

SAFETY ENHANCEMENT PROGRAM (SEP)
PERFORMANCE INDICATORS

The purpose of the Safety Enhancement Program (SEP) Performance Indicators pages is to list the indicators related to the SEP items with parameters that can be trended.

SAFETY ENHANCEMENT PROGRAM (SEP)
PERFORMANCE INDICATORS
(CONTINUED)

SAFETY ENHANCEMENT PROGRAM (SEP)
PERFORMANCE INDICATORS
(CONTINUED)

SAFETY ENHANCEMENT PROGRAM (SEP)
PERFORMANCE INDICATORS
(CONTINUED)

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MAINTENANCE

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PERFORMANCE INDICATORS
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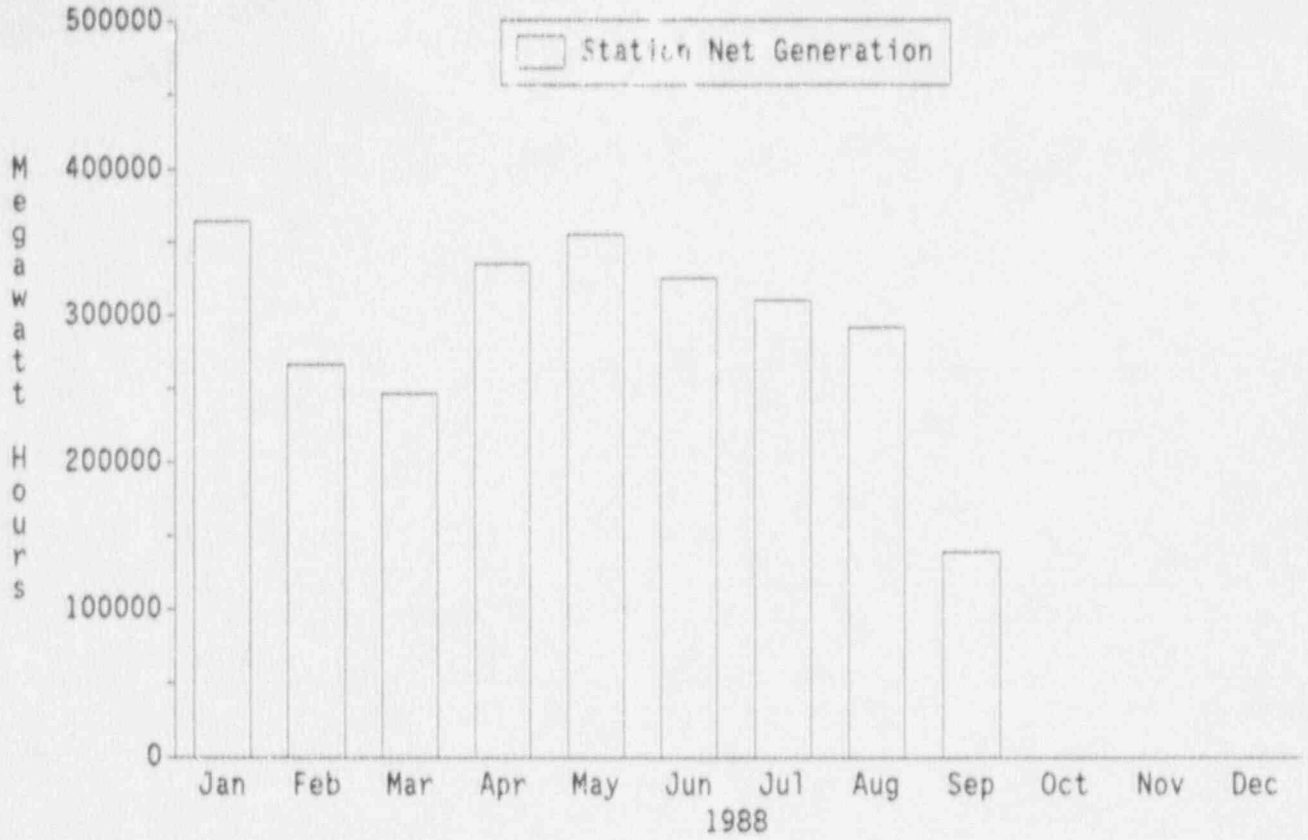
(CONTINUED)

QUALITY ASSURANCE (CONTINUED)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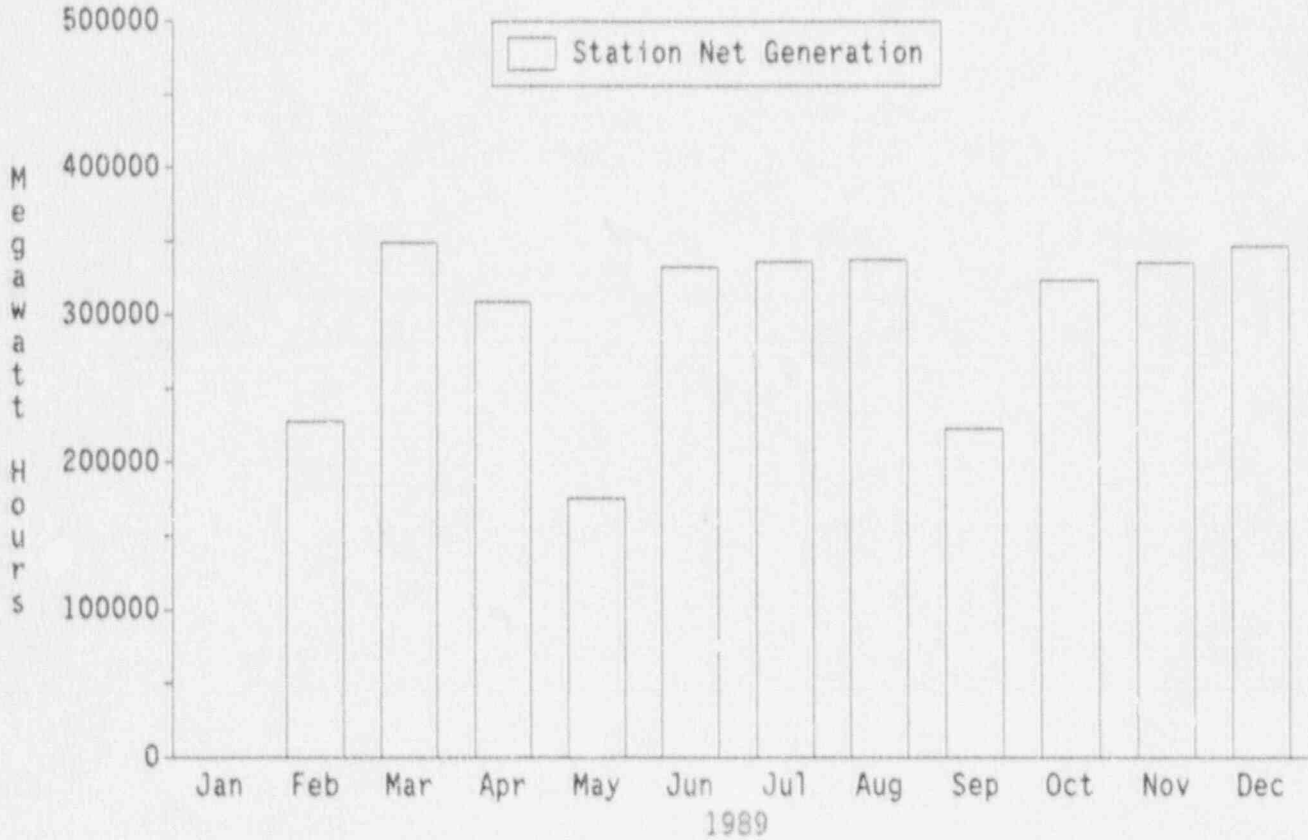
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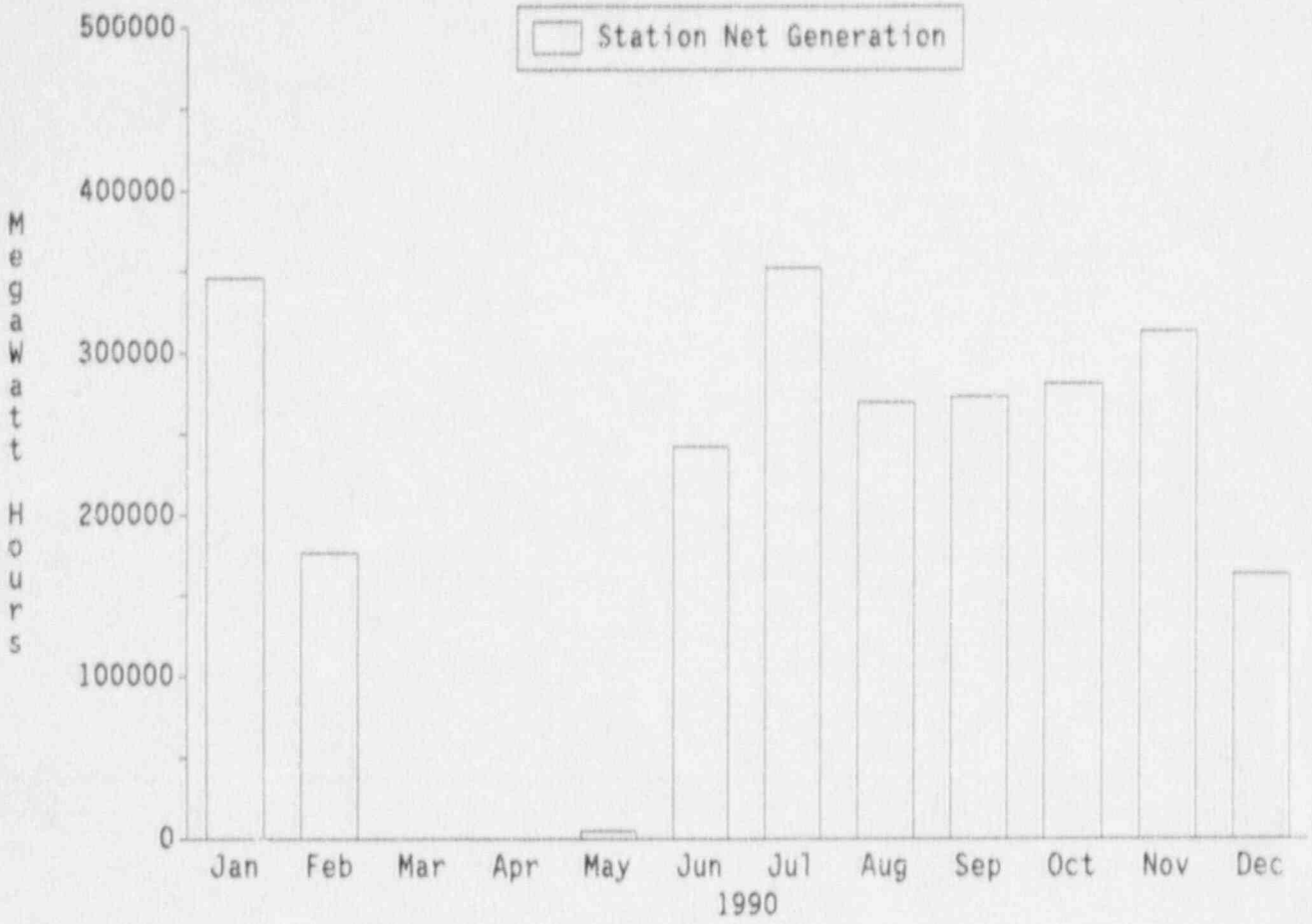
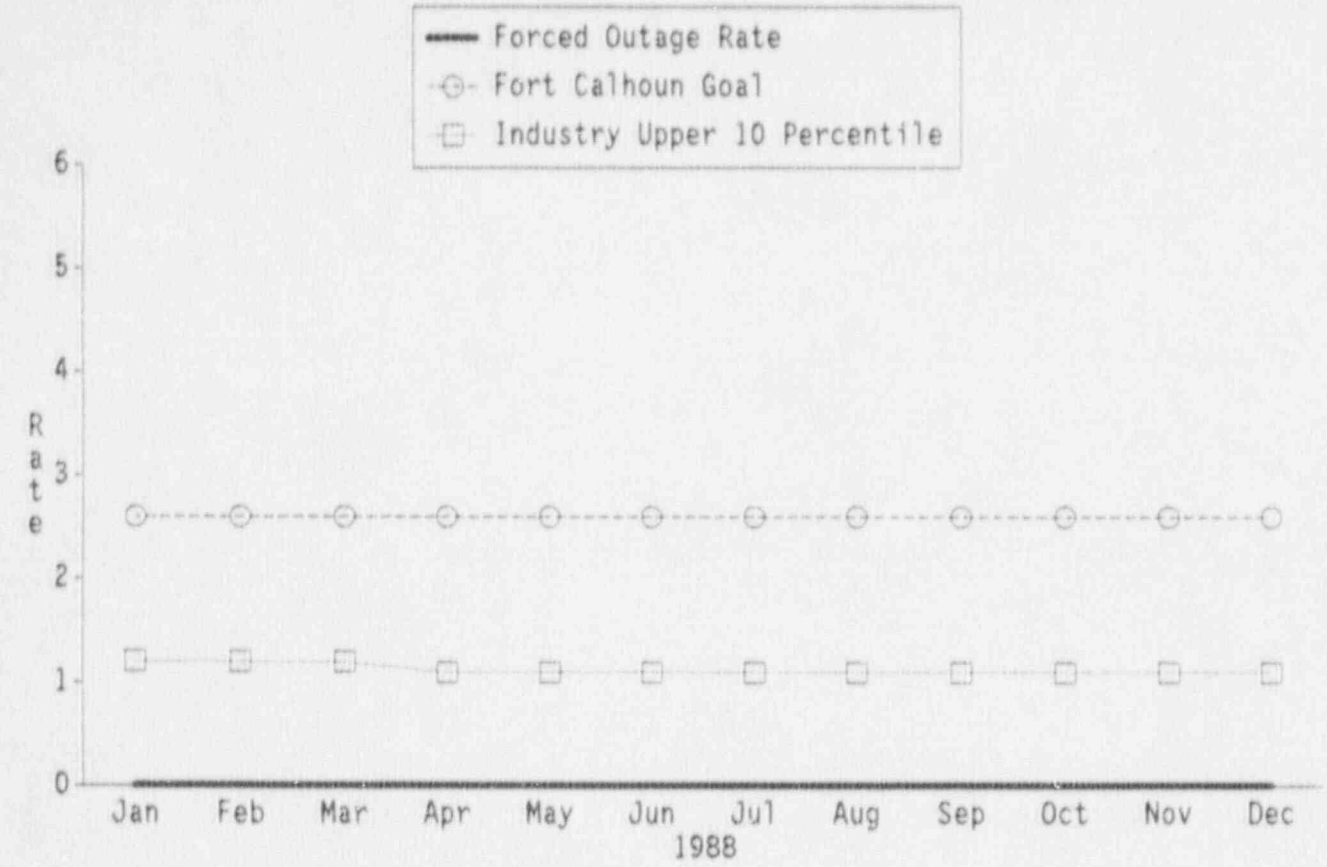


STATION NET GENERATION

During the month of December 1990, a net total of 163,610.5 MWH was generated by the Fort Calhoun Station. The net generation of the Fort Calhoun Station was low due to 404.3 forced outage hours being reported. This forced outage was due to a Control Element Drive Mechanism (CEDM) housing leak. The net generation for the month of August was low due to a forced outage which occurred during the month. This forced outage was due to seal problems on reactor coolant pump RC-3A. The net generation for the months of September and October were also low due to a forced outage. The forced outage which occurred in September and continued into October was due to a design basis question on containment cooling capabilities. November's net generation was also low due to a forced outage. This outage was due to an Instrument Air System failure in the Turbine Building.

The net generation totals for the months of March and April were zero and the net generation total for the month of May was low due to the plant being shutdown for the 1990 Refueling Outage.

Adverse Trend: None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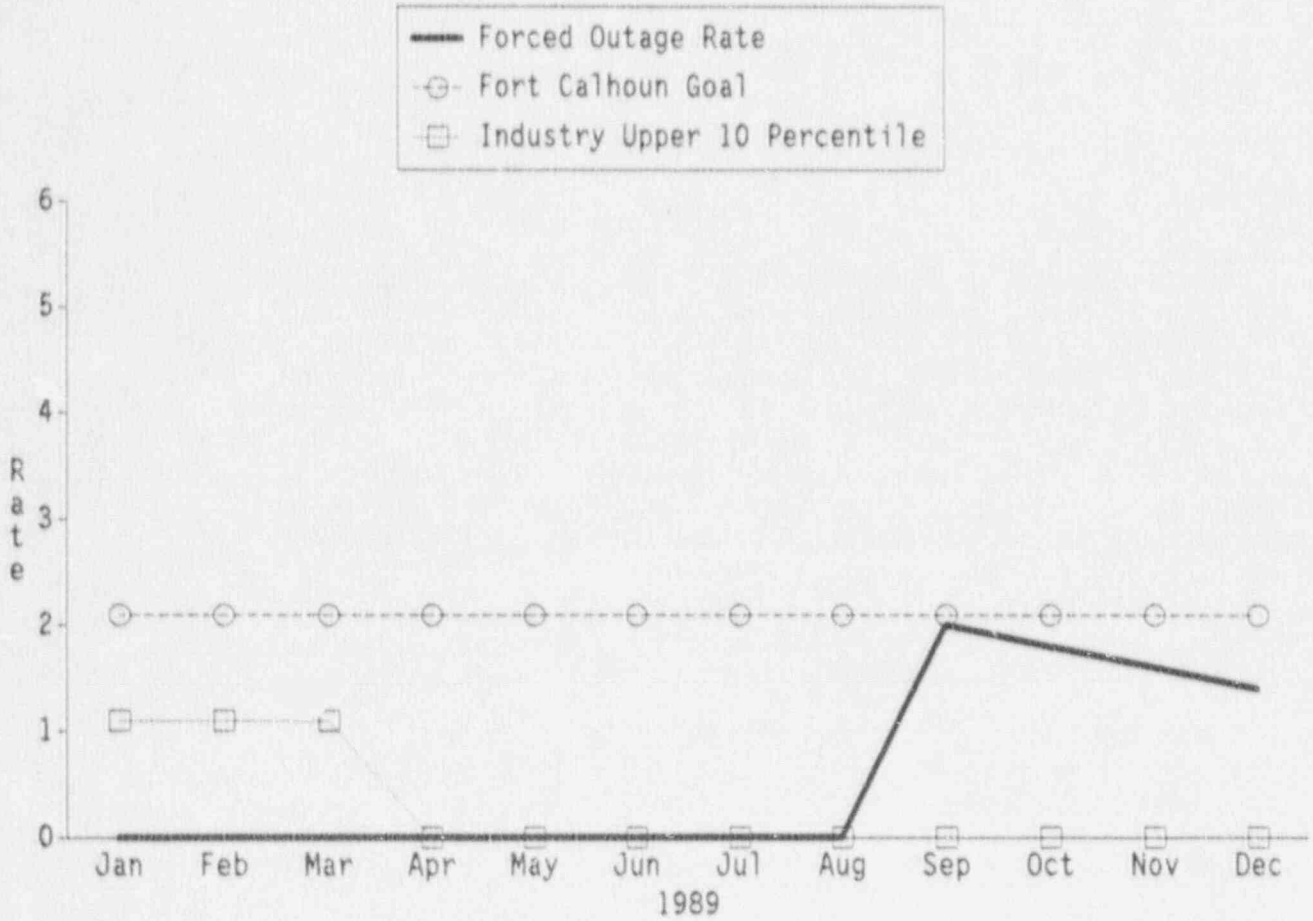
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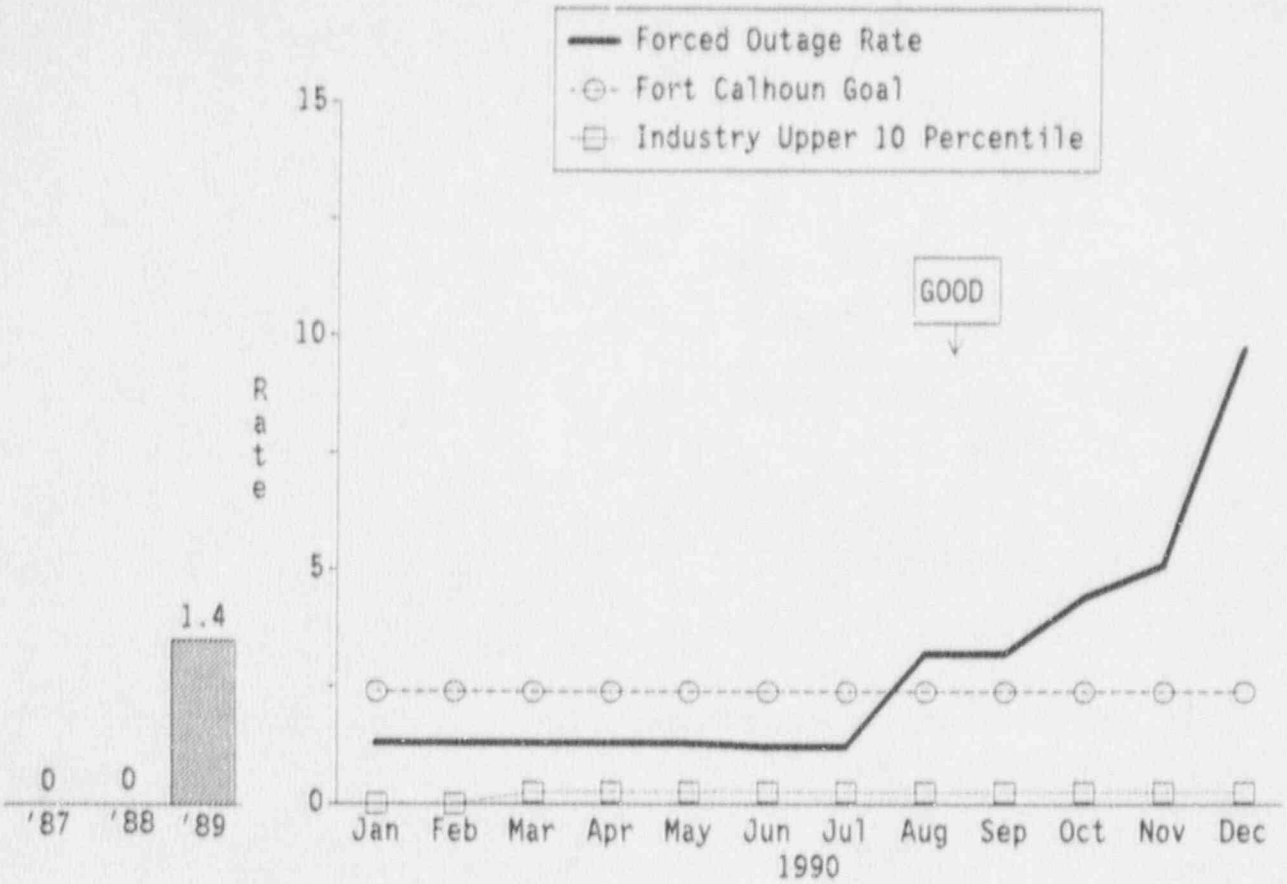


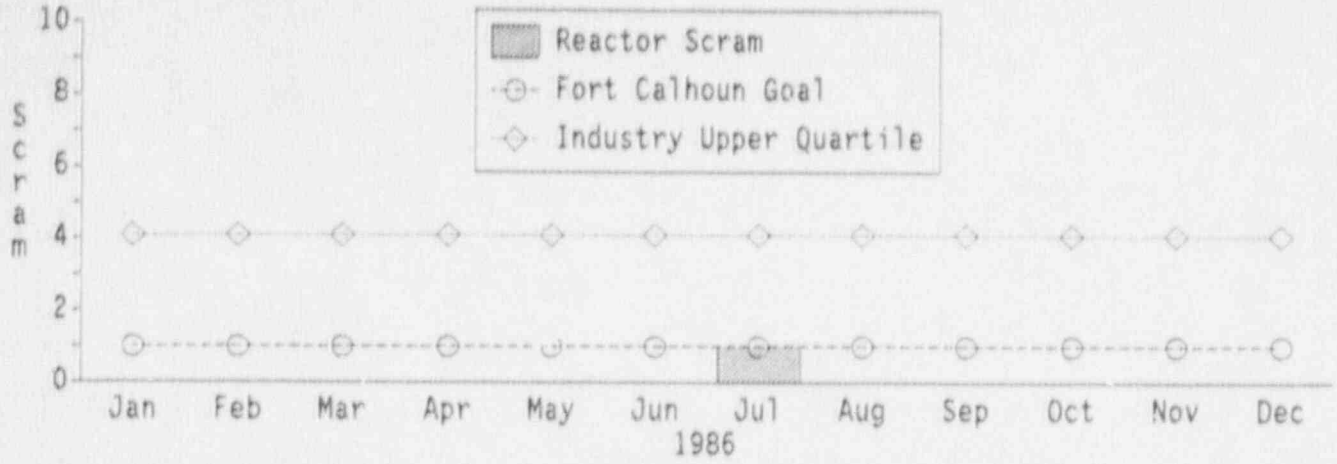
FORCED OUTAGE RATE

The forced outage rate was reported as 9.7% for 1990. The rise in the forced outage rate for the Fort Calhoun Station during the month of December was due to 404.3 forced outage hours being reported during December due to a CEDM housing leak.

The industry upper ten percentile value for the forced outage rate is 0.25%.

The 1990 goal for forced outage rate is 2.4% and is based on seven days of forced outage time. The basis for establishing the 1990 performance goals can be found on page 179.

Adverse Trend: The forced outage rate has been rising since July 1990. This rise in the forced outage rate was due to four forced outages which occurred in August; September and continued into October; November; and December. The first forced outage was due to seal problems encountered in reactor coolant pump RC-3A, the second forced outage was due to design basis questions concerning containment cooling capabilities, the third forced outage was due to an Instrument Air System line failure in the Turbine Building, and the fourth forced outage was due to a CEDM housing leak.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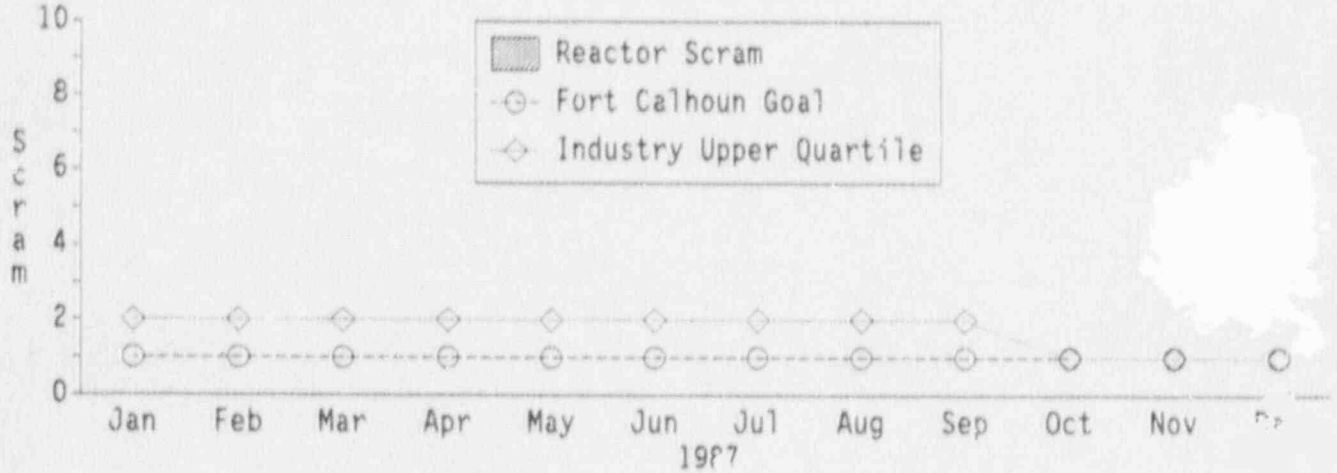
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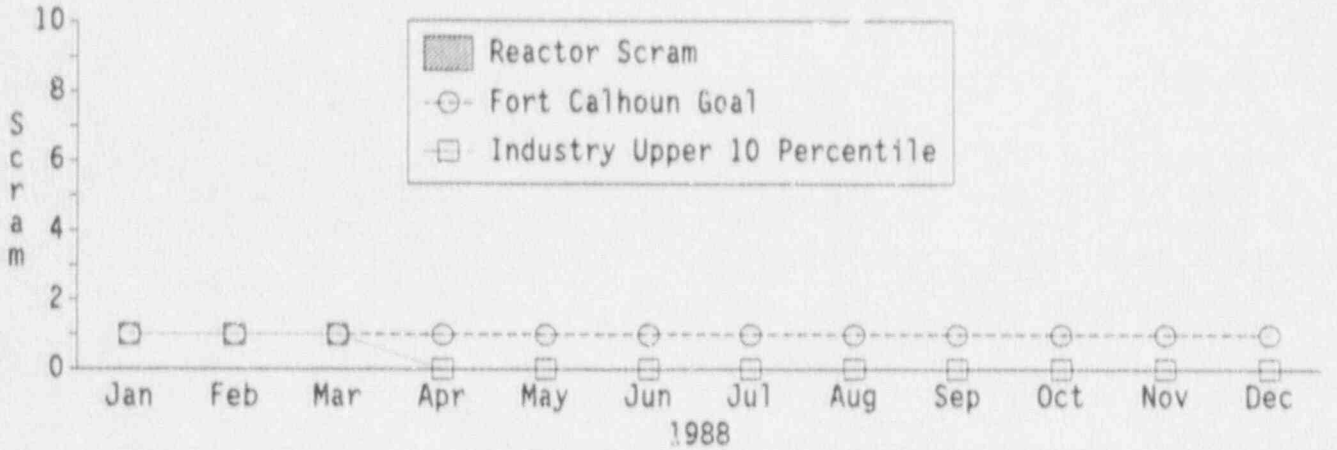
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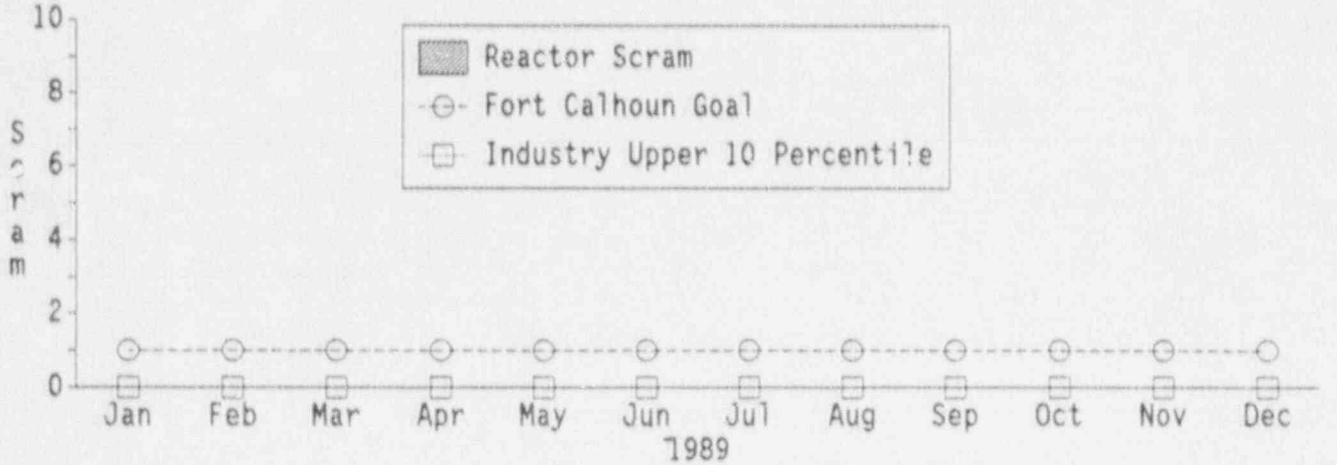
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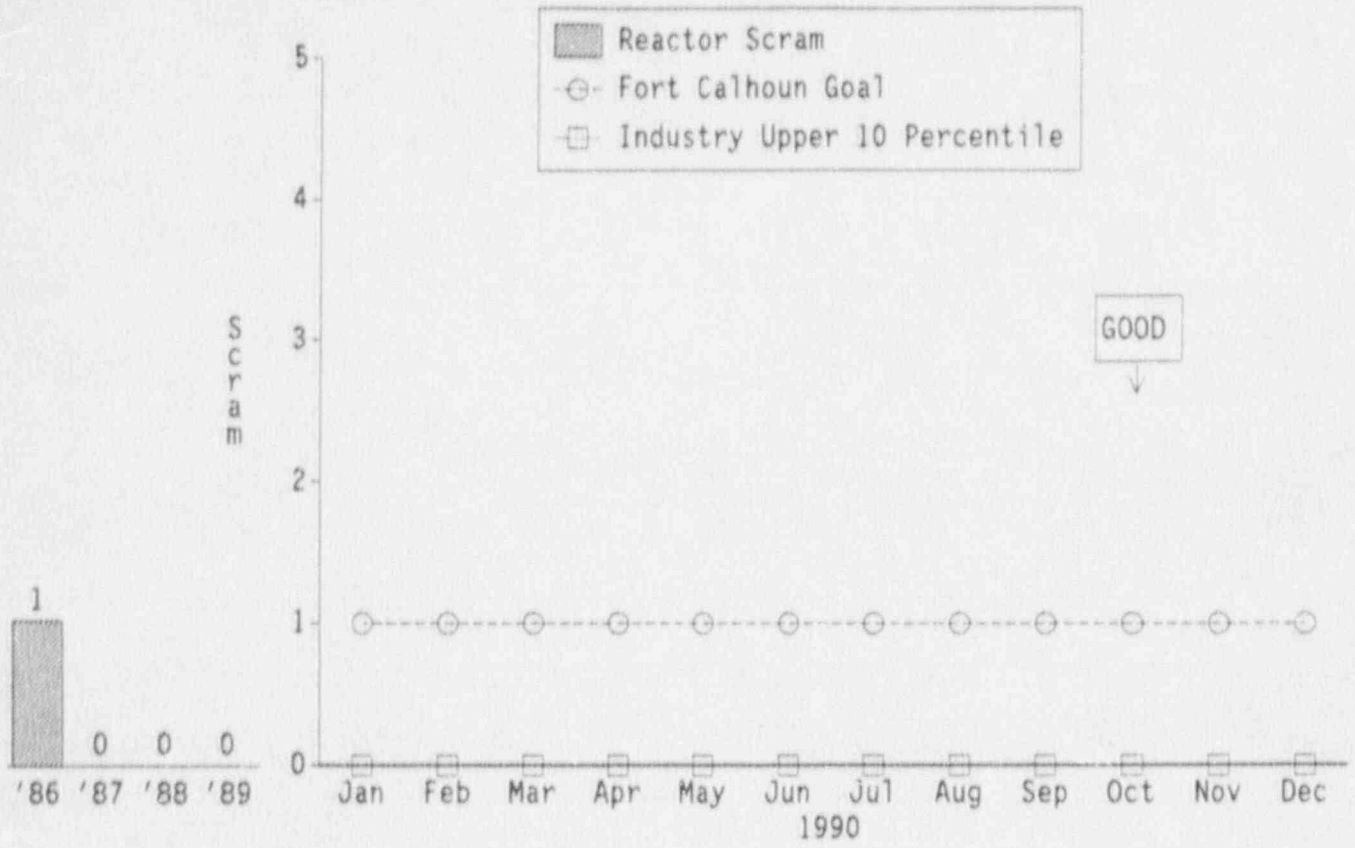
1989



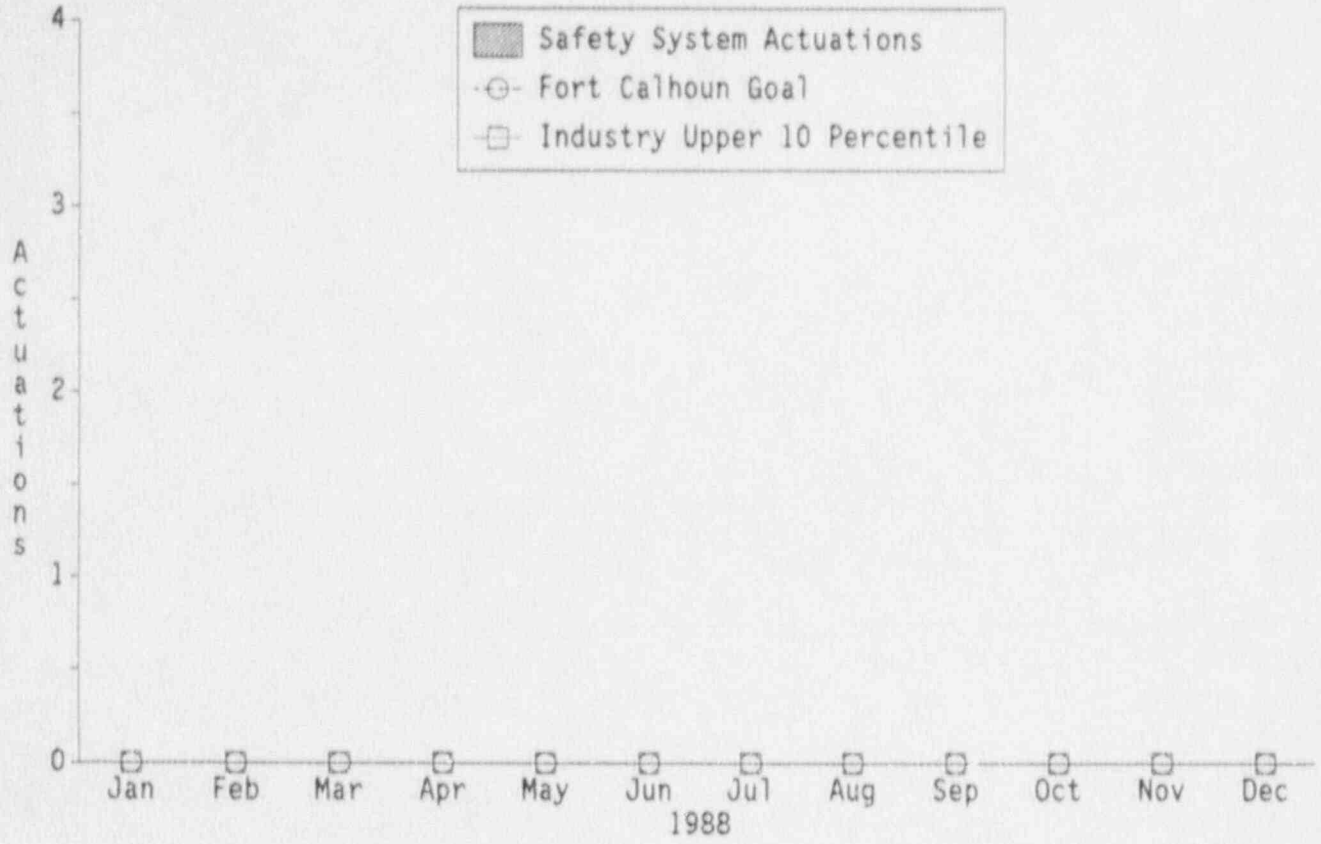
UNPLANNED AUTOMATIC REACTOR SCRAMS WHILE CRITICAL

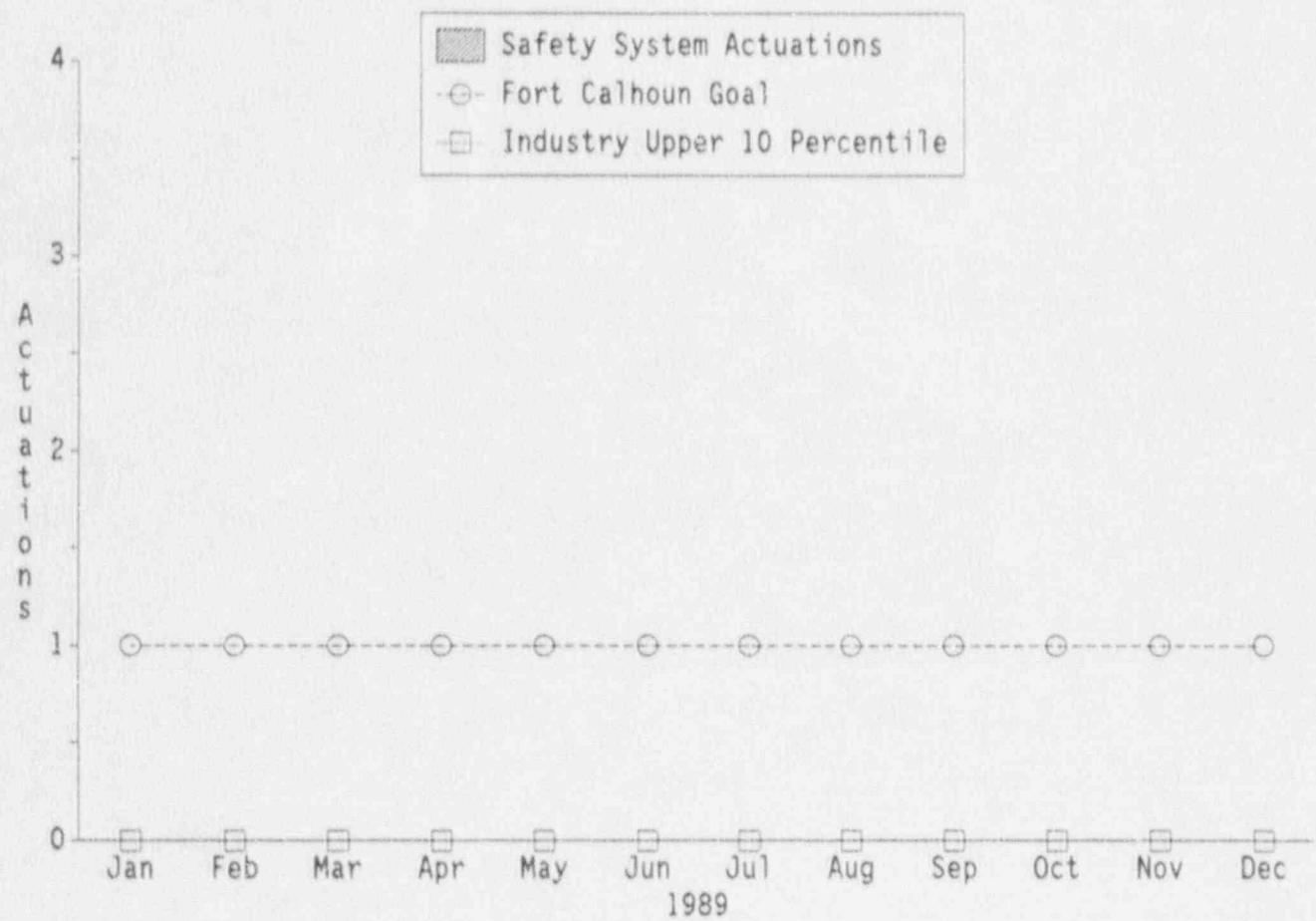
There were no unplanned automatic reactor scrams in December. It has been 1,643 days since the last unplanned automatic reactor scram which occurred on July 2, 1986.

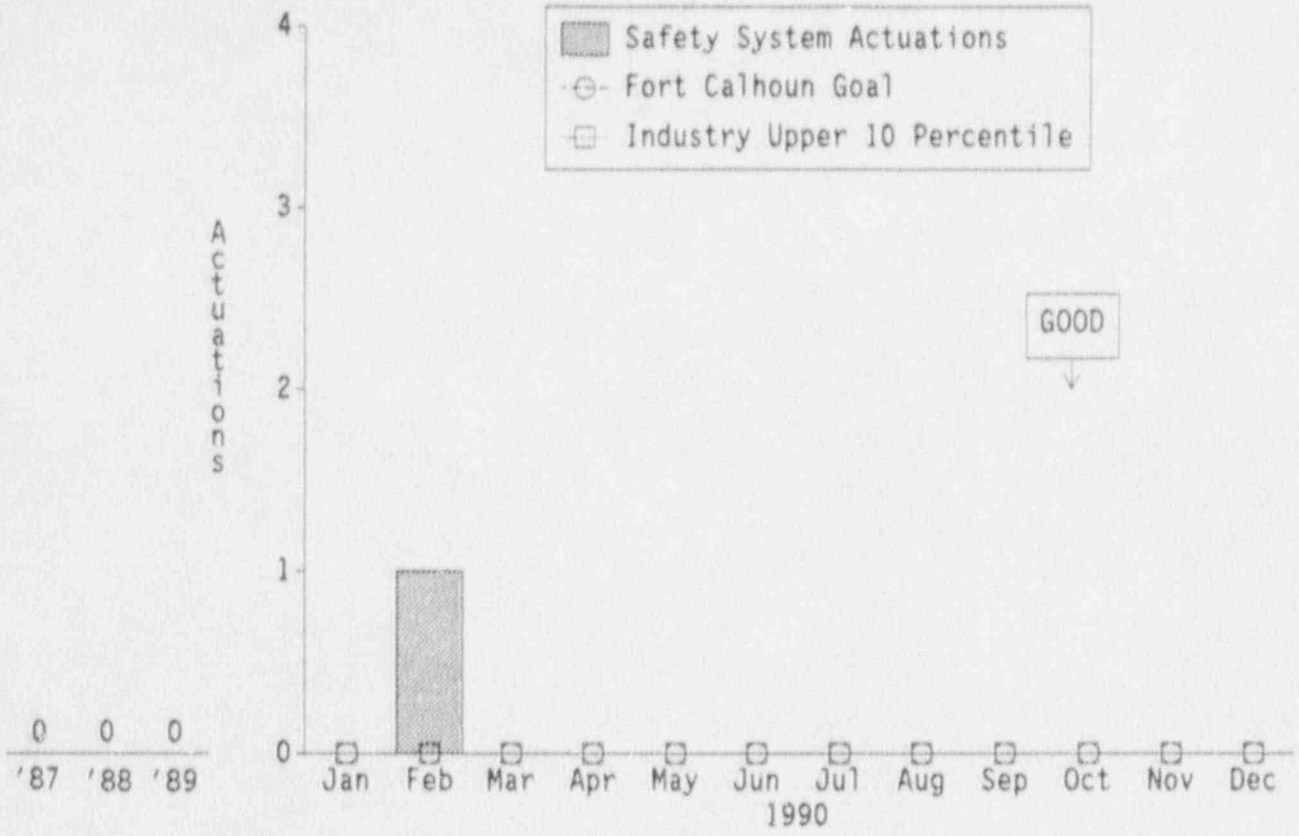
The 1990 goal for unplanned automatic reactor scrams while critical has been set at 1.

The industry upper ten percentile value is zero scrams per unit on an annual basis. The Fort Calhoun Station is currently in the upper ten percentile of nuclear plant performance in this area.

Adverse Trend: None


Safety System Actuations
Fort Calhoun Goal
Industry Upper 10 Percentile
Actuations
0
1
2
3
4
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Safety System Actuations
Fort Calhoun Goal
Industry Upper 10 Percentile
Actuations
0
1
2
3
4
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



UNPLANNED SAFETY SYSTEM ACTUATIONS - (INPO DEFINITION)

There were no unplanned safety system actuations during the month of December 1990.

The 1990 goal for the number of unplanned safety system actuations is zero. This goal was based on past performance at the Fort Calhoun Station.

The industry upper ten percentile value for the number of unplanned safety system actuations per year is zero.

Adverse Trend: None

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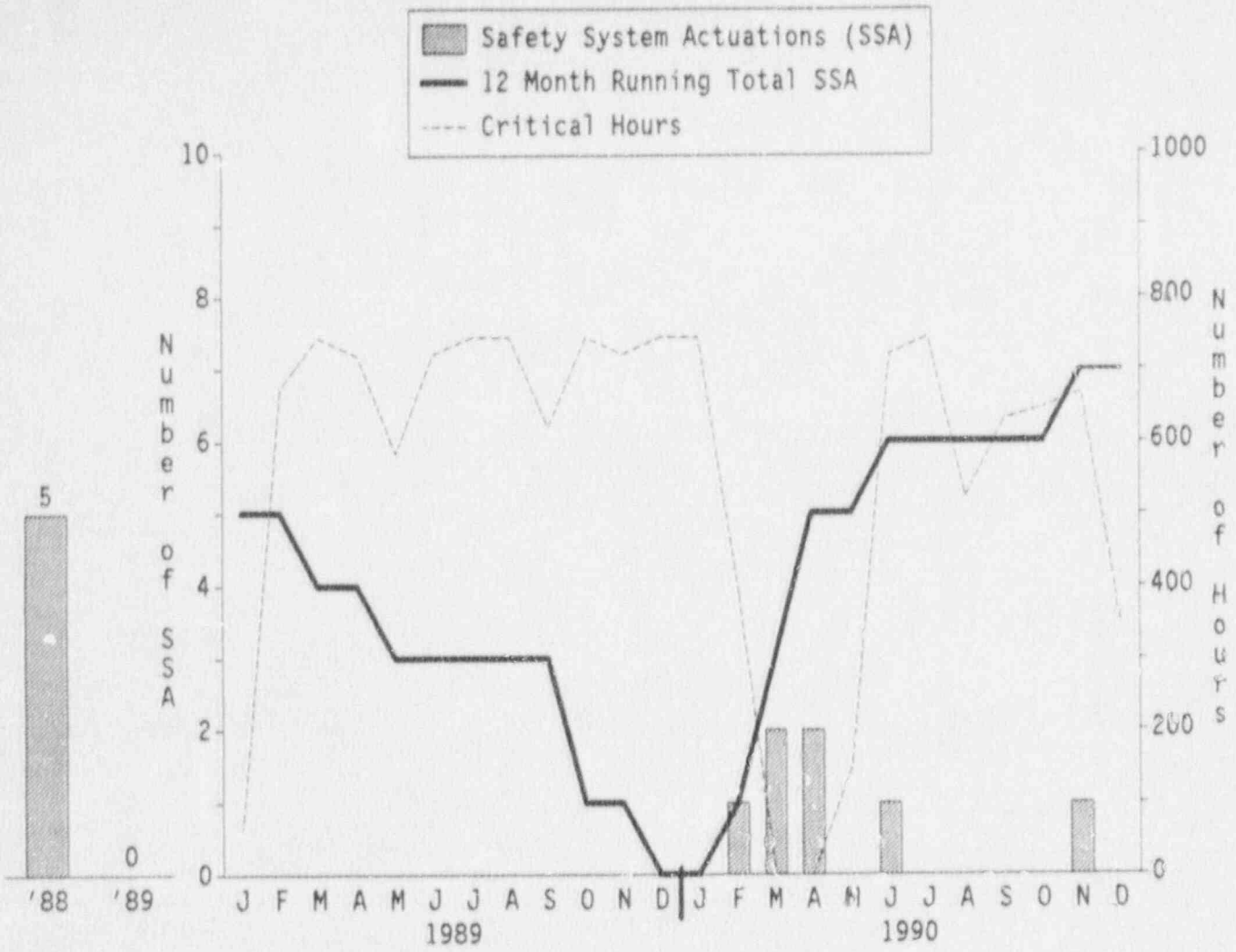


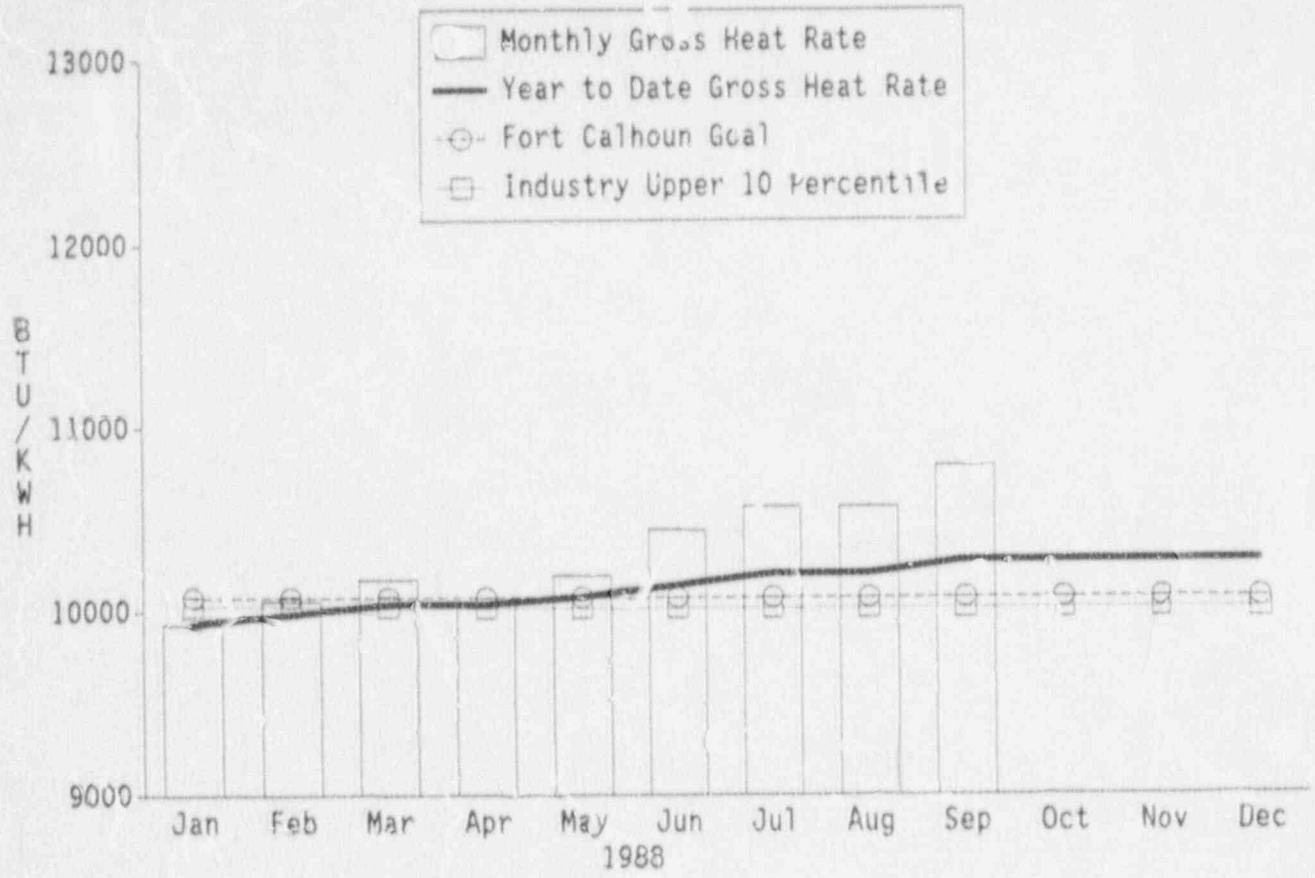
UNPLANNED SAFETY SYSTEM ACTUATIONS - (NRC DEFINITION)

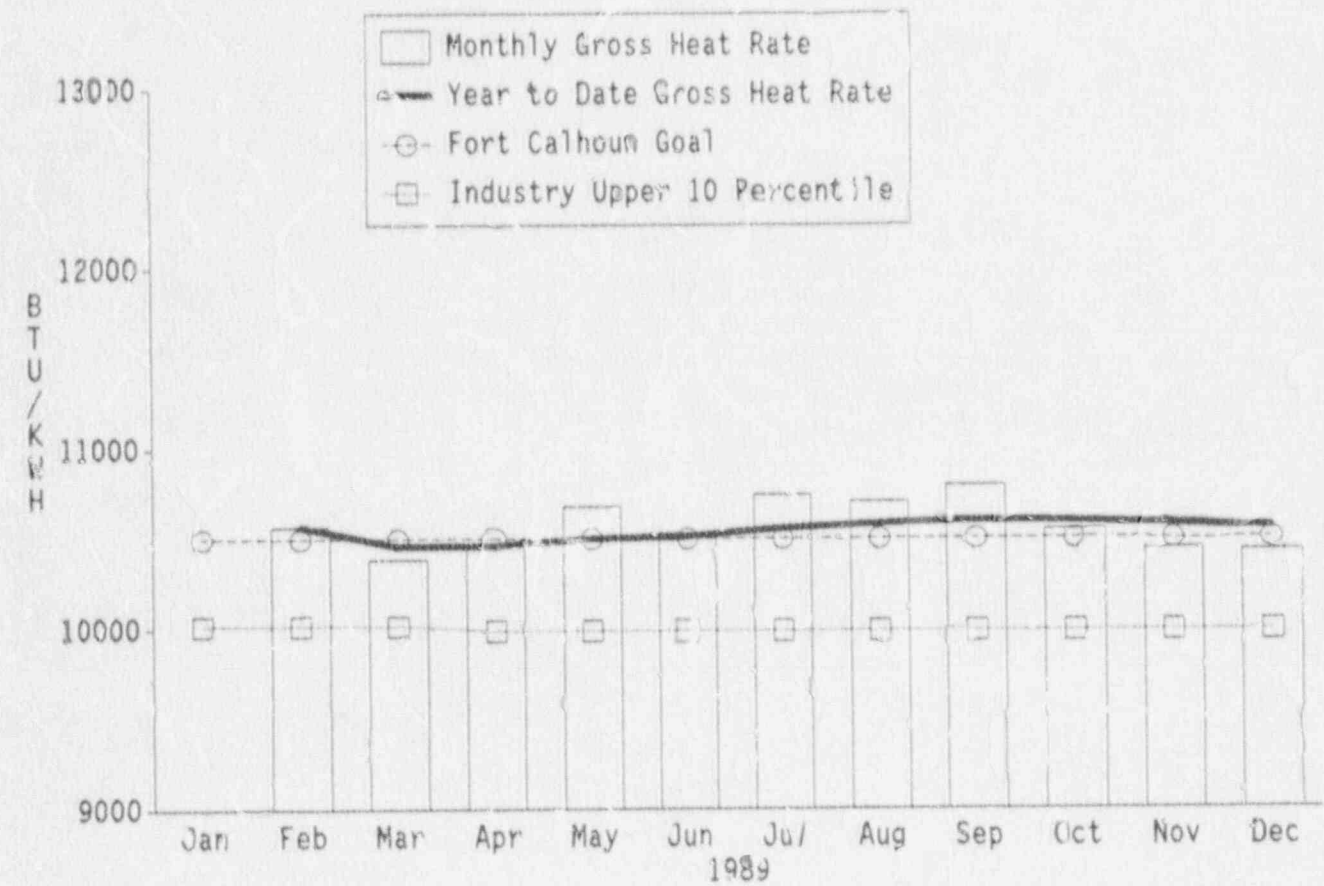
This indicator shows the number of safety system actuations (SSA) which include the High and Low Pressure Safety Injection Systems, the Safety Injection Tanks, and the Emergency Diesel Generators. The NRC classification of SSA includes actuations when major equipment is operated and when the logic systems for these safety systems are challenged.

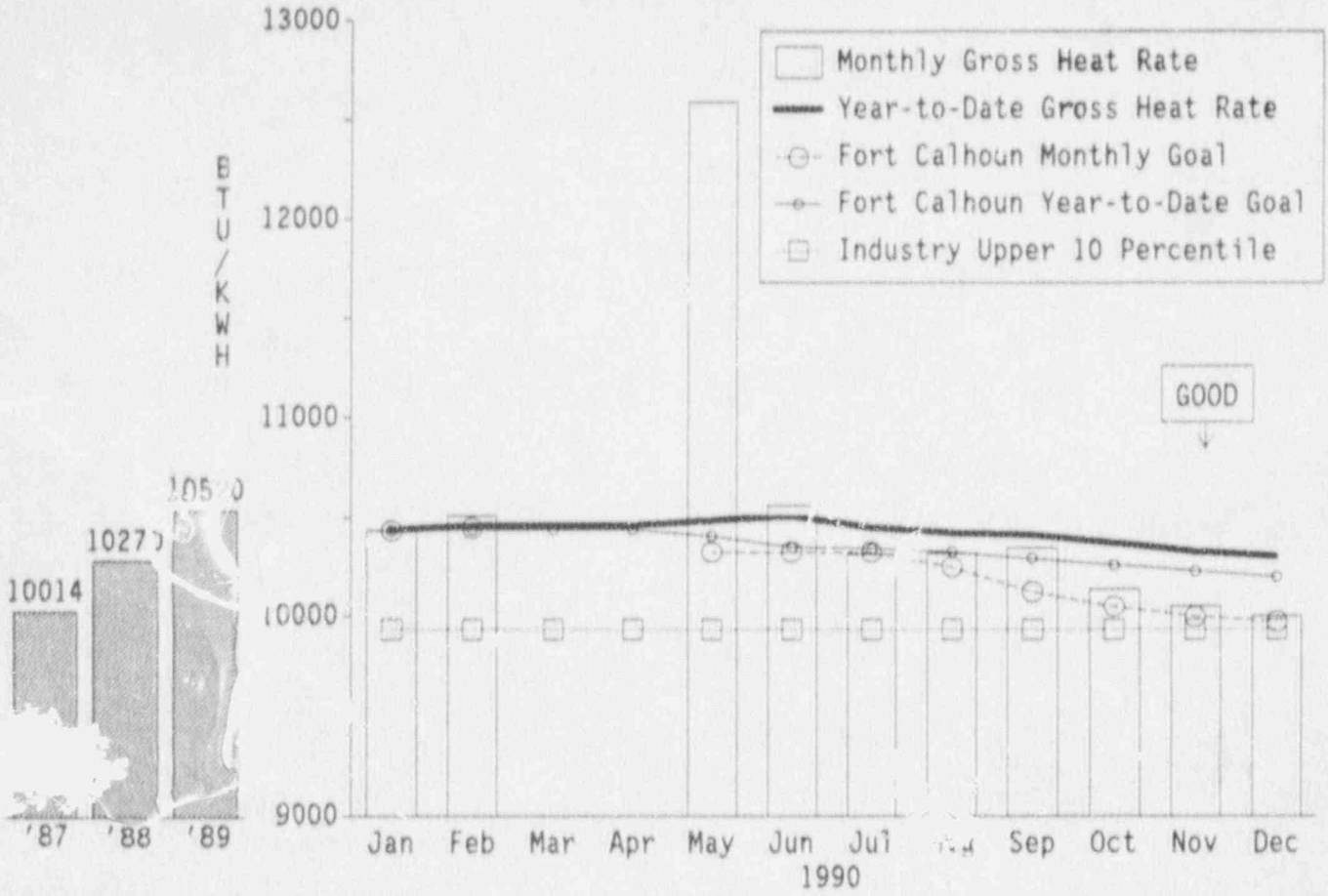
The last event of this type occurred in November 1990 when Diesel Generator D-1 and Diesel Generator DG-2 experienced sympathy starts when the turbine was tripped due to a forced shutdown of the plant. This forced shutdown was due to an Instrument Air System line failure in the Turbine Building.

The majority of SSA displayed above were related to 1990 Refueling Outage activities and are currently being reviewed under the Safety System Actuation Reduction Program. The goal of this Program is to reduce the number of SSA at Fort Calhoun.

Adverse Trend: None


Monthly Gross Heat Rate
Year to Date Gross Heat Rate
Fort Calhoun Goal
Industry Upper 10 Percentile
13000
12000
11000
10000
9000
BTU/KWH
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Monthly Gross Heat Rate
Year to Date Gross Heat Rate
Fort Calhoun Goal
Industry Upper 10 Percentile
13000
12000
11000
10000
9000
BTU/KWH
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



GROSS HEAT RATE

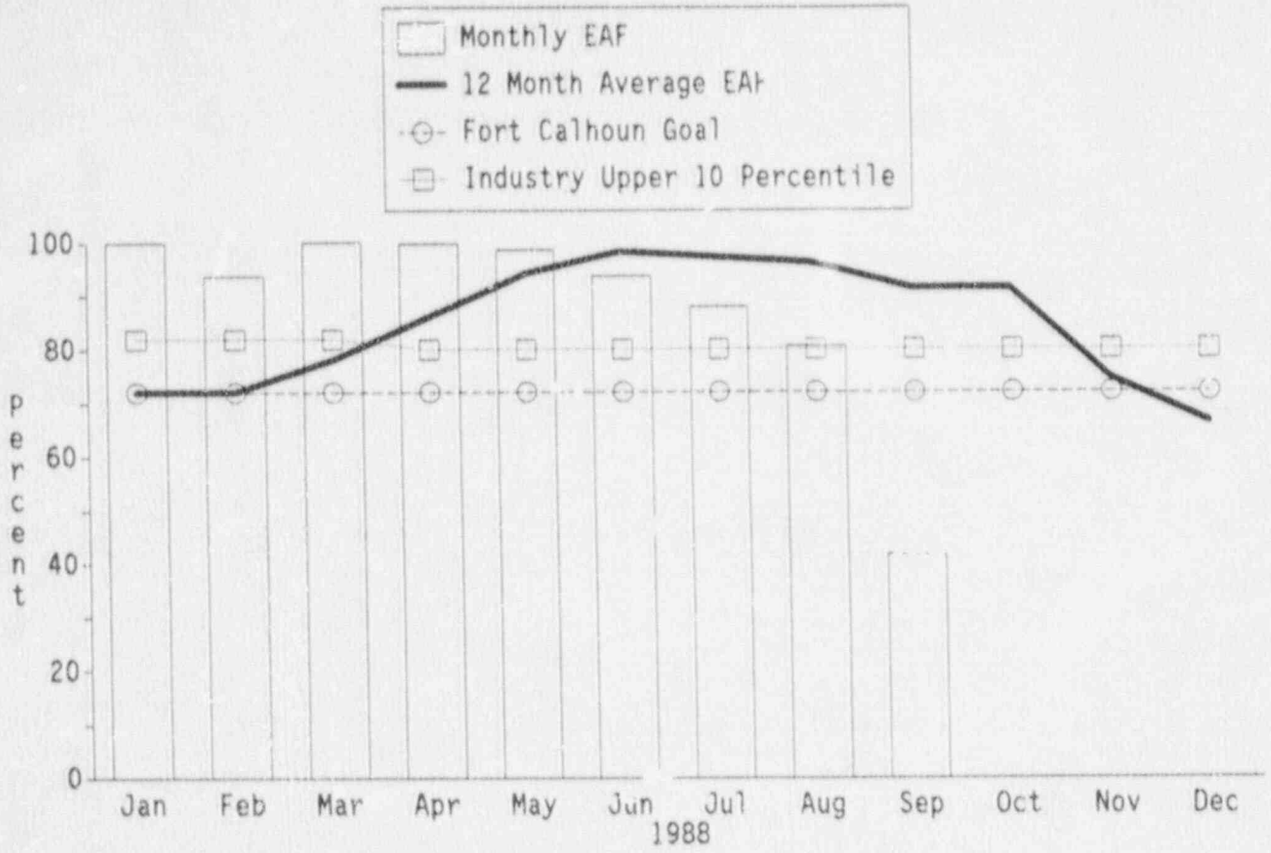
The gross heat rate for the Fort Calhoun Station was reported as 10,001 BTU/KWH during the month of December. This monthly gross heat rate was above the monthly gross heat rate goal of 9,975 BTU/KWH. The high monthly gross heat rate was due to a forced shutdown of the plant.

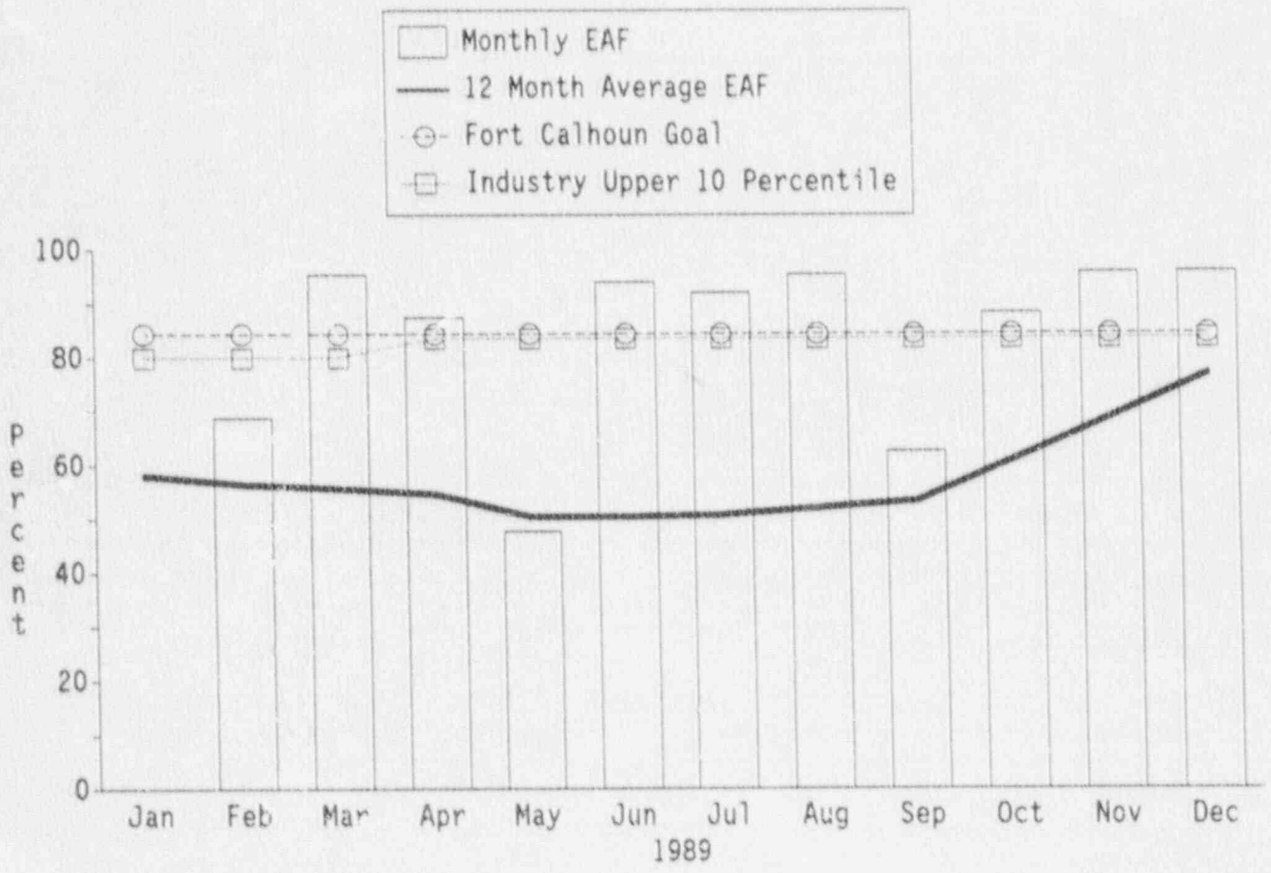
The year-to-date gross heat rate was reported as 10,304 BTU/KWH. This year-to-date value was higher than the year-to-date gross heat rate goal of 10,200 BTU/KWH. The year-to-date gross heat rate is above the Fort Calhoun goal due to the fact that the first stage of the high pressure turbine was removed prior to the 1990 Refueling Outage. Additionally, the gross heat rate values for the months of May, June, and July 1990, were high due to startup after the 1990 Refueling Outage and various derates. The high gross heat rate values for September, October, November, and December were due to start ups after forced outages which occurred in these months.

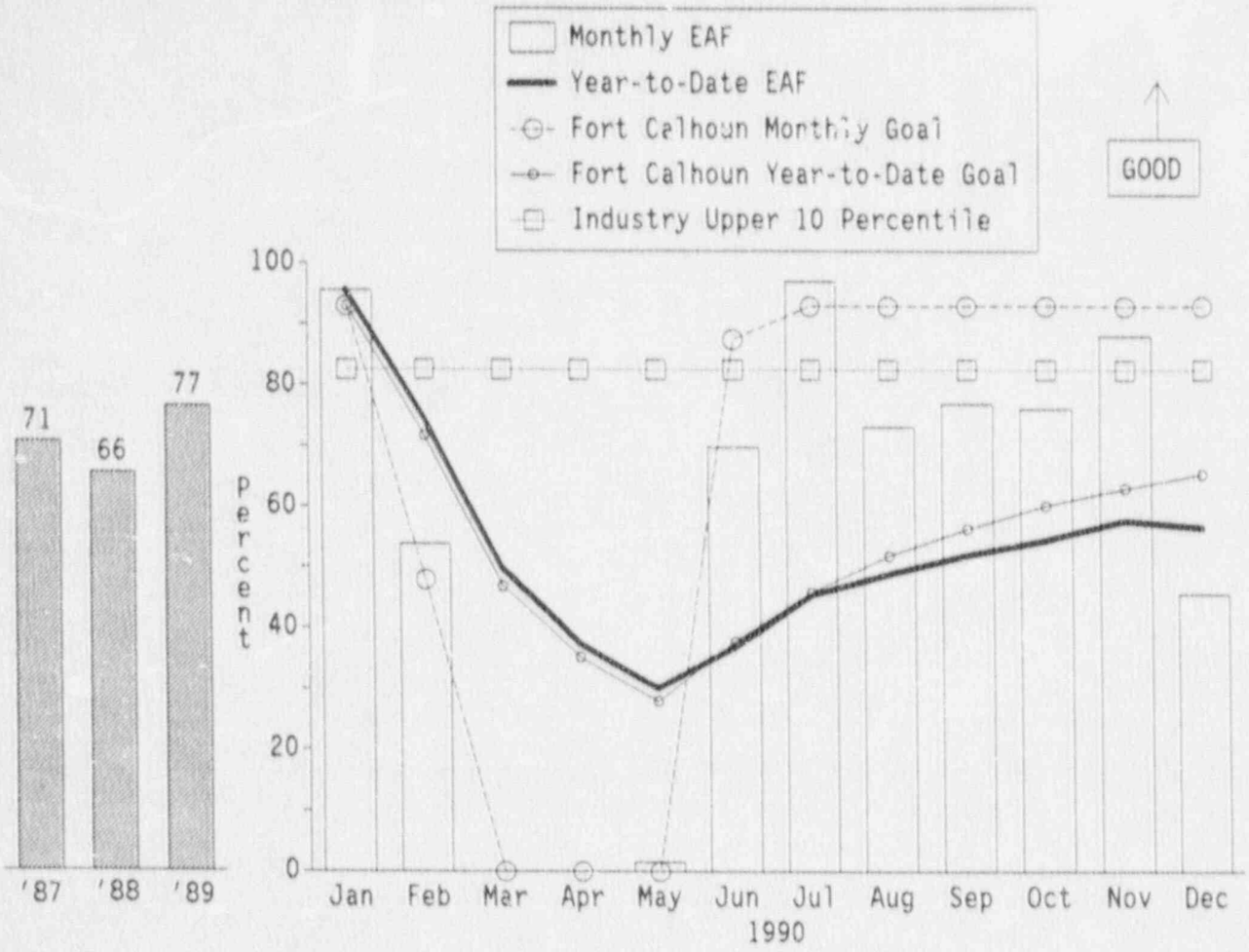
The above monthly and year-to-date Fort Calhoun goals are the best gross heat rate that can be achieved by the Fort Calhoun Station.

The gross heat rate industry upper ten percentile value is 9,935 BTU/KWH.

Adverse Trends: None


Monthly EAF
12 Month Average EAF
Fort Calhoun Goal
Industry Upper 10 Percentile
100
80
60
40
20
0
percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Monthly EAF
12 Month Average EAF
Fort Calhoun Goal
Industry Upper 10 Percentile
100
80
60
40
20
0
percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



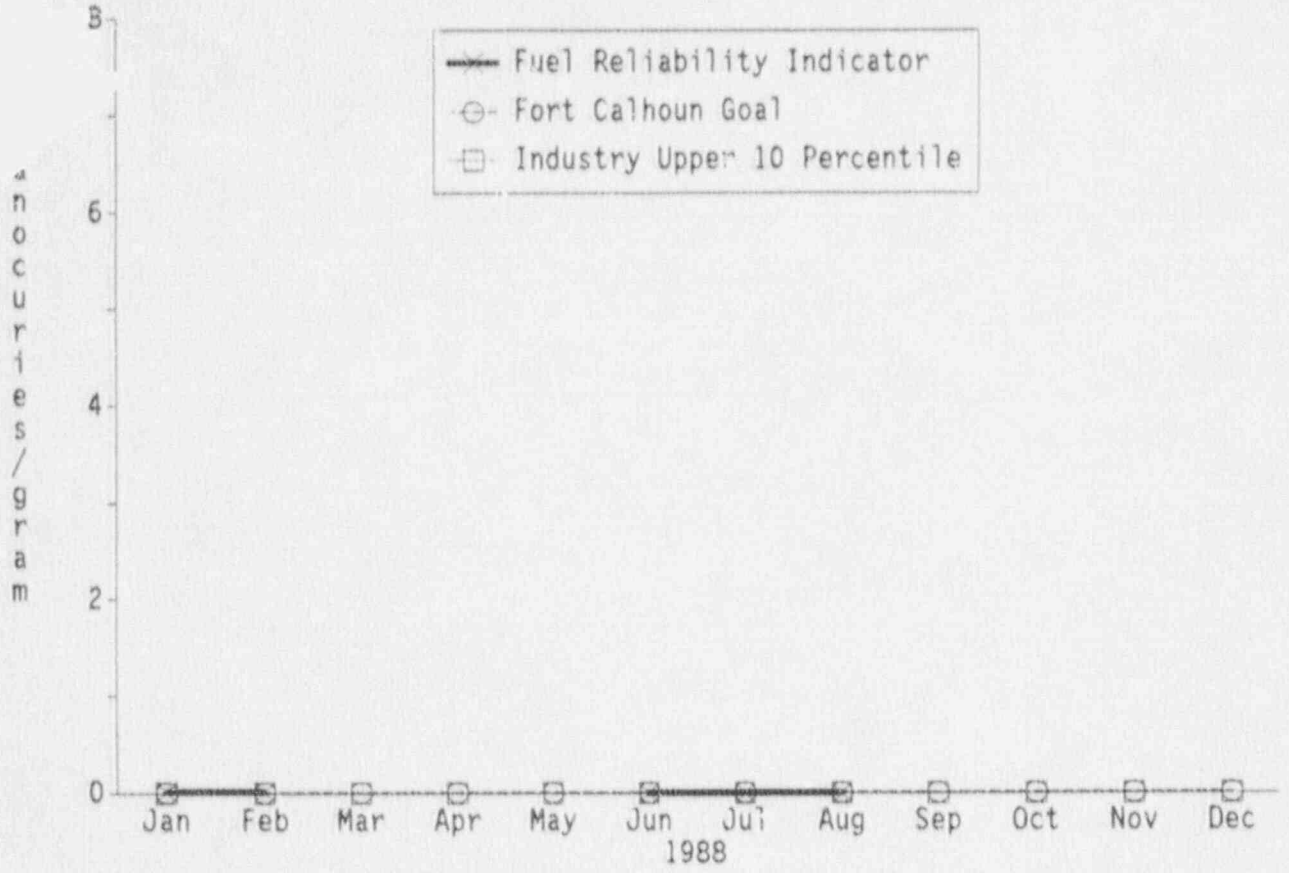
EQUIVALENT AVAILABILITY FACTOR

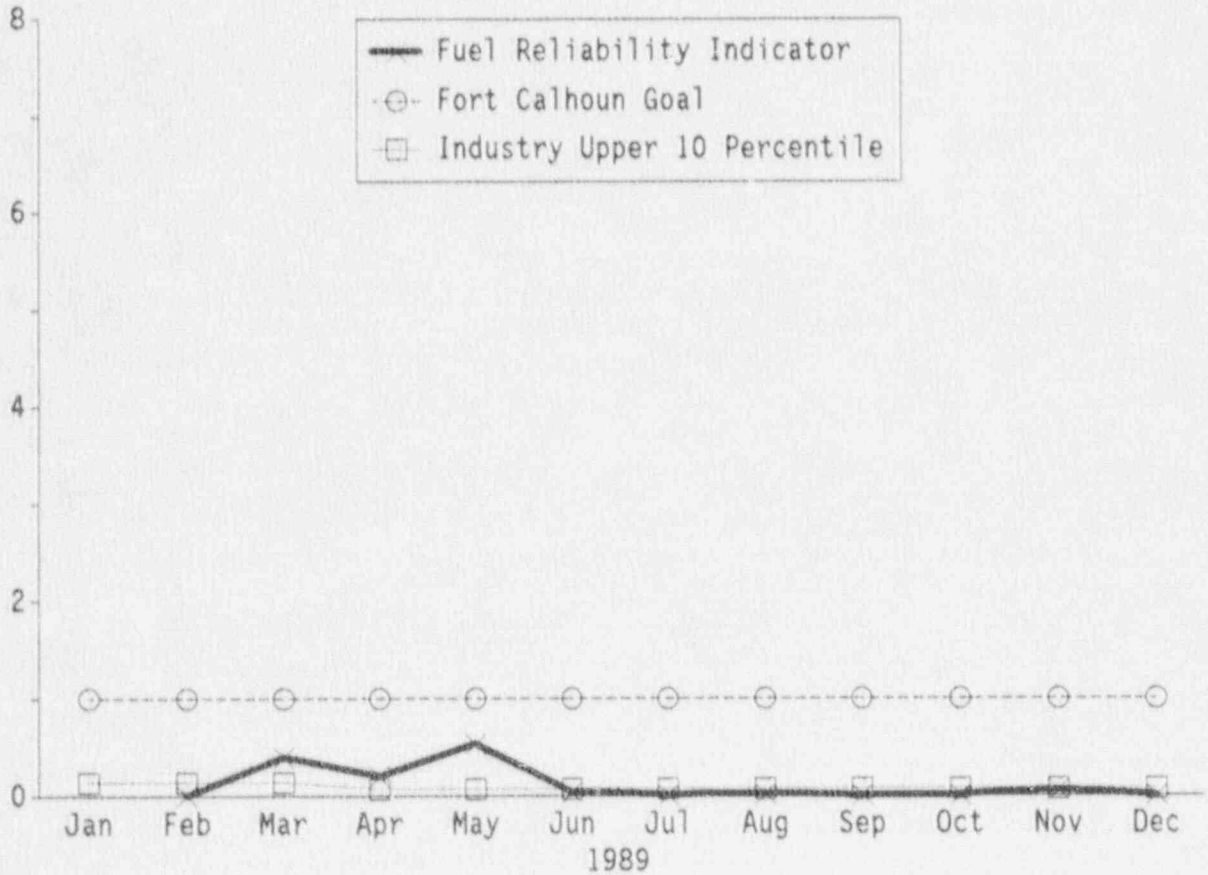
The EAF was reported as 45.7% for the month of December. This EAF was lower than the Fort Calhoun monthly goal of 93% due to forced outage hours being reported during December. This forced outage occurred due to a CEDM housing leak.

