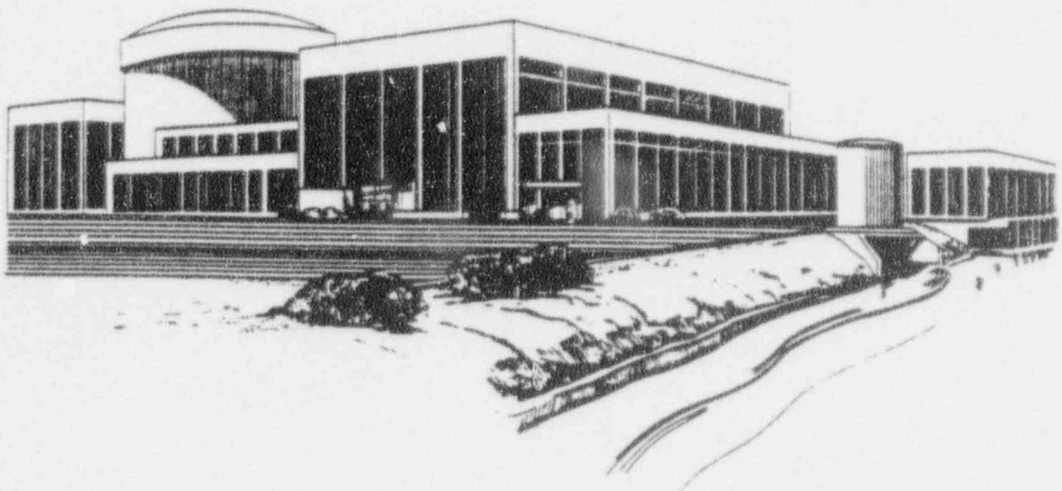
FORT CALHOUN STATION
PERFORMANCE INDICATORS



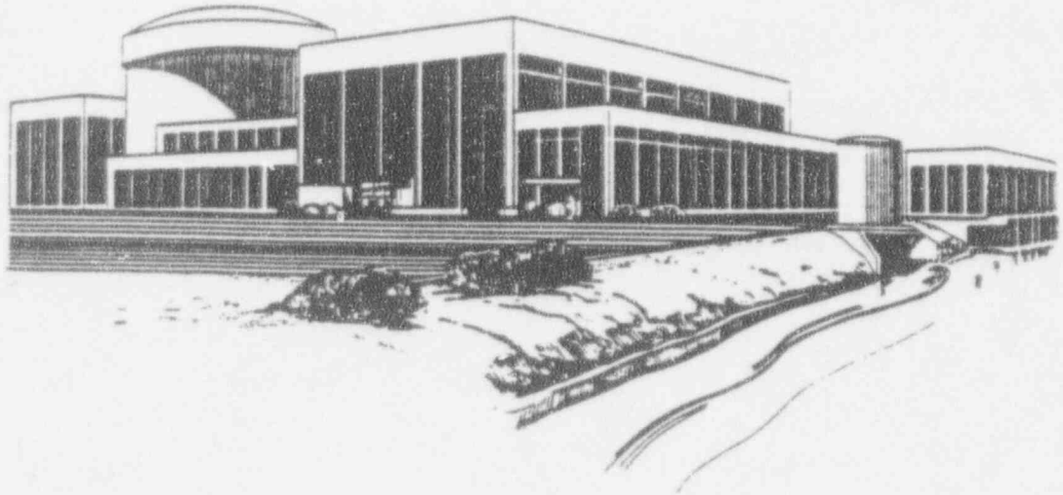
DECEMBER 1993

SAFE OPERATIONS
PERFORMANCE EXCELLENCE
COST EFFECTIVENESS

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

FORT CALHOUN STATION
PERFORMANCE INDICATORS



DECEMBER 1993

SAFE OPERATIONS
PERFORMANCE EXCELLENCE
COST EFFECTIVENESS

OMAHA PUBLIC POWER DISTRICT
FORT CALHOUN STATION
PERFORMANCE INDICATORS REPORT

Prepared By:
Production Engineering Division
System Engineering
Test and Performance Group

DECEMBER 1993

FORT CALHOUN STATION
DECEMBER 1993 MONTHLY OPERATING REPORT

OPERATIONS SUMMARY

On December 1, the station was operating at 90.5% power following the 1993 maintenance and refueling outage. Power ascension continued with the plant reaching 100% power on December 3.

A reactor trip occurred at approximately 0227 on Monday, December 6 during weekly testing of the turbine Electro-Hydraulic Control (EHC) system pumps. The trip resulted from inadequate design of a Facility Change Engineering Change Notice (ECN) which had reconfigured the EHC fluid lines to the EHC pressure transmitters. The ECN was installed during the 1993 Refueling Outage to eliminate an equipment vibration problem. Following the plant trip, the EHC fluid lines were reconfigured and tested prior to restart of the plant. Details of this event were provided in License Event Report (LER) 93-018 dated January 5, 1994. The reactor was taken critical at 0146 on December 7. The generator was synchronized to the grid at 0536 on December 7, and a power ascension commenced at a rate of less than 3% per hour to approximately 95%. Power was held at 95% for Technical Specification moderator temperature coefficient testing.

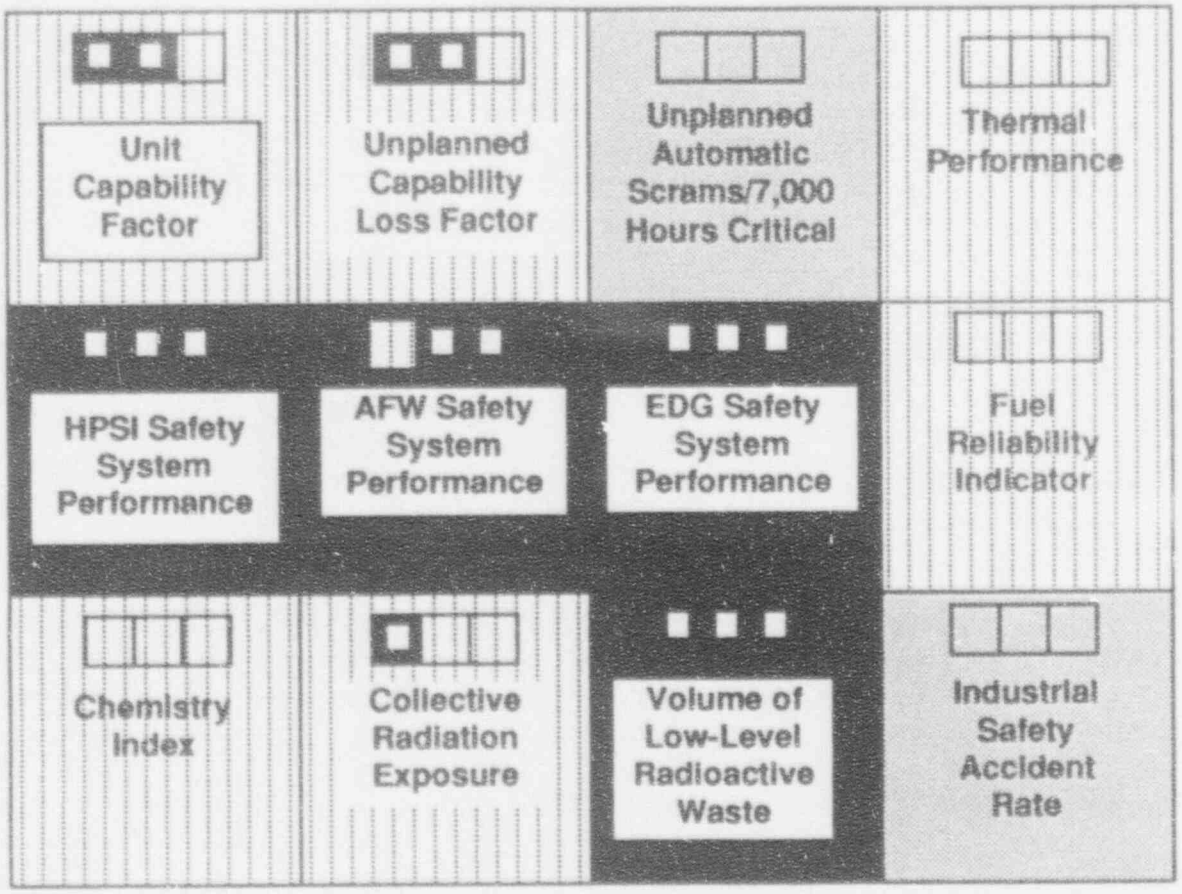
On December 9, surveillance test SE-ST-AFW-3005, an Inservice Inspection (ISI) test on the Auxiliary Feedwater System (AFW), was satisfactorily conducted. However, a one-hour notification was made to the NRC because it was realized that the surveillance test procedures rendered both AFW pumps inoperable for an 18 minute period. Further information on this event can be found in LER 93-019 dated January 10, 1994.

On December 12, power ascension from 95% to 100% occurred, with 100% operation continuing throughout the remainder of December.

The following LERs were submitted during this reporting period:

LER No.	Description
93-014 Rev. 1	Failure of a Power Operated Relief Valve to Open During Testing
93-015	Manual Emergency Boration following Spurious Increase in Indicated Reactor Power
93-016	Unplanned Control Rod Withdrawal and Subsequent Manual Reinsertion
93-017	Time Delays for Offsite Power Low Signal Found Out of Tolerance

Source: Nuclear Licensing & Industry Affairs



12 Month Value Performance Categories

Performance in Industry Upper 10% and better than 1993 OPPD goal

Performance Better Than 1993 OPPD Goal

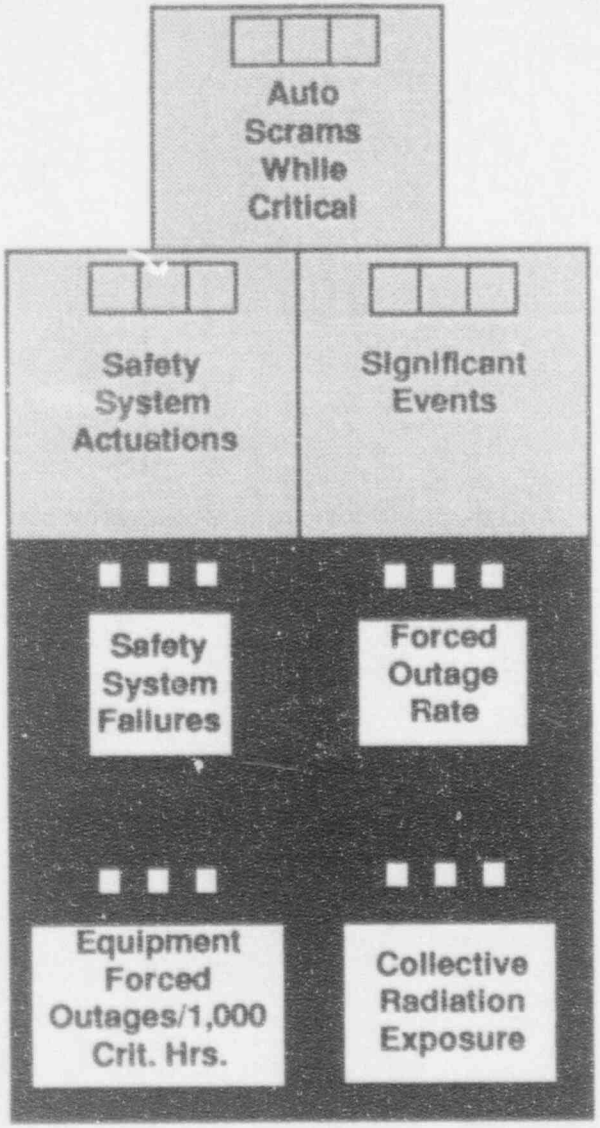
Performance Not Meeting 1993 OPPD Goal

September '93	October '93	November '93

December 1993 12 Month Value Performance

INPO PERFORMANCE INDICATORS

(Performance for the twelve months from January 1, 1993 through December 31, 1993.)

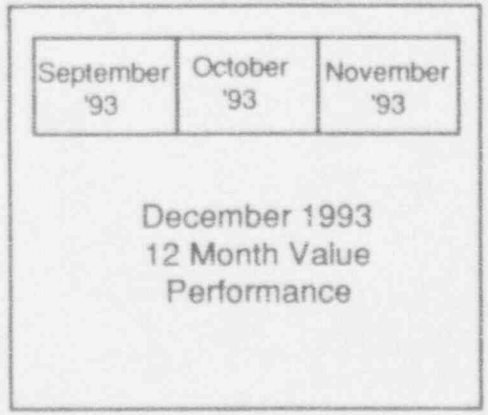


12 Month Value Performance Categories

Performance Better Than Peer Average Trend

Performance Better Than 1993 OPPD Goal

Performance Not Meeting 1993 OPPD Goal or Peer Average Trend



NRC PERFORMANCE INDICATORS

(Safety System Failures and Significant Events ratings are averages for April 1991 through March 1993. All other indicator values are for the twelve months from January 1, 1993 through December 31, 1993.)

FORT CALHOUN STATION PERFORMANCE INDICATORS REPORT
DECEMBER 1993 - SUMMARY

POSITIVE TREND REPORT

A performance indicator with data representing three consecutive months of improving performance or three consecutive months of performance that is superior to the stated goal is exhibiting a positive trend per Nuclear Operations Division Quality Procedure 37 (NOD-QP-37).

The following indicators are exhibiting positive trends for the reporting month:

Recordable Injury/Illness Cases Frequency Rate
(Page 7)

HPSI Safety System Performance
(Page 15)

AFW Safety System Performance
(Page 17)

Emergency AC Power System Safety System Performance
(Page 19)

Fuel Reliability Indicator
(Page 21)

Emergency Diesel Generator Unit Reliability
(Page 23)

Diesel Generator Reliability (25 Demands)
(Page 25)

Emergency Diesel Generator Unreliability
(Page 27)

Collective Radiation Exposure
(Page 31)

Maximum Individual Radiation Exposure
(Page 33)

Number of Missed Surveillance Tests Resulting in Licensee Event Reports
(Page 39)

Forced Outage Rate
(Page 45)

Unit Capability Factor
(Page 49)

Unplanned Capability Loss Factor
(Page 51)

Unplanned Safety System Actuations - (INPO Definition)
(Page 55)

Thermal Performance
(Page 61)

Equipment Forced Outages per 1,000 Critical Hours
(Page 65)

Check Valve Failure Rate
(Page 71)

Volume of Low-Level Solid Radioactive Waste
(Page 73)

Primary System Chemistry Percent of Hours Out of Limit
(Page 75)

Percentage of Total MWOs Completed per Month Identified as Rework
(Page 91)

Hazardous Waste Produced
(Page 1011)

Decontaminated Radiation Controlled Area
(Page 103)

Outstanding Modifications
(Page 115)

End of Positive Trend Report

ADVERSE TREND REPORT

A Performance Indicator with data representing three (3) consecutive months of declining performance; or four or more consecutive months performance that is trending towards declining as determined by the Manager - Station Engineering, constitutes an adverse trend per NOD-QP-37. A supervisor whose performance indicator exhibits an adverse trend by this definition may specify in written form (to be published in this report) why the trend is not adverse.

The following performance indicator is exhibiting an adverse trend for the reporting month:

Engineering Change Notice Status
(Page 117)
An adverse trend is indicated based on three consecutive months of increases in the number of ECNs backlogged in DEN.

End of Adverse Trend Report.

INDICATORS NEEDING INCREASED MANAGEMENT ATTENTION REPORT

A performance indicator with data for the reporting period that is inadequate when compared to the OPPD goal is defined as "Needing Increased Management Attention" per NOD-QP-37.

The following performance indicators need increased management attention for the reporting month:

Number of Personnel Errors Reported in LERs
(Page 11)
The percentage of total LERs submitted from 1/1/93 through 11/30/93 that have been attributed to personnel errors (28.57%) exceeds the 1993 Fort Calhoun goal of a maximum of 12%.

Number of Control Room Equipment Deficiencies
(Page 29)
The total number of control room equipment deficiencies at the end of the reporting month (61) exceeds the 1993 Fort Calhoun monthly goal of a maximum of 45.

Violations Per 1,000 Inspection Hours
(Page 35)
The number of violations per 1,000 inspection hours for the 12 months from 12/1/92 through 11/30/93 is 2.40, which exceeds the 1993 and 1992 Fort Calhoun goals of a maximum of 1.5.

Unplanned Automatic Reactor Scrams per 7,000 Hours Critical
(Page 53)
The number of unplanned automatic reactor scrams per 7,000 hours critical year-to-date (1.98) exceeds the 1993 goal of 0.

Unplanned Safety System Actuations (NRC Definition)
(Page 57)
The number of NRC unplanned safety system actuations year-to-date (3) exceeds the 1993 Fort Calhoun goal of 0.

Gross Heat Rate
(Page 59)
The GHR for the year (10,223 BTU/KWH) exceeds the 1993 goal of a maximum of 10,168 BTU/KWH.

Secondary System Chemistry
(Page 77)
The INPO CPI value for the reporting month (0.846) exceeds the 1993 Fort Calhoun goal of a maximum value of 0.60.

In-Line Chemistry Instruments Out-of-Service
(Page 99)
The number of in-line chemistry instruments out-of-service for the reporting month (6) is above the 1993 monthly goal of a maximum of 5.

Document Review
(Page 109)
The number of biennial reviews greater than 6 months overdue for the reporting month (10) exceeds the 1993 Fort Calhoun monthly goal of 0.

Temporary Modifications
(Page 113)
The number of temporary modifications >6 months old that are removable on-line for the reporting month (4) exceeds the 1993 monthly goal of 0.

Engineering Assistance Request Breakdown
(Page 116)
The total number of EARs open at the end of the reporting month (153) exceeds the 1993 Fort Calhoun goal of a maximum of 150 total open EARs.

End of Management Attention Report.

PERFORMANCE INDICATOR REPORT IMPROVEMENTS/CHANGES

This section lists significant changes made to the report and to specific indicators within the report since the previous month.

MWO Planning Status (Cycle 16 Refueling Outage)
(Page 127)
This indicator has been added to the report.

Number of Personnel Errors Reported in LERS (Page 11), Violations Per 1,000 Inspection Hours (Page 35) & LER Root Cause Breakdown (Page 121)
These indicators have been revised to be consistent with the Performance Measures Program that has been established.

Open Corrective Action Reports
(Page 126)
The number of open significant CARs for the month of November has been changed from 2 to 5 to correct an error in last month's report.

End of Performance Indicator Report Improvements/ Changes Report

V

Table of Contents/Summary

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PERFORMANCE (continued) PAGE

COST PAGE

DIVISION AND DEPARTMENT PERFORMANCE INDICATORS PAGE

DIVISION AND DEPARTMENT PERFORMANCE INDICATORS (continued) PAGE

OPPD NUCLEAR ORGANIZATION GOALS

Vice President - 1993 Priorities

MISSION

The safe and reliable generation of electricity for OPPD customers through the professional use of nuclear technology. The Company shall conduct these operations prudently, efficiently and effectively to assure the health, safety and protection of all personnel, the general public and the environment.

GOALS

Goal 1: SAFE OPERATIONS

To ensure the continuation of a "safety culture" in the OPPD Nuclear Program and to provide a professional working environment, in the control room and throughout the OPPD nuclear organization, that assures safe operation.

1993 Priorities:
Improve SALP ratings.
Improve INPO rating.
Reduce 1993 NRC violations with no violations more severe than level 4.
No unplanned automatic reactor scrams or safety system actuations.

Goal 2: PERFORMANCE

To strive for Excellence in Operations utilizing the highest standards of performance at Fort Calhoun Station that result in safe reliable plant operation in power production.

1993 Priorities:
Improve Quality, Professionalism, and Teamwork.
Improve Plant Reliability.
Meet or exceed INPO key parameters and outage performance goals.
Reduce the number of human performance errors.

Goal 3: COSTS

Operate Fort Calhoun Station in a manner that cost effectively maintains nuclear generation as a viable source of electricity.

1993 Priorities:
Maintain total O & M and Capital expenditures within budget.
Streamline work processes.

Goals Source: Scofield (Manager)

FOREWORD

Performance indicator graphs for the years 1991 and 1992 are included in this report. The graphs are provided where appropriate comparisons can be made. In some instances, for example when the method of reporting an indicator has changed during 1993 or when an indicator has been added to the report, the graphs for the previous years are not included.

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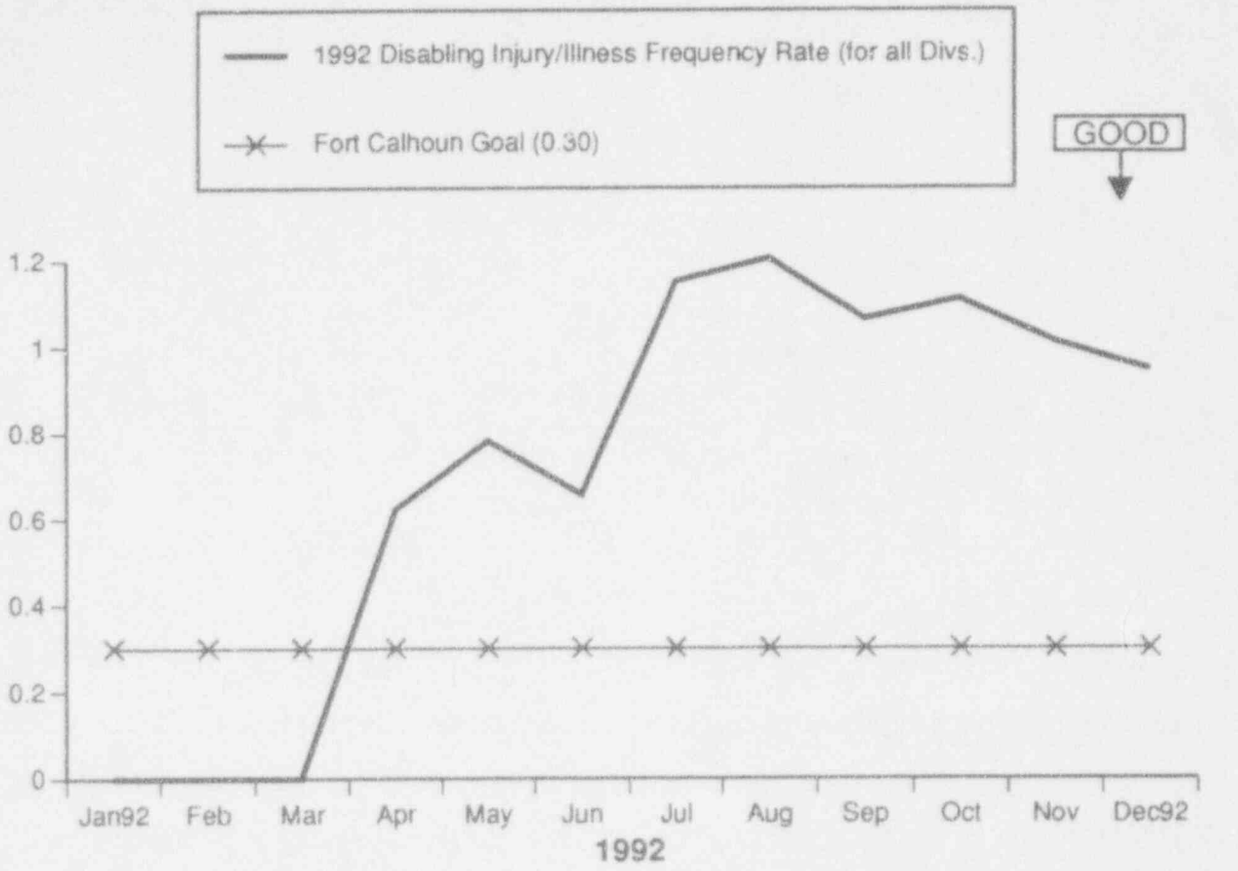
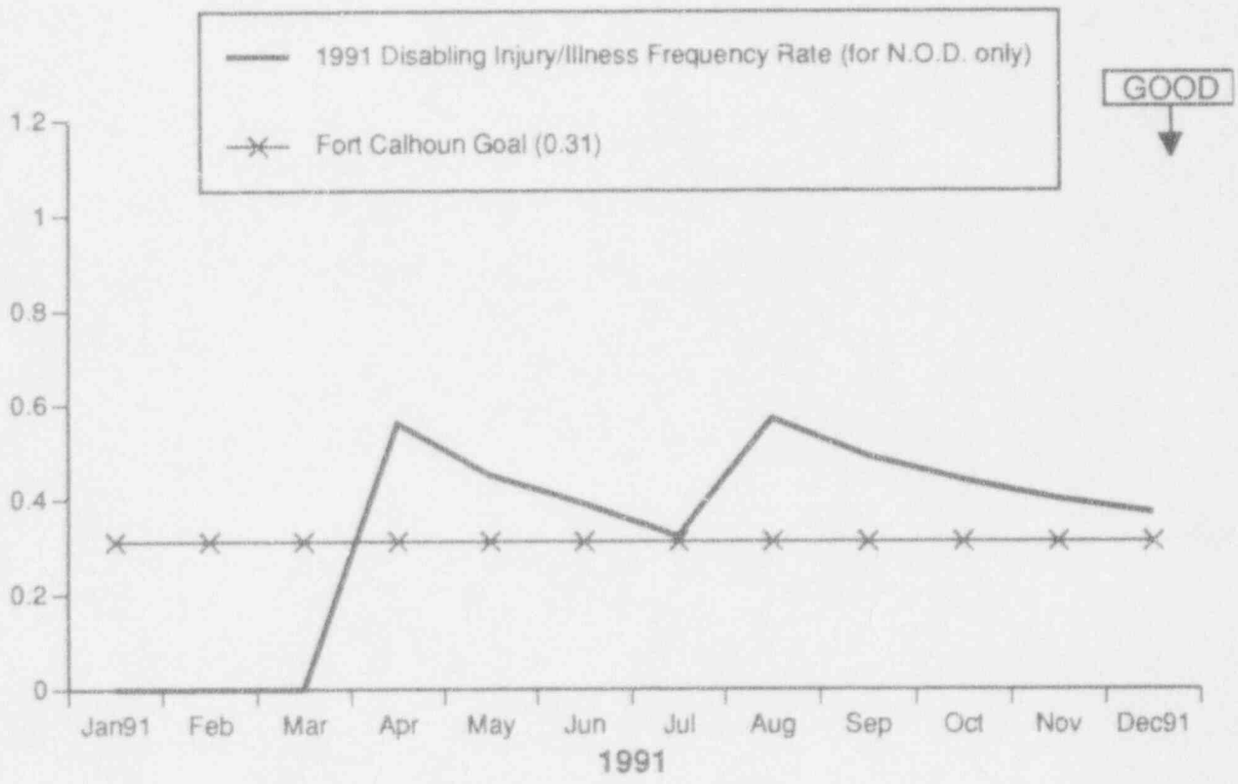
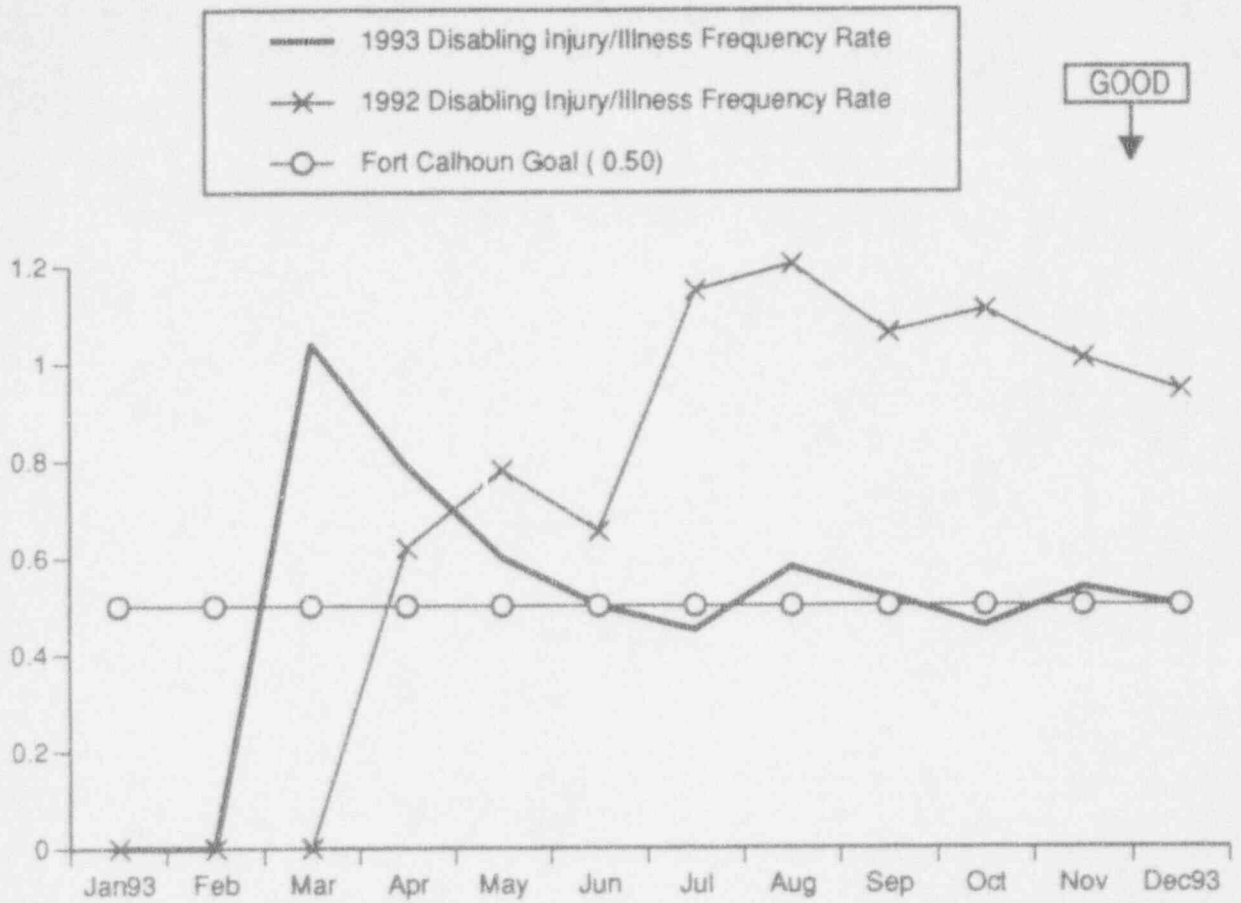
SAFE OPERATIONS

Goal: To ensure the continuation of a "safety culture" in the OPPD Nuclear Program and to provide a professional working environment in the control room and throughout the OPPD Nuclear Organization that assures safe operation.


1992 Disabling Injury/Illness Frequency Rate (for all Divs.)
Fort Calhoun Goal (0.30)
GOOD
1.2
1
0.8
0.6
0.4
0.2
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


1991 Disabling Injury/Illness Frequency Rate (for N.O.D. only)
Fort Calhoun Goal (0.31)
GOOD
1.2
1
0.8
0.6
0.4
0.2
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



DISABLING INJURY/ILLNESS FREQUENCY RATE (LOST TIME ACCIDENT RATE)

This indicator shows the 1993 disabling injury/illness frequency rate. The 1992 disabling injury/illness frequency rate is also shown.

The disabling injury/illness frequency rate for January through December 1993 was 0.50. There were no lost time accidents reported for the month of December. The total number of lost time accidents that have been reported during 1993 is 4.

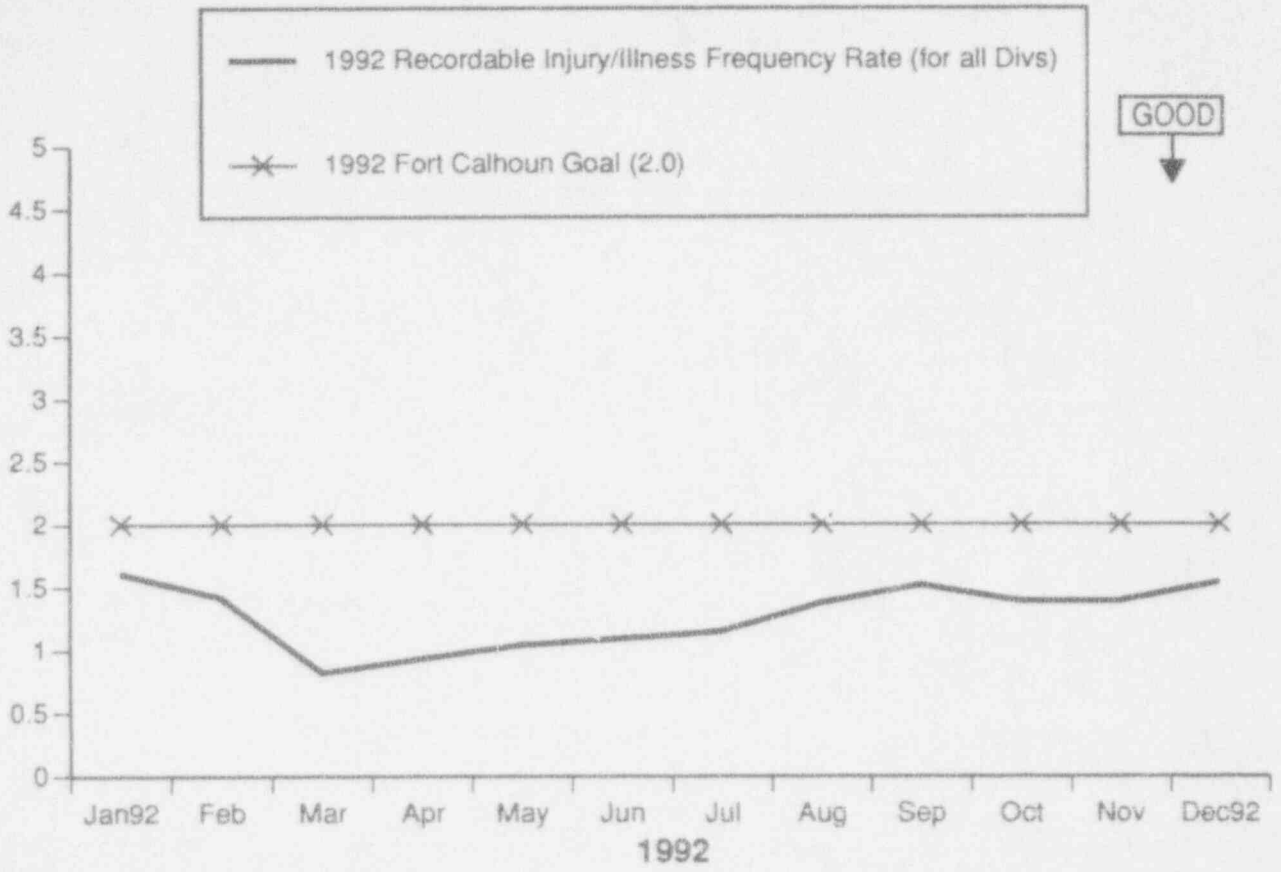
The 1993 Fort Calhoun goal for this indicator is a maximum value of 0.50.

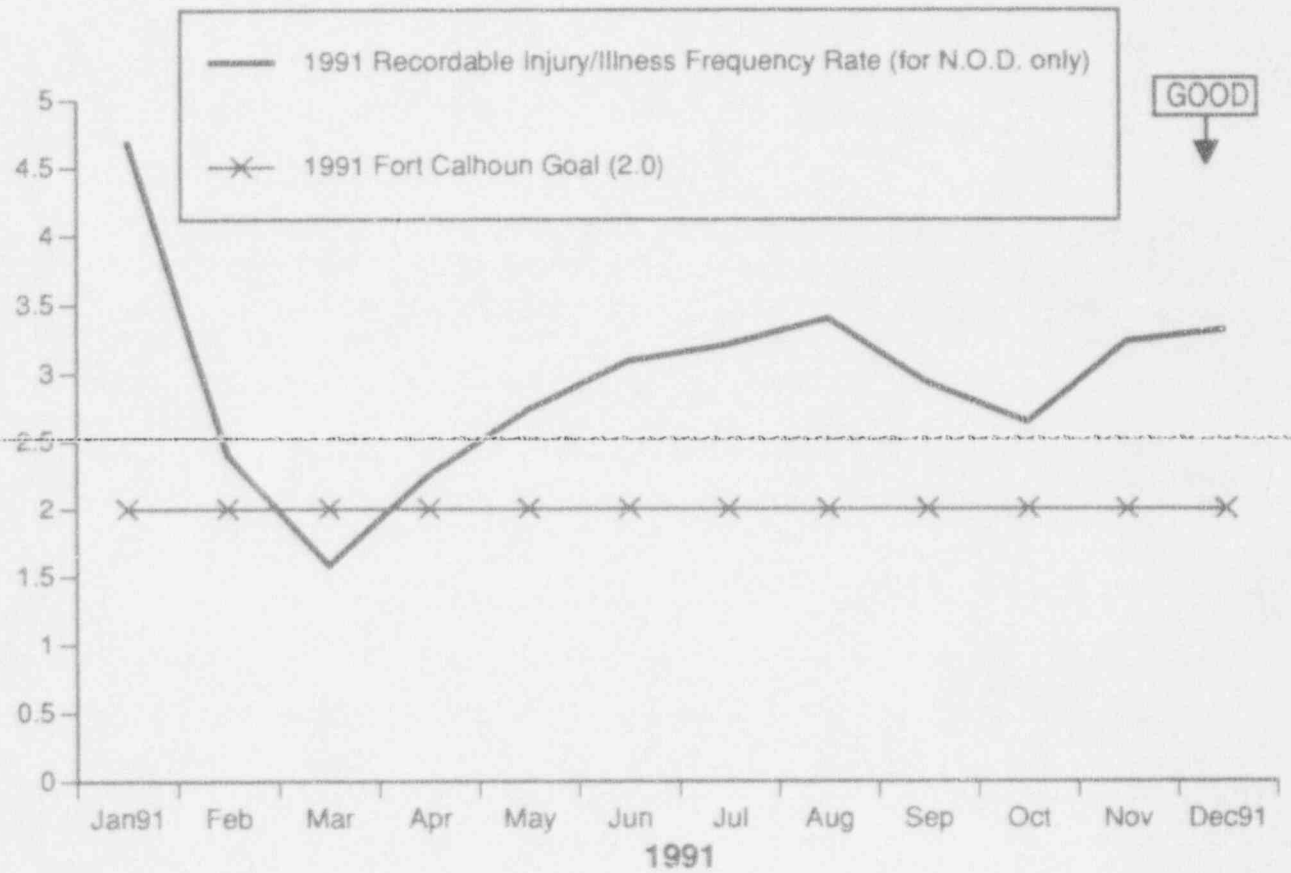
Data Source: Sorenson/Skaggs (Manager/Source)

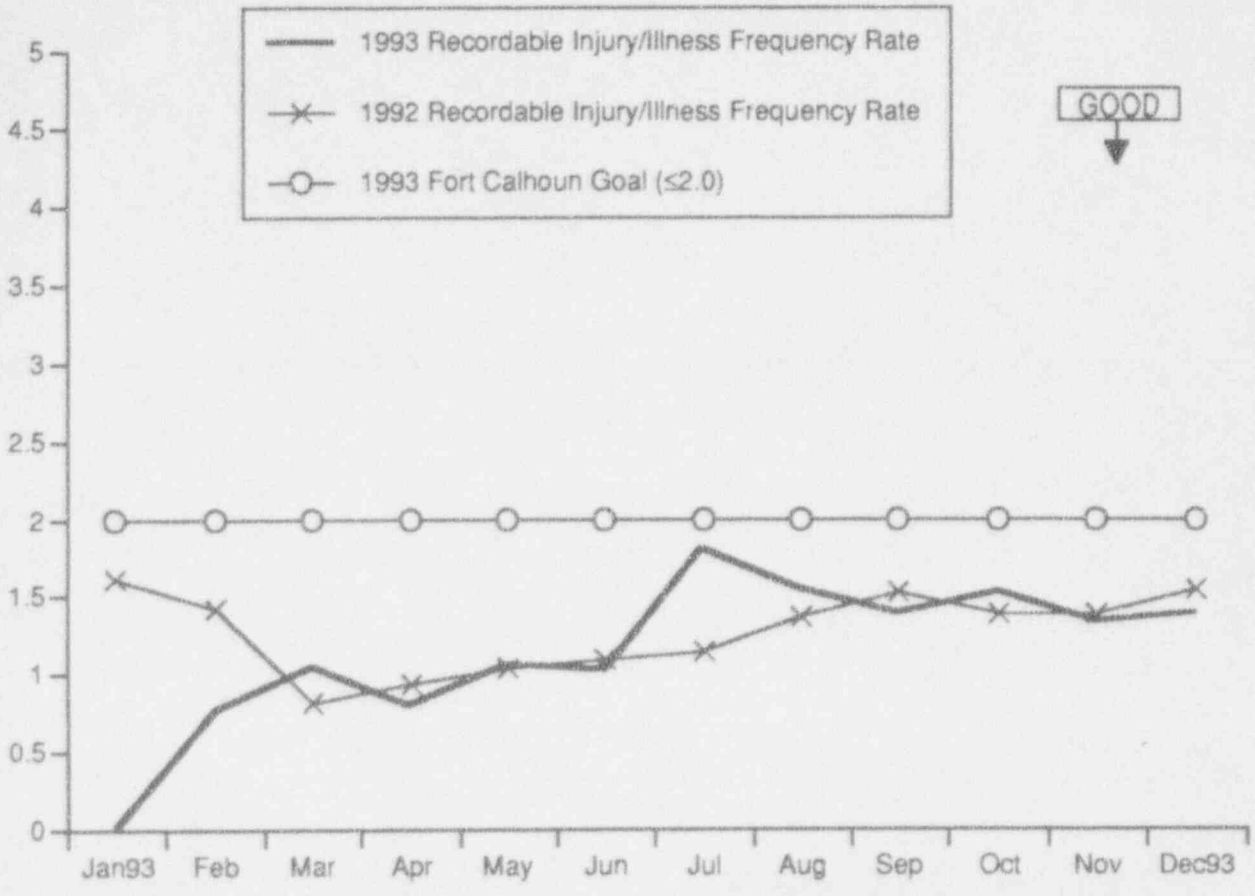
Accountability: Chase/Richard

Adverse Trend: None

SEP 25, 26 & 27


1992 Recordable Injury/Illness Frequency Rate (for all Divs)
1992 Fort Calhoun Goal (2.0)
GOOD
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


1991 Recordable Injury/Illness Frequency Rate (for N.O.D. only)
1991 Fort Calhoun Goal (2.0)
GOOD
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



RECORDABLE INJURY/ILLNESS CASES FREQUENCY RATE

This indicator shows the 1993 recordable injury/illness cases frequency rate. The 1992 recordable injury/illness cases frequency rate is also shown.

A recordable injury/illness case is reported if personnel from any of the Nuclear Divisions are injured on the job and require corrective medical treatment beyond first aid. The recordable injury/illness cases frequency rate is computed on a year-to-date basis.

The recordable injury/illness rate for January through December 1993 was reported as 1.38. There was 1 recordable injury/illness case, a thumb injury, reported for the month of December. There have been 11 recordable injury/illness cases in 1993.

The 1993 goal for this indicator is a maximum value of 2.0.

Data Source: Sorenson/Skaggs (Manager/Source)

Accountability: Richard

Positive Trend

SEP 15, 25, 26 & 27

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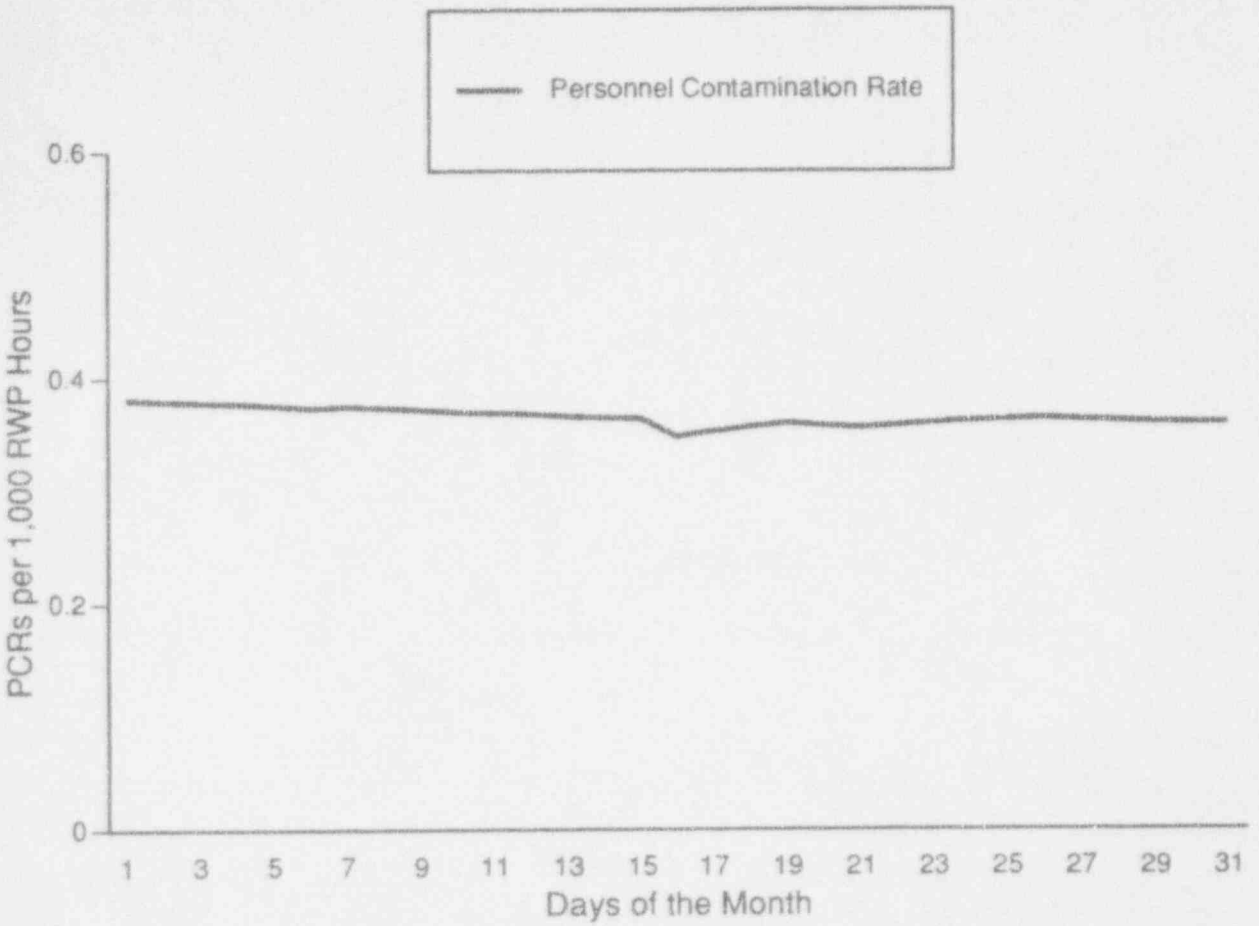