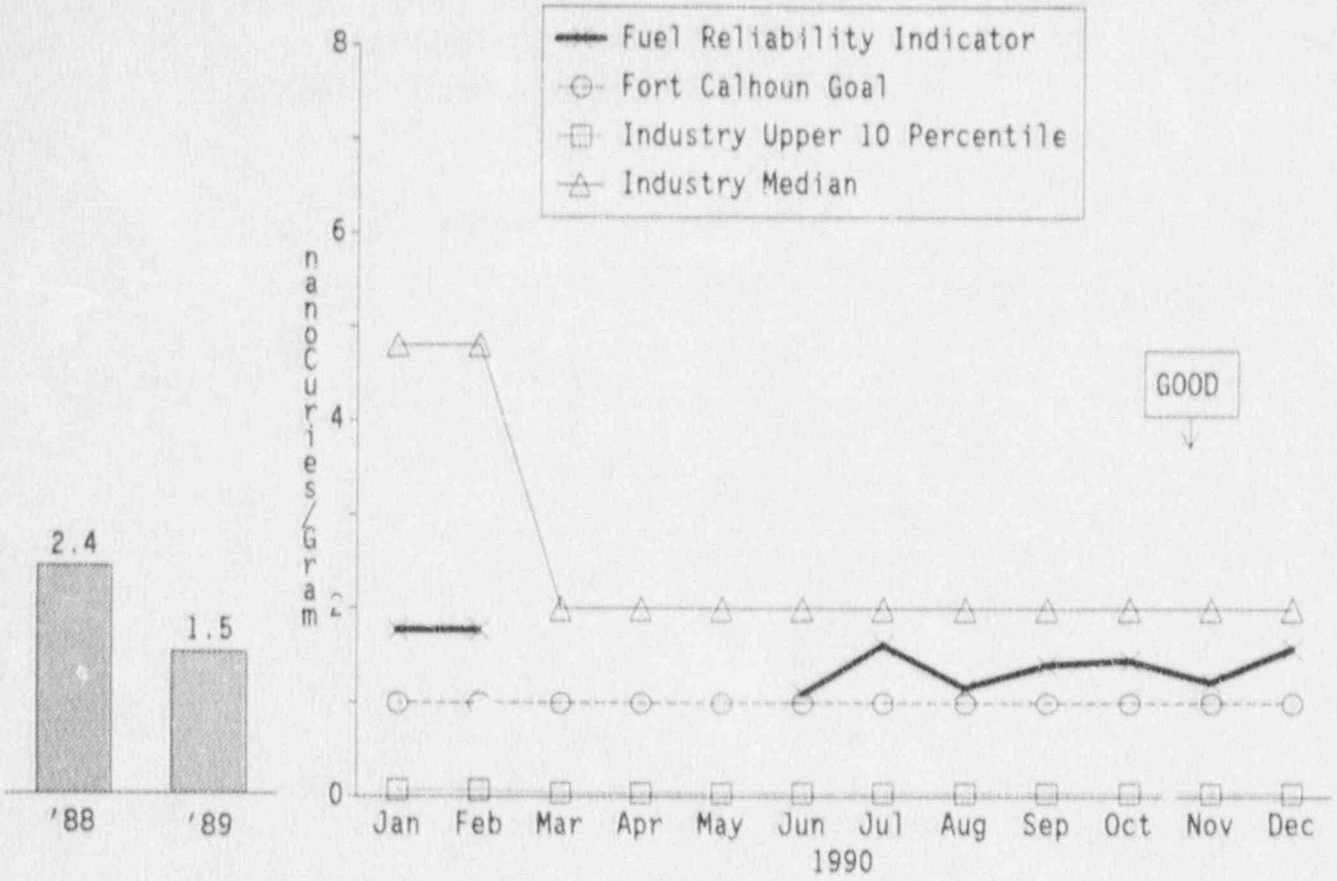
The year-to-date EAF was reported as 56.6%. This year-to-date value was lower than the year-to-date goal of 65.4%. The low year-to-date EAF was due to various power fluctuations which occurred during the month of June and the forced outage hours being reported during the months of August, September, October, November, and December.

The EAF industry upper ten percentile value is 82.5%.

Adverse Trends: None


Fuel Reliability Indicator
Fort Calhoun Goal
Industry Upper 10 Percentile
microcuries/gram
8
6
4
2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Fuel Reliability Indicator
Fort Calhoun Goal
Industry Upper 10 Percentile
8
6
4
2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



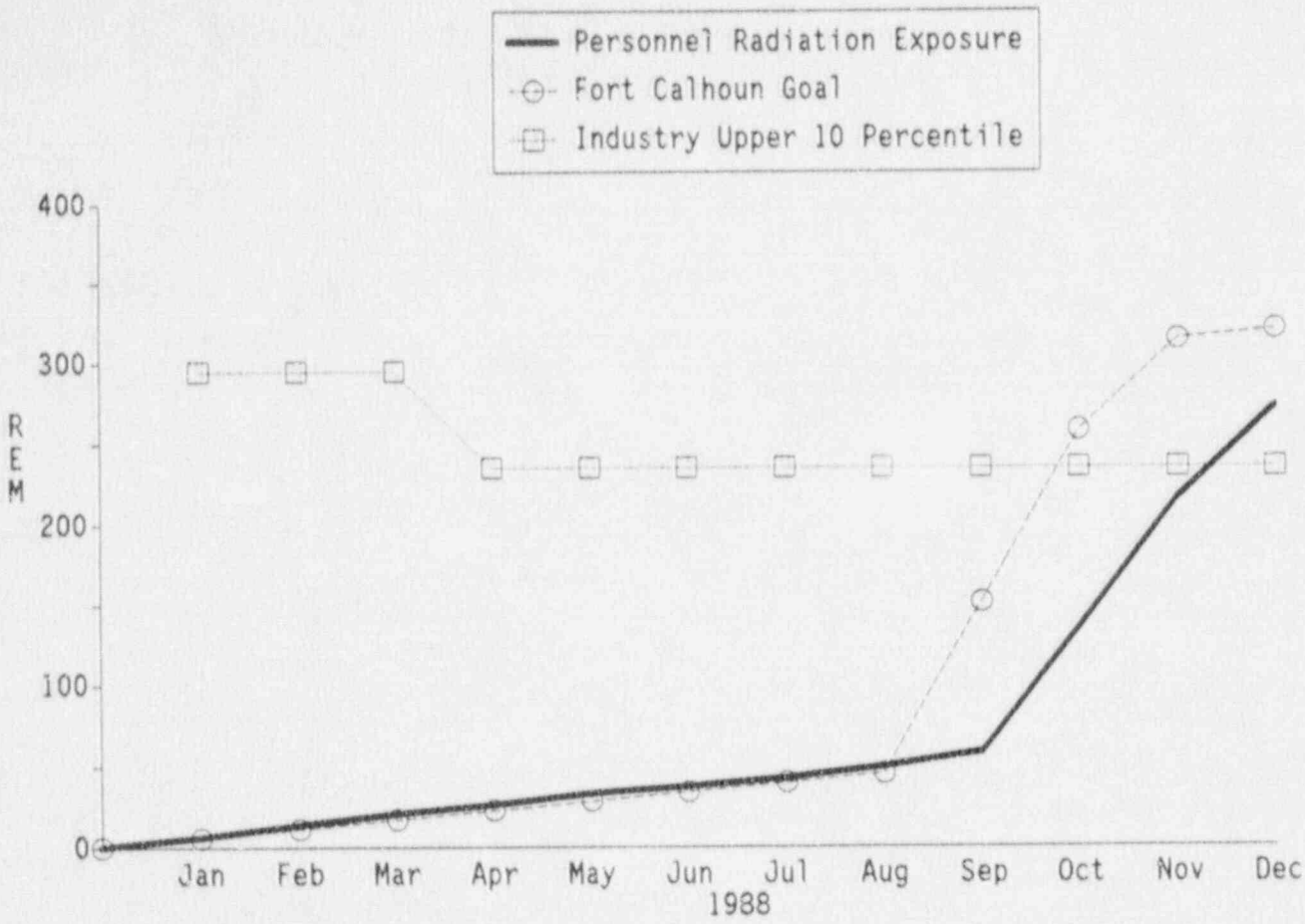
FUEL RELIABILITY INDICATOR

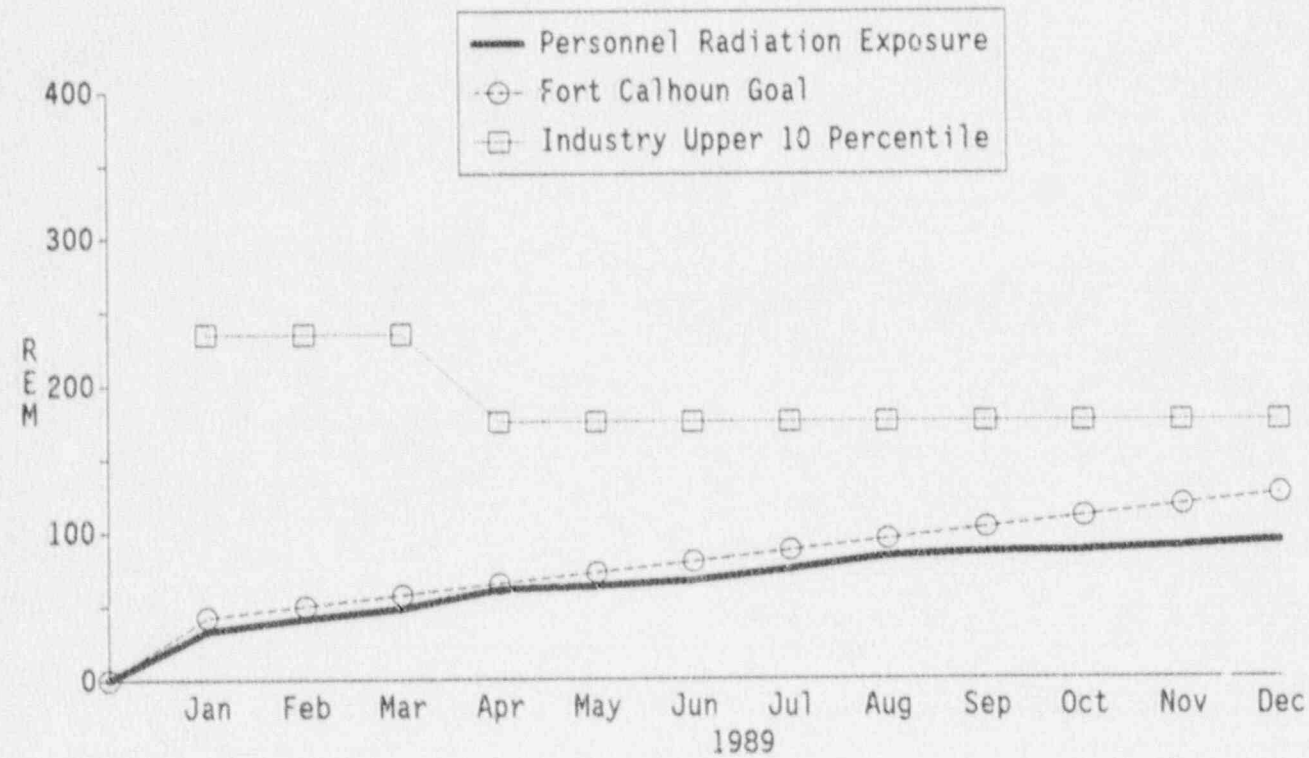
The FRI was reported as 1.58 nanocuries/gram for the month of December. This INPO indicator uses an industry normalized letdown purification rate. The FRI was also calculated using Fort Calhoun's actual letdown purification rate. The FRI value using the plant's actual letdown purification rate was reported as 2.39 nanocuries/gram.

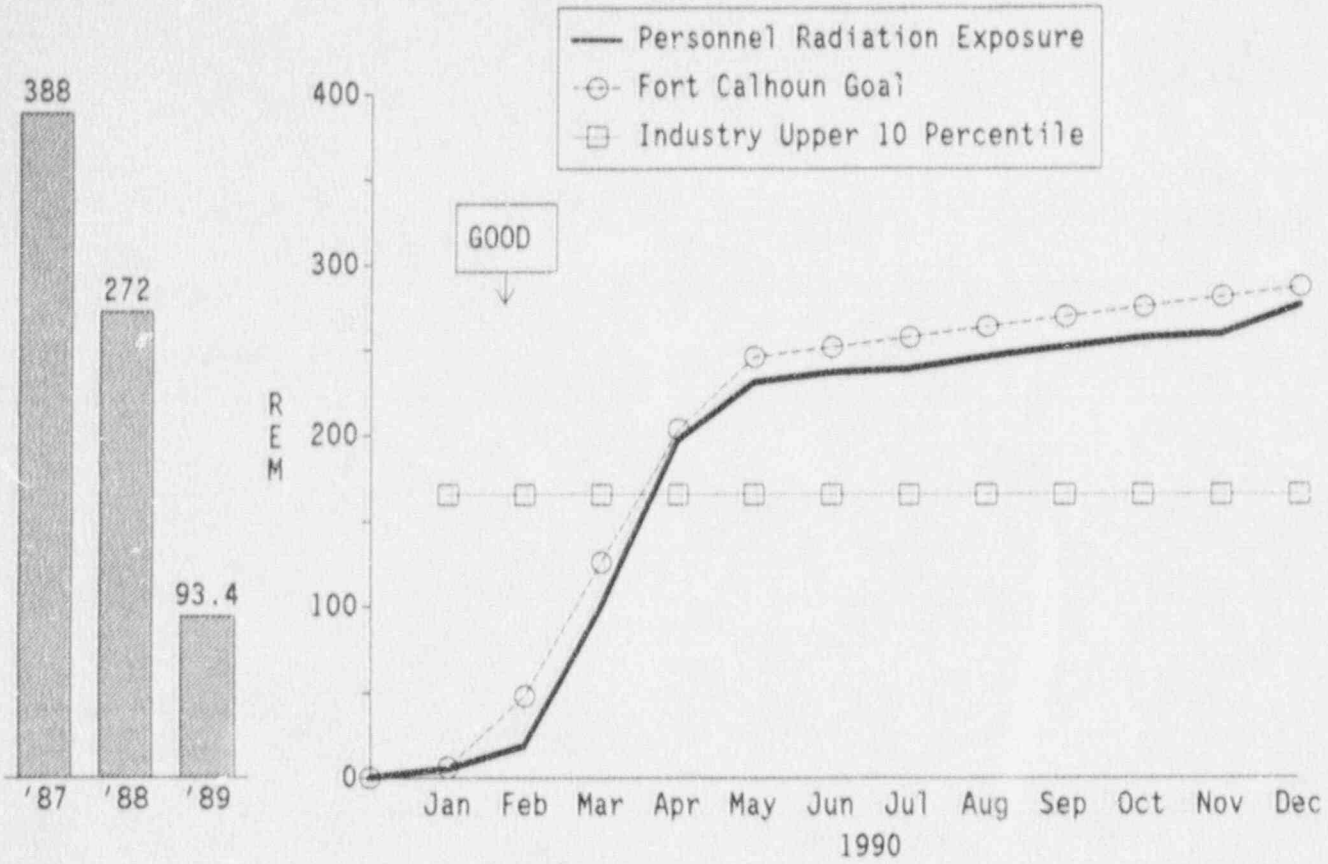
The 1990 fuel reliability goal has been set at 1.0 nanocuries/gram.

The fuel reliability indicator industry upper ten percentile value is 0.04 nanocuries/gram.

Adverse Trend: None


Personnel Radiation Exposure
Fort Calhoun Goal
Industry Upper 10 Percentile
400
300
200
100
0
REM
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Personnel Radiation Exposure
Fort Calhoun Goal
Industry Upper 10 Percentile
400
300
200
100
0
REM
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



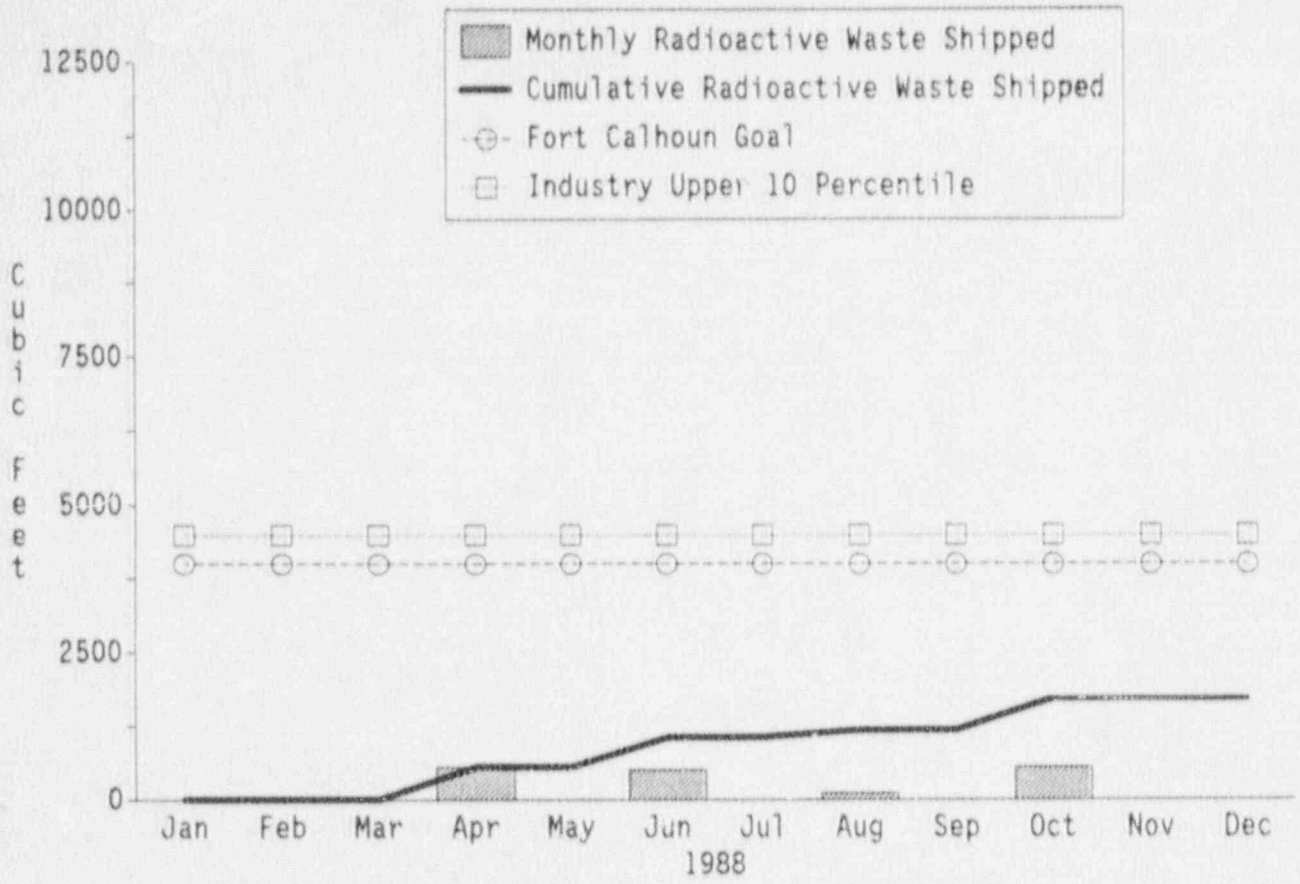
PERSONNEL RADIATION EXPOSURE
(CUMULATIVE)

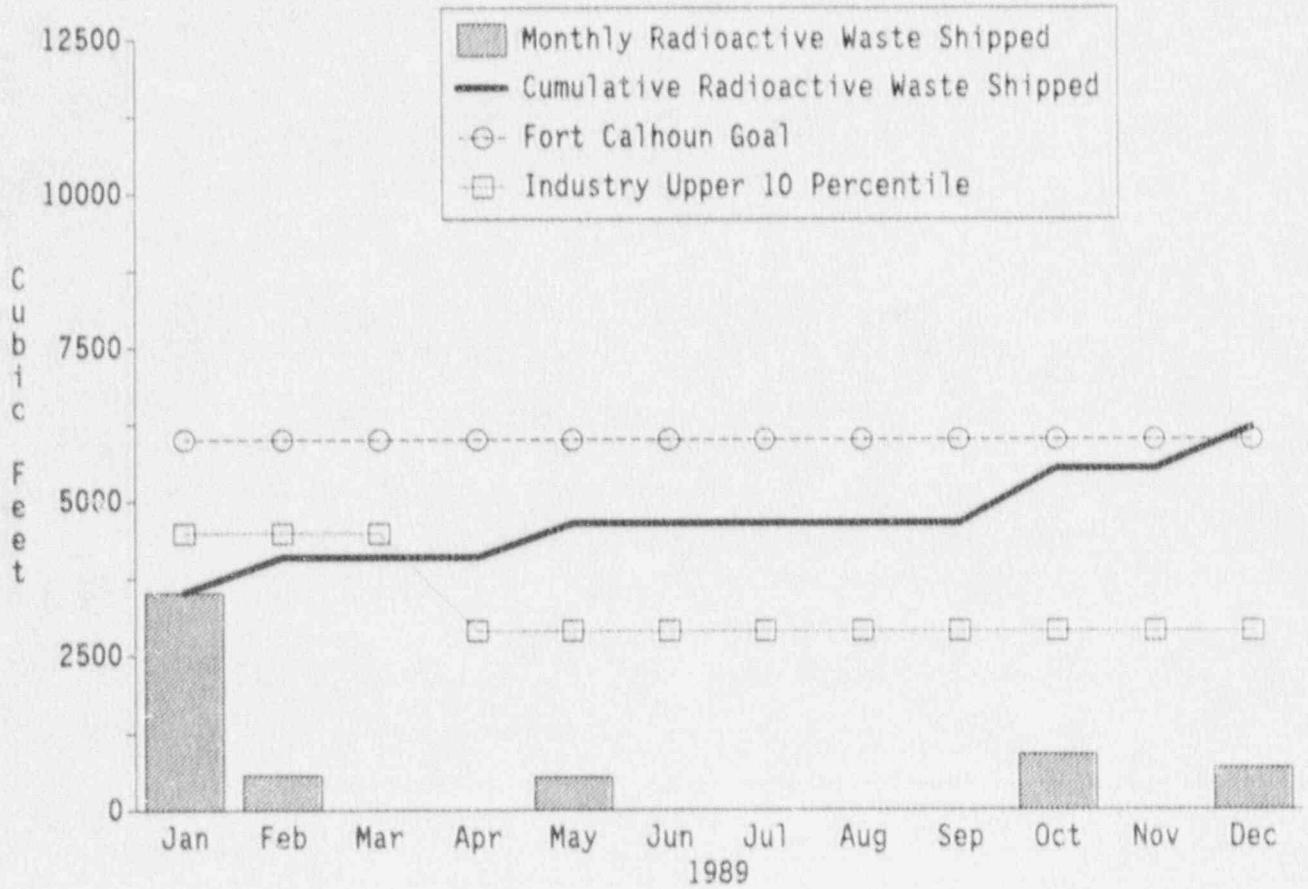
During December 1990, 16.9 man-rem was recorded by TLD's worn by personnel while working at the Fort Calhoun Station.

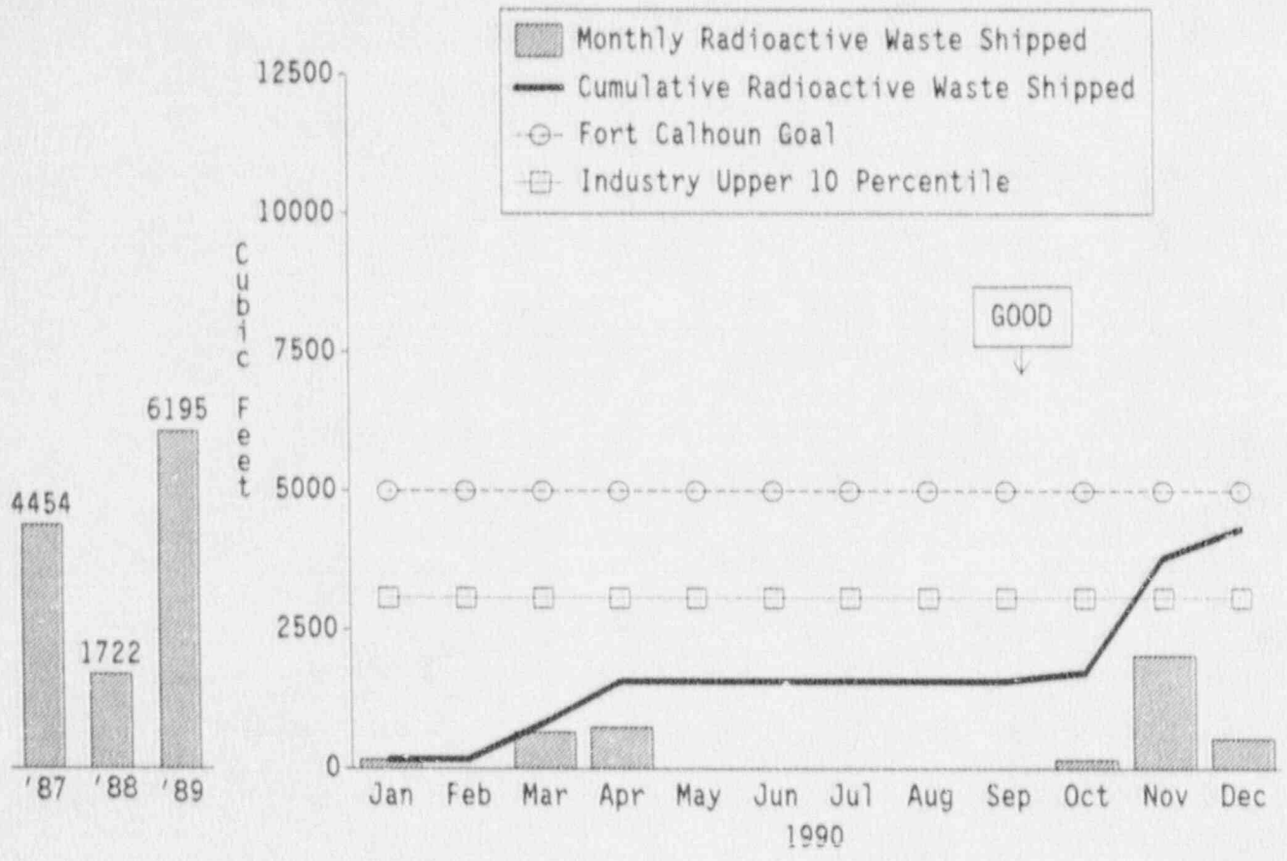
The monthly cumulative exposure goal for December was 287 man-rem while the actual cumulative exposure through December totaled 275.9 man-rem. The exposure cumulated in 1990 has been high due to the increased activity in the Radiation Controlled Area (RCA) associated with the 1990 Refueling Outage and four forced outages which occurred in 1990.

The personnel radiation exposure industry upper ten percentile is 166 man-rem per unit per year.

Adverse Trend: None SEP 54


Monthly Radioactive Waste Shipped
Cumulative Radioactive Waste Shipped
Fort Calhoun Goal
Industry Upper 10 Percentile
12500
10000
7500
5000
2500
0
Cubic Feet
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Monthly Radioactive Waste Shipped
Cumulative Radioactive Waste Shipped
Fort Calhoun Goal
Industry Upper 10 Percentile
12500
10000
7500
5000
2500
0
Cubic Feet
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



VOLUME OF LOW-LEVEL SOLID RADIOACTIVE WASTE

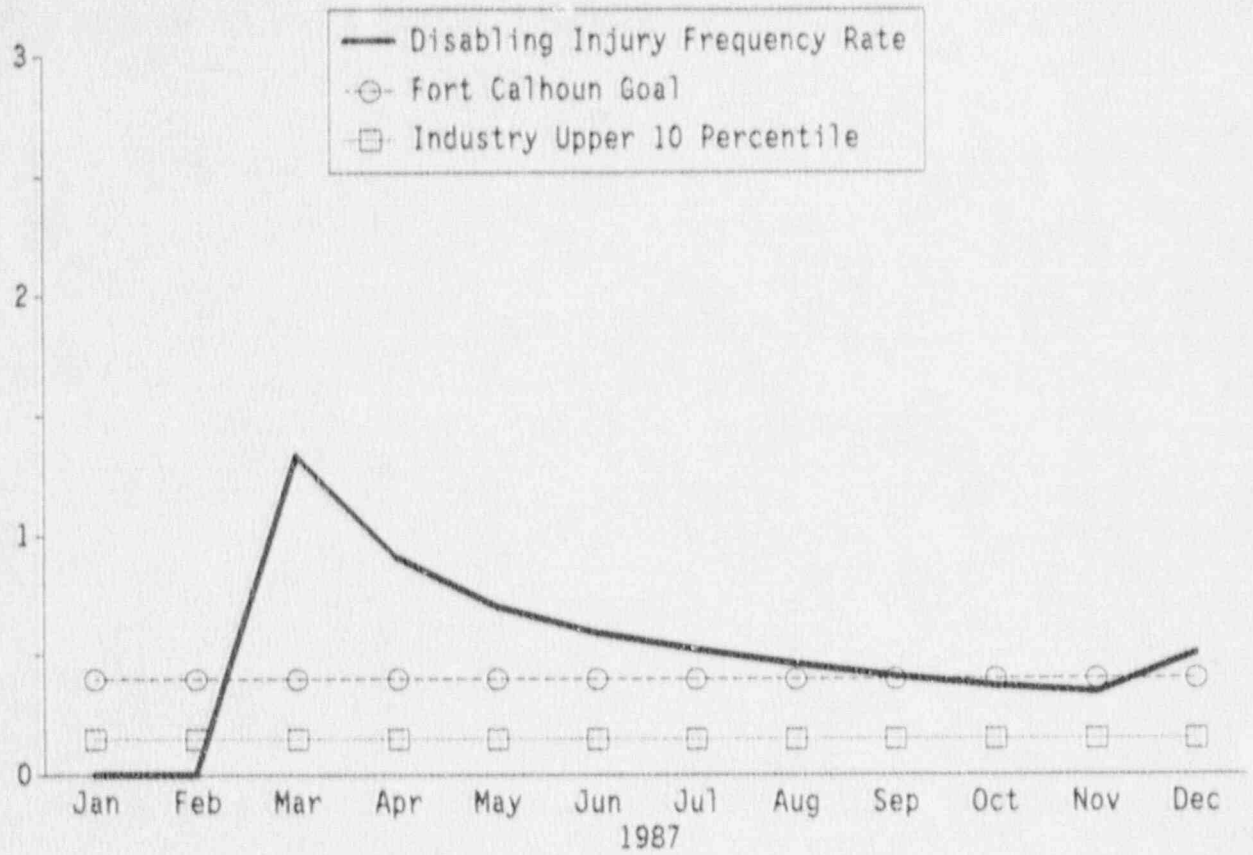
The above graph shows the amount of low-level radioactive waste shipped off-site for disposal. The table below lists the amount of waste actually shipped off-site for disposal and the amount of low-level radioactive waste which is in temporary storage. The amount of solid radioactive waste which was shipped off-site during the month of November 1990 was reported as 0.0 cubic feet in the November 1990 Performance Indicators Report. The actual amount of solid radioactive waste which was shipped during November 1990 was 2,043.2 cubic feet. This discrepancy was due to the manner in which the radioactive waste is processed and shipped for disposal. Scientific Ecology Group (SEG) processes the radioactive waste from the Fort Calhoun Station. After processing, SEG ships the processed waste and reports the volume of the processed waste to the Fort Calhoun Station.

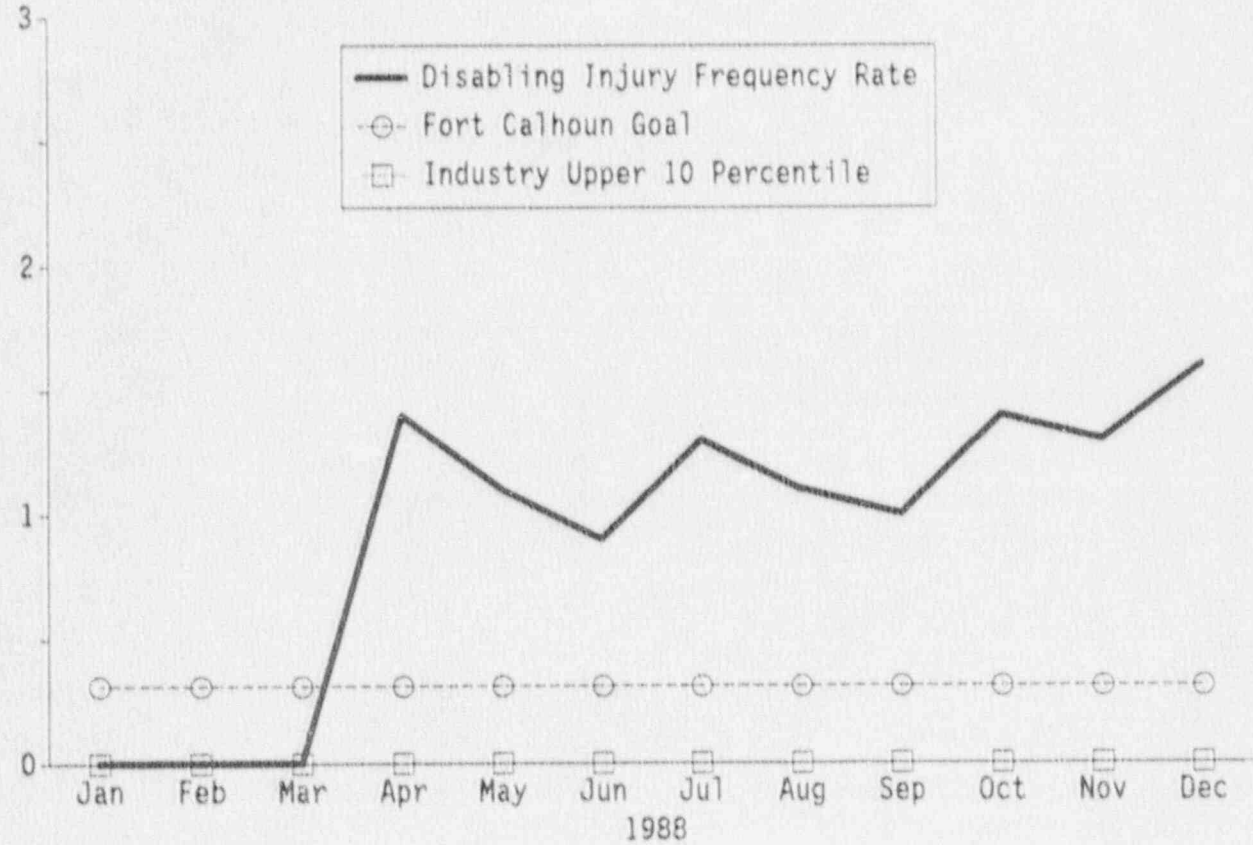
The volume of solid radioactive waste is (cubic feet):

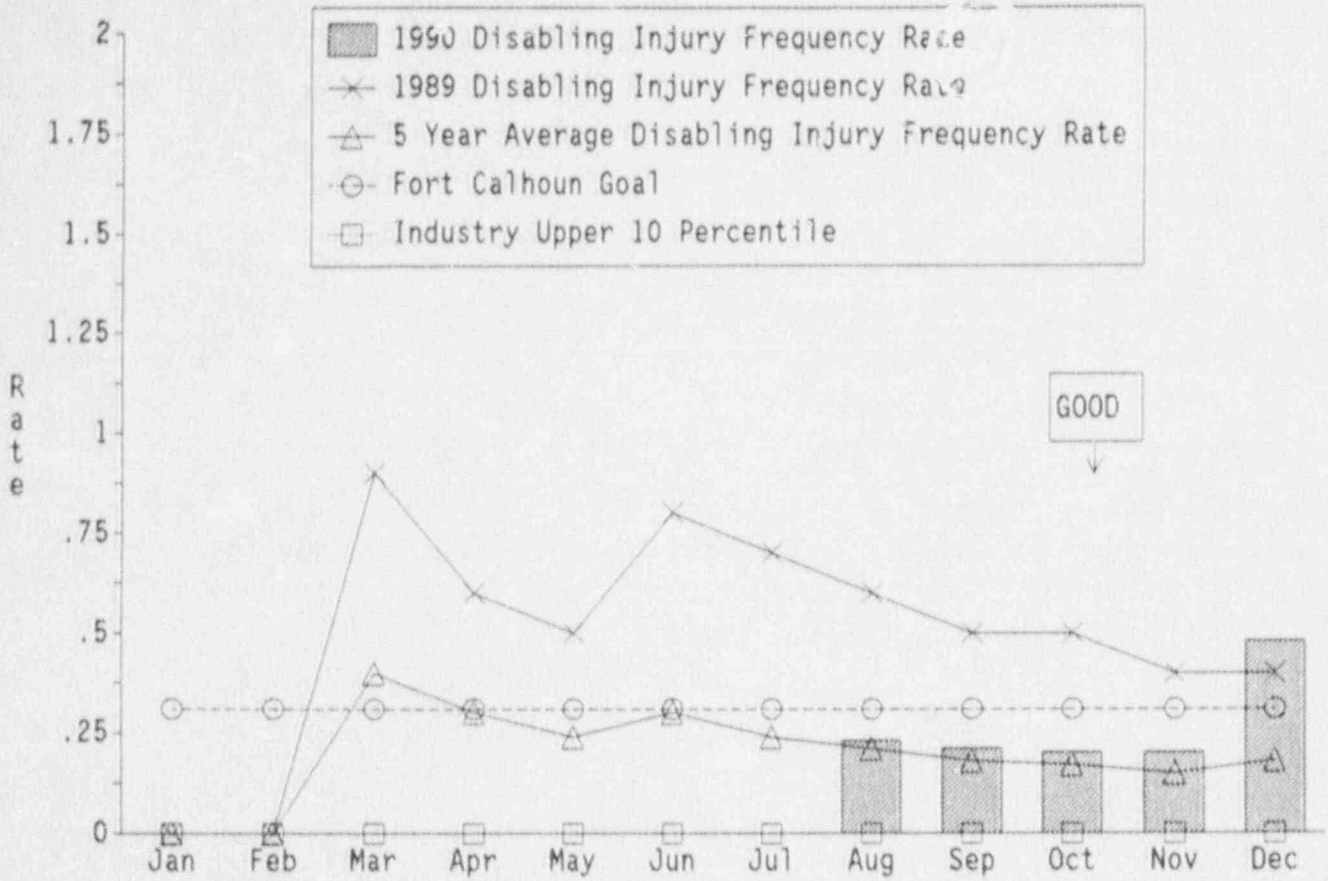
Amount Shipped in December	-	540.2
Amount in Temporary Storage	-	158.1
1990 Cumulative Amount Shipped	-	4310.1
1990 Goal	-	5000.0

The industry upper ten percentile value is 3,072 cubic feet per unit per year. The Fort Calhoun Station was in the respective upper ten percentile of nuclear plants for this indicator in 1986, 1987 and 1988.

Adverse Trend: None SEP 54


Disabling Injury Frequency Rate
Fort Calhoun Goal
Industry Upper 10 Percentile
3
2
1
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1987


Disabling Injury Frequency Rate
Fort Calhoun Goal
Industry Upper 10 Percentile
3
2
1
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988



DISABLING INJURY FREQUENCY RATE
(LOST TIME ACCIDENT RATE)

This indicator shows the current monthly disabling injury rate in column form. The 1989 disabling injury frequency rate and the Fort Calhoun Station 5 year average disabling injury frequency rate are also shown. There were two disabling injuries reported at the Fort Calhoun Station in December. The total number of disabling injuries that were reported in 1990 was three.

The 1990 disabling injury frequency rate goal was set at 0.31% and was based on one disabling injury occurring in 1990.

The industry upper ten percentile disabling injury frequency rate is 0%.

The year end disabling injury frequency rates for 1987, 1988, and 1989 were 0.6, 1.6, and 0.4 respectively.

Adverse Trend: None SEP 26

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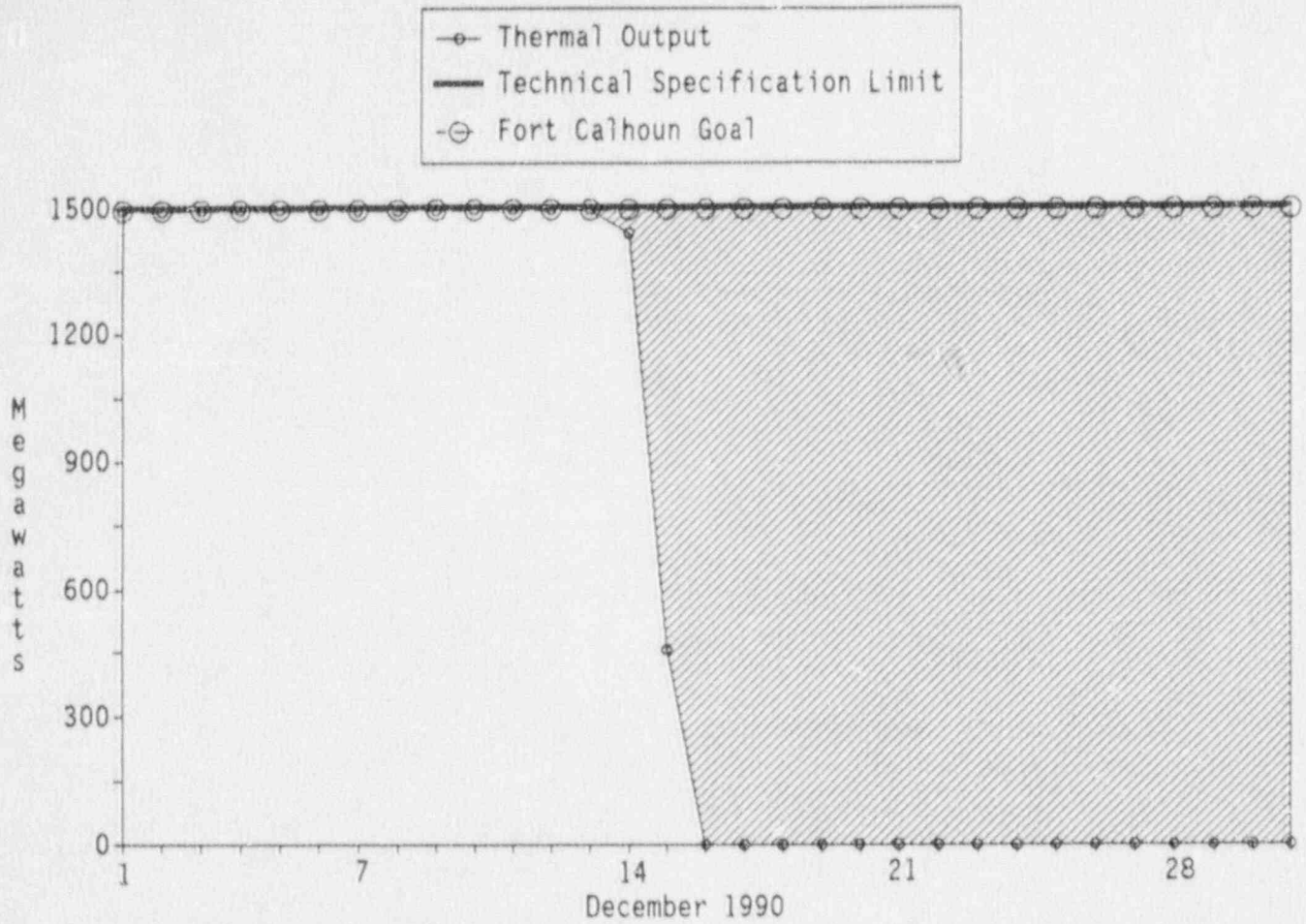
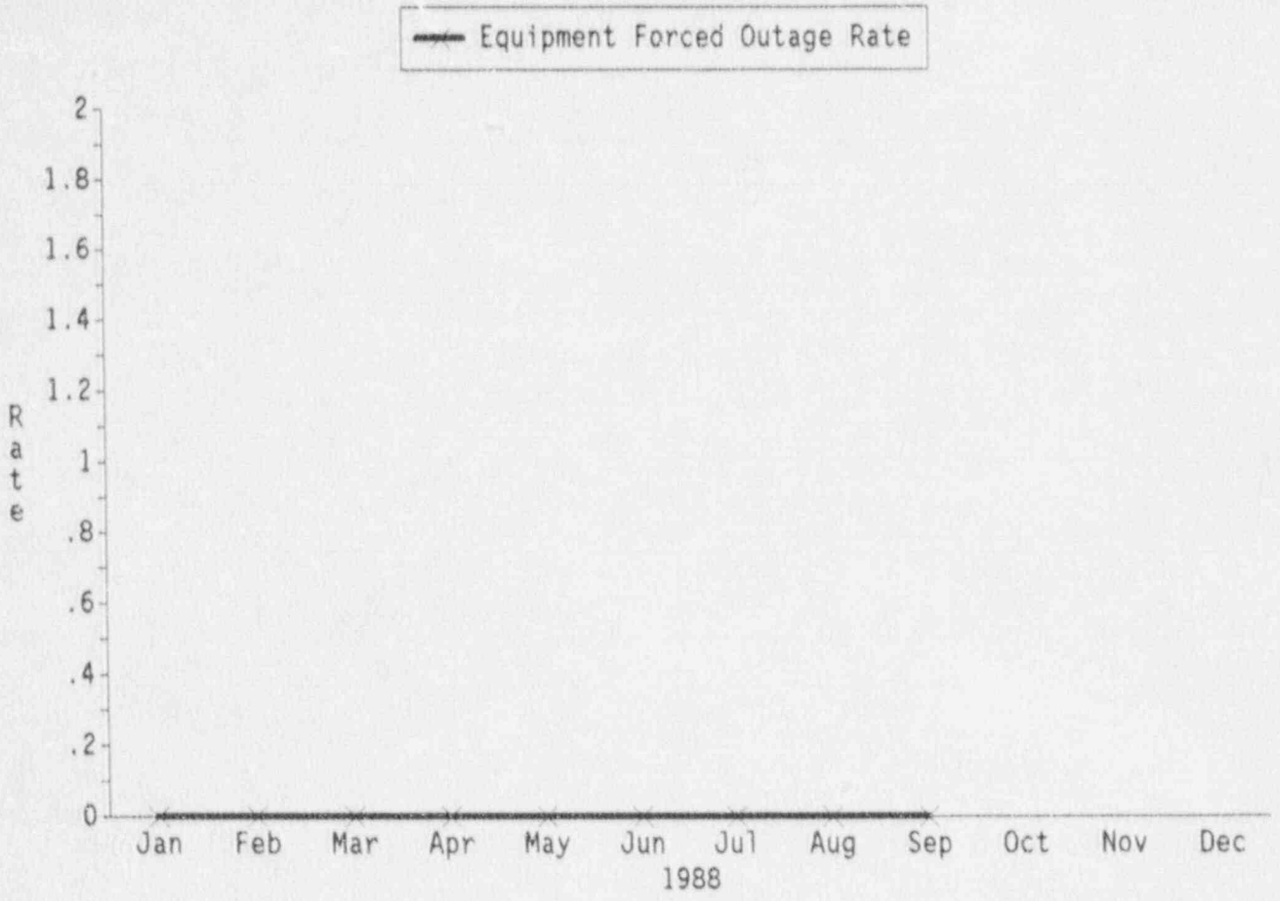


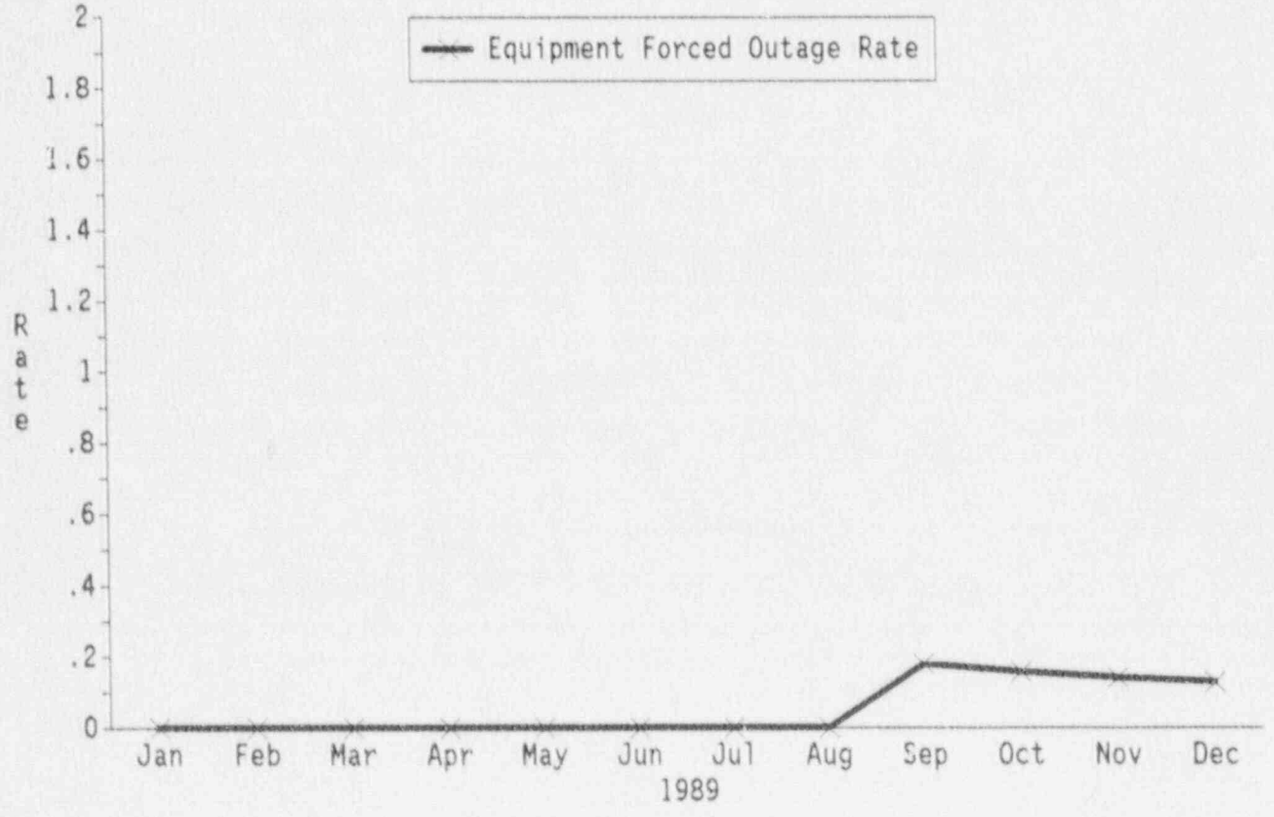
DAILY THERMAL OUTPUT

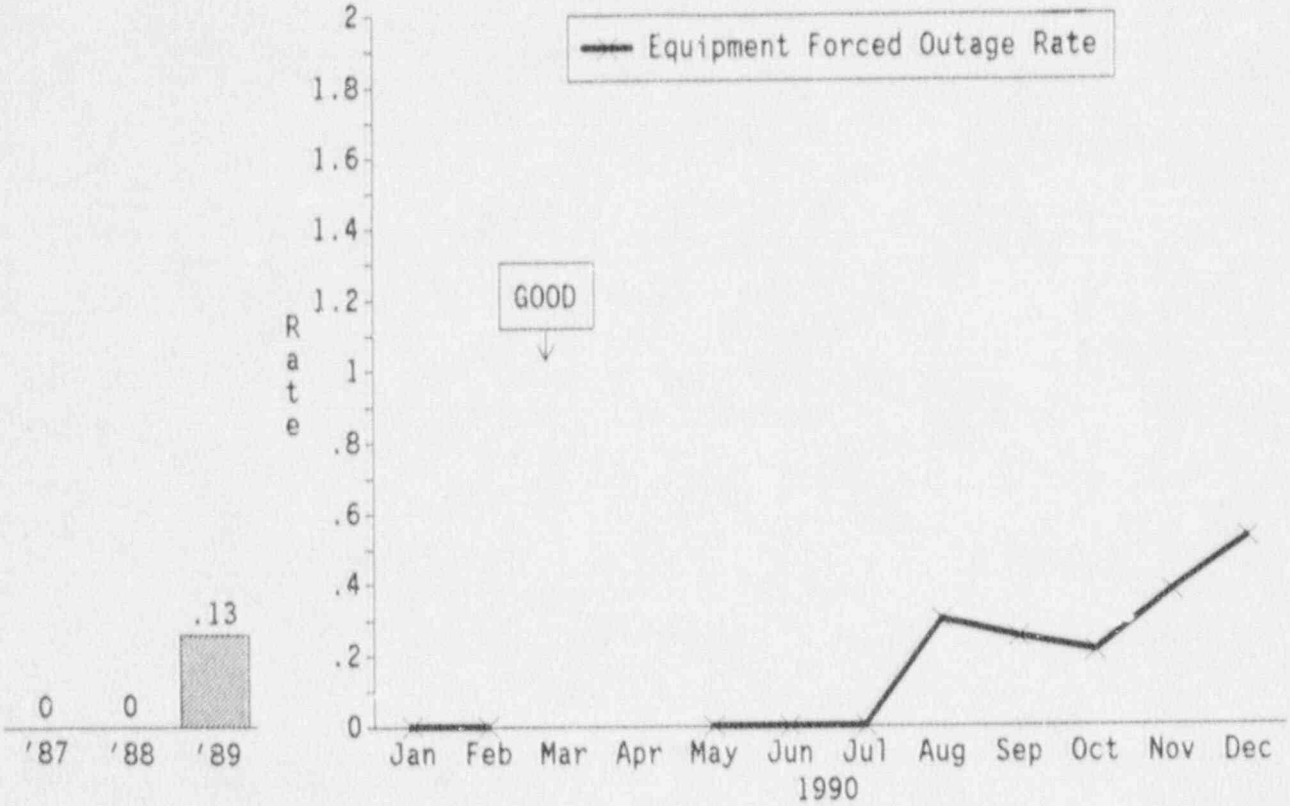
The above thermal output graph displays the daily operating power level, the 1500 thermal megawatt average technical specification limit, and the 1495 thermal megawatt Fort Calhoun goal. The cross hatched area represents the difference between the maximum allowable operation and the actual plant operation.

The percent power operation of the Fort Calhoun Station during December 1, 1990 through December 14, 1990 was approximately 100%. The plant was then shutdown for the rest of the month due to a forced outage. This forced outage was due to a CEDM housing leak.

Adverse Trend: None


Equipment Forced Outage Rate
Rate
2
1.8
1.6
1.4
1.2
1
.8
.6
.4
.2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Equipment Forced Outage Rate
Rate
2
1.8
1.6
1.4
1.2
1
.8
.6
.4
.2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989

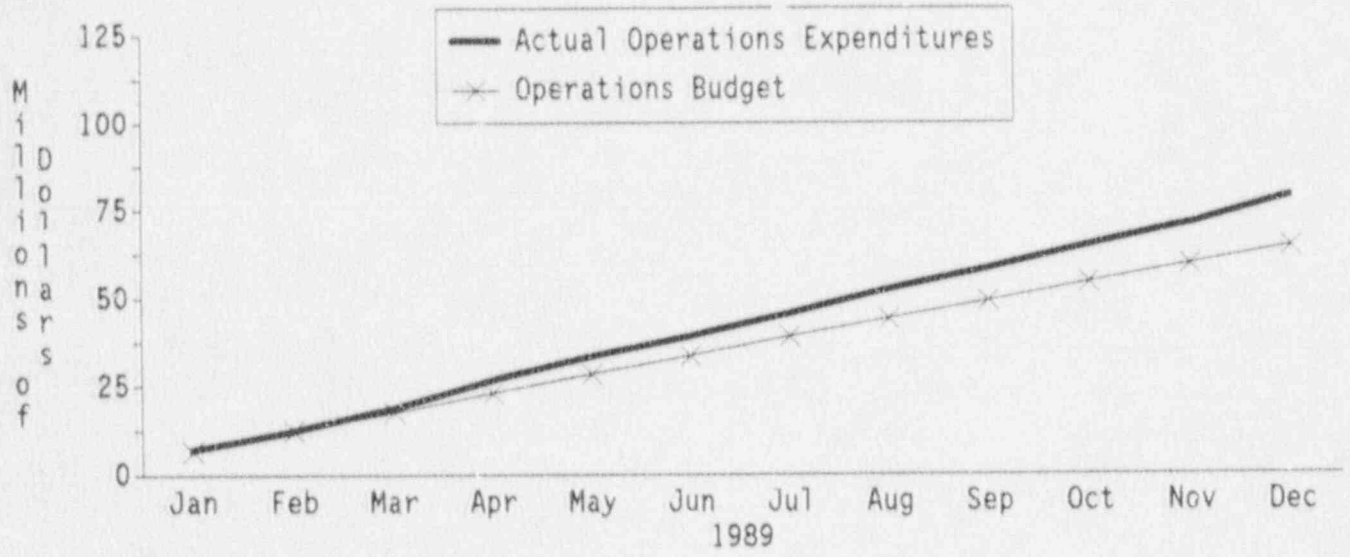


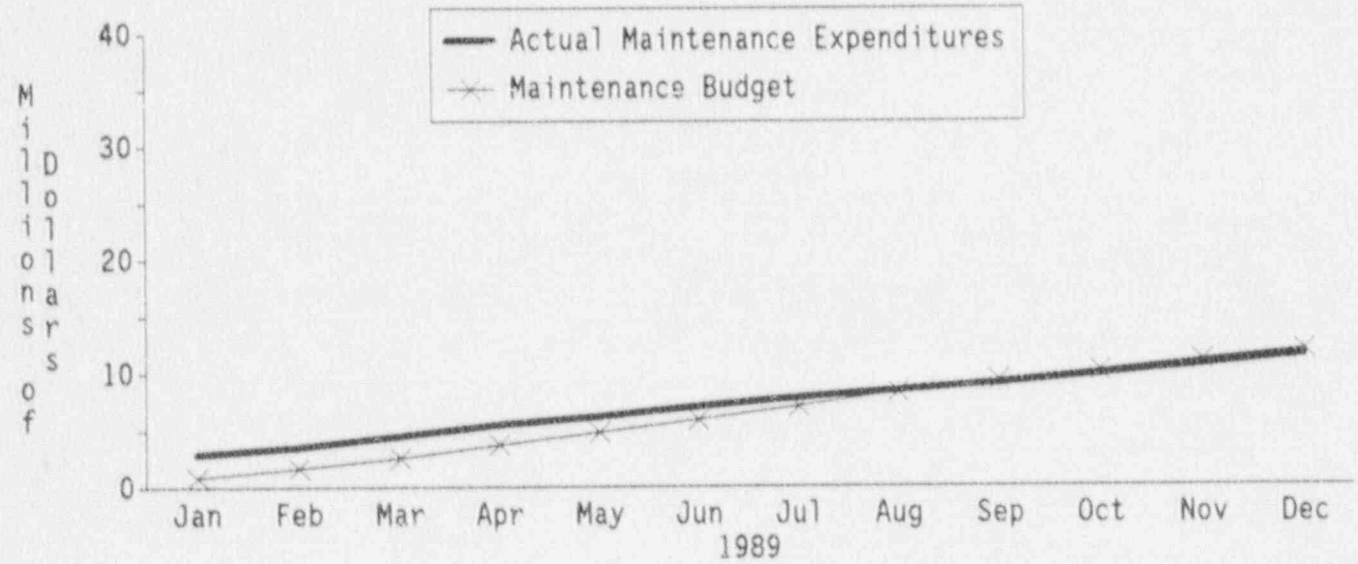
EQUIPMENT FORCED OUTAGES
PER 1000 CRITICAL HOURS

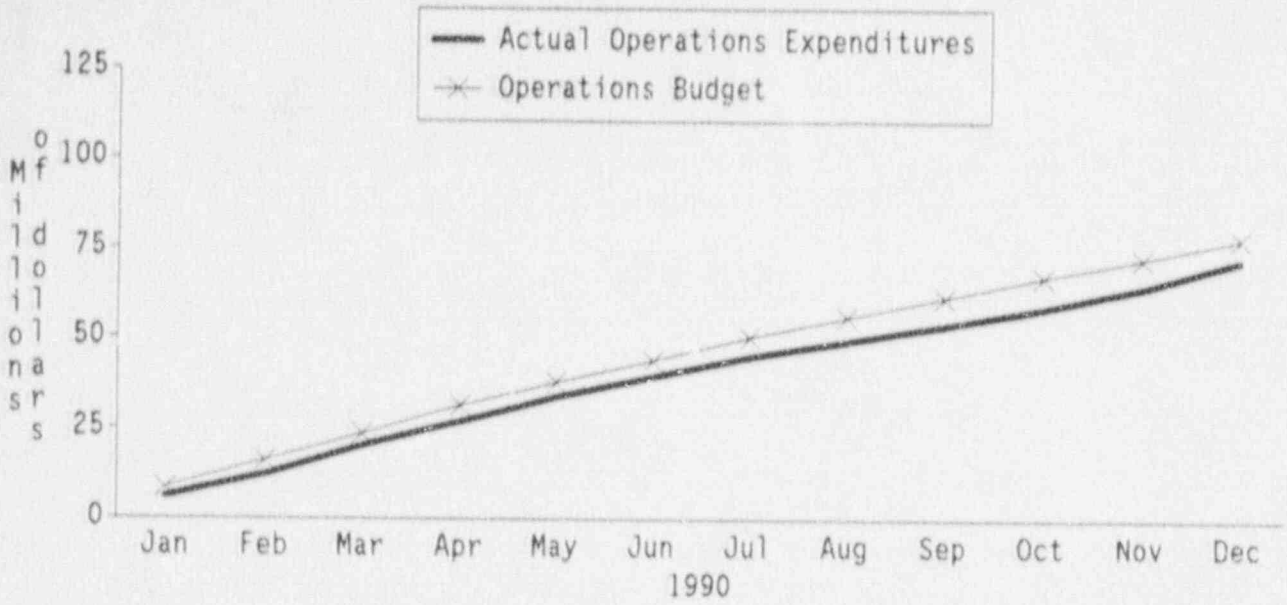
There were 404.3 equipment forced outage hours reported during the month of December 1990. These forced outage hours were reported due to a CEDM housing leak.

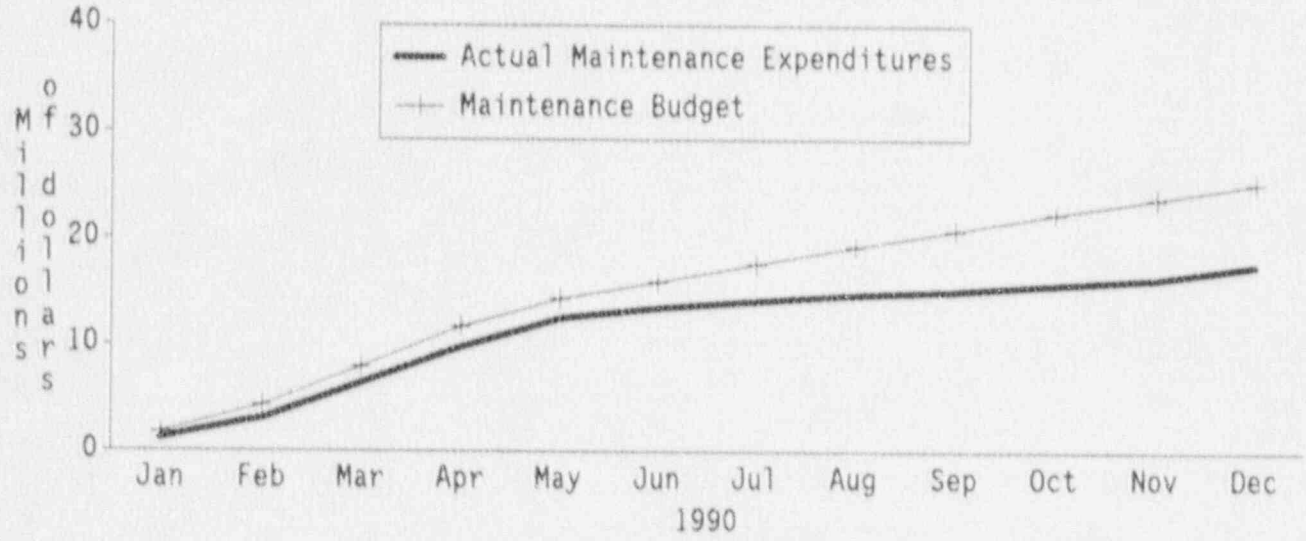
The last equipment forced outage occurred in November of 1990 and was due to an Instrument Air System failure in the Turbine Building.

Adverse Trend: None


Actual Operations Expenditures
Operations Budget
Millions of Dollars
125
100
75
50
25
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989


Actual Maintenance Expenditures
Maintenance Budget
Millions of Dollars
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989





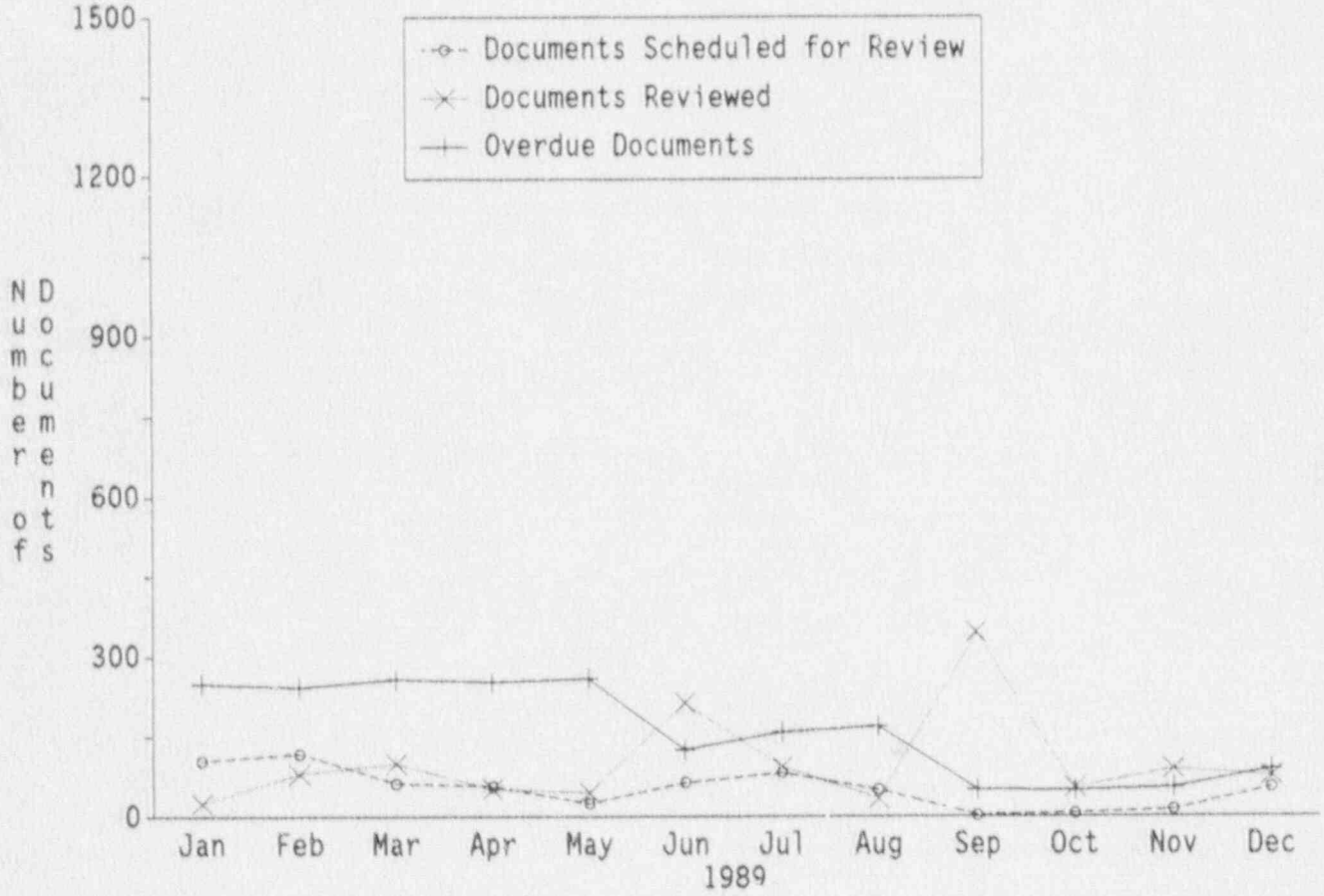
OPERATIONS AND MAINTENANCE BUDGET

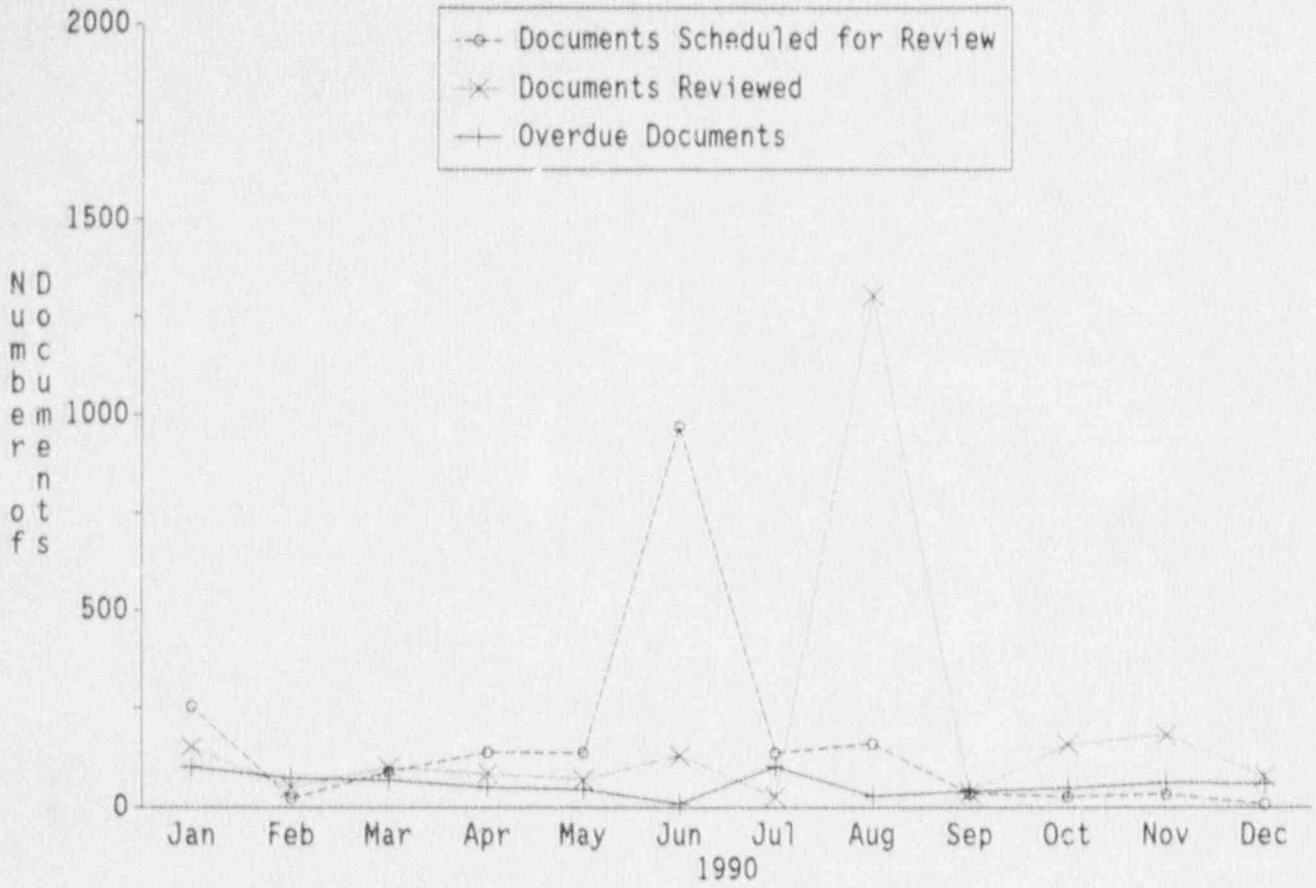
The Operations and Maintenance Budget Indicator shows the budget year to date as well as the actual expenditures for operations and maintenance for the Fort Calhoun Station.

The budget year-to-date for Operations was 78.0 million dollars for December while the actual cumulative expenditures through December totaled 71.9 million dollars.

The budget year-to-date for Maintenance was 25.3 million dollars for December while the actual cumulative expenditures through December totaled 17.5 million dollars.

Adverse Trends: None


Documents Scheduled for Review
Documents Reviewed
Overdue Documents
Number of Documents
1500
1200
900
600
300
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



DOCUMENT REVIEW

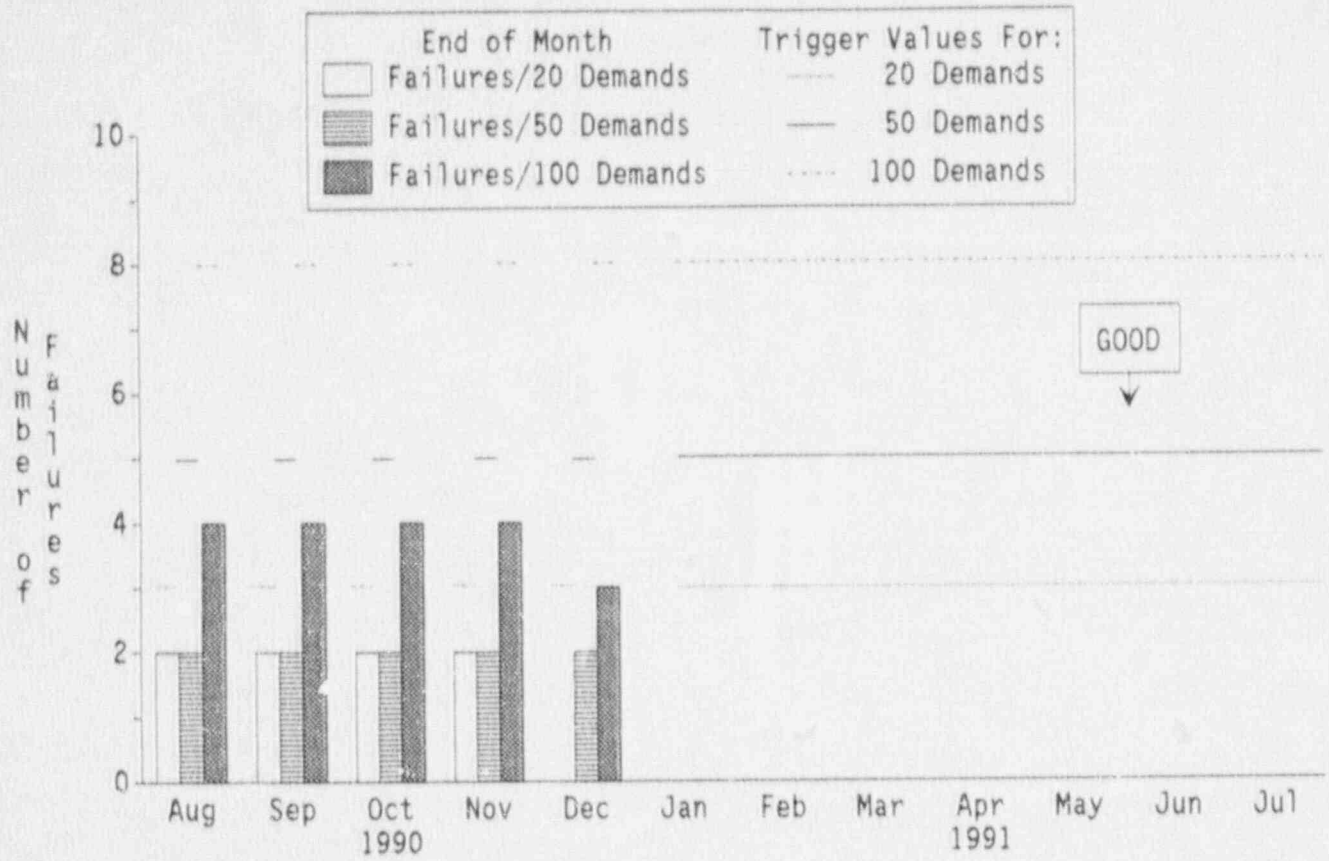
This indicator shows the number of biennial reviews completed during the reporting month, the number of biennial reviews scheduled for the reporting month, and the number of biennial reviews that are overdue. These document reviews are performed in-house and include Special Procedures, the Site Security Plan, Maintenance Procedures, Preventive Maintenance Procedures, and the Operating Manual.

During December there were 79 document reviews completed while 8 document reviews were scheduled. At the end of December, there were 60 document reviews overdue. The overdue document reviews at the end of December consisted primarily of Operations' documents.

During the month of December there were 57 new or renamed documents reviewed. These new or renamed documents will need to be reviewed again in 1992.

The high number of documents scheduled for review for the month of June 1990 was due to the high number of document reviews that were completed during the month of June 1988. The reviews that were completed during June 1988 were due to be reviewed in June 1990.

Adverse Trend: None SEP 46



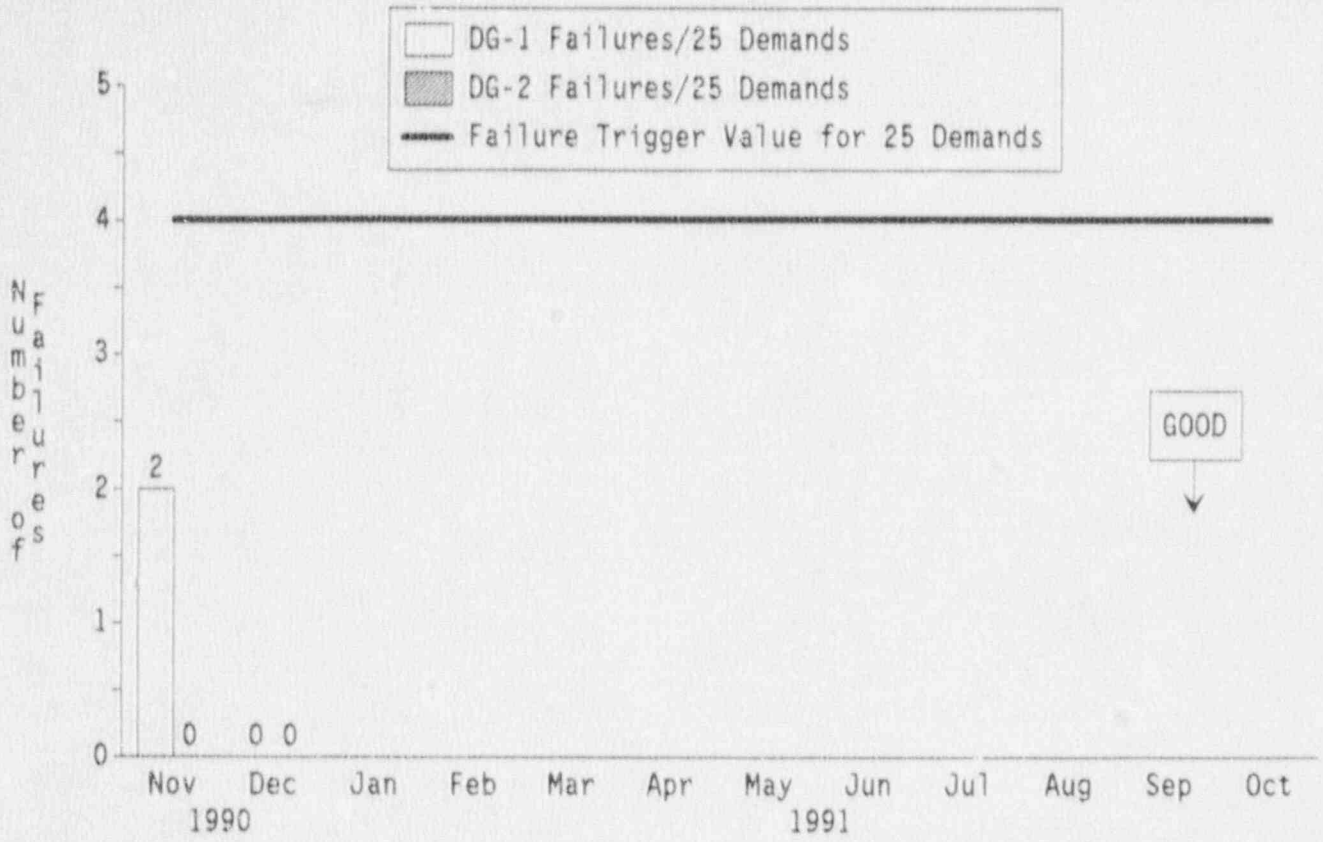
EMERGENCY DIESEL GENERATOR UNIT RELIABILITY

This bar graph shows three monthly indicators pertaining to the number of failures that were reported during the last 20, 50, and 100 emergency diesel generator demands at the Fort Calhoun Station. Also shown are trigger values which correspond to a high level of confidence that a unit's diesel generators have obtained a reliability of greater than or equal to 95% when the failure values are below the corresponding trigger values.

The demands counted for this indicator include the respective number of starts and the respective number of load-runs for both Diesel Generators combined. The number of start demands include all valid and inadvertent starts, including all start-only demands and all start demands that are followed by load-run demands, whether by automatic or manual initiation. Load-run demands must follow successful starts and meet at least one of the following; a load-run that is a result of a real load signal; a load-run test expected to carry the plant's load and duration as stated in the test specifications; special tests in which a diesel generator was expected to be operated for a minimum of one hour and to be loaded with at least 50% of design load (see exceptions and other demand criteria in the Definition Section).

The last 2 demand failures occurred in the month of June 1990 and were due to problems with DG-1's static exciter voltage regulator.

Adverse Trend: None



DIESEL GENERATOR RELIABILITY (25 DEMANDS)

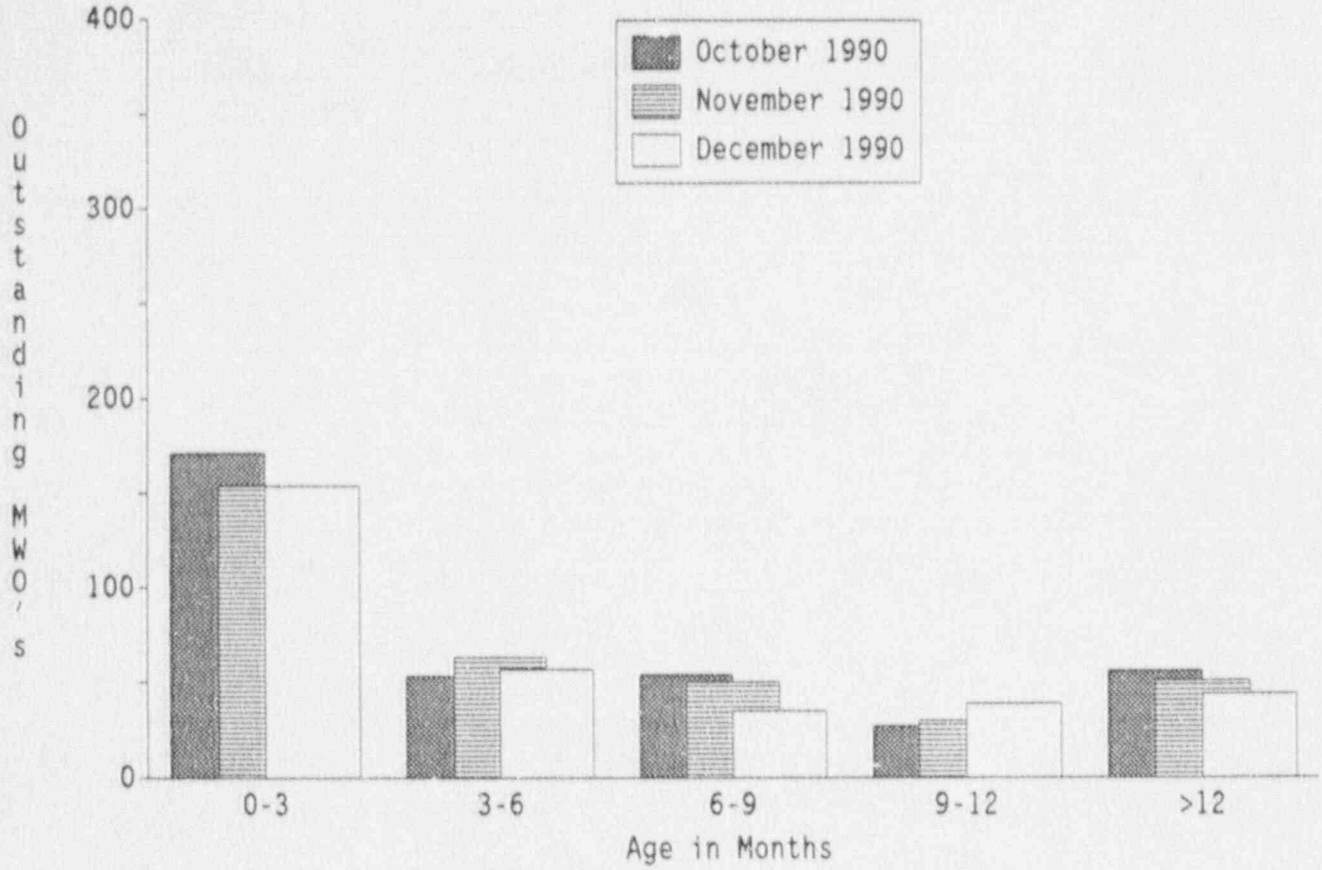
This indicator shows the number of failures experienced by each emergency diesel generator during the last 25 start demands and 25 load-run demands. A trigger value of 4 failures within the last 25 demands is also shown.

It must be emphasized that in accordance with NUMARC criteria, certain actions will take place in the event that any one diesel generator experiences 4 or more failures within the last 25 demands on the unit. These actions are described in the Definition Section. A Standing Order will be drafted for the Fort Calhoun Station to institutionalize and formally approve/adopt the required NUMARC actions.

Diesel Generator DG-1 has not experienced any failures during the last 25 demands on the unit.

Diesel Generator DG-2 has not experienced any failures during the last 25 demands on the unit.

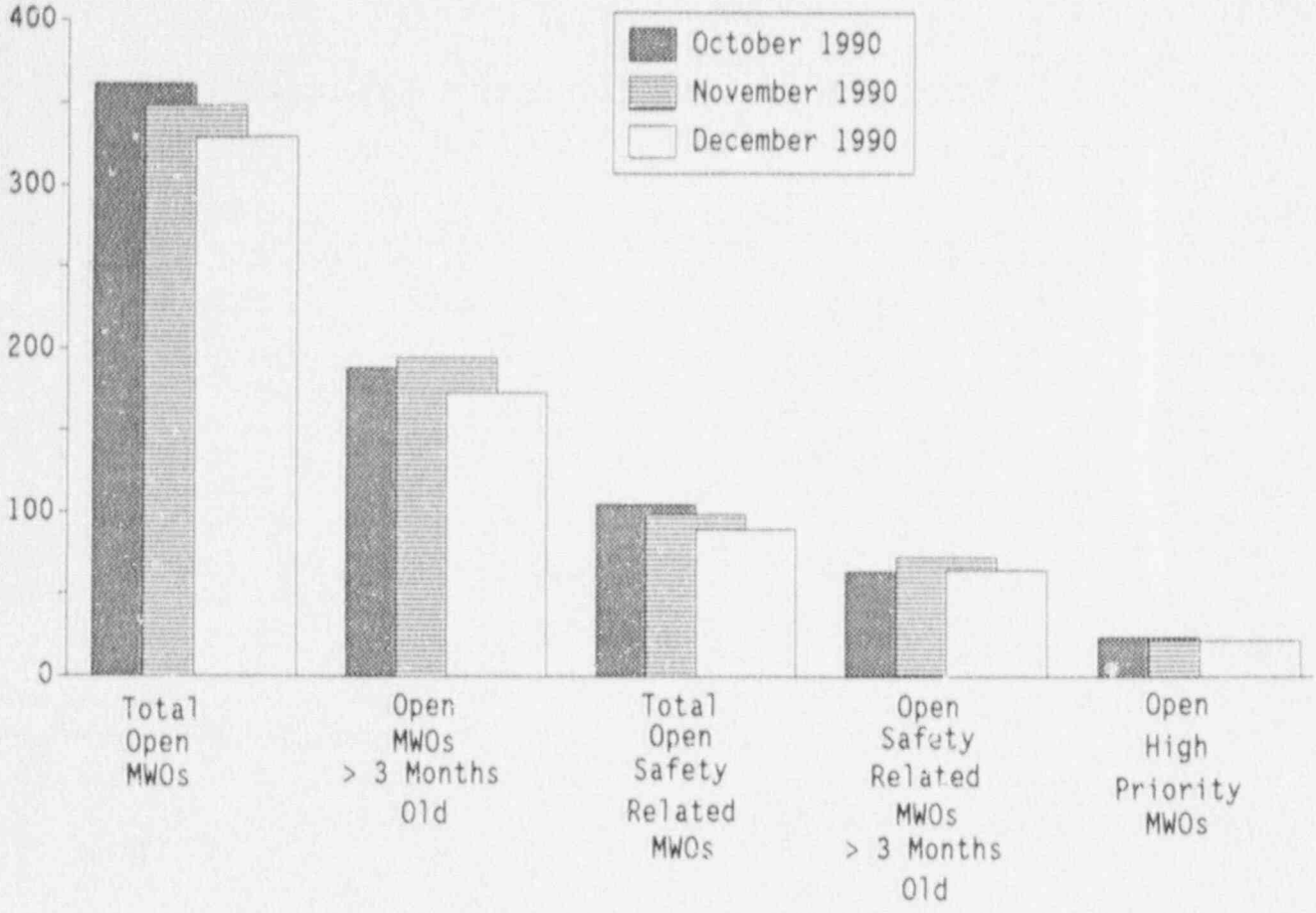
Adverse Trend: None



AGE OF OUTSTANDING MAINTENANCE WORK ORDERS
(CORRECTIVE NON-OUTAGE)

This indicator shows the age of corrective non-outage maintenance work orders (MWO's) remaining open at the end of the reporting month.

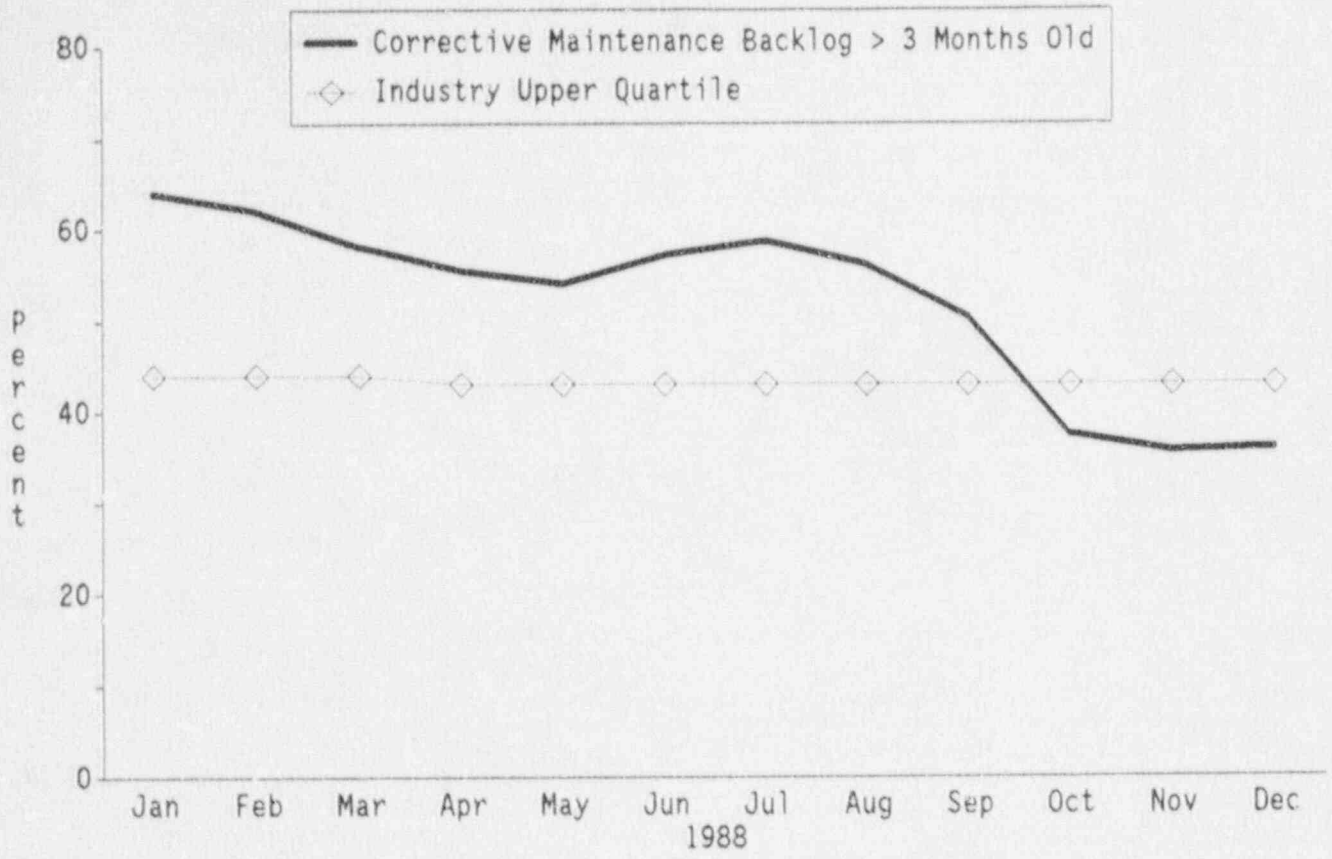
Adverse Trend: None

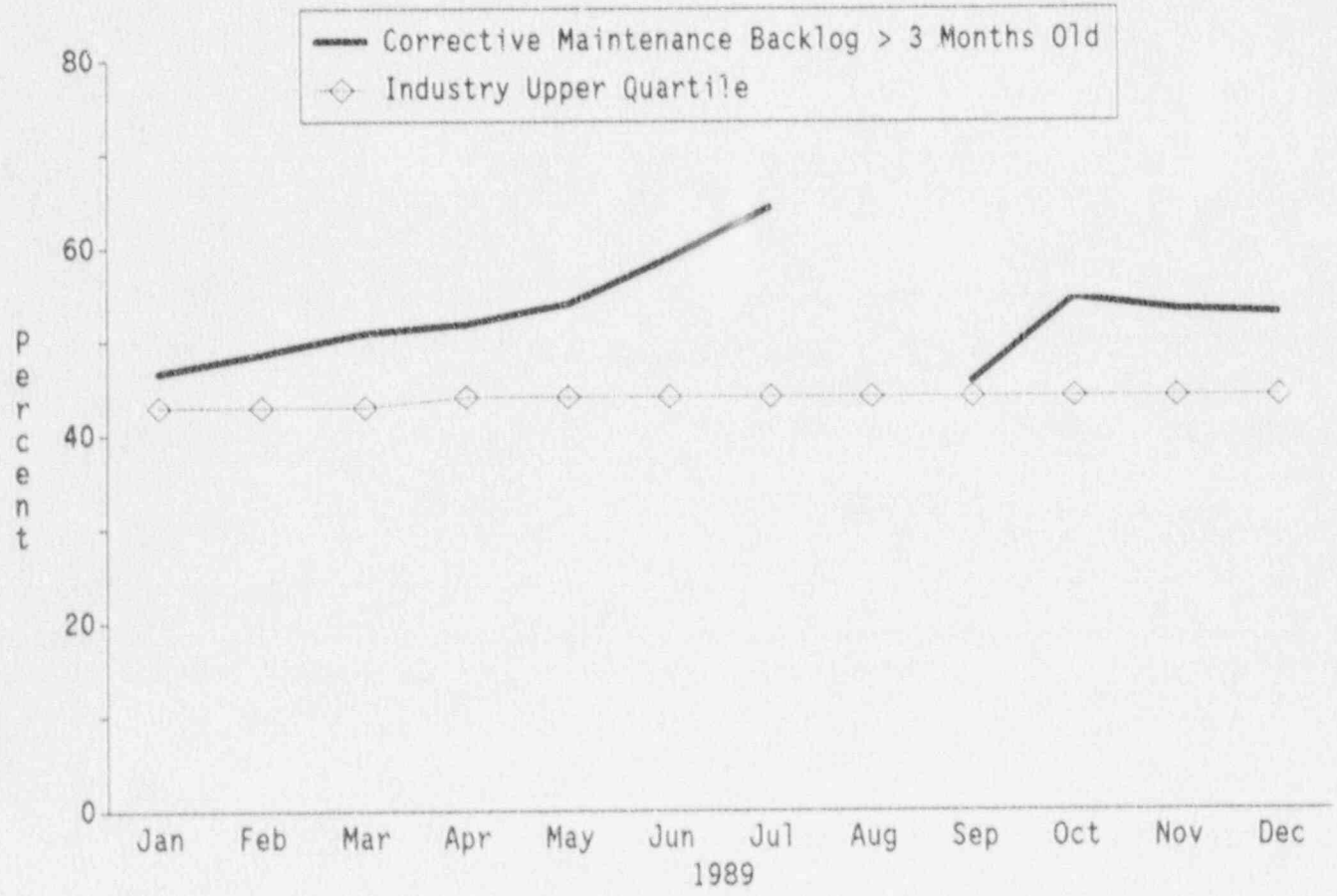


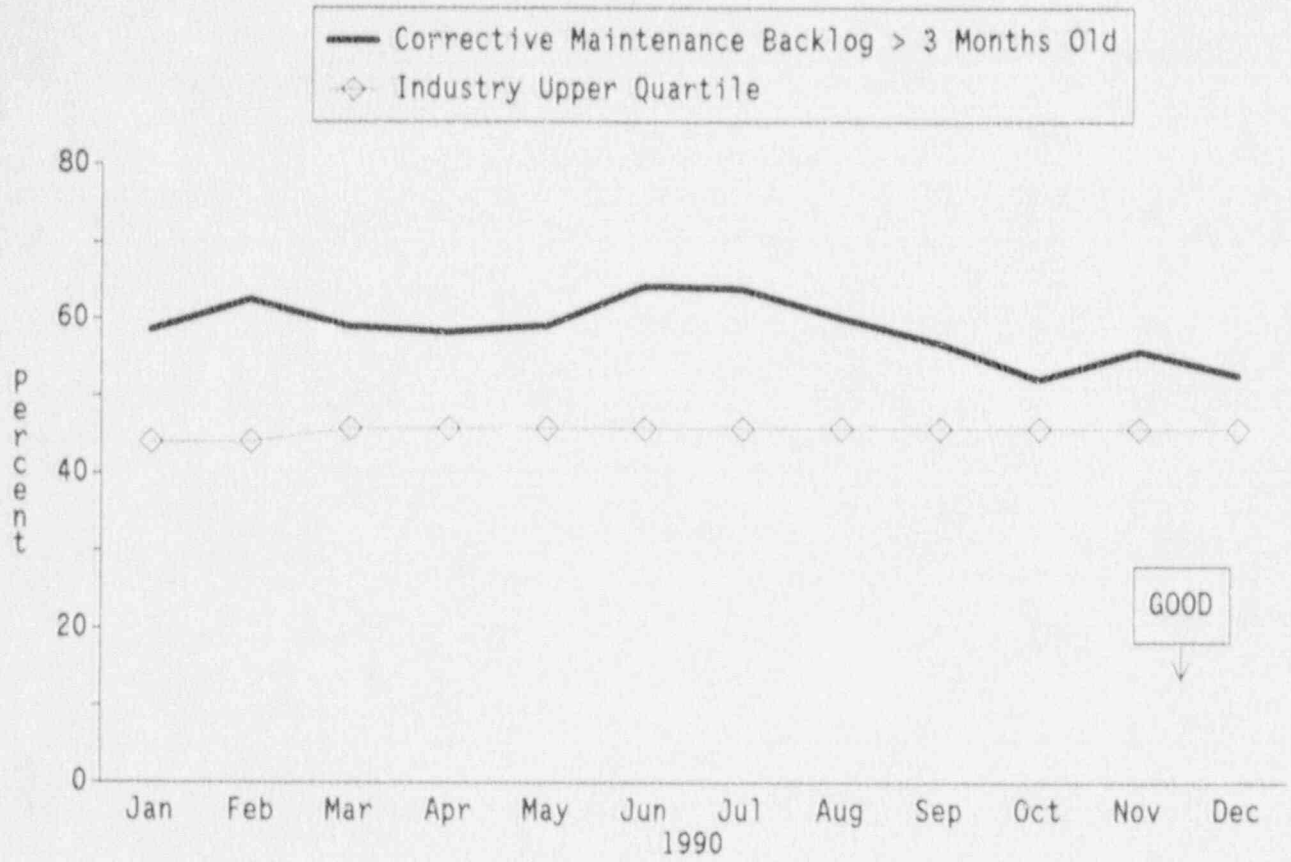
MAINTENANCE WORK ORDER BREAKDOWN
(CORRECTIVE NON-OUTAGE)

This indicator shows the total number of corrective non-outage MWO's remaining open at the end of the reporting month, along with a breakdown by several key categories.

Adverse Trend: None


Corrective Maintenance Backlog > 3 Months Old
Industry Upper Quartile
80
60
40
20
0
percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Corrective Maintenance Backlog > 3 Months Old
Industry Upper Quartile
80
60
40
20
0
percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



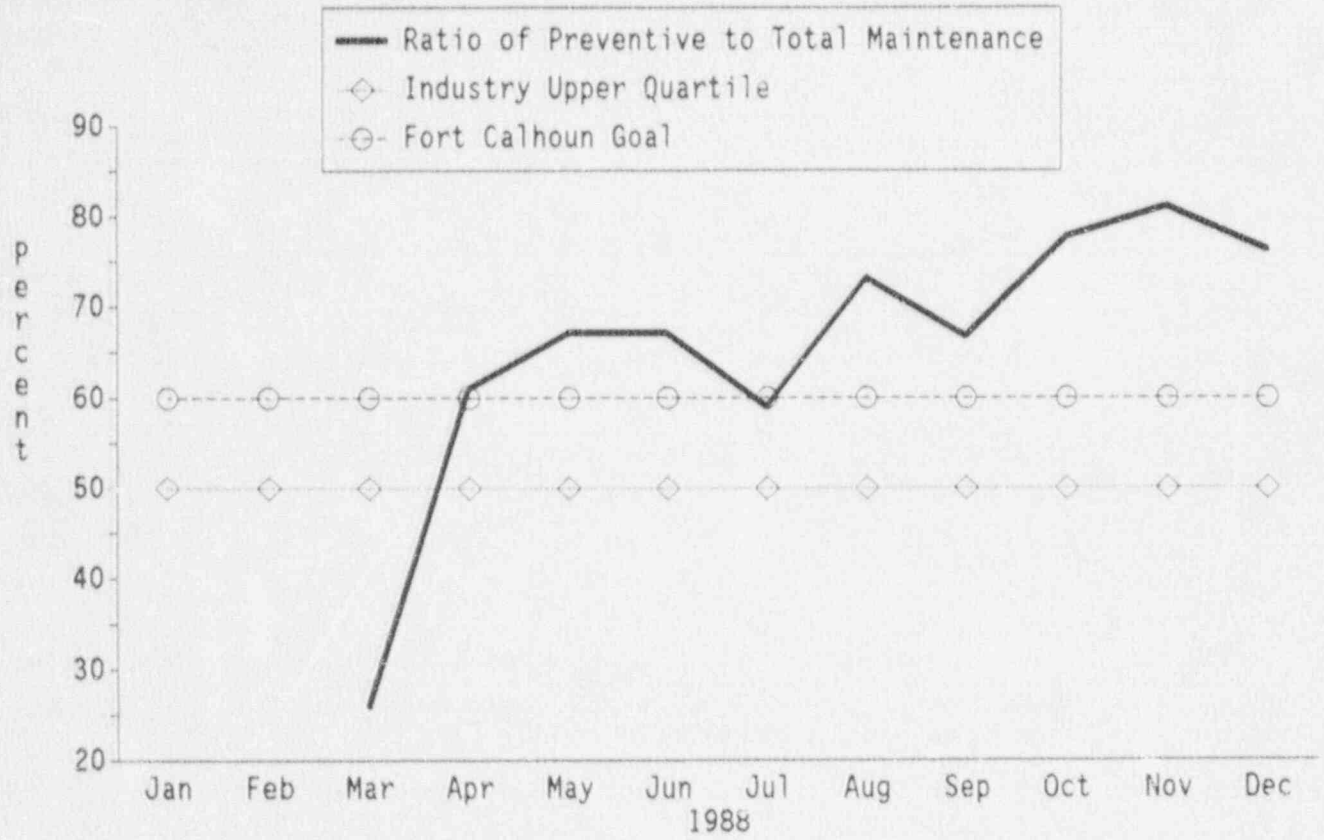
CORRECTIVE MAINTENANCE BACKLOG
GREATER THAN 3 MONTHS OLD
(NON-OUTAGE)

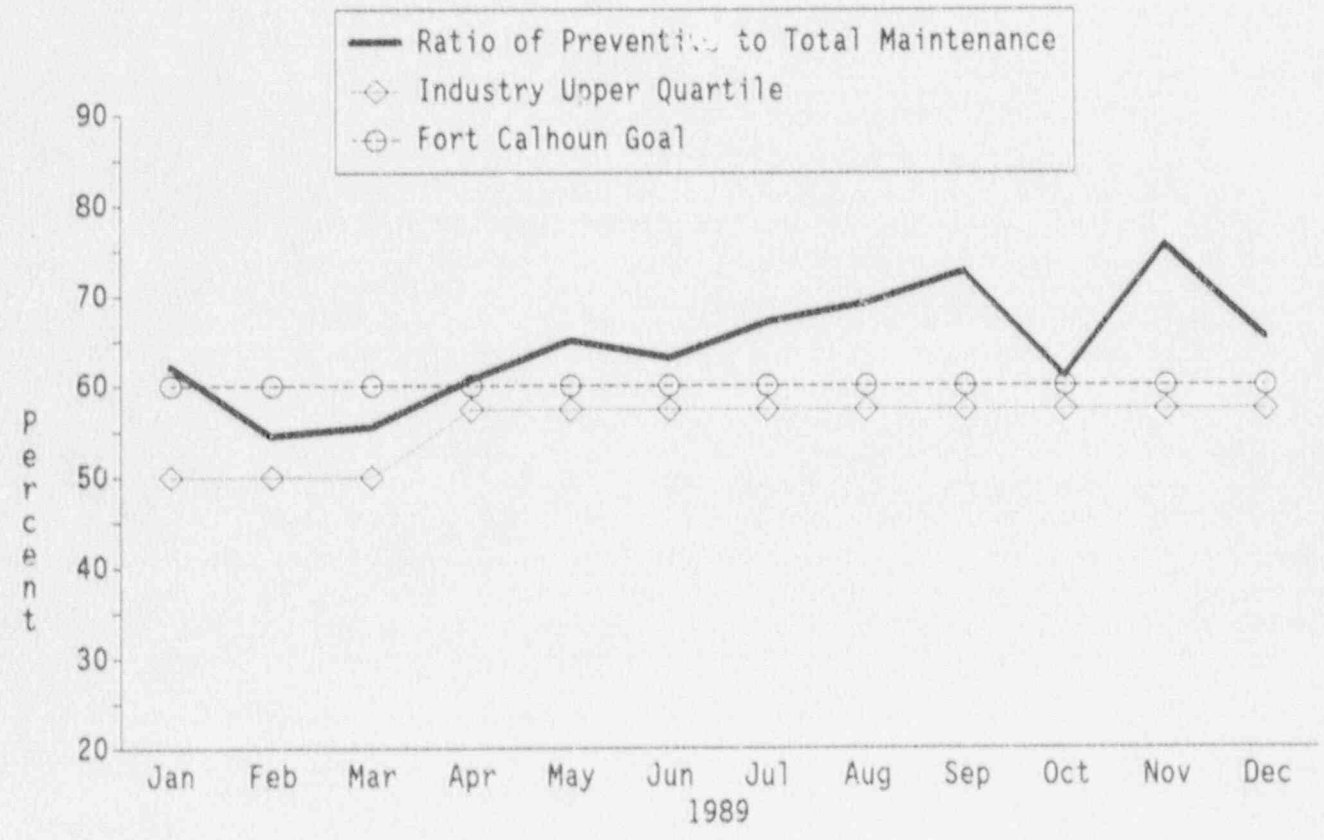
This indicator shows the percentage of open corrective non-outage maintenance work orders that are greater than three months old at the end of the reporting month.

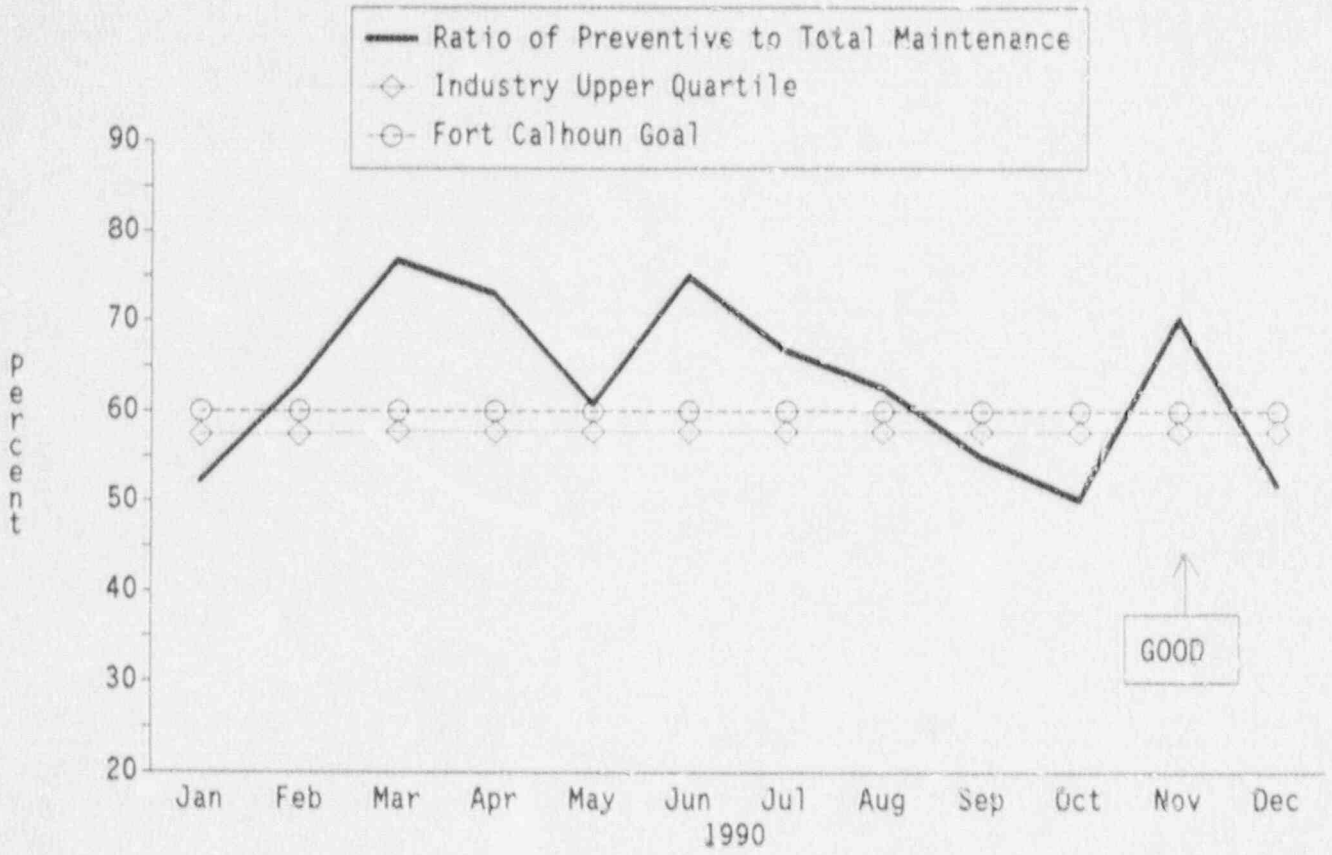
The percentage of open corrective non-outage maintenance work orders that are greater than three months old at the end of December was reported as 52.6%

The industry upper quartile value for corrective maintenance backlog greater than 3 months old is 45.8%.

Adverse Trend: one


Ratio of Preventive to Total Maintenance
Industry Upper Quartile
Fort Calhoun Goal
percent
90
80
70
60
50
40
30
20
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Ratio of Preventive to Total Maintenance
Industry Upper Quartile
Fort Calhoun Goal
percent
90
80
70
60
50
40
30
20
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



RATIO OF PREVENTIVE TO TOTAL MAINTENANCE
(NON-OUTAGE)

The ratio of preventive to total maintenance indicator shows the ratio of completed non-outage preventive maintenance to total completed non-outage maintenance.

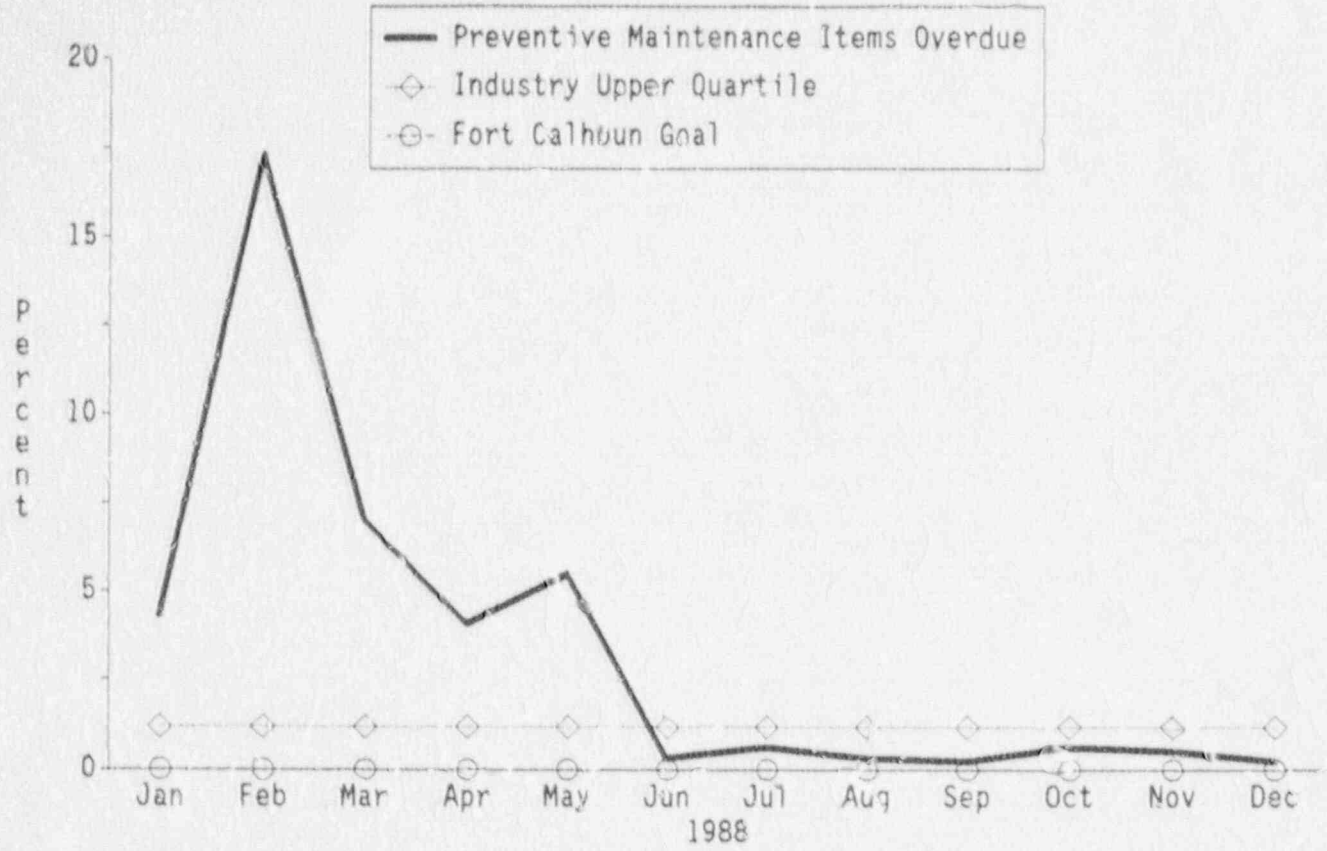
The ratio of preventive to total maintenance at the Fort Calhoun Station decreased to 51.8% in December.

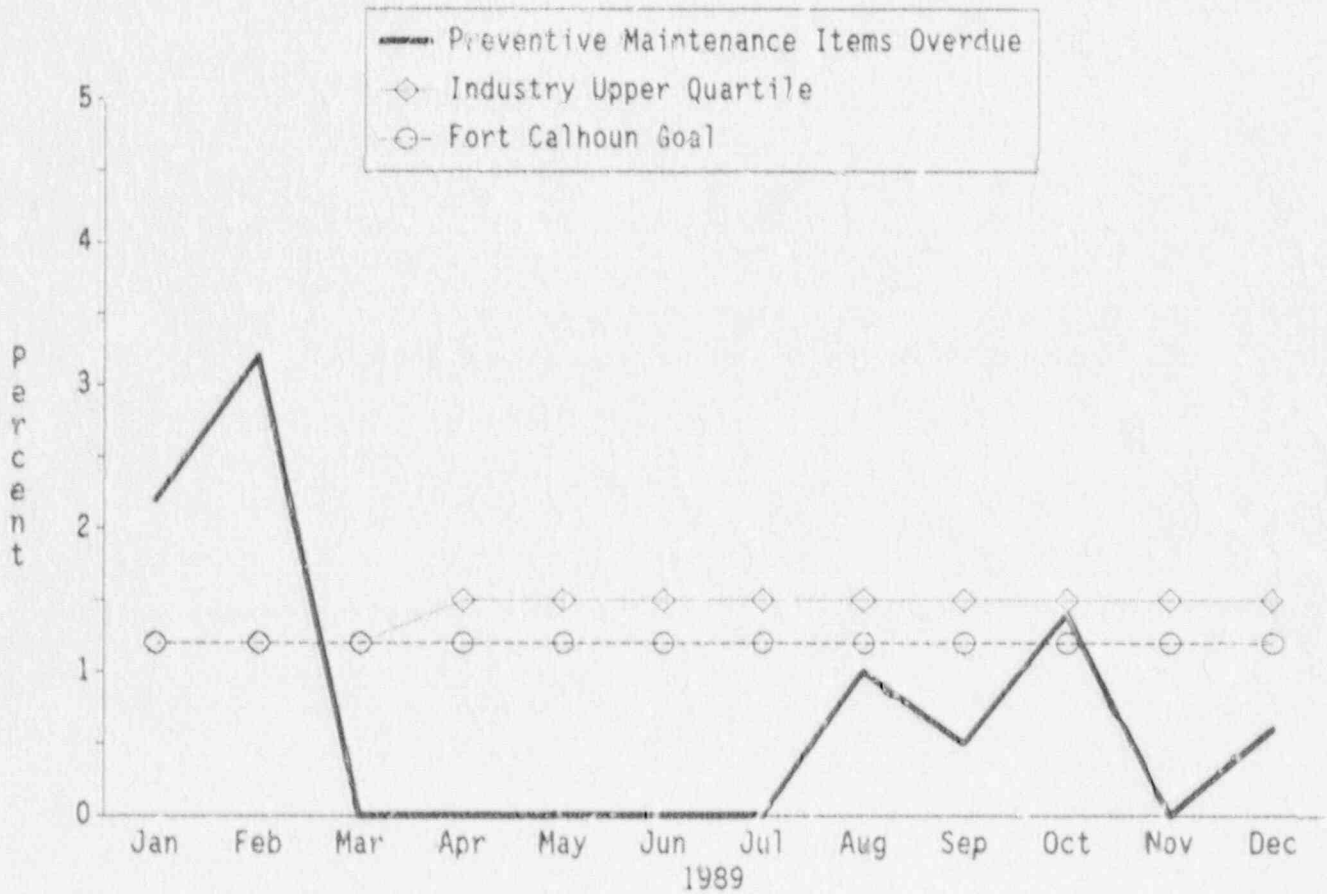
The low ratios in August, September, October, and December were due to the increased involvement of maintenance in corrective maintenance activities associated with the three forced outages which occurred in August, September, and December.

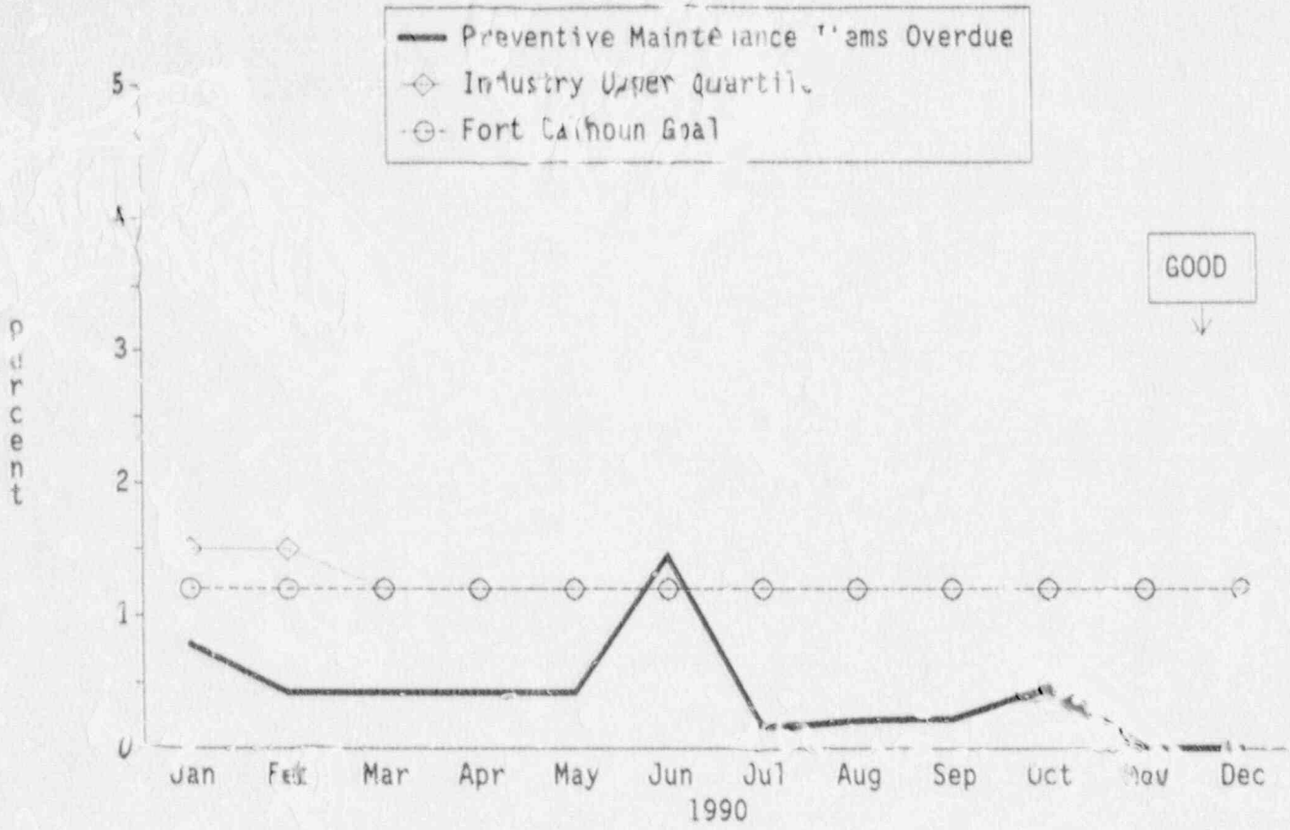
The Fort Calhoun goal is to have a ratio of preventive to total maintenance greater than 60%.

The industry upper quartile value for the ratio of preventive to total maintenance is 57.7%.

Adverse Trend: None SEP 41


Preventive Maintenance Items Overdue
Industry Upper Quartile
Fort Calhoun Goal
20
15
10
5
0
Percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Preventive Maintenance Items Overdue
Industry Upper Quartile
Fort Calhoun Goal
5
4
3
2
1
0
Percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



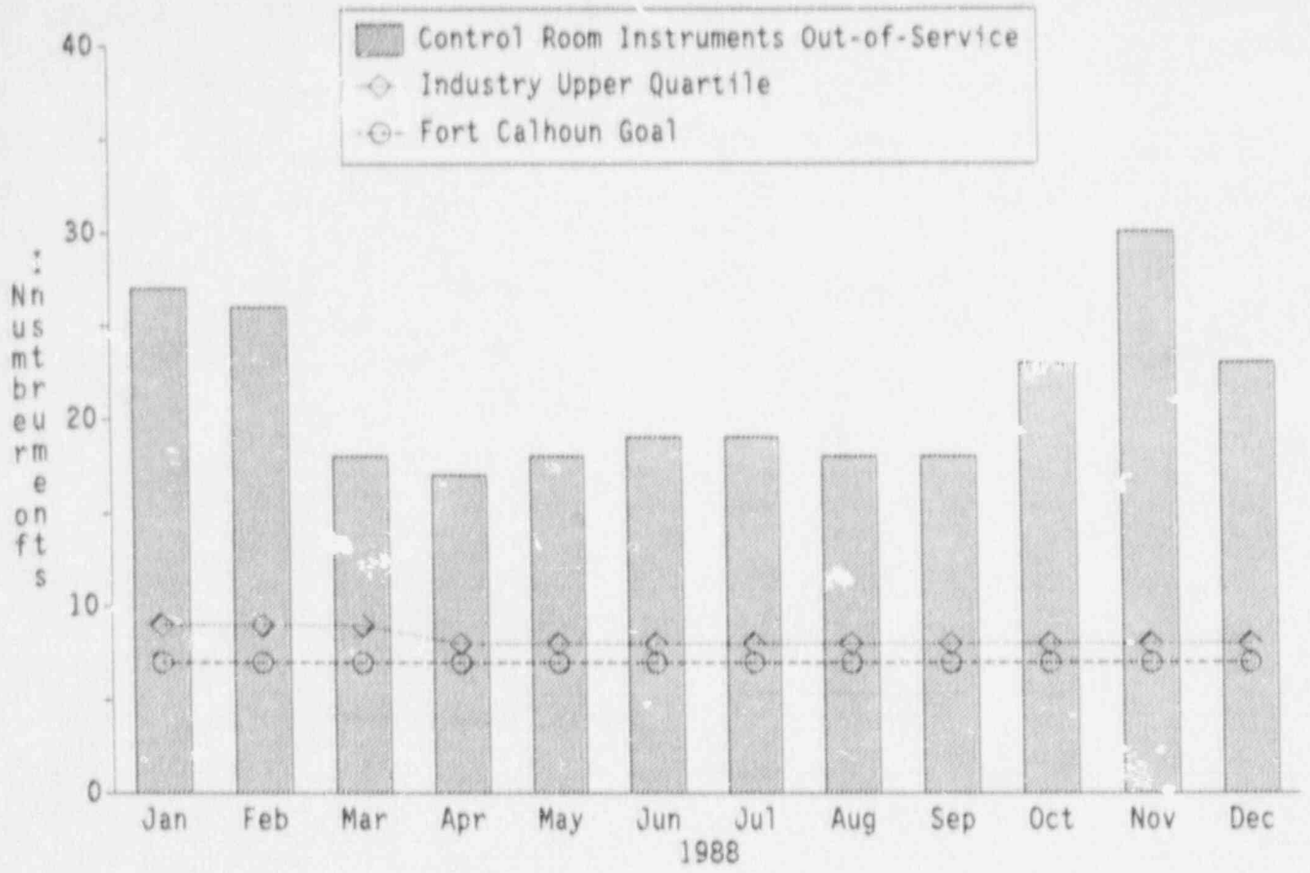
PREVENTIVE MAINTENANCE ITEMS OVERDUE

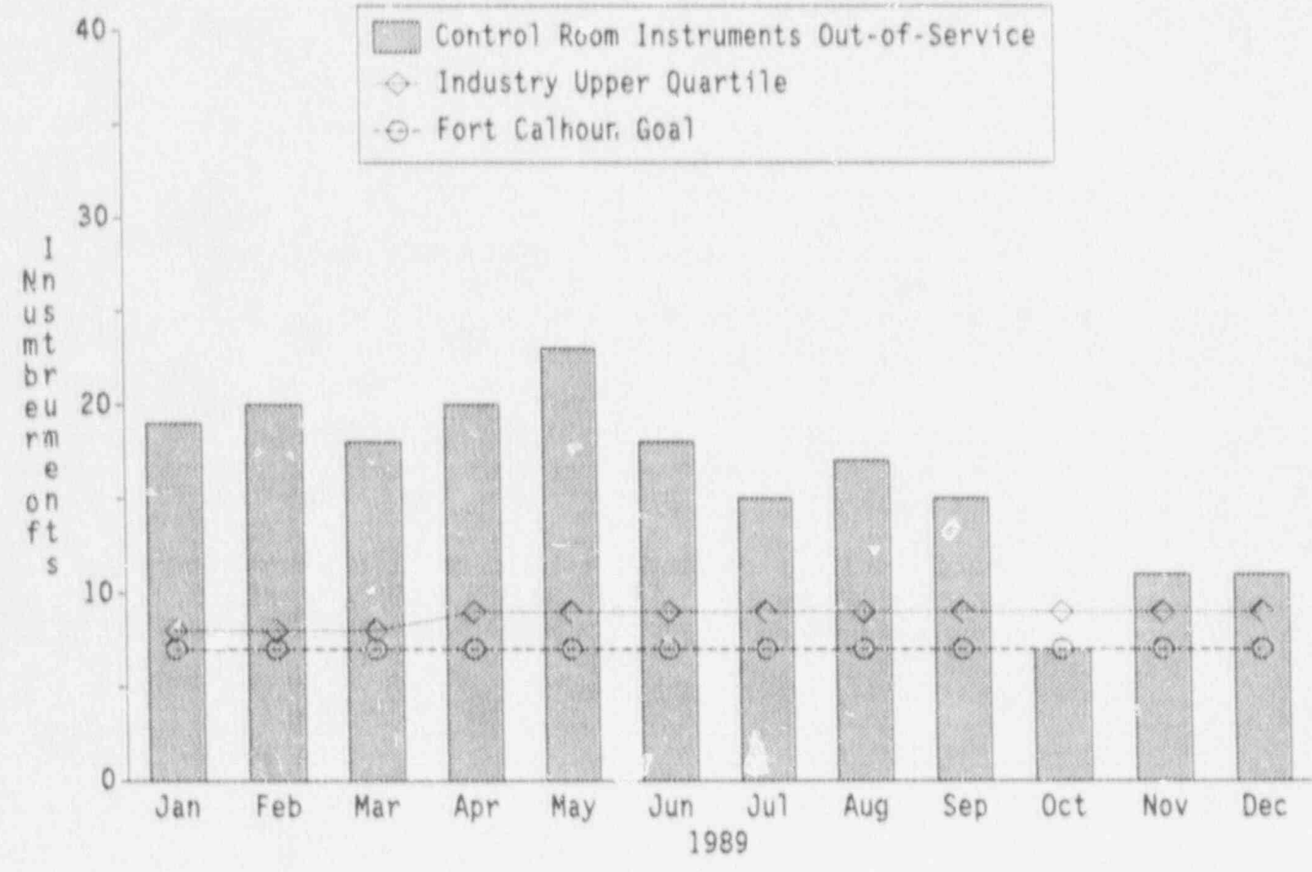
The purpose of this indicator is to monitor progress in the administration and execution of preventive maintenance programs. A small percentage of preventive maintenance items overdue indicates a station commitment to the preventive maintenance program and an ability to plan, schedule, and perform preventive maintenance tasks as programs require.

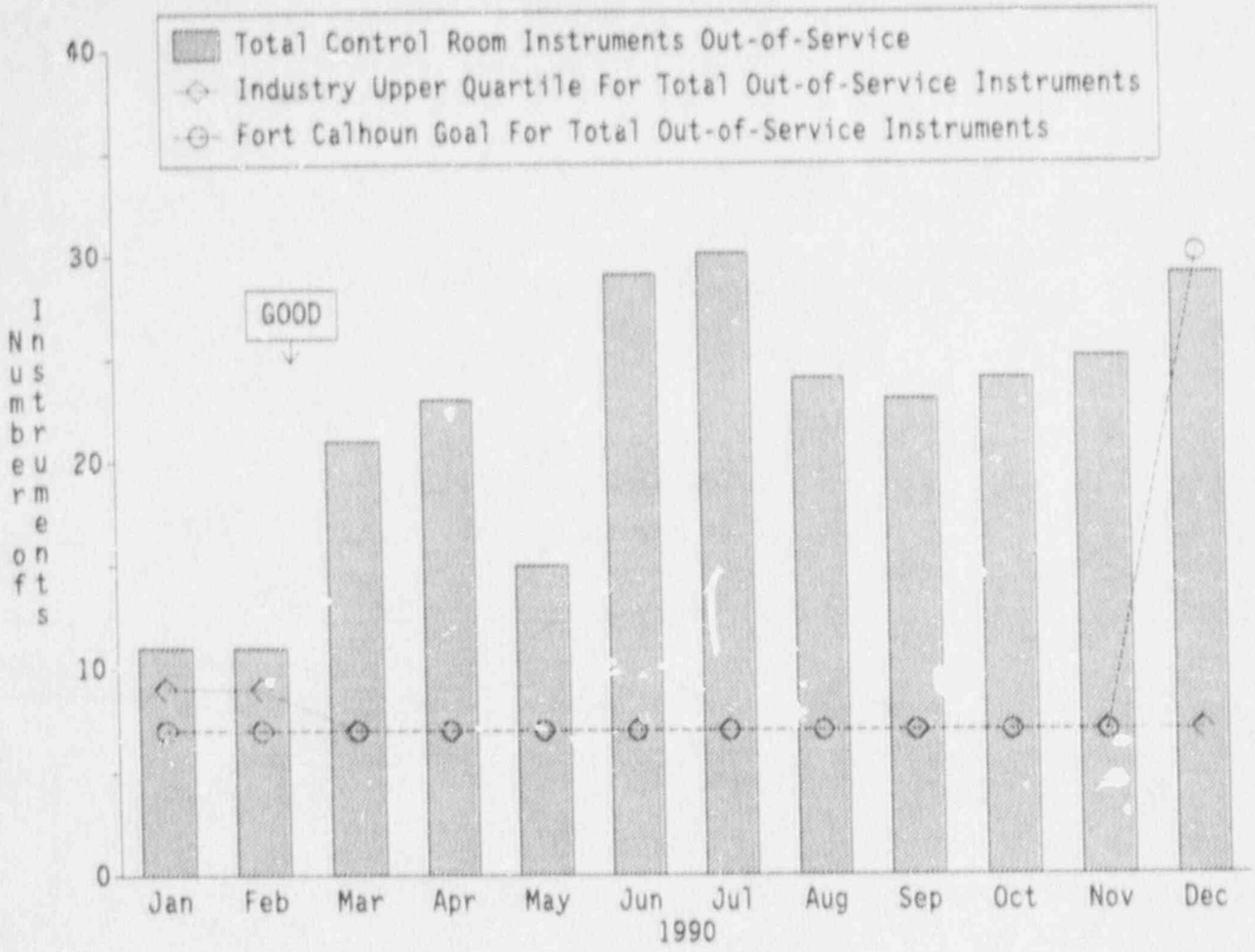
During December 1990, 1,104 PM items were completed. A total of zero PM items were not completed within the allowable grace period.

The Fort Calhoun goal is to have less than 1.2% preventive maintenance items overdue. The industry upper quartile for preventive maintenance items overdue is 1.2%. The Fort Calhoun Station is currently performing in the industry upper quartile for this indicator.

Adverse Trend: None SEP 41


Control Room Instruments Out-of-Service
Industry Upper Quartile
Fort Calhoun Goal
Number of Events
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Control Room Instruments Out-of-Service
Industry Upper Quartile
Fort Calhoun Goal
Number of Events
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



NUMBER OF OUT-OF-SERVICE
CONTROL ROOM INSTRUMENTS

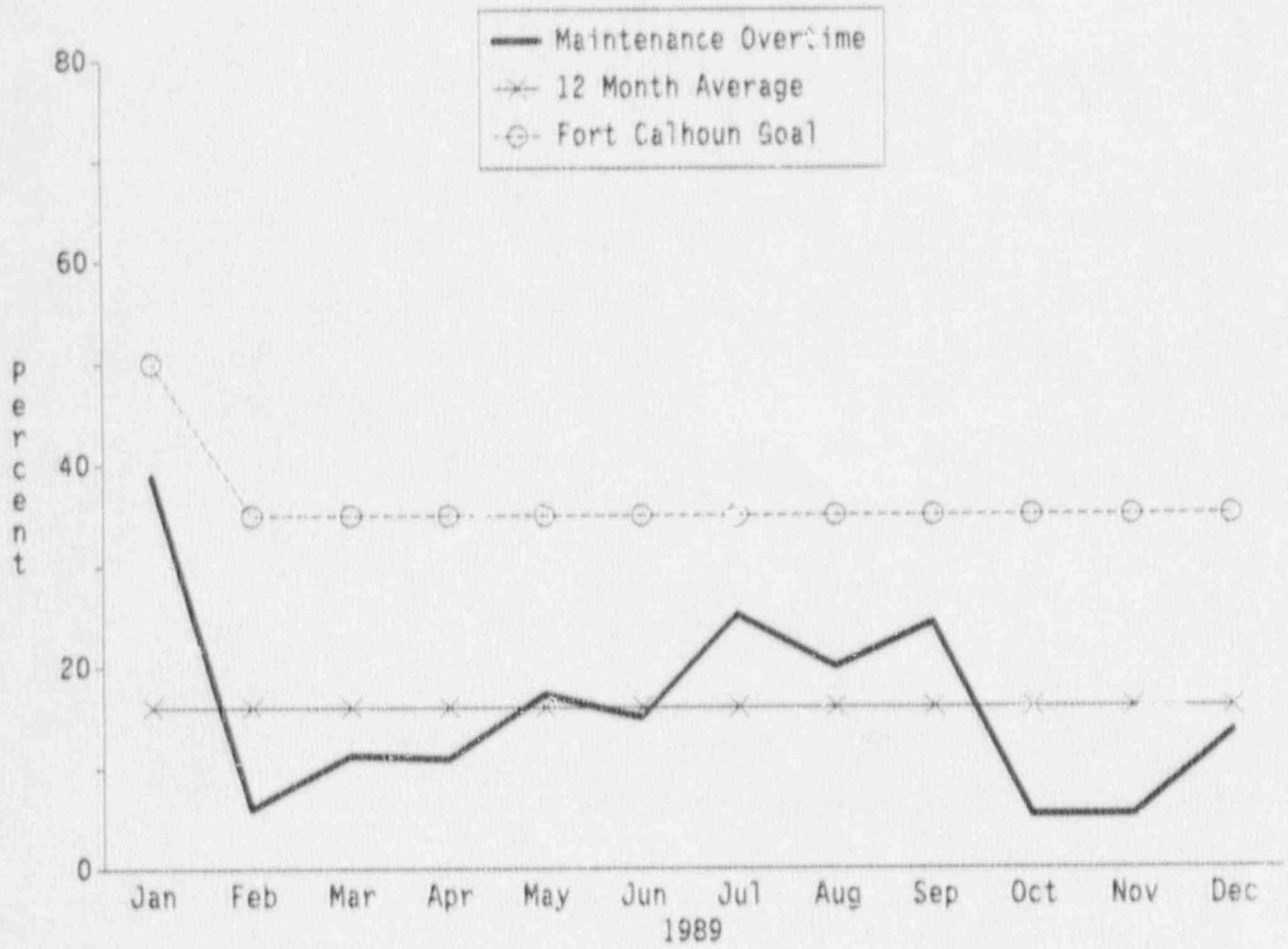
The Number of Out-of-Service Control Room Instruments Indicator has been changed. This indicator previously presented the Fort Calhoun goal as less than 7 out-of-service control room instruments. The current Fort Calhoun goal is less than 30 out-of-service control room instruments.

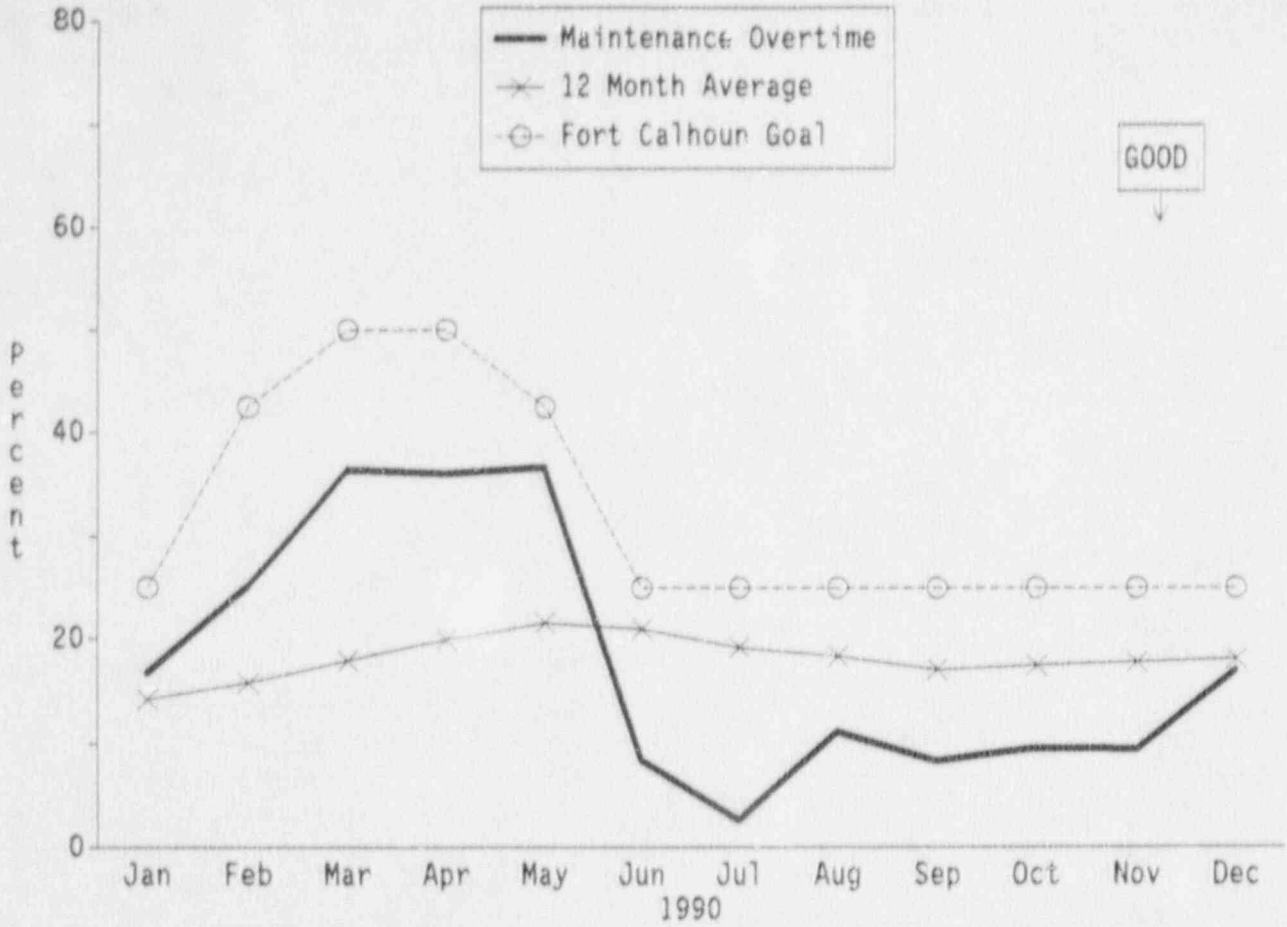
This indicator shows the number of out-of-service control room instruments, the industry upper quartile for this indicator, and the Fort Calhoun goal.

There was a total of 29 out-of-service control room instruments at the end of December.

The industry upper quartile value for the number of out-of-service control room instruments is 7.

Adverse Trend: None


Maintenance Overtime
12 Month Average
Fort Calhoun Goal
80
60
40
20
0
percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



MAINTENANCE OVERTIME

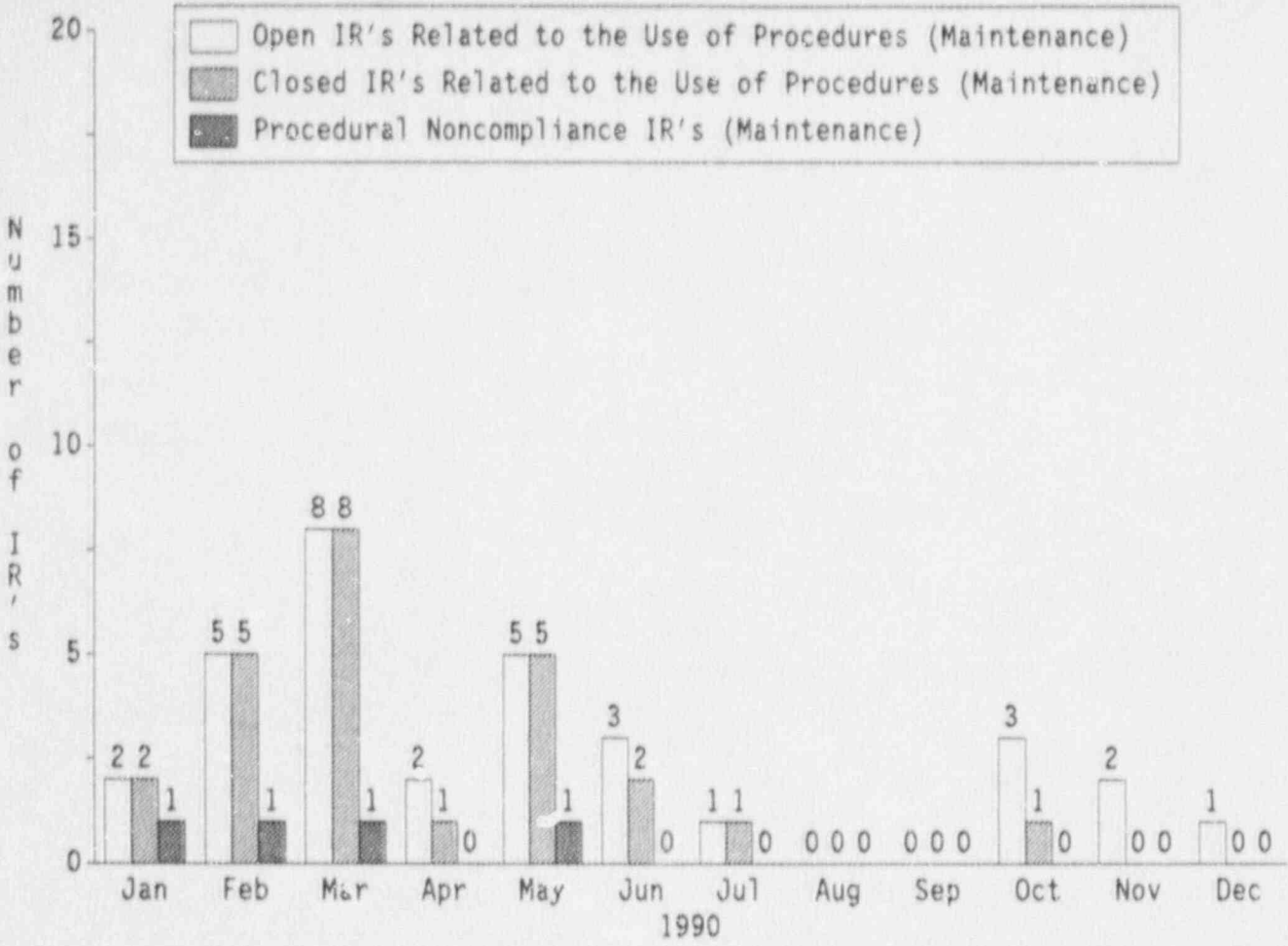
The Maintenance Overtime Indicator monitors the ability to perform the desired maintenance activities with the allotted resources. Excessive overtime indicates insufficient resource allocation and can lead to errors due to fatigue.

The percent of overtime hours with respect to normal hours was reported as 17.0% during the month of December 1990. The 12 month average percentage of overtime hours with respect to normal hours was reported as 18.1%.

The high percentage of overtime hours reported for the months of February 1990 through May 1990 was due to increased maintenance support associated with the 1990 Refueling Outage. The high percentage of overtime hours reported for August, September, October, November, and December 1990 was due to maintenance activities associated with the 4 forced outages during these months.

The Fort Calhoun goal for the percent of maintenance overtime hours worked has been set at 25% for non-outage months and 50% for outage months.

Adverse Trend: None

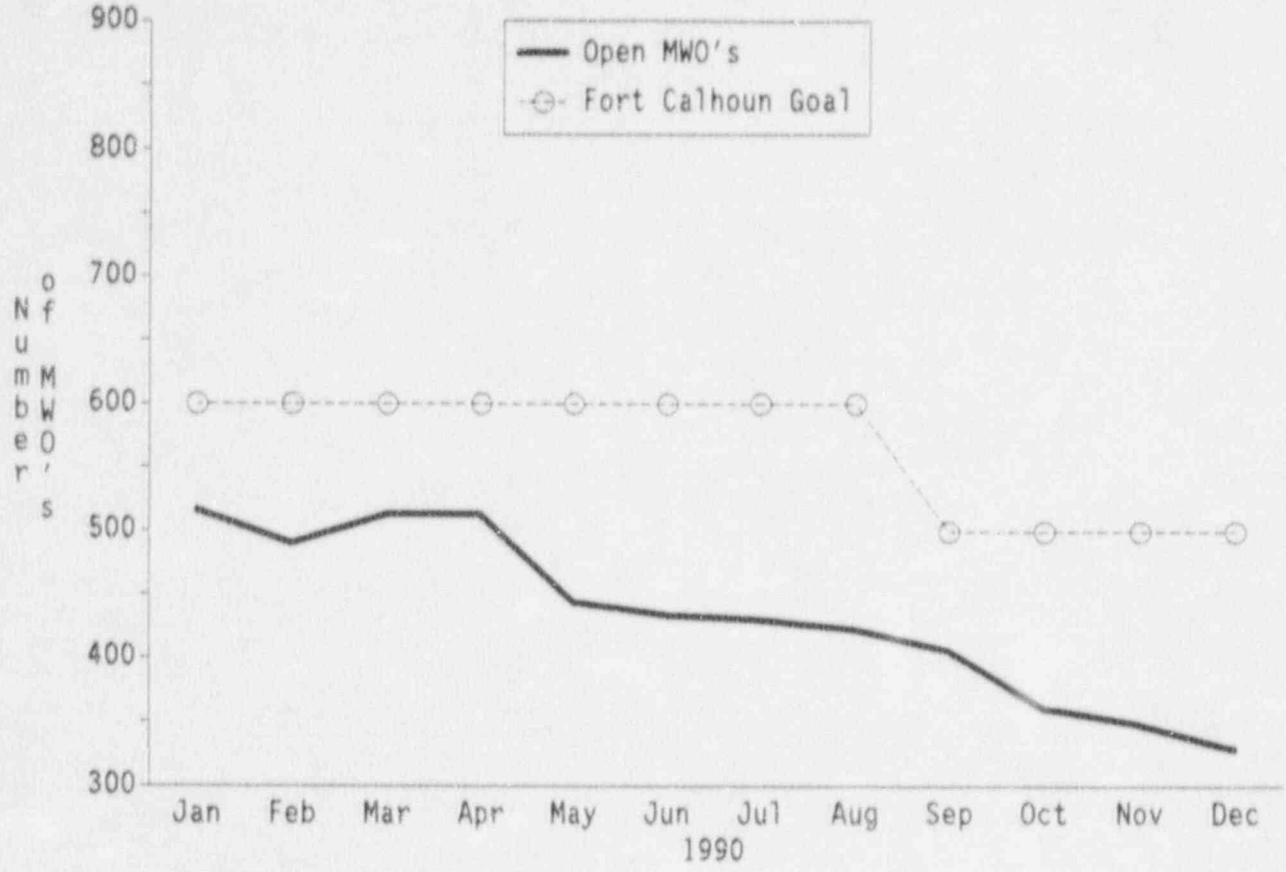


PROCEDURAL NONCOMPLIANCE INCIDENTS
(MAINTENANCE)

This indicator shows the number of identified Maintenance Incidents Reports (IR's) that are related to the use of procedures, the number of closed IR's that are related to the use of procedures (includes IR's that were caused by procedural noncompliance), and the number of closed IR's that were caused by procedural noncompliance.

It should be noted that the second and third columns will lag behind the first column until the IR's are closed. This reporting method is due to the process in which IR's receive category codes. IR's receive their category codes when they are closed.

Adverse Trend: None SEP 15 & 44



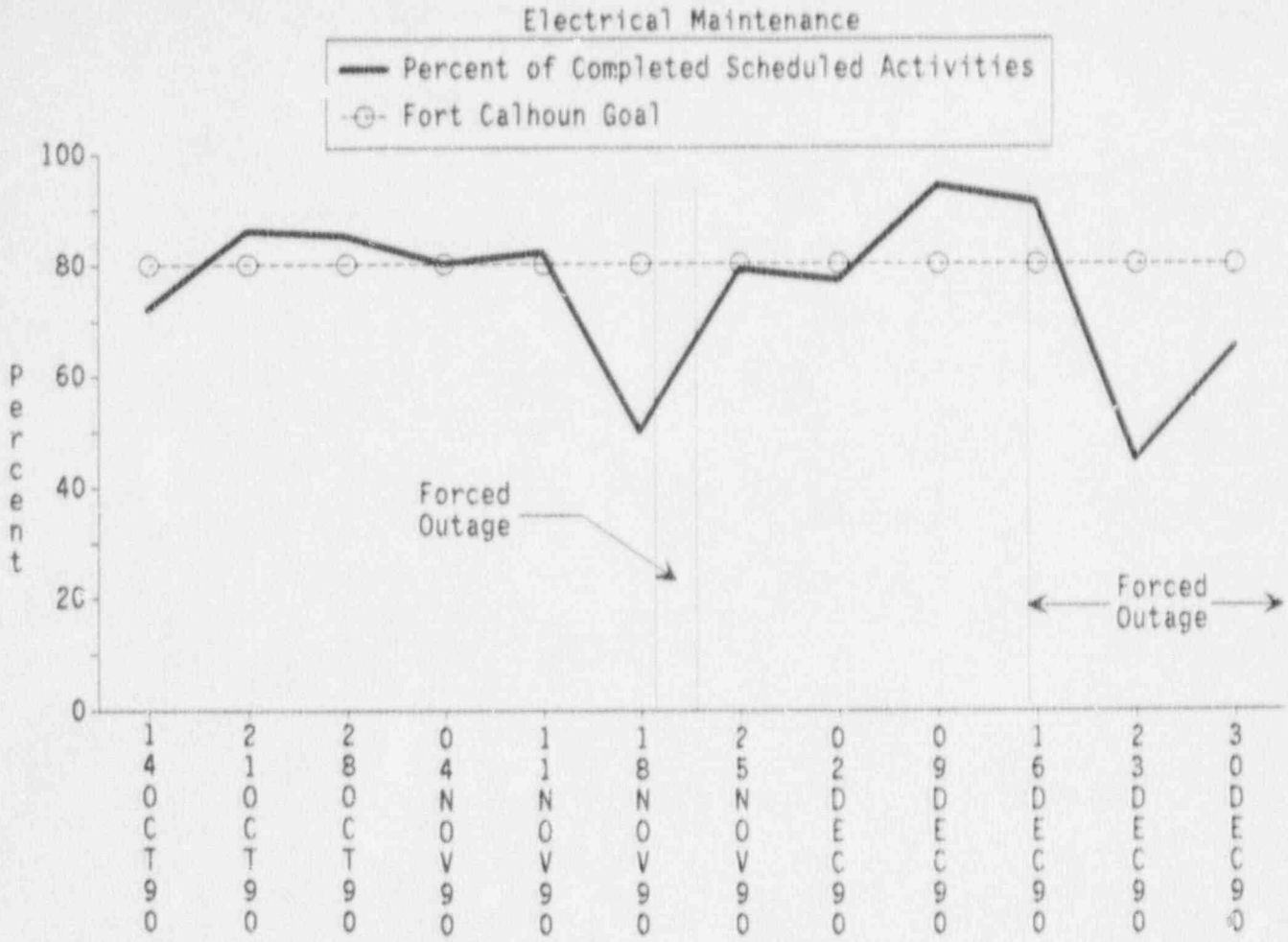
MAINTENANCE WORK ORDER BACKLOG
(CORRECTIVE NON-OUTAGE MAINTENANCE)

This indicator shows the number of corrective non-outage maintenance work orders that are open at the end of the reporting month.

At the end of December 1990, there were 329 corrective non-outage maintenance work orders remaining open.

The goal for this indicator is to have less than 500 corrective non-outage maintenance work orders remaining open.

Adverse Trend: None SEP 36



PERCENT OF COMPLETED SCHEDULED MAINTENANCE ACTIVITIES
(ELECTRICAL MAINTENANCE)

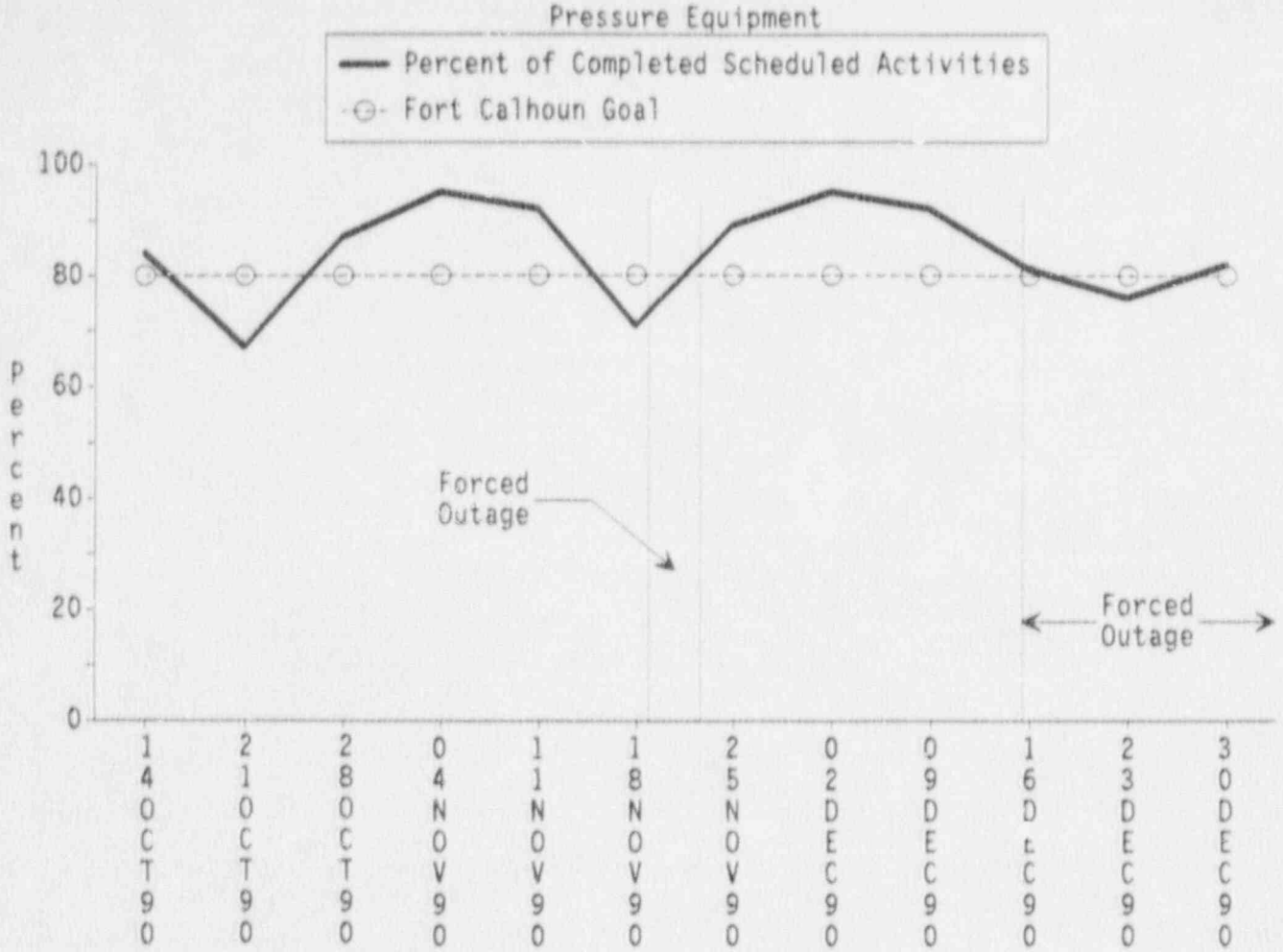
This indicator shows the percent of the number of completed maintenance activities as compared to the number of scheduled maintenance activities concerning Electrical Maintenance. Maintenance activities include MWR's, MWO's, ST's, PMO's, calibrations, and miscellaneous maintenance activities.

The Fort Calhoun Station goal for this indicator is 80%.

WEEK ENDING	PERCENT OF COMPLETED SCHEDULED ACTIVITIES
12/02/90	77
12/09/90	94
12/16/90	91
12/23/90	45
12/30/90	65

Adverse Trend: None

SEP 33



PERCENT OF COMPLETED SCHEDULED MAINTENANCE ACTIVITIES
(PRESSURE EQUIPMENT)

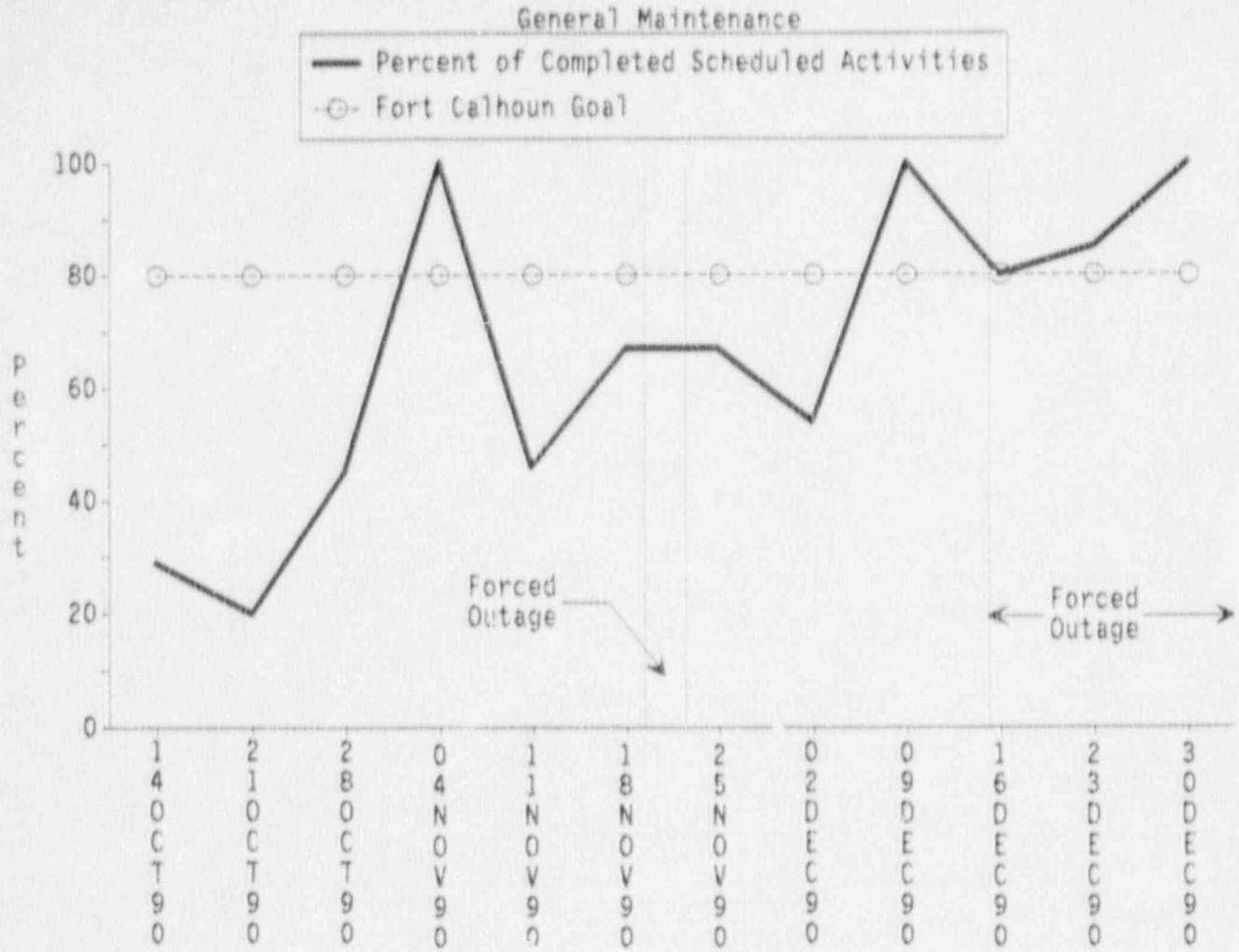
This indicator shows the percent of the number of completed maintenance activities as compared to the number of scheduled maintenance activities concerning Pressure Equipment Maintenance. Maintenance activities include MWR's, MWO's, ST's, PMO's, calibrations, and miscellaneous maintenance activities.

The Fort Calhoun Station goal for this indicator is 80%.

WEEK ENDING	PERCENT OF COMPLETED SCHEDULED ACTIVITIES
12/02/90	95
12/09/90	92
12/16/90	81
12/23/90	76
12/30/90	82

Adverse Trend: None

SEP 33



PERCENT OF COMPLETED SCHEDULED MAINTENANCE ACTIVITIES (GENERAL MAINTENANCE)

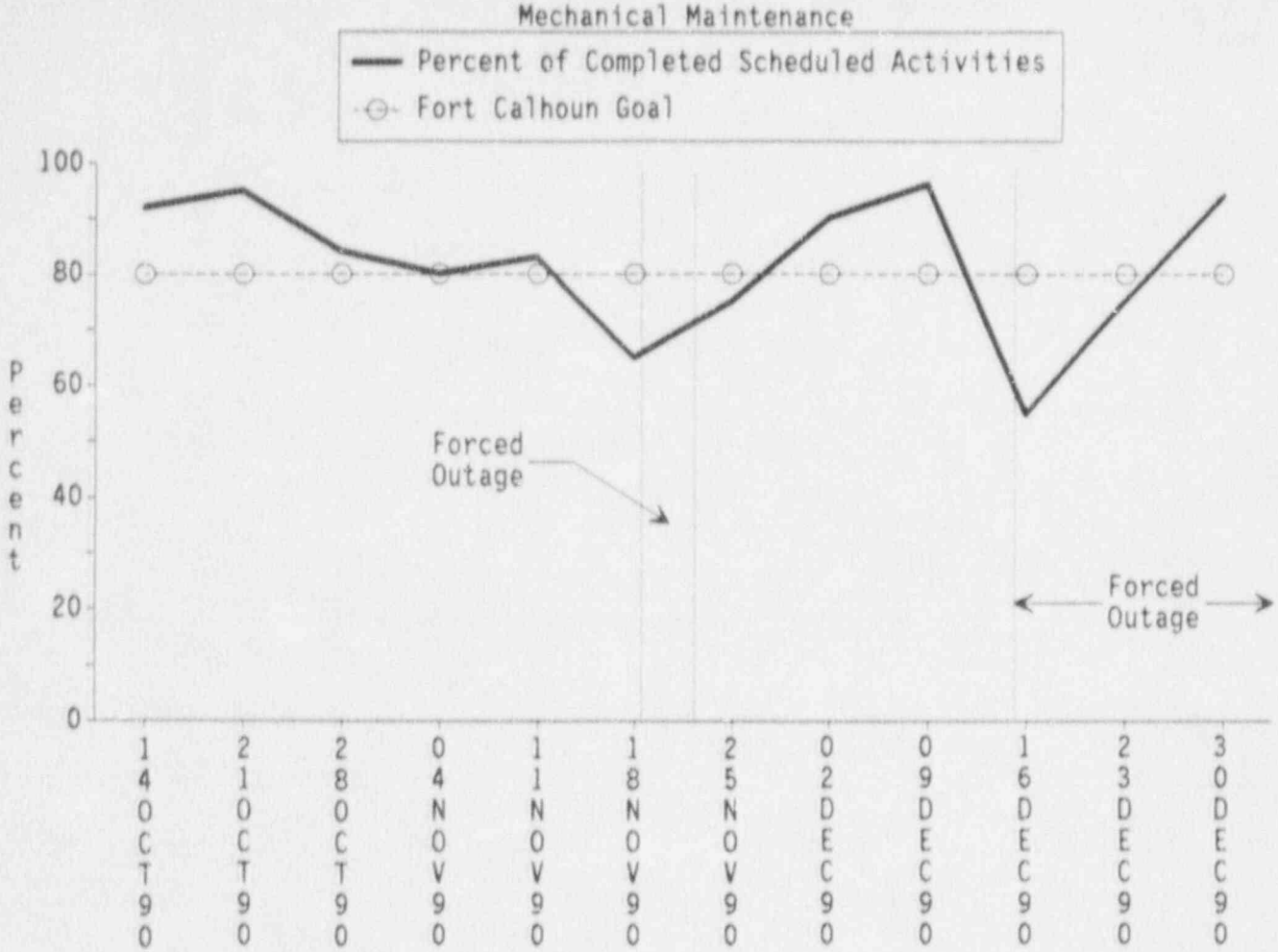
This indicator shows the percent of the number of completed maintenance activities as compared to the number of scheduled maintenance activities concerning General Maintenance. Maintenance activities include MWR's, MWO's, ST's, PMO's, calibrations, and miscellaneous maintenance activities.