CONTAMINATIONS ≥2,000 COUNTS/MINUTE PER PROBE AREA

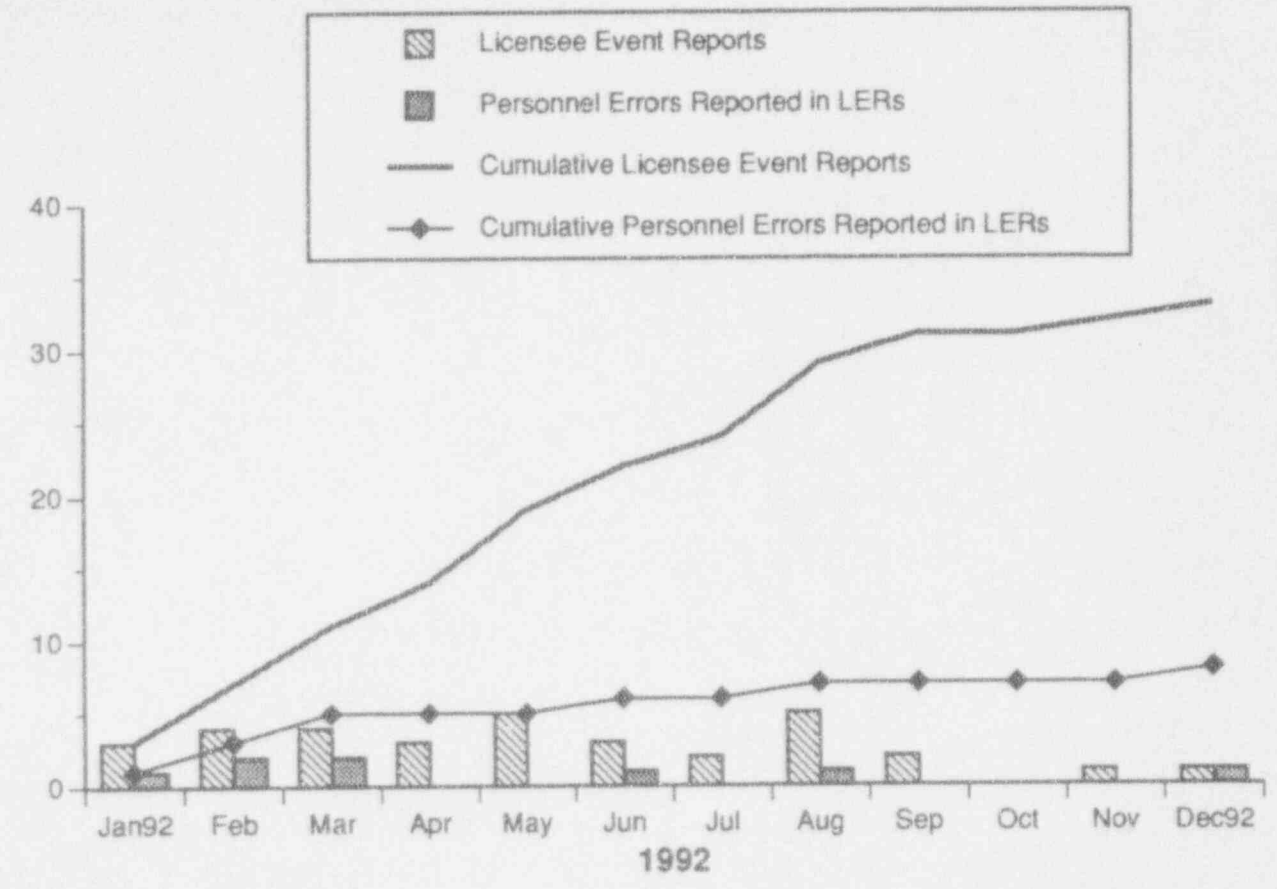
This indicator shows the Personnel Contamination Rate for contaminations ≥2,000 counts/minute per probe area for the reporting month.

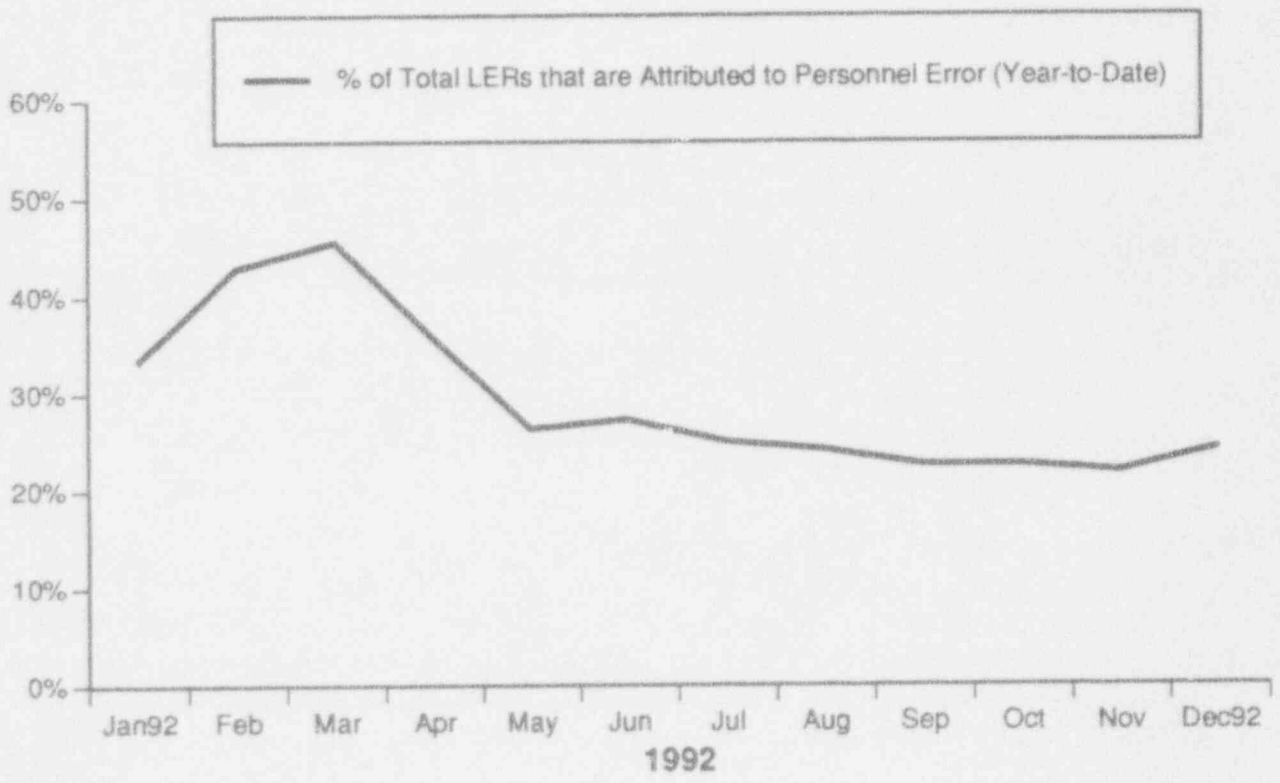
There has been a total of 139 reportable/recordable contaminations in 1993. 37 of these contaminations were classified as non-outage and 99 were classified as outage contaminations. (3 outage contaminations occurred during the maintenance outage.)

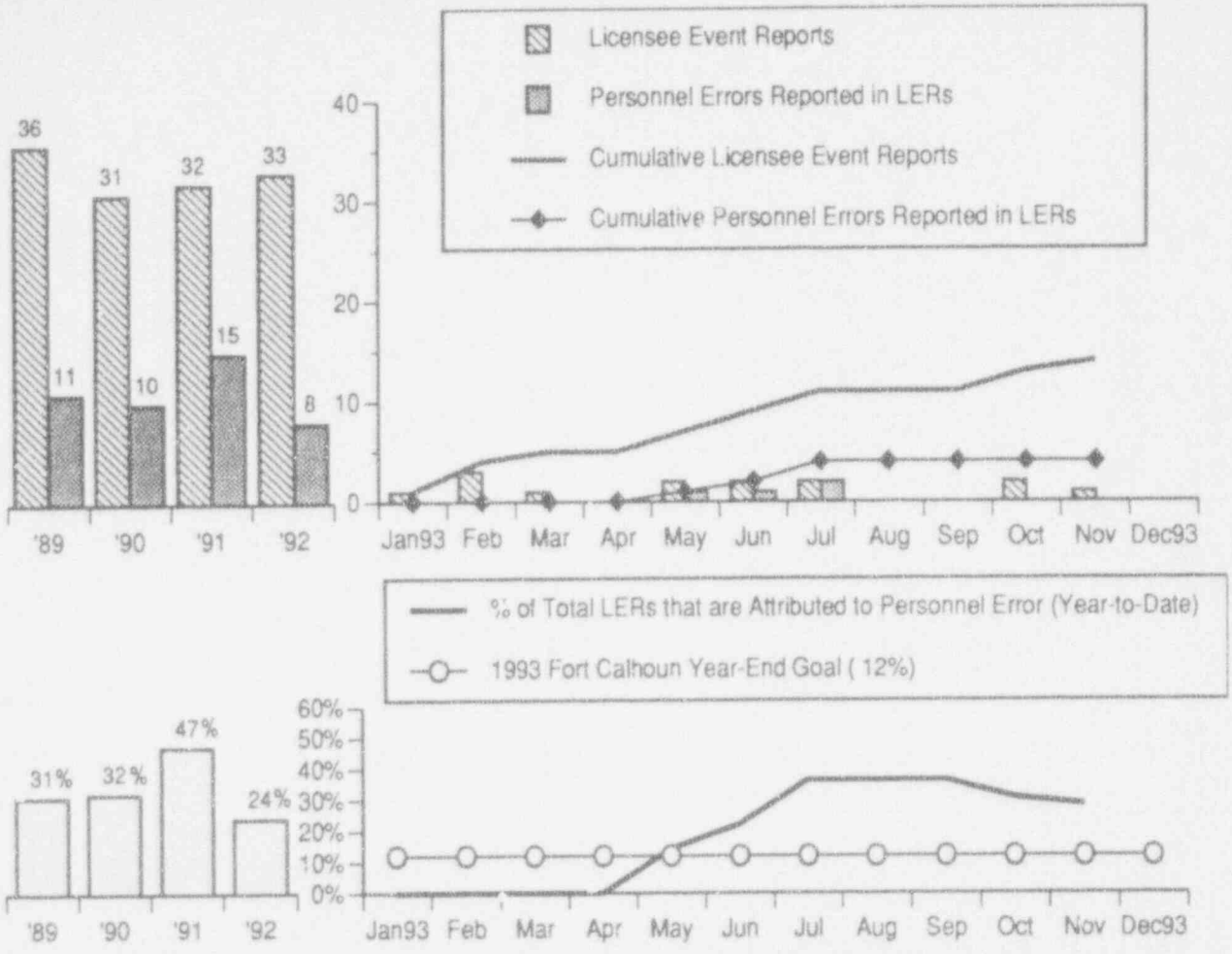
The 1993 year-end on-line goal for contaminations ≥2,000 counts/minute per probe area is 0.1 PCR/1,000 RWP hours. The 1993 year-end outage goal for contaminations ≥2,000 counts/minute per probe area is 1.5 PCR/1,000 RWP hours.

Data Source: Chase/Williams (Manager/Source)
Accountability: Chase/Lovett
Adverse Trend: None

SEP 15 & 54


Licensee Event Reports
Personnel Errors Reported in LERs
Cumulative Licensee Event Reports
Cumulative Personnel Errors Reported in LERs
40
30
20
10
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


% of Total LERs that are Attributed to Personnel Error (Year-to-Date)
60%
50%
40%
30%
20%
10%
0%
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992



NUMBER OF PERSONNEL ERRORS REPORTED IN LERS

The top graph shows the number of Licensee Event Reports (LERs) submitted during each month in 1993, the LERs attributed to personnel error for each month and the cumulative totals for each item. The bottom graph shows the percentage of total LERs submitted that have been attributed to personnel error. The year-end totals for the four previous years are also shown for both graphs. This indicator has been revised to be consistent with the Performance Measures Program. It is now one month behind the reporting month because there is typically a 30 day delay related to generation of LERs.

In November there was 1 LER reported. The percentage of total LERs submitted year-to-date that have been attributed to personnel error was 28.57% at the end of November.

The following LERs have been attributed to personnel error in 1993:

LER 93-006 Failure to Maintain Continuous Fire Watch for Impaired Halon System
LER 93-007 Unplanned Emergency Diesel Generator Start and Reactor Trip Signal
LER 93-010 Failure to Address Low Halon Tank Pressure Following Surveillance Test
LER 93-011 Reactor Trip on Loss of Load During Switchyard Maintenance

The 1993 goal for this indicator is that a maximum of 12% of the total LERs submitted will be attributed to personnel error.

Data Source: Short/Cavanaugh (Manager/Source)
Accountability: Chase
Adverse Trend: None

SEP 15

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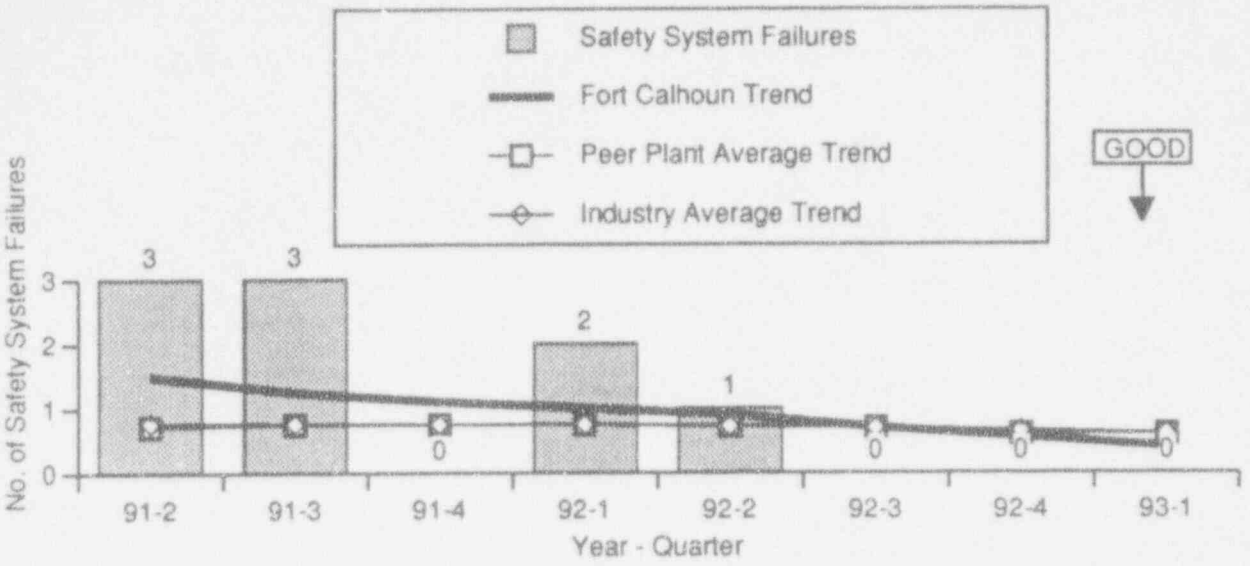


SAFETY SYSTEM FAILURES

This indicator illustrates the number of NRC Safety System Failures as reported by the Nuclear Regulatory Commission's Office for Analysis and Evaluation of Operational Data in the biannual "Performance Indicators for Operating Commercial Nuclear Power Reactors" report.

The following NRC safety system failures occurred between the second quarter of 1991 and the first quarter of 1993:

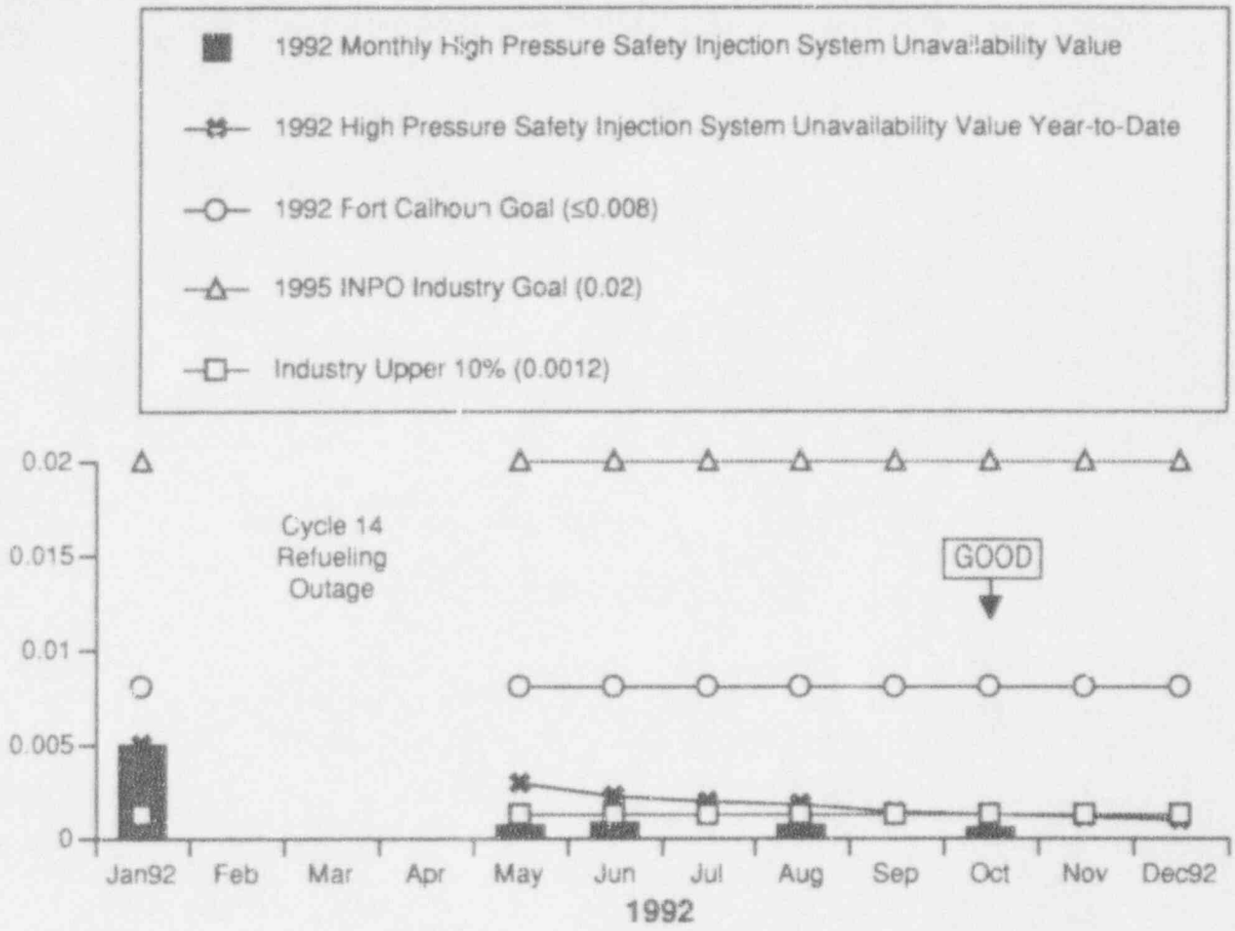
Second Quarter 1991: 1) Failure of high energy auxiliary steamlines in various equipment rooms could render equipment vital for safe shutdown inoperable. 2) All 4 channels of the pressurizer pressure low signal trip could have been nonconservatively calibrated due to an inadequate calibration procedure. 3) A steam generator blowdown was performed while the radiation monitor was inoperable. This was caused by the mode selector switch on the monitor being left in the calibrate position.

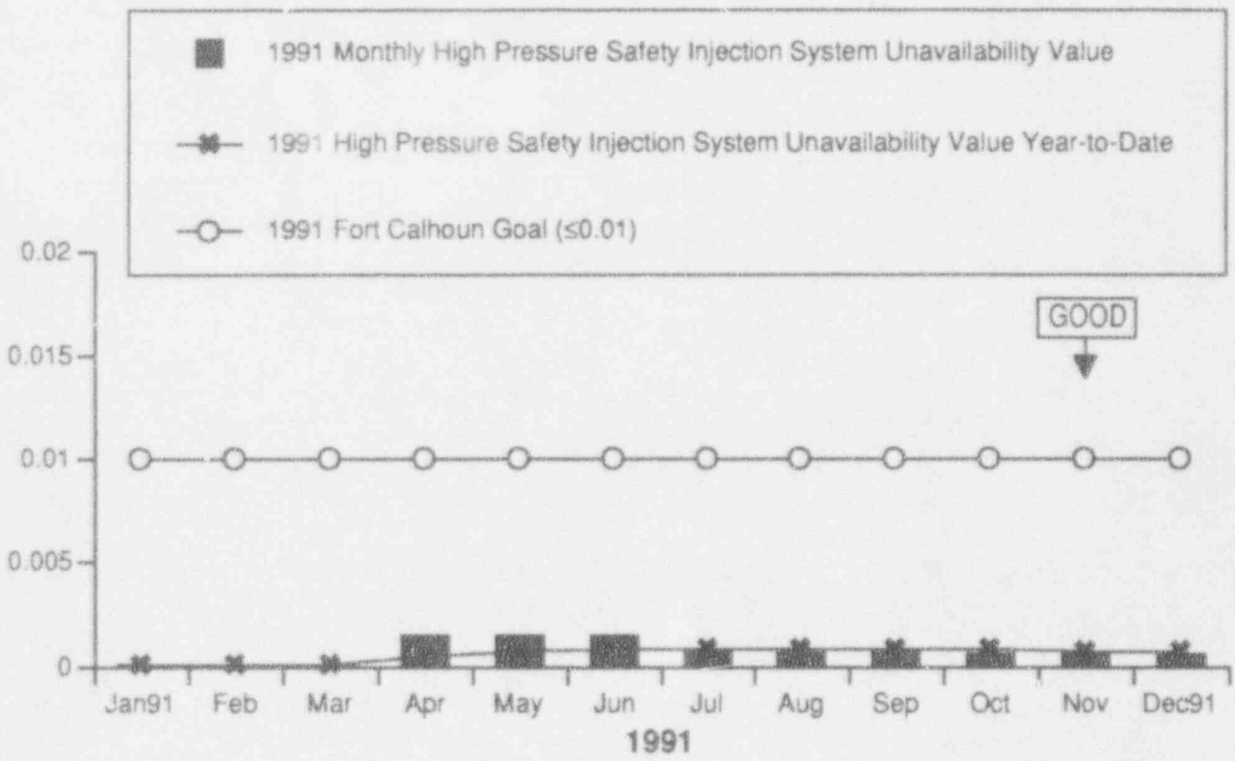
Third Quarter 1991: 1) Both EDGs could have been rendered unable to perform their design function due to radiator exhaust damper failure. The dampers had cracked pins in their couplings. 2) The station batteries were declared inoperable due to cracks developing in the cell casings. This was caused by inadequate design of the terminal post seals. 3) An error in an operating procedure could cause improper manipulation of nitrogen backup bottles for instrument air. This could cause a loss of the containment spray system.

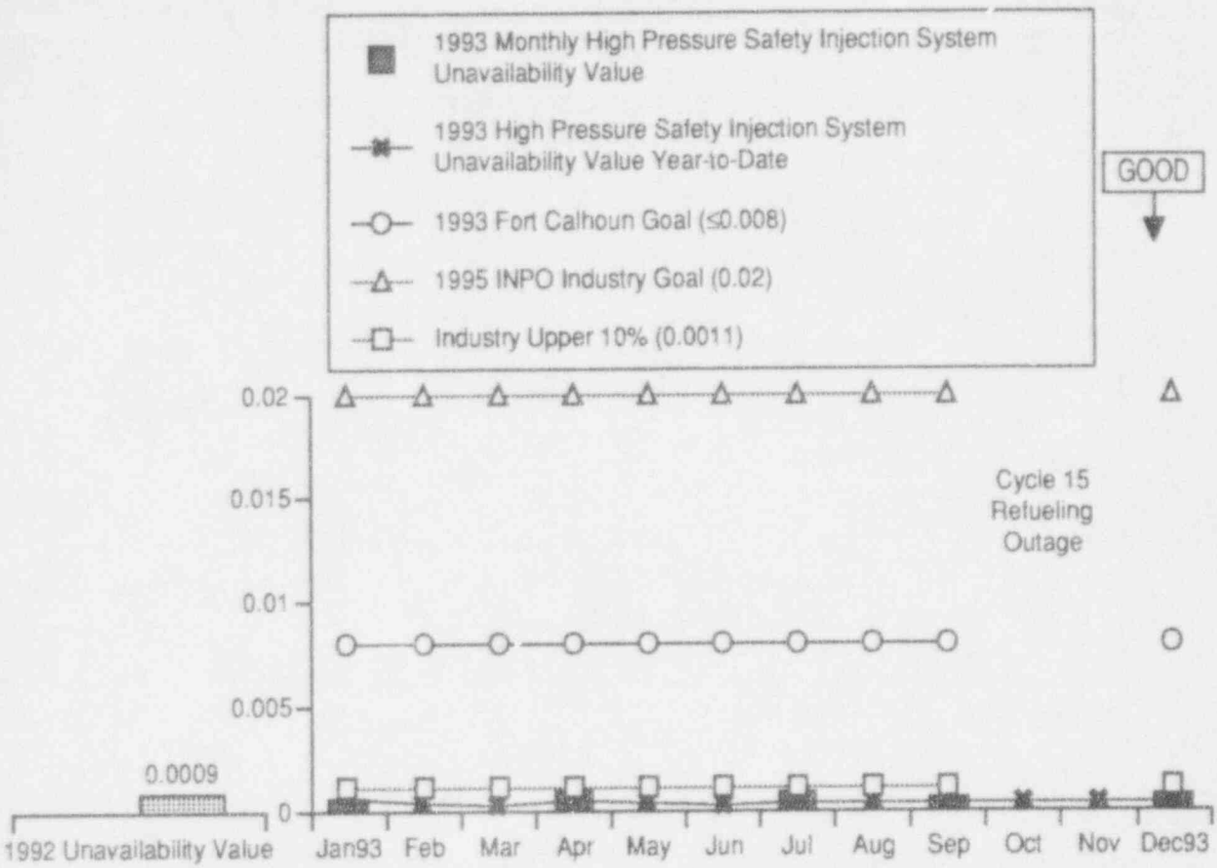
First Quarter 1992: 1) Defective control switches in the 4KV switchgear could have rendered safety equipment inoperable. 2) All 4 channels of the SG DP trip for RPS had been calibrated nonconservatively. This occurred due to an incorrect procedure which specified a tolerance band that was too wide.

Second Quarter 1992: Fuse and breaker coordination problems for the DC buses could cause a loss of the entire bus if a fault occurred on one of the loads.

Data Source: Nuclear Regulatory Commission
Accountability: Chase
Adverse Trend: None


1992 Monthly High Pressure Safety Injection System Unavailability Value
1992 High Pressure Safety Injection System Unavailability Value Year-to-Date
1992 Fort Calhoun Goal (≤0.008)
1995 INPO Industry Goal (0.02)
Industry Upper 10% (0.0012)
0.02
0.015
0.01
0.005
0
Cycle 14
Refueling
Outage
GOOD
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


1991 Monthly High Pressure Safety Injection System Unavailability Value
1991 High Pressure Safety Injection System Unavailability Value Year-to-Date
1991 Fort Calhoun Goal (≤0.01)
0.02
0.015
0.01
0.005
0
GOOD
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



HIGH PRESSURE SAFETY INJECTION SYSTEM
SAFETY SYSTEM PERFORMANCE

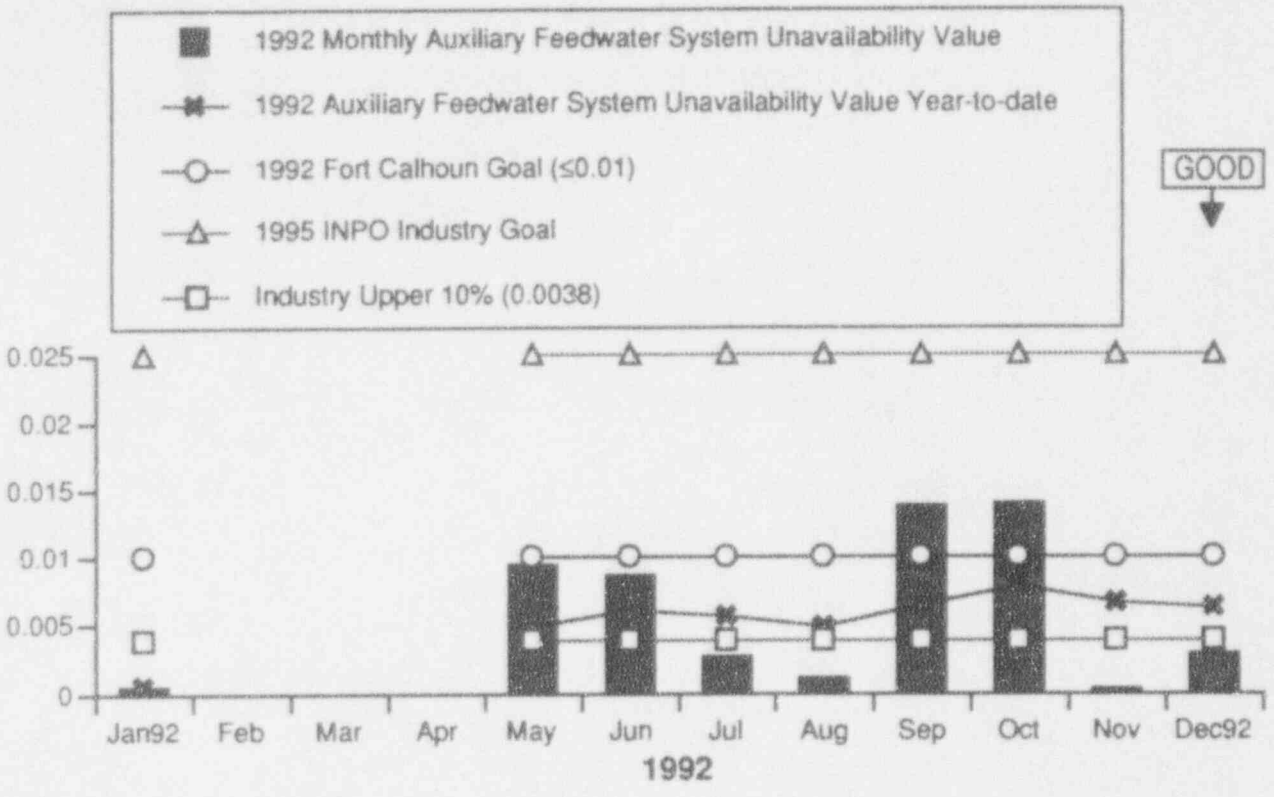
This indicator shows the High Pressure Safety Injection System unavailability value, as defined by INPO in the Safety System Performance Indicator Definitions, for the reporting month.

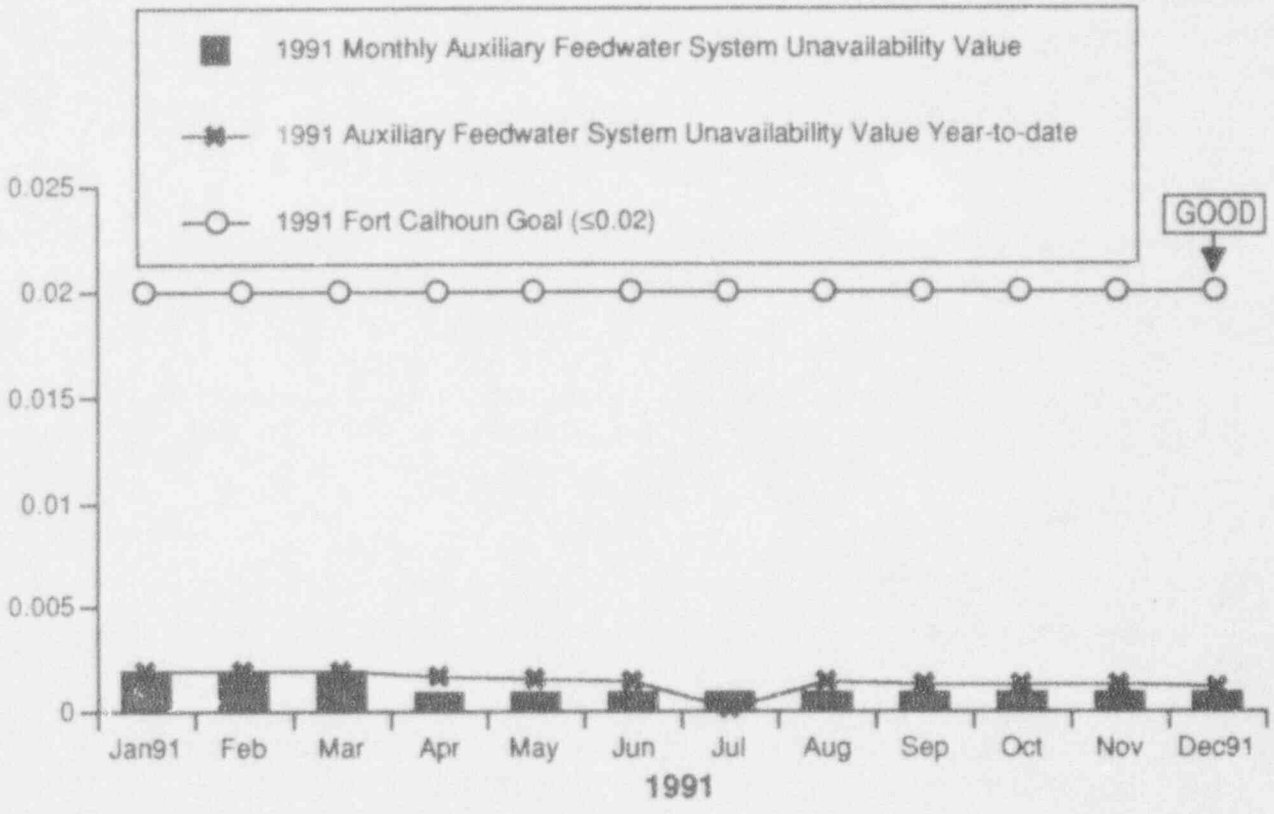
The High Pressure Safety Injection System unavailability value for the month of December 1993 was 0.00074. There was 1.6 hours of planned unavailability for surveillance tests during the month. The 1993 year-to-date HPSI unavailability value was 0.00036 at the end of December.

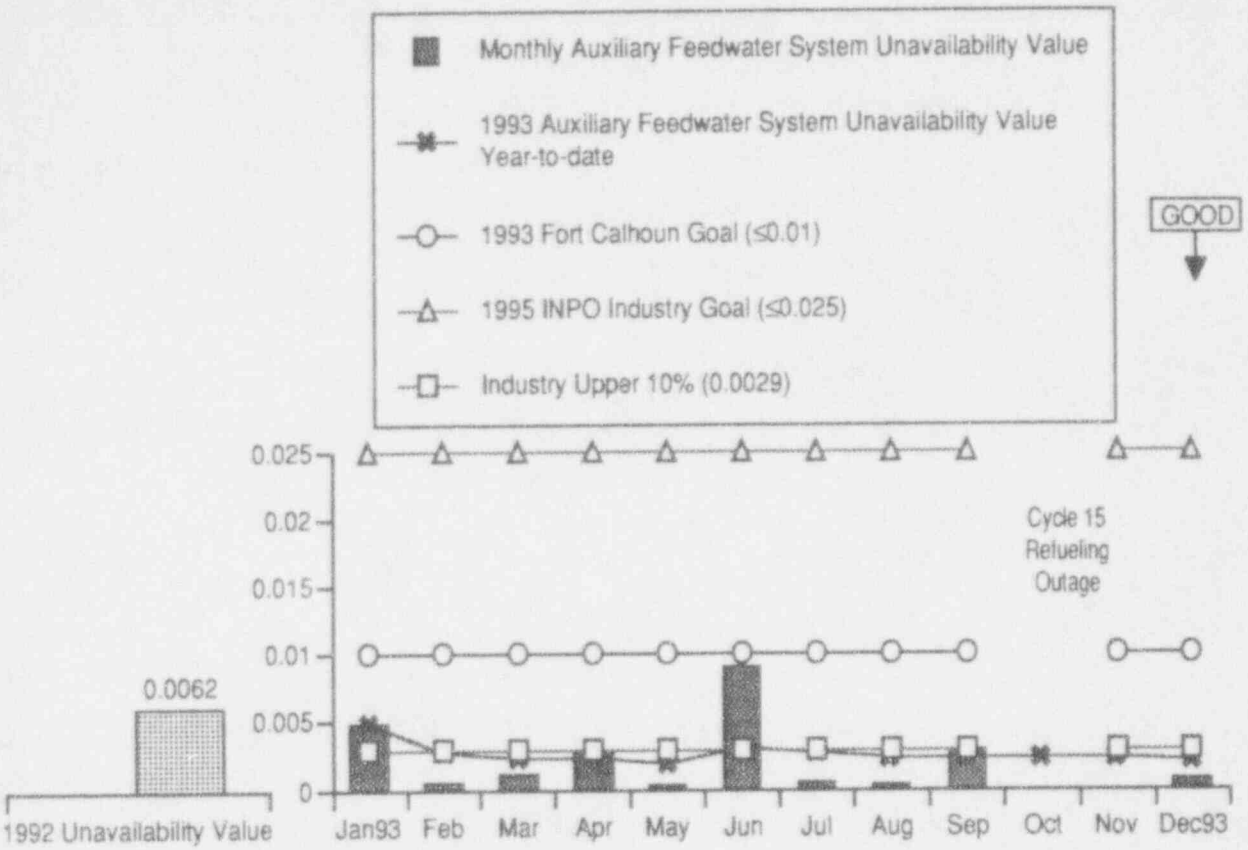
There was a total of 7.68 hours of planned unavailability (for maintenance and surveillance tests) and no hours of unplanned unavailability for the HPSI system in 1993.

The 1993 Fort Calhoun goal for this indicator was a maximum of 0.008. The 1995 INPO industry goal is 0.02 and the industry upper ten percentile value (for the three year period from 7/90 through 6/93) is approximately 0.0011.

Data Source: Jaworski/Schaffer
Accountability: Jaworski/Schaffer
Positive Trend


1992 Monthly Auxiliary Feedwater System Unavailability Value
1992 Auxiliary Feedwater System Unavailability Value Year-to-date
1992 Fort Calhoun Goal (≤0.01)
1995 INPO Industry Goal
Industry Upper 10% (0.0038)
GOOD
0.025
0.02
0.015
0.01
0.005
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


1991 Monthly Auxiliary Feedwater System Unavailability Value
1991 Auxiliary Feedwater System Unavailability Value Year-to-date
1991 Fort Calhoun Goal (≤0.02)
GOOD
0.025
0.02
0.015
0.01
0.005
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



AUXILIARY FEEDWATER SYSTEM
SAFETY SYSTEM PERFORMANCE

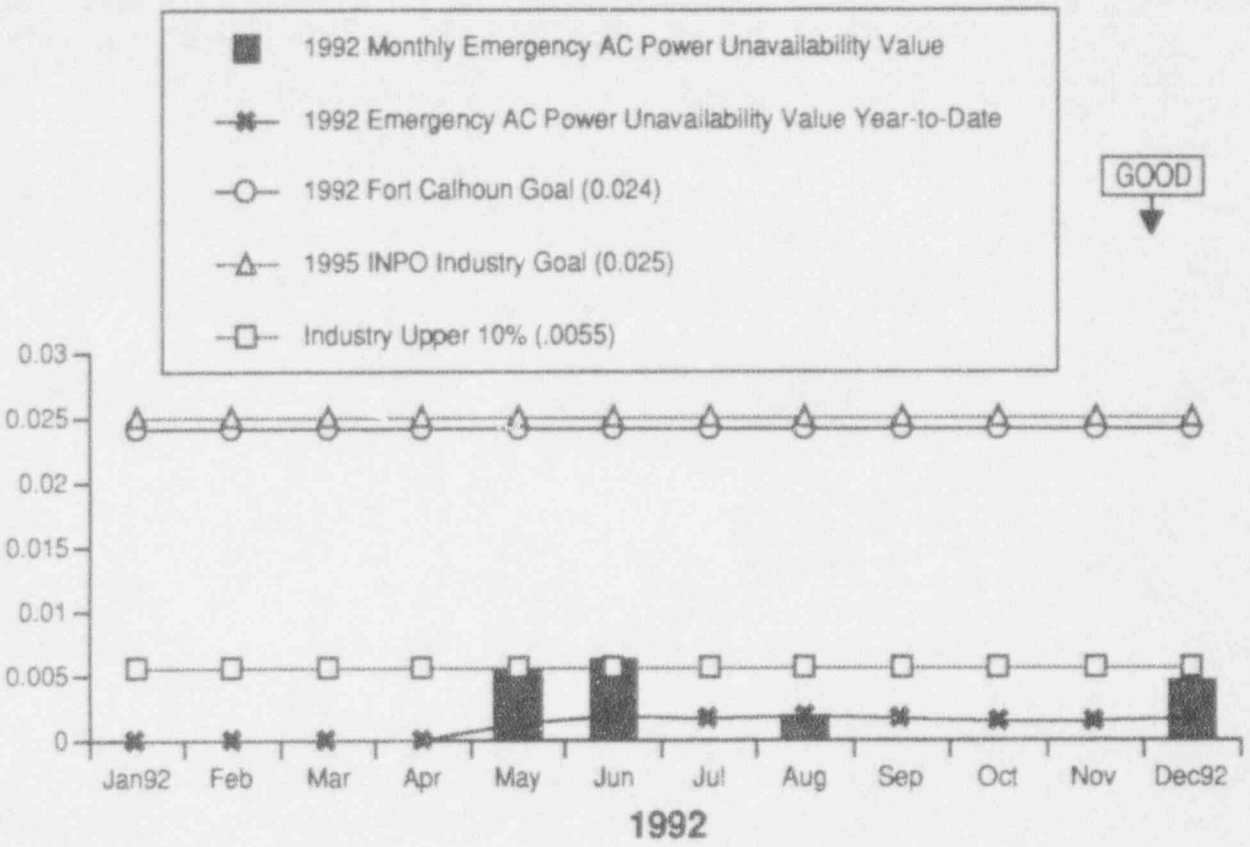
This indicator shows the Auxiliary Feedwater System Unavailability value, as defined by INPO in the Safety System Performance Indicator Definitions, for the reporting month.

The Auxiliary Feedwater System Unavailability Value for December 1993 was 0.00064. The 1993 year-to-date AFW unavailability value was 0.0022 at the end of December.

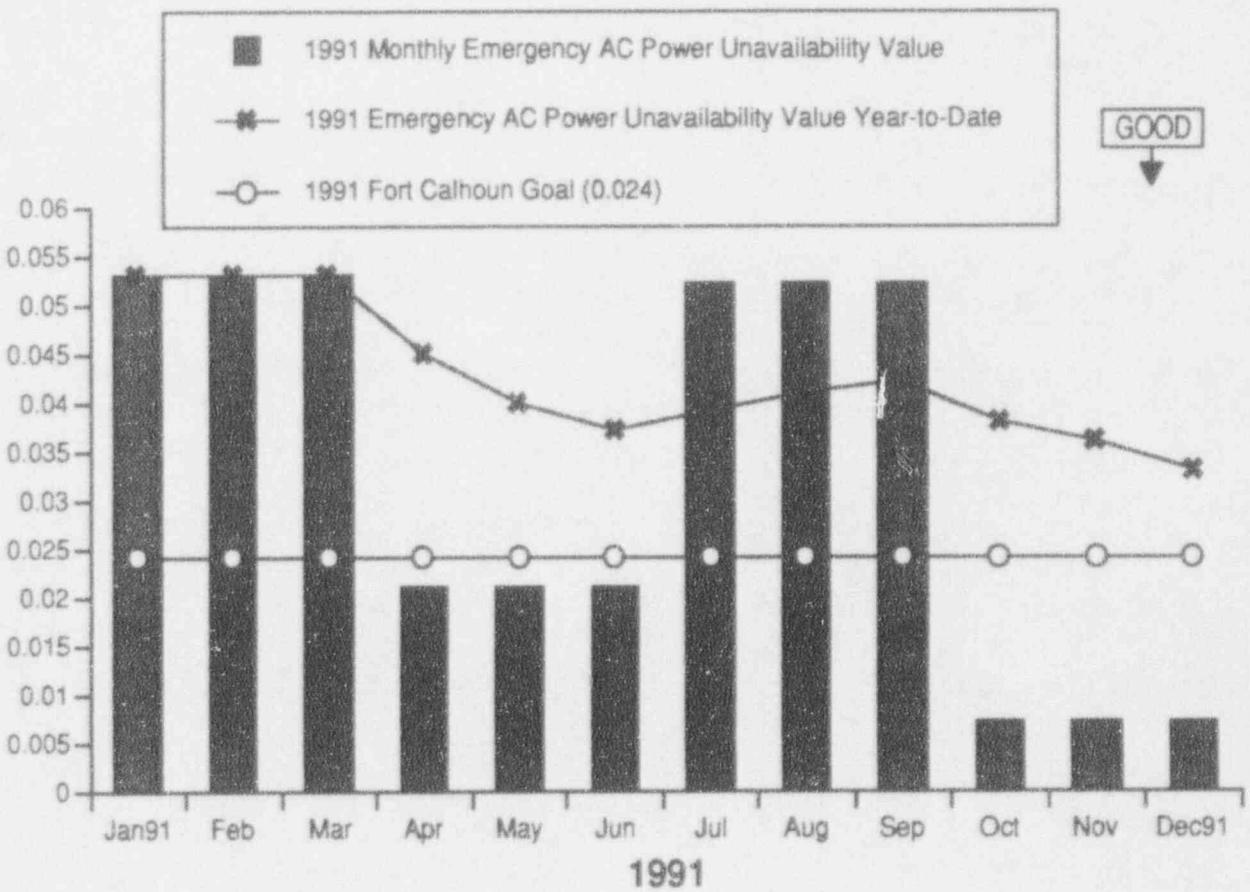
There was a total of 28.93 hours of planned unavailability (for maintenance and surveillance tests) and 2.02 hours of unplanned unavailability for the auxiliary feedwater system in 1993.

The 1993 Fort Calhoun year-end goal for this indicator was a maximum value of 0.01. The 1995 INPO industry goal is 0.025 and the industry upper ten percentile value (for the three year period from 7/90 through 6/93) is approximately 0.0029.