The Fort Calhoun Station goal for this indicator is 80%.

WEEK ENDING	PERCENT OF COMPLETED SCHEDULED ACTIVITIES
12/02/90	54
12/09/90	100
12/16/90	80
12/23/90	85
12/30/90	100

Adverse Trend: None

SEP 33



PERCENT OF COMPLETED SCHEDULED MAINTENANCE ACTIVITIES
(MECHANICAL MAINTENANCE)

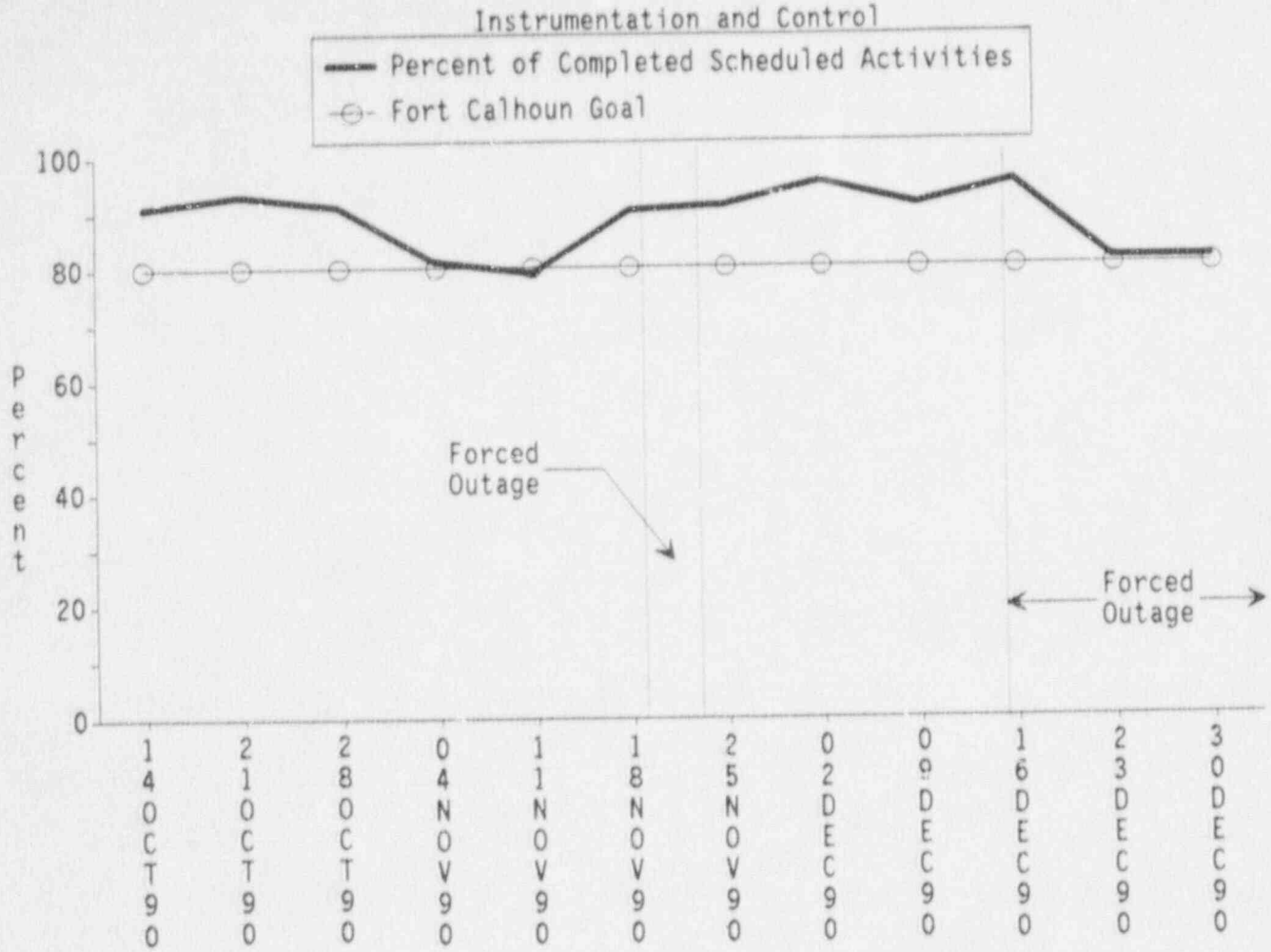
This indicator shows the percent of the number of completed maintenance activities as compared to the number of scheduled maintenance activities concerning Mechanical Maintenance. Maintenance activities include MWR's, MWO's, ST's, PMO's, calibrations, and miscellaneous maintenance activities.

The Fort Calhoun Station goal for this indicator is 80%.

WEEK ENDING	PERCENT OF COMPLETED SCHEDULED ACTIVITIES
12/02/90	90
12/09/90	96
12/16/90	55
12/23/90	75
12/30/90	94

Adverse Trend: None

SEP 33



PERCENT OF COMPLETED SCHEDULED MAINTENANCE ACTIVITIES (INSTRUMENTATION & CONTROL)

This indicator shows the percent of the number of completed maintenance activities as compared to the number of scheduled maintenance activities concerning Instrumentation & Control. Maintenance activities include MWR's, MWO's, ST's, PMO's, calibrations, and miscellaneous maintenance activities.

The Fort Calhoun Station goal for this indicator is 80%.

WEEK ENDING	PERCENT OF COMPLETED SCHEDULED ACTIVITIES
12/02/90	95
12/09/90	91
12/16/90	95
12/23/90	81
12/30/90	81

Adverse Trend: None

SEP 33

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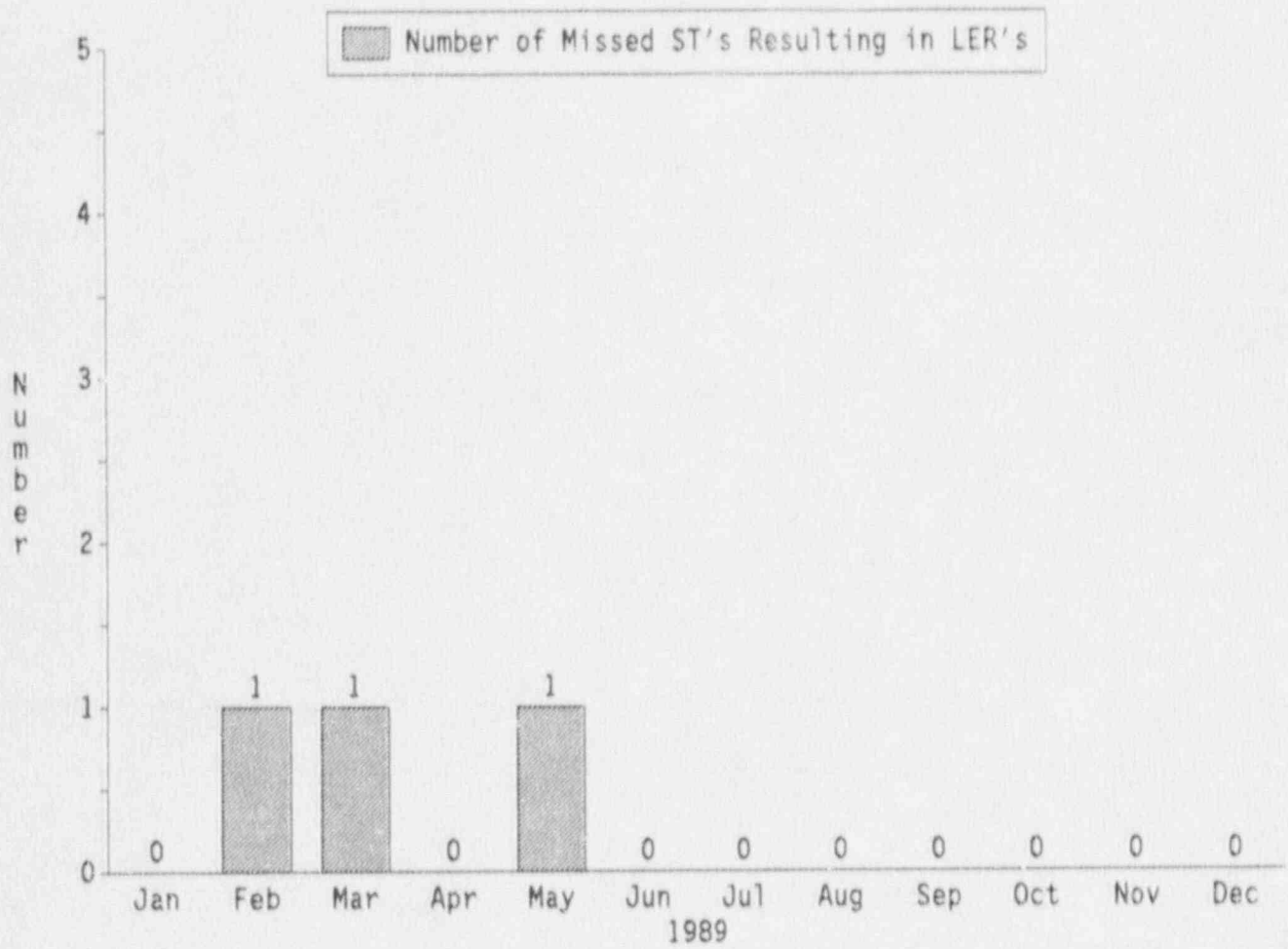
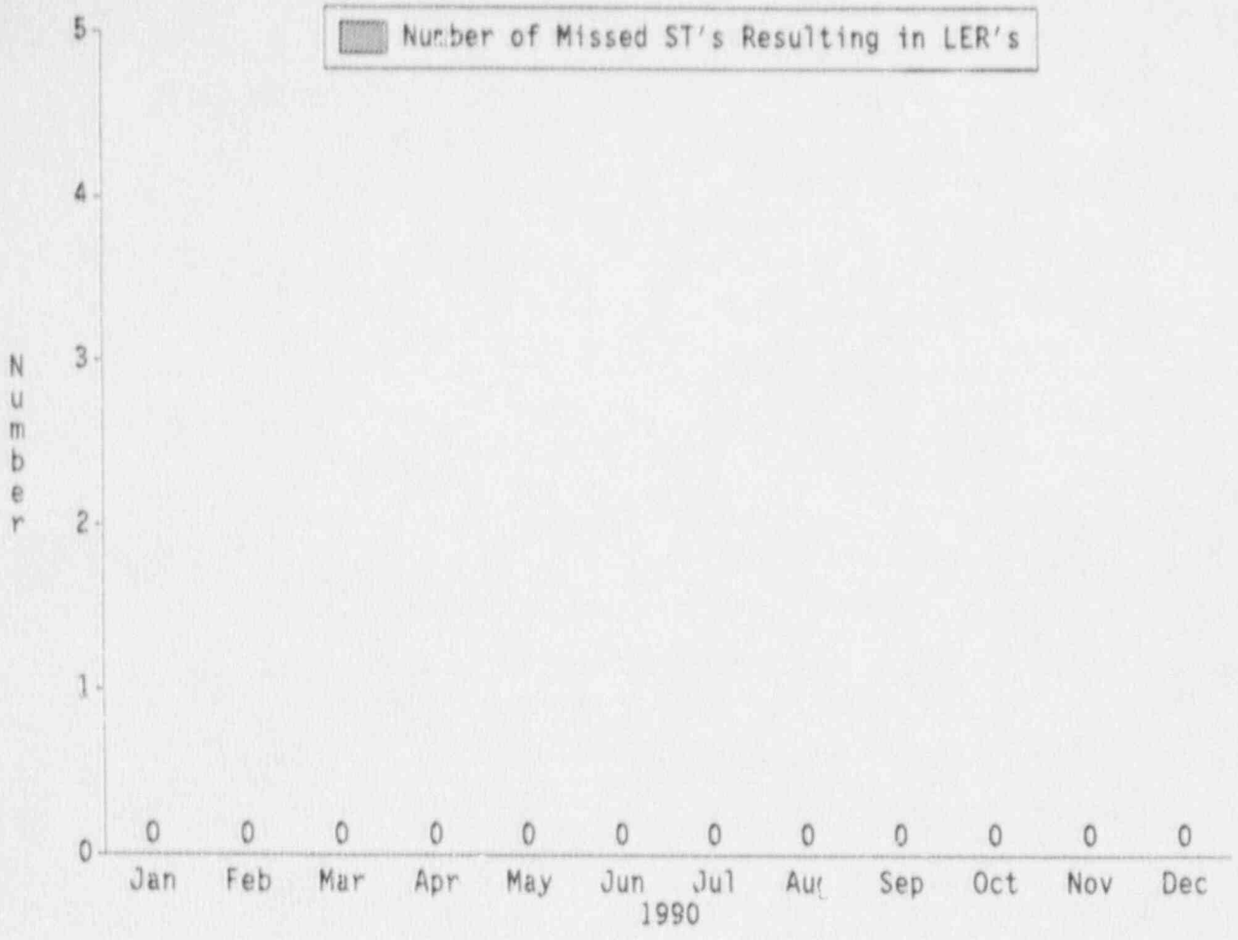

Number of Missed ST's Resulting in LER's
Number
5
4
3
2
1
0
0
1
1
0
1
0
0
0
0
0
0
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989

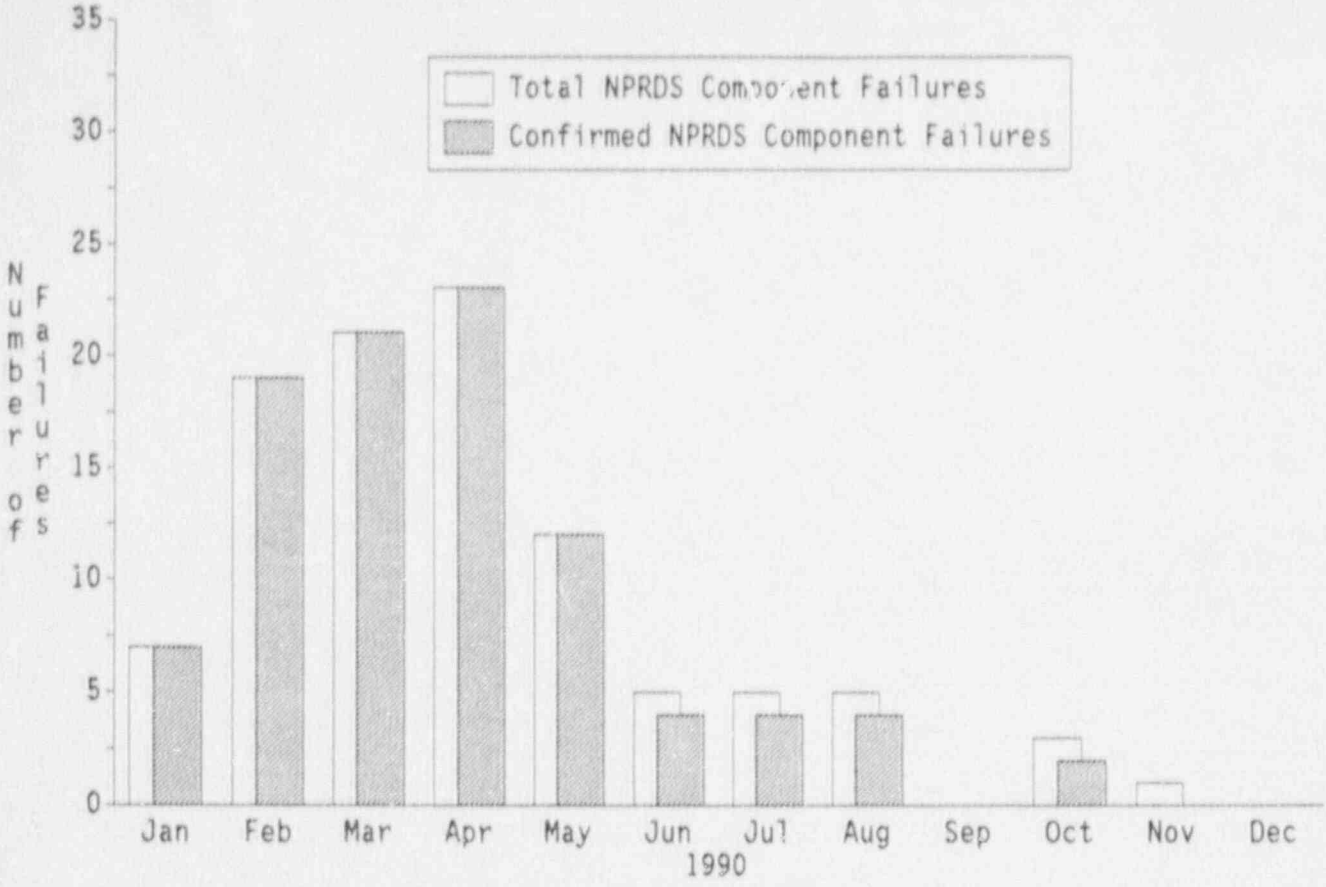


NUMBER OF MISSED SURVEILLANCE TESTS
RESULTING IN LICENSEE EVENT REPORTS

This indicator shows the number of missed Surveillance Tests (ST's) that result in Licensee Event Reports (LER's) during the reporting month.

During the month of December 1990, were zero missed ST's that result LER's.

Adverse Trend: None SEP 60 & 61

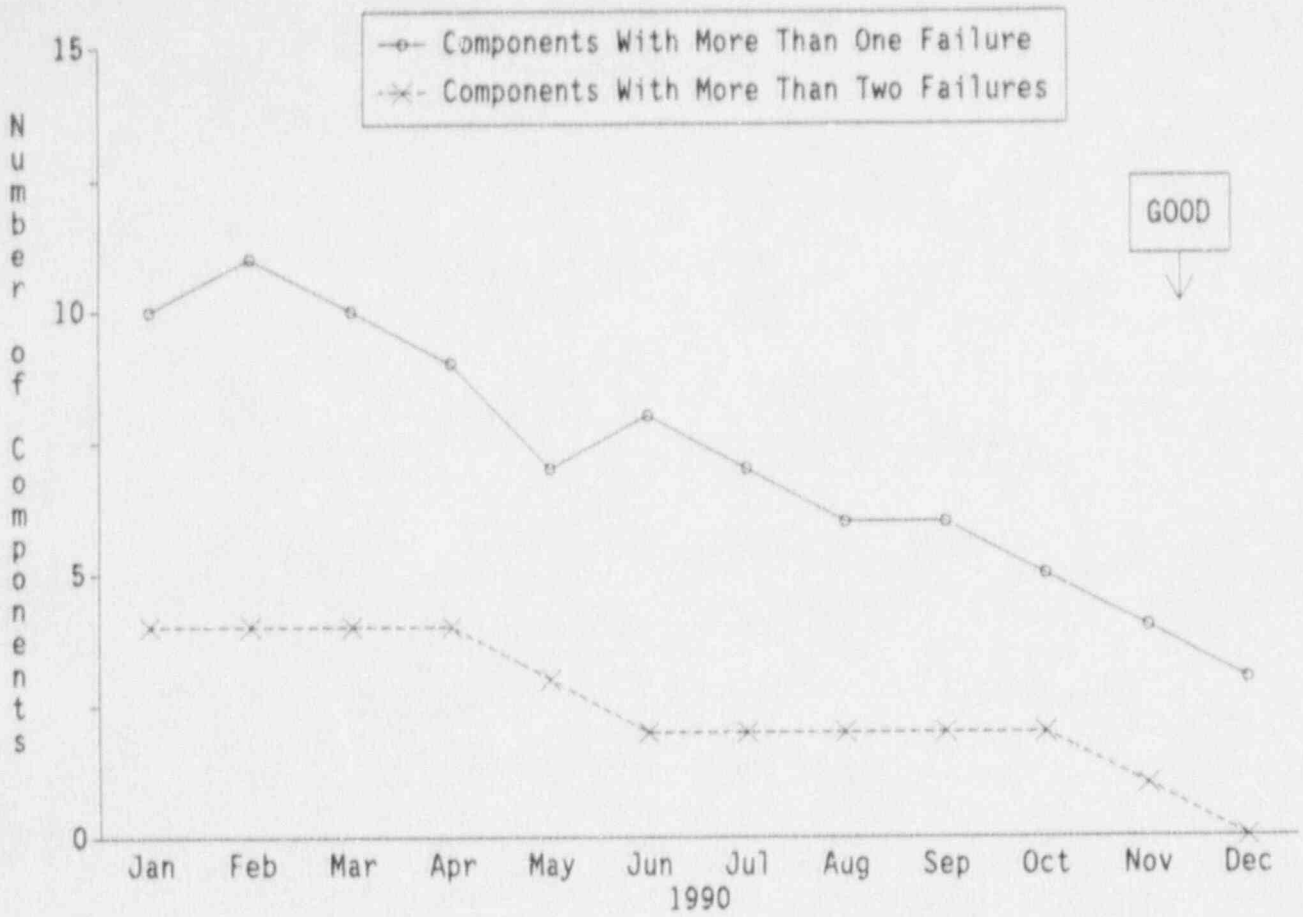


NUMBER OF NUCLEAR PLANT RELIABILITY
DATA SYSTEMS (NPRDS)
REPORTABLE FAILURES

This indicator shows the total number of NPRDS component failures and the number of confirmed NPRDS component failures. The total number of NPRDS component failures is based upon the number of failure reports sent to INPO. The number of confirmed NPRDS component failures is based upon the number of failure reports that have been accepted by INPO. The difference of these two figures is the number of failure reports still under review by INPO.

During December 1990, there was a total of zero confirmed NPRDS component failures.

Adverse Trend: None



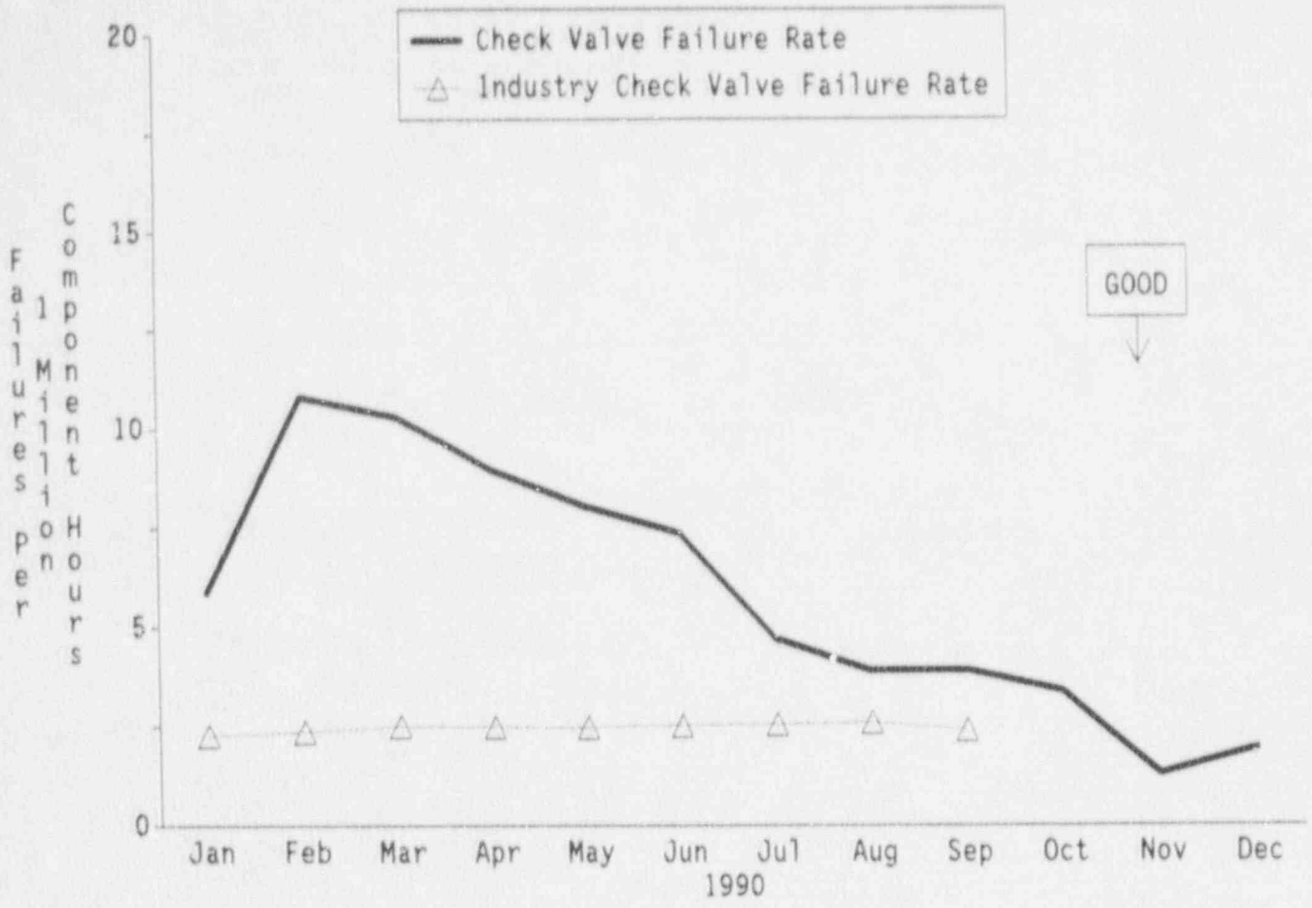
MAINTENANCE EFFECTIVENESS

The Maintenance Effectiveness Indicator was developed following guidelines set forth by the Nuclear Regulatory Commission's Office for Analysis and Evaluation of Operational Data (NRC/AEOD). The NRC/AEOD is currently developing and verifying a maintenance effectiveness indicator using the Nuclear Plant Reliability Data System (NPRDS) component failures.

This indicator shows the number of NPRDS components with more than one failure during the last twelve months and the number of NPRDS components with more than two failures during the last twelve months. The number of NPRDS components with more than two failures in a twelve-month period should indicate the effectiveness of plant maintenance.

During December 1990, there were 3 NPRDS components with more than one failure and zero NPRDS components with more than two failures.

Adverse Trend: None



CHECK VALVE FAILURE RATE

This indicator shows the Fort Calhoun check valve failure rate and the industry check valve failure rate.

The data for the industry check valve failure rate is three months behind the Performance Indicators Report reporting month due to the time involved in collecting and processing the data. The industry failure rate is based upon failures that have occurred in the previous 18 month interval.

For September 1990, the Fort Calhoun Station reported a check valve failure rate of 3.91E-6 while the industry reported a failure rate of 2.42E-6. At the end of December, the Fort Calhoun Station reported a check valve failure rate of 1.96E-6. As of the end of September, the check valve failure rate for Fort Calhoun was higher than the industry check valve failure rate. The reason for the high check valve failure rate is that the plant is performing maintenance on check valves which have not been tested for failures before. As time goes on, the check valve failure rate is expected to decrease due to the fact that the check valves are now being maintained through the Check Valve Program.

Adverse Trend: None

SEP 43

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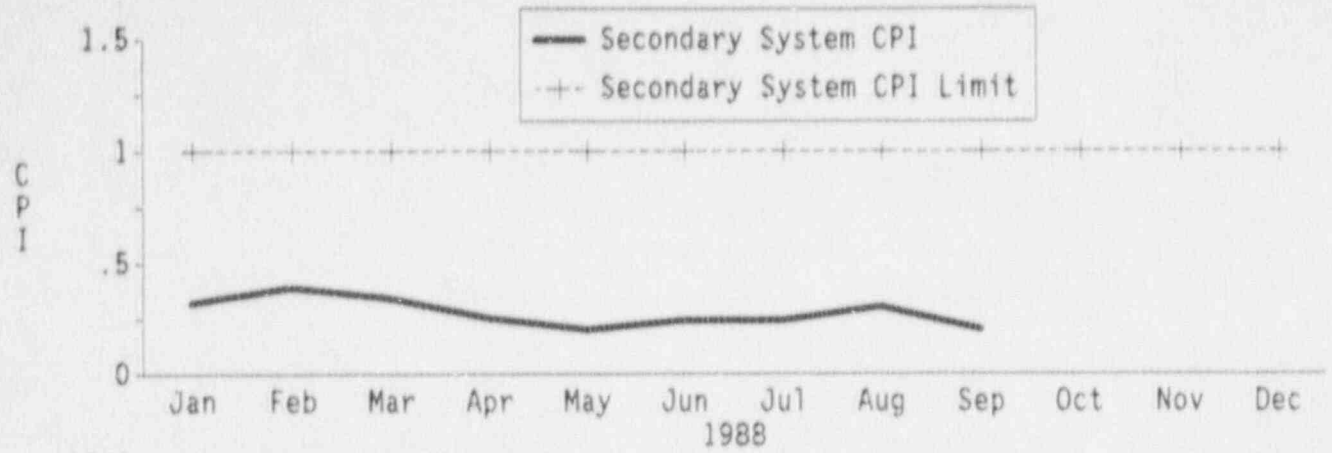
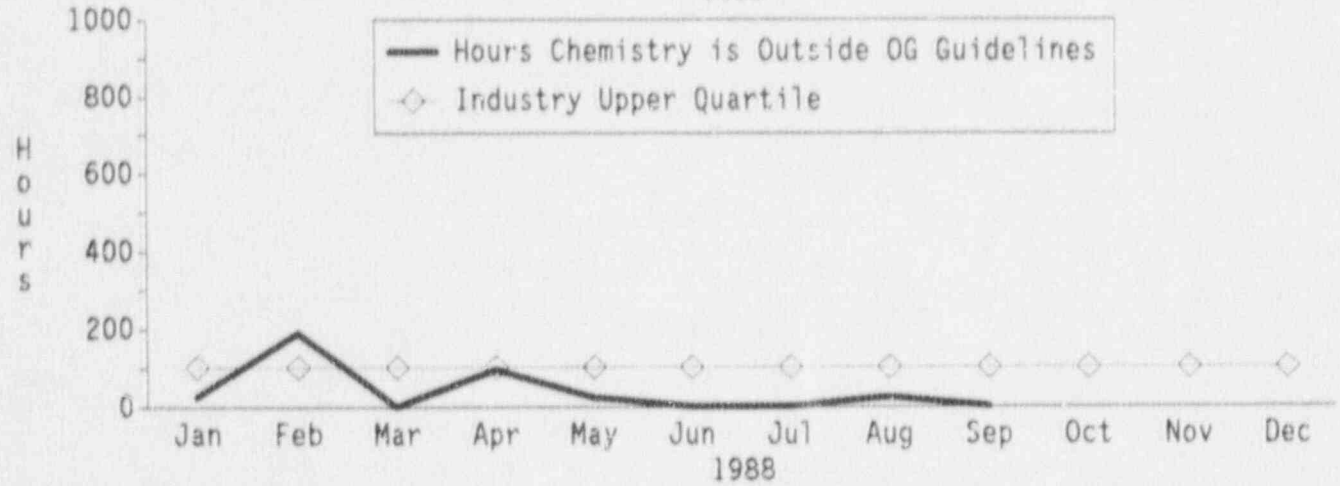
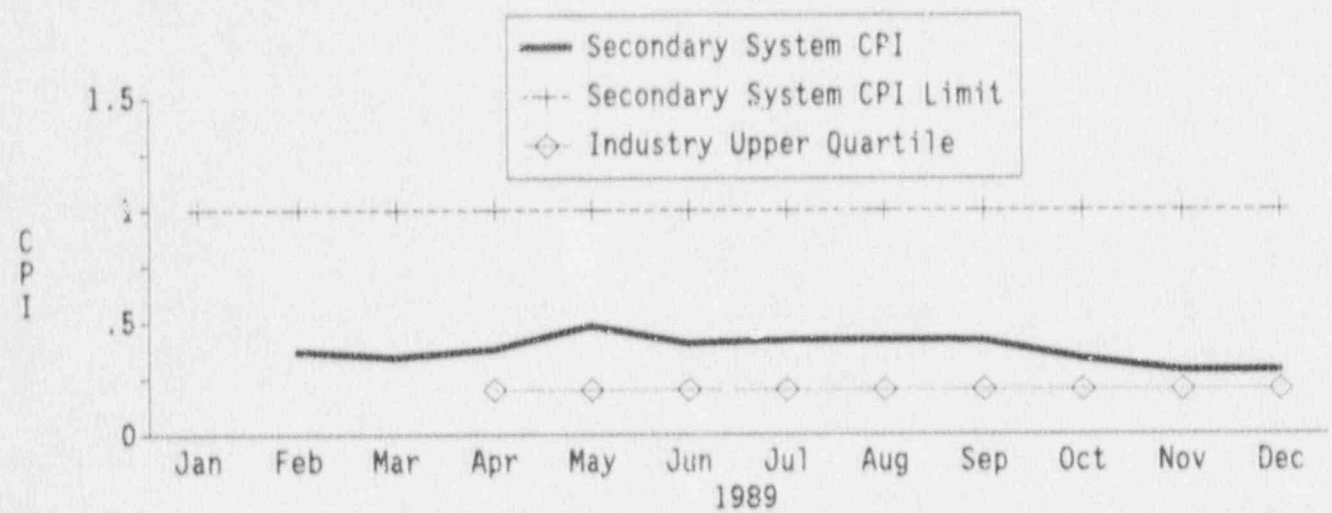
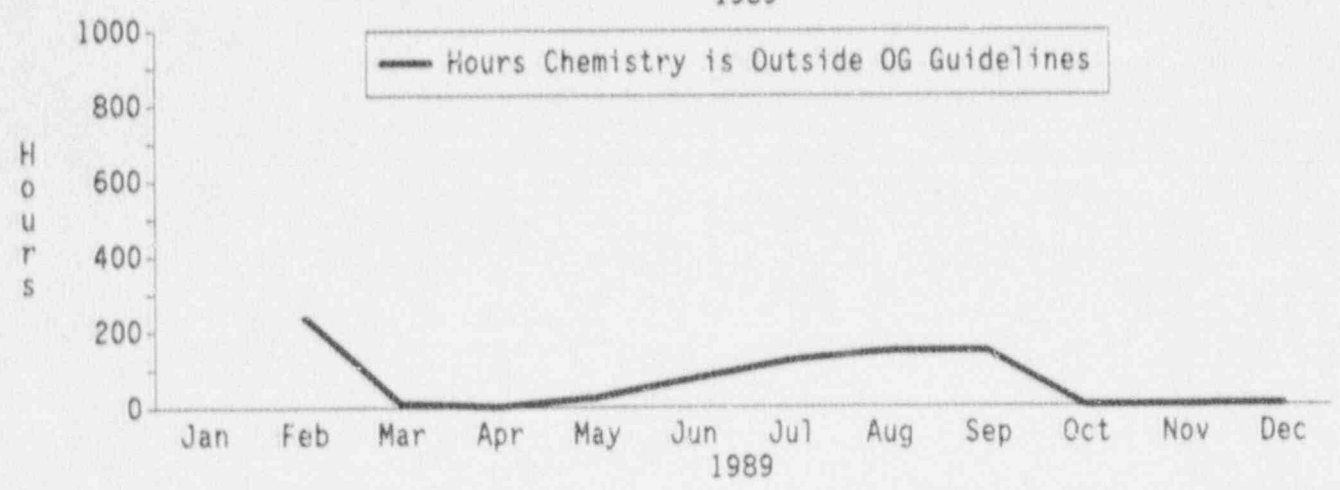
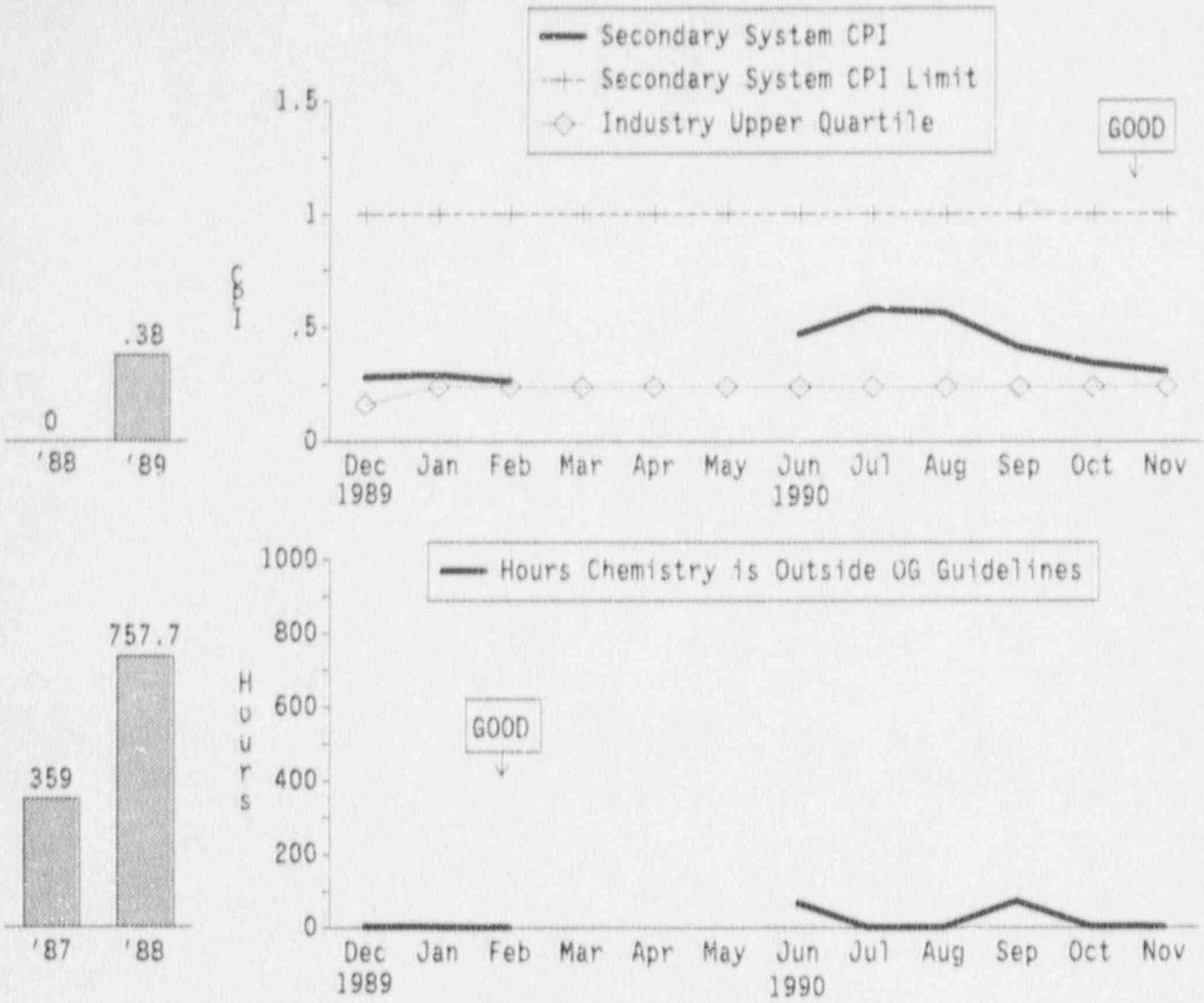

Secondary System CPI
Secondary System CPI Limit
CPI
1.5
1
.5
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1988


Hours Chemistry is Outside OG Guidelines
Industry Upper Quartile
Hours
1000
800
600
400
200
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1988


Secondary System CPI
Secondary System CPI Limit
Industry Upper Quartile
CPI
1.5
1
.5
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1989


Hours Chemistry is Outside OG Guidelines
Hours
1000
800
600
400
200
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1989



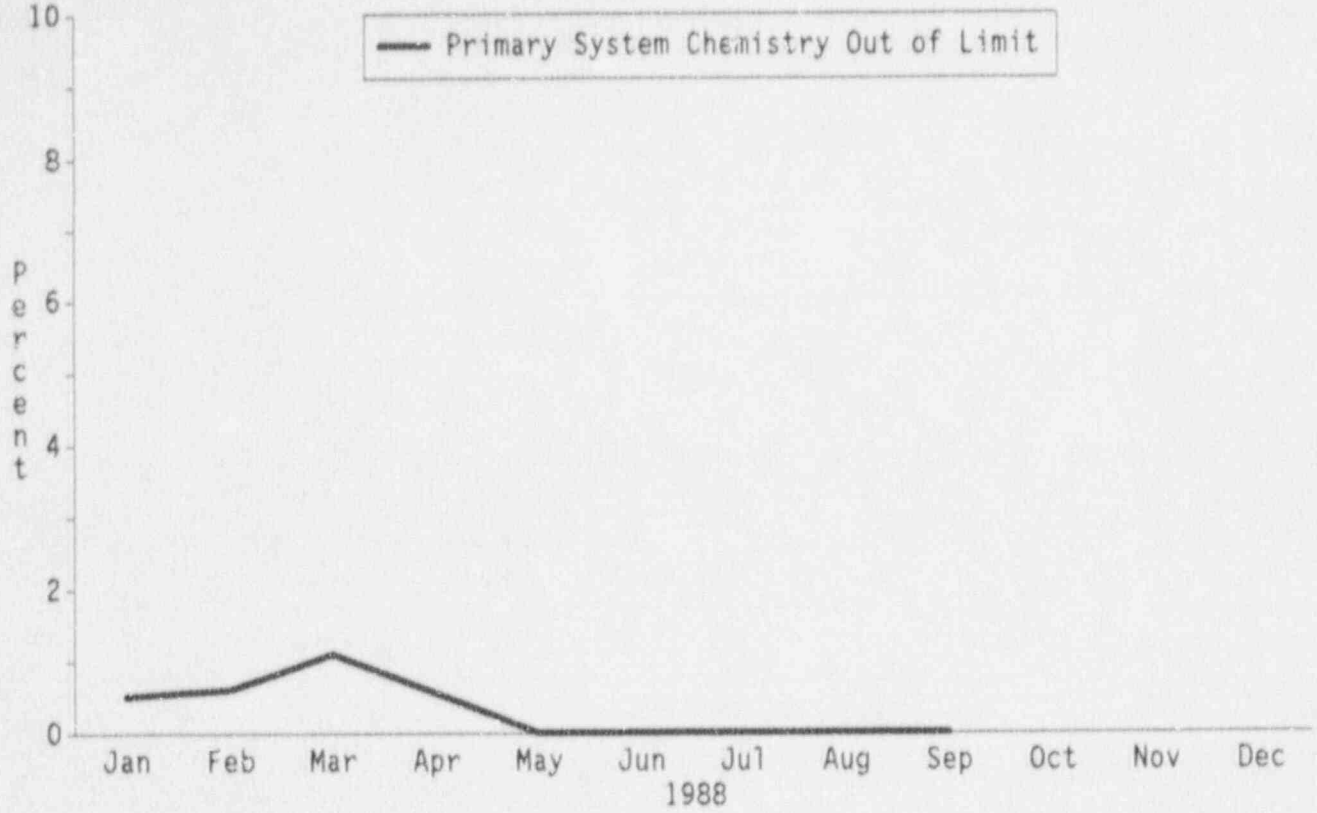
SECONDARY SYSTEM CHEMISTRY

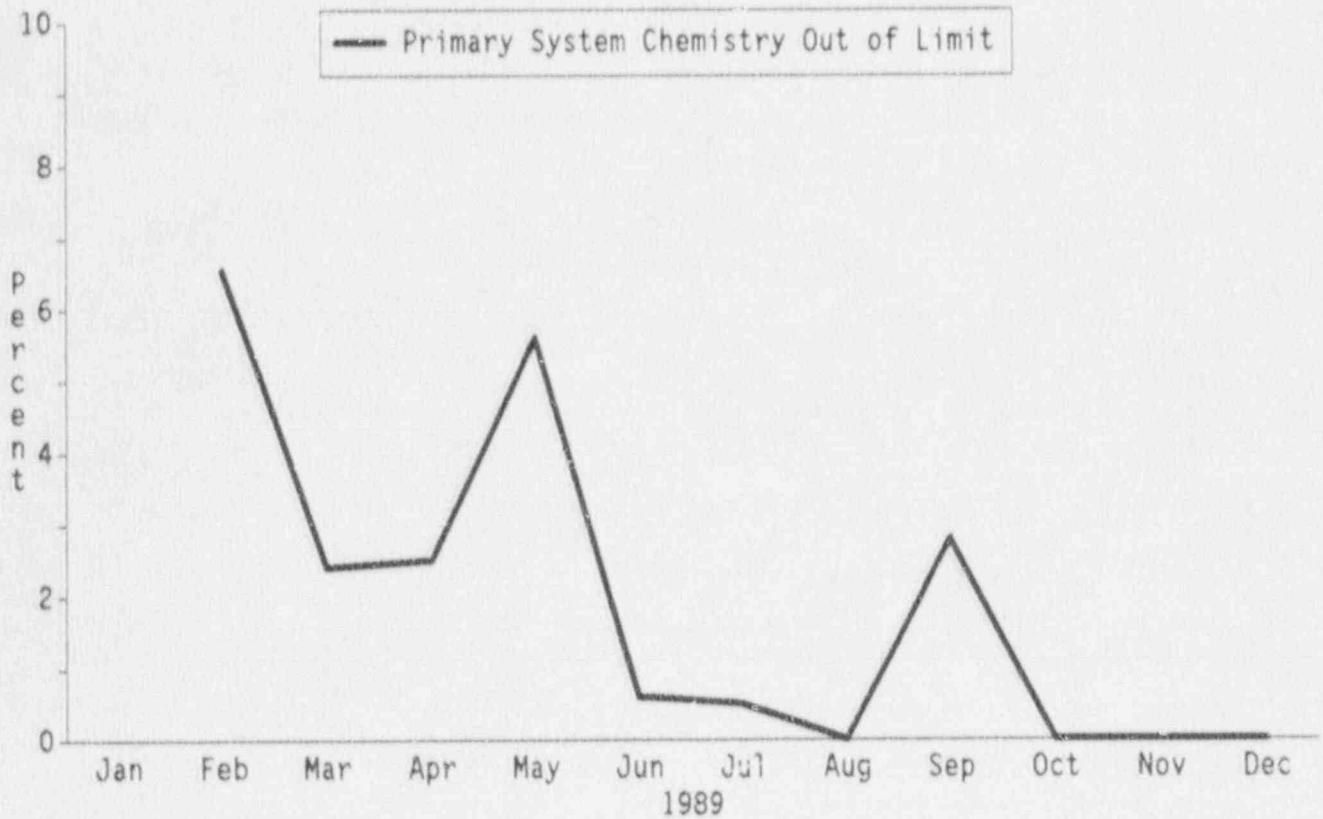
The top graph, Secondary System Chemistry Performance Index (CPI), is calculated using three parameters. The three parameters used include; cation conductivity in steam generator blowdown, sodium in steam generator blowdown, and condensate pump discharge dissolved oxygen. The CPI was reported as 0.31 for the month of November. The CPI values for June, July, and August are high due to startup after the 1990 Refueling Outage, various fluctuations in power which have occurred, and a forced outage in August. The industry upper quartile value for this indicator was 0.16 for August 1989 through December 1989. The CPI industry value then changed to 0.24 for 1990.

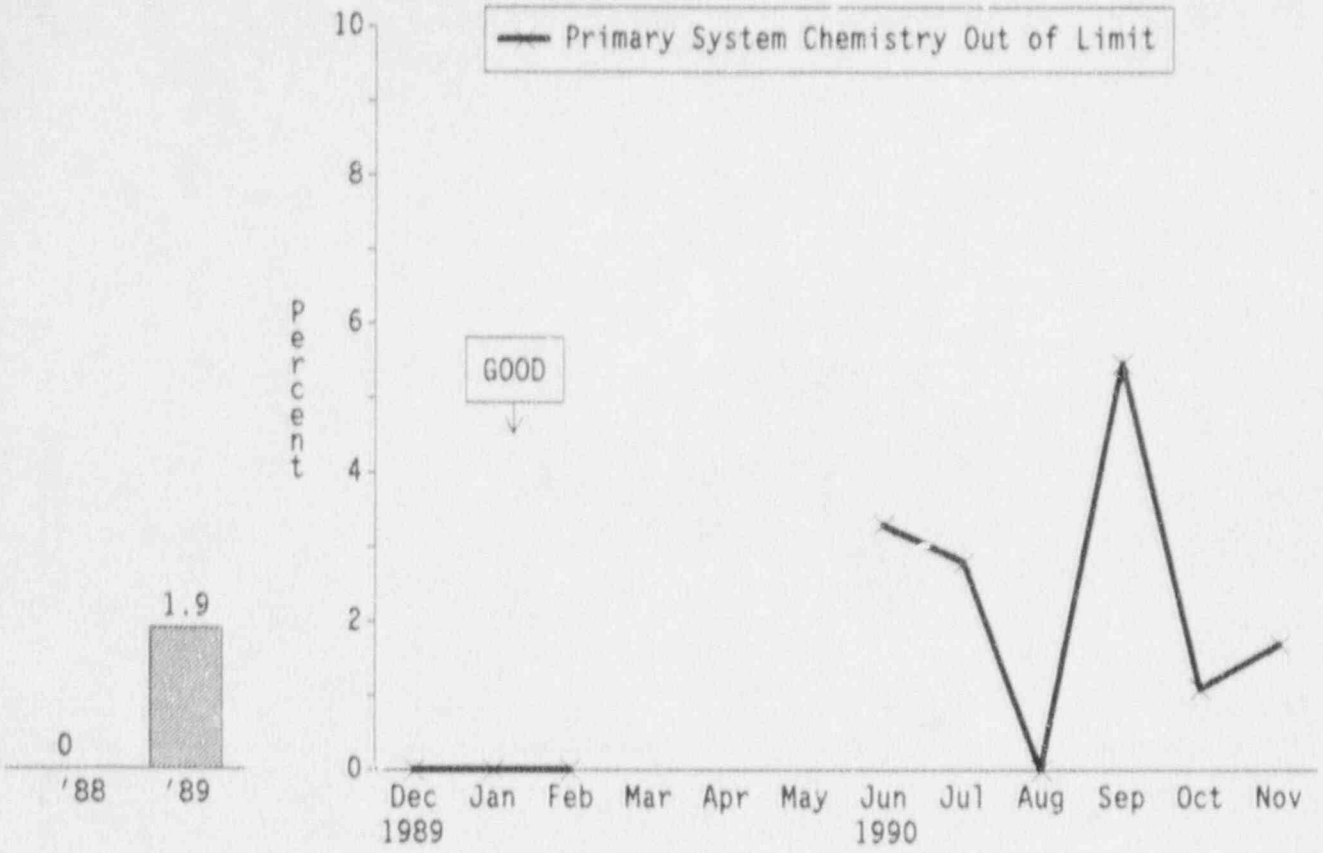
The bottom graph, Hours Chemistry is Outside Owners Group Guidelines, tracks the total hours of 13 parameters exceeding guidelines during power operation. The number of hours outside owners group guidelines was reported as 0.0 hours for the month of November.

The above two chemistry indicators are one month behind the reporting period due to the time needed for data collection and evaluation of the station chemistry data.

Adverse Trends: None


Primary System Chemistry Out of Limit
10
8
6
4
2
0
percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Primary System Chemistry Out of Limit
10
8
6
4
2
0
percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



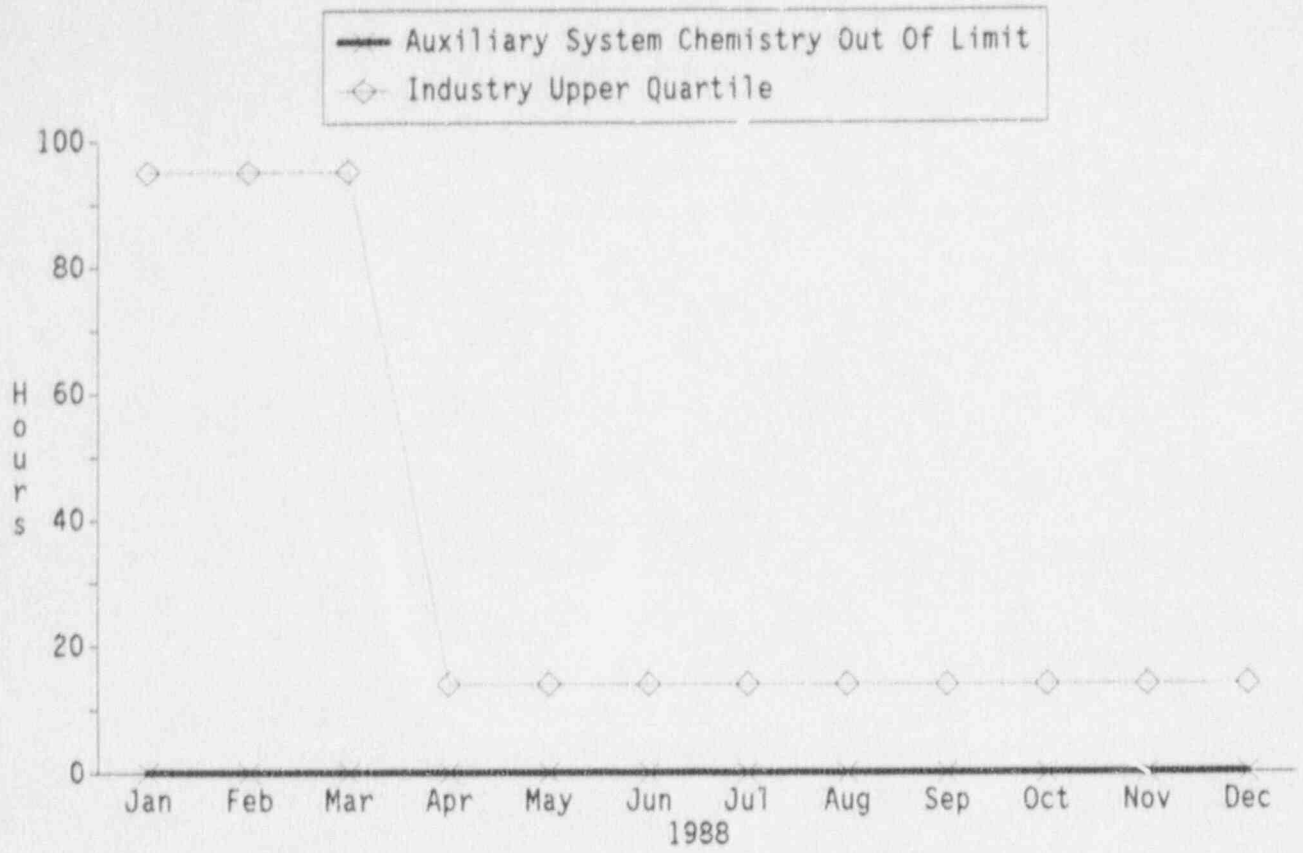
PRIMARY SYSTEM CHEMISTRY
PERCENT OF HOURS OUT OF LIMIT

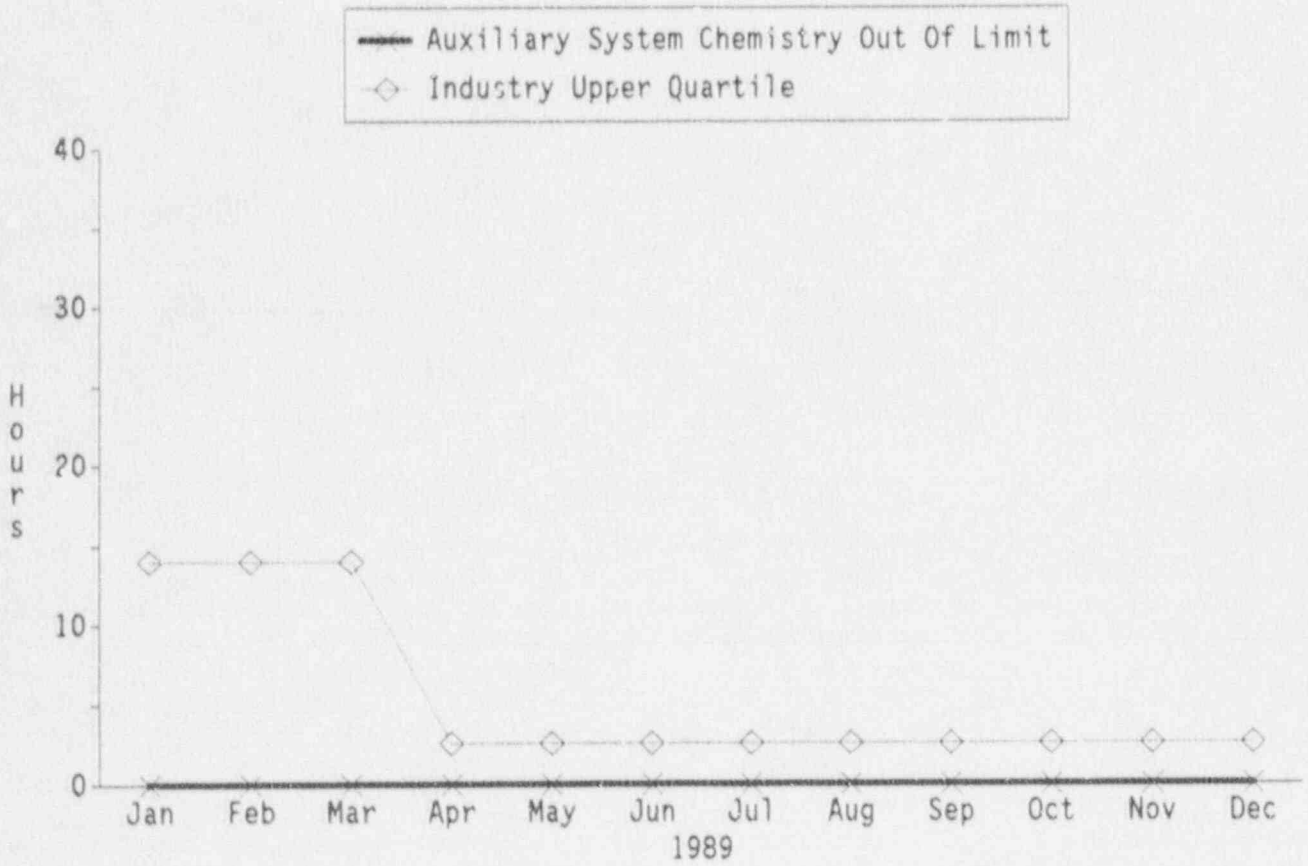
The Primary System Chemistry - Percent of Hours Out of Limit indicator tracks the primary system chemistry performance by monitoring six key chemistry parameters.

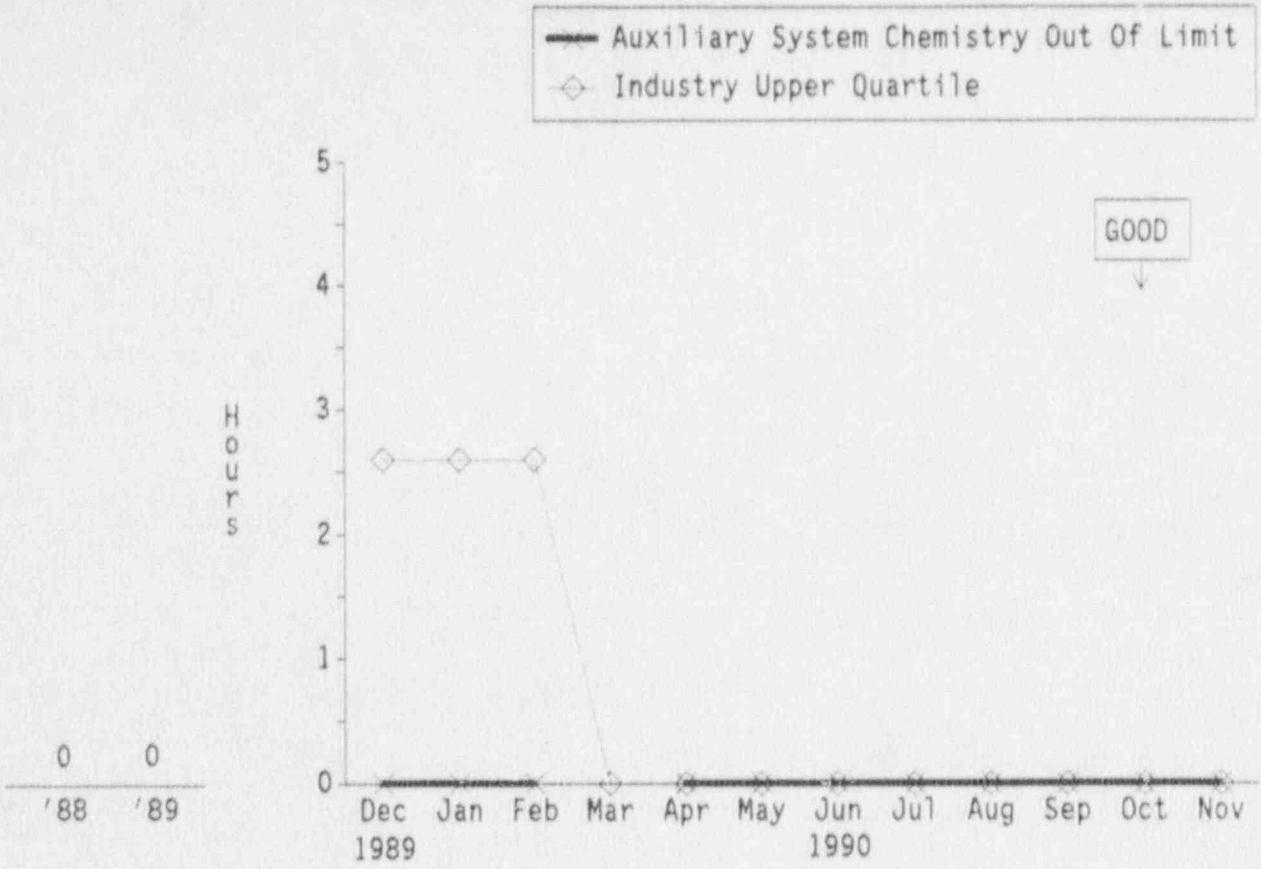
The Primary System Chemistry Percent of Hours Out of Limit was reported as 1.7% for the month of November.

The high percent of hours out of limit for the primary system during June and July was due to startup after the 1990 Refueling Outage and various power fluctuations which occurred during June and July. The high percent of hours out of limit for the month of September 1990 was due a shutdown and a startup which occurred. The high percent of hours out of limit which was reported for November was due to a shutdown and startup which occurred. 100% equates to all six parameters being out of limit for the month.

Adverse Trend: None


Auxiliary System Chemistry Out Of Limit
Industry Upper Quartile
100
80
60
40
20
0
Hours
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Auxiliary System Chemistry Out Of Limit
Industry Upper Quartile
40
30
20
10
0
Hours
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



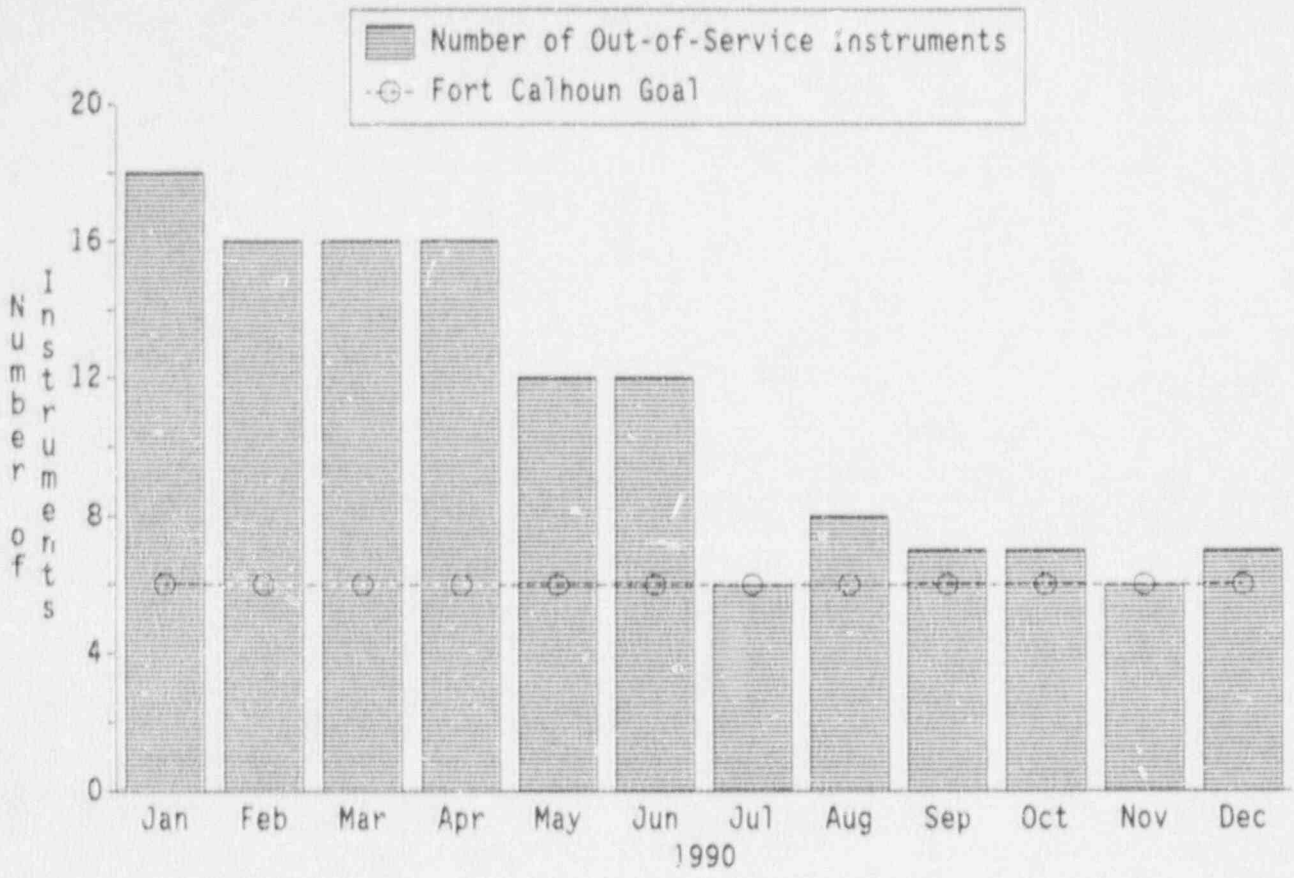
AUXILIARY SYSTEM (CCW) CHEMISTRY HOURS OUTSIDE STATION LIMITS

The Auxiliary System Chemistry Hours Outside Station Limits indicator tracks the monthly hours that the Component Cooling Water (CCW) system is outside the station chemistry limit. The above chemistry indicator is one month behind the reporting period due to the time needed for data collection and evaluation of the chemistry data for the station.

The auxiliary system chemistry hours outside station limits was reported as zero for the month of November.

The industry upper quartile value for auxiliary systems chemistry hours outside station limits is 0.0 hours. The Fort Calhoun Station is currently performing in the upper quartile of all nuclear power plants for this indicator.

Adverse Trend: None



IN-LINE CHEMISTRY INSTRUMENTS OUT-OF-SERVICE

This indicator shows the total number of in-line chemistry system instruments that are out-of-service at the end of the reporting month. The chemistry systems involved in this indicator include the Secondary System and the Post Accident Sampling System (PASS).

At the end of December there were a total of 7 in-line chemistry instruments that were out-of-service. Five of these instruments were from the Secondary System and two were from PASS.

The Fort Calhoun goal for the number of in-line chemistry system instruments that are out-of-service has been set at 6. Six out-of-service chemistry instruments make up 10% of all the chemistry instruments which are counted for this indicator.

Adverse Trend: None

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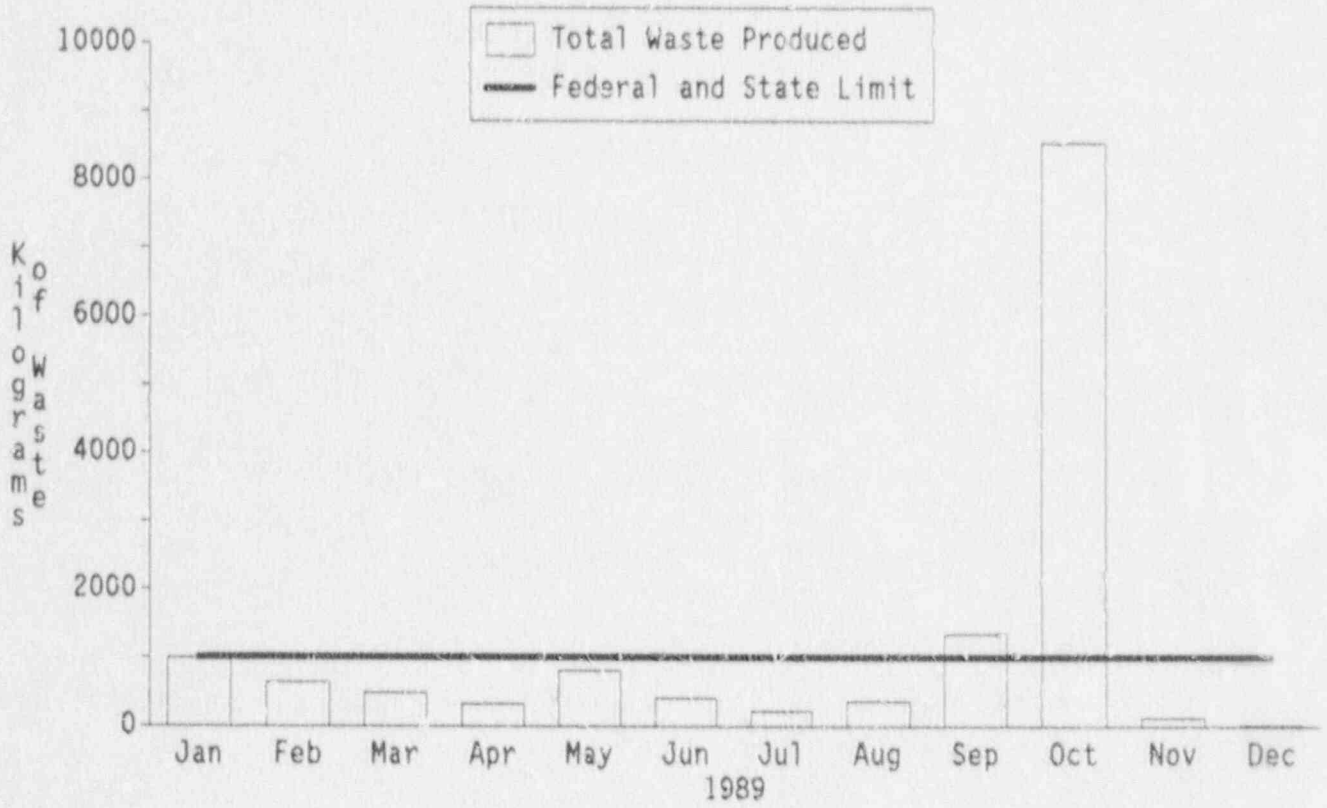
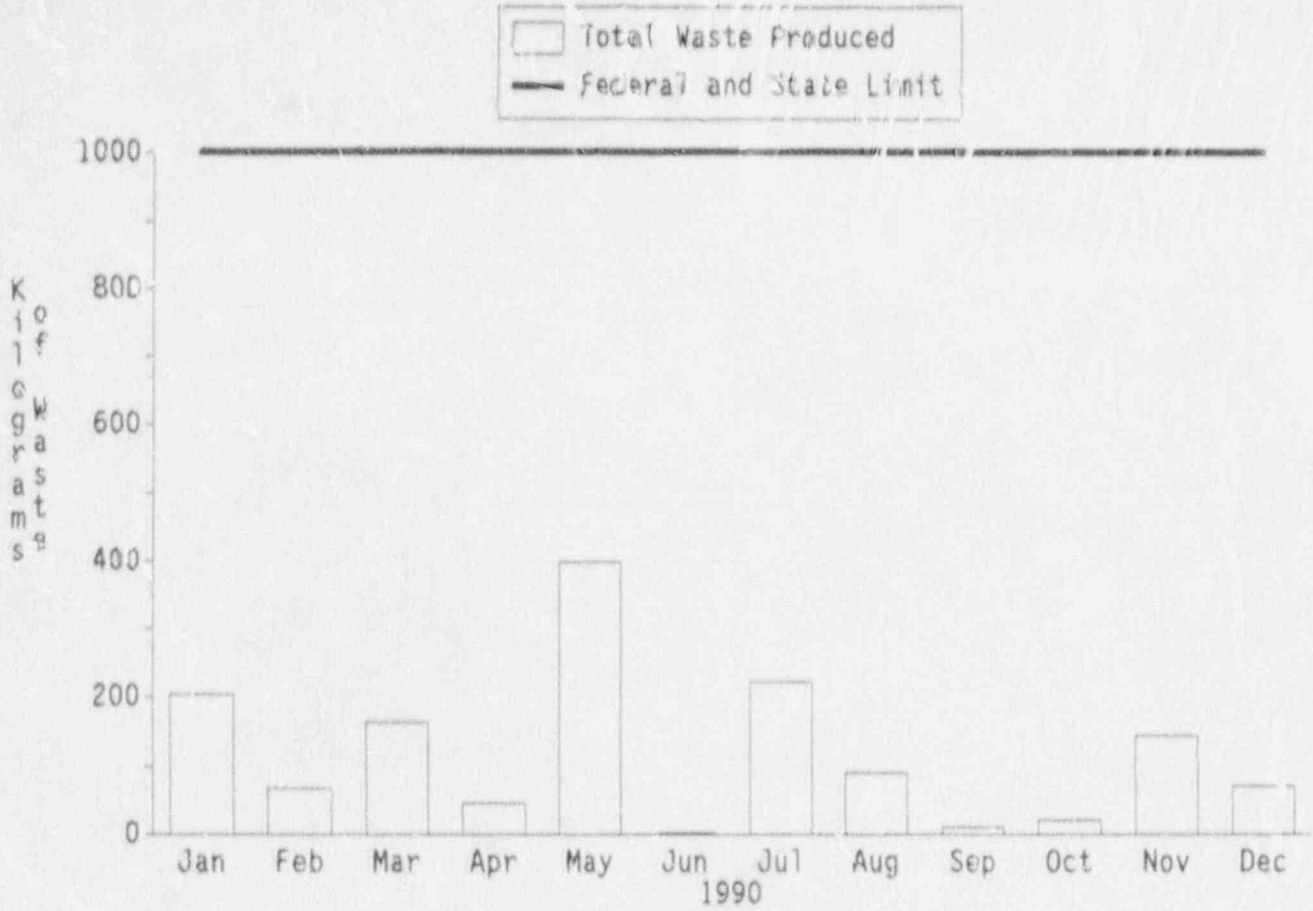

Total Waste Produced
Federal and State Limit
10000
8000
6000
4000
2000
0
Kilograms of Waste
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989

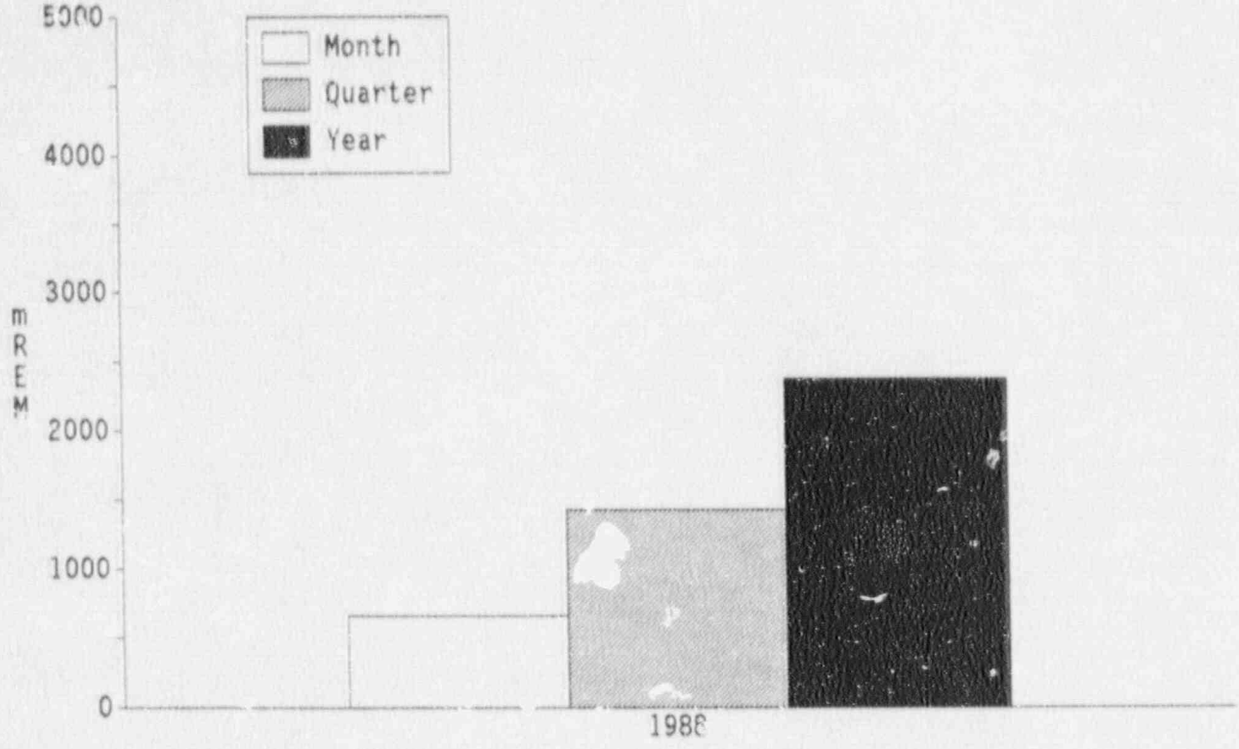


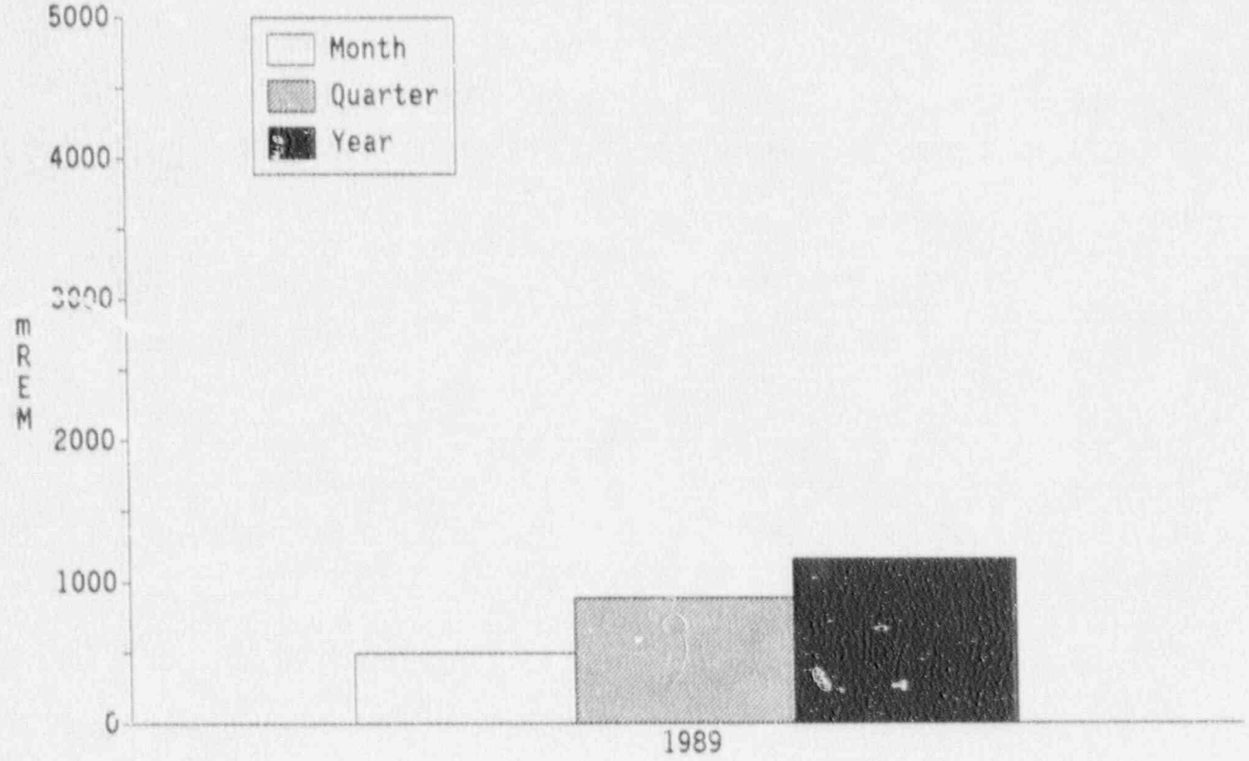
HAZARDOUS WASTE PRODUCED

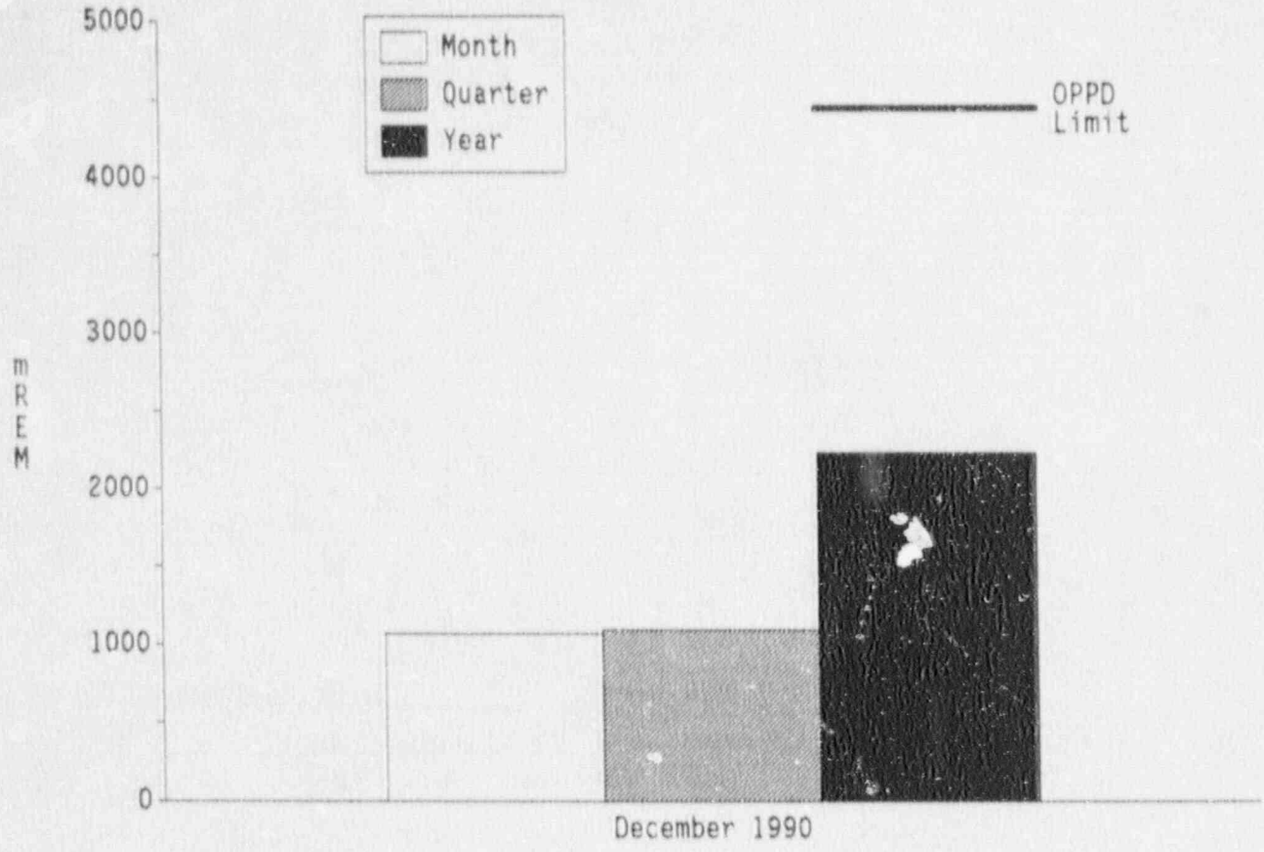
This indicator shows the total amount of hazardous waste produced by Fort Calhoun each month. This hazardous waste consists of non-halogenated hazardous waste, halogenated hazardous waste, and other hazardous waste produced.

During the month of December, 0.0 kilograms of non-halogenated hazardous waste was produced, 70.4 kilograms of halogenated hazardous waste was produced, and 0.0 kilograms of other hazardous waste was produced.

Adverse Trend: None


5000
4000
3000
2000
1000
0
mREM
Month
Quarter
Year
1988


5000
4000
3000
2000
1000
0
mREM
Month
Quarter
Year
1989



MAXIMUM INDIVIDUAL RADIATION EXPOSURE

During December 1990, an individual accumulated 1,073 mRem which was the highest individual exposure for the month.

The maximum individual exposure for the fourth quarter of 1990 was 1,097 mRem.

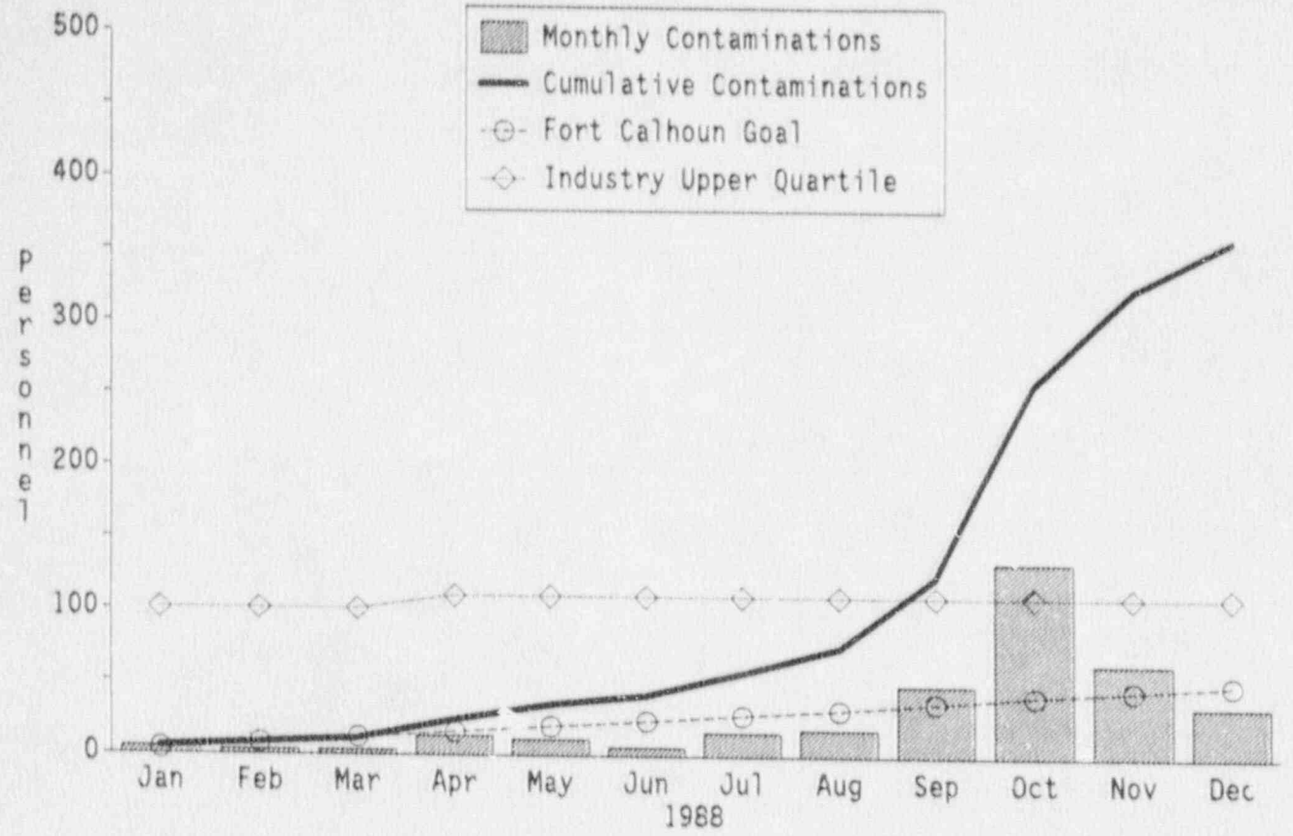
The maximum individual exposure reported for 1990 was 2,233 mRem.

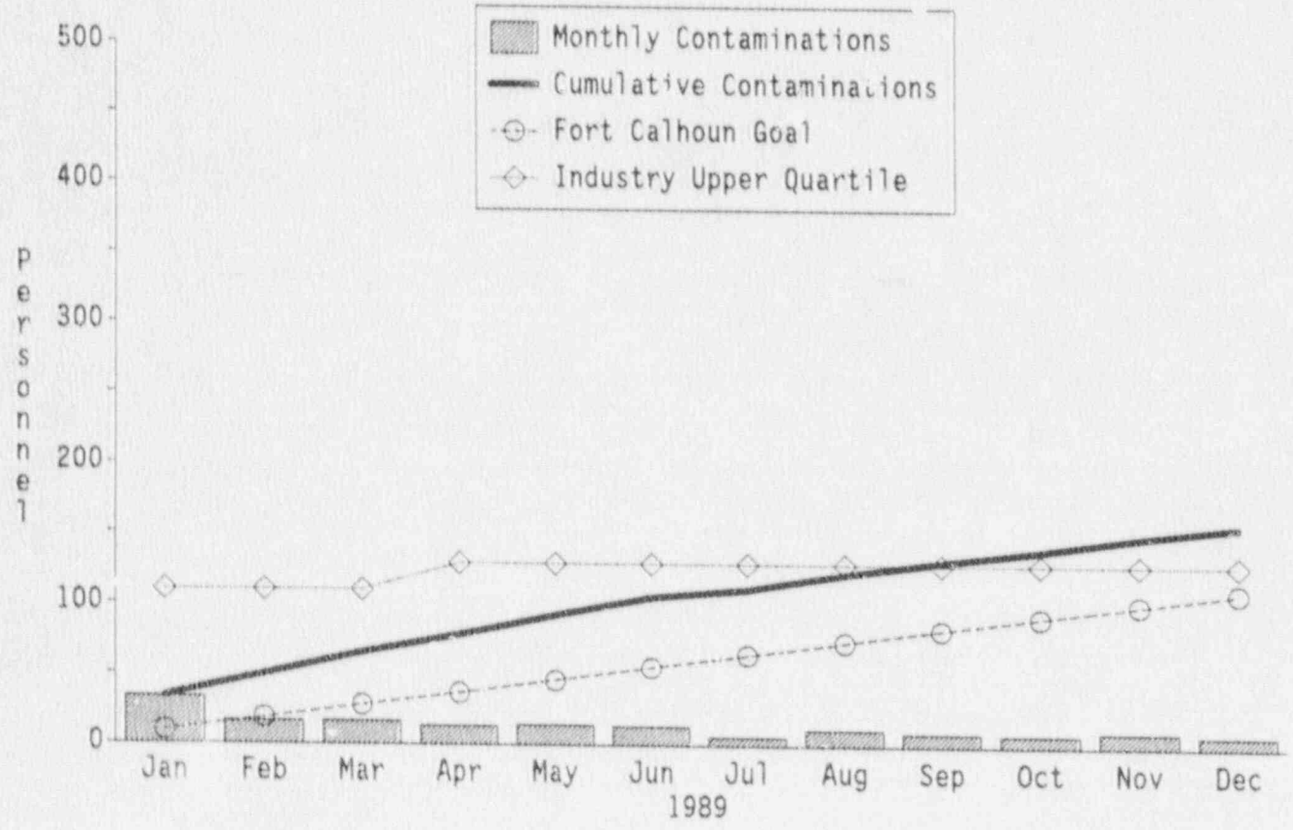
The high maximum individual exposure reported for the month of December, the fourth quarter and the year of 1990 was due to the 1990 Refueling Outage and four forced outages which occurred in the latter part of 1990.

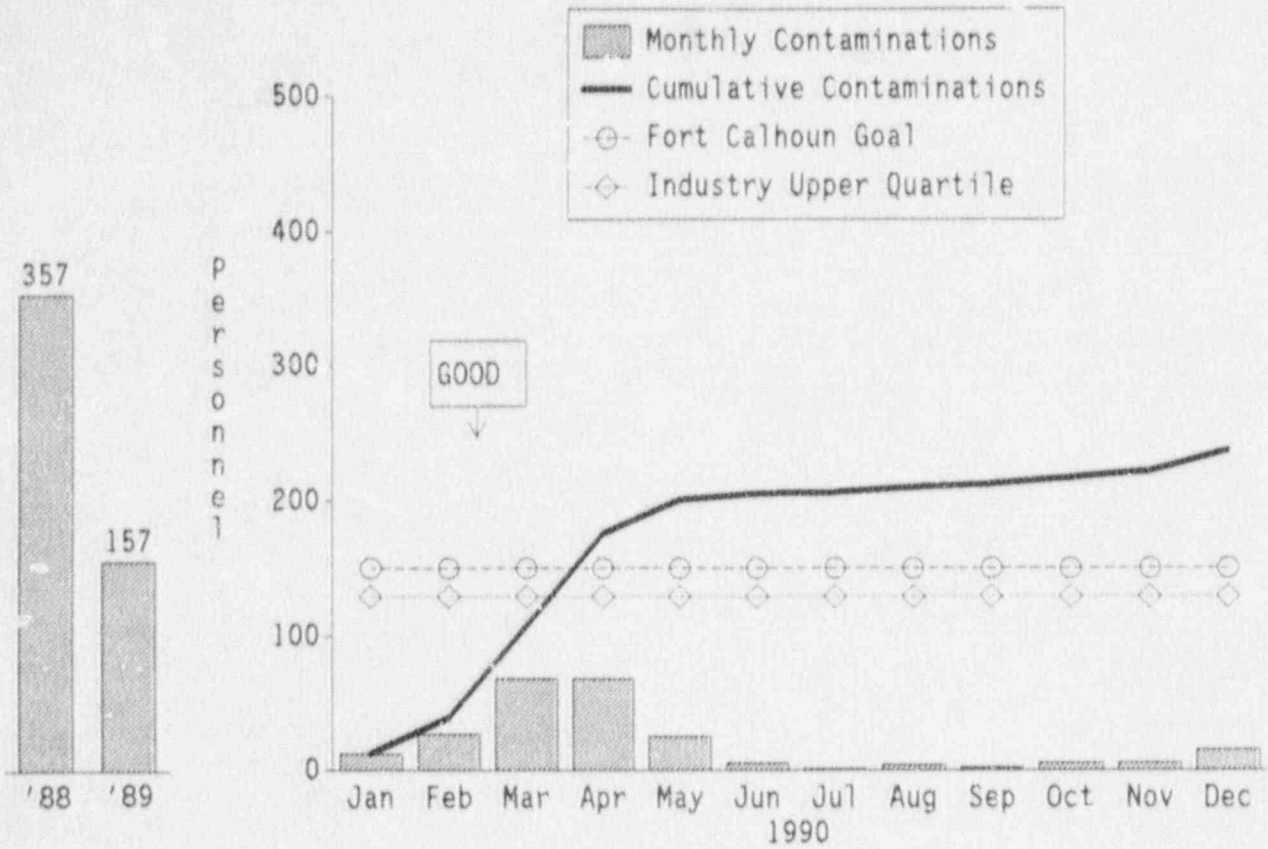
The maximum accumulated 1989 individual exposure was 1,165 mRem, received by a Health Physicist.

The OPPD limit for the maximum yearly individual radiation exposure is 4,500 mRem/year.

Adverse Trend: None


Monthly Contaminations
Cumulative Contaminations
Fort Calhoun Goal
Industry Upper Quartile
Personnel
500
400
300
200
100
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Monthly Contaminations
Cumulative Contaminations
Fort Calhoun Goal
Industry Upper Quartile
Personnel
500
400
300
200
100
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



TOTAL SKIN AND CLOTHING CONTAMINATIONS

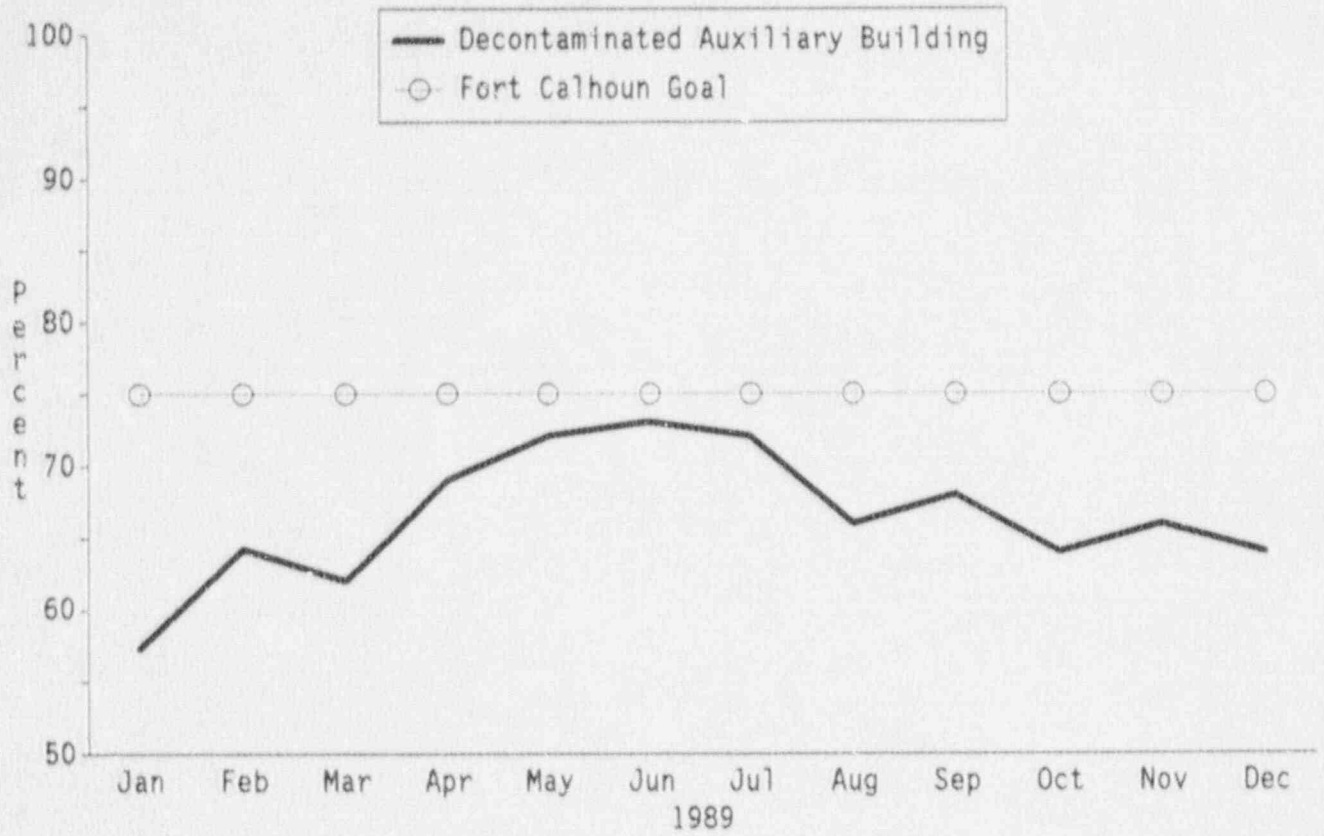
There was a total of 15 skin and clothing contaminations reported for the Fort Calhoun Station during December, 1990. There has been a total of 237 skin and clothing contaminations during 1990. The high number of skin and clothing contaminations which occurred during the months of March and April 1990 were related to increased activity in the Radiation Controlled Area (RCA) during the 1990 Refueling Outage.

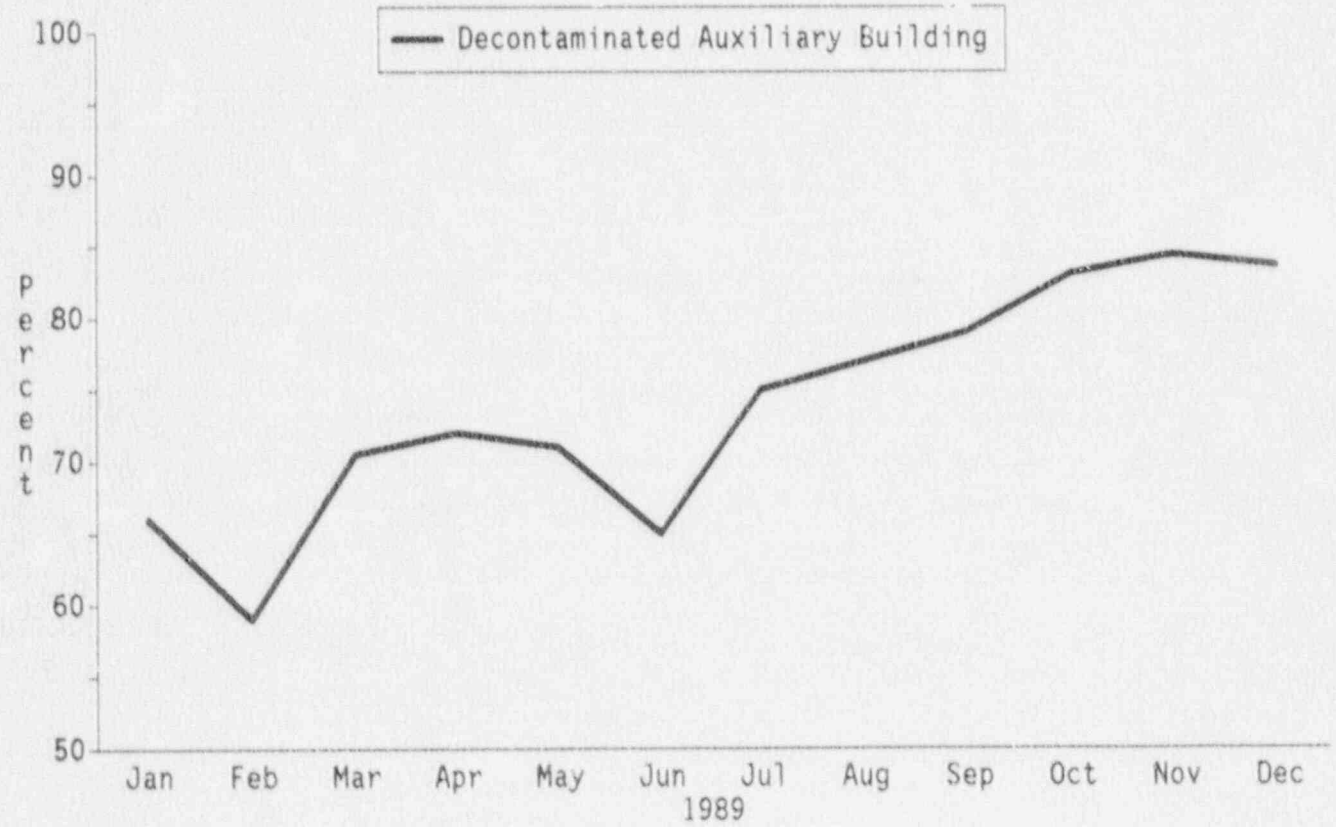
There was a total of 157 skin and clothing contaminations in 1989.

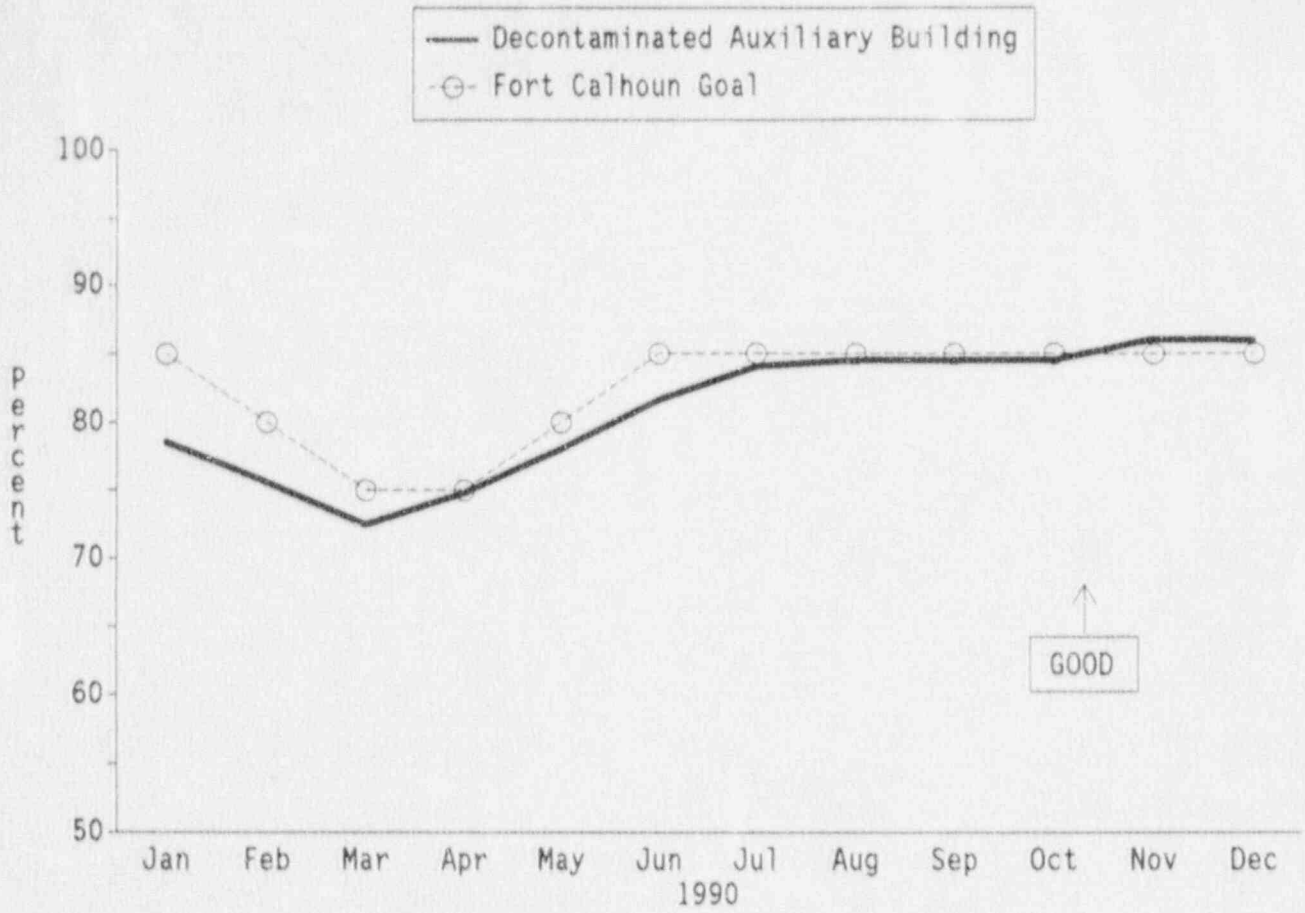
The 1990 goal for skin and clothing contaminations is less than 150 contaminations. This 1990 goal of 150 contaminations includes a Fort Calhoun goal of 23 skin contaminations.

The industry upper quartile value for total skin and clothing contaminations is 129 per unit annually.

Adverse Trend: None SEP 15 & 54


Decontaminated Auxiliary Building
Fort Calhoun Goal
100
90
80
70
60
50
Percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989


Decontaminated Auxiliary Building
100
90
80
70
60
50
Percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989

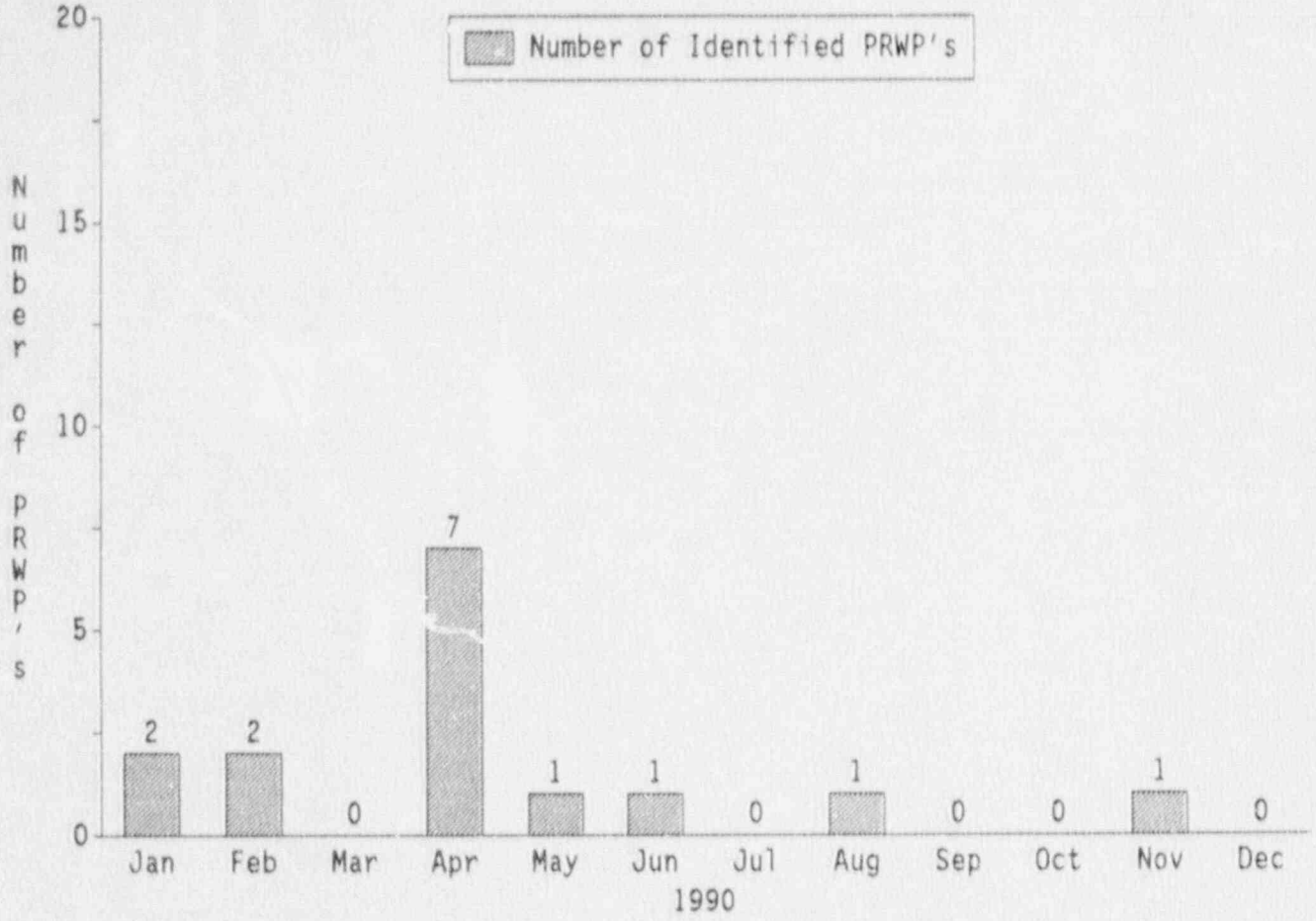


DECONTAMINATED AUXILIARY BUILDING

This graph shows the percentage of the auxiliary building which is decontaminated (clean) based on the total square footage. The Fort Calhoun goal is 85% decontaminated auxiliary building (non-outage months) and 75% decontaminated auxiliary building (outage months).

As of December 31, 1990, 85.9% of the total square footage of the auxiliary building was decontaminated. An increase in the percentage of the auxiliary building which is decontaminated is expected after the auxiliary building painting is completed.

Adverse Trend: None SEP 54



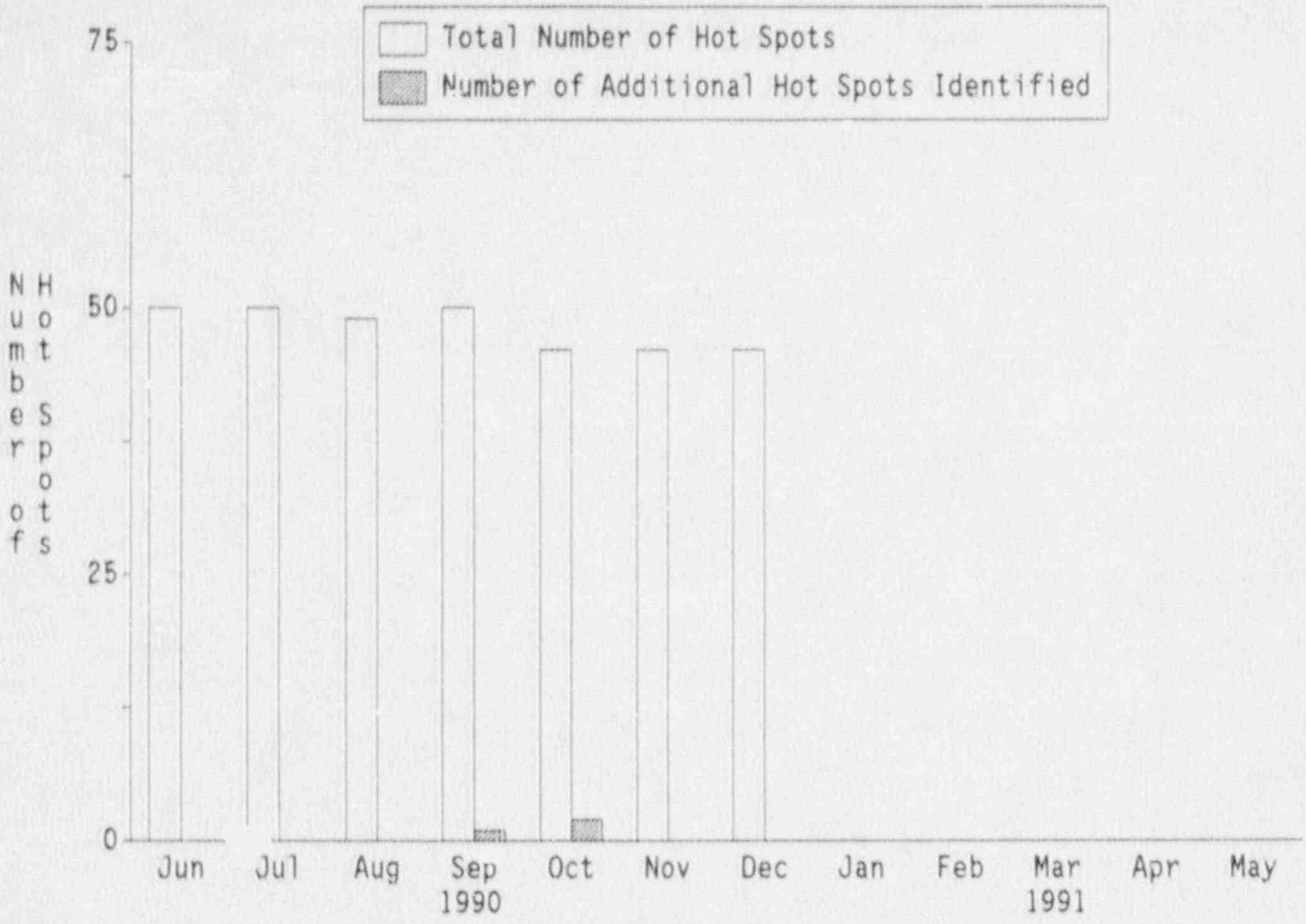
RADIOLOGICAL WORK PRACTICES PROGRAM

The Radiological Work Practices Program Indicator shows the number of Poor Radiological Work Practices (PRWP's) which were identified during the reporting month.

The number of PRWP's which are identified each month should indirectly provide a means to qualitatively assess supervisor accountability for their workers' radiological performance.

During the month of December 1990, no PRWP's were identified.

Adverse Trend: None SEP 52



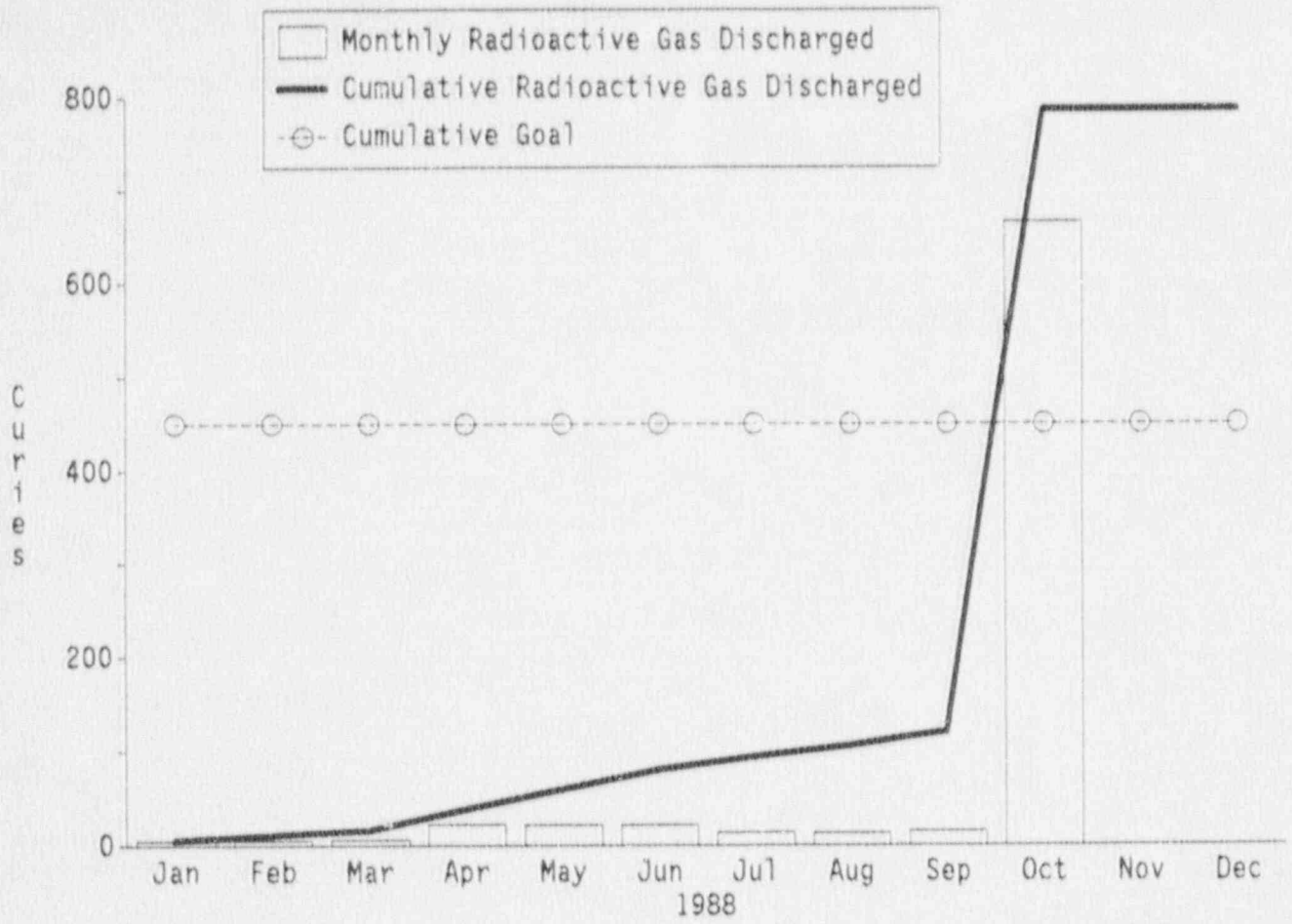
NUMBER OF HOT SPOTS

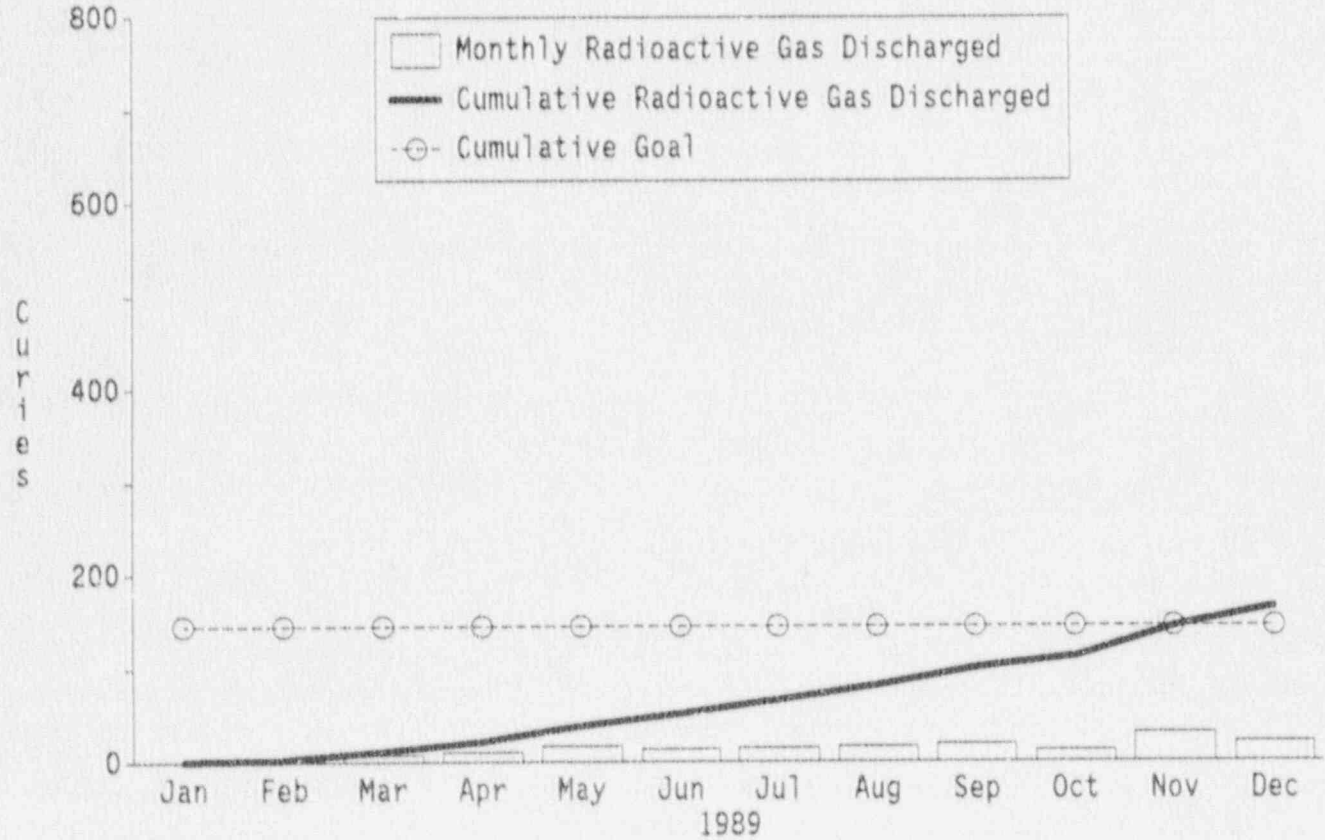
This indicator shows the total number of hot spots which have been identified to exist in the Fort Calhoun Station and have been documented through the use of a hot spot identification sheet. A hot spot is defined as a small localized source of high radiation. A hot spot occurs when the contact dose rate of an item or piece of equipment is at least 5 times the General Area dose rate and the item or piece of equipment's dose rate is equal to or greater than 100 mRem/hour.

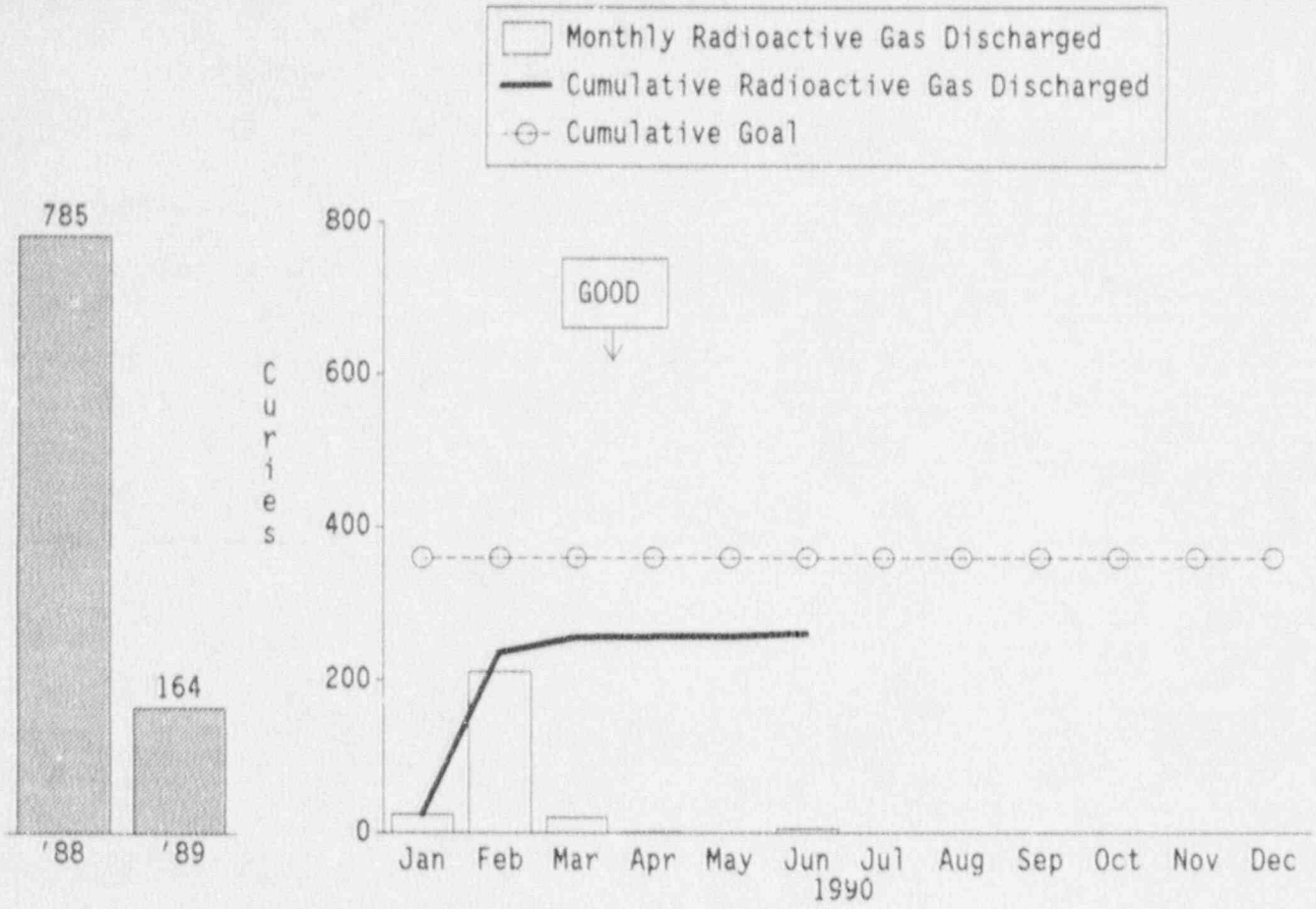
At the end of December, 46 hot spots were identified and documented to exist in the Fort Calhoun Station. During the month of December, no additional hot spots were identified to exist in the Fort Calhoun Station.

The Station ALARA committee established a goal to eliminate at least 5 hot spots during 1990. The Fort Calhoun Station has exceeded this goal.

Adverse Trend: None


Monthly Radioactive Gas Discharged
Cumulative Radioactive Gas Discharged
Cumulative Goal
800
600
400
200
0
Curies
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Monthly Radioactive Gas Discharged
Cumulative Radioactive Gas Discharged
Cumulative Goal
800
600
400
200
0
Curies
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



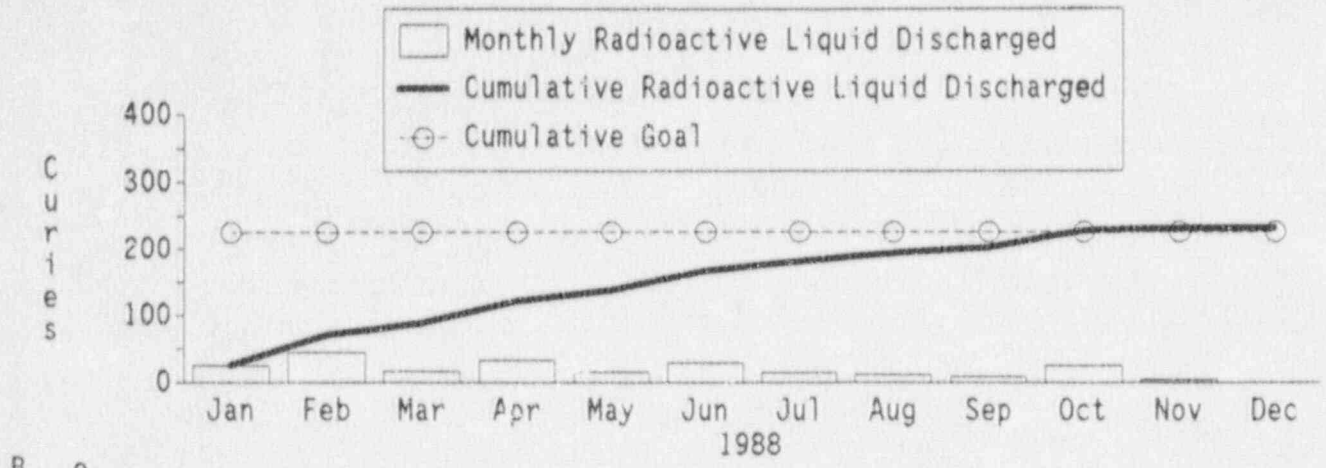
GASEOUS RADIOACTIVE WASTE BEING DISCHARGED TO THE ENVIRONMENT

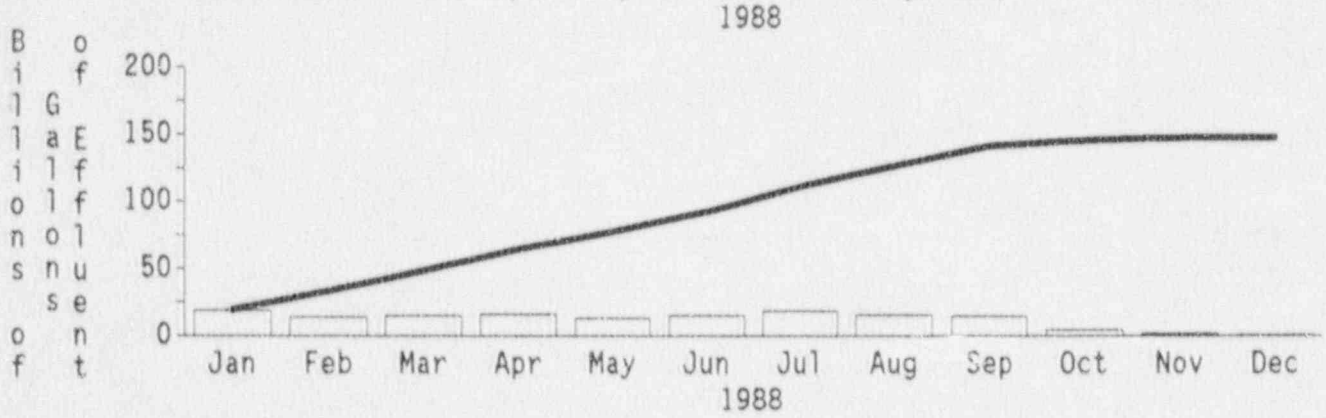
The gaseous radioactive waste being discharged to the environment is shown for January 1990 through June 1990. A total of 261 curies have been released to the environment from January through June of 1990. The Fort Calhoun Station goal is 360 curies for this indicator.

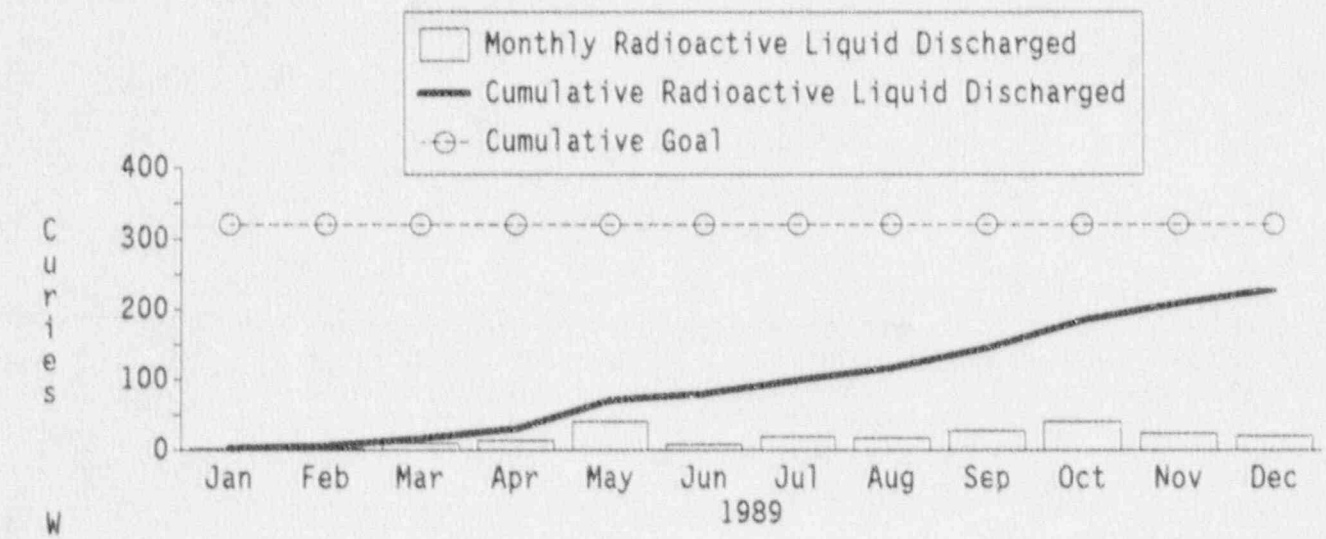
The high value of gaseous radioactive waste that was released to the environment during the month of February 1990 was due to containment purge associated with the 1990 Refueling Outage.

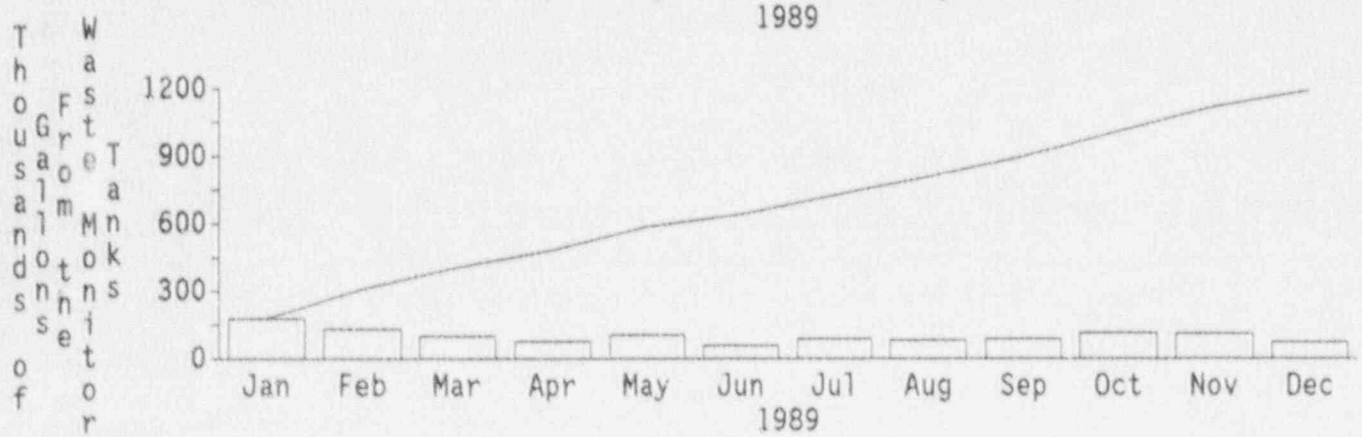
The gaseous radioactive waste being discharged to the environment is calculated every six months.

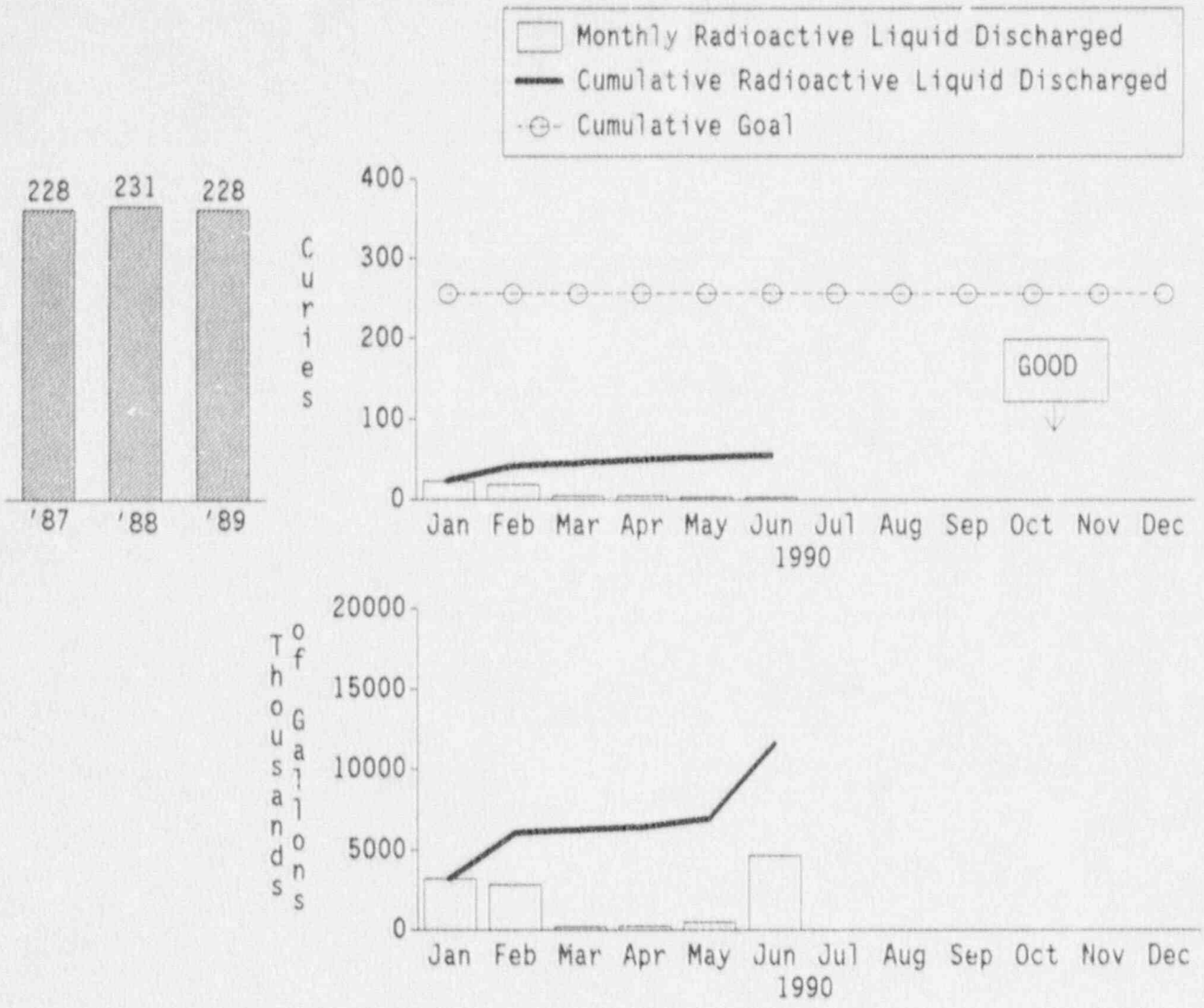
Adverse Trend: None


Monthly Radioactive Liquid Discharged
Cumulative Radioactive Liquid Discharged
Cumulative Goal
Curies
400
300
200
100
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1988


Billions of Gallons of Effluent
200
150
100
50
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1988


Monthly Radioactive Liquid Discharged
Cumulative Radioactive Liquid Discharged
Cumulative Goal
Curies
400
300
200
100
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1989


Thousands of Gallons From the Waste Monitor Tanks
1200
900
600
300
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1989



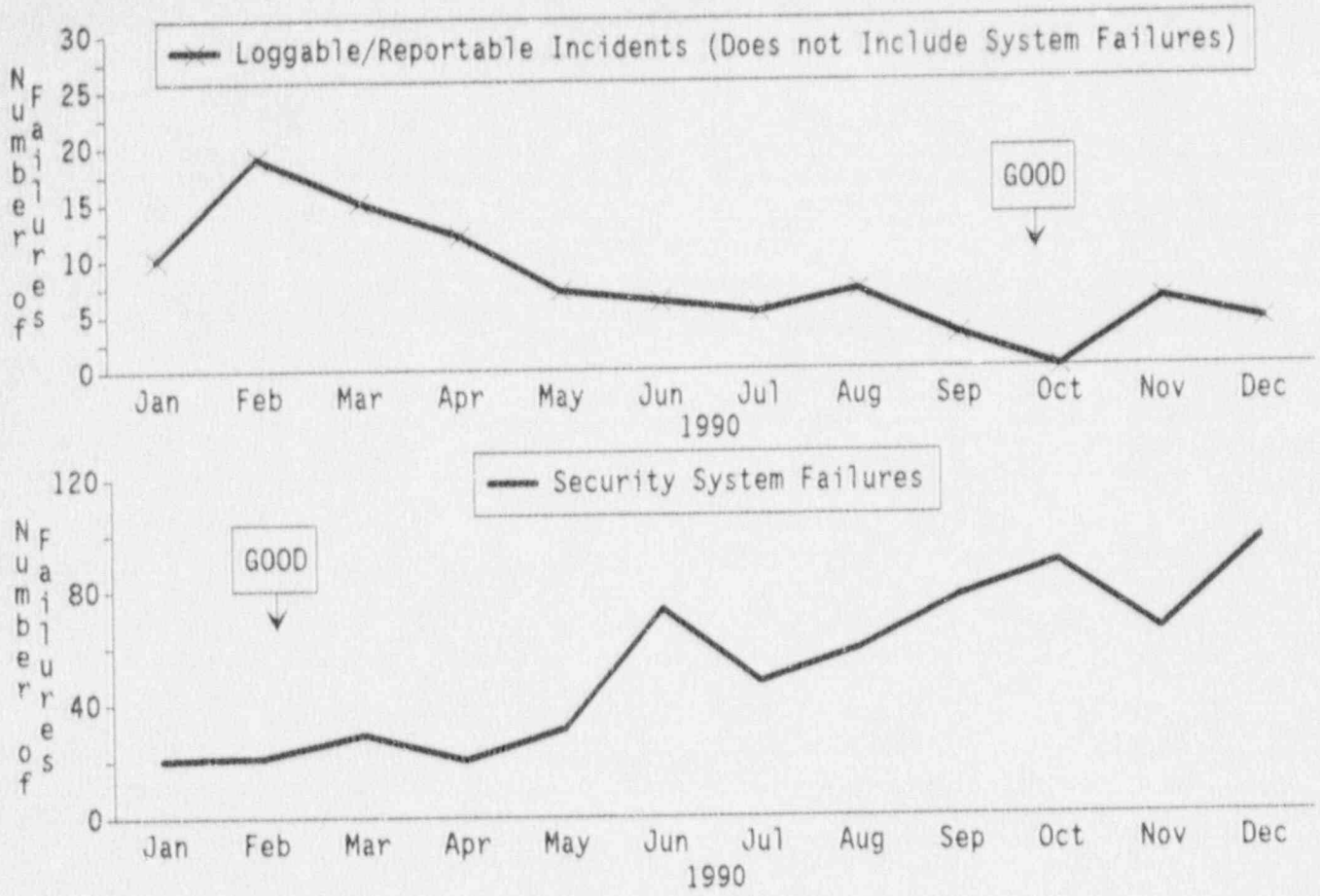
LIQUID RADIOACTIVE WASTE BEING DISCHARGED TO THE ENVIRONMENT

The liquid radioactive waste being discharged to the environment is shown for the months of January 1990 through June 1990. The liquid radioactive waste that was discharged to the environment from all sources totaled 55 curies from January through June 1990. The Fort Calhoun Station goal for 1990 is 256 curies.

The bottom graph shows the volume of liquid radioactive waste that has been released from the radioactive waste monitor tanks and steam generators. The volume of liquid radioactive waste discharged to the environment from the radioactive waste monitor tanks and the steam generators totaled 11.6 million gallons from January through June 1990. The liquid radioactive waste that was released to the environment includes liquid released from the steam generators due to the fact that radioisotopes were detected in the steam generator blowdown.

The liquid radioactive waste being discharged to the environment is calculated every six months.

Adverse Trend: None

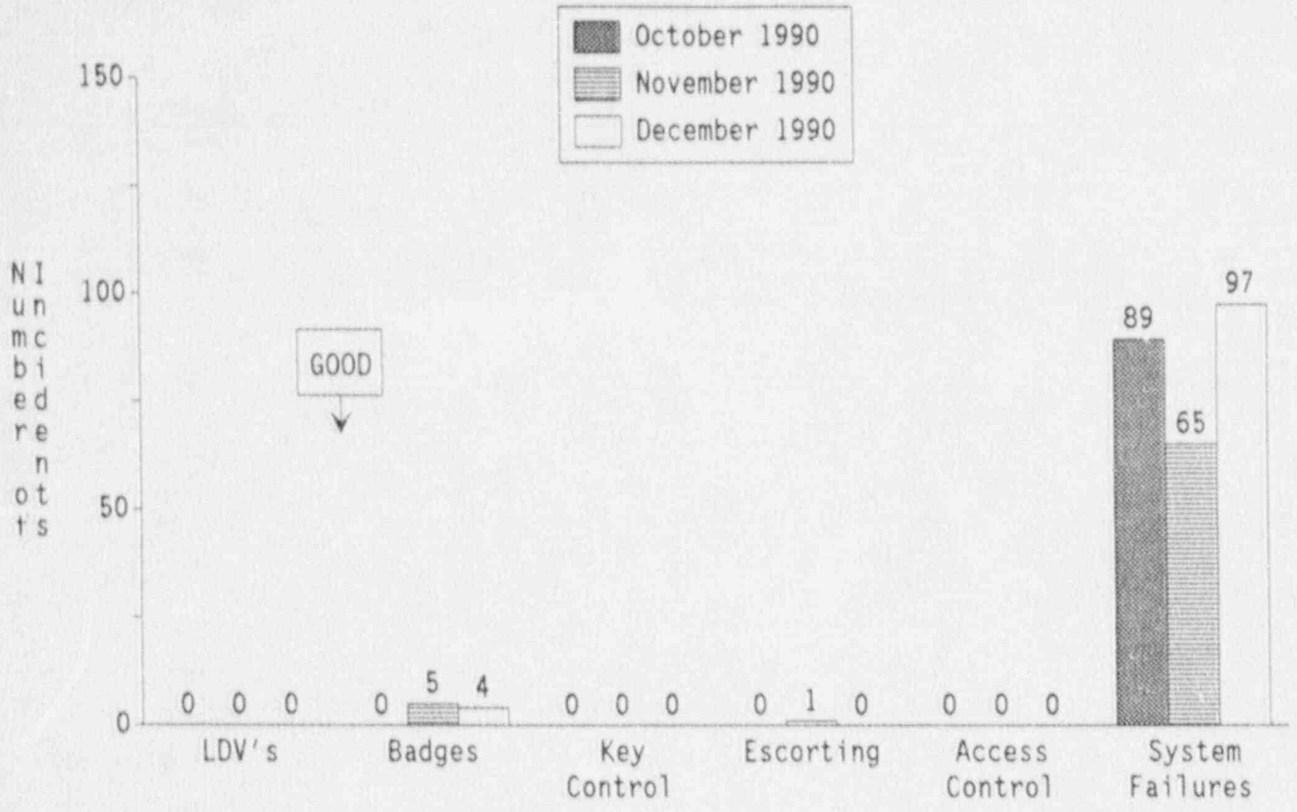


LOGGABLE/REPORTABLE INCIDENTS (SECURITY)

The Loggable/Reportable Incidents (Security) Indicator is depicted in two separate graphs. The top graph shows the total number of loggable/reportable incidents concerning Licensee Designated Vehicles (LDV's), security badges, security key control, escorting, and access control which occurred during the reporting month. The bottom graph shows the total number of loggable/reportable incidents concerning security system failures which occurred during the reporting month.

During the month of December 1990, there were 101 loggable/reportable incidents identified. Security system failures accounted for 97 of the loggable/reportable incidents (96%) reported this month. Forty five (45) of the loggable/reportable security system failures were environmental failures due to inclement weather conditions during the reporting period. As depicted in the top graph, Security Services has considerably reduced the number of non-security system failure related incidents. Continuous efforts are being made to improve the maintenance of the security system.

Adverse Trend: None SEP 58



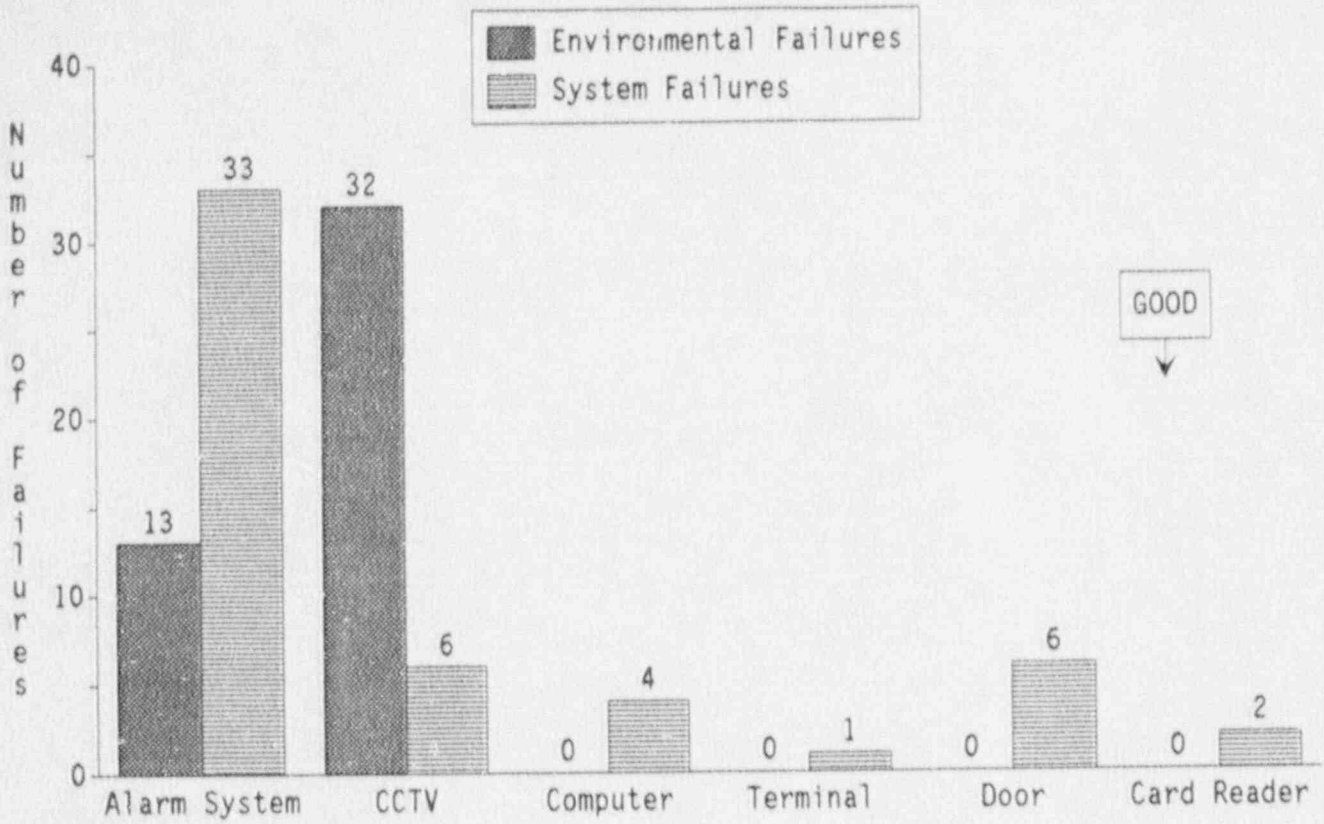
SECURITY INCIDENT BREAKDOWN

The Security Incident Breakdown Indicator shows the number of incidents concerning the following items for the reporting month in column form. These items include: Licensee Designated Vehicles (LDV's), security badges, security key control, escorting, access control, and security system failures.

Security Items	Number of Incidents		
	DEC	NOV	OCT
Licensee Designated Vehicles (LDV's)	0	0	0
Security Badges	4	5	0
Security Key Control	0	0	0
Escorting	0	1	0
Access Control	0	0	0
Security System Failures	97	65	89
Total	101	71	89

Adverse Trend: None

SEP 58



SECURITY SYSTEM FAILURES

This indicator shows the number of loggable/reportable incidents concerning the following items for the reporting month. These items include: alarm system failures, CCTV failures, security computer failures, terminal failures, door equipment failures, and card reader failures. In addition to this information, alarm system failures and CCTV failures will be divided into two categories, environmental and system failures as indicated in the Definition Section.

System Failures — Number of Incidents

	DEC 90		NOV 90		OCT 90	
	ENVIRONS	FAILURES	ENVIRONS	FAILURES	ENVIRONS	FAILURES
Alarm Systems	13	33	10	16	5	22
CCTV	32	6	28	2	42	4
Computer	N/A	4	N/A	0	N/A	3
Terminal	N/A	1	N/A	1	N/A	1
Door Equipment	N/A	6	N/A	8	N/A	11
Card Reader	N/A	2	N/A	0	N/A	1
Total	45	52	38	27	47	42

Adverse Trend: None

SEP 58

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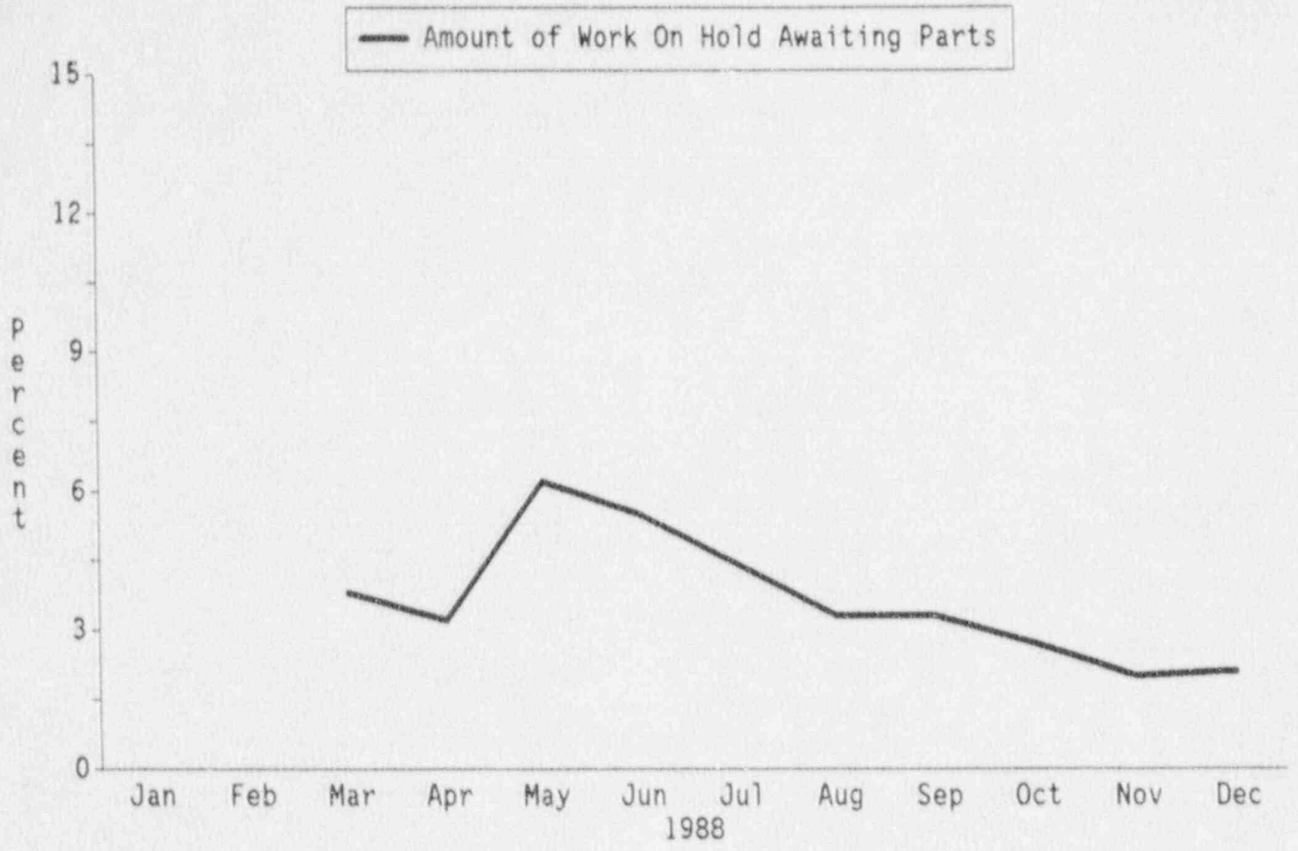
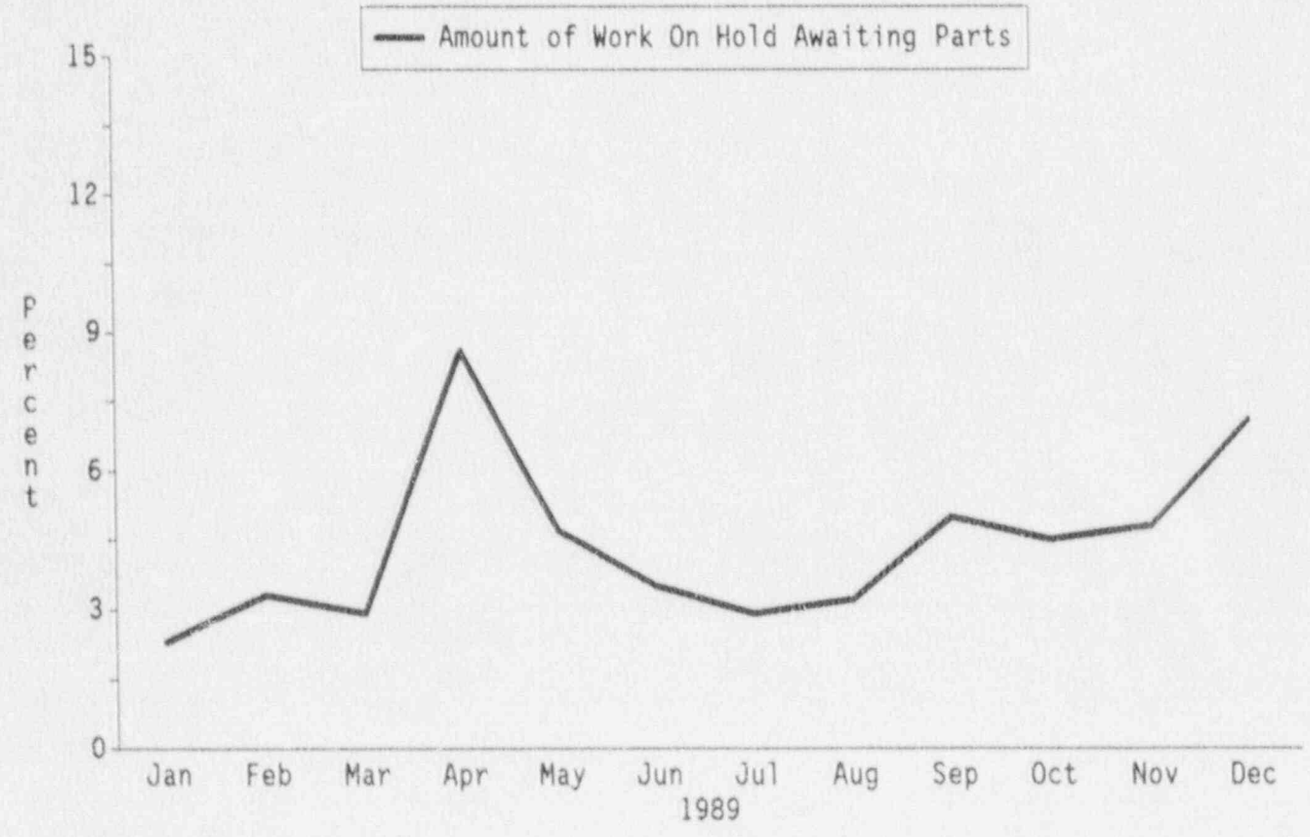
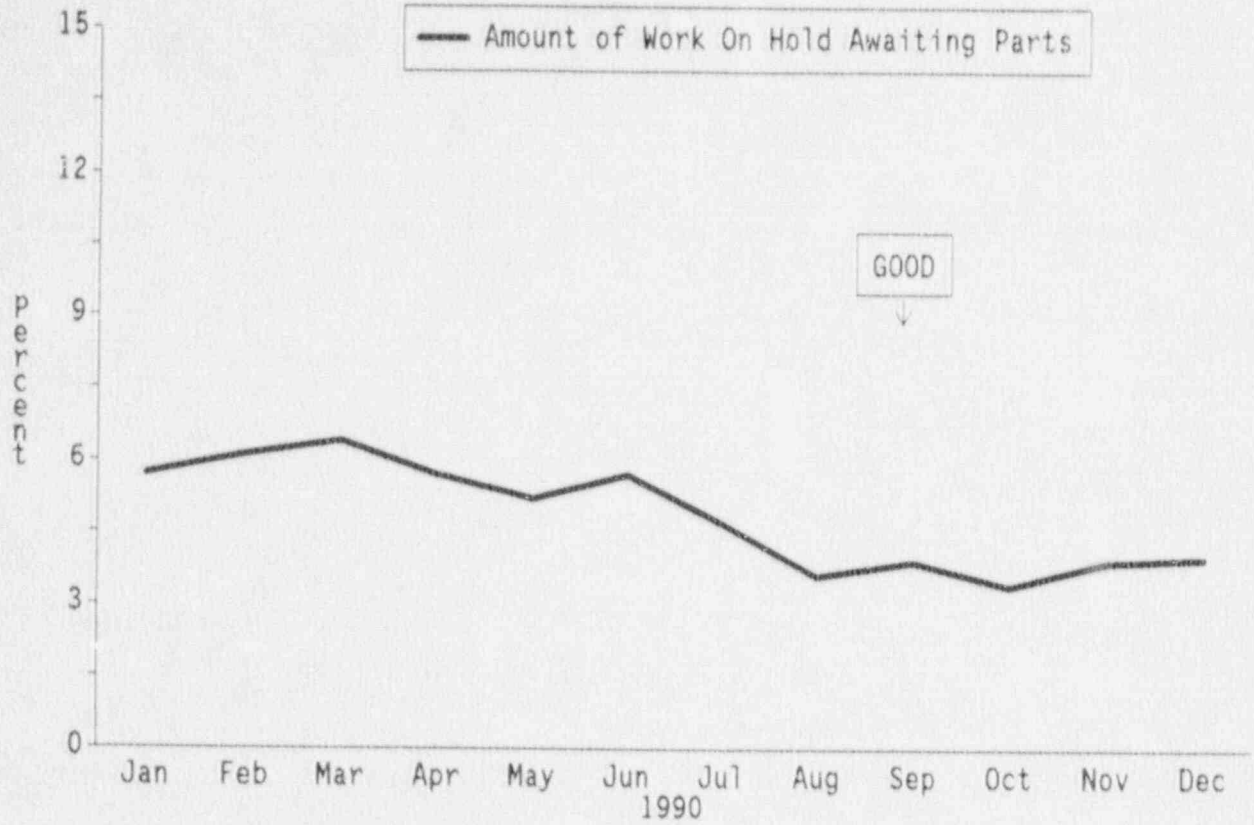

Amount of Work On Hold Awaiting Parts
15
12
9
6
3
0
Percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Amount of Work On Hold Awaiting Parts
15
12
9
6
3
0
Percent
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



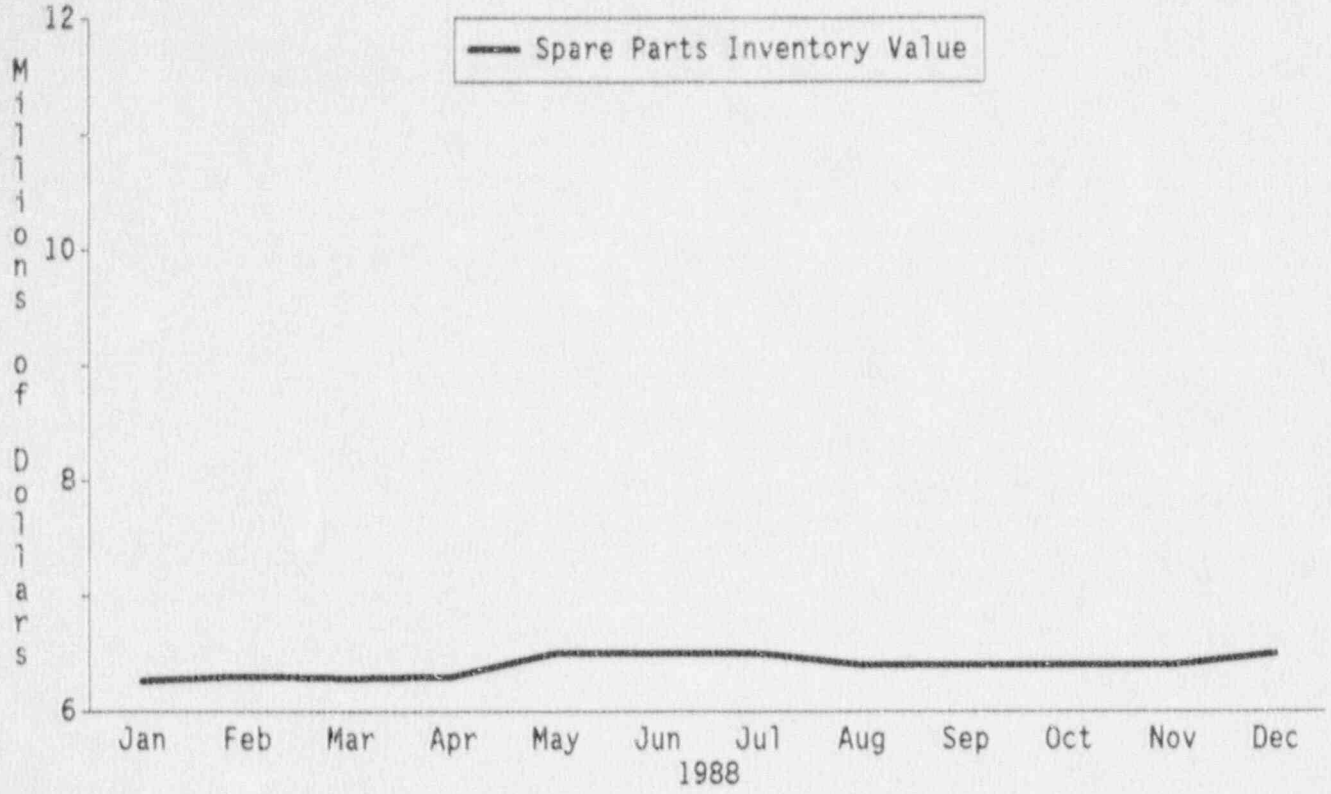
AMOUNT OF WORK ON HOLD AWAITING PARTS
(NON-OUTAGE)

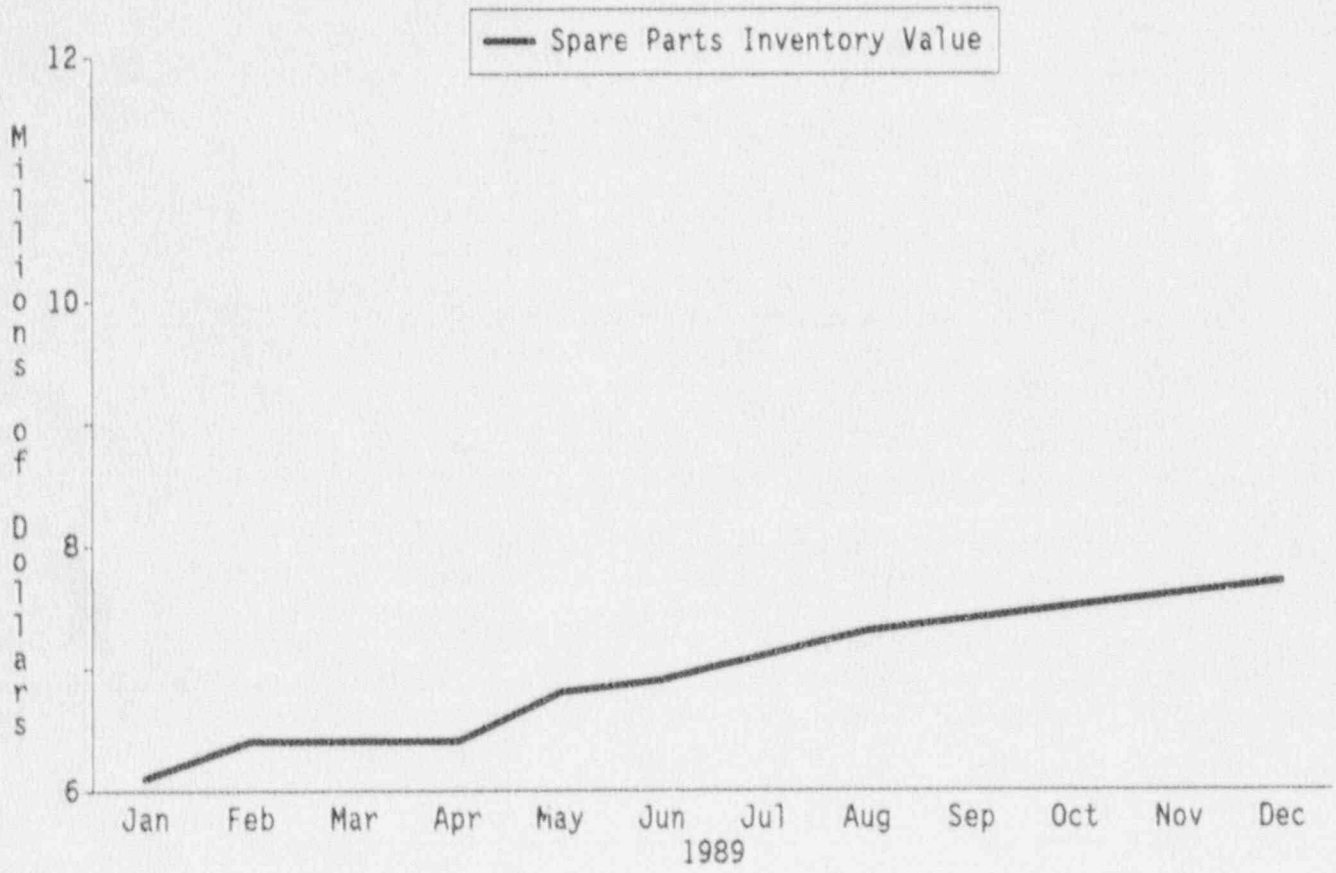
This procurement indicator displays the amount of open, non-outage, maintenance items that are on hold awaiting parts, to the total amount of open, non-outage, maintenance items, expressed as a percentage.