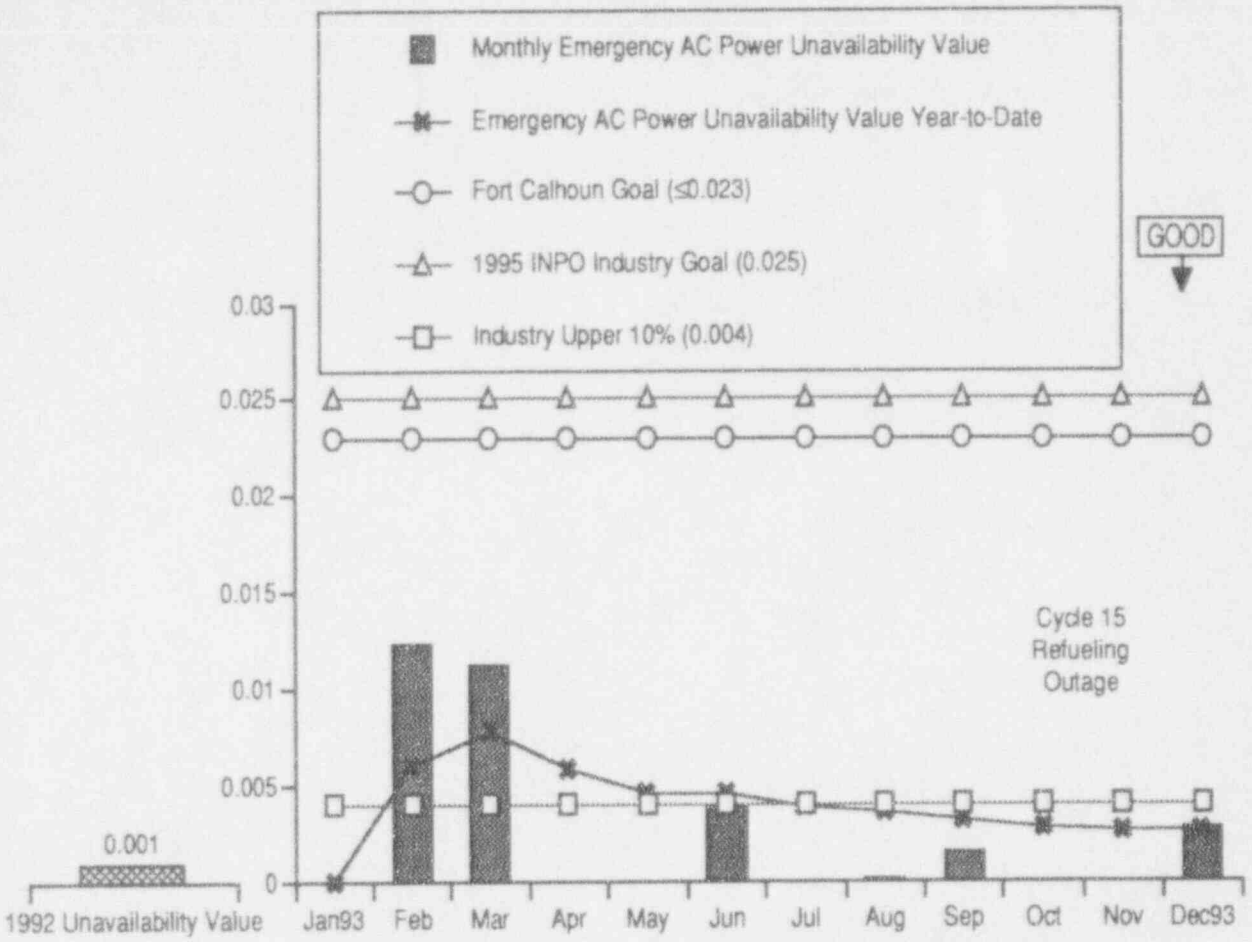
Data Source: Jaworski/Nay
Accountability: Jaworski/Nay
Positive Trend


1992 Monthly Emergency AC Power Unavailability Value
1992 Emergency AC Power Unavailability Value Year-to-Date
1992 Fort Calhoun Goal (0.024)
1995 INPO Industry Goal (0.025)
Industry Upper 10% (.0055)
GOOD
0.03
0.025
0.02
0.015
0.01
0.005
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92

1992


1991 Monthly Emergency AC Power Unavailability Value
1991 Emergency AC Power Unavailability Value Year-to-Date
1991 Fort Calhoun Goal (0.024)
GOOD
0.06
0.055
0.05
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91

1991



EMERGENCY AC POWER SYSTEM
SAFETY SYSTEM PERFORMANCE

This indicator shows the Emergency AC Power System unavailability value, as defined by INPO in the Safety System Performance Indicator Definitions, for the reporting month.

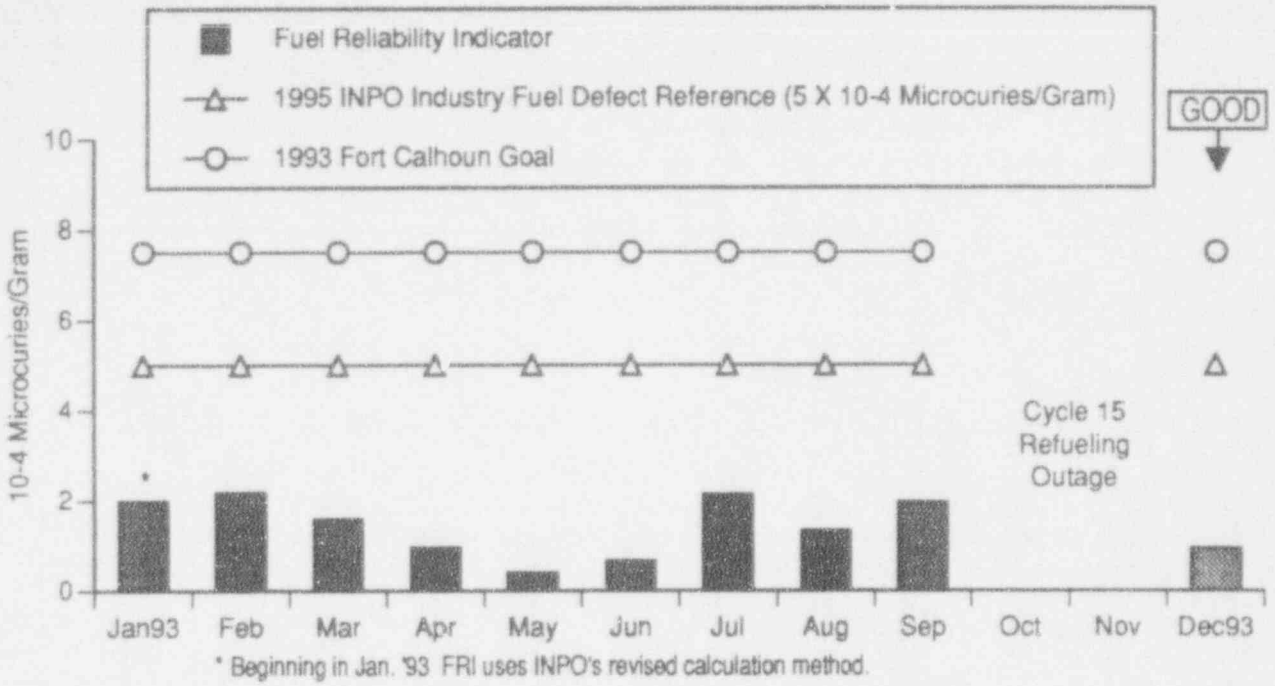
The Emergency AC Power System unavailability value for December 1993 was 0.0. There were no hours of planned or unplanned unavailability for the month. The Emergency AC Power System unavailability value was 0.0028 for 1993.

There was a total of 41.04 hours of planned unavailability for surveillance tests and maintenance, and 0.22 hours of unplanned unavailability for the emergency AC power system in 1993.

The 1993 Fort Calhoun goal for this indicator was ≤0.023. The 1995 INPO industry goal is 0.025 and the industry upper ten percentile value (for the three year period from 7/90 through 6/93) is approximately 0.004.

Data Source: Jaworski/Ronning
Accountability: Jaworski/Ronning
Positive Trend

(This page intentionally left blank. The method of calculating the FRI was revised in 1993.)



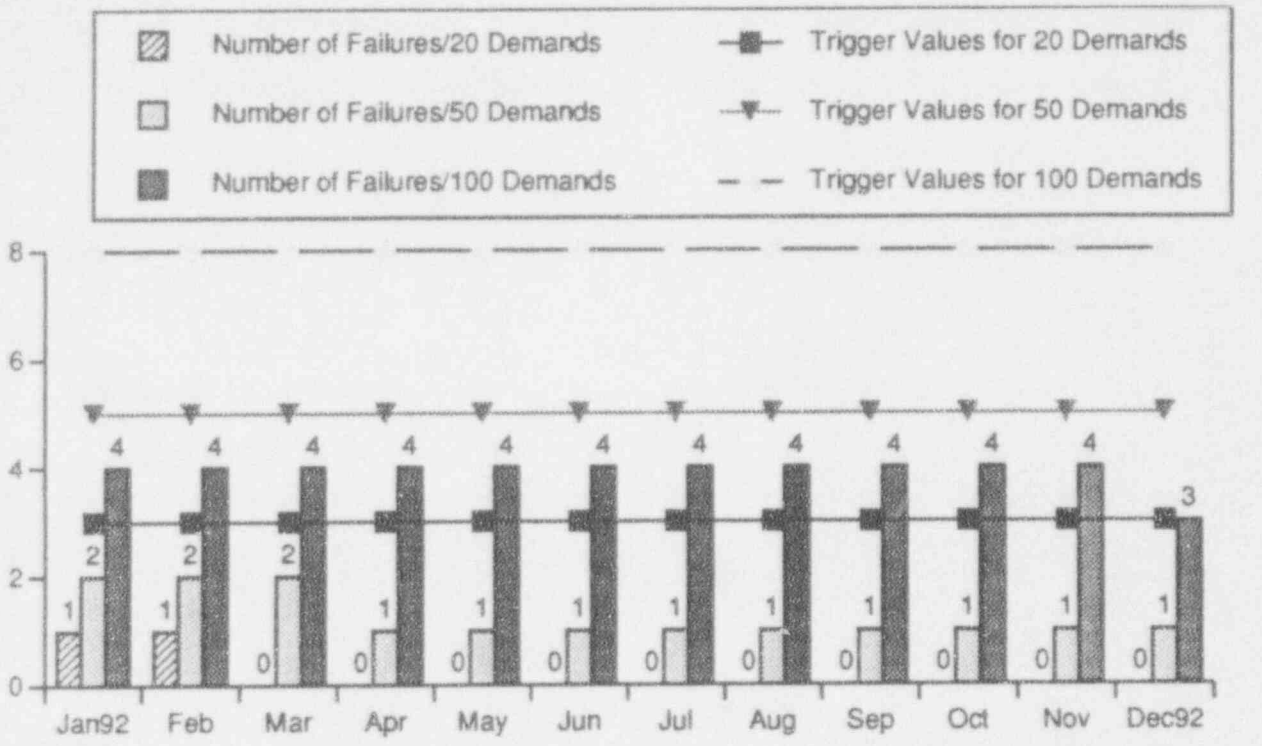
FUEL RELIABILITY INDICATOR

The Fuel Reliability Indicator (FRI) value for December 1993 was 0.944 $X10^{-4}$ microcuries/gram. The purpose of the FRI is to monitor industry progress in achieving and maintaining a high level of fuel integrity. The December FRI value indicates a defect free core. The December FRI was calculated based on fission product activities present in the reactor coolant during steady state full power operation, December 16 through December 31.

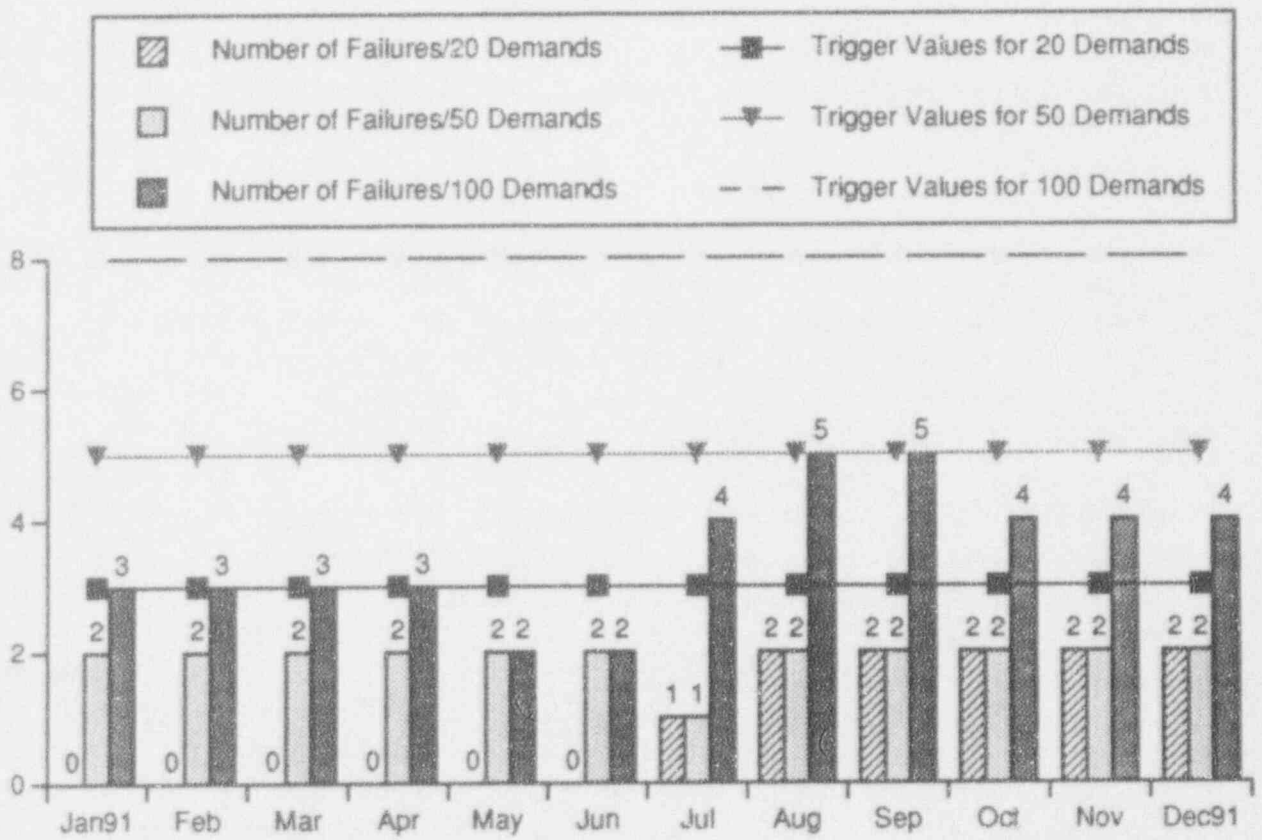
Cycle 15 plant operation started on November 25 and the plant attained 100% power on December 3. A trip occurred on December 6 due to turbine EHC problems. The plant restarted and gradually increased power, achieving 100% power on December 13. Fission product activity data from plant full power operation, trip and restart shows no Xenon-133 activity increases and no iodine spiking present. This is an indication of a defect free core. The last detected fuel failure was during Cycle 13.

The INPO September 1992 Report "Performance Indicators for U.S. Nuclear Utility Industry" (INPO No. 92-011) states that "...the 1995 industry goal for fuel reliability is that units should strive to operate with zero fuel defects. A value larger than 5.0 X 10^{-4} microcuries/gram indicates a high probability of unit operation with one or more fuel defects. The determination of current defect-free operation requires more sophisticated analysis by utility reactor engineers." The value of 5.0 X 10^{-4} microcuries/gram is defined as a "Fuel Defect Reference" number or a "Zero Leaker Threshoid". Each utility will calculate whether the core is defect free or not. The 1994 Fort Calhoun Station FRI performance indicator goal will be to maintain a monthly FRI below 5.0 $X10^{-4}$ microcuries/gram.

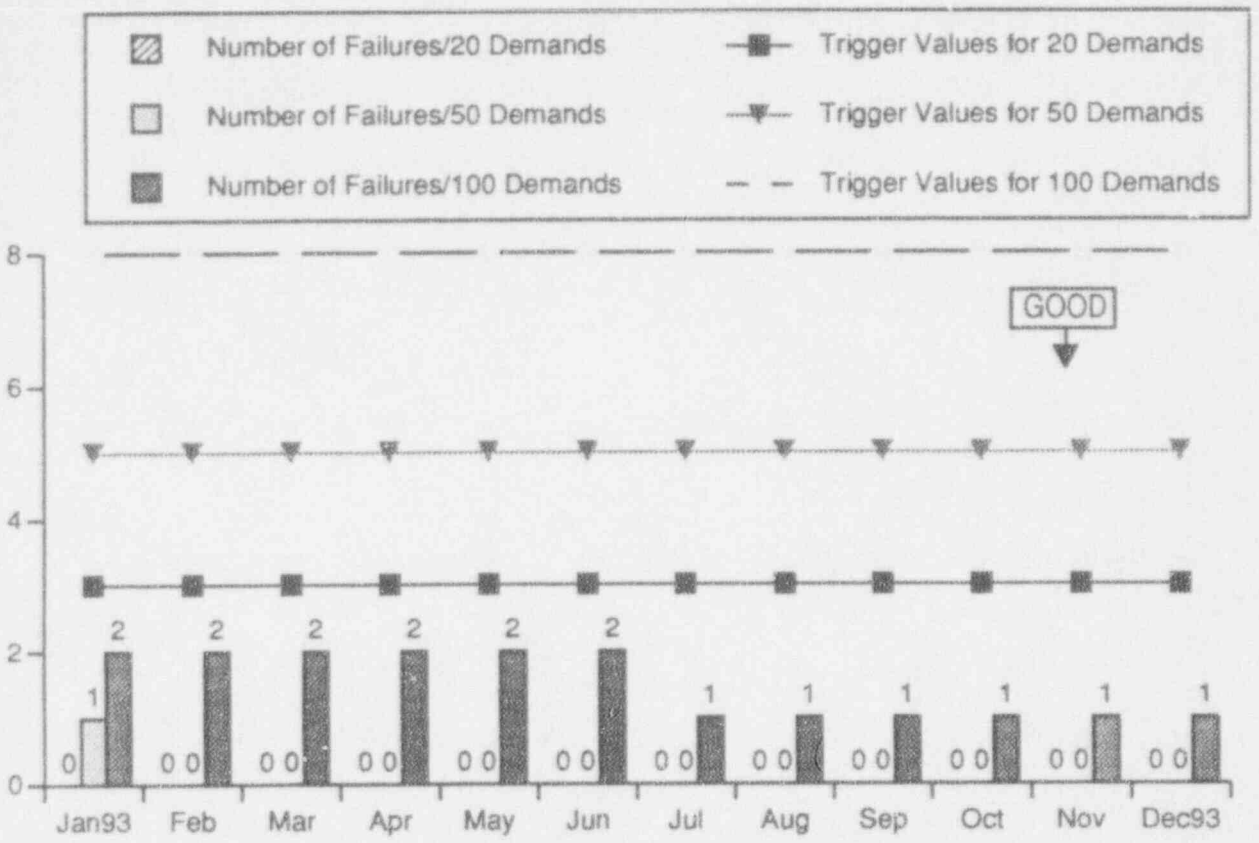
Data Source: Holthaus/Guliani
Accountability: Chase/Spilker
Positive Trend


Number of Failures/20 Demands
Number of Failures/50 Demands
Number of Failures/100 Demands
Trigger Values for 20 Demands
Trigger Values for 50 Demands
Trigger Values for 100 Demands
8
6
4
2
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92

1992


Number of Failures/20 Demands
Number of Failures/50 Demands
Number of Failures/100 Demands
Trigger Values for 20 Demands
Trigger Values for 50 Demands
Trigger Values for 100 Demands
8
6
4
2
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91

1991

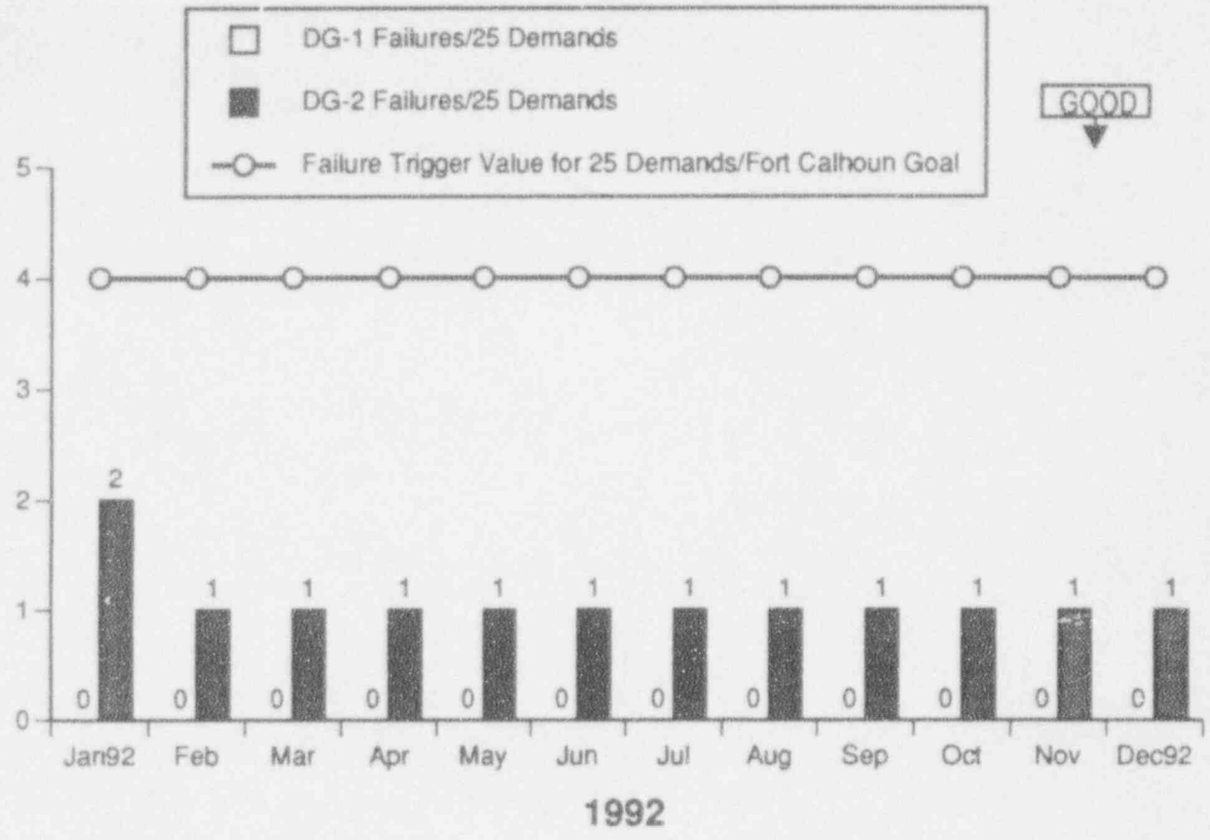


EMERGENCY DIESEL GENERATOR UNIT RELIABILITY

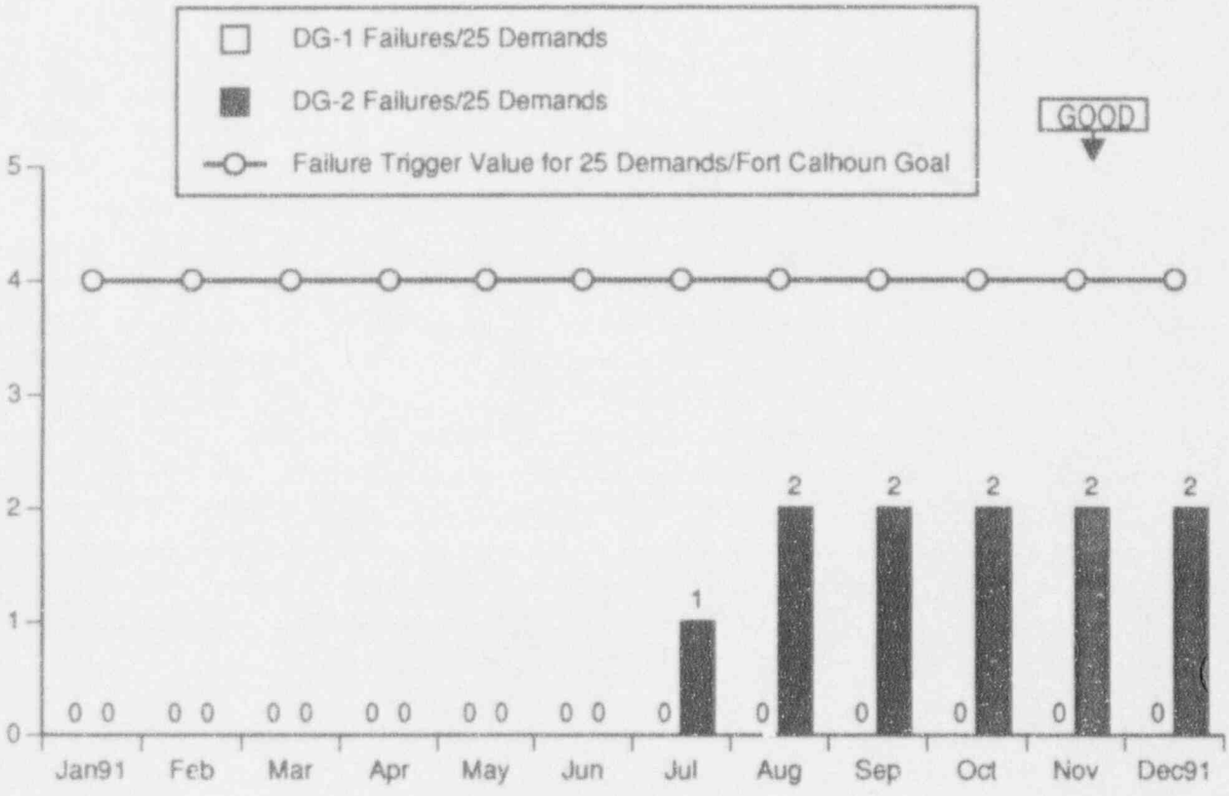
This bar graph shows three monthly indicators pertaining to the number of failures that were reported during the last 20, 50, and 100 emergency diesel generator demands at the Fort Calhoun Station. Also shown are trigger values which correspond to a high level of confidence that a unit's diesel generators have obtained a reliability of greater than or equal to 95% when the failure values are below the corresponding trigger values. The Fort Calhoun 1993 goal is to have fewer failures than these 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 includes 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 criteria: 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, and a special test 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 of this report).