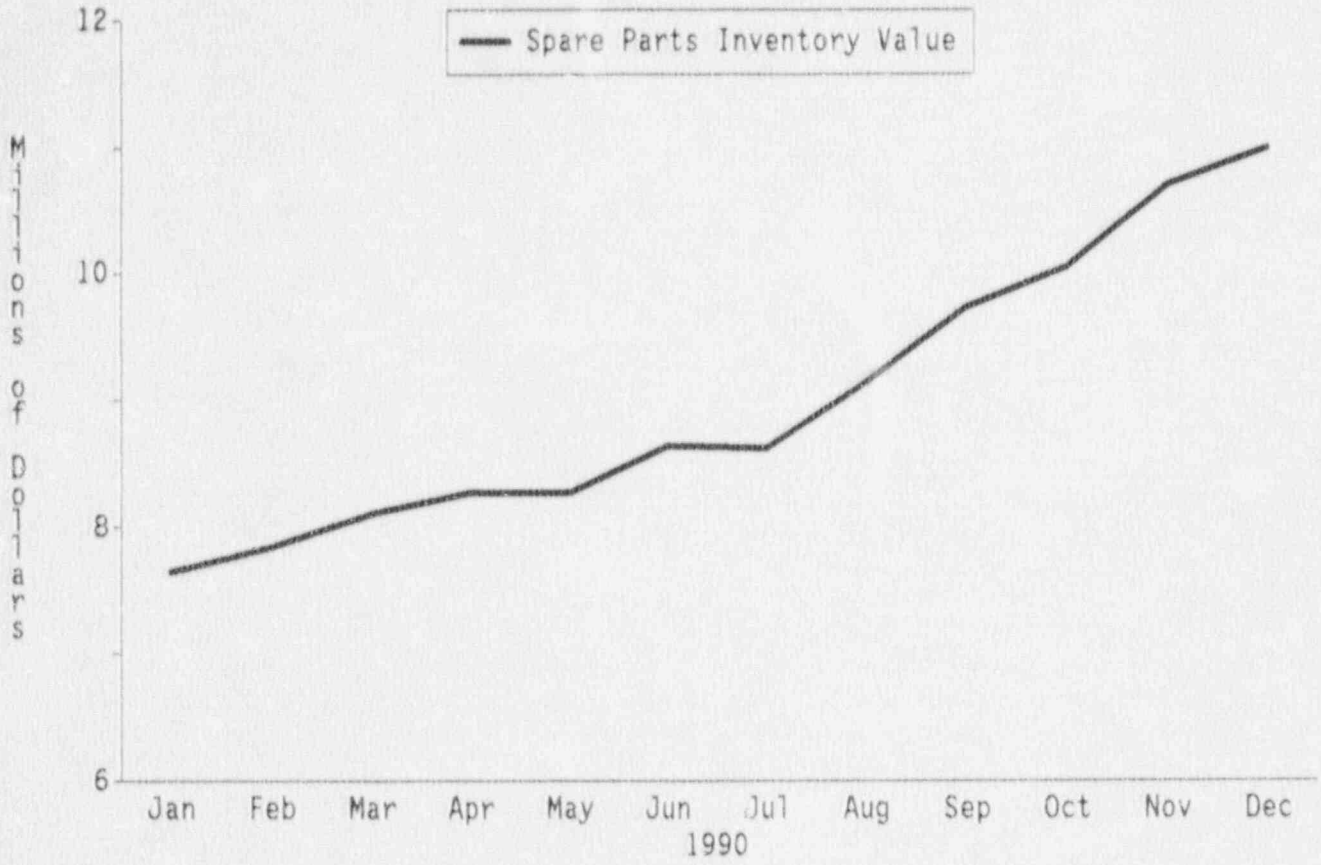
The percentage of work on hold awaiting parts increased to 4.0% in December.

As of December 31, 1990, there were a total of 799 open, non-outage, maintenance items with 32 of these items on hold awaiting parts.

Adverse Trend: None


Spare Parts Inventory Value
Millions of Dollars
12
10
8
6
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988

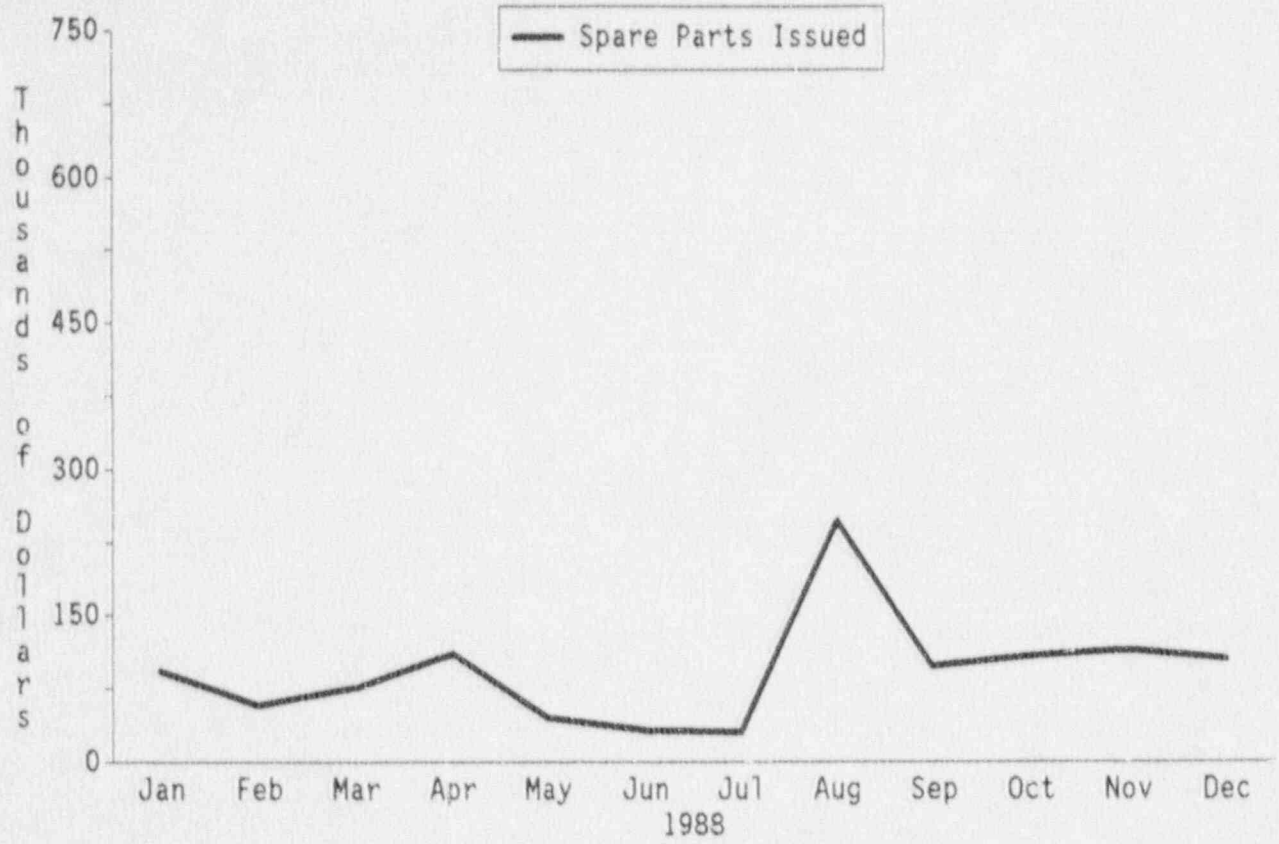

Spare Parts Inventory Value
Millions of Dollars
12
10
8
6
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989

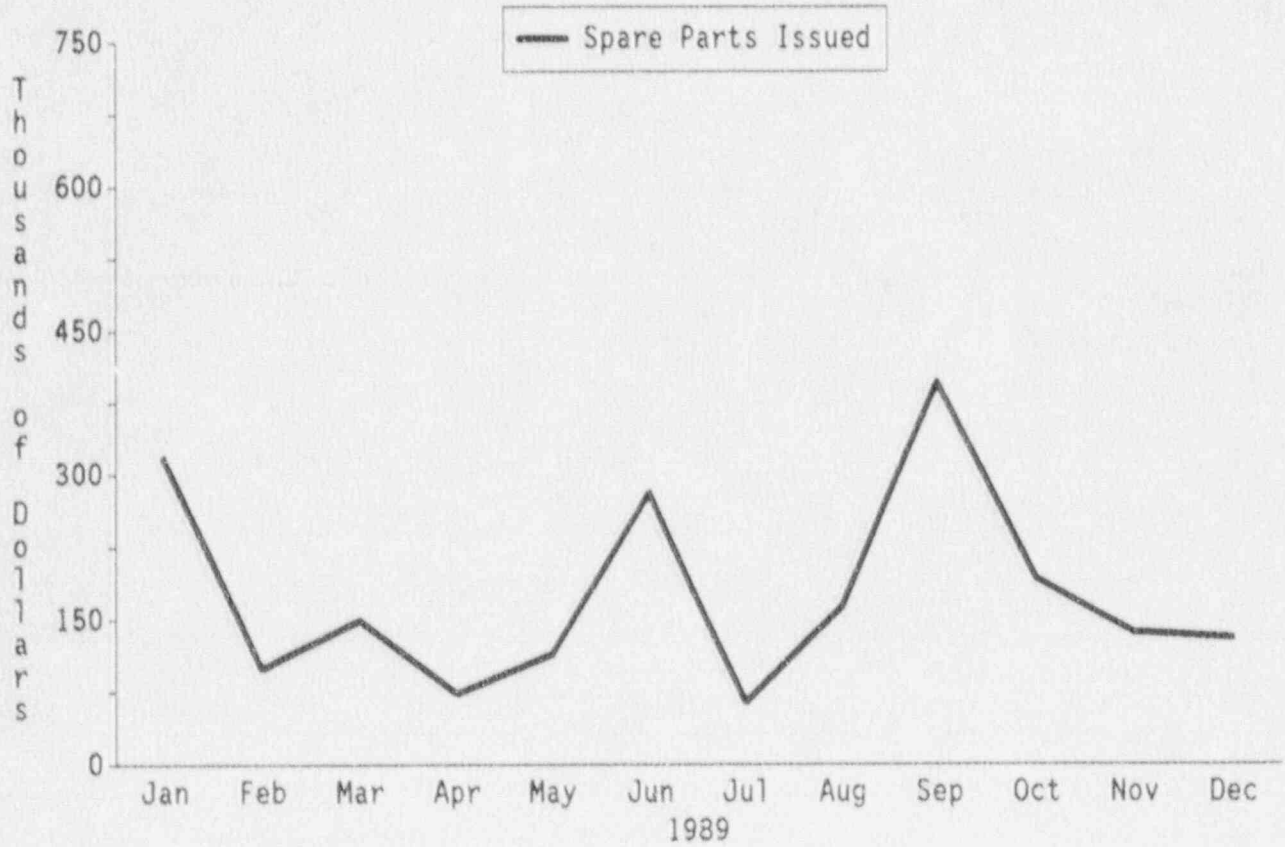


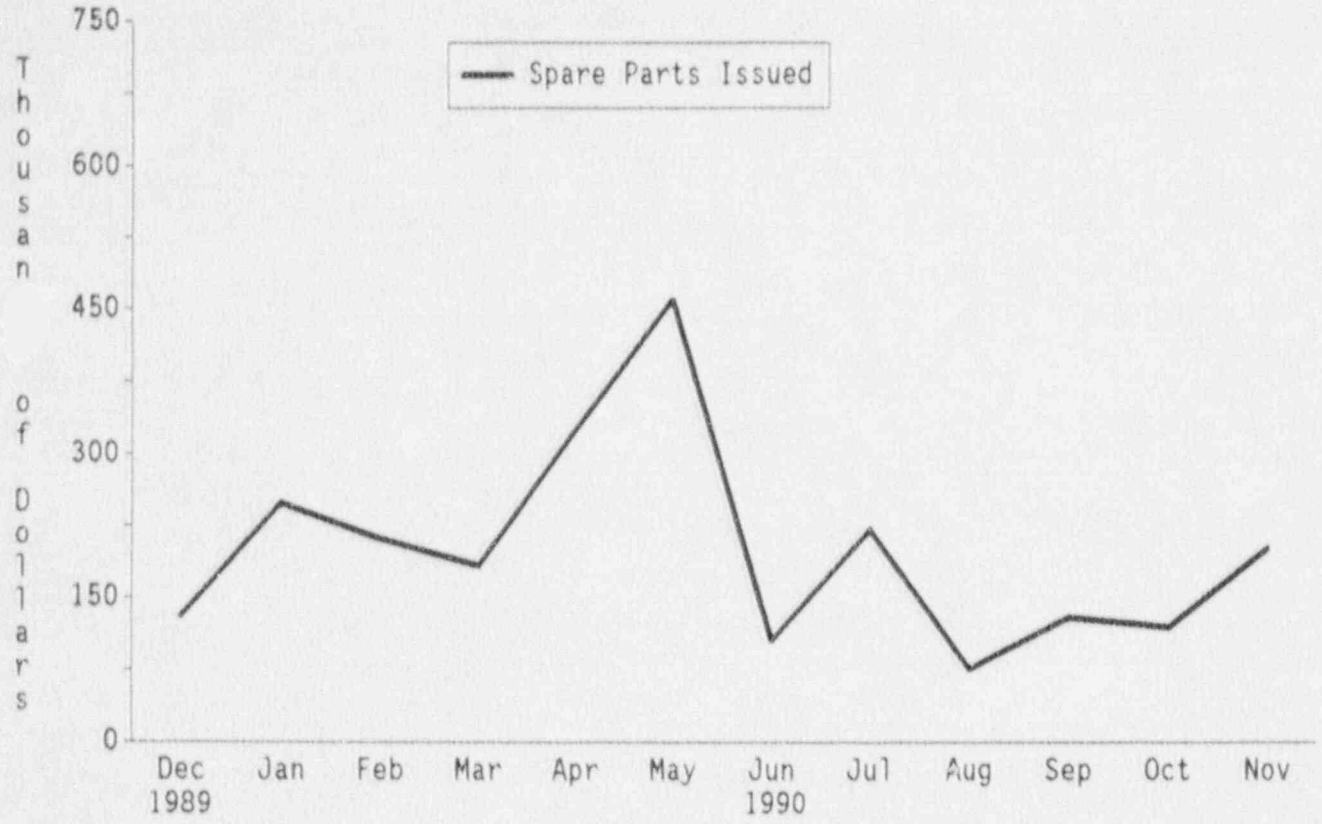
SPARE PARTS INVENTORY VALUE

The spare parts inventory value at the Fort Calhoun Station at the end of December 1990 was reported as $10,978,039.

Adverse Trend: None


Spare Parts Issued
Thousands of Dollars
750
600
450
300
150
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Spare Parts Issued
Thousands of Dollars
750
600
450
300
150
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989

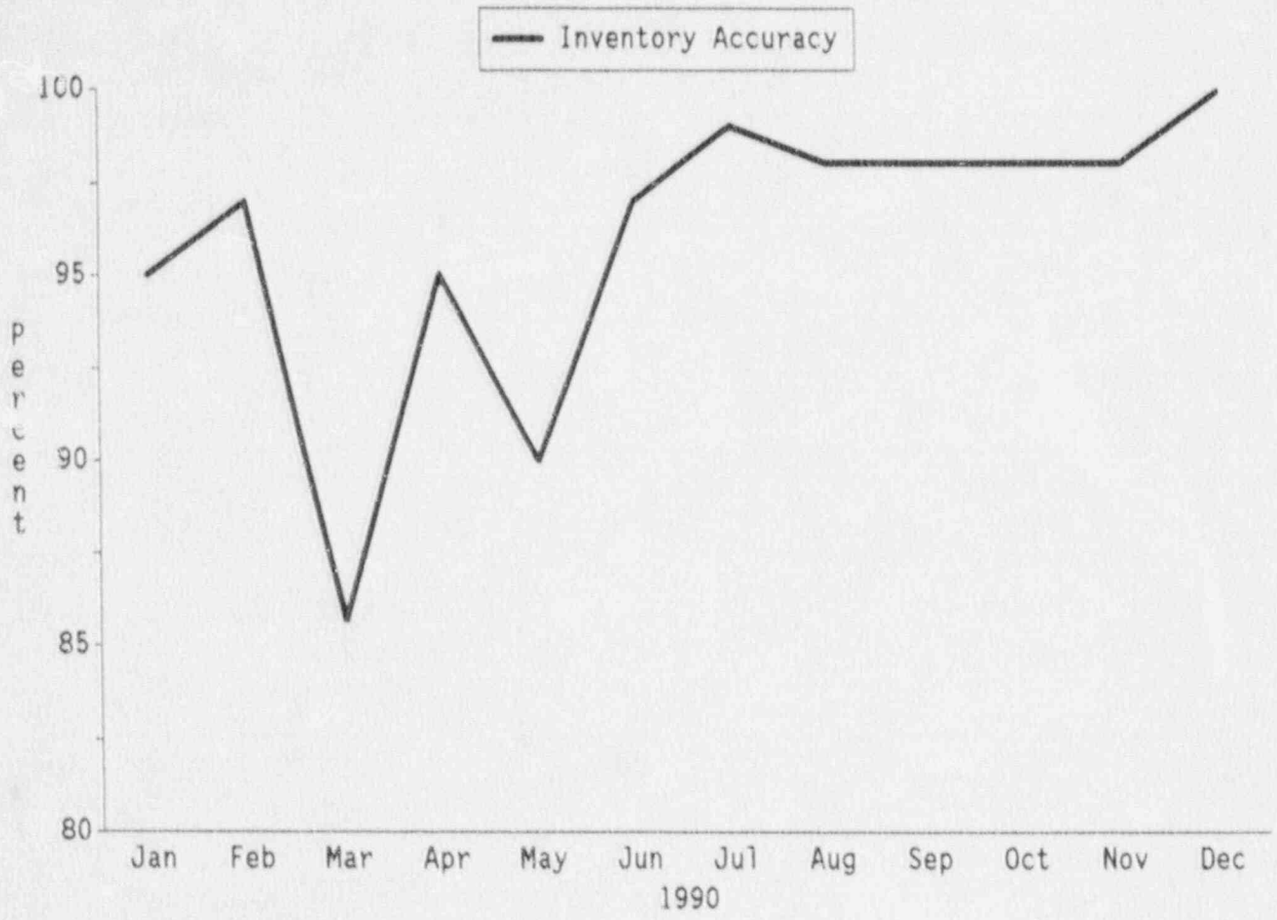


SPARE PARTS ISSUED

The value of the spare parts issued during November 1990, totaled $201,806.

The value of the spare parts issued during December 1990, was not available at the time of publishing.

Adverse Trend: None

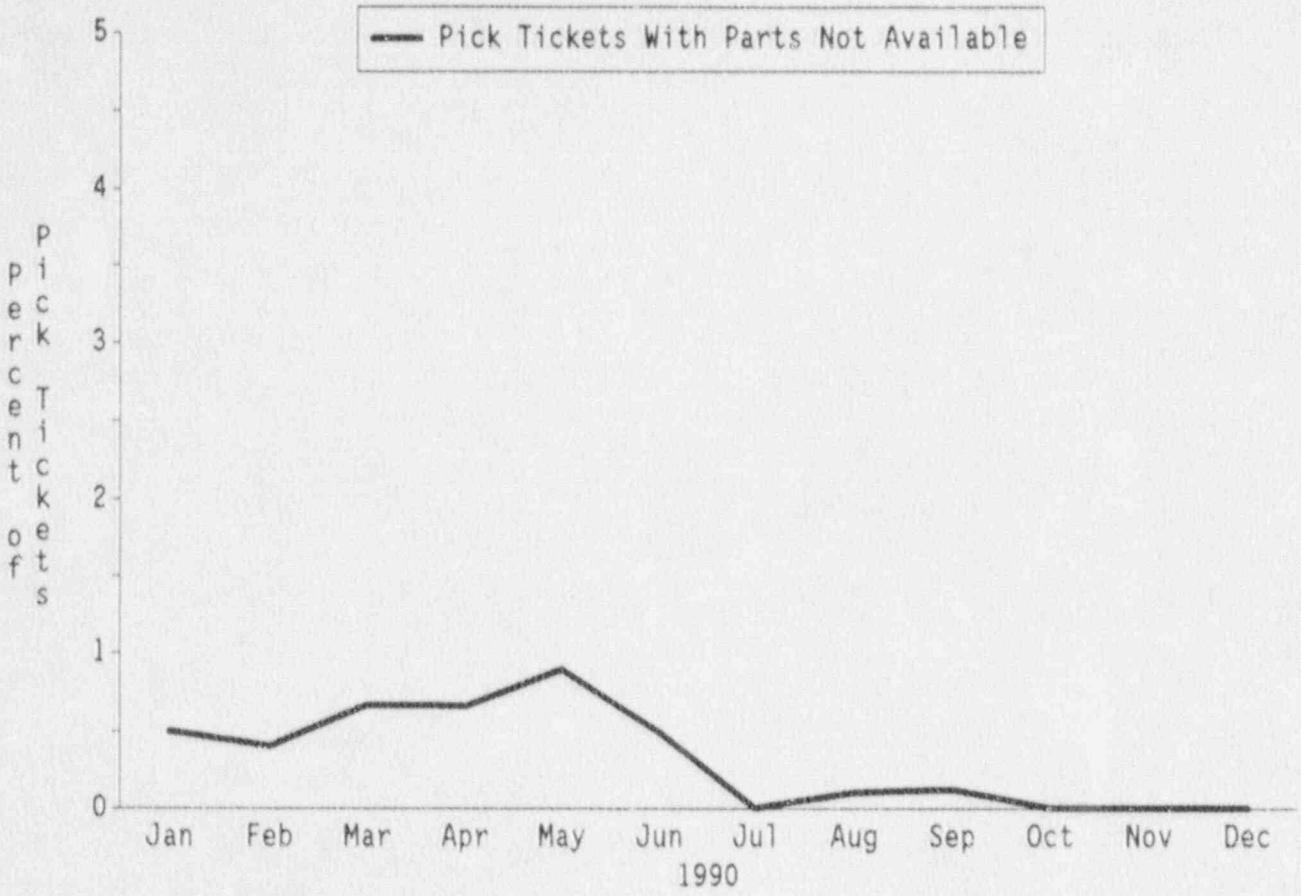


INVENTORY ACCURACY

This indicator shows the accuracy of the actual parts count for the warehouse compared to the counts contained in the mmis computer system for the reporting month.

During December, 853 different line items were counted in the warehouse. Of the 853 line items counted one item needed its count adjusted. The inventory accuracy for the month of December was reported as 99.9%.

Adverse Trend: None

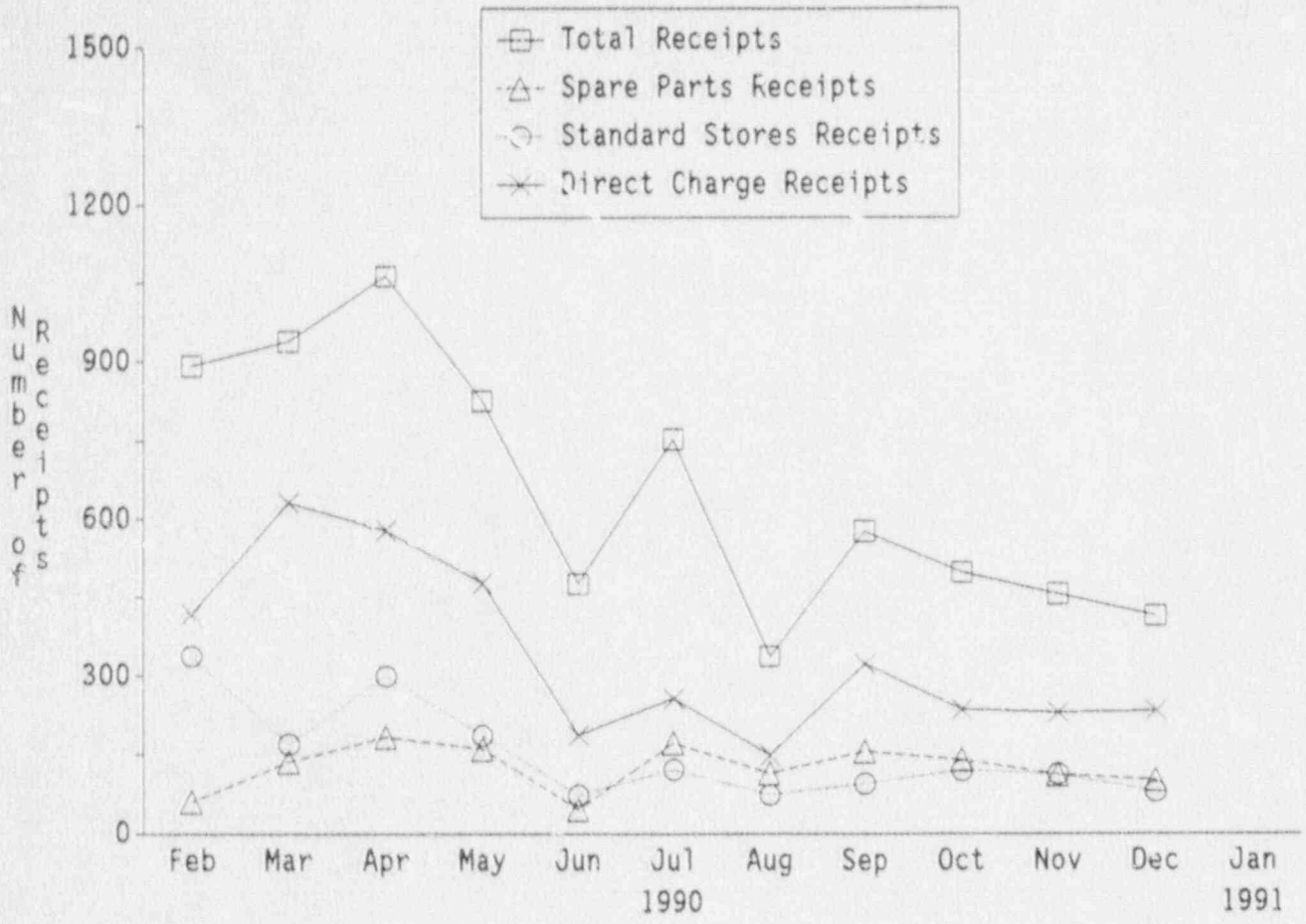


STOCKOUT RATE

This indicator shows the percentage of the number of Pick Tickets generated with no parts available during the reporting month.

During the month of December, a total of 747 Pick Tickets were generated. Of the 747 Pick Tickets generated, zero Pick Tickets were generated with no parts available.

Adverse Trend: None

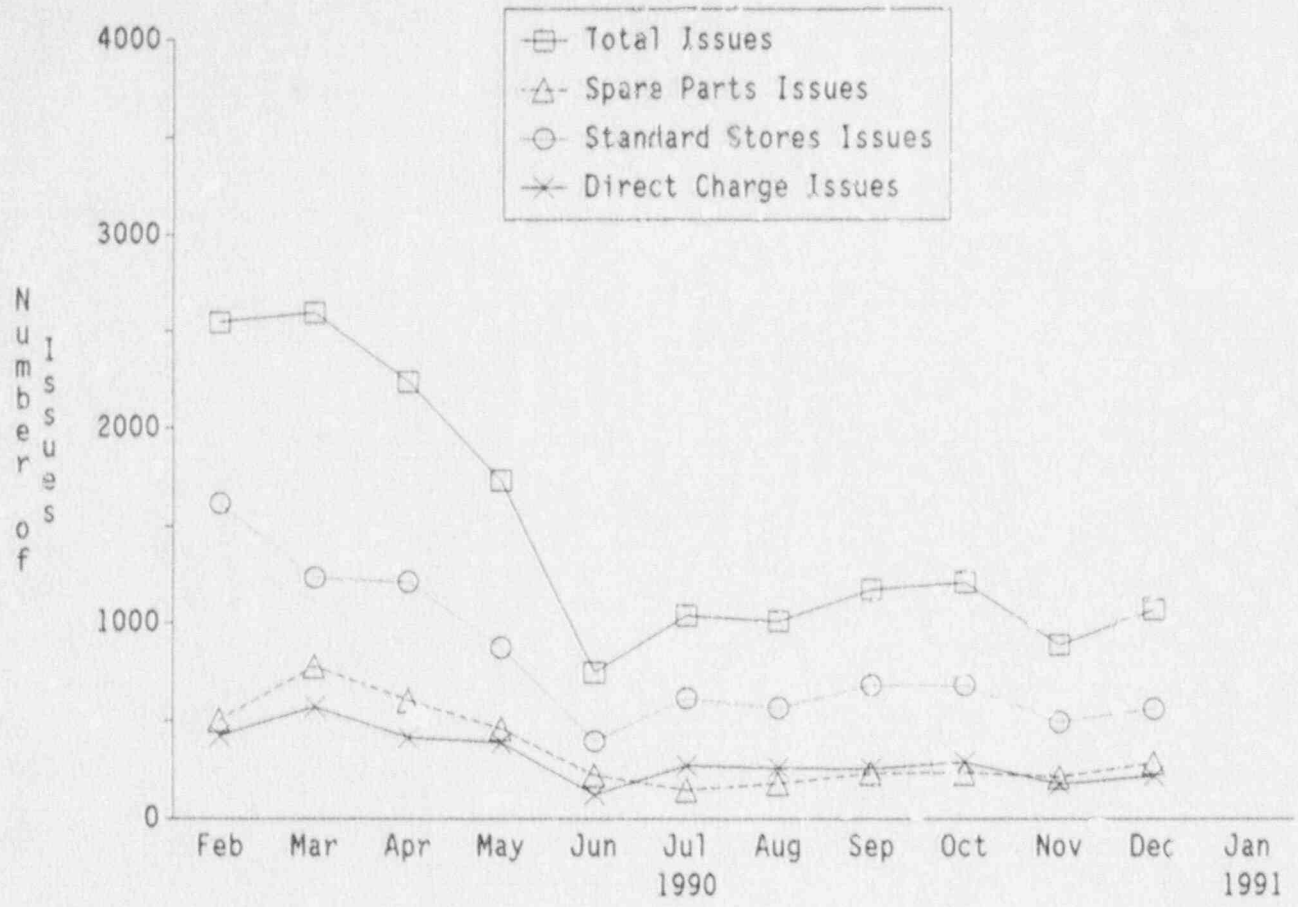


WAREHOUSE RECEIPTS

This indicator shows the total number of warehouse receipts, the number of spare parts receipts, the number of standard stores receipts, and the number of direct charge receipts during the reporting month.

During December the warehouse received a total of 415 receipts. Of the 415 receipts received, 102 were spare parts receipts, 80 were standard stores receipts, and 233 were direct charge receipts.

Adverse Trend: None

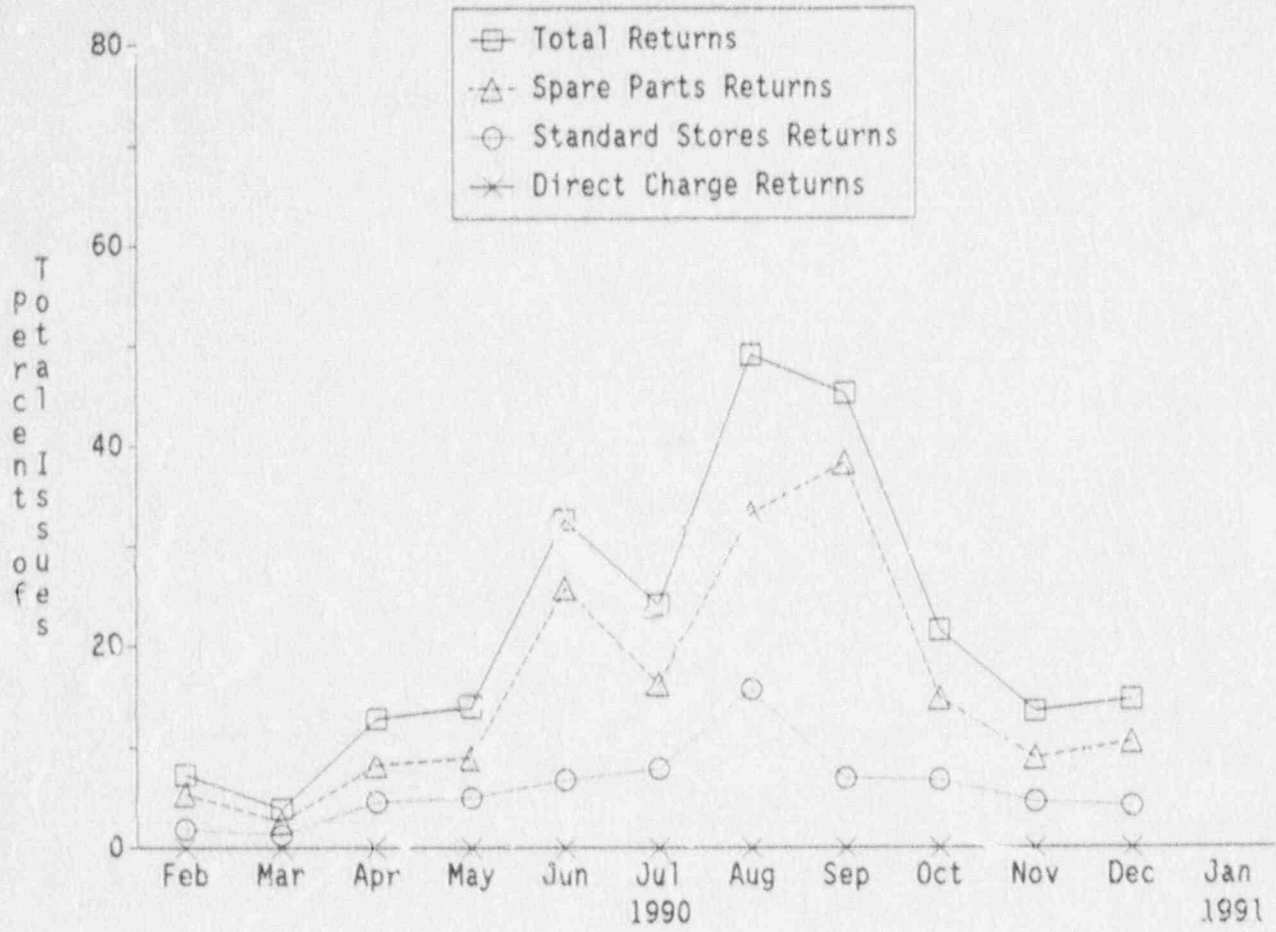


WAREHOUSE ISSUES

This indicator shows the total number of warehouse issues, the number of spare parts issues, the number of standard stores issues, and the number direct charge issues for the reporting month.

During December the warehouse completed a total of 1,075 issues. Of the 1,075 issues completed, 289 were spare parts issues, 565 were standard stores issues, and 221 were direct charge issues.

Adverse Trend: None

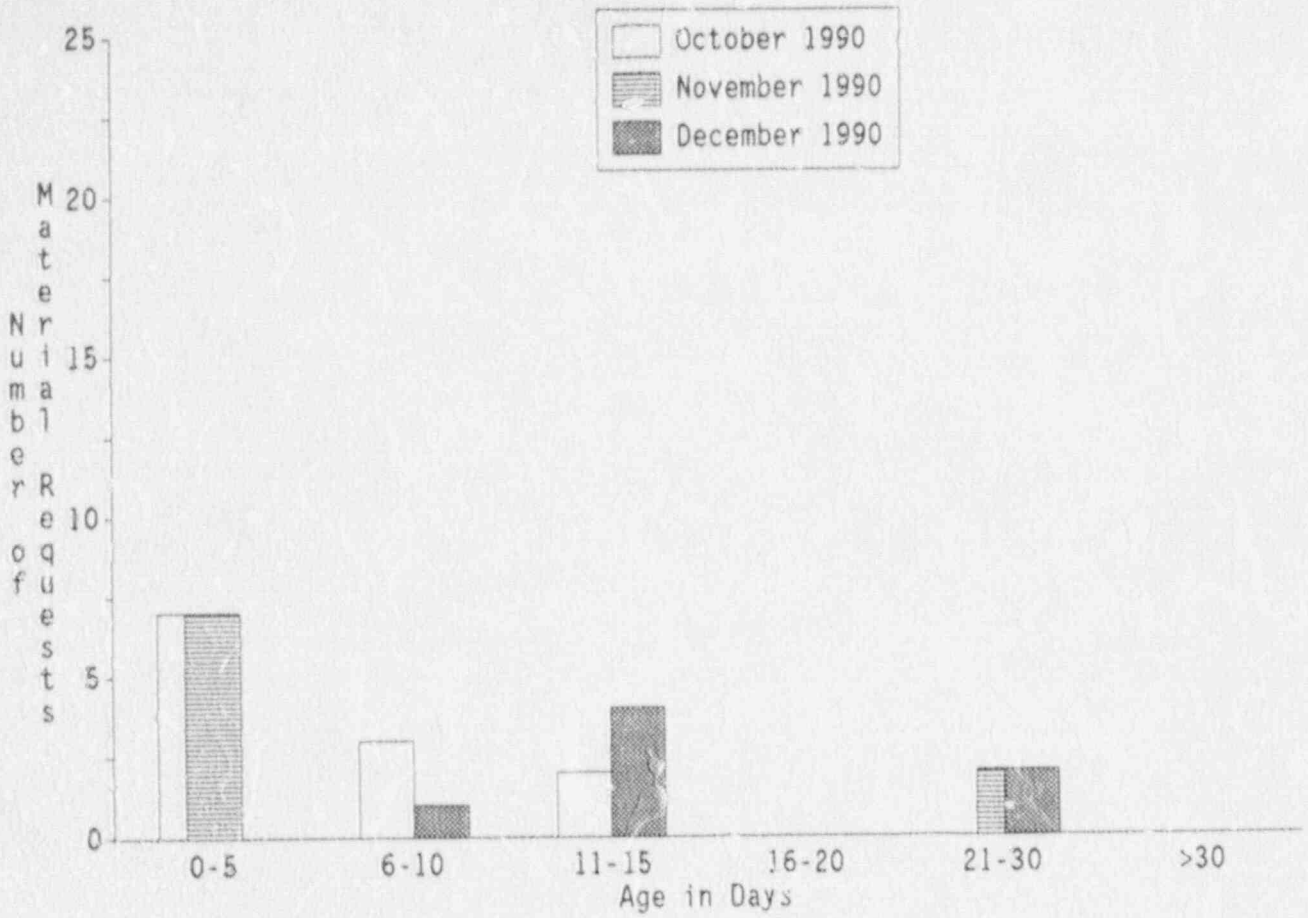


WAREHOUSE RETURNS

The Warehouse Returns Indicator shows the percentage of the total number of warehouse returns, the number of spare parts returns, the number of standard stores returns, and the number of direct charge returns compared to the total number of warehouse issues during the reporting month.

During the month of December there were a total of 1,075 warehouse issues. Of the 1,075 issues, there were 159 total returns. These returns consisted of 114 spare parts returns and 45 standard stores returns.

Adverse Trend: None

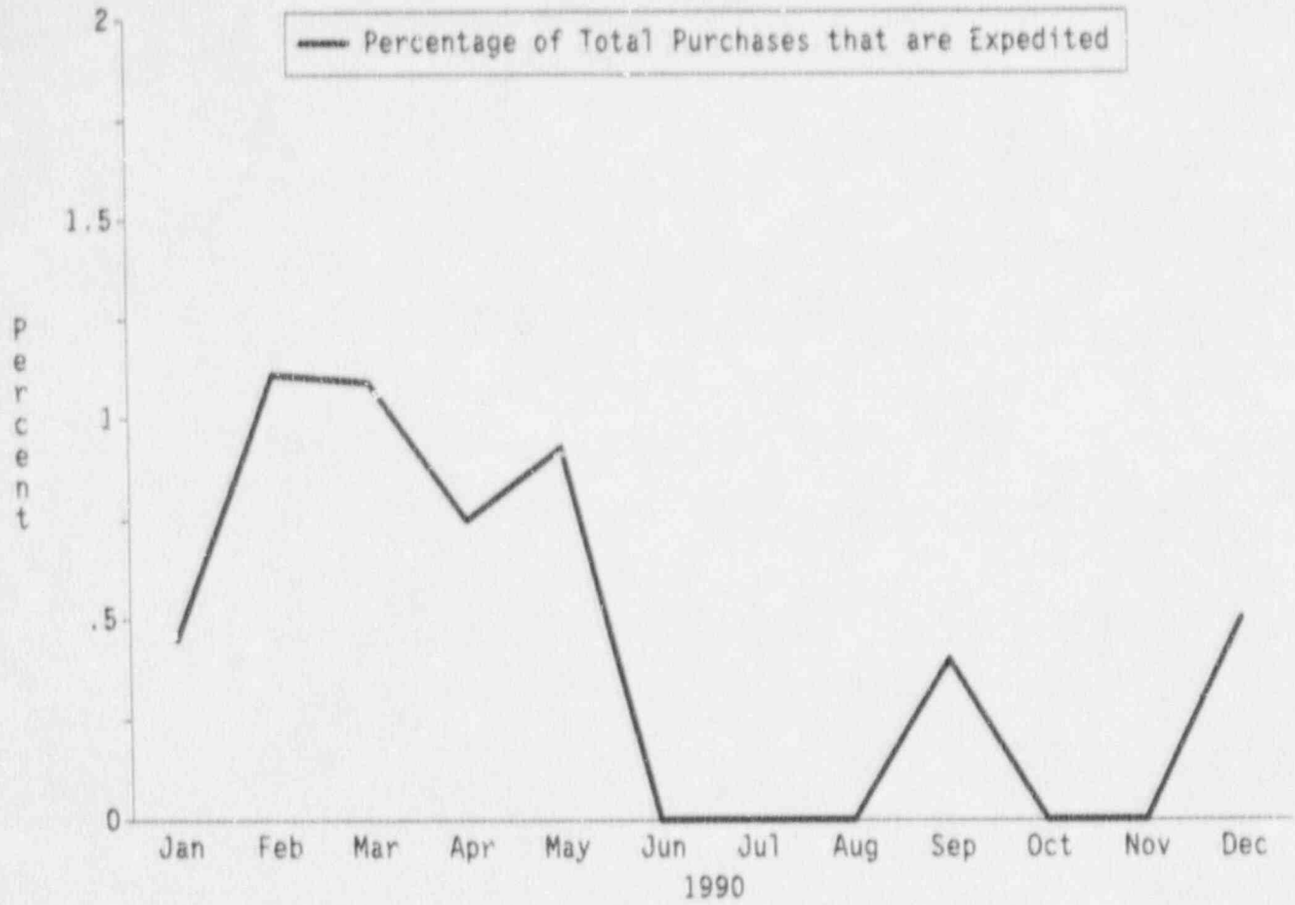


MATERIAL REQUESTS AWAITING APPROVAL

This indicator shows the number of material requests awaiting approval at the end of the reporting month broken down into their age by days.

At the end of December, 7 material requests were awaiting approval.

Adverse Trend: None

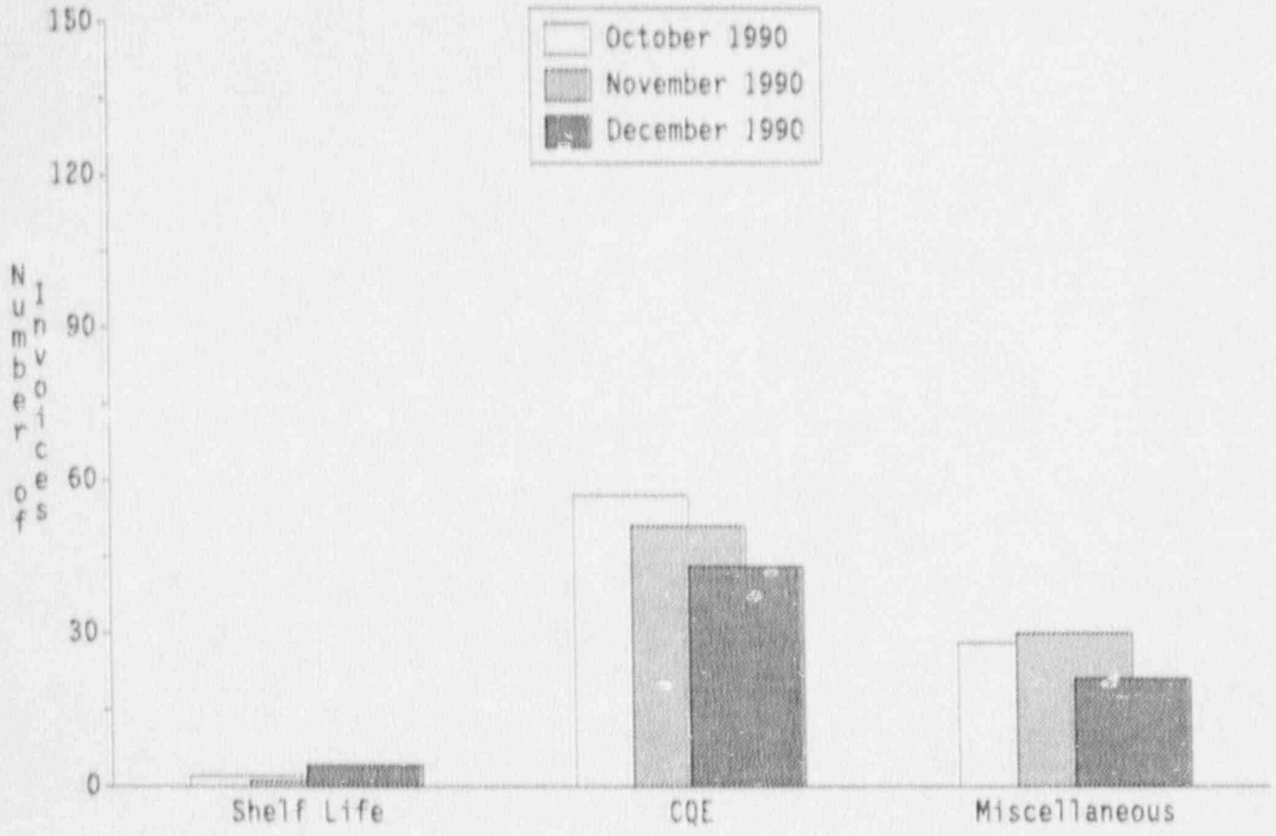


EXPEDITED PURCHASES

This indicator shows the percentage of expedited purchases compared to the total number of purchase orders generated during the reporting month.

During December, there was a total of 406 purchase orders generated. Of the 406 purchase orders generated, there were 2 expedited purchases.

Adverse Trend: None

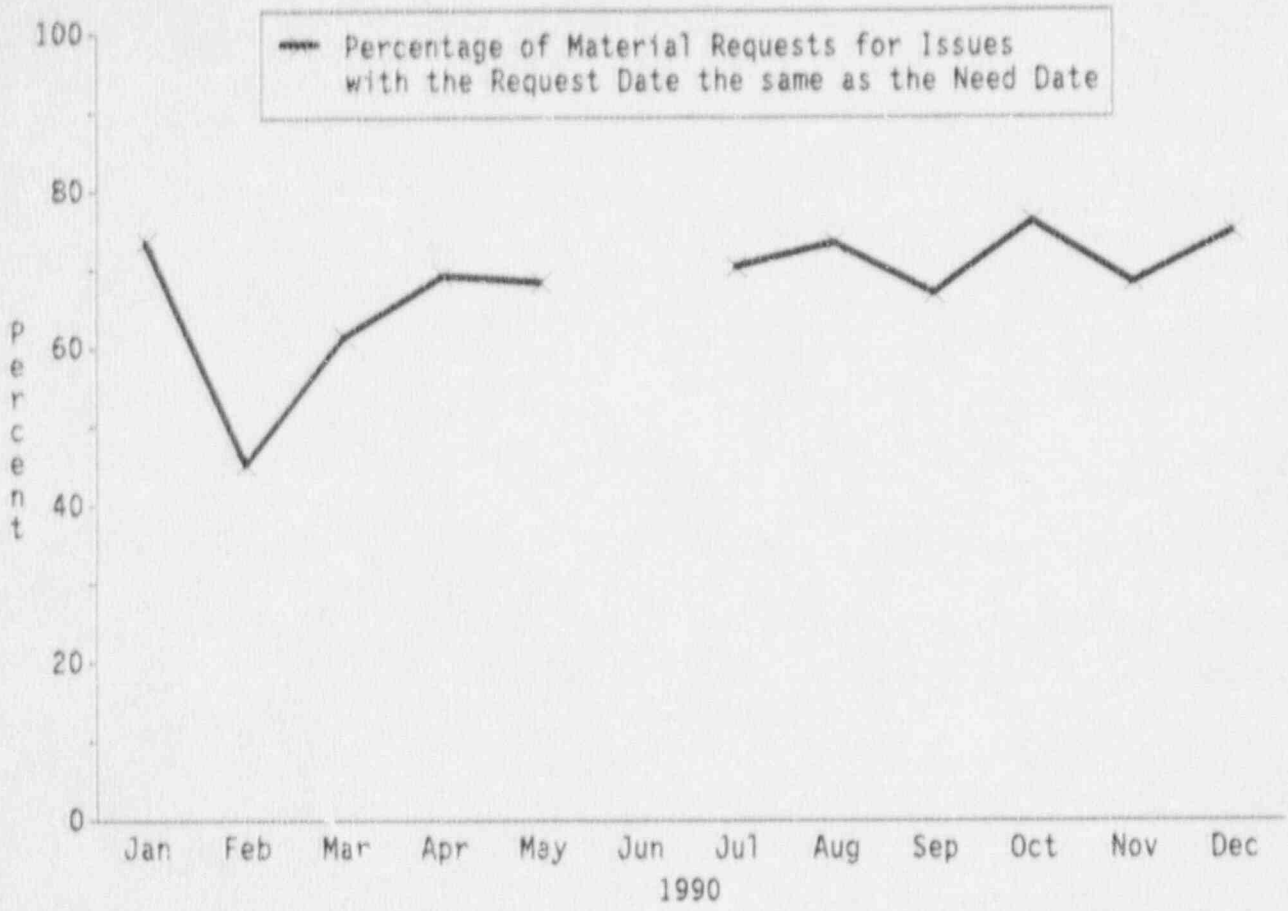


INVOICE BREAKDOWN

This indicator shows the number of invoices that are on hold at the end of the reporting month due to shelf life, CQE, and miscellaneous reasons.

At the end of December, 4 invoices were on hold due to shelf life reasons, 43 invoices were on hold due to CQE reasons, and 21 invoices were on hold due to miscellaneous reasons.

Adverse Trend: None



MATERIAL REQUEST PLANNING

This indicator shows the percent of material requests (MR's) for issues with their request date the same as their need date compared to the total number of MR's for issues for the reporting month.

During the month of December, a total of 747 MR's were received by the warehouse. Of the 747 total MR's received by the warehouse, 557 MR's were for issues with their request date the same as their need date.

Adverse Trend: None

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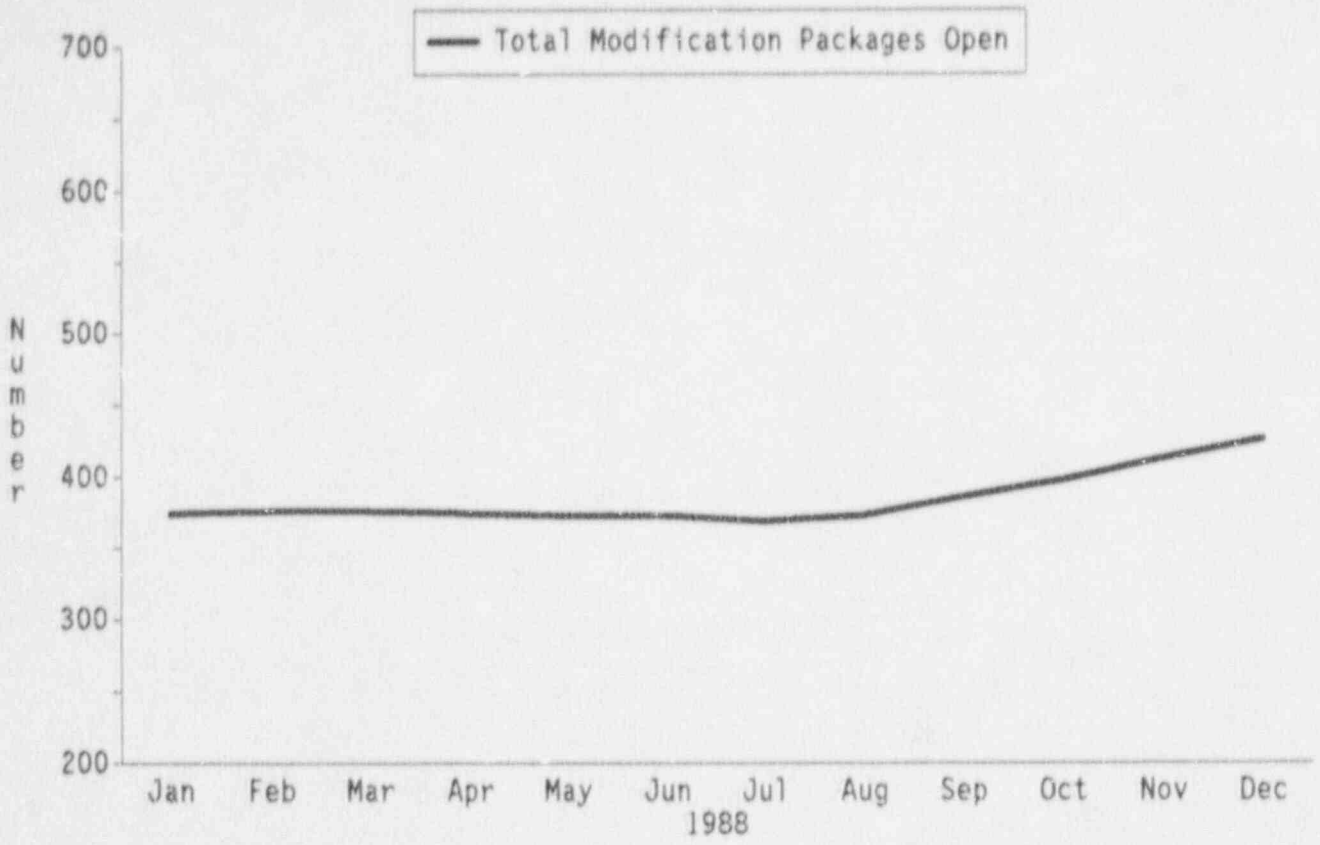
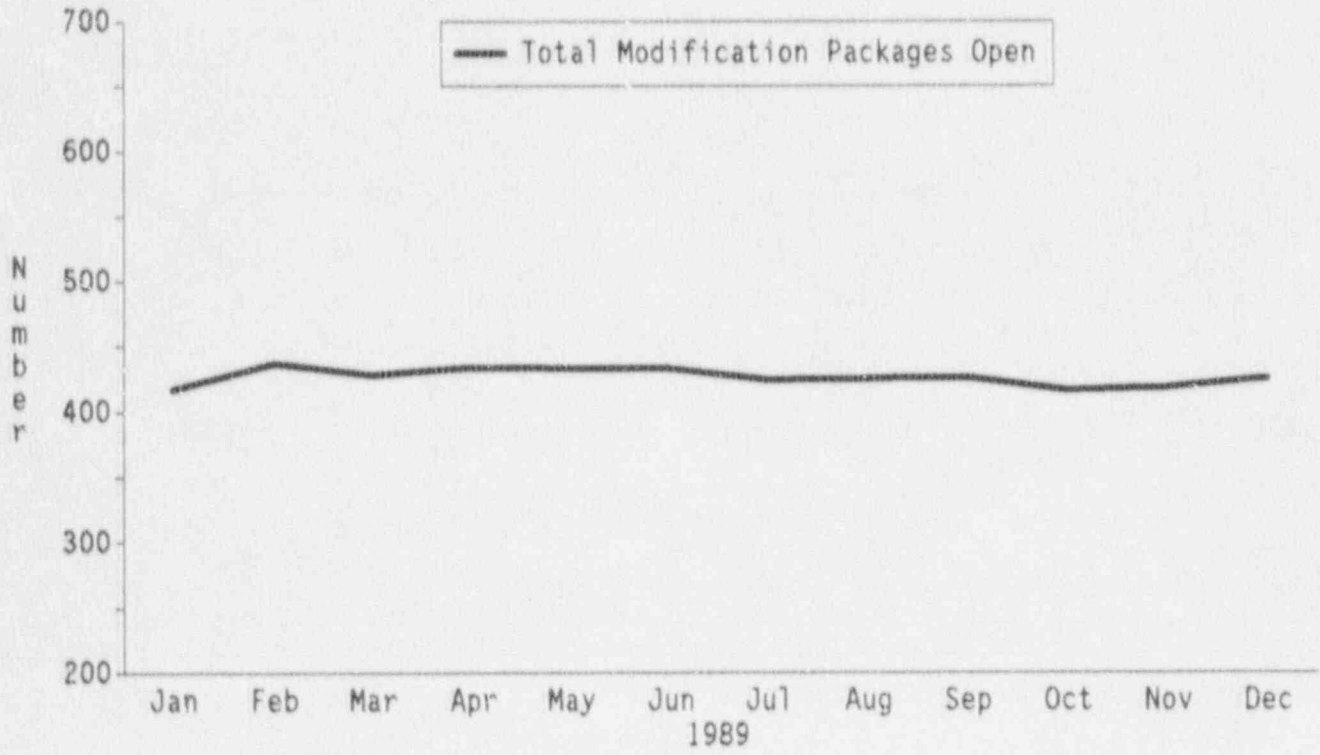
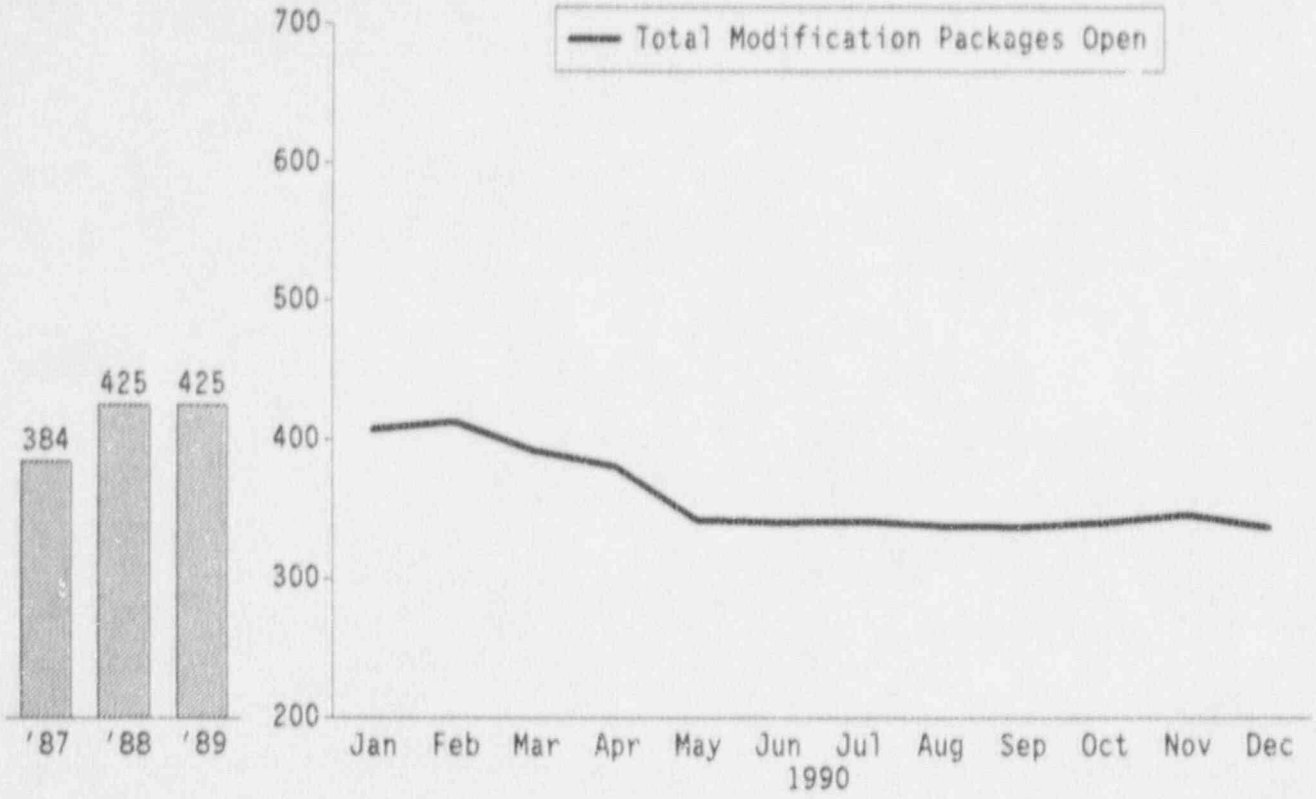

Total Modification Packages Open
700
600
500
400
300
200
Number
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Total Modification Packages Open
700
600
500
400
300
200
Number
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



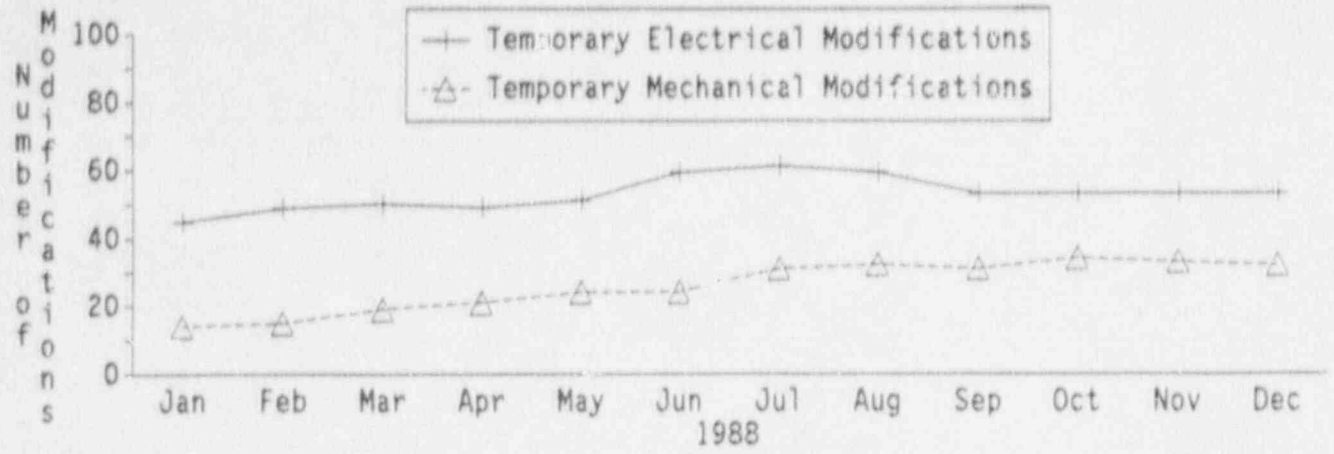
OUTSTANDING MODIFICATIONS

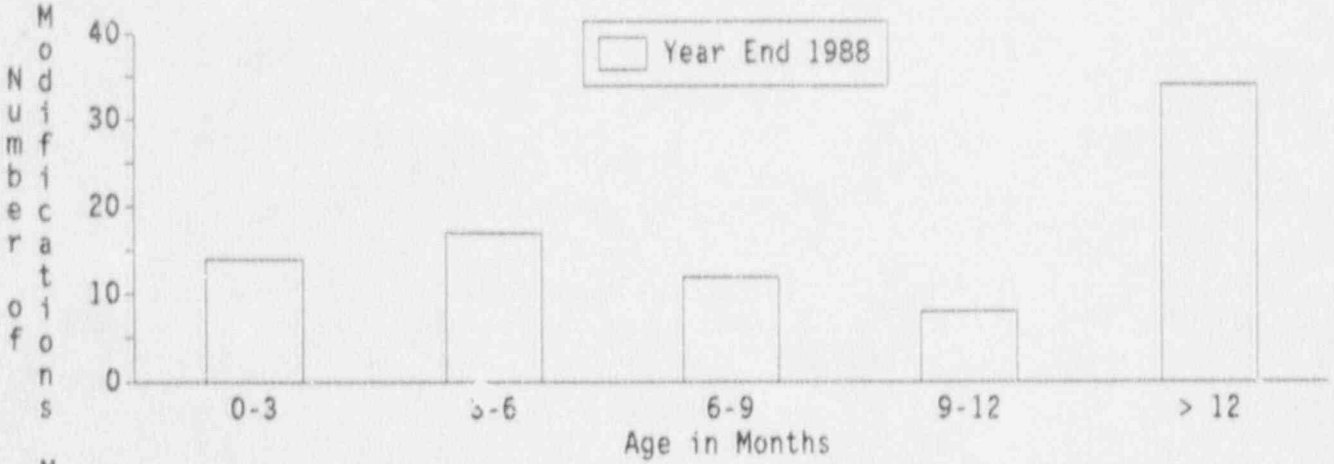
The total number of outstanding modifications decreased by 9 during the month of November.

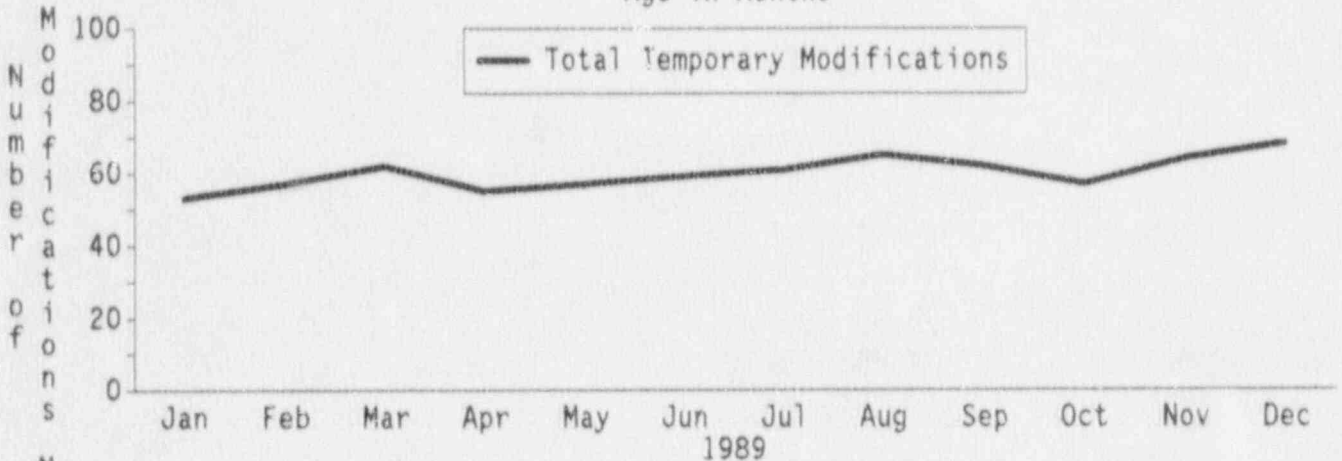
CATEGORY	OCT 90	NOV 90	DEC 90
Form FC-1133 Backlog/In Progress	13	14	16
Mod Requests Being Reviewed	137	134	130
Design Engr. Backlog/In Progress	90	98	99
Construction Backlog/In Progress	39	38	40
Design Engr. Update Backlog/In Progress	61	62	52
Total	340	346	337

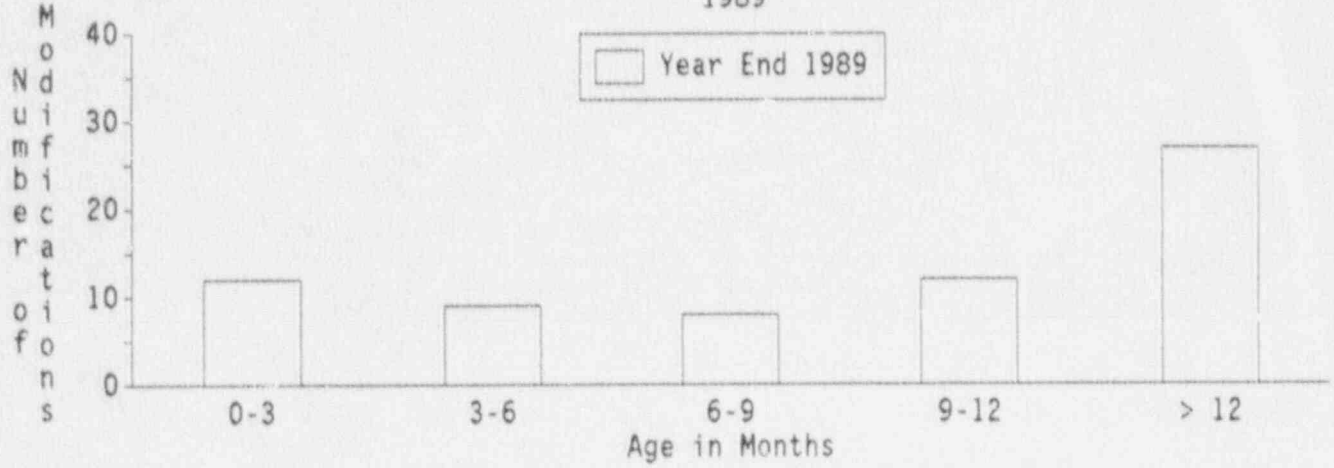
As of the end of December, 72 additional modification requests have been issued this year and 15 modification requests have been cancelled. The Nuclear Projects Review Committee (NPRC) has completed 171 backlog modification request reviews this year. The Nuclear Projects Committee (NPC) has completed 150 backlog modification request reviews this year. The number of reviews completed is high due to the fact that some of these requests were reviewed more than once.

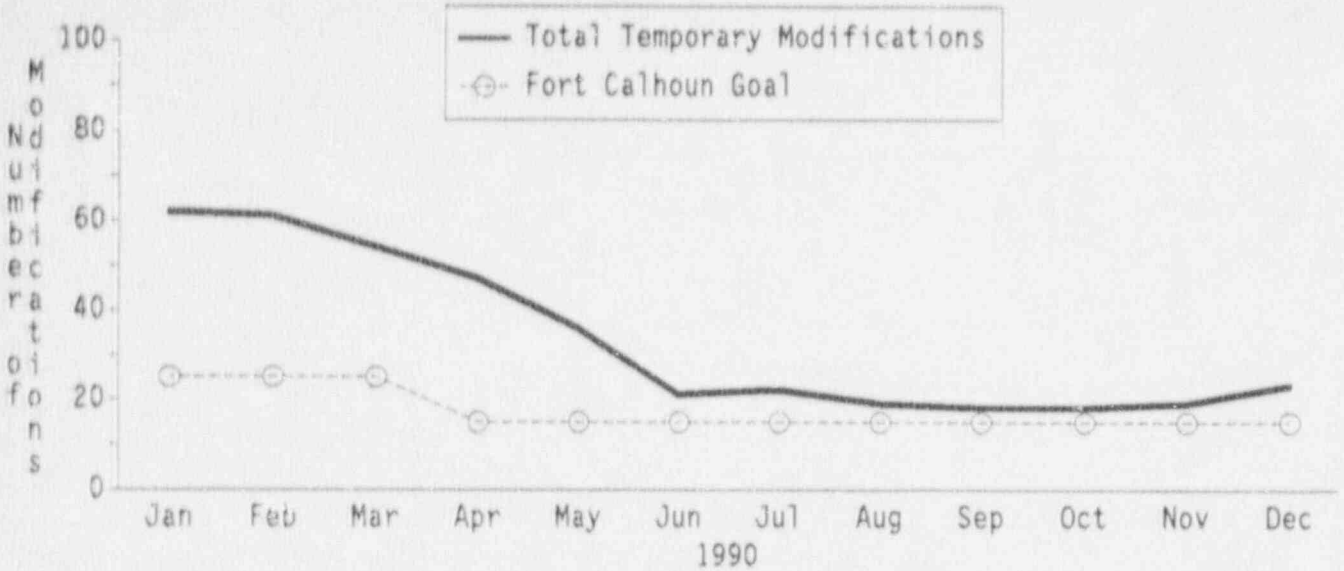
Adverse Trend: None

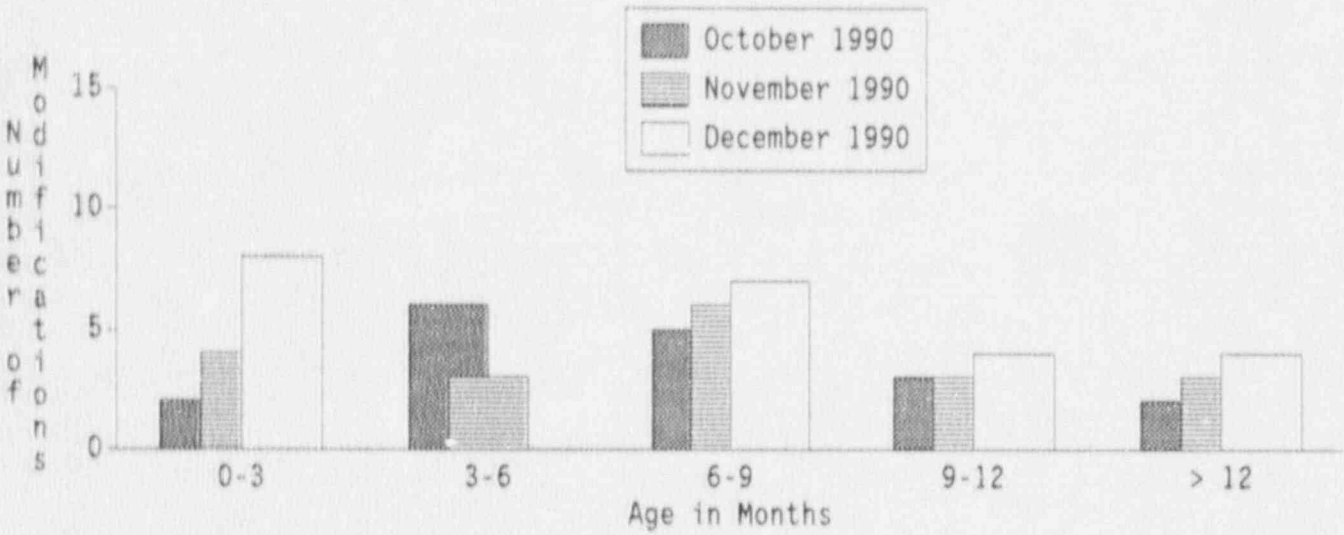

Temporary Electrical Modifications
Temporary Mechanical Modifications
Number of Modifications
100
80
60
40
20
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Year End 1988
Number of Modifications
40
30
20
10
0
0-3
3-6
6-9
9-12
> 12
Age in Months


Total Temporary Modifications
Number of Modifications
100
80
60
40
20
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989


Year End 1989
Number of Modifications
40
30
20
10
0
0-3
3-6
6-9
9-12
> 12
Age in Months





TEMPORARY MODIFICATIONS
(EXCLUDING SCAFFOLDING)

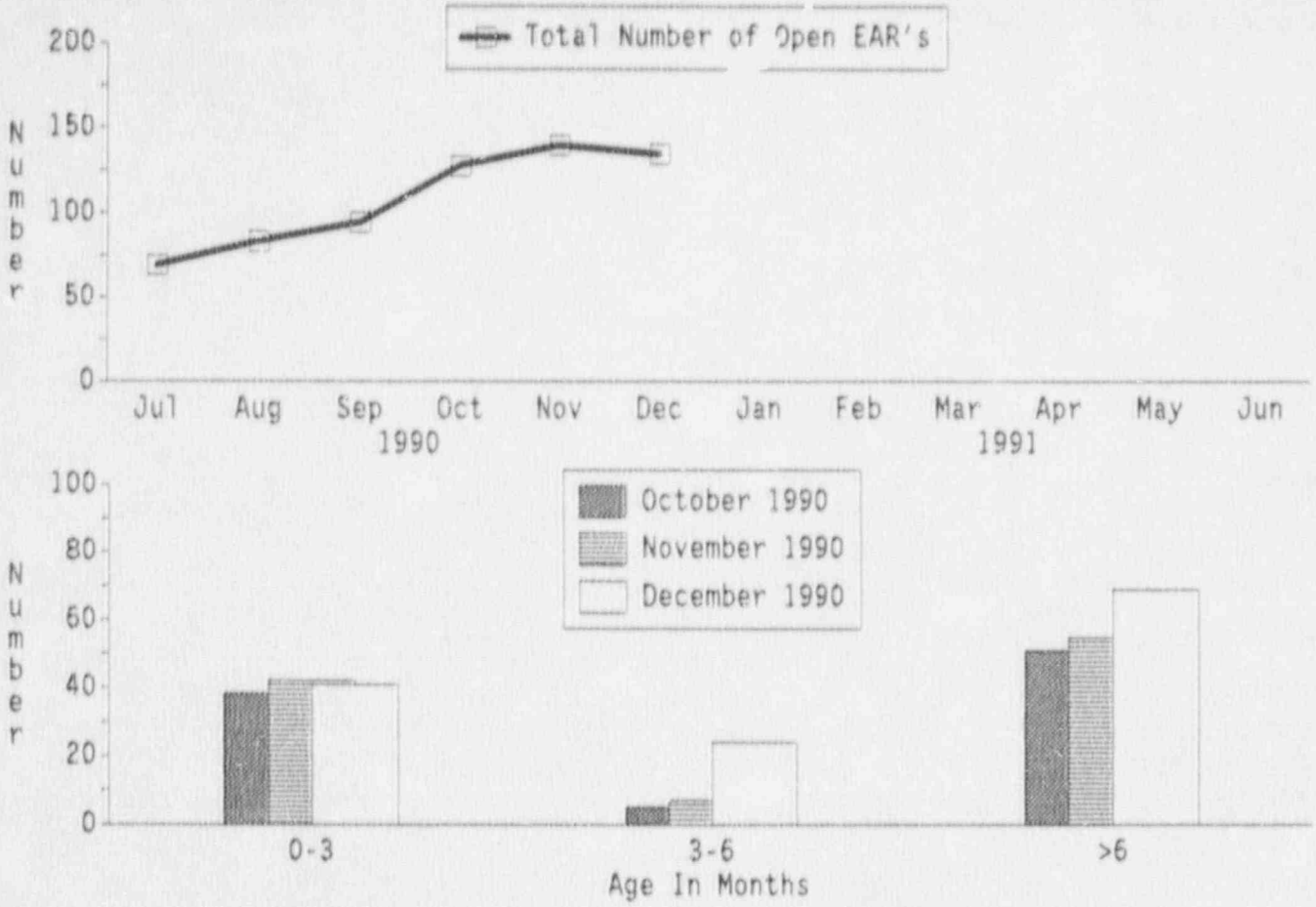
The top graph shows the total number of temporary modifications installed in the Fort Calhoun Station and a Fort Calhoun goal.