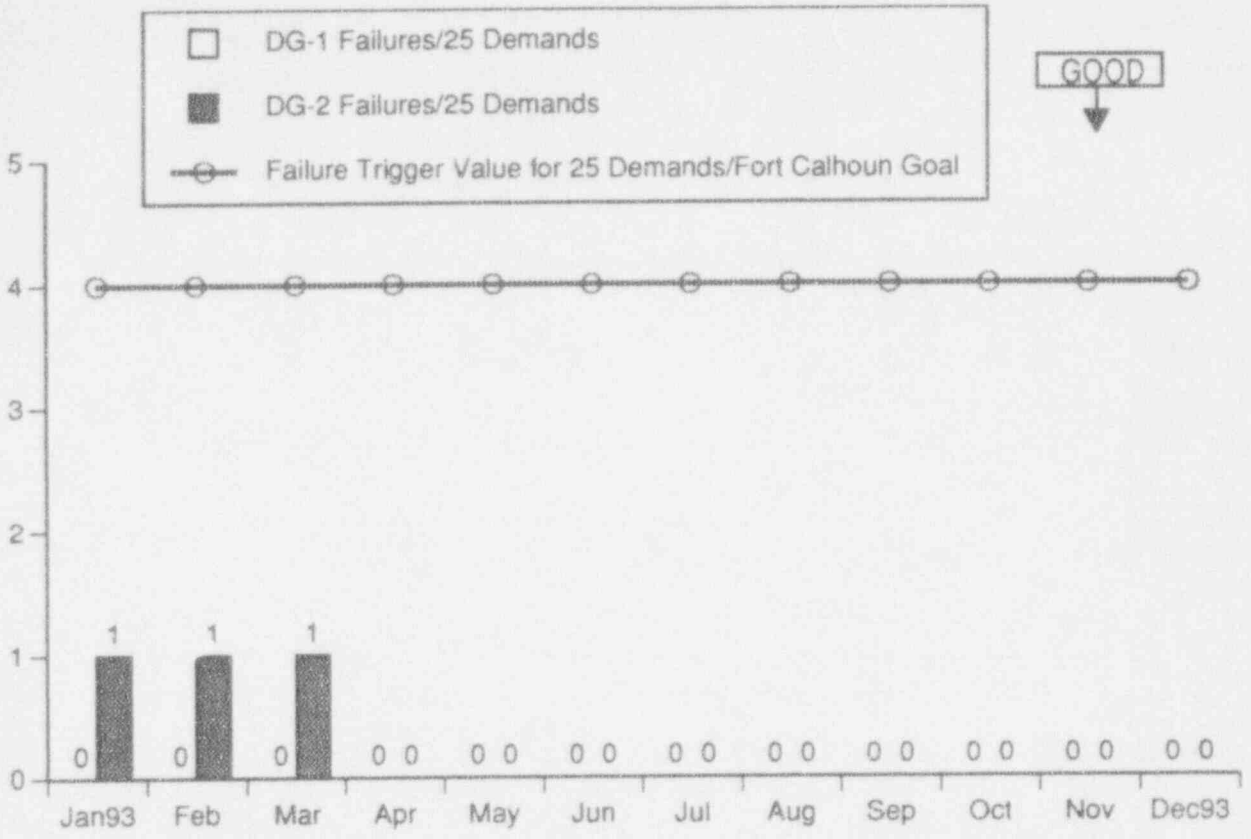
Data Source: Jaworski/Ronning (Manager/Source)
Accountability: Jaworski/Ronning
Positive Trend


DG-1 Failures/25 Demands
DG-2 Failures/25 Demands
Failure Trigger Value for 25 Demands/Fort Calhoun Goal
GOOD
5
4
3
2
1
0
0 2 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1
Jan92 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec92

1992


DG-1 Failures/25 Demands
DG-2 Failures/25 Demands
Failure Trigger Value for 25 Demands/Fort Calhoun Goal
GOOD
5
4
3
2
1
0
0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 2 0 2 0 2 0 2 0 2
Jan91 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec91

1991



DIESEL GENERATOR RELIABILITY (25 DEMANDS)

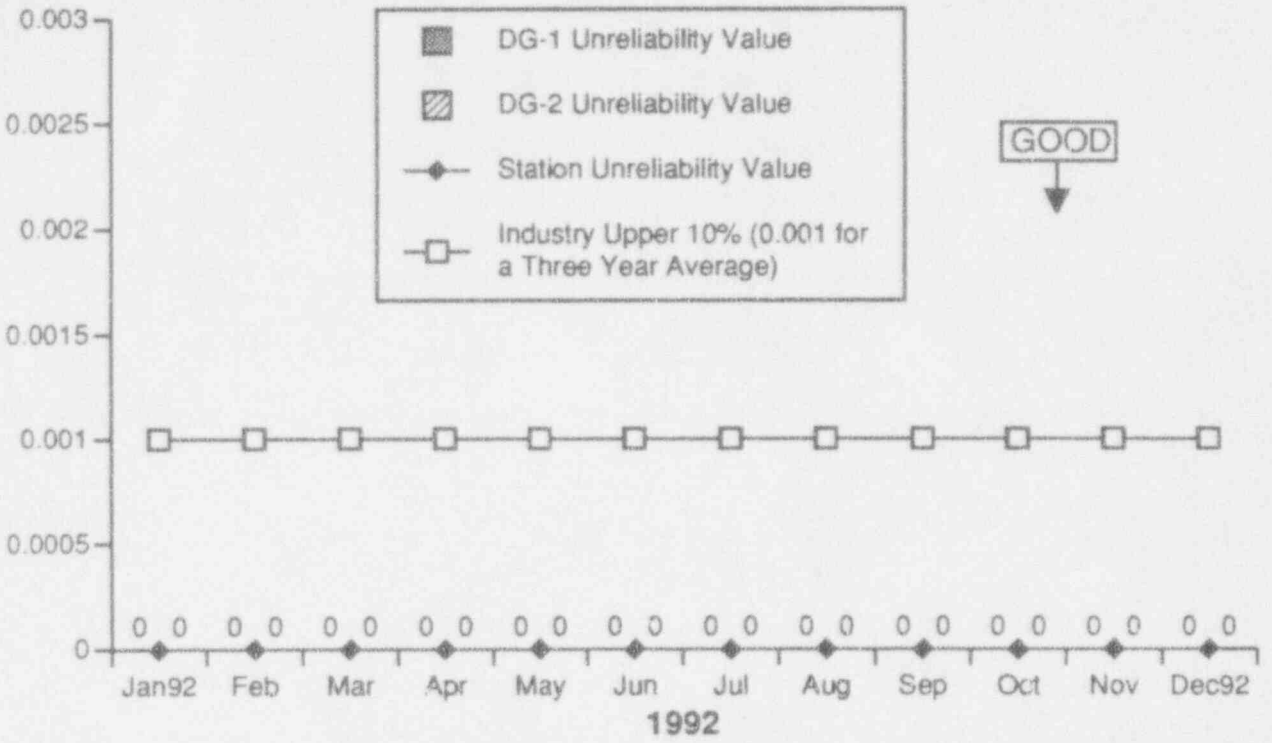
This indicator shows the number of failures experienced by each emergency diesel generator during the last 25 start demands and the last 25 load-run demands. A trigger value of 4 failures within the last 25 demands is also shown. This trigger value of 4 failures within 25 demands was the Fort Calhoun goal for 1993.

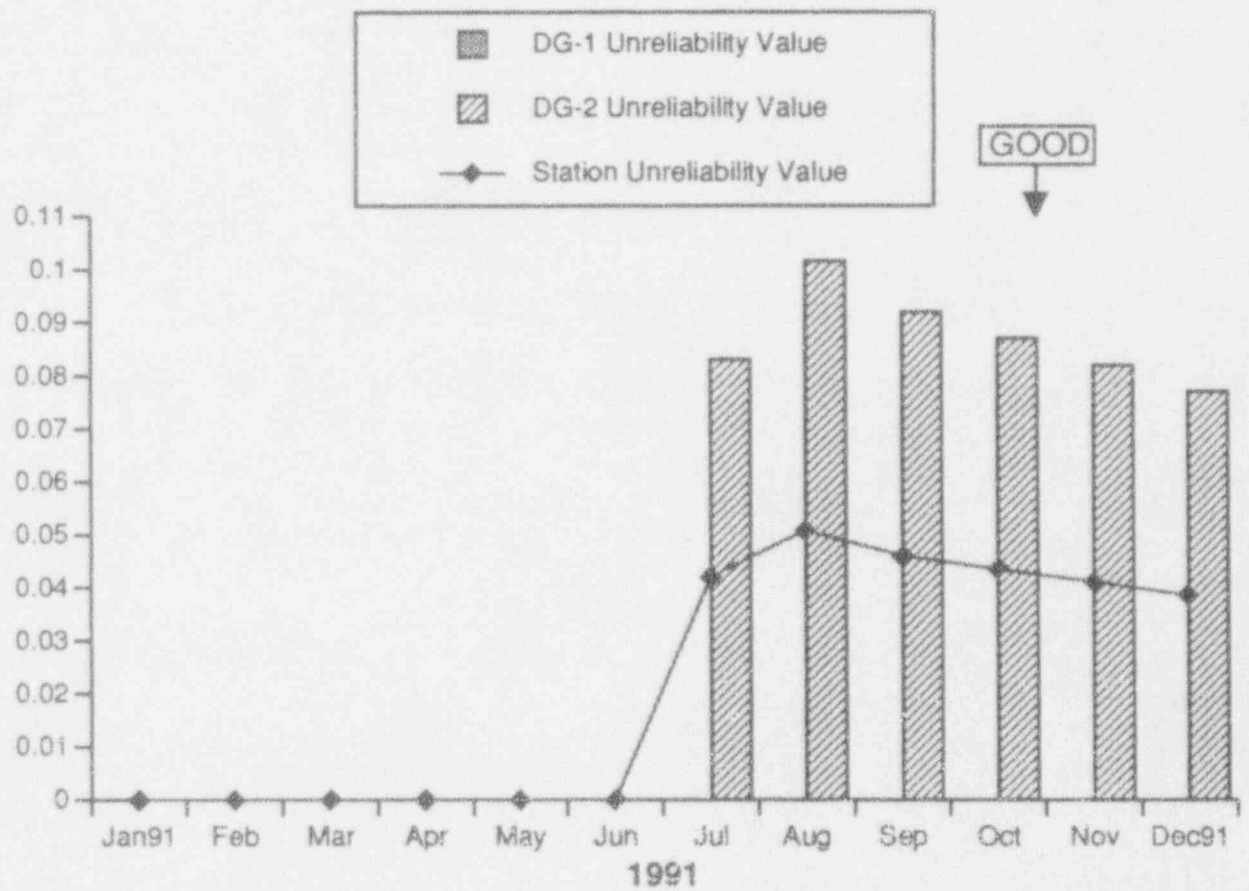
It must be emphasized that, in accordance with NUMARC criteria, certain actions will take place in the event that any one emergency diesel generator experiences 4 or more failures within the last 25 demands on the unit. These actions are described in the Definitions Section of this report. A System Engineering Instruction has been approved for the Fort Calhoun Station to institutionalize and formally approve/adopt the required NUMARC actions.

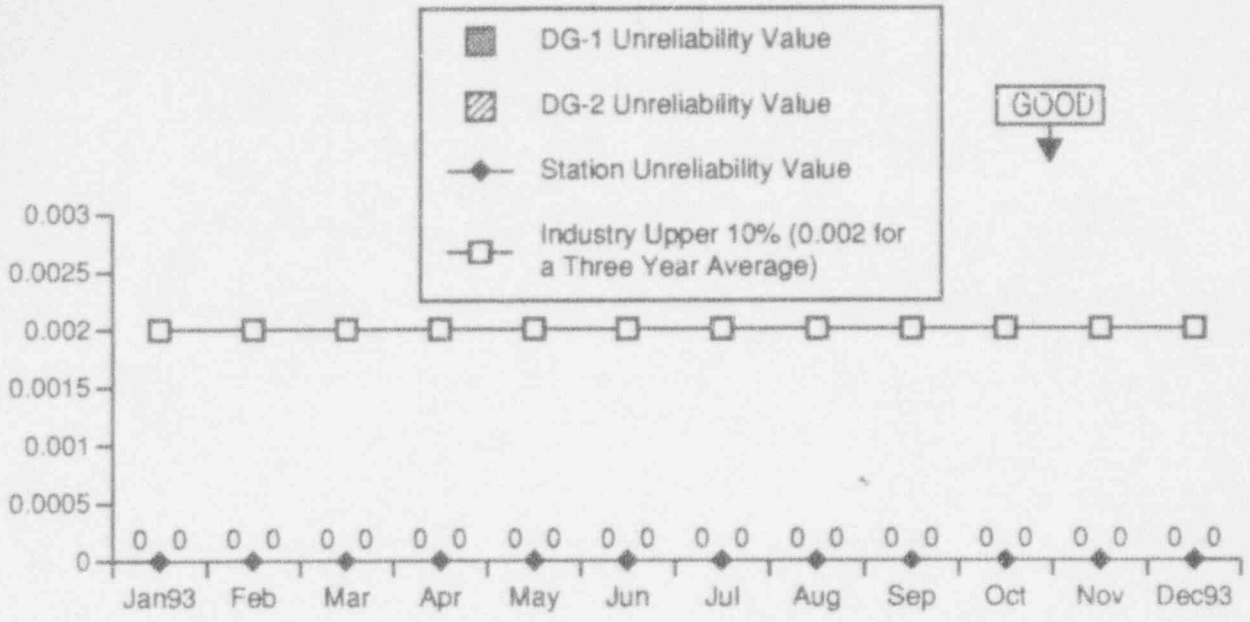
Diesel Generator DG-1 has not experienced any failures during the last 25 demands on the unit.

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

Data Source: Jaworski/Ronning (Manager/Source)
Accountability: Jaworski/Ronning
Positive Trend


DG-1 Unreliability Value
DG-2 Unreliability Value
Station Unreliability Value
Industry Upper 10% (0.001 for a Three Year Average)
GOOD
0.003
0.0025
0.002
0.0015
0.001
0.0005
0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Jan92 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec92
1992


DG-1 Unreliability Value
DG-2 Unreliability Value
Station Unreliability Value
GOOD
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Jan91 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec91
1991



EMERGENCY DIESEL GENERATOR UNRELIABILITY

The purpose of this indicator is to monitor the likelihood that emergency AC power generators will respond to off-normal events or accidents. It also provides an indication of the effectiveness of maintenance, operation and test practices in controlling generator unreliability.

The year-to-date station EDG unreliability value at the end of December 1993 was 0.0.

For DG-1: There was 1 start demand for the reporting month without failure.
In addition, there was 1 load-run demand without failure.

For DG-2: There was 1 start demand for the reporting month without failure.
In addition, there was 1 load-run demand without failure.

Emergency diesel generator unreliability is calculated as follows:

value per DG = SU + LU - (SU x LU)

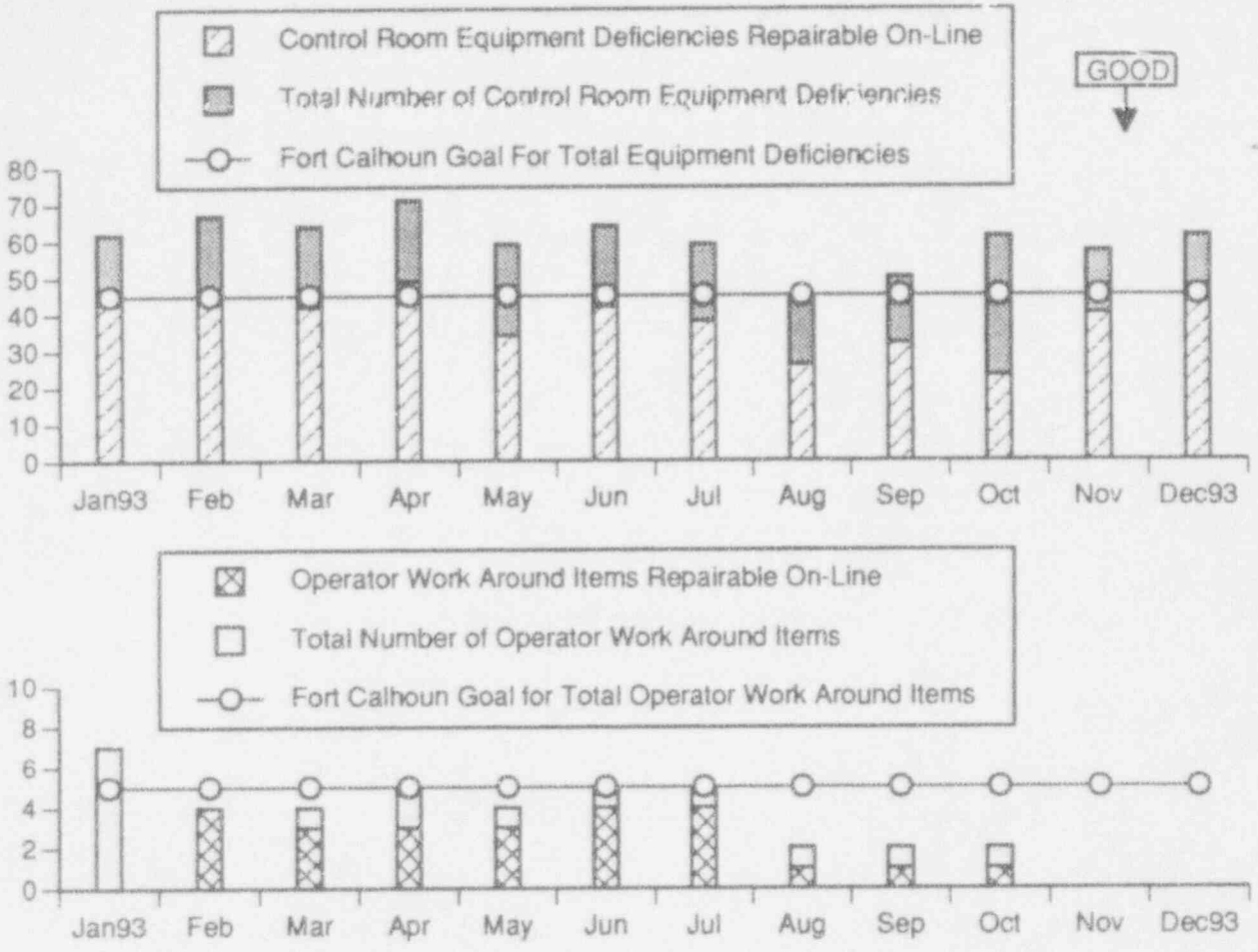
where SU = Start Unreliability = $\frac{\text{number of unsuccessful starts}}{\text{number of valid start demands}}$

LU = Load-run Unreliability = $\frac{\text{number of unsuccessful load-runs}}{\text{number of valid load-run demands}}$

Station Value = average of DG-1 and DG-2 values

Data Source: Jaworski/Ronning (Manager/Source)
Accountability: Jaworski/Ronning
Positive Trend

(This page intentionally left blank. The method of reporting this indicator has changed in 1993.)



NUMBER OF CONTROL ROOM EQUIPMENT DEFICIENCIES

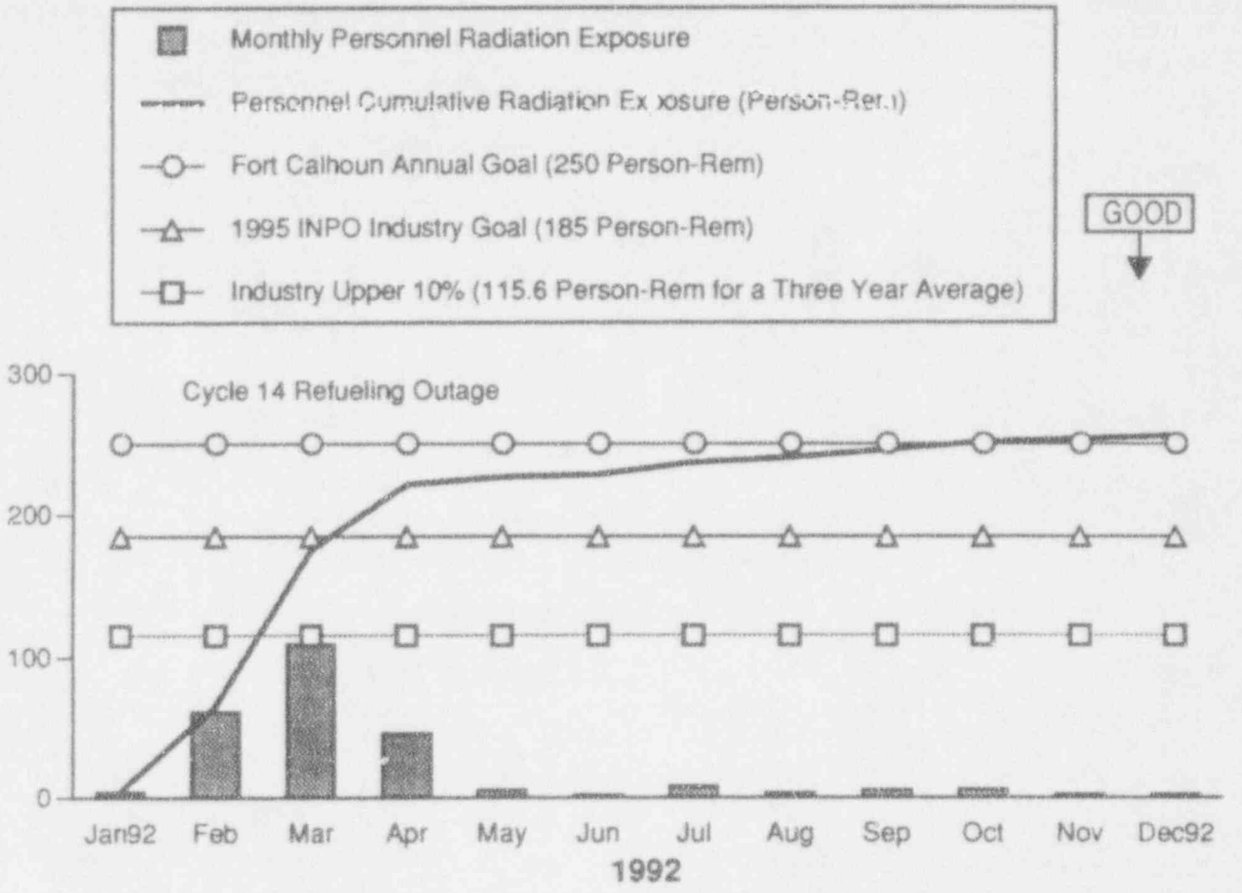
This indicator shows the number of control room equipment deficiencies that are repairable during plant operations (on-line), the total number of control room equipment deficiencies, the number of Operator Work Around (OWA) Items repairable on-line, the total number of OWAs and the Fort Calhoun goals.

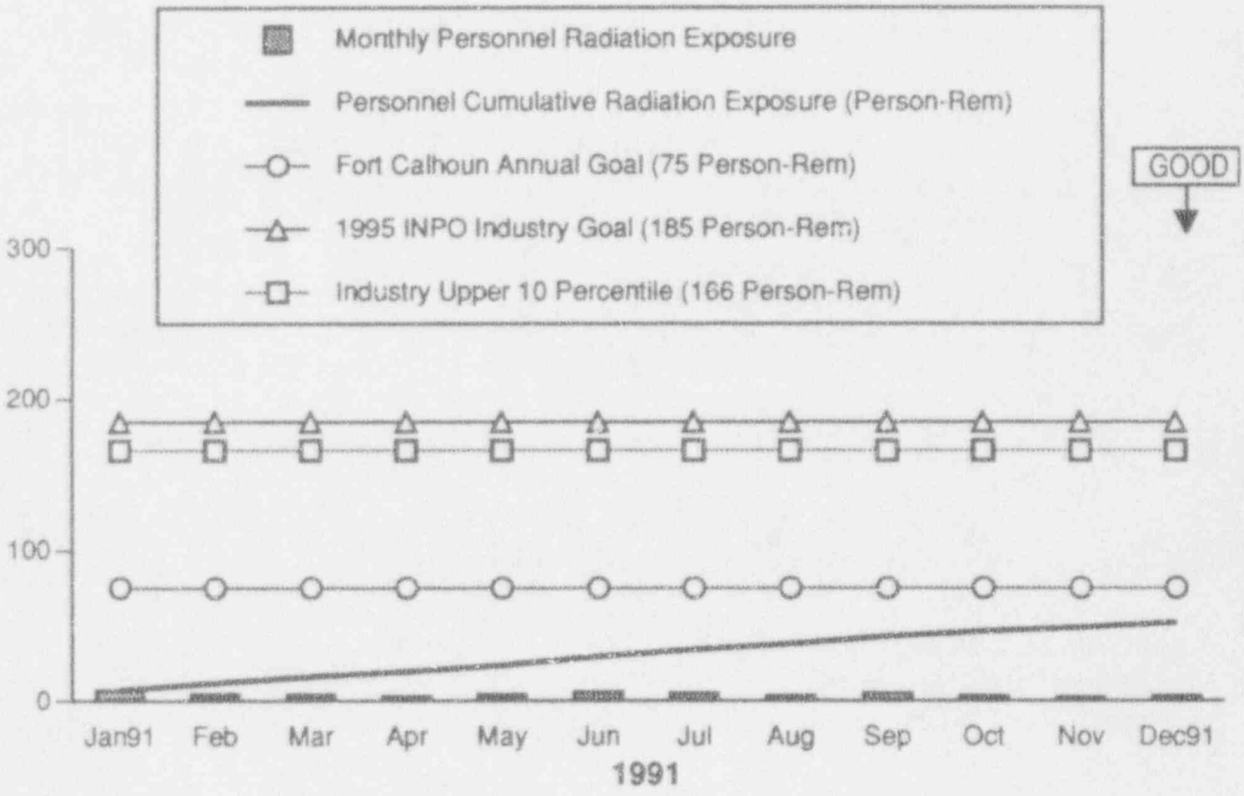
There was a total of 61 control room equipment deficiencies at the end of December 1993. 47 of these deficiencies are repairable on-line and 14 require a plant outage to repair.

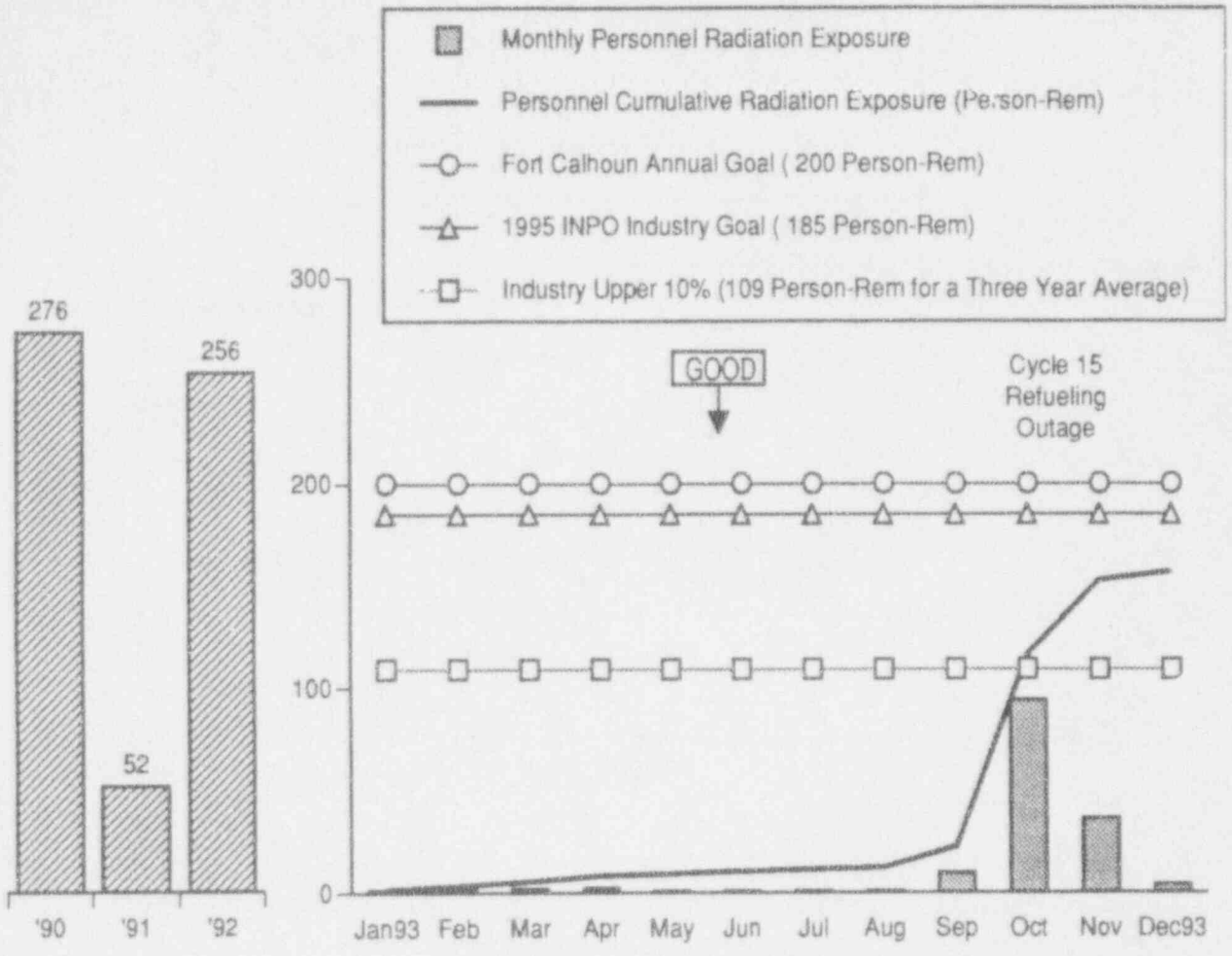
There were no identified Operator Work Around Items at the end of the month.

The 1993 Fort Calhoun monthly goals are to have a maximum of 45 control room equipment deficiencies (total) and a maximum of 5 OWAs (total).

Data Source: Chase/Tills (Manager/Source)
Accountability: Chase/Bobba
Adverse Trend: None


Monthly Personnel Radiation Exposure
Personnel Cumulative Radiation Exposure (Person-Rem)
Fort Calhoun Annual Goal (250 Person-Rem)
1995 INPO Industry Goal (185 Person-Rem)
Industry Upper 10% (115.6 Person-Rem for a Three Year Average)
GOOD
Cycle 14 Refueling Outage
300
200
100
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Monthly Personnel Radiation Exposure
Personnel Cumulative Radiation Exposure (Person-Rem)
Fort Calhoun Annual Goal (75 Person-Rem)
1995 INPO Industry Goal (185 Person-Rem)
Industry Upper 10 Percentile (166 Person-Rem)
GOOD
300
200
100
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



COLLECTIVE RADIATION EXPOSURE

During December 1993, 4.161 person-rem was recorded by TLDs worn by personnel while working at the Fort Calhoun Station. The 1993 exposure was 156.59 person-rem.

The Fort Calhoun goal for collective radiation exposure for 1993 was a maximum of 200 person-rem.

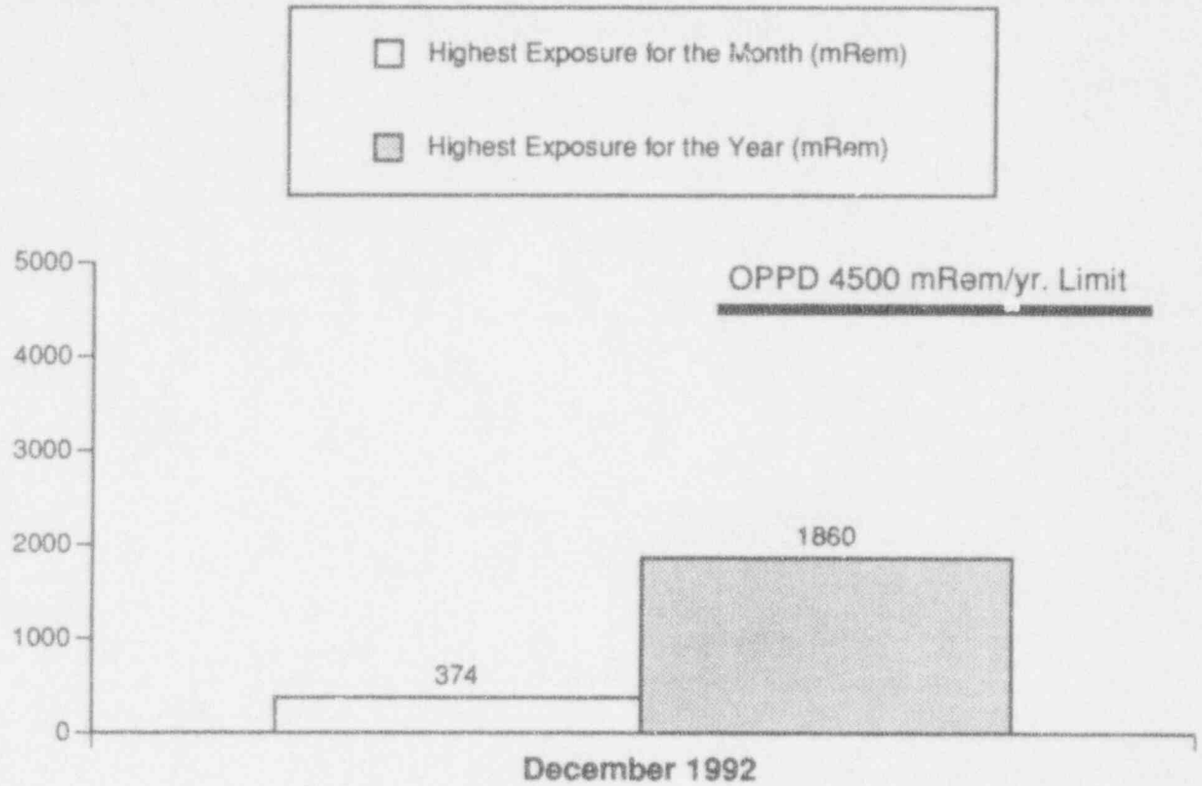
The 1995 INPO industry goal is 185 person-rem per year. The industry upper ten percentile value (for the three year period from 7/90 through 6/93) is approximately 109 person-rem per year. The yearly average for Fort Calhoun Station for the three years from 1/91 through 12/93 was 154.7 person-rem per year.

Data Source: Chase/Williams (Manager/Source)

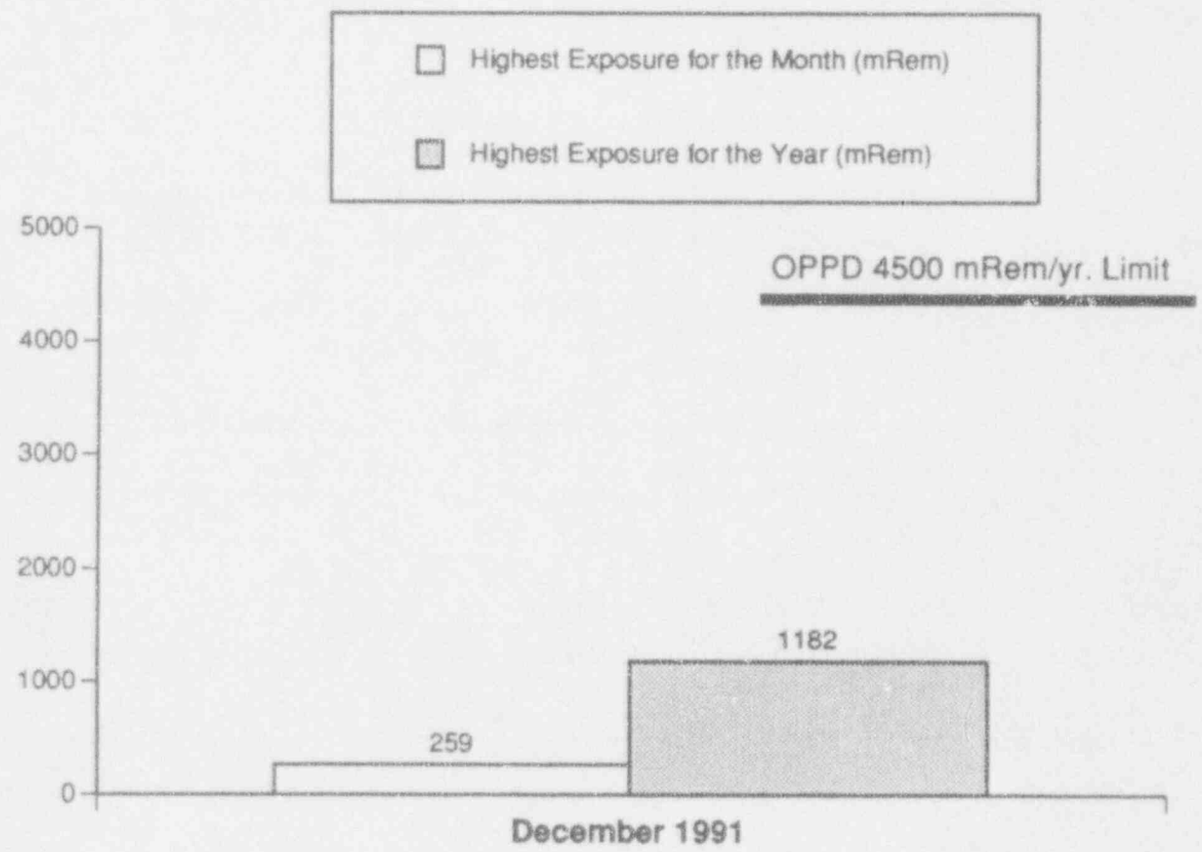
Accountability: Chase/Lovett

Positive Trend

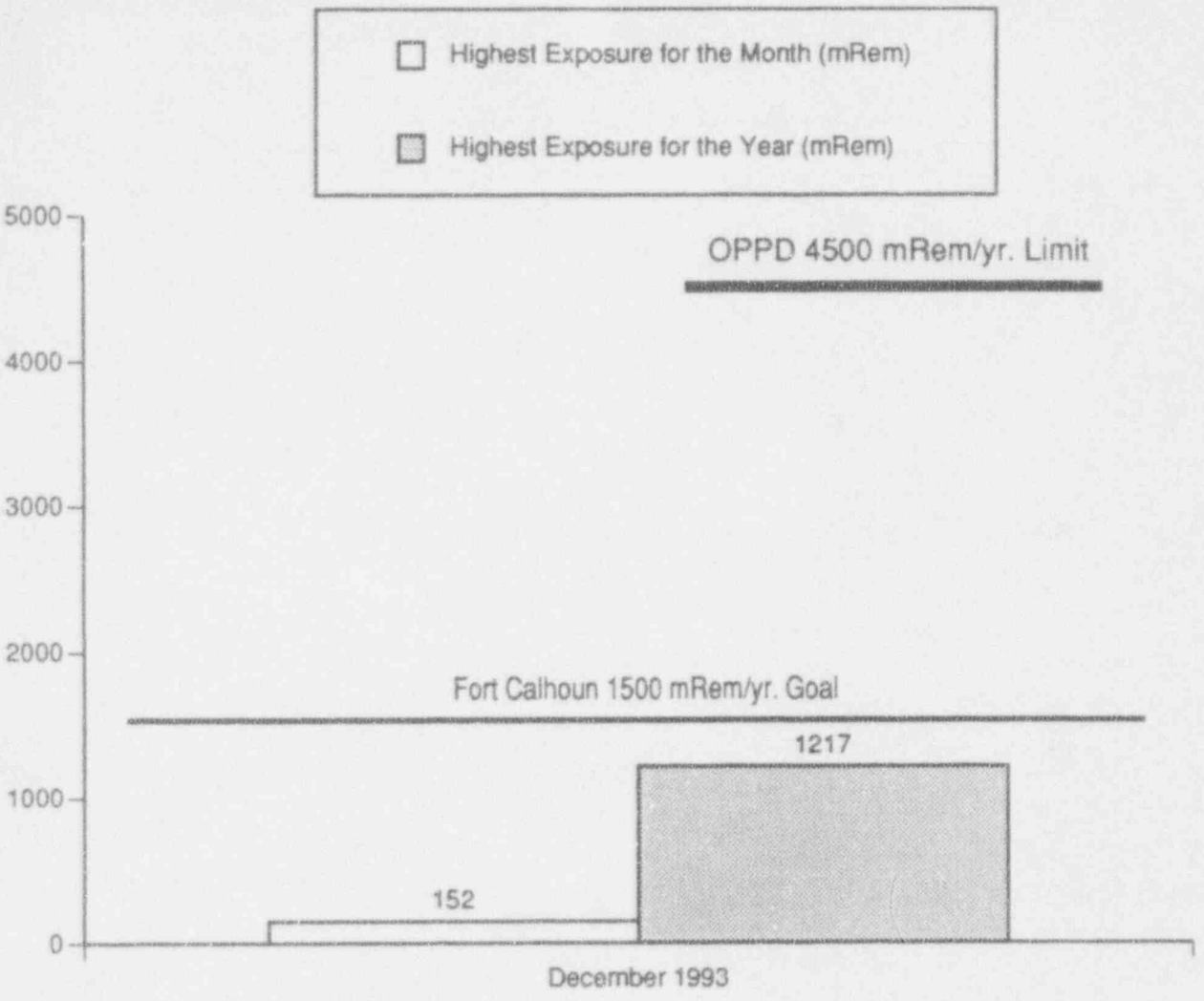
SEP 54



December 1992



December 1991



MAXIMUM INDIVIDUAL RADIATION EXPOSURE

During December 1993, an individual accumulated 152 mRem, which was the highest individual exposure for the month.

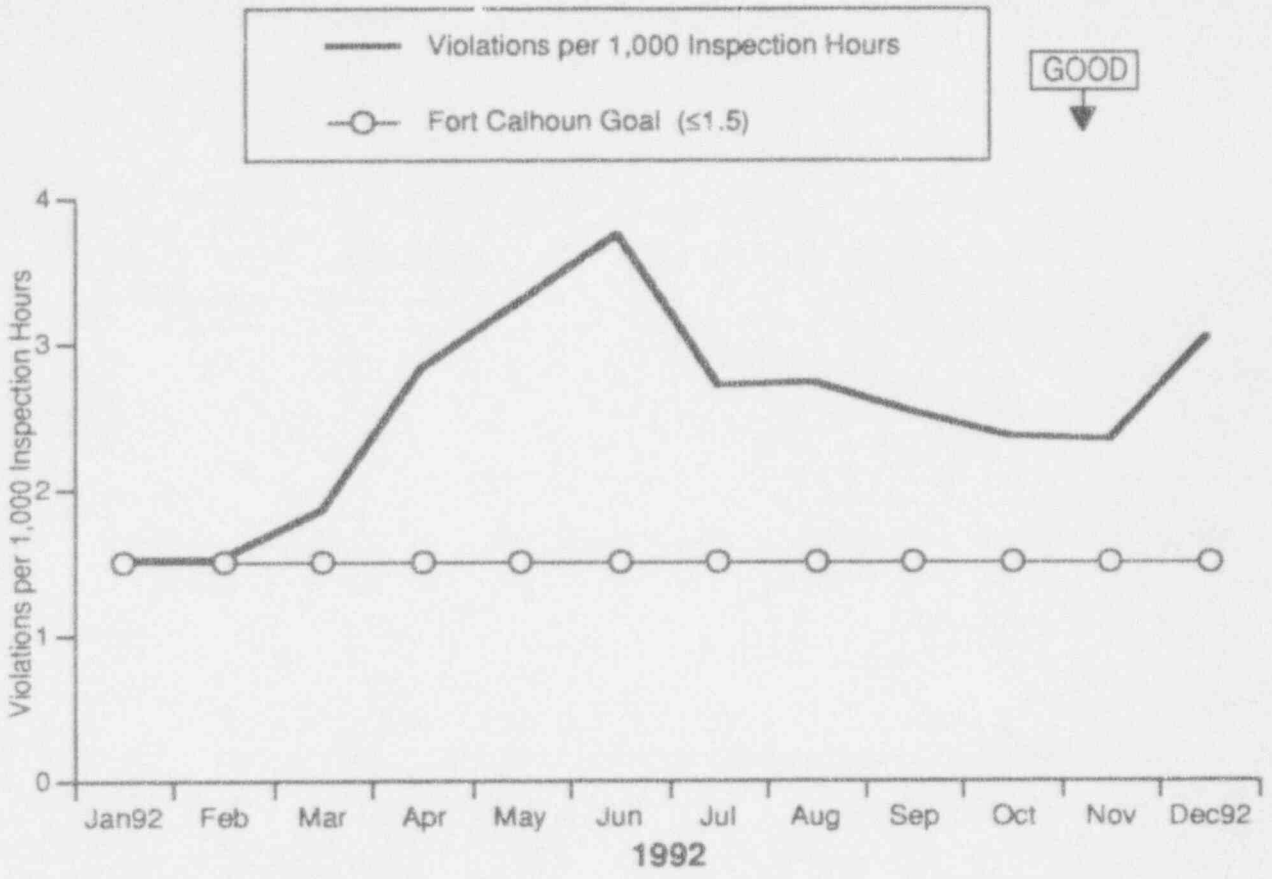
The maximum individual exposure for the year was 1,217 mRem at the end of December.