At the end of December, there was a total of 23 temporary modifications installed in the Fort Calhoun Station. The Fort Calhoun goal for the total number of installed temporary modifications is less than 15 installed temporary modifications.

The bottom graph, Age of Temporary Modifications, displays the age of all temporary modifications by months installed in the plant.

The number of temporary modifications which are 6-9 months old have been increasing, but further investigation reveals that 4 out of the 6 temporary modifications that are 6-9 months old require an outage for removal.

Adverse Trend: None SEP 62 & 71

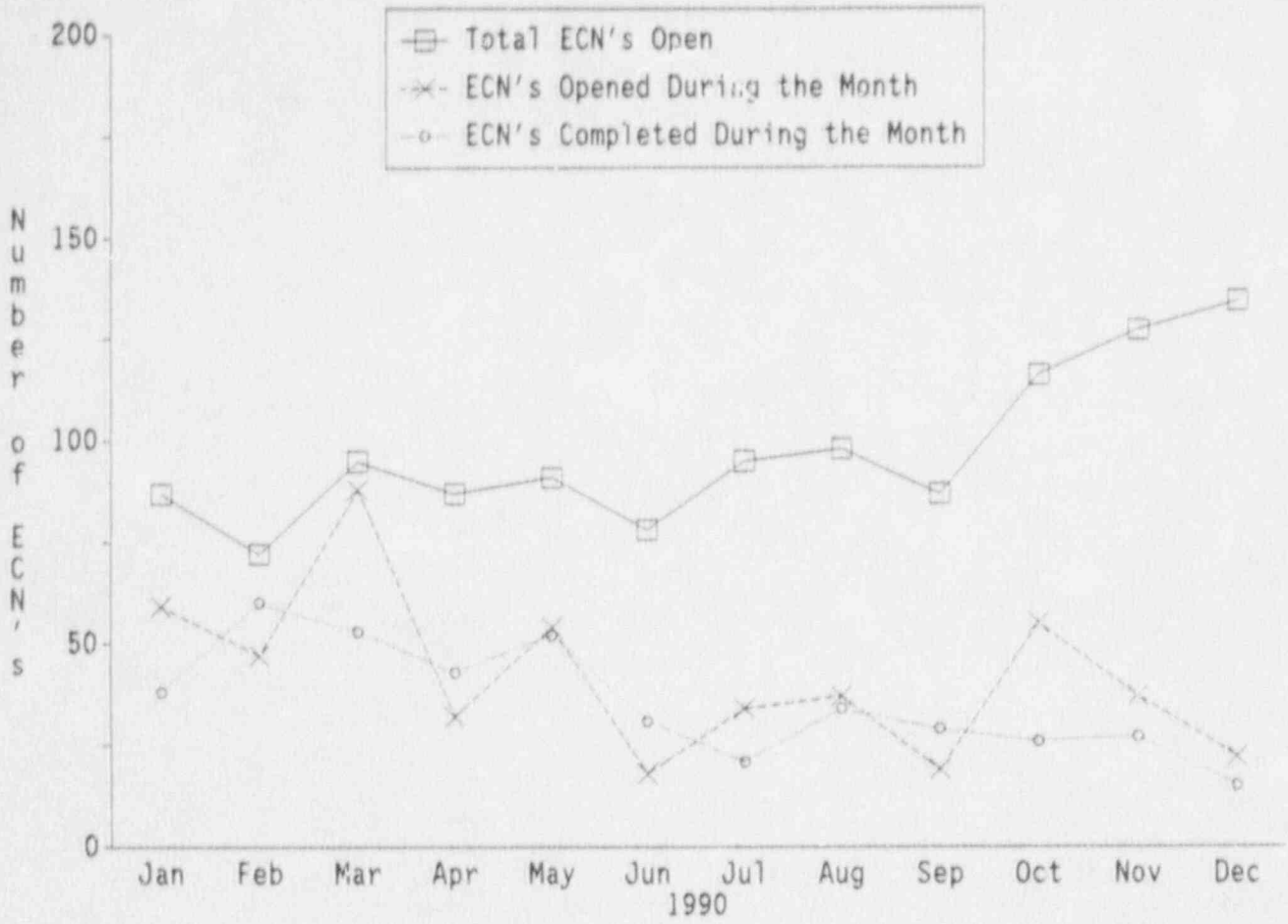


OUTSTANDING ENGINEERING ASSISTANCE REQUESTS (EAR's)

The top graph shows the total number of open EAR's at the end of the reporting month. At the end of December, there was a total of 134 open EAR's.

The bottom graph shows the total number of open EAR's broken down by their age in months.

Adverse Trend: None SEP 62

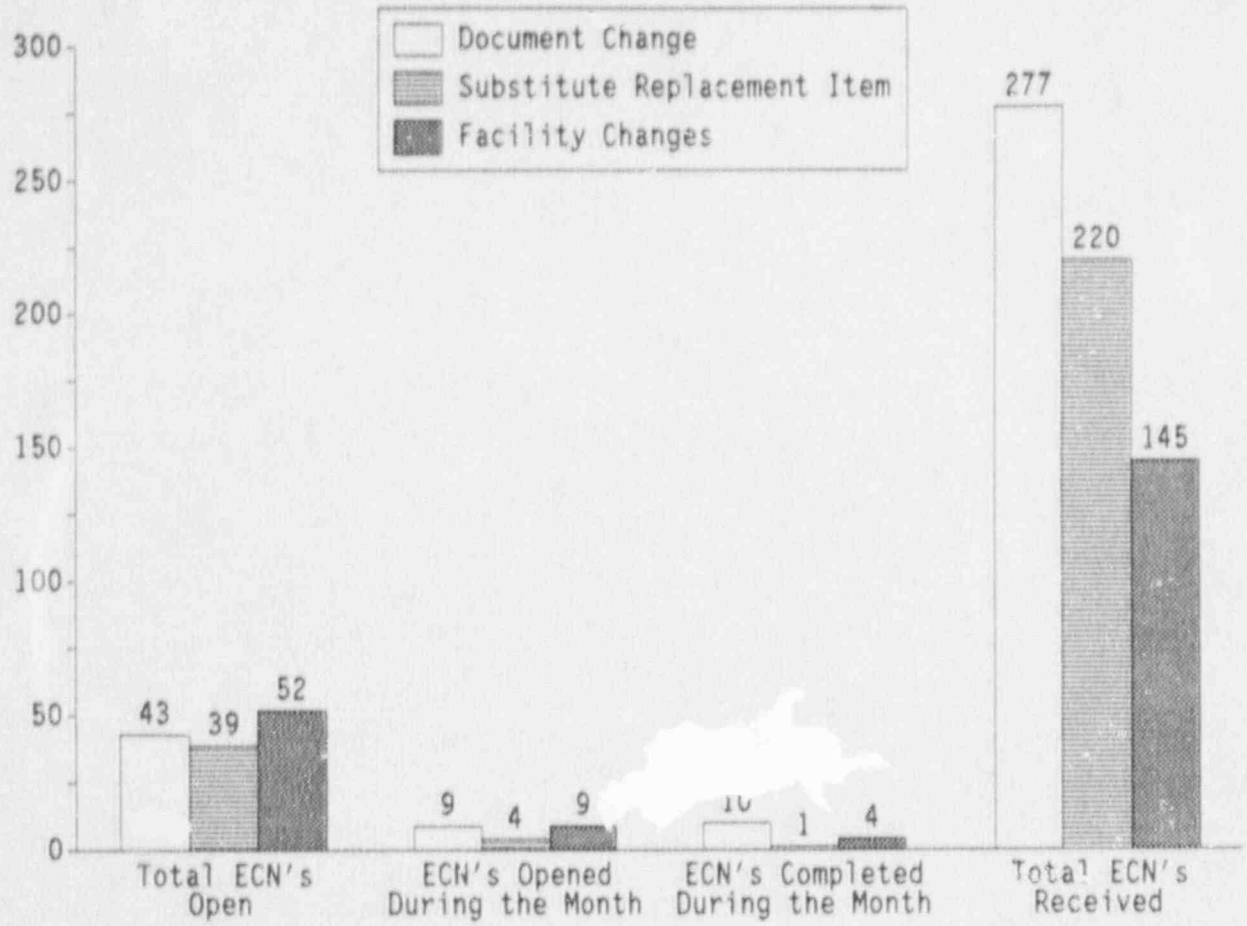


ENGINEERING CHANGE NOTICE STATUS

The indicator shows the total number of open Engineering Change Notices (ECN's), the number of ECN's opened during the reporting month, and the number of ECN's completed during the reporting month.

At the end of December 1990, there was a total of 134 open ECN's. During the month of December, 22 ECN's were opened, and 15 ECN's were completed.

Adverse Trend: None SEP 62



ENGINEERING CHANGE NOTICE BREAKDOWN

This indicator breaks down the total number of Engineering Change Notices (ECN's) that remain open at the end of the reporting month, the number of ECN's that were opened during the reporting month, the number of ECN's that were completed during the reporting month, and the number of ECN's received by Design Engineering during the reporting month into several categories. These categories include: ECN's requiring a document change to complete, ECN's requiring substitute replacement items to complete, and ECN's requiring facility changes to complete.

	Total Open	Opened	Completed	Received
Document Changes	43	9	10	277
Substitute Replacement	39	4	1	220
Facility Changes	52	9	4	145

Adverse Trend: None

SEP 62

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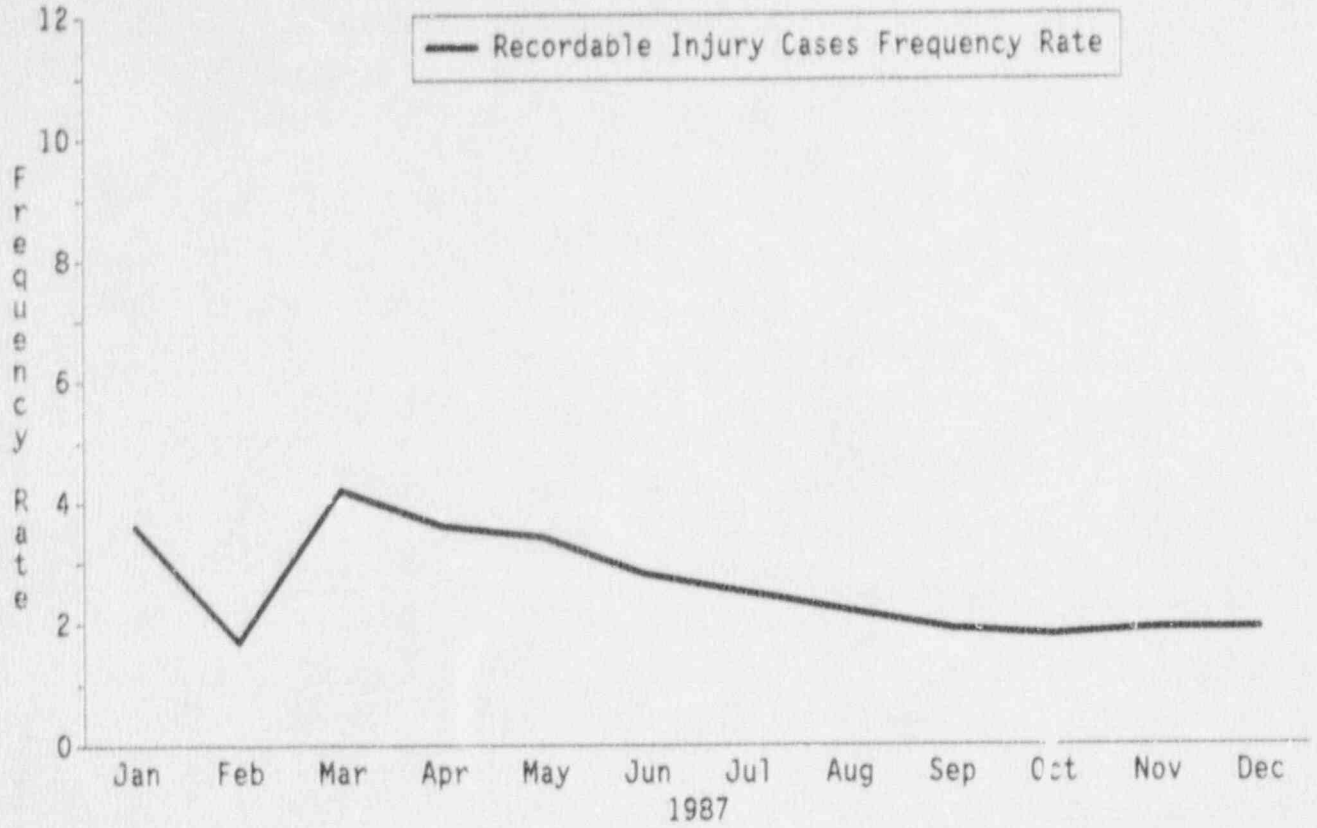
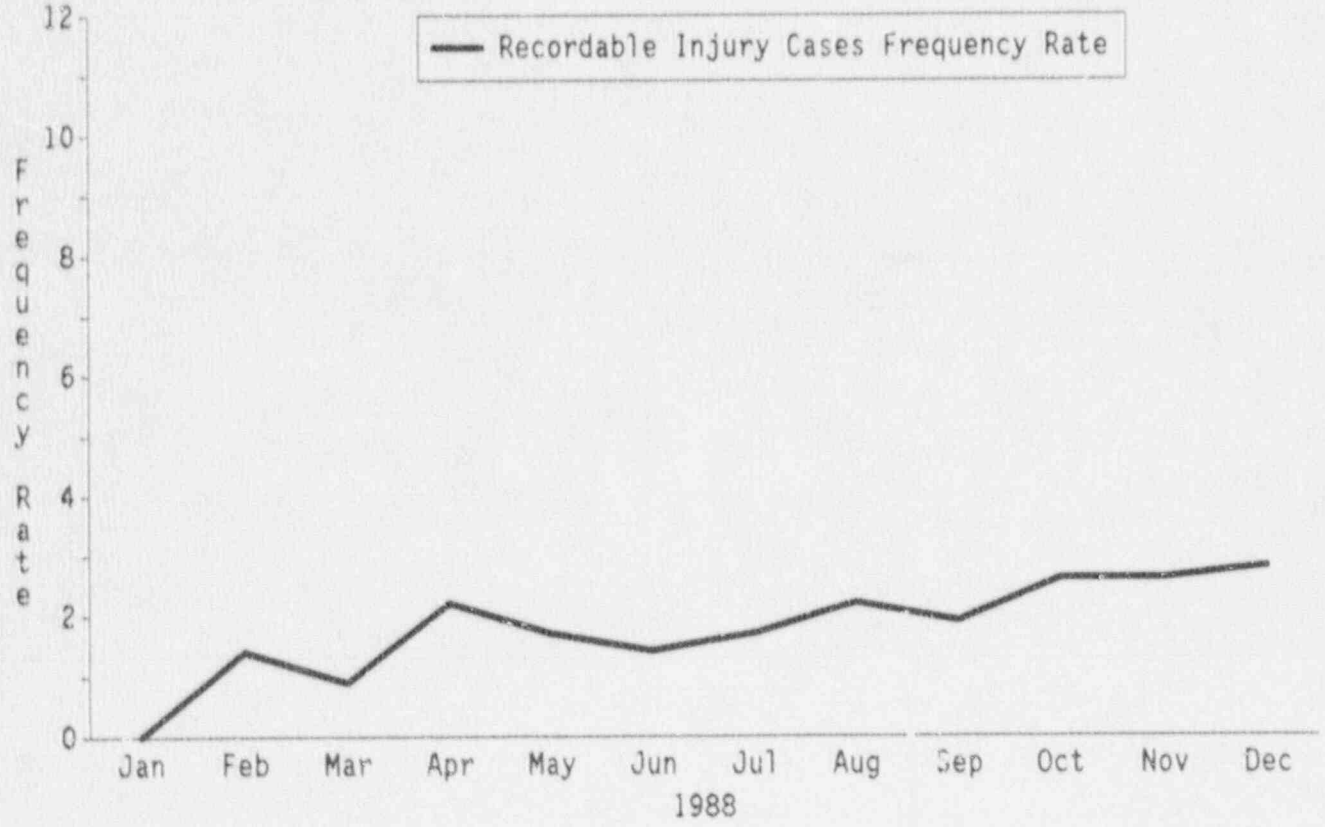
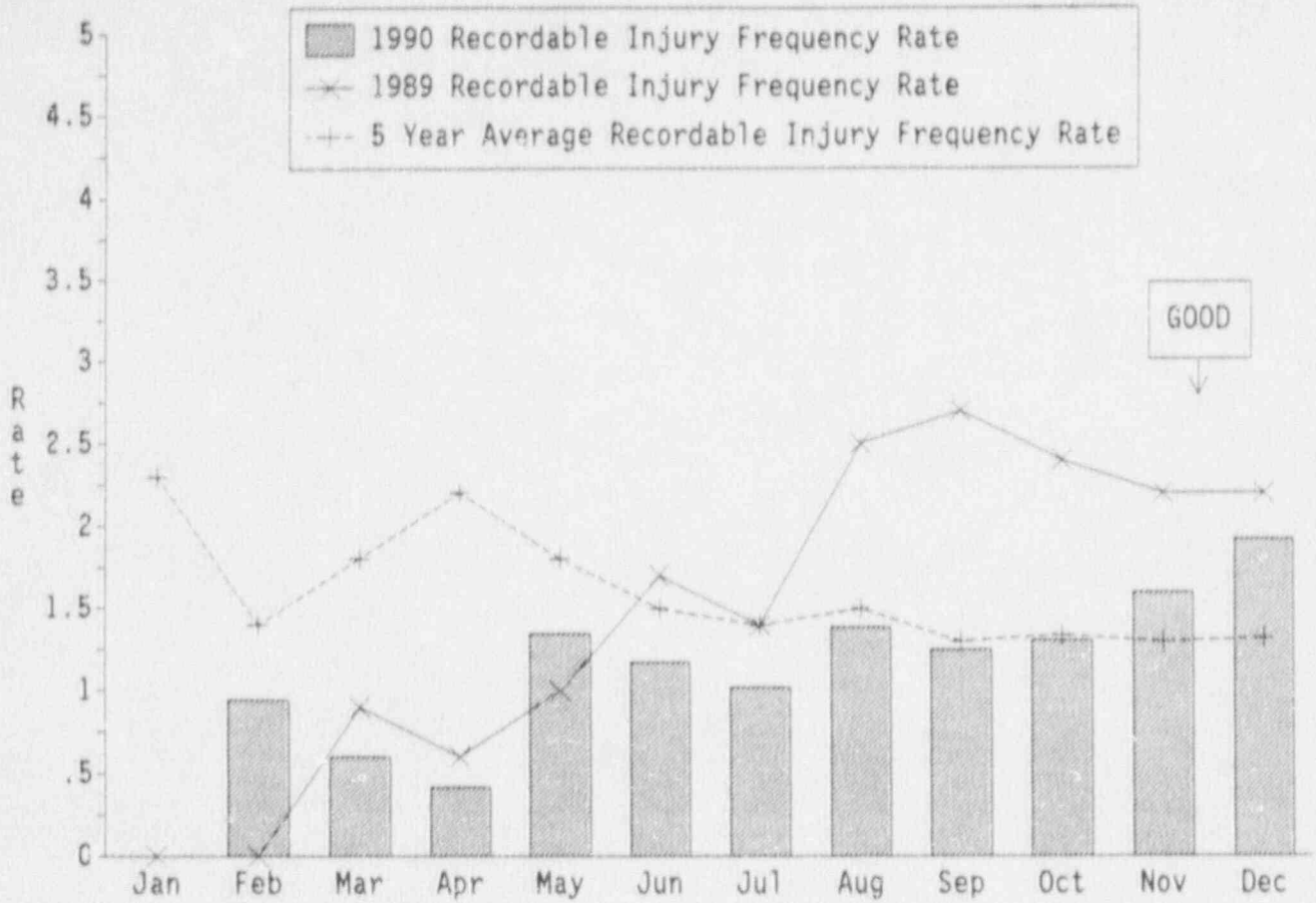

Recordable Injury Cases Frequency Rate
Frequency Rate
12
10
8
6
4
2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1987


Recordable Injury Cases Frequency Rate
Frequency Rate
12
10
8
6
4
2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988



RECORDABLE INJURY CASES FREQUENCY RATE

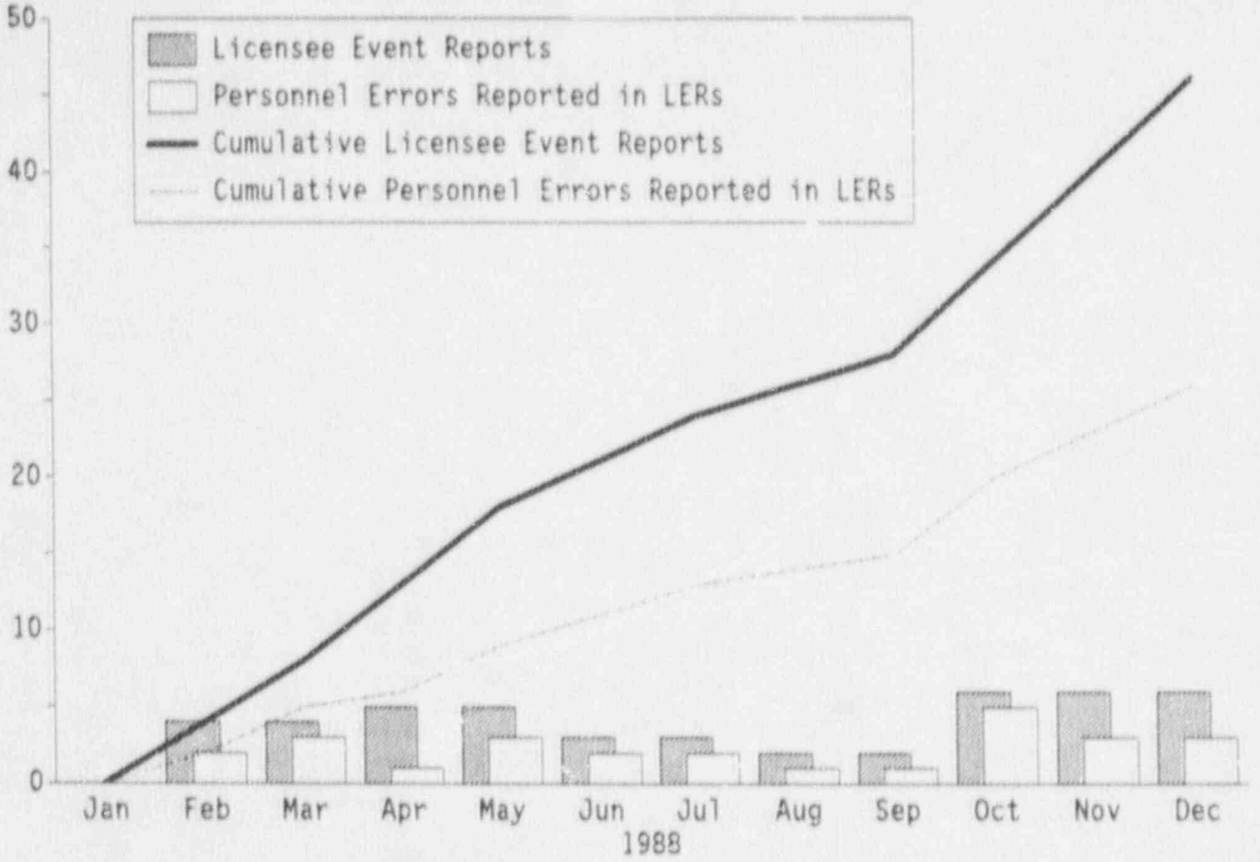
This indicator shows the monthly recordable injury cases frequency rate in column form. The above graph also includes the 1989 recordable injury cases frequency rate and the Fort Calhoun Station 5 year average recordable injury cases frequency rate.

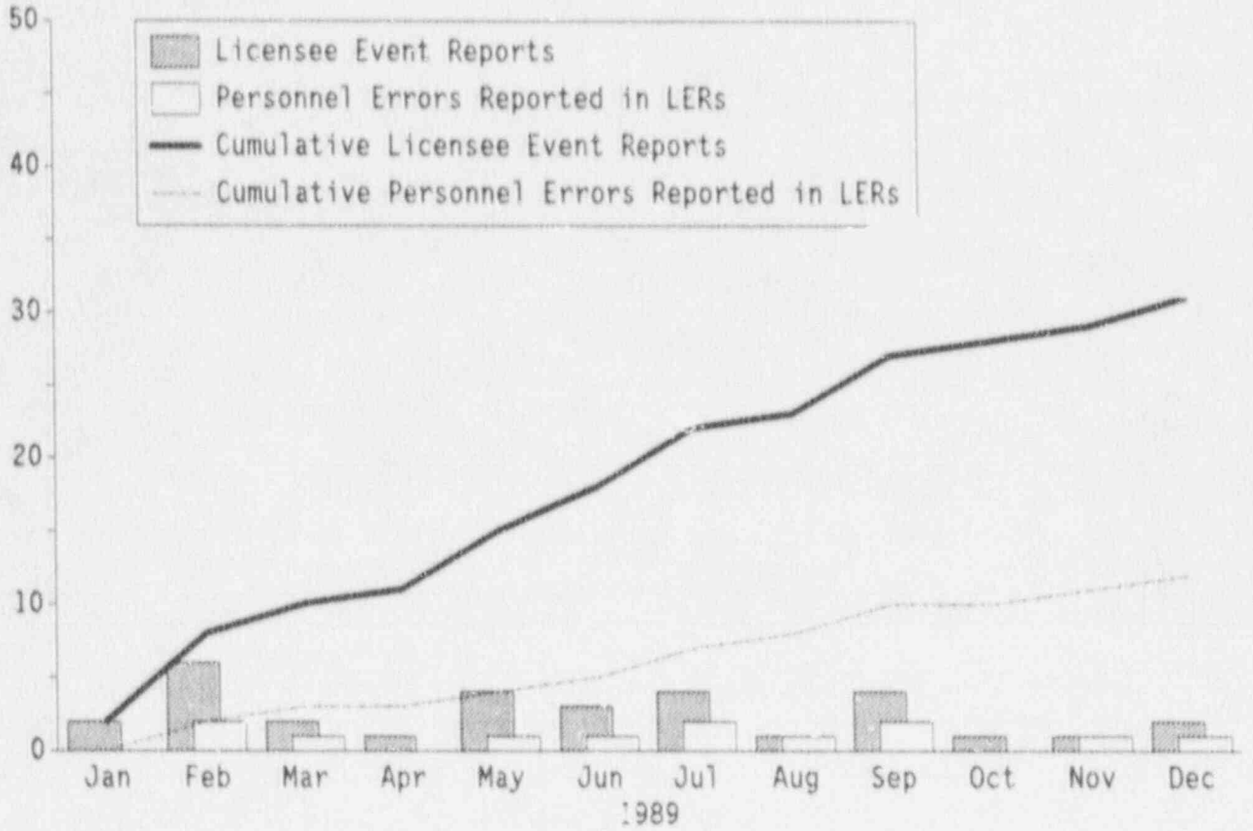
A recordable injury case is reported if Nuclear Operations Division personnel are injured on the job and require corrective medical treatment. The recordable cases frequency rate is computed on a year-to-date basis. There were three recordable injury cases reported during the month of December. There has been a total of 12 recordable injury cases so far in 1990.

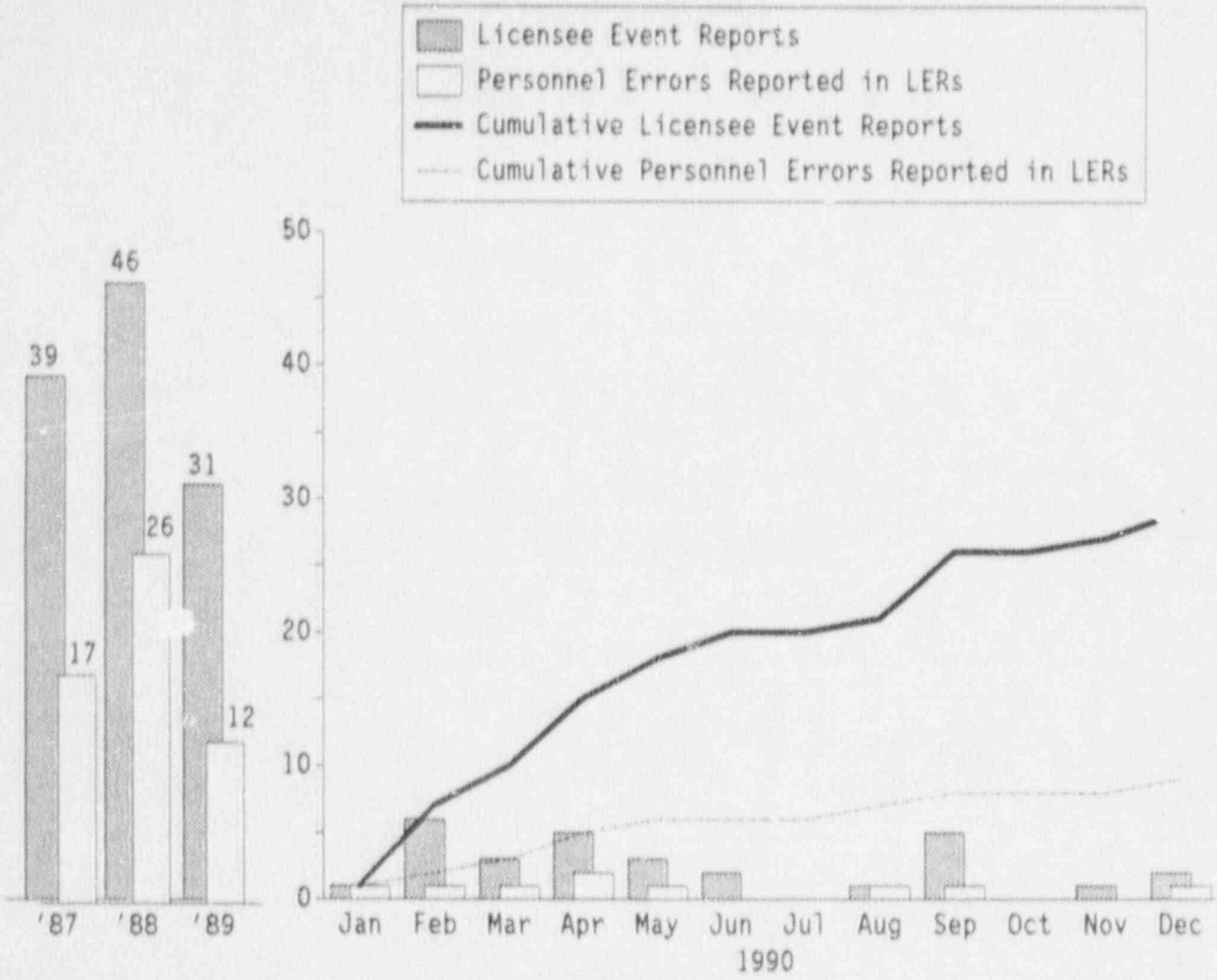
There were eleven recordable cases reported in 1989, eleven reported in 1988, and eight reported in 1987. The year end recordable injury frequency rates for 1987, 1988, and 1989 were 2.5, 2.6, and 2.2 respectively.

Adverse Trend: The recordable injury cases frequency rate has been increasing since September 1990. This increase in the frequency is due to 5 recordable injury cases which have occurred since September 1990.

SEP 15 & 26


Licensee Event Reports
Personnel Errors Reported in LERs
Cumulative Licensee Event Reports
Cumulative Personnel Errors Reported in LERs
50
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Licensee Event Reports
Personnel Errors Reported in LERs
Cumulative Licensee Event Reports
Cumulative Personnel Errors Reported in LERs
50
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



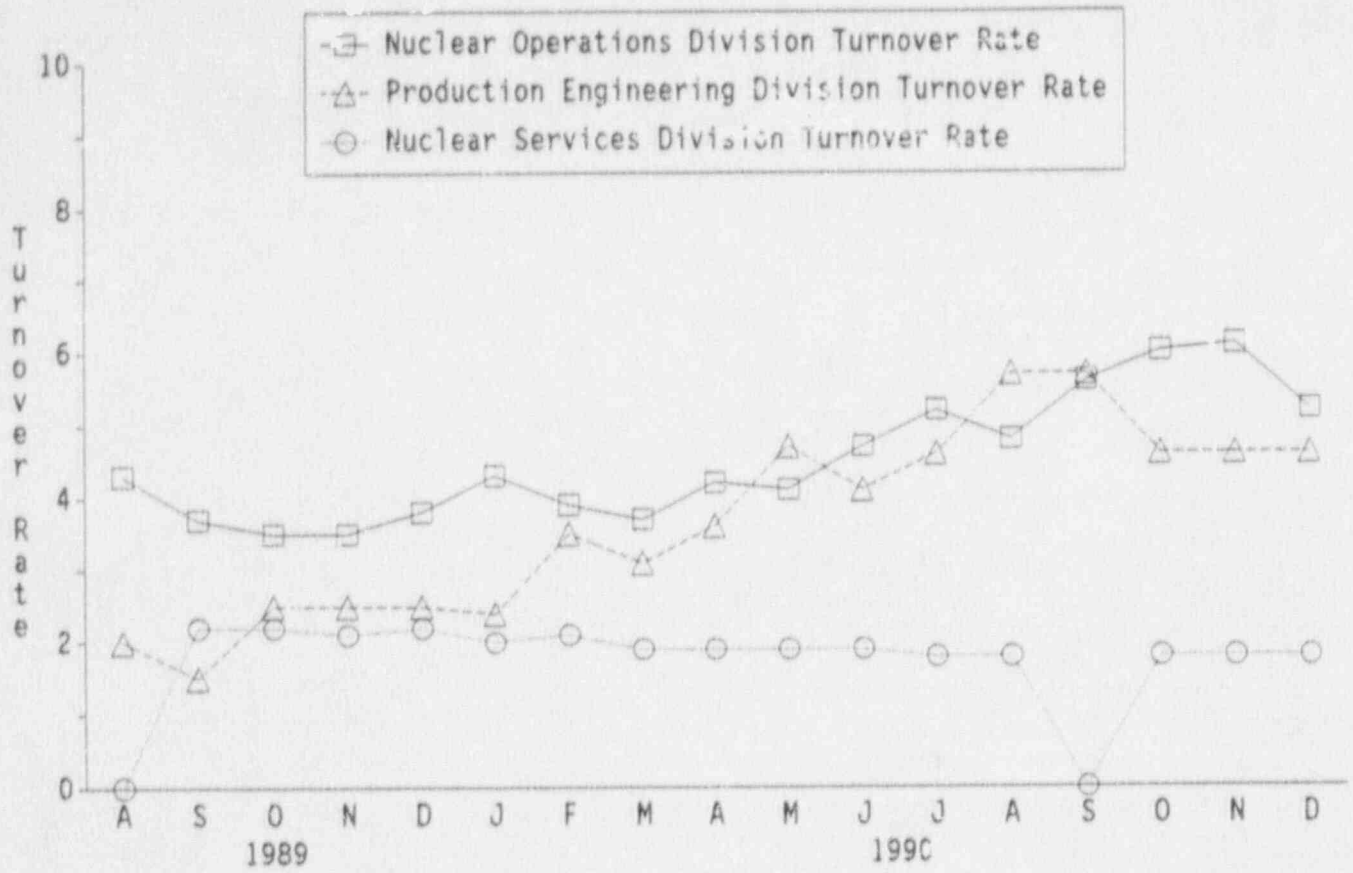
NUMBER OF PERSONNEL ERRORS
REPORTED IN LER'S

The Number of Personnel Errors Reported in LER's Indicator reports the Licensee Event Reports (LER's) by their event date.

In December 1990, there were 2 LER's reported. One of these LER's was attributable to personnel error.

There have been 29 LER's reported so far in 1990 and 9 LER's have been attributable to personnel errors.

Adverse Trend: None SEP 15



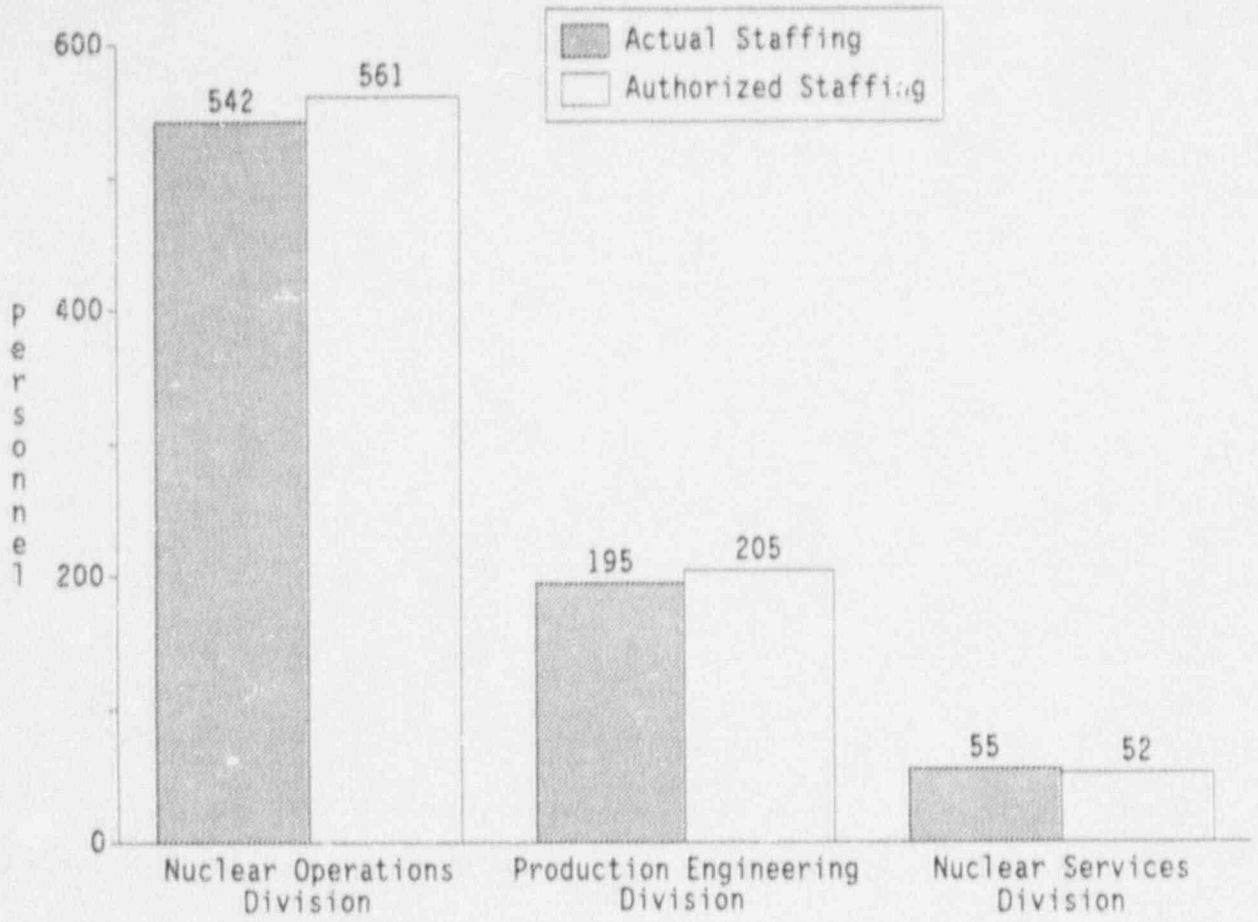
PERSONNEL TURNOVER RATE

Data dating from July 1, 1988 has been assembled to produce the annual turnover rates for the three Nuclear Divisions. The turnover rates for the three Divisions are calculated using only resignations from OPPD.

DIVISION	TURNOVER RATE
NOD	5.2%
PED	4.6%
NSD	1.8%

Currently, the OPPD corporate turnover rate is being reported as approximately 4.0%. This OPPD corporate turnover rate is based on the turnover rate over the last three years.

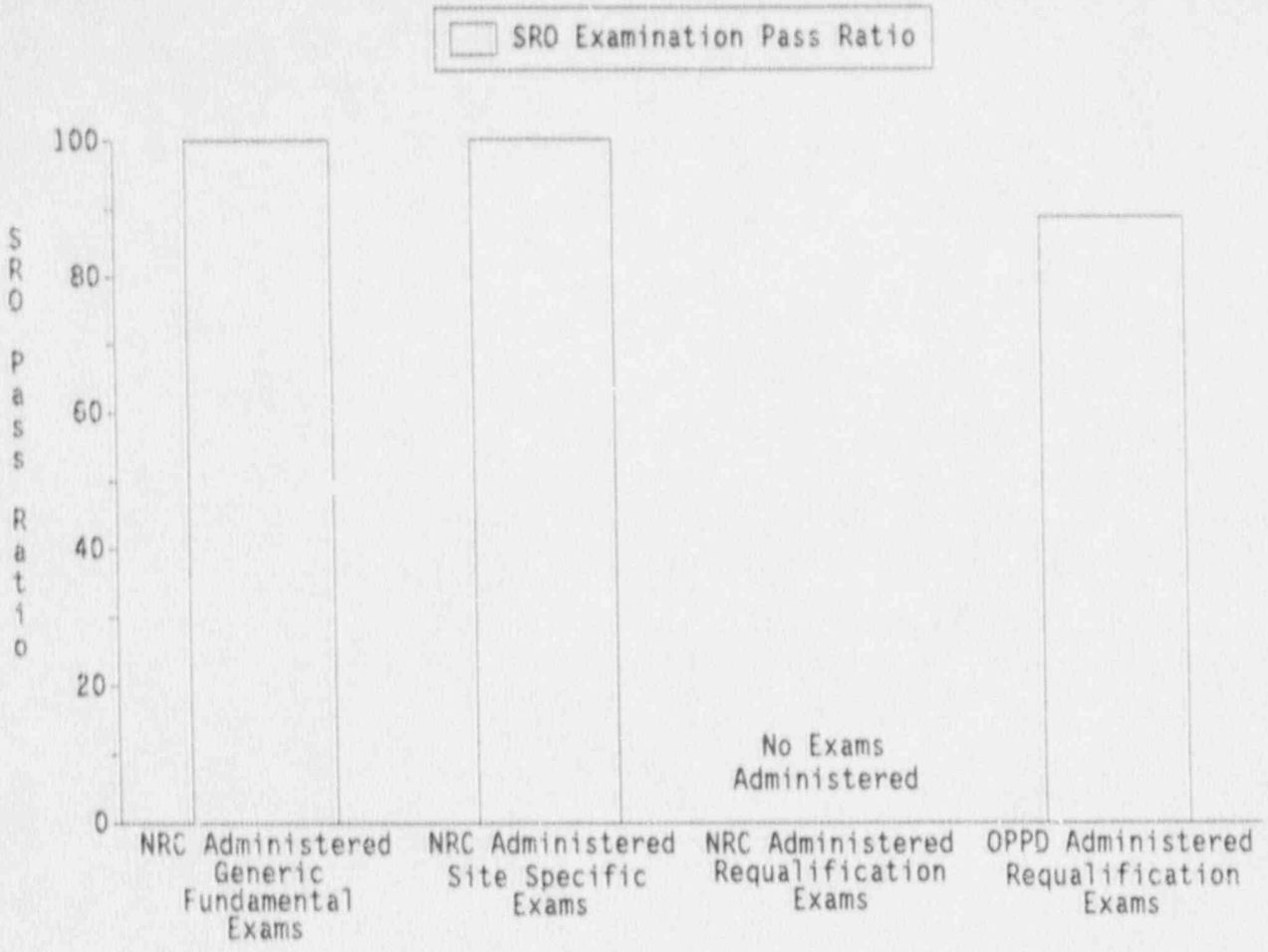
Adverse Trend: None



STAFFING LEVEL

The authorized and actual staffing levels are shown for the three Nuclear Divisions.

Adverse Trend: None SEP 24



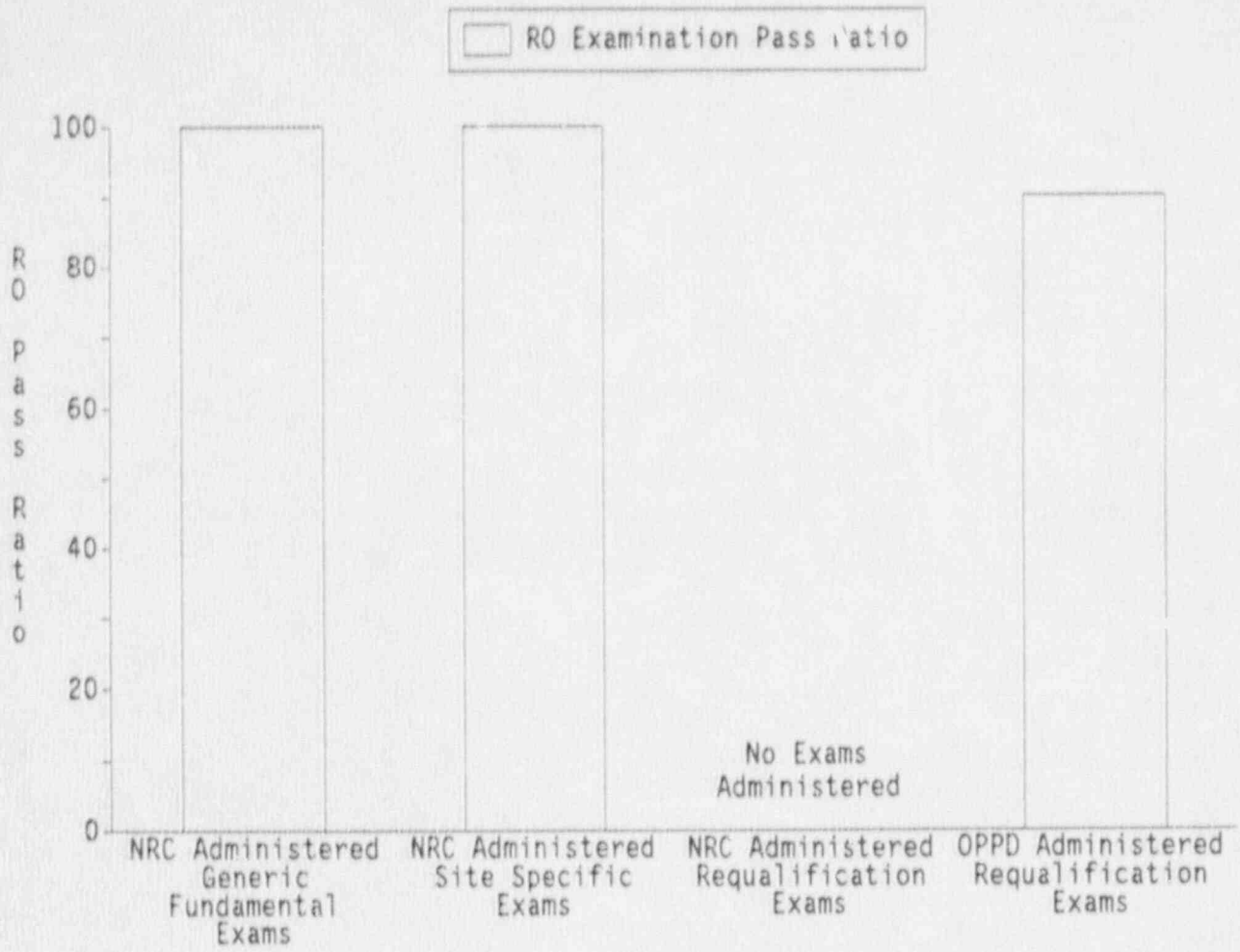
SRO LICENSE EXAMINATION PASS RATIO

The SRO License Examination Pass Ratio Indicator shows the number of NRC administered Generic Fundamentals Exams (GFE's), the number of NRC administered Site Specific Exams, the number of NRC administered license requalification exams, and the number of OPPD administered license requalification exams. No exams were administered in December.

	OPPD ADMINISTERED	NRC ADMINISTERED		
DATE	Requal % PASS RATIO	Generic Fund. % PASS RATIO	Site Spec. % PASS RATIO	Requal. % PASS RATIO
Feb 1990	-	100	-	-
Oct 1990	-	100	100	-
Nov 1990	88.5	-	-	-

Adverse Trend: None

SEP 68



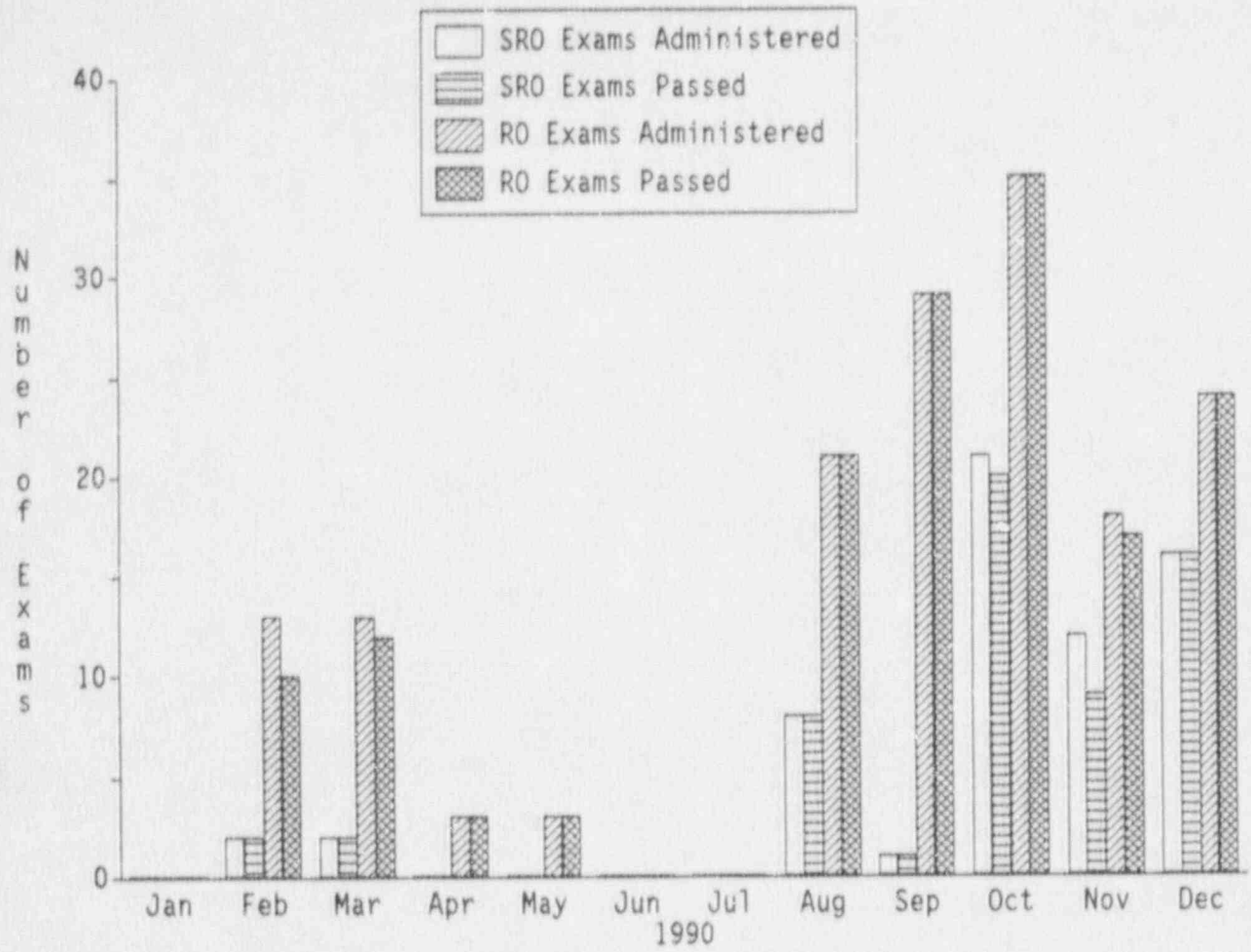
RO LICENSE EXAMINATION PASS RATIO

The RO License Examination Pass Ratio Indicator shows the number of NRC administered Generic Fundamentals Exams (GFE's), the number of NRC administered Site Specific Exams, the number of NRC administered license requalification exams, and the number of OPPD administered license requalification exams. No exams were administered during December.

	OPPD ADMINISTERED	NRC ADMINISTERED		
	Requal	Generic Fund.	Site Spec.	Requal.
DATE	% PASS RATIO	% PASS RATIO	% PASS RATIO	% PASS RATIO
Feb 1990	-	100	-	-
May 1990	-	-	100	-
Oct 1990	-	100	100	-
Nov 1990	90.1	-	-	-

Adverse Trend: None

SEP 68



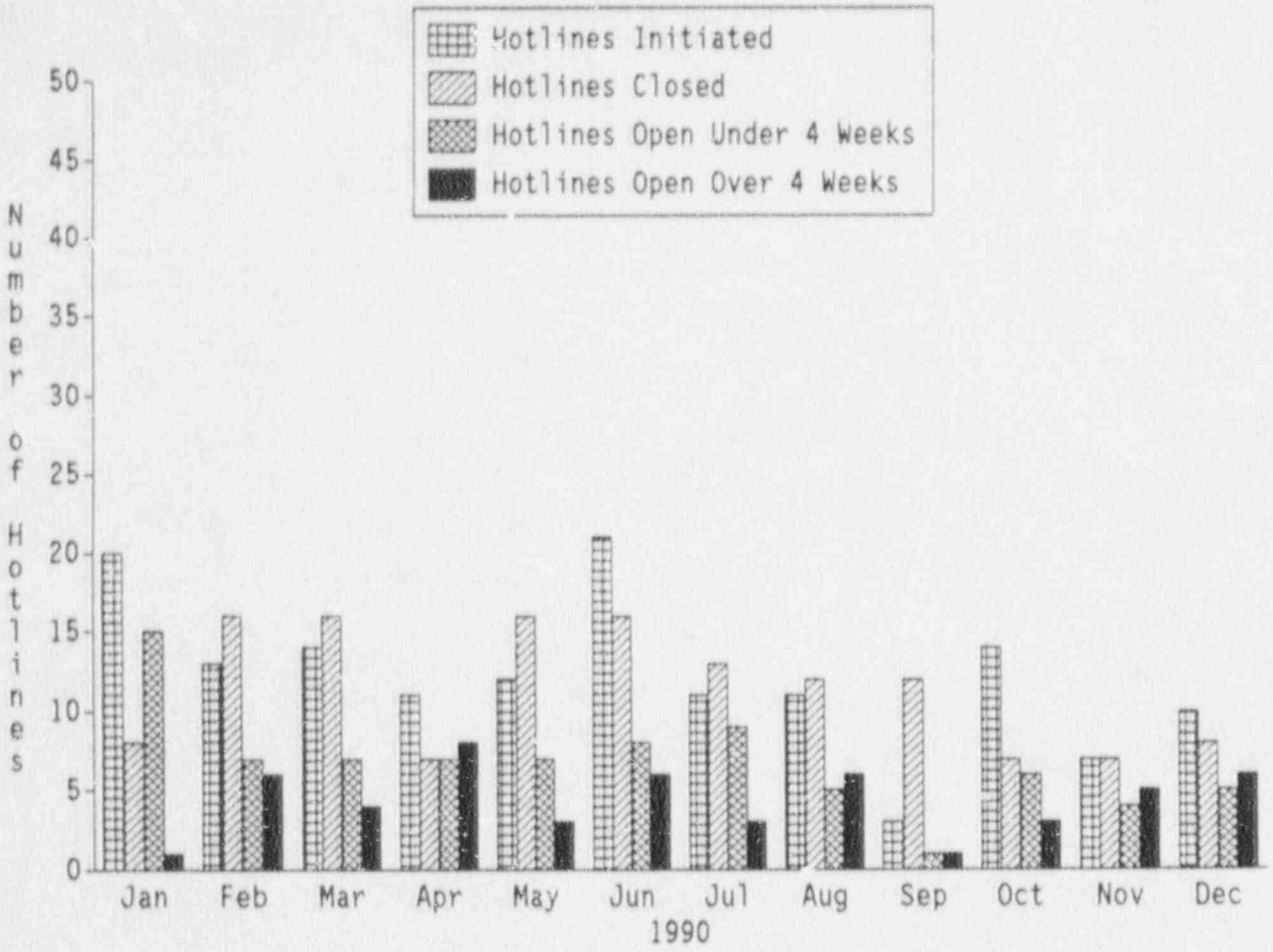
LICENSE CANDIDATE EXAMS

This indicator shows the number of SRO and RO quizzes and exams taken and passed each month. These internally administered quizzes and exams are used to plot the SRO and RO candidates' monthly progress.

During the month of December 1990, 16 SRO exams were administered. Out of the 16 exams taken, 16 exams were passed.

During the month of December 1990, 24 RO exams were administered. Out of the 24 RO exams taken, 24 exams were passed.

Adverse Trend: None SEP 68

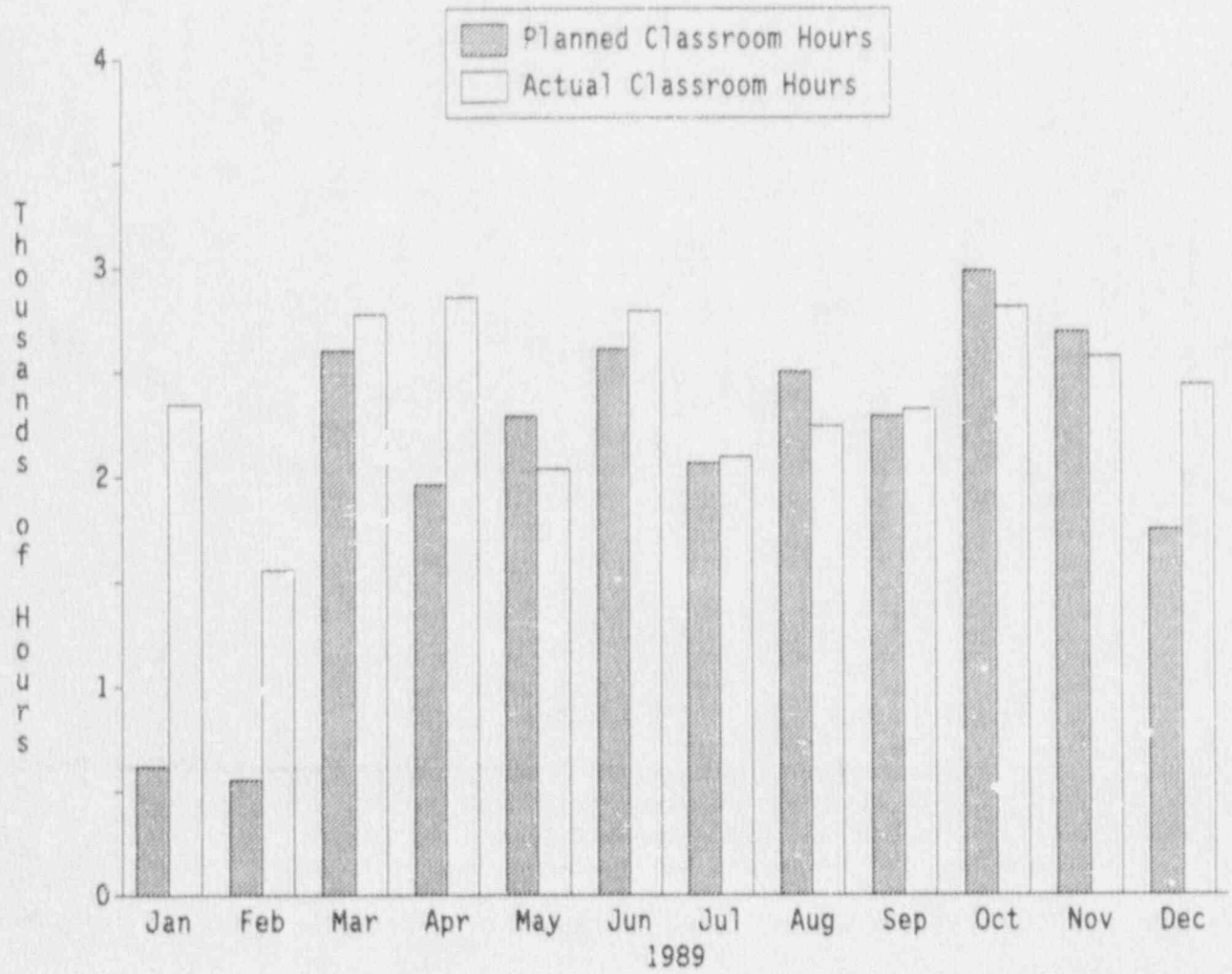


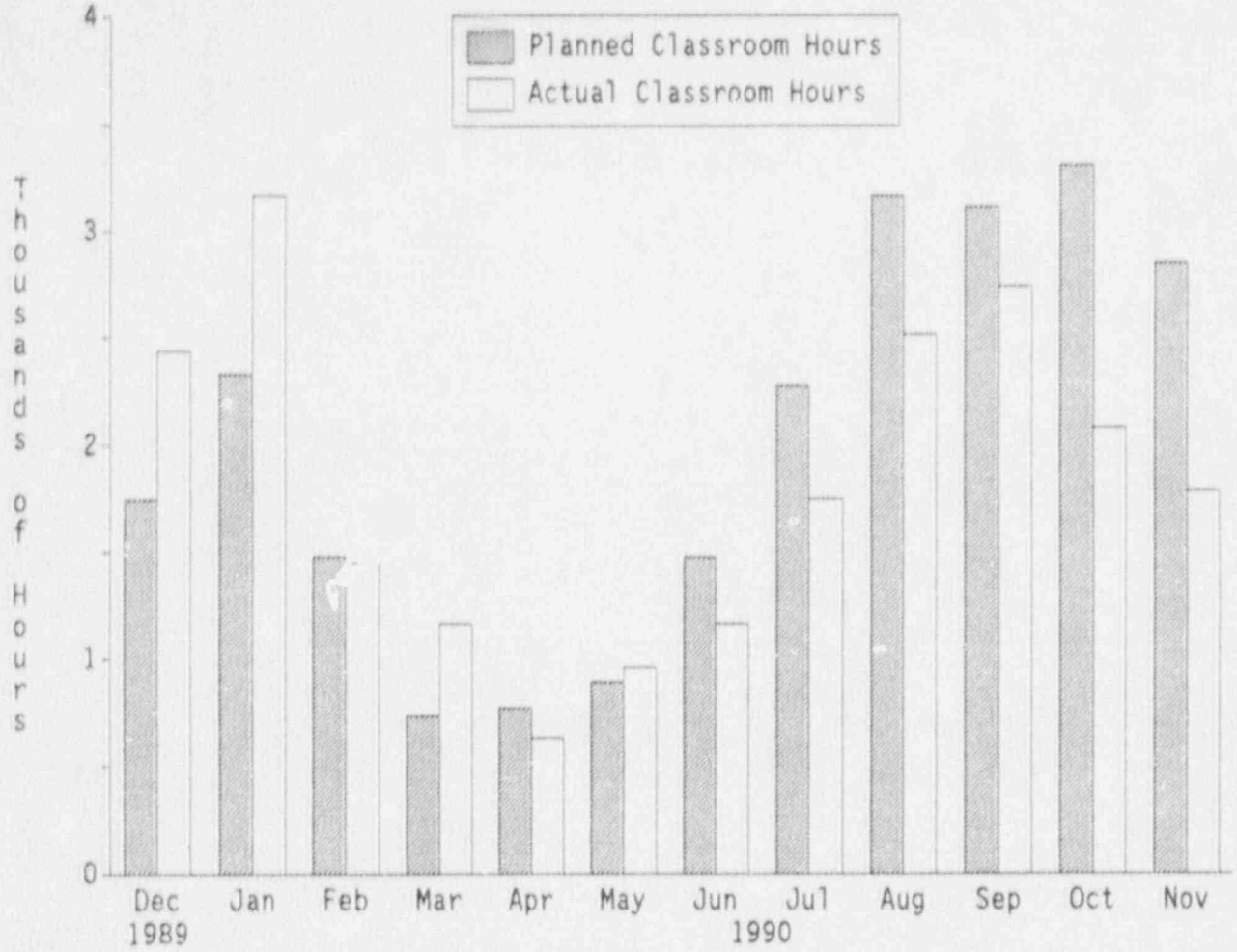
HOTLINES

This indicator shows the number of Hotlines initiated during the reporting month, the number of Hotlines closed during the reporting month, the number of Hotlines that remain open and are less than four weeks old, and the number of Hotlines that remain open and are older than four weeks old.

During the month of December 1990, there were 10 Hotlines initiated, 8 Hotlines closed, 5 Hotlines that remained open and were less than four weeks old, and 6 Hotlines that remained open and were older than four weeks old.

Adverse Trend: None


Planned Classroom Hours
Actual Classroom Hours
Thousands of Hours
0
1
2
3
4
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989

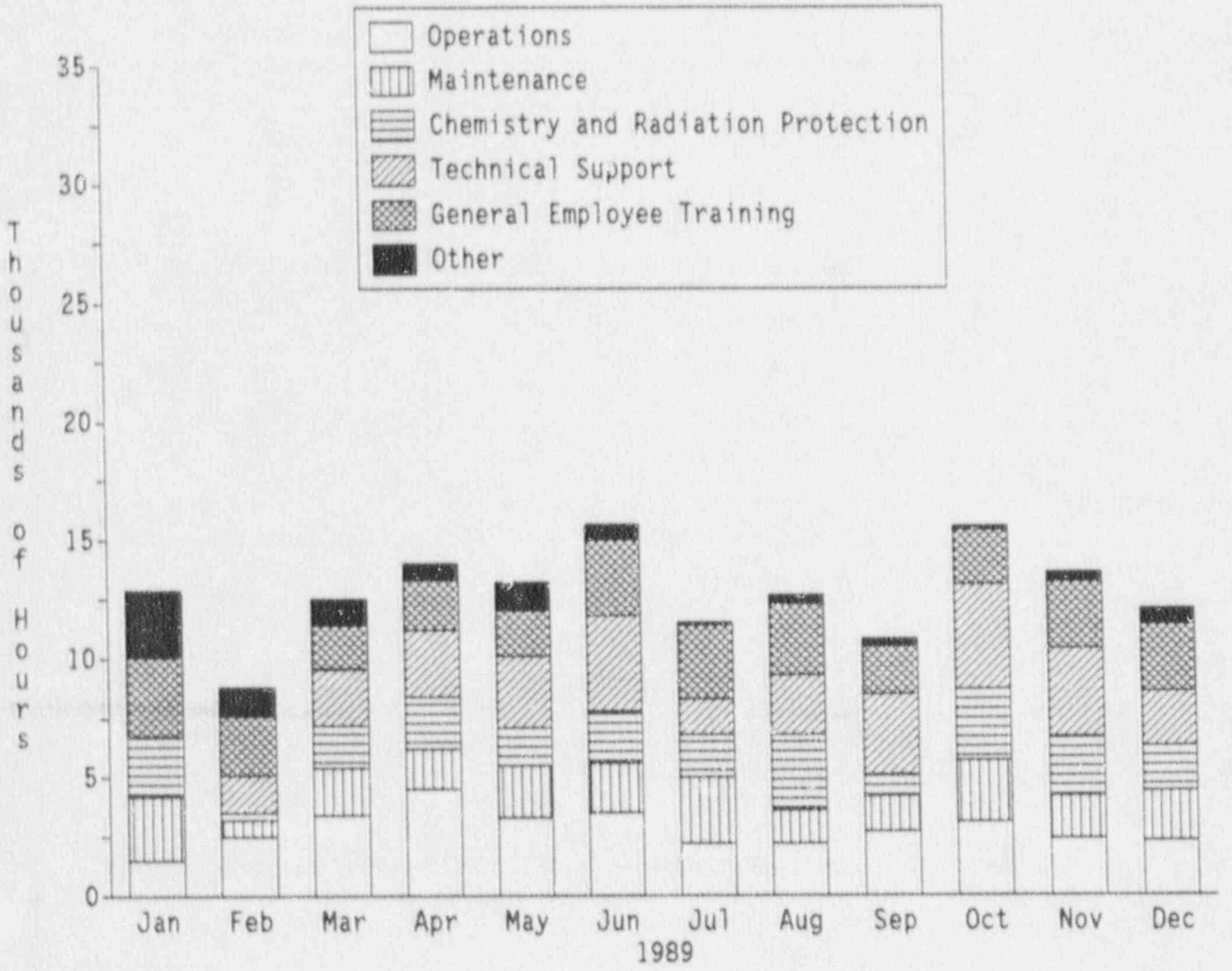


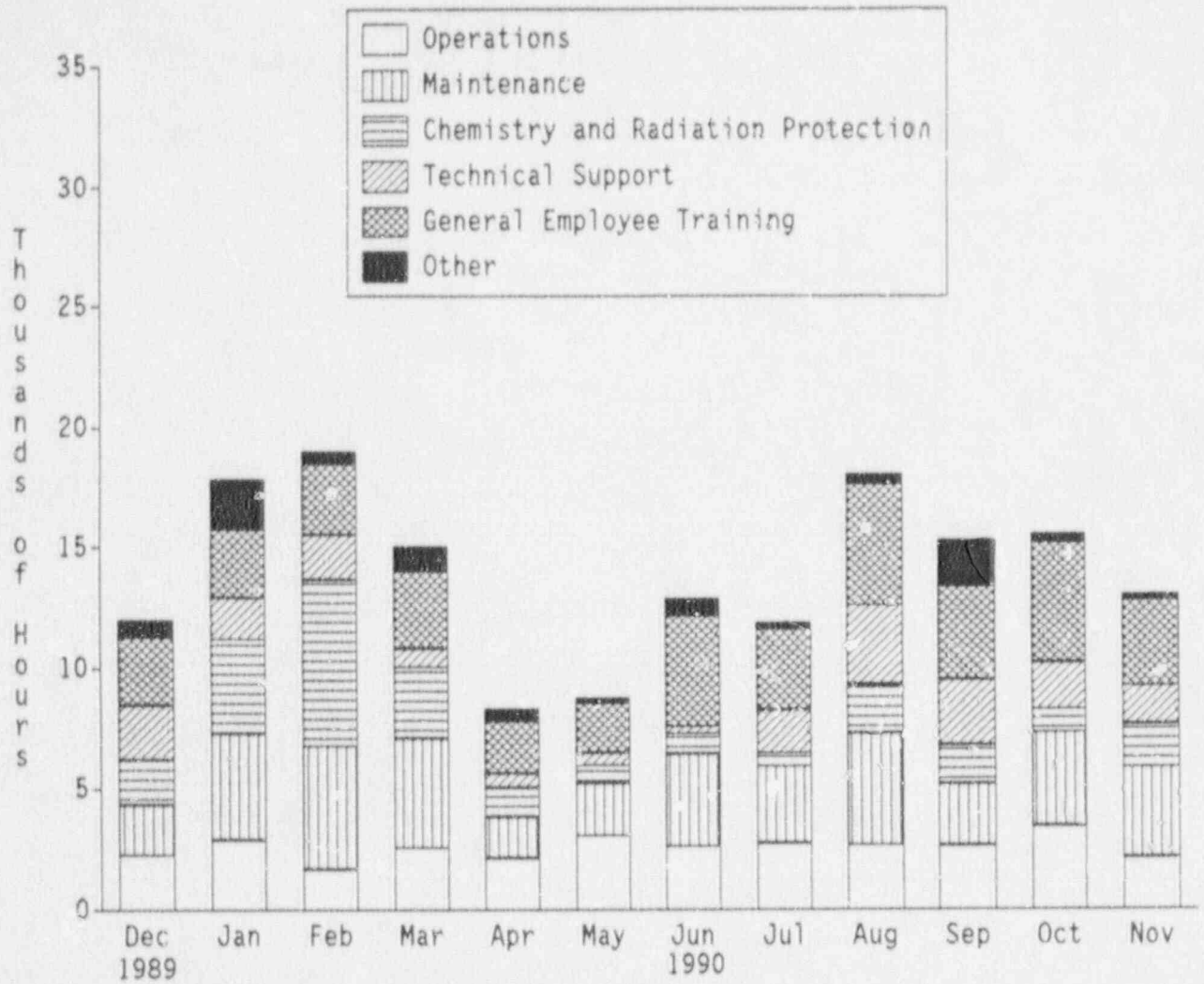
CLASSROOM (INSTRUCTOR) HOURS

This indicator displays the number of planned classroom hours and the number of actual classroom hours for the Fort Calhoun Station.

This indicator is one month behind the reporting month due to the time involved in collecting and processing the needed information.

Adverse Trend: None


Operations
Maintenance
Chemistry and Radiation Protection
Technical Support
General Employee Training
Other
Thousands of Hours
35
30
25
20
15
10
5
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



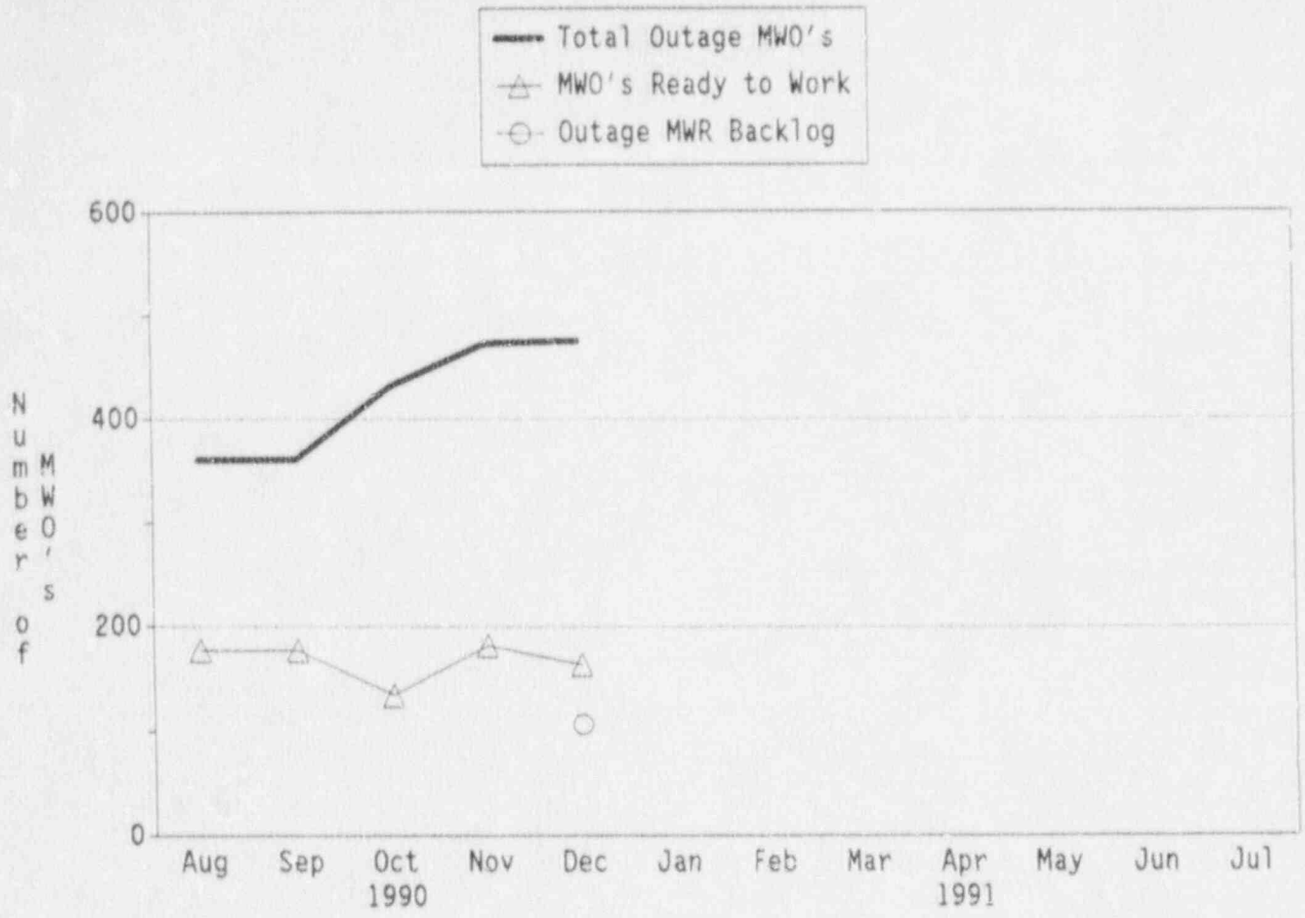
TOTAL HOURS OF STUDENT TRAINING

This indicator shows the total number of student hours for Operations, Maintenance, Chemistry and Radiation Protection, Technical Support, General Employee Training, and Other training conducted for the Fort Calhoun Station.

This indicator is one month behind the reporting month due to the time needed to collect and evaluate the data.

	Total Hours	
TRAINING	DEC 1990	NOV 1990
Operations	2,124	2,634
Maintenance	3,770	2,565
Chemistry and Radiation Protection	1,777	1,632
Technical Support	1,605	3,697
General Employee Training	3,569	3,855
Other	216	1,922
Total	13,061	16,305

Adverse Trend: None



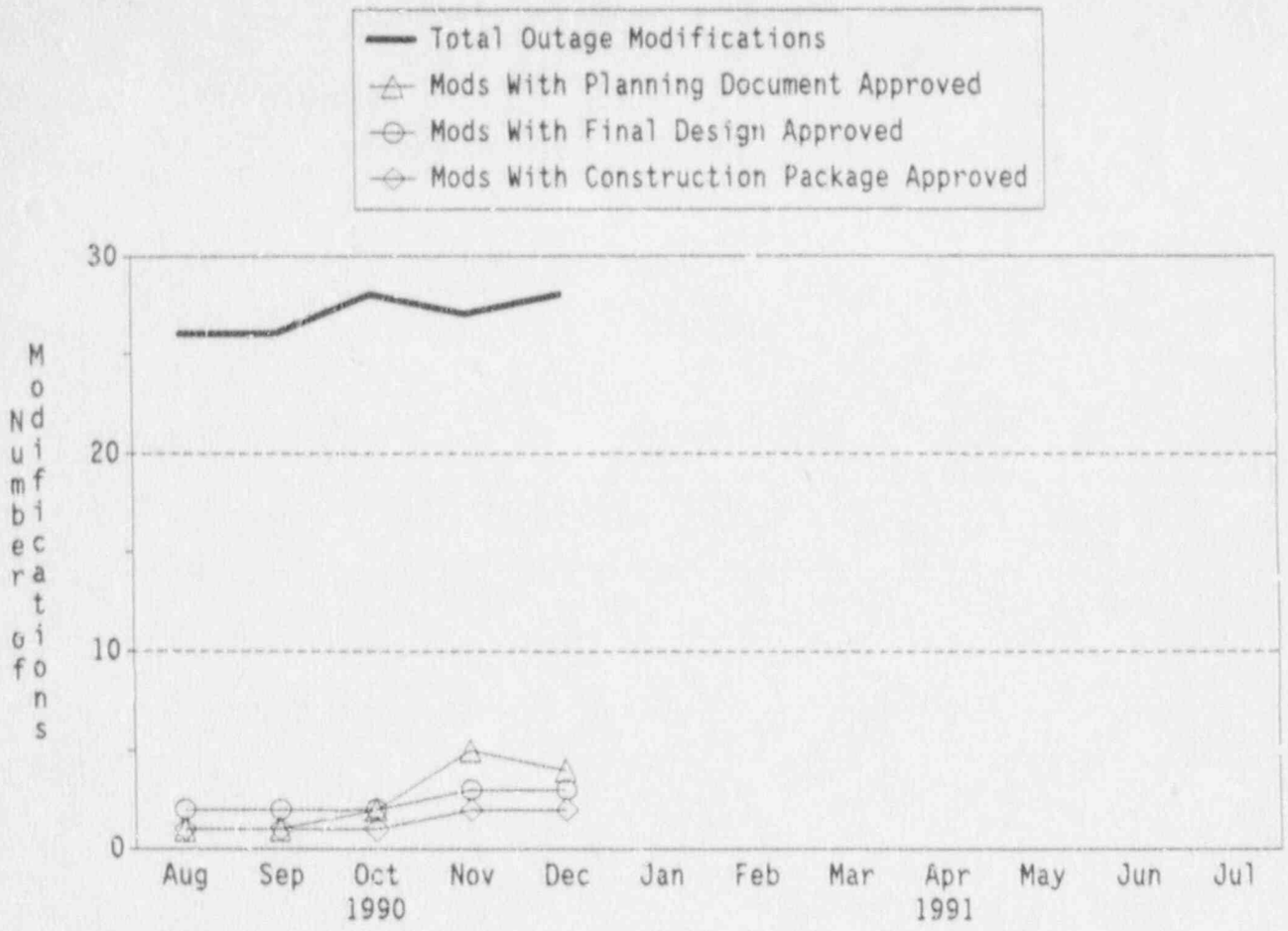
MWO OVERALL STATUS (1991 REFUELING OUTAGE)

The MWO Overall Status (1991 Refueling Outage) Indicator has been changed. The outage MWR backlog has been added to this indicator. The outage MWR backlog includes MWR's which have been identified for the 1991 Refueling Outage, but have not yet been converted to MWO's.

This indicator shows the total number of MWO's that have been written over the past reporting periods for completion during the 1991 Refueling Outage and the number of MWO's that are ready for work (the parts for these MWO's are staged, the procedures are approved, and the paperwork is ready for field use). Any MWO's written after the start of the outage will be reflected in the indicator labeled Emergent MWO's. Approximately 3000 maintenance orders were completed during each of the previous two refueling outages.

Additional data points will be added to this indicator as information becomes available.

Adverse Trend: None SEP 31



PROGRESS OF 1991 OUTAGE MODIFICATION PLANNING

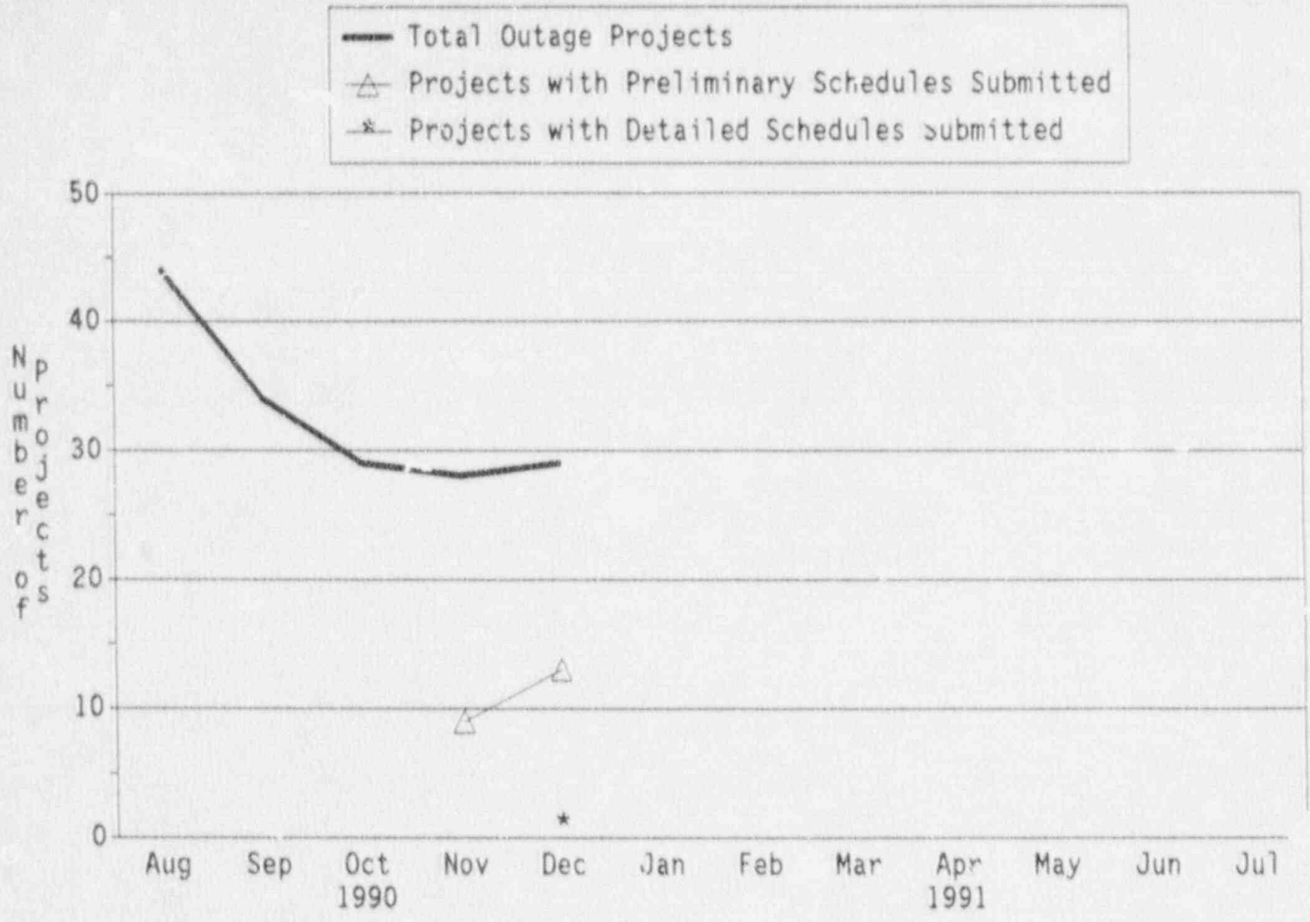
This indicator shows the number of modifications approved for planning (to determine feasibility) for completion during the 1991 Refueling Outage. Additional data points will be added to this indicator as information becomes available.

The current schedule for completion of the modification phases of the 1991 Refueling Outage is as follows.

Outage Scope Freeze	OCT 1, 1990
Planning Documents Approved	FEB 22, 1991
Final Designs Approved	APR 24, 1991
Construction Packages Approved	JUN 15, 1991
Schedule Incorporated	JUL 26, 1991
Material On Site	JUL 26, 1991
Construction Started	OCT 21, 1991
Construction Complete	NOV 4, 1991
Accepted By SAC	NOV 15, 1991

Adverse Trend: None

SEP 31



OVERALL PROJECT STATUS (1991 REFUELING OUTAGE)

The Overall Project Status (1991 Refueling Outage) Indicator has been changed. The number of projects in which their detailed schedules have been submitted has been added. This indicator also shows the status of the projects which affect the scope of the 1991 Refueling Outage.

The reduction in the number of total outage projects is due to reclassification of former projects to ECN's or Maintenance items.

Additional data points will be added to this indicator as information becomes available.

The schedule for the 1991 Refueling Outage projects is as follows.

All Projects Identified and Outage Scope Frozen	OCT 1, 1990
All Projects Scheduled in Detail	JUN 28, 1991
Procedures Ready	AUG 2, 1991
Parts Staged	AUG 16, 1991

Adverse Trend: None SEP 31

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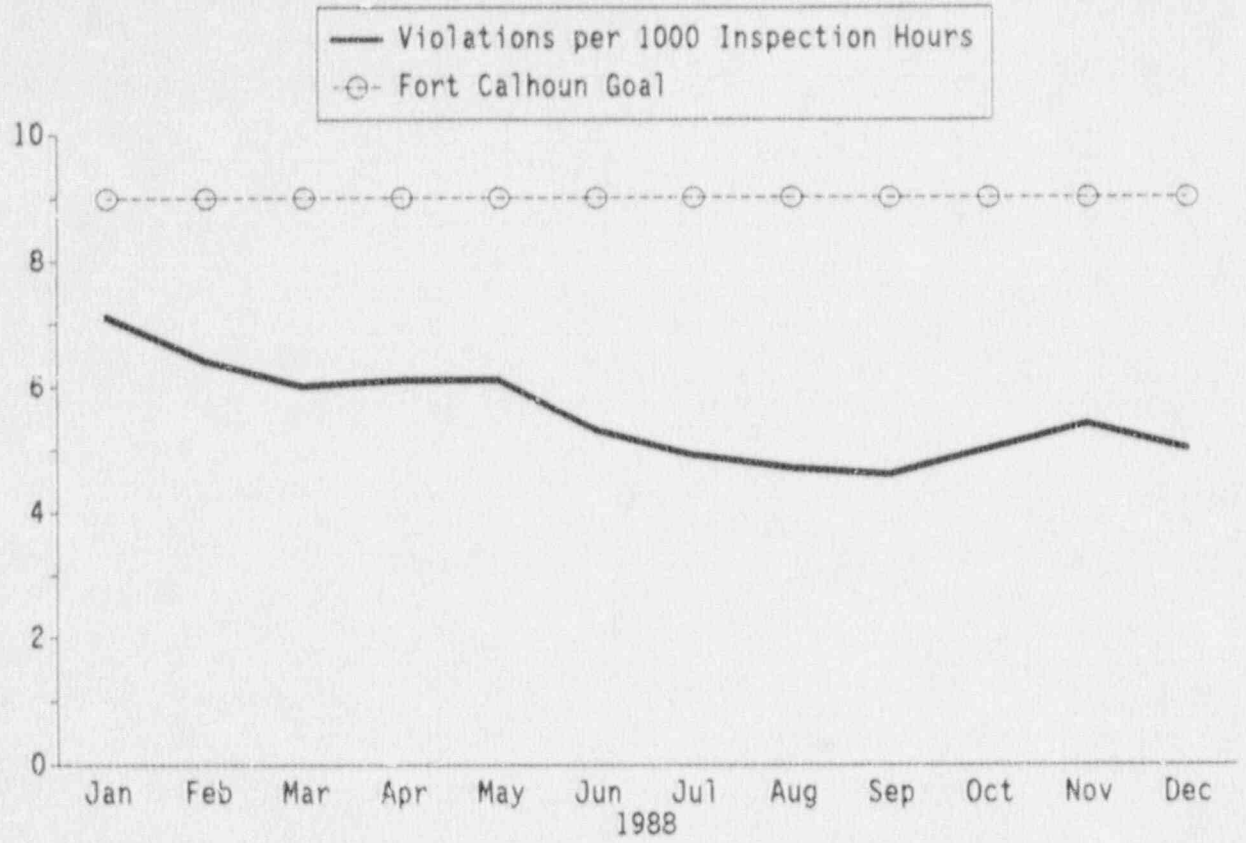
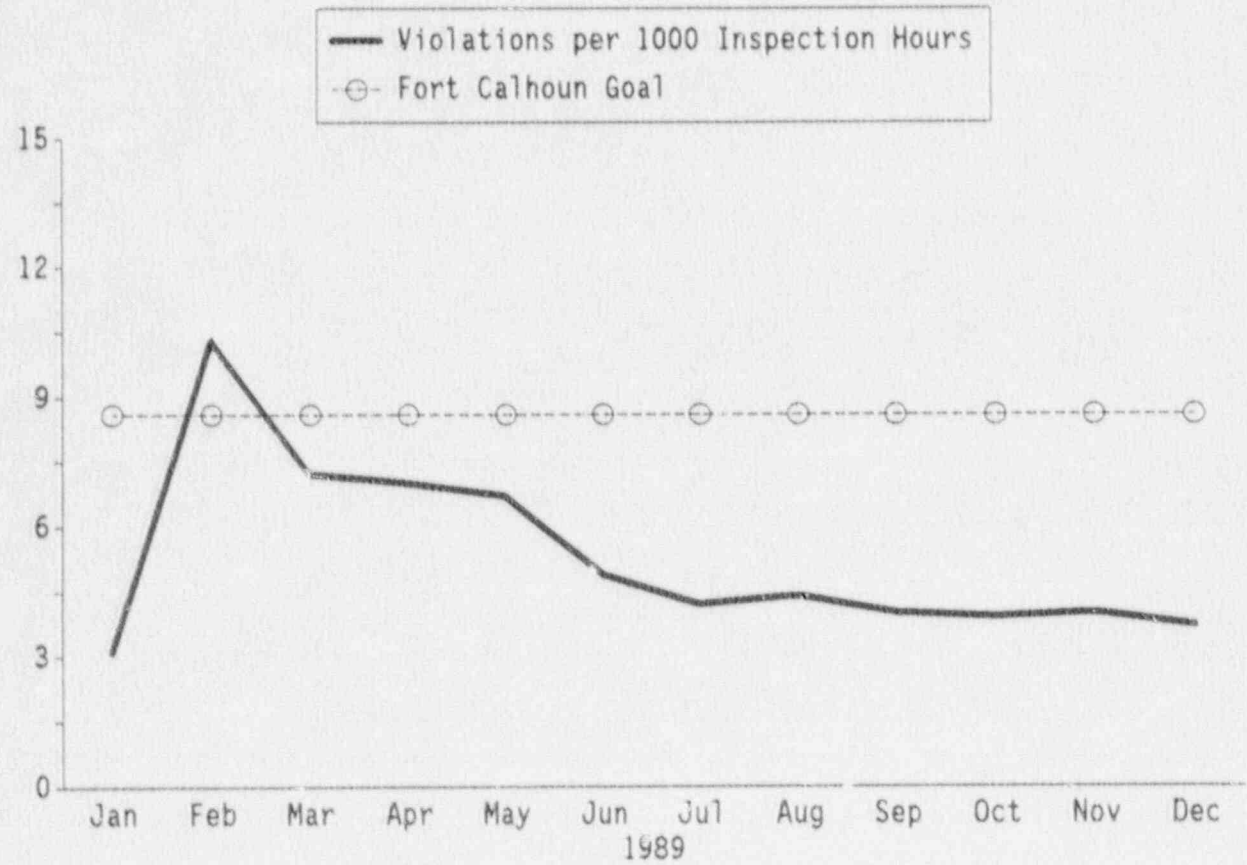
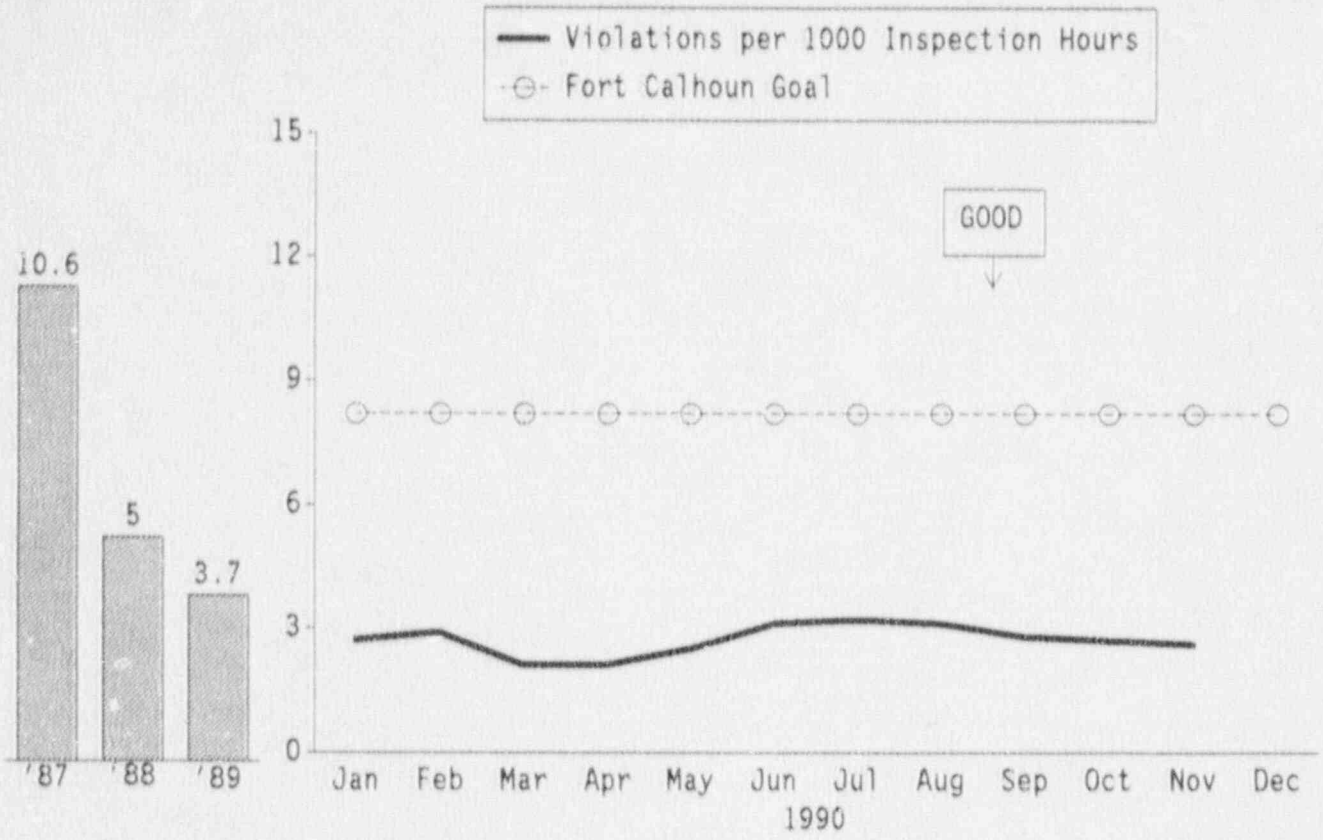

Violations per 1000 Inspection Hours
Fort Calhoun Goal
10
8
6
4
2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Violations per 1000 Inspection Hours
Fort Calhoun Goal
15
12
9
6
3
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989



VIOLATIONS PER 1000 INSPECTION HOURS

The Violations per 1000 Inspection Hours Indicator has been changed. A new data source has been accepted which will supply data which can be more directly compared to the rest of the nuclear industry. The graph for this indicator has also been changed to reflect the new data.

This indicator displays the number of NRC violations cited in inspection reports per 1000 NRC inspection hours.

This indicator is one month behind the reporting month due to the time involved with collecting and processing the data.

The violations per 1000 inspection hours indicator was reported as 2.6 for the month of November 1990.

There have been a total of 7,672 inspection hours in 1990 which have resulted in 20 violations.

The goal for the number of violations per 1000 inspection hours is less than 8.2.

Adverse Trend: None

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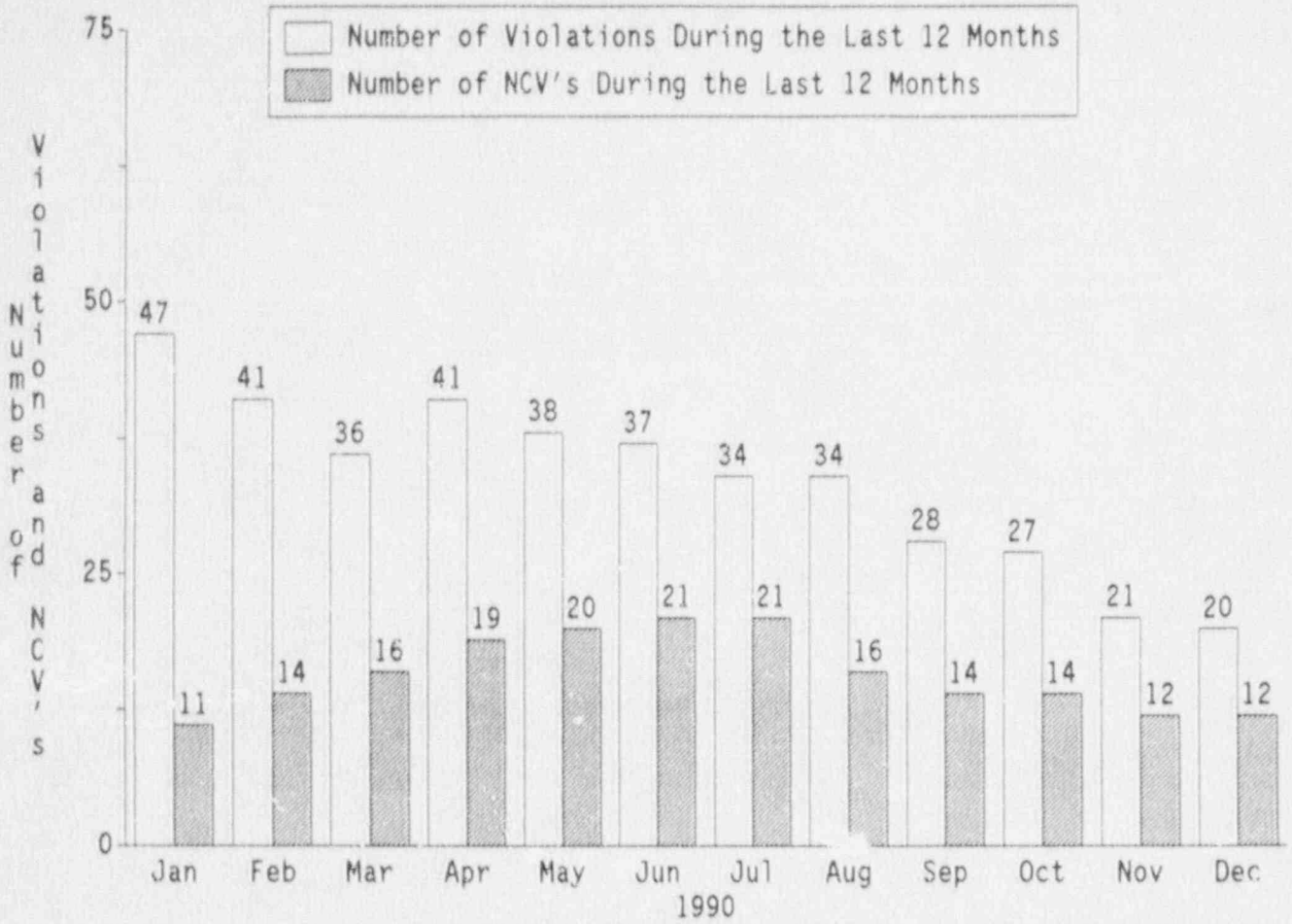
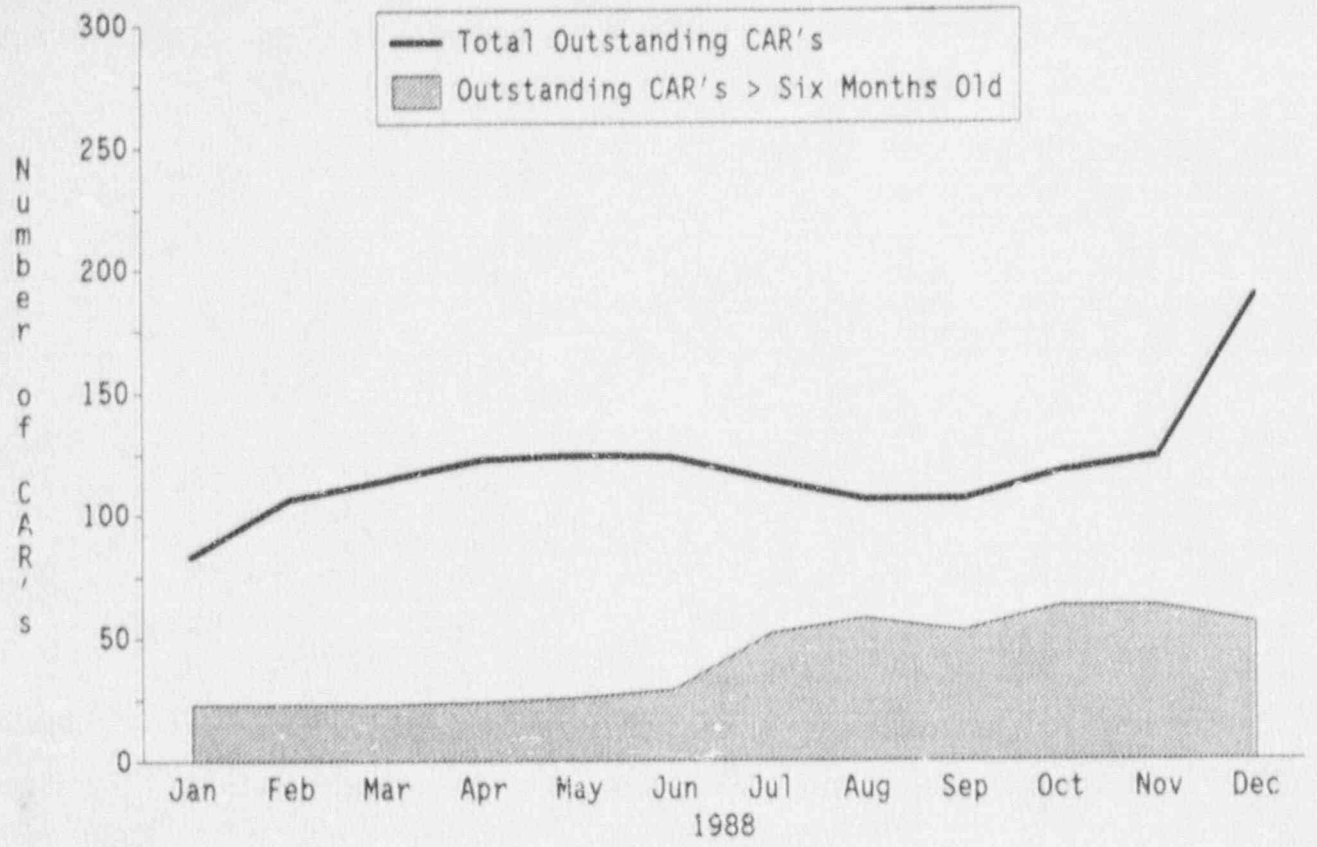


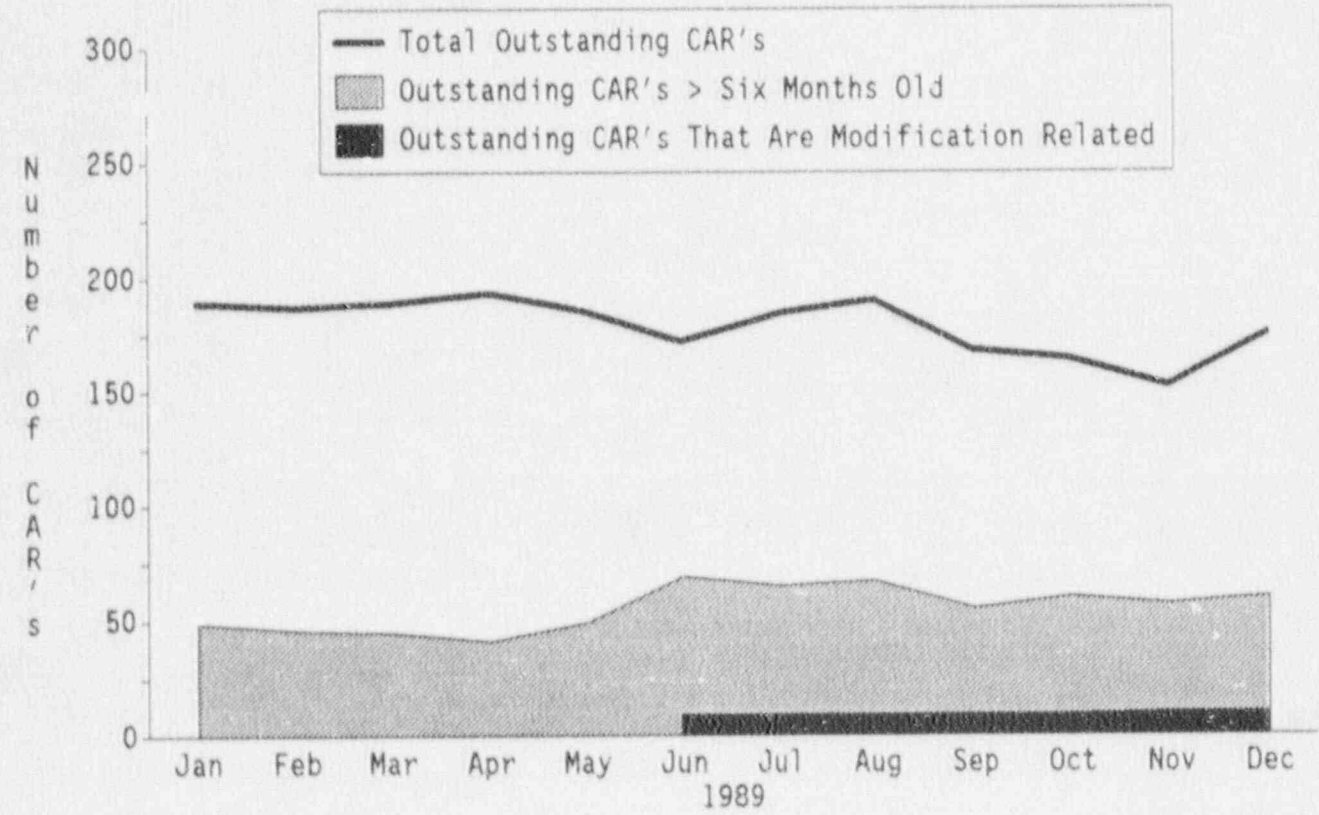
CUMULATIVE VIOLATIONS AND NCV's
(TWELVE-MONTH RUNNING TOTAL)

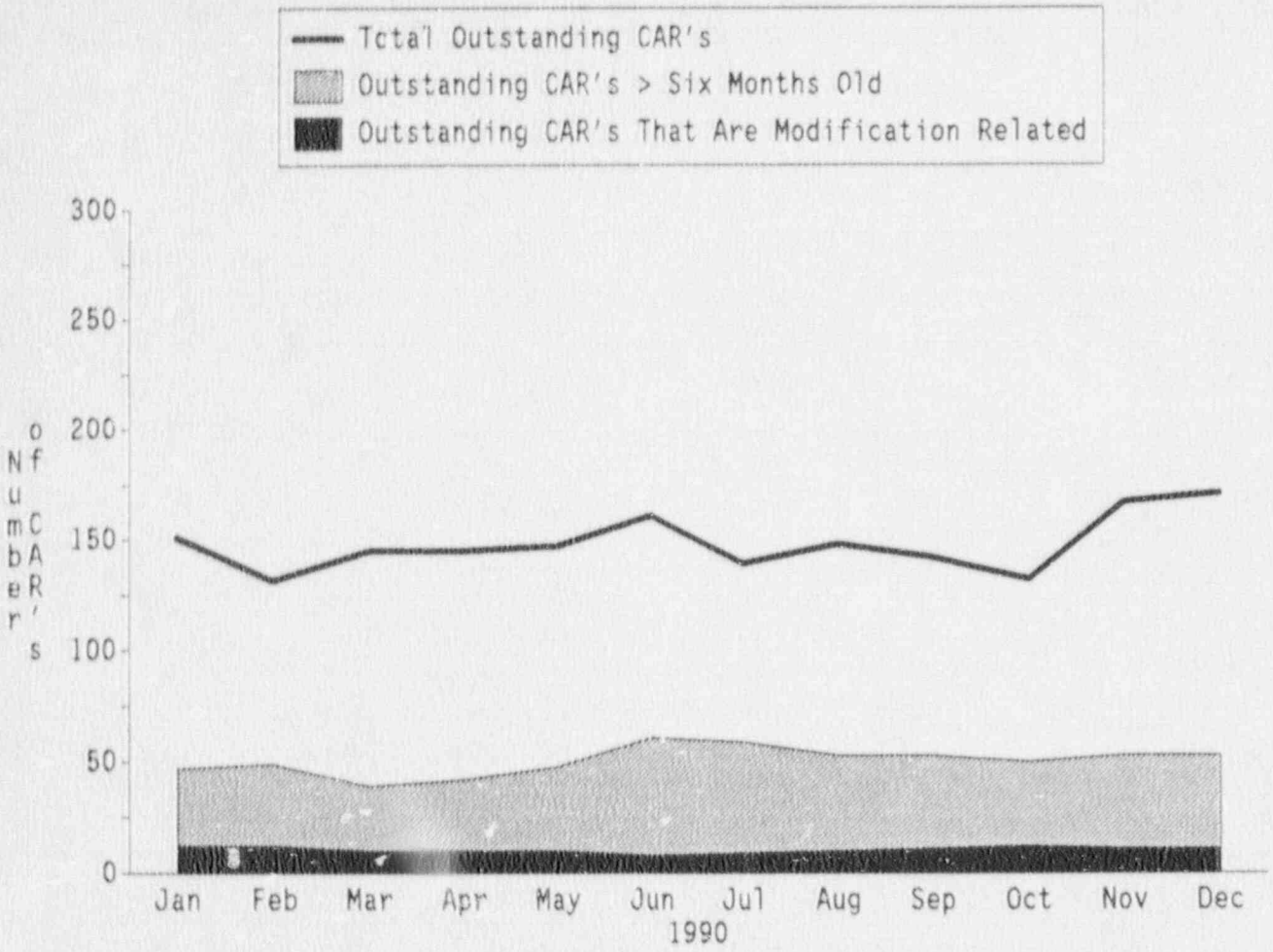
The Cumulative Violations and Non-Cited Violations (NCV's) Indicator shows the cumulative number of violations for the last twelve months and the cumulative number of NCV's for the last twelve months.

During the last twelve months, 20 violations have been identified and 12 NCV's have been identified.

Adverse Trend: None


Total Outstanding CAR's
Outstanding CAR's > Six Months Old
Number of CAR's
300
250
200
150
100
50
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1988


Total Outstanding CAR's
Outstanding CAR's > Six Months Old
Outstanding CAR's That Are Modification Related
Number of CAR's
300
250
200
150
100
50
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1989

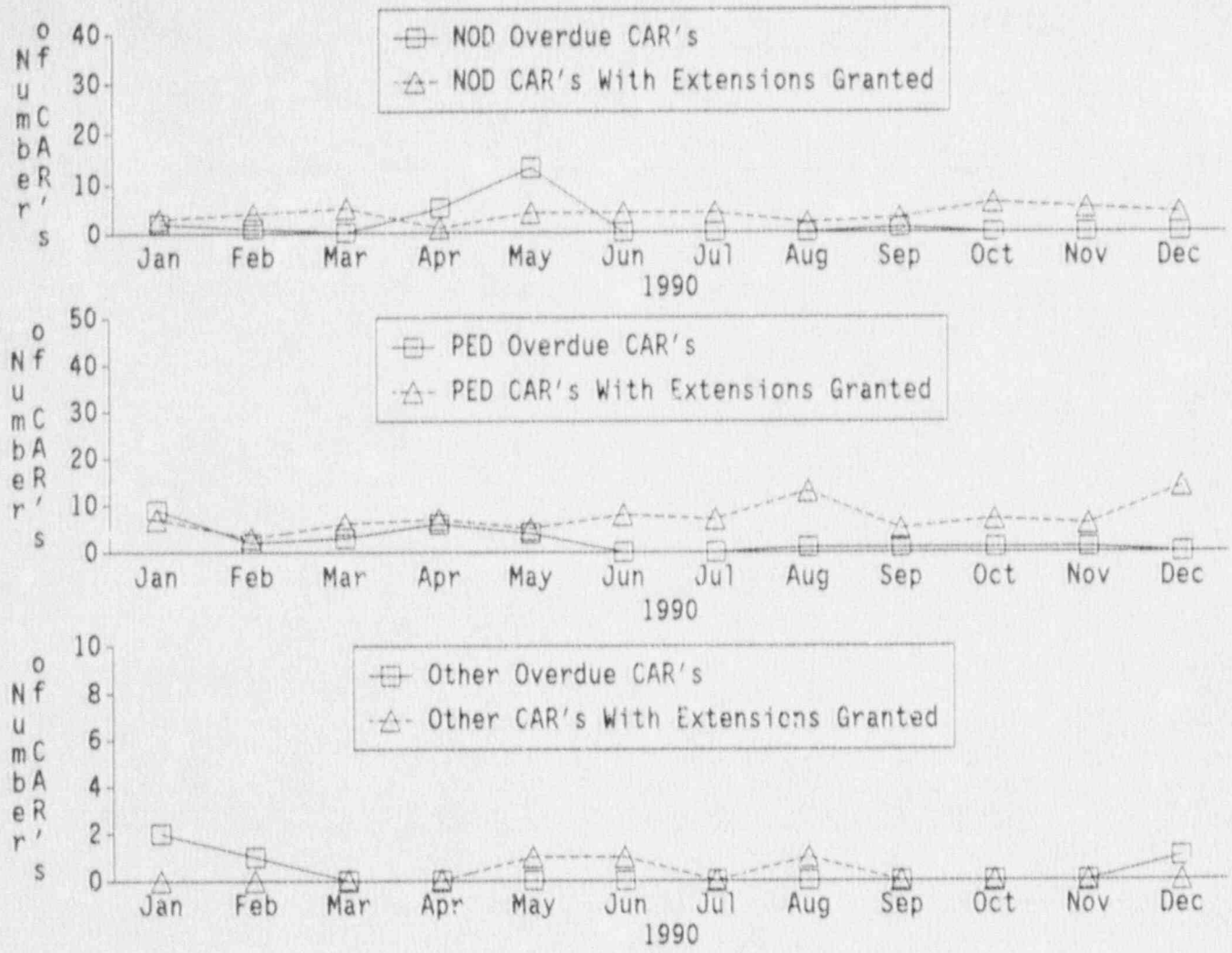


OUTSTANDING CORRECTIVE ACTION REPORTS

This indicator shows the total number of outstanding Corrective Action Reports (CAR's), the number of outstanding CAR's that are greater than six months old, and the number of outstanding CAR's that are modification related.

As of the end of December 1990, there were 171 outstanding CAR's, 53 CAR's that are greater than six months old, and 11 CAR's that are modification related.

Adverse Trend. None



OVERDUE AND EXTENDED CORRECTIVE ACTION REPORTS

This indicator shows the number of overdue CAR's and the number of CAR's which received extensions broken down by organization.

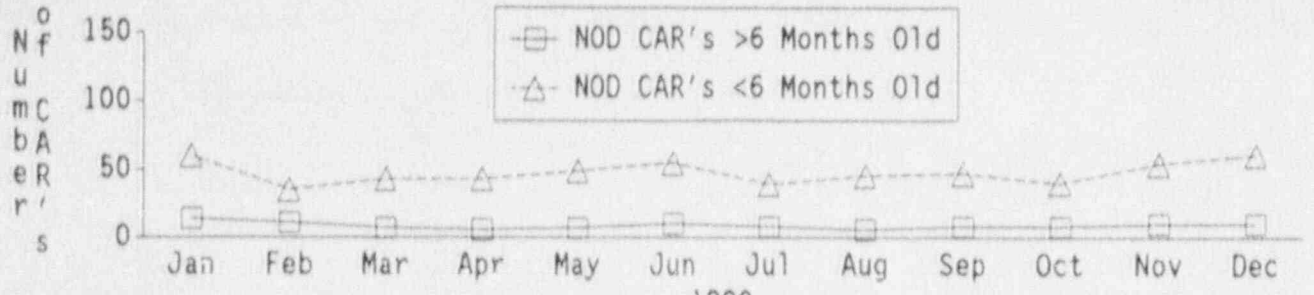
OVERDUE CAR's

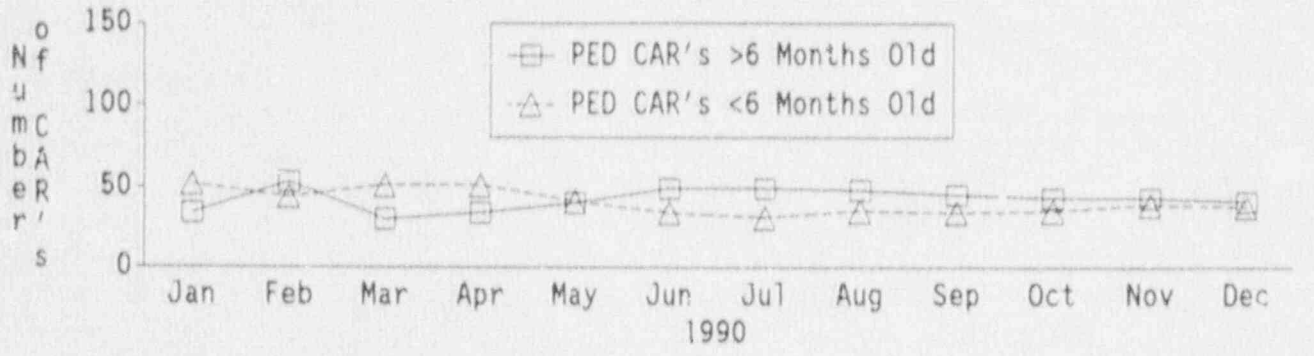
ORGANIZATION	OCT 90	NOV 90	DEC 90
NOD	0	0	0
PED	1	1	0
Others	0	0	1
Total	1	1	1

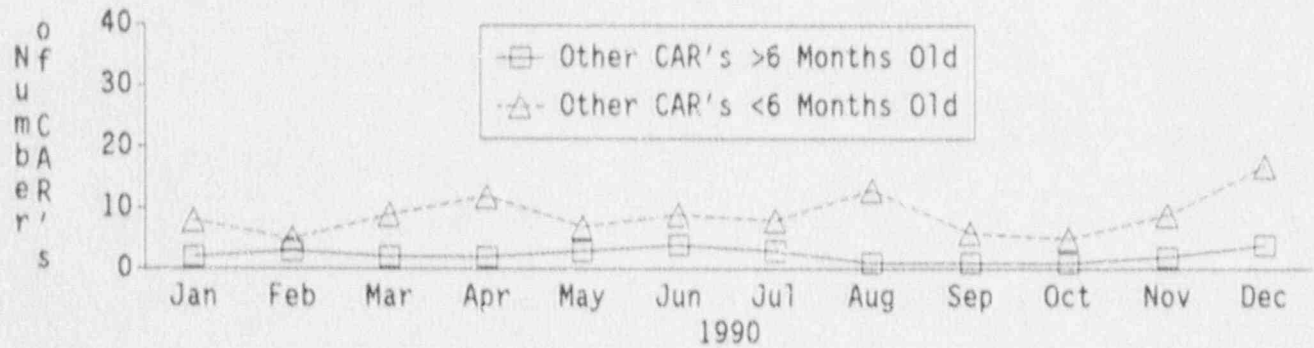
CAR's WITH EXTENSIONS GRANTED

ORGANIZATION	OCT 90	NOV 90	DEC 90
NOD	6	5	4
PED	7	6	14
Others	0	0	0
Total	13	11	18

Adverse Trend: None







CORRECTIVE ACTION REPORTS CURRENT STATUS

This indicator shows the number of CAR's that are older than 6 months and the number of CAR's that are less than 6 months old broken down by organization.

CAR's GREATER THAN 6 MONTHS OLD

ORGANIZATION	OCT 90	NOV 90	DEC 90
NOD	8	10	10
PED	43	43	41
Others	1	2	4
Total	52	55	55

CAR's LESS THAN 6 MONTHS OLD

ORGANIZATION	OCT 90	NOV 90	DEC 90
NOD	40	54	61
PED	35	39	38
Others	5	9	17
Total	80	112	116

Adverse Trend: None

SALP FUNCTIONAL AREA	1989 OPPD CAR's	1989 SIGNIFICANT CAR's	1989 NRC VIOLATIONS	1989 LER'S	1990 OPPD CAR's	1990 SIGNIFICANT CAR's	1990 NRC VIOLATIONS	1990 LER'S
A. Plant Operations	11	0	8	2	62 (7)	0	2	10 (1)
B. Radiological Controls	30	1	2	1	28	2	0	0
C. Maintenance/ Surveillance	140	8	2	10	180 (6)	8	6	4
D. Emergency Preparedness	8	0	0	0	7	0	3	0
E. Security	26	2	6	10	26 (1)	0	6	3 (1)
F. Engineering/ Technical Support	134	2	7	7	172 (15)	5 (1)	3	12
G. Safety Assessment/ Quality Verification	68	0	1	0	29 (7)	0	0	0
H. Other	0	0	0	1	1	0	0	0
Total	417	13	26	31	505 (36)	15 (1)	20	29 (2)

CAR'S ISSUED VERSUS SIGNIFICANT CAR'S VERSUS NRC VIOLATIONS ISSUED VERSUS LER'S REPORTED

The above matrix shows the number of Corrective Action Reports (CAR's) issued by the Nuclear Services Division versus the number of Significant CAR's issued by the Nuclear Services Division versus the number of violations issued by the Nuclear Regulatory Commission (NRC) for the Fort Calhoun Station in 1989 and 1990. Included in this table is the number of Licensee Event Reports (LER's) identified by the station each year. The number of NRC violations reported are one month behind the reporting month due to the time involved in collecting and processing the violations.

In December, 1990, there were 36 CAR's issued, one Significant CAR issued, and 2 LER's identified. During November zero NRC violations were issued. Thus no violations were attributable to personnel error. The monthly distribution of CAR's, Significant CAR's, NRC violations, and LER's are shown in parentheses.

SEP 15, 20 & 21

SIGNIFICANT ITEMS OF INTEREST

This section is intended to provide information on events which are significant to the Fort Calhoun Station and will give a "heads-up" look at what is scheduled in the coming months.

- The Procedure Upgrade Project and the Plant have approved and issued 811 safety related procedures. This meets a Safety Enhancement Program (SEP) Item Number 48 milestone commitment.

- The Electrical Distribution Safety System Functional Inspection is planned for March 1990.

- The inspection of the thermal shield was approved as a 1991 Refueling Outage task. As a result, the Refueling Outage length will be extended. The length of this extension is being determined.

AGE OF OUTSTANDING MAINTENANCE WORK ORDERS

This indicator tracks the total number of outstanding corrective non-outage Maintenance Work Orders at the Fort Calhoun Station versus their age in months.

AMOUNT OF WORK ON HOLD AWAITING PARTS

This indicator is defined as the percentage of open, non-outage, maintenance work orders that are on hold awaiting parts, to the total number of open, non-outage, maintenance work orders.

AUXILIARY SYSTEMS CHEMISTRY HOURS OUTSIDE STATION LIMITS

The cumulative hours that the Component Cooling Water system is outside the station chemistry limit. The hours are accumulated from the first sample exceeding the limit until additional sampling shows the parameter to be back within limits.

CHECK VALVE FAILURE RATE

The Fort Calhoun check valve failure rate and the industry check valve failure rate (failures per 1 million component hours). The data for the industry failure rate is three months behind the Performance Indicators Report reporting month. This indicator tracks performance for SEP item 43.

CLASSROOM (INSTRUCTOR) HOURS

The number of planned classroom hours and the number of actual classroom hours for the Fort Calhoun Station.

CORRECTIVE ACTION REPORT CURRENT STATUS

The number of Corrective Action Reports (CAR's) that are older than 6 months and the number of CAR's that are less than 6 months old broken down by organization for the last 6 months.

CORRECTIVE MAINTENANCE BACKLOG GREATER THAN 3 MONTHS OLD

The percentage of total outstanding corrective maintenance items, not requiring an outage, that are greater than three months old at the end of the period reported.

CUMULATIVE VIOLATIONS AND NON-CITED VIOLATIONS
(TWELVE-MONTH RUNNING TOTAL)

The cumulative number of violations and Non-Cited Violations for the last 12 months.

DAILY THERMAL OUTPUT

The daily core thermal output as measured from computer point XC105 in thermal megawatts.

DISABLING INJURY FREQUENCY RATE (LOST TIME ACCIDENT RATE)

This indicator is defined as the number of accidents for all utility personnel permanently assigned to the station, involving days away from work per 200,000 man-hours worked (100 man-years). This does not include contractor personnel. This indicator tracks personnel performance for Safety Enhancement Program (SEP) Item 26.

DIESEL GENERATOR RELIABILITY (25 DEMANDS)

The number of failures for each emergency diesel generator in the last 25 start demands and the last 25 load-run demands. A trigger value of 4 failures in the last 25 demands is also shown. If any one diesel generator experiences 4 or more failures within the last 25 demands on the unit, the unit is defined as a problem emergency diesel generator and in accordance with NUMARC Initiative 5A, corrective actions must be taken.* A Standing Order will be drafted in February 1991 for the Fort Calhoun Station to institutionalize and formally approve/adopt the required actions.

Number of Start Demands

All valid and inadvertent start demands, including all start-only demands and all start demands that are followed by load-run demands, whether by automatic or manual initiation. A start-only demand is a demand in which the emergency generator is started, but no attempt is made to load the generator.

Number of Start Failures

Any failure within the emergency generator system that prevents the generator from achieving specified frequency and voltage is classified as a valid start failure. This includes any condition identified in the course of maintenance inspections (with the emergency generator in standby mode) that definitely would have resulted in a start failure if a demand had occurred.

Number of Load-Run Demands

For a valid load-run demand to be counted the load-run attempt must meet one or more of the following;

- A load-run of any duration that results from a real automatic or manual initiation.

DIESEL GENERATOR RELIABILITY (25 DEMANDS) (CONTINUED)

- A load-run test to satisfy the plant's load and duration as stated in the test specifications.

- Other special tests in which the emergency generator is expected to be operated for at least one hour while loaded with at least 50% of its design load.

Number of Load-Run Failures

A load-run failure should be counted for any reason in which the emergency generator does not pick up load and run as predicted. Failures are counted during any valid load-run demands.

Exceptions

Unsuccessful attempts to start or load-run should not be counted as valid demands or failures when they can be attributed to any of the following;

- Spurious trips that would be bypassed in the event of an emergency.

- Malfunction of equipment that is not required during an emergency.

- Intentional termination of a test because of abnormal conditions that would not have resulted in major diesel generator damage or repair.

- Malfunctions or operating errors which would have not prevented the emergency generator from being restarted and brought to load within a few minutes.

- A failure to start because a portion of the starting system was disabled for test purpose, if followed by a successful start with the starting system in its normal alignment.

Each emergency generator failure that results in the generator being declared inoperable should be counted as one demand and one failure. Exploratory tests during corrective maintenance and the successful test that follows repair to verify operability should not be counted as demands or failures when the EDG has not been declared operable again.

* Problem emergency diesel generator actions include:

(1) Determine the root cause of each new failure.

(2) Review applicable past failures.

(3) Evaluate the corrective maintenance tracking history.

(4) Assess actual failure history against critical review elements.

(5) Perform corrective Actions.

DIESEL GENERATOR RELIABILITY (25 DEMANDS) (CONTINUED)

* Problem diesel generator actions (continued)

Following completion of corrective actions, restored performance of the problem diesel generator should be demonstrated by conducting seven consecutive failure free start and load-run tests (at a frequency of no less than 24 hours and of no more than seven days between each demand). All starts and load-runs performed during this period should be included in the unit diesel generator reliability data so long as the diesel generator is operable.

This process of evaluating recent demands and taking appropriate action on the individual diesel generator experiencing recurring failures is a key element in providing reasonable assurance that diesel generator performance is restored to an acceptable level.

DOCUMENT REVIEW (BIENNIAL)

The Document Review Indicator shows the number of documents reviewed during the reporting month, the number of documents scheduled for review during the reporting month, and the number of document reviews that are overdue. This indicator tracks performance for Safety Enhancement Program (SEP) Reference Number 46.

EMERGENCY DIESEL GENERATOR UNIT RELIABILITY

The number of failures that were reported during the last 20, 50, and 100 emergency diesel generator demands at the Fort Calhoun Station. Also shown are trigger values which correlate to a high level of confidence that a unit's diesel generators have obtained a reliability of greater than or equal to 95% when the failure values are below the trigger values.

Number of Start Demands

All valid and inadvertent start demands, including all start-only demands and all start demands that are followed by load-run demands, whether by automatic or manual initiation. A start-only demand is a demand in which the emergency generator is started, but no attempt is made to load the generator.

Number of Start Failures

Any failure within the emergency generator system that prevents the generator from achieving specified frequency and voltage is classified as a valid start failure. This includes any condition identified in the course of maintenance inspections (with the emergency generator in standby mode) that definitely would have resulted in a start failure if a demand had occurred.

EMERGENCY DIESEL GENERATOR UNIT RELIABILITY (CONTINUED)

Number of Load-Run Demands

For a valid load-run demand to be counted the load-run attempt must meet one or more of the following;

- A load-run of any duration that results from a real automatic or manual initiation.

- A load-run test to satisfy the plant's load and duration as stated in the test specifications.

- Other special tests in which the emergency generator is expected to be operated for at least one hour while loaded with at least 50% of its design load.

Number of Load-Run Failures

A load-run failure should be counted for any reason in which the emergency generator does not pick up load and run as predicted. Failures are counted during any valid load-run demands.

Exceptions

Unsuccessful attempts to start or load-run should not be counted as valid demands or failures when they can be attributed to any of the following;

- Spurious trips that would be bypassed in the event of an emergency.

- Malfunction of equipment that is not required during an emergency.

- Intentional termination of a test because of abnormal conditions that would not have resulted in major diesel generator damage or repair.

- Malfunctions or operating errors which would have not prevented the emergency generator from being restarted and brought to load within a few minutes.

- A failure to start because a portion of the starting system was disabled for test purpose, if followed by a successful start with the starting system in its normal alignment.

Each emergency generator failure that results in the generator being declared inoperable should be counted as one demand and one failure. Exploratory tests during corrective maintenance and the successful test that follows repair to verify operability should not be counted as demands or failures when the EDG has not been declared operable again.

ENGINEERING CHANGE NOTICE (ECN) BREAKDOWN

The breakdown of the total number of open ECN's, the number of ECN's that were opened during the reporting month, the number of ECN's that were completed during the reporting month, and the number of ECN's received during the reporting month into three categories. These categories include; 1) document changes are required to complete the ECN's, 2) substitute or replacement items are required to complete the ECN's, or 3) facility changes are required to complete the ECN's. This indicator tracks performance for SEP item 62.

ENGINEERING CHANGE NOTICE (ECN) STATUS

The number of ECN's that remain open at the end of the reporting month, the number of ECN's that were opened during the reporting month, and the number of ECN's that are completed during the reporting month. This indicator tracks performance for SEP item 62.

EQUIPMENT FORCED OUTAGES PER 1000 CRITICAL HOURS

Equipment forced outages per 1000 critical hours is the inverse of the mean time between forced outages caused by equipment failures. The mean time is equal to the number of hours the reactor is critical in a period (1000 hours) divided by the number of forced outages caused by equipment failures in that period.

EQUIVALENT AVAILABILITY FACTOR

This indicator is defined as the ratio of gross available generation to gross maximum generation, expressed as a percentage. Available generation is the energy that can be produced if the unit is operated at the maximum power level permitted by equipment and regulatory limitations. Maximum generation is the energy that can be produced by a unit in a given period if operated continuously at maximum capacity.

EXPEDITED PURCHASES

The percentage of expedited purchases which occurred during the reporting month compared to the total number of purchase orders generated.

FORCED OUTAGE RATE

This indicator is defined as the percentage of time that the unit was unavailable due to forced events compared to the time planned for electrical generation. Forced events are failures or other unplanned conditions that require removing the unit from service before the end of the next weekend. Forced events include startup failures and events initiated while the unit is in reserve shutdown (i.e., the unit is available but not in service.

FUEL RELIABILITY INDICATOR

This indicator is defined as the steady-state primary coolant I-131 activity, corrected for the tramp uranium contribution and normalized to a common purification rate.

Tramp uranium is fuel which has been deposited on reactor core internals from previous defective fuel or is present on the surface of fuel elements from the manufacturing process.

Steady state is defined as continuous operations above 85 percent power for at least seven days.

This INPO indicator uses an industry normalized letdown purification rate. The FRI has also been calculated using Fort Calhoun's actual letdown purification rate. These calculations revealed that the use of the plant's actual rate would result in an approximate 45% increase in FRI data.

GASEOUS RADIOACTIVE WASTE BEING DISCHARGED TO THE ENVIRONMENT

This indicator displays the total number of Curies of all gaseous radioactive nuclides released from the Fort Calhoun Station.

GROSS HEAT RATE

Gross heat rate is defined as the ratio of total thermal energy in British Thermal Units (BTU) produced by the reactor to the total gross electrical energy produced by the generator in kilowatt-hours (KWH).

HAZARDOUS WASTE PRODUCED

The total amount (in Kilograms) of non-halogenated hazardous waste, halogenated hazardous waste, and other hazardous waste produced by the Fort Calhoun Station each month.

HOTLINES

The number of Hotlines that are initiated, closed, overdue, and open for a given month. A Hotline is a training document sent out for immediate review. The Hotline should be reviewed and signed within 5 days of receipt of the Hotline.

HOURS CHEMISTRY IS OUTSIDE OWNERS GROUP GUIDELINES

Total hours for 13 secondary side chemistry parameters exceeding guidelines during power operation. Power operation is defined as greater than 30% power. The 13 parameters tracked are steam generator pH, cation conductivity, boron silica, chloride, sulfate, sodium, feed water pH, dissolved oxygen, hydrazine, iron, copper, and condensate pump discharge dissolved oxygen.

IN-LINE CHEMISTRY INSTRUMENTS OUT-OF-SERVICE

Total number of in-line chemistry instruments that are out-of-service in the Secondary System and the Post Accident Sampling System (PASS).

INVENTORY ACCURACY

The percentage of line items that are counted each month by the warehouse which need count adjustments.

INVOICE BREAKDOWN

The number of invoices that are on hold due to shelf life, CQE, and miscellaneous reasons.

LICENSE CANDIDATE EXAMS

This indicator shows the number of SRO and/or RO quizzes and exams that are administered and passed each month. The License Candidate Exams Indicator tracks Training performance for Safety Enhancement Program Item Number 68.

LIQUID RADIOACTIVE WASTE BEING DISCHARGED TO THE ENVIRONMENT

This indicator displays the volume of liquid radioactive waste released from the radioactive waste monitor tanks. The curies from all releases from the Fort Calhoun Station to the Missouri River are also shown.

LOGGABLE/REPORTABLE INCIDENTS (SECURITY)

The total number of security incidents for the reporting month. This indicator tracks security performance for Safety Enhancement Program Item Number 58.

MAINTENANCE EFFECTIVENESS

The number of Nuclear Plant Reliability Data System (NPRDS) components with more than one failure and the number of NPRDS components with more than two failures during the last twelve months.

MAINTENANCE WORK ORDER BACKLOG

The number of corrective non-outage maintenance work orders that remain open at the end of the reporting month. This indicator was added to the Performance Indicators Report to trend open corrective non-outage maintenance work orders as stated in Safety Enhancement Program (SEP) Item No. 36.

MAINTENANCE WORK ORDER BREAKDOWN

This indicator is a breakdown of corrective non-outage maintenance work orders by several categories that remain open at the end of the reporting month.

MAINTENANCE OVERTIME

The percentage of overtime hours compared to normal hours for maintenance. This includes OPPD personnel as well as contract personnel.

MATERIAL REQUEST PLANNING

The percent of material requests (MR's) for issues with their request date the same as their need date compared to the total number of MR's.

MATERIAL REQUESTS AWAITING APPROVAL

The number of material requests awaiting approval at the end of the reporting month broken down by their age in days.

MAXIMUM INDIVIDUAL RADIATION EXPOSURE

The total maximum amount of Gamma and Neutron (Whole Body) radiation received by an individual person working at the Fort Calhoun Station on a monthly, quarterly, and annual basis.

MWO OVERALL STATUS (1991 REFUELING OUTAGE)

The total number of Maintenance Work Orders (MWO's) that have been written for completion during the 1991 Refueling Outage. MWO's which are written after the start of the Refueling Outage will be labeled Emergent MWO's. This indicator also shows the number of MWO's which are ready to work for the 1991 Refueling and the outage MWR backlog. The MWR's which are backlogged are MWR's which have been identified, but not yet converted to MWO's. This indicator tracks performance for SEP Reference Number 31.

NUMBER OF HOT SPOTS

The number of radiological hot spots which have been identified and documented to exist at the Fort Calhoun Station at the end of the reporting month. A hot spot is a small localized source of radiation. A hot spot occurs when the contact dose rate of an item is at least 5 times the General Area dose rate and the item's dose rate is equal to or greater than 100 mRem/hour.

NUMBER OF NUCLEAR PLANT RELIABILITY DATA SYSTEM (NPRDS) FAILURE REPORTS SUBMITTED

The data plotted is the total number of NPRDS component failures (confirmed and possible) and the number of confirmed NPRDS component failures. The total number of NPRDS component failures are based on the number of failure reports that have been sent to the Institute of Nuclear Operations (INPO).

Confirmed NPRDS component failures are based upon failure reports that have been accepted by INPO. Possible NPRDS component failures are based upon failure reports that are still under review by INPO.

NPRDS is the Nuclear Plant Reliability Data System, and is a utility industry users group program which has been outlined by INPO and implemented at the Fort Calhoun Station.

NUMBER OF OUT-OF-SERVICE CONTROL ROOM INSTRUMENTS

A control room instrument that cannot perform its design function is considered as out-of-service. A control room instrument which has had a Maintenance Work Order (MWO) written for it and has not been repaired by the end of the reporting period is considered out-of-service and will be counted. The duration of the out-of-service condition is not considered.

Computer CRTs are not considered as control room instruments.

NUMBER OF PERSONNEL ERRORS REPORTED IN LER'S

The number of Licensee Event Reports (LERs) attributed to personnel error on the original LER submittal. This indicator trends personnel performance for SEP Item No. 15.

NUMBER OF MISSED SURVEILLANCE TESTS RESULTING IN LICENSEE EVENT REPORTS

The number of Surveillance Tests (ST's) that result in Licensee Event Reports (LER's) during the reporting. This indicator tracks missed ST's for Safety Enhancement Program (SEP) Item Numbers 60 and 61.

OPERATIONS AND MAINTENANCE BUDGET

The year to date budget compared to the actual expenditures for operations and maintenance.

OUTSTANDING CORRECTIVE ACTION REPORTS

This indicator displays the total number of outstanding Corrective Action Reports (CAR's), the number of CAR's that are older than six months and the number of modification related CAR's.

OUTSTANDING ENGINEERING ASSISTANCE REQUESTS (EAR's)

The total number of open EAR's and the number of open EAR's broken down by their age in months. This indicator tracks performance for SEP item 62.

OUTSTANDING MODIFICATIONS

The number of Modification Requests (MR'S) in any state between the issuance of a Modification Number and the completion of the drawing update.

Form FC-1133 Backlog/In Progress

The Form FC-1133 has not been plant approved.

Modification Requests Being Reviewed

This category includes:

1.) * Modification Requests that are not yet reviewed

2.) * Modification Requests being reviewed by the Nuclear Projects Review Committee (NPRC)

3.) * Modification Requests being reviewed by the Nuclear Projects Committee (NPC)

* These Modification Requests may be reviewed several times before they are approved for accomplishment or cancelled. Some of these Modification Requests are returned to Engineering for more information, some approved for evaluation, some approved for study, and some approved for planning. Once planning is completed and the scope of the work is clearly defined, these Modification Requests may be approved for accomplishment with a year assigned for construction or they may be cancelled. All of these different phases require review.

Design Engineering Backlog/In Progress

Nuclear Planning has assigned a year in which construction will be completed and design work may be in progress.

Construction Backlog/In Progress

The Construction Package has been issued or construction has begun but the modification has not been accepted by the System Acceptance Committee (SAC).

Design Engineering Update Backlog/In Progress

PED has received the Modification Completion Report but the drawings have not been updated.

OVERALL PROJECT STATUS (1991 REFUELING OUTAGE)

The number of projects which affect the scope of the 1991 Refueling Outage. Also shown is the number of projects in which their preliminary schedules have been submitted and the number of projects in which their detailed schedules have been submitted. This indicator tracks performance for SEP Reference Number 31.

OVERDUE AND EXTENDED CORRECTIVE ACTION REPORTS

The number of overdue Corrective Action Reports (CAR's) and the number of CAR's which received extensions broken down by organization for the last 6 months.

PERCENT OF COMPLETED SCHEDULED MAINTENANCE ACTIVITIES

The percent of the number of completed maintenance activities as compared to the number of scheduled maintenance activities each week. This percent is shown for each craft. Maintenance activities include MWR's, MWO's, ST's, PMO's, calibrations, and other miscellaneous activities. These indicators track Maintenance performance for SEP Reference Number 33.

PERSONNEL RADIATION EXPOSURE (CUMULATIVE)

Collective radiation exposure is the total external whole-body dose received by all on-site personnel (including contractors and visitors) during a time period, as measured by the thermoluminescent dosimeter (TLD). Collective radiation exposure is reported in units of man-rem. This indicator tracks radiological work performance for Safety Enhancement Program (SEP) Item Number 54.

PERSONNEL TURNOVER RATE

The ratio of the number of turnovers to average employment. A turnover is a vacancy created by voluntary resignation from the company. Retirement, death, termination, transfers within the company, and part-time employees are not considered in turnover.

PREVENTIVE MAINTENANCE ITEMS OVERDUE

This indicator is defined as the percentage of preventive maintenance items in the month that were not completed by the scheduled date plus a grace period equal to 25 percent of the scheduled interval. This indicator tracks preventive maintenance activities for Safety Enhancement Program (SEP) Item Number 41.

PRIMARY SYSTEM CHEMISTRY - PERCENT OF HOURS OUT OF LIMIT

The percent of hours out of limit are for six primary chemistry parameters divided by the total number of hours possible for the month. The key parameters used are: Lithium, Chloride, Hydrogen, Dissolved Oxygen, Fluoride, and Suspended Solids. EPRI limits are used.

PROCEDURAL NONCOMPLIANCE INCIDENTS (MAINTENANCE)

The number of identified incidents concerning maintenance procedural problems, the number of closed IR's related to the use of procedures (includes the number of closed IR's caused by procedural noncompliance), and the number of closed procedural noncompliance IR's. This indicator trends personnel performance for SEP Item Numbers 15 and 41.

PROGRESS OF 1991 OUTAGE MODIFICATION PLANNING

The number of modifications approved for planning (to determine feasibility) for completion during the 1991 Refueling. This indicator tracks performance for SEP Reference Number 31.

RADIOLOGICAL WORK PRACTICES PROGRAM

The number of identified poor radiological work practices (PRWP) for the reporting month. This indicator tracks radiological work performance for Safety Enhancement (SEP) Item Number 52.

RATIO OF PREVENTIVE TO TOTAL MAINTENANCE

The ratio of preventive maintenance (including surveillance testing and calibration procedures) to the sum of non-outage corrective maintenance and preventive maintenance completed over the reporting period. The ratio, expressed as a percentage, is calculated based on man-hours. This indicator tracks preventive maintenance activities for Safety Enhancement Program (SEP) Item Number 41.

RECORDABLE INJURY CASES FREQUENCY RATE (RECORDABLE INJURY RATE)

The number of injuries requiring more than normal first aid per 200,000 manhours worked. This indicator trends personnel performance for SEP Item No. 15 and SEP Item 26.

RO LICENSE EXAMINATION PASS RATIO

The RO license examination pass ratio for NRC administered Generic Fundamentals Exams (GFE's), NRC administered Site Specific Exams, NRC administered license requalification exams, and OPPD administered license requalification exams. This indicator tracks Training performance for Safety Enhancement Program Item Number 68.

SECONDARY SYSTEM CHEMISTRY PERFORMANCE INDEX

The Chemistry Performance Index (CPI) is a calculation based on the concentration of key impurities in the secondary side of the plant. These key impurities are the most likely cause of deterioration of the steam generators. The chemistry parameters are reported only for the period of time greater than 30 percent power.

SECONDARY SYSTEM CHEMISTRY PERFORMANCE INDEX (CONTINUED)

The following equation is how the CPI is calculated:

$$CPI = ((Ka/0.8) + (Na/20) + (O_2/10)) / 3$$

Where the following parameters are monthly averages of;
Ka = average blowdown cation conductivity
Na = average blowdown sodium concentration
O_2 = average condensate pump discharge dissolved oxygen concentration

SECURITY INCIDENTS BREAKDOWN

This indicator shows a percentile breakdown of the types of Security incidents for the reporting month.

The following items are the types of Security incidents represented in this indicator.

Licensee Designated Vehicles (LDV's)

Incidents related to the use of LDV's, e.g. keys left in the vehicle, loss of keys, or failure to return keys.

Security Badges

Incidents involving lost/unattended badges, badges removed from site, or failure to wear badges.

Escorting

Incidents involving escort responsibilities, e.g. improper control or escort of a visitor(s).

Security System Failures

Incidents involving alarm system failures, CCTV failures, security computer failures, terminal failures, door equipment failures, and card reader failures.

Security Key Control

Incidents involving Security key control, e.g. lost Security keys, Security keys removed from site, or failure to return Security keys. This type of incident does not reflect incidents concerning LDV keys.

SECURITY INCIDENT BREAKDOWN (CONTINUED)

Access Control

Incidents involving the inspection and control of personnel, packages, and vehicles, e.g. failure to properly search personnel, packages, and vehicles. This item also includes the introduction of contraband or prohibited items into the Protected Area, or the attempted introduction of such items.

This indicator tracks security performance for Safety Enhancement Program (SEP) Item Number 58.

SECURITY SYSTEM FAILURES

Incidents involving alarm system failures, CCTV failures, security computer failures, and card reader failures. Alarm system failures and CCTV failures are further categorized as follows:

Alarm System Failure - Detection system events involving false/nuisance alarms and mechanical failures.

Alarm System Environmental Failures - Degradations to detection system performance as a result of environmental conditions (i.e., rain, snow, frost).

CCTV Failures - Mechanical failures to all CCTV hardware components.

CCTV Environmental Failures - Degradations to CCTV performance as a result of environmental conditions (i.e., rain, snow, frost, fog, sunspots, shade).

In the future, a single environmental event which causes multiple failures to the alarm system and/or CCTV system will be logged as one event (i.e., a rain storm which causes multiple alarm system failures, the sun rising which degrades multiple CCTV performance).

SPARE PARTS ISSUED

The dollar value of the spare parts issued for the Fort Calhoun Station during the reporting period.

SRO OPERATOR LICENSE EXAMINATION PASS RATIO

The SRO license examination pass ratio for NRC administered Generic Fundamentals Exams (GFE's), NRC administered Site Specific Exams, NRC administered license requalification exams, and OPPD administered license requalification exams. This indicator tracks Training performance for Safety Enhancement Program Item Number 68.

STAFFING LEVEL

The actual staffing level and the authorized staffing level for the Nuclear Operations Division, the Production Engineering Division, and the Nuclear Services Division.

STATION NET GENERATION

The net generation (sum) produced by the Fort Calhoun Station during the reporting month.

STOCKOUT RATE

The total number of Pick Tickets that were generated during the reporting month and the total number of Pick Tickets that were generated during the reporting month with no parts available.

TEMPORARY MODIFICATIONS

The number of temporary mechanical and electrical configurations to the plant's systems.

Temporary configurations are defined as electrical jumpers, electrical blocks, mechanical jumpers, or mechanical blocks which are installed in the plant operating systems and are not shown on the latest revision of the P&ID, schematic, connection, wiring, or flow diagrams.

Jumpers and blocks which are installed for Surveillance Tests, Maintenance Procedures, Calibration Procedures, Special Procedures, or Operating Procedures are not considered as temporary modifications unless the jumper or block remains in place after the test or procedure is complete. Jumpers and blocks installed in test or lab instruments are not considered as temporary modifications.

Scaffolding is not considered a temporary modification. Jumpers and blocks which are installed and for which EEAR's have been submitted, will be considered as a temporary modifications until final resolution of the EEAR and the jumper or block is removed or is permanently recorded on the drawings.

This indicator tracks temporary modifications for Safety Enhancement Program (SEP) Item Number 62 & 71.

TOTAL HOURS OF STUDENT TRAINING

The total number of student hours of training for Operations, Maintenance, Chemistry and Radiation Protection, Technical Support, General Employee Training, and Other training conducted for the Fort Calhoun Station.

TOTAL SKIN AND CLOTHING CONTAMINATIONS

Reportable skin and clothing contaminations above background levels greater than 5000 dpm/100 cm squared. This indicator trends personnel performance for SEP Item No. 15.

UNPLANNED AUTOMATIC REACTOR SCRAMS WHILE CRITICAL

This indicator is defined as the number of unplanned automatic scrams (reactor protection system logic actuations) that occur while the reactor is critical. The indicator is further defined as follows:

- Unplanned means that the scram was not part of a planned test or evolution.

- Scram means the automatic shutdown of the reactor by a rapid insertion of all control rods that is caused by actuation of the reactor protection system. The scram signal may have resulted from exceeding a setpoint or may have been spurious.

- Automatic means that the initial signal that caused actuation of the reactor protection system logic was provided from one of the sensors monitoring plant parameters and conditions, rather than the manual scram switches (or pushbuttons) in the main control room.

- Critical means that during the steady-state condition of the reactor prior to the scram, the effective multiplication factor (K_{eff}) was equal to one.

UNPLANNED SAFETY SYSTEM ACTUATIONS - (INPO DEFINITION)

This indicator is defined as the sum of the following safety system actuations:

- the number of unplanned Emergency Core Cooling System (ECCS) actuations that result from reaching an ECCS actuation setpoint or from a spurious/inadvertent ECCS signal

- the number of unplanned emergency AC power system actuations that result from a loss of power to a safeguards bus

An unplanned safety system actuation occurs when an actuation setpoint for a safety system is reached or when a spurious or inadvertent signal is generated (ECCS only), and major equipment in the system is actuated. Unplanned means that the system actuation was not part of a planned test or evolution.

The ECCS actuations to be counted are actuations of the high pressure injection system, the low pressure injection system, or the safety injection tanks.

UNPLANNED SAFETY SYSTEM ACTUATIONS - (NRC DEFINITION)

The number of safety system actuations which include (only) the High Pressure Safety Injection System, the Low Pressure Safety Injection System, the Safety Injection Tanks, and the Emergency Diesel Generators. The NRC classification of safety system actuations includes actuations when major equipment is operated and when the logic systems for the above safety systems are challenged.

VIOLATIONS PER 1000 INSPECTION HOURS

This indicator is defined as the number of violations sited in NRC inspection reports for the Fort Calhoun Station per 1000 NRC inspection hours. The violations are reported in the year that the inspection was actually performed and not based on when the inspection report is received. The hours reported for each inspection report are used as the inspection hours.

VOLUME OF LOW-LEVEL SOLID RADIOACTIVE WASTE

This indicator is defined as the volume of low-level solid radioactive waste actually shipped for disposal. This indicator also shows the volume of low-level radioactive waste which is in temporary storage.

Low-level solid radioactive waste consists of dry active waste, sludges, resins, and evaporator bottoms generated as a result of nuclear power plant operation and maintenance.

Dry active waste includes contaminated rags, cleaning materials, disposable protective clothing, plastic containers, and any other material to be disposed of at a low-level radioactive waste disposal site, except resin, sludge, or evaporator bottoms. Low-level refers to all radioactive waste that is not spent fuel or a by-product of spent fuel processing.

This indicator tracks radiological work performance for Safety Enhancement Program (SEP) Item Number 54.

WAREHOUSE ISSUES

The total number of warehouse issues, the number of non-CQE stock issues, the number of CQE stock issues, the number of direct charge non-CQE issues, and the number of direct charge CQE issues which occurred during the reporting month.

WAREHOUSE RECEIPTS

The total number of warehouse receipts, the number of non-CQE stock receipts, the number of CQE stock receipts, the number of direct charge non-CQE receipts, and the number of direct charge CQE receipts which occurred during the reporting month.

WAREHOUSE RETURNS

The percentage of the total number of warehouse returns, the number of spare parts returns, the number of standard stores returns, and the number of direct charge returns compared to the total number of warehouse issues.

BASIS FOR ESTABLISHING 1990 PERFORMANCE INDICATOR GOALS

This section will explain the basis used in establishing the 1990 performance goals.

FORCED OUTAGE RATE AND EQUIVALENT AVAILABILITY FACTOR

The Forced Outage Rate (FOR) and Equivalent Availability Factor (EAF) goals have been established from 1990 to 1992. The following table is a breakdown of the hours allotted for each category over the next three years.

YEAR	GENERATOR ON LINE (HOURS)	FORCED OUTAGE (HOURS)	STARTUP OUTAGE TIME (HOURS)	PLANNED OUTAGE (HOURS)	PERIOD (HOURS)	EAF (%)	FOR (%)
1990(*)	6356	168	172	2064	8760	65.4	2.4
1991(*)	6956	168	172	1464	8760	75.9	2.3
1992	8520	240	0	0	8760	92.9	2.7

(*) Refueling Outage Years

UNPLANNED AUTOMATIC REACTOR SCRAMS WHILE CRITICAL

The 1990 goal for Unplanned Automatic Reactor Scrams While Critical has been set at one. The Fort Calhoun Station has had one unplanned automatic reactor scram in the past four years of operation.

UNPLANNED SAFETY SYSTEM ACTUATIONS

The Unplanned Safety System Actuations goal for 1990 has been established at zero. The Fort Calhoun Station did not have an unplanned safety system actuation for six years.

GROSS HEAT RATE

The 1990 Gross Heat Rate goal for the Fort Calhoun Station has been set at 10,200 BTU/KWH. This heat rate goal is based on 10,435 BTU/KWH for the month of January, 10,450 BTU/KWH for the month of February, 10,325 BTU/KWH for the month of May, 10,225 BTU/KWH for the month of June, 10,325 BTU/KWH for the month of July, 10,250 BTU/KWH for the month of August, 10,125 BTU/KWH for the month of September, 10,050 BTU/KWH for the month of October, 10,000 BTU/KWH for the month of November, and 9,975 BTU/KWH for the month of December.

BASIS FOR ESTABLISHING 1990 PERFORMANCE INDICATOR GOALS

(CONTINUED)

FUEL RELIABILITY INDICATOR

The 1990 Fuel Reliability Indicator (FRI) goal has been set at 1.0 nanocuries/gram. This level allows for approximately one to two fuel pin failures. Although Cycle 11 was completed without any apparent fuel pin failures, there are a number of Advanced Nuclear Fuels Corporation (ANF) assemblies entering into a third or fourth cycle of operation. When a fuel pin has been used for three or four fuel cycles there is an increased probability of fuel failure. The Failed Fuel Action Plan, Standing Order O-43, allows for approximately four fuel pin failures prior to implementing any increased action levels.

PERSONNEL RADIATION EXPOSURE (CUMULATIVE)

The 1990 Personnel Radiation Exposure (Cumulative) goal is 287 man-rem. This goal was based on 234 man-rem of cumulative exposure for the 1990 Refueling Outage and approximately 5.9 man-rem of cumulative exposure for each non-outage month.

VOLUME OF LOW-LEVEL SOLID RADIOACTIVE WASTE

The 1990 Volume of Low-Level Solid Radioactive Waste goal is 5,000 cubic feet. This goal was based on a recommendation made by the Fort Calhoun ALARA Committee and approved by the Division Manager of the Nuclear Production Division.

DISABLING INJURY FREQUENCY RATE

The Disabling Injury Frequency Rate 1990 goal has been set at 0.31. This goal allows for one lost time accident in the Nuclear Production Division during 1990.

FORT CALHOUN STATION
OPERATING CYCLES AND REFUELING OUTAGE DATES

EVENT	FROM - TO	PRODUCTION (MWH)	CUMULATIVE (MWH)
Cycle 1	09/26/73 - 02/01/75	3,299,639	3,299,639
First Refueling	02/01/75 - 05/09/75		
Cycle 2	05/09/75 - 10/01/76	3,853,322	7,152,961
Second Refueling	10/01/76 - 12/13/76		
Cycle 3	12/13/76 - 09/30/77	2,805,927	9,958,888
Third Refueling	09/30/77 - 12/09/77		
Cycle 4	12/09/77 - 10/14/78	3,026,832	12,985,720
Fourth Refueling	10/14/78 - 12/24/78		
Cycle 5	12/24/78 - 01/18/80	3,882,734	16,868,454
Fifth Refueling	01/18/80 - 06/11/80		
Cycle 6	06/11/80 - 09/18/81	3,899,714	20,768,168
Sixth Refueling	09/18/81 - 12/21/81		
Cycle 7	12/21/81 - 12/06/82	3,561,866	24,330,034
Seventh Refueling	12/06/82 - 04/07/83		
Cycle 8	04/07/83 - 03/03/84	3,406,371	27,736,405
Eighth Refueling	03/03/84 - 07/12/84		
Cycle 9	07/12/84 - 09/28/85	4,741,488	32,477,893
Ninth Refueling	09/28/85 - 01/16/86		
Cycle 10	01/16/86 - 03/07/87	4,356,753	36,834,646
Tenth Refueling	03/07/87 - 06/08/87		
Cycle 11	06/08/87 - 09/27/88	4,936,859	41,771,505
Eleventh Refueling	09/27/88 - 01/31/89		
Cycle 12	01/31/89 - 02/17/90	3,817,954	45,589,459
Twelfth Refueling	02/17/90 - 05/29/90		

FORT CALHOUN STATION
OPERATING CYCLES AND REFUELING OUTAGE DATES
(CONTINUED)

EVENT	FROM - TO	PRODUCTION (MWH)	CUMULATIVE (MWH)
Cycle 13	05/29/90 - 09/28/91*		
Thirteenth Refueling	09/28/91*- 11/22/91*		
Cycle 14	11/22/91*- 02/12/93*		
Fourteenth Refueling	02/12/93*- 05/06/93*		
Cycle 15	05/06/93*- 09/30/94*		
Fifteenth Refueling	09/30/94*- 11/26/94*		

* - Planned Dates

FORT CALHOUN STATION
PRODUCTION AND OPERATION RECORDS

The following seven items are the current production and operation "records" for the Fort Calhoun Station.

1. First Sustained Reaction.	August 5, 1973 (5:47 p.m.)
2. First Electricity Supplied to the System.	August 25, 1973
3. Commercial Operation (180,000 KWH).	September 26, 1973
4. Achieved Full Power (100%).	May 4, 1974
5. Longest Run (477 days).	June 8, 1987 - Sept. 27,1988
6. Highest Monthly Net Generation (364,468,800 MWH).	October 1987
7. Most Productive Fuel Cycle (4,936,859 MWH). . . .	June 8, 1987 - Sept. 27, 1988 (Cycle 11)

PERFORMANCE INDICATOR DATA SOURCES

PERFORMANCE INDICATOR	MANAGER/INDIVIDUAL
Age of Outstanding Maintenance Work Orders	Patterson/Schmitz
Amount of Work On Hold Awaiting Parts	Patterson/CHAMPS
Auxiliary Systems Chemistry Hours Outside Station Limits	Franco/Glantz
CAR's Current Status	Orr/Gurtis
CAR's Issued Versus NRC Violations Issued	Chase/Simmons Orr/Gurtis
Classroom (Instructor) Hours	Gasper/Newhouse
Corrective Maintenance Backlog > 3 Months Old	Patterson/Schmitz
Cumulative Violations and NCV's	Chase/Simmons
Daily Thermal Output	Holthaus/Gray
Decontaminated Auxiliary Building	Patterson/Gundal
Diesel Generator Reliability (25 Demands)	DG Log
Diesel Generator Unit Reliability	DG Log
Disabling Injury Frequency Rate	Sorenson/Skaggs
Document Review	Patterson/McKay
Engineering Change Notice Breakdown	Phelps/Bera
Engineering Change Notice Status	Phelps/Bera
Equipment Forced Outages per 1000 Critical Hours	Holthaus/Gray
Equivalent Availability Factor	Dietz/Parra
Expedited Purchases	Willrett/Fraser
Forced Outage Rate	Holthaus/Gray
Fuel Reliability Indicator	Holthaus/Lofshult
Gaseous Radioactive Waste Discharged to the Environment	Franco/Stultz
Gross Heat Rate	Holthaus/Gray
Hazardous Waste Produced	Smith/Henning

PERFORMANCE INDICATOR DATA SOURCE
(CONTINUED)

Hotlines	Gasper/Newhouse
In-Line Chemistry Instruments Out-of-Service	Patterson/Renaud
Inventory Accuracy	Willrett/Fraser
Invoice Breakdown	Willrett/Fraser
License Candidate Exams	Gasper/Lazar
Liquid Radioactive Waste Discharged to the Environment	Franco/Stultz
Loggable/Reportable Security Incidents	Sefick/Woerner
Maintenance Effectiveness	Jaworski/Dowdy
Maintenance Work Order Backlog (Corrective Non-Outage)	Patterson/Schmitz
Maintenance Work Order Breakdown	Patterson/Schmitz
Maintenance Overtime	Patterson/Schmitz
Material Request Planning	Willrett/Fraser
Material Requests Awaiting Approval	Willrett/Fraser
Maximum Individual Radiation Exposure	Patterson/Williams
MWO Overall Status (1991 Refueling Outage)	Patterson/Hyde
Number of Hot Spots	Patterson/Williams
Number of NPRDS Reportable Failures	Jaworski/Dowdy
Number of Out-of-Service Control Room Instruments	Patterson/Adams
Number of Personnel Errors Reported in LER's	Chase/Simmons
Number of Missed ST's Resulting in LER's	Plant LER's
Operations and Maintenance Budget	Gleason/Parent
Outstanding CAR's	Orr/Gurtis
Outstanding Engineering Assistance Requests (EAR's)	Jaworski/Van Osdel
Outstanding Modifications	Jaworski/Turner

PERFORMANCE INDICATOR DATA SOURCE
(CONTINUED)

Overall Project Status (1991 Refueling Outage)	Patterson/Hyde
Overdue and Extended CAR's	Orr/Gurtis
Percent of Completed Scheduled Maintenance Activities	Peterson/Schmitz
Personnel Radiation Exposure (Cumulative)	Patterson/Williams
Personnel Turnover Rate	Sorenson/Burke
Preventive Maintenance Items Overdue	Patterson/Linden
Primary System Chemistry - Percent Hours Out of Limits	Franco/Glantz
Procedural Noncompliance Incidents (Maintenance)	Patterson/McKay
Progress of 1991 Outage Modification Planning	Patterson/Hyde
Radiological Work Practices Program	Patterson/Williams
Ratio of Preventive to Total Maintenance	Patterson/Schmitz
Recordable Injury Cases Frequency Rate	Sorenson/Skaggs
RO License Examination Pass Ratio	Gasper/Lazar
Secondary System Chemistry	Franco/Stultz
Security Incident Breakdown	Sefick/Woerner
Security System Failures	Sefick/Woerner
Spare Parts Inventory Value	Steele/Huliska
Spare Parts Issued	Steele/Miser
SRO License Examination Pass Ratio	Gasper/Lazar
Staffing Level	Sorenson/Burke
Stockout Rate	Willrett/Fraser
Temporary Modifications	Jaworski/Turner
Total Hours of Student Training	Gasper/Newhouse
Total Skin and Clothing Contaminations	Patterson/Williams
Unplanned Automatic Reactor Scrams While Critical	Plant LER's

PERFORMANCE INDICATOR DATA SOURCE
(CONTINUED)

Unplanned Safety System Actuations (INPO)	Plant LER's
Unplanned Safety System Actuations (NRC)	Plant LER's
Violations per 1000 Inspection Hours	Chase/Howman
Volume of Low-level Solid Radioactive Waste	Patterson/Breuer
Warehouse Issues	Willrett/Fraser
Warehouse Receipts	Willrett/Fraser
Warehouse Returns	Willrett/Fraser

REFERENCES

INPO Good Practices OA-102, "Performance Monitoring - Management Information"

INPO Report Dated November 1984, "Nuclear Power Plant Operational Data"

NUMARC 87-00, "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors", Revision 1, Appendix D, "EDG Reliability Program", dated April 6, 1990.