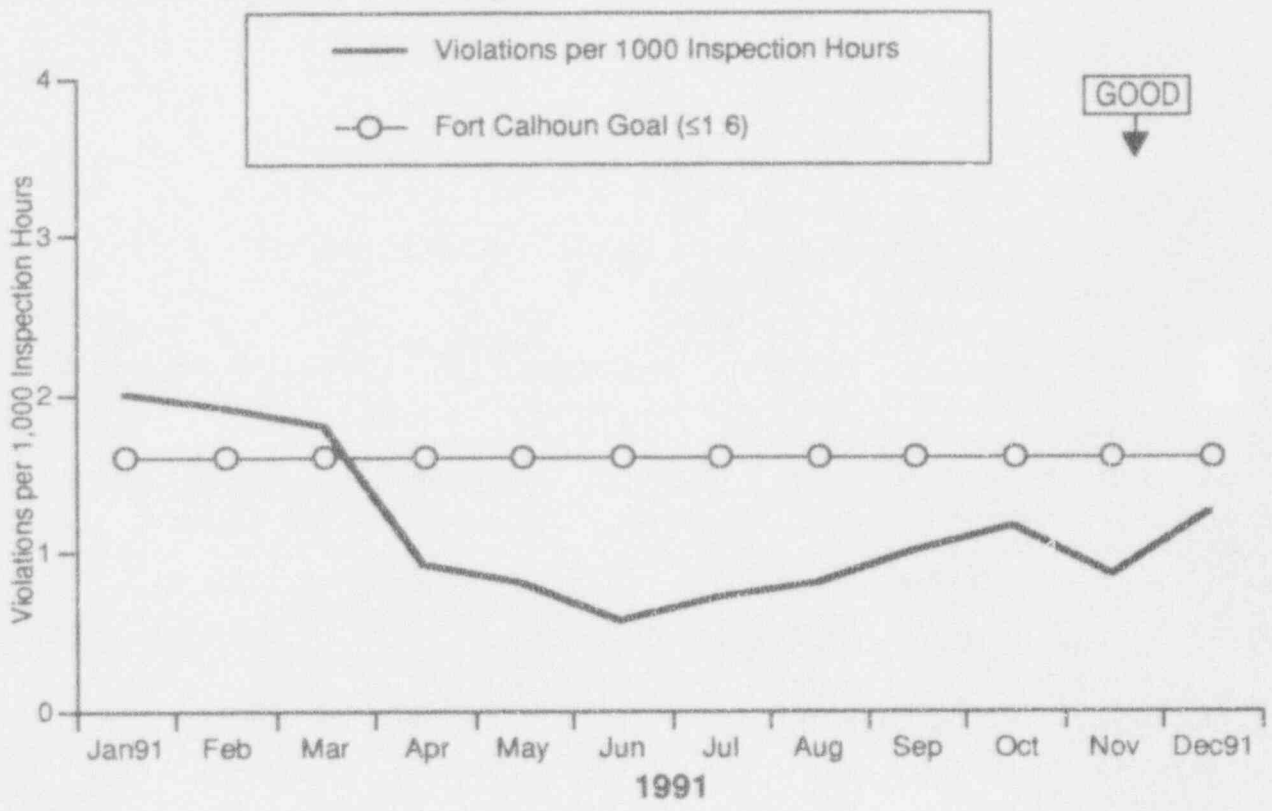
The OPPD limit for the maximum yearly individual radiation exposure is 4,500 mRem/year. The 1993 Fort Calhoun year-end goal is a maximum of 1,500 mRem.

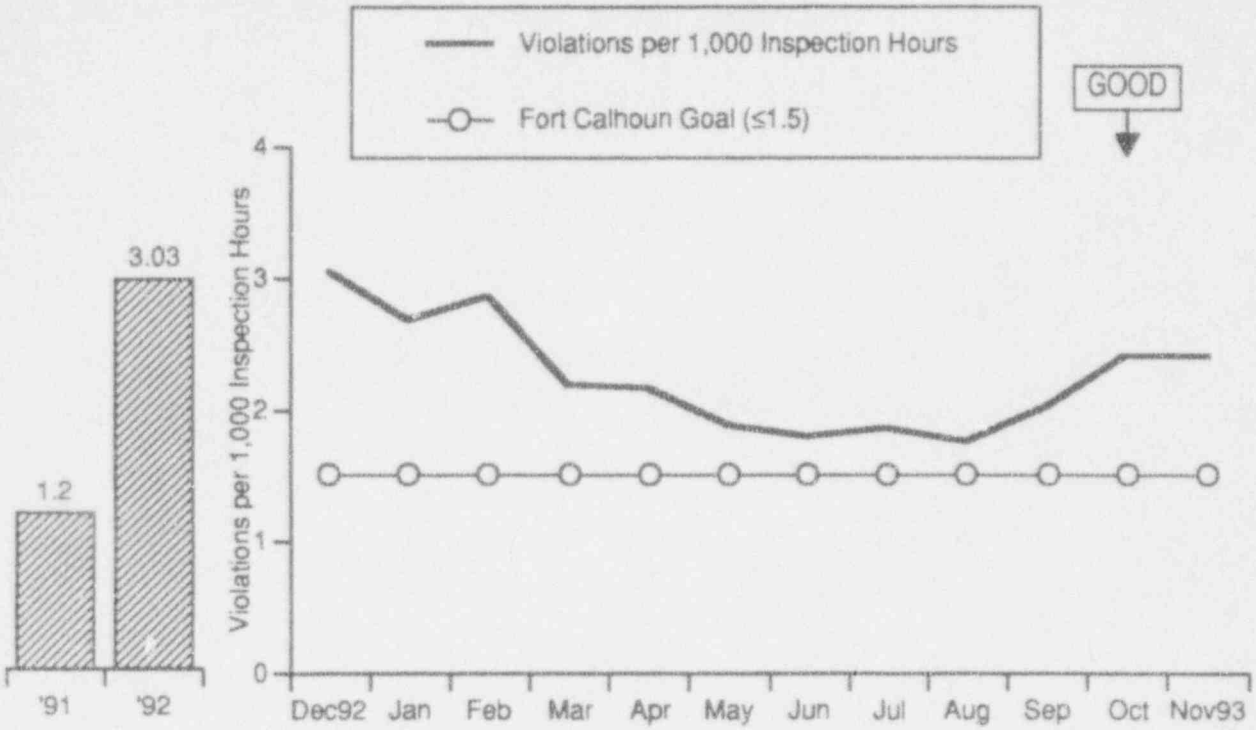
Date Source: Chase/Williams (Manager/Source)

Accountability: Chase/Lovett

Positive Trend


Violations per 1,000 Inspection Hours
Fort Calhoun Goal (≤1.5)
GOOD
Violations per 1,000 Inspection Hours
0
1
2
3
4
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Violations per 1000 Inspection Hours
Fort Calhoun Goal (≤1 6)
GOOD
Violations per 1,000 Inspection Hours
0
1
2
3
4
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



VIOLATIONS PER 1,000 INSPECTION HOURS

This indicator displays the number of NRC violations cited in inspection reports per 1,000 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 1,000 inspection hours indicator was reported as 2.40 for the twelve months from December 1, 1992 through November 30, 1993.

The following inspections ended during this reporting period:

IER No.	Title	No. of Hours
None.		

To date, OPPD has received a total of 9 violations in 1993:

Level III Violations	(0)
Level IV Violations	(4)
Level V Violations	(0)
Non-Cited Violations (NCV)	(5)

The 1993 and 1992 Fort Calhoun goals for this indicator are a maximum of 1.5 violations per 1,000 inspection hours.

Data Source: Short/Cavanaugh (Manager/Source)
Accountability: Short
Adverse Trend: None

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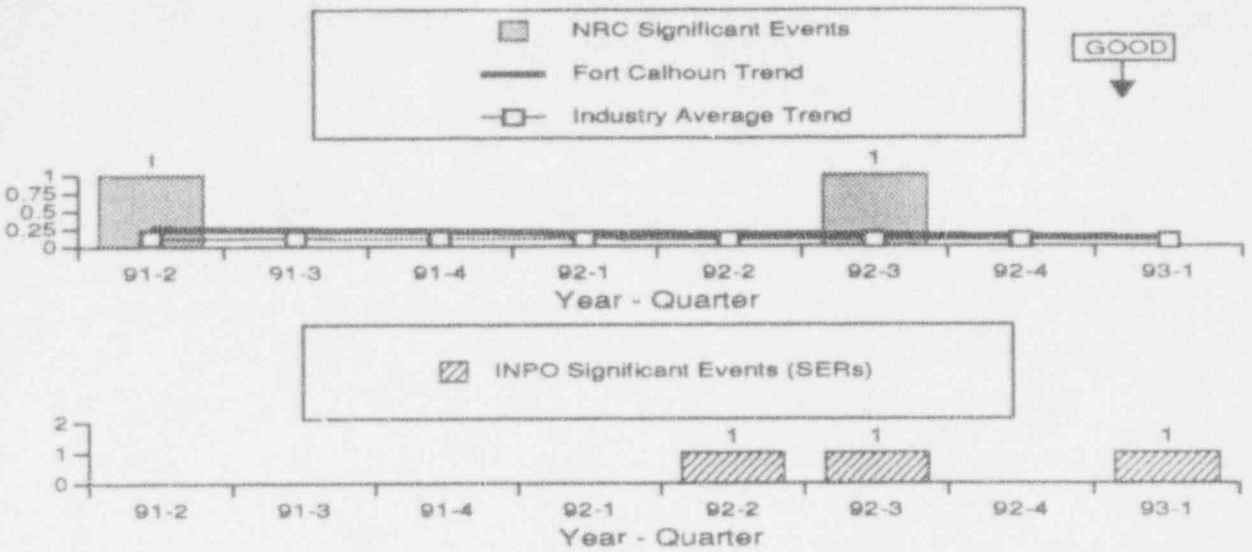


SIGNIFICANT EVENTS

This indicator illustrates the number of NRC and INPO Significant Events for Fort Calhoun Station as reported by the Nuclear Regulatory Commission's Office for Analysis and Evaluation of Operational Data in the biannual "Performance Indicators for Operating Commercial Nuclear Power Reactors" report and INPO's Nuclear Network.

The following NRC significant events occurred between the second quarter of 1991 and the first quarter of 1993:

Second Quarter 1991: Safety related equipment was not adequately protected from a high energy line break.

Third Quarter 1992: The failure of a Pressurizer Code safety valve to reseat initiated a LOCA with the potential to degrade the reactor coolant pressure boundary.

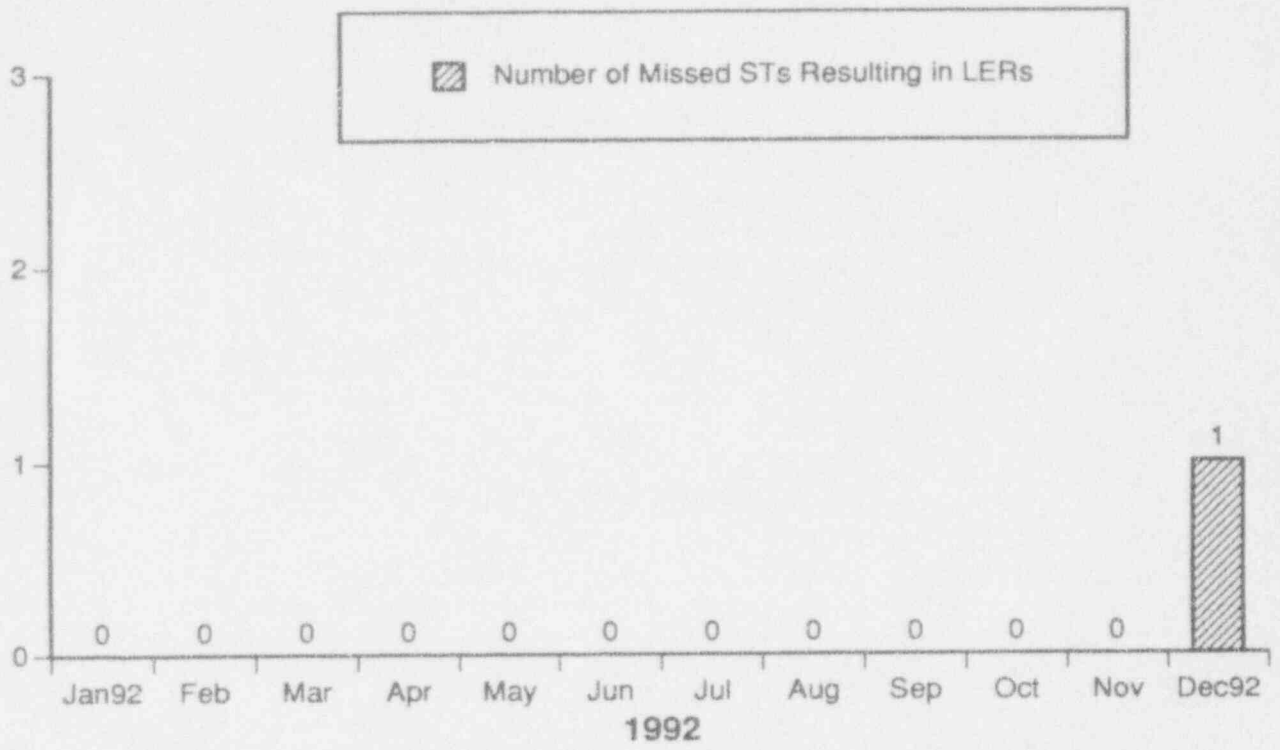
The following INPO significant events, as reported in Significant Event Reports (SERs), occurred between the second quarter of 1991 and the first quarter of 1993:

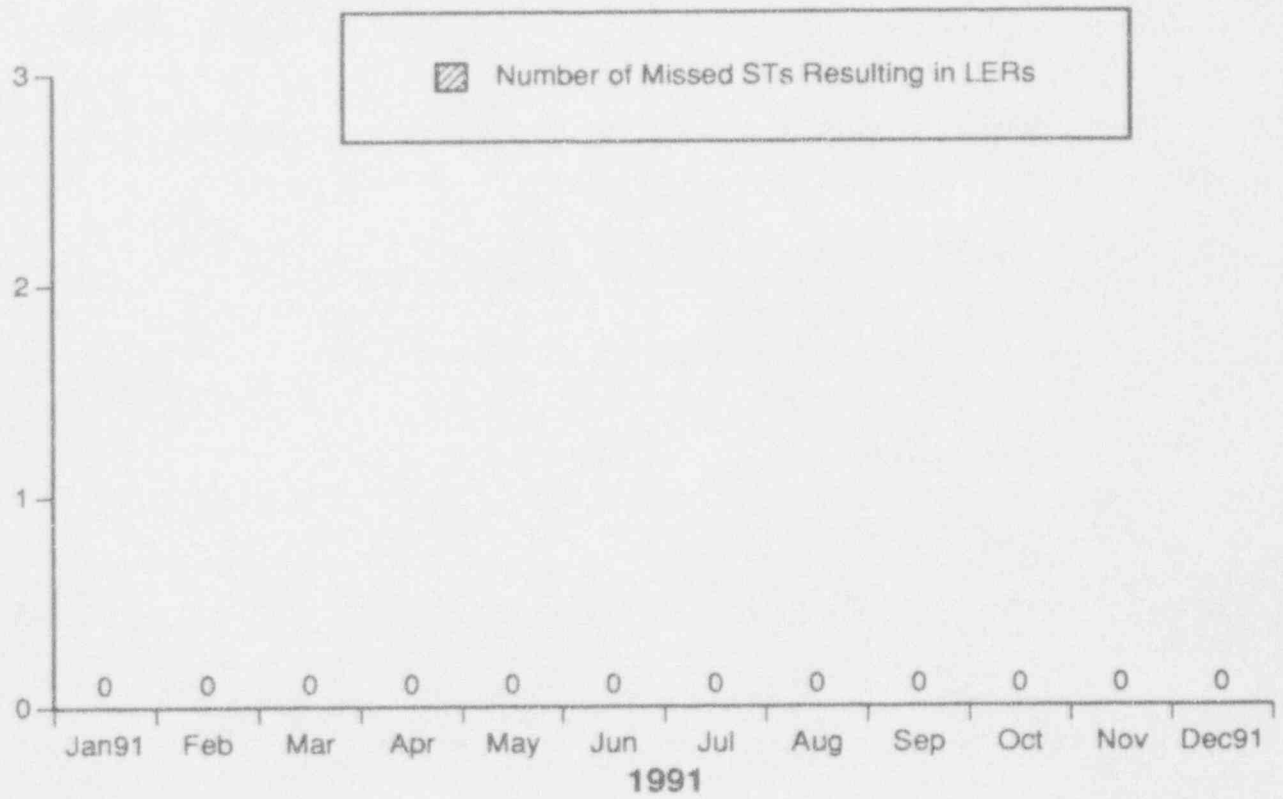
Second Quarter 1992: Personnel and accessible building areas were contaminated with transuranic, alpha-emitting radionuclides.

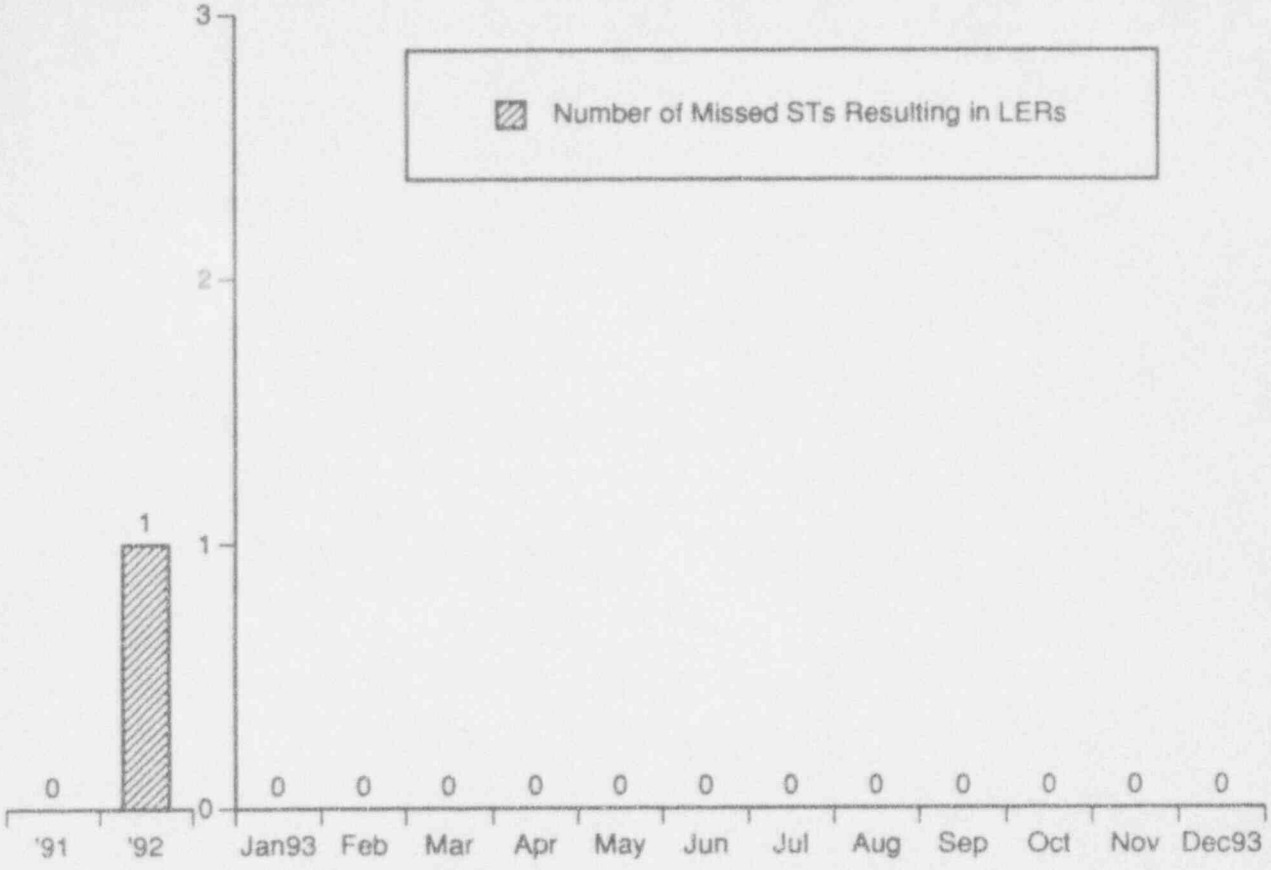
Third Quarter 1992: The failure of a nonessential inverter during troubleshooting caused a turbine load rejection. This resulted in a high reactor coolant pressure automatic scram and the opening of the pressure relief valves and one of two pressurizer safety valves. One pressurizer safety valve subsequently reopened at a lower reactor coolant system pressure and remained partially open, resulting in a release of reactor coolant to containment via the pressurizer quench tank.

First Quarter 1993: The plant operated for 4 months with reversed upper and lower nuclear instrument excore detector input signals to one of four channels of the reactor protection system.

Data Source: Nuclear Regulatory Commission & INPO
Accountability: Chase
Adverse Trend: None


Number of Missed STs Resulting in LERs
3
2
1
0
0 0 0 0 0 0 0 0 0 0 0 1
Jan92 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec92
1992


Number of Missed STs Resulting in LERs
3
2
1
0
0 0 0 0 0 0 0 0 0 0 0 0
Jan91 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec91
1991



NUMBER OF MISSED SURVEILLANCE TESTS RESULTING IN LICENSEE EVENT REPORTS

This indicator shows the number of missed Surveillance Tests (STs) that result in Licensee Event Reports (LERs) during the reporting month. The graph on the left shows the yearly totals for the indicated years.

There were no missed surveillance tests resulting in LERs during December 1993.

During the month of January 1993 it was discovered that during December 1992 an ASME Section XI Code required surveillance was not completed nor corrective maintenance performed as a result of AC-10A falling into the "Alert Range" (LER 93-003 Failure to Satisfy Inservice Testing Requirements for Raw Water Pump).

The 1993 Fort Calhoun goal for this indicator is zero.

Data Source: Monthly Operating Report & Plant Licensee Event Reports (LERs)

Accountability: Chase/Jaworski

Positive Trend SEP 60 & 61

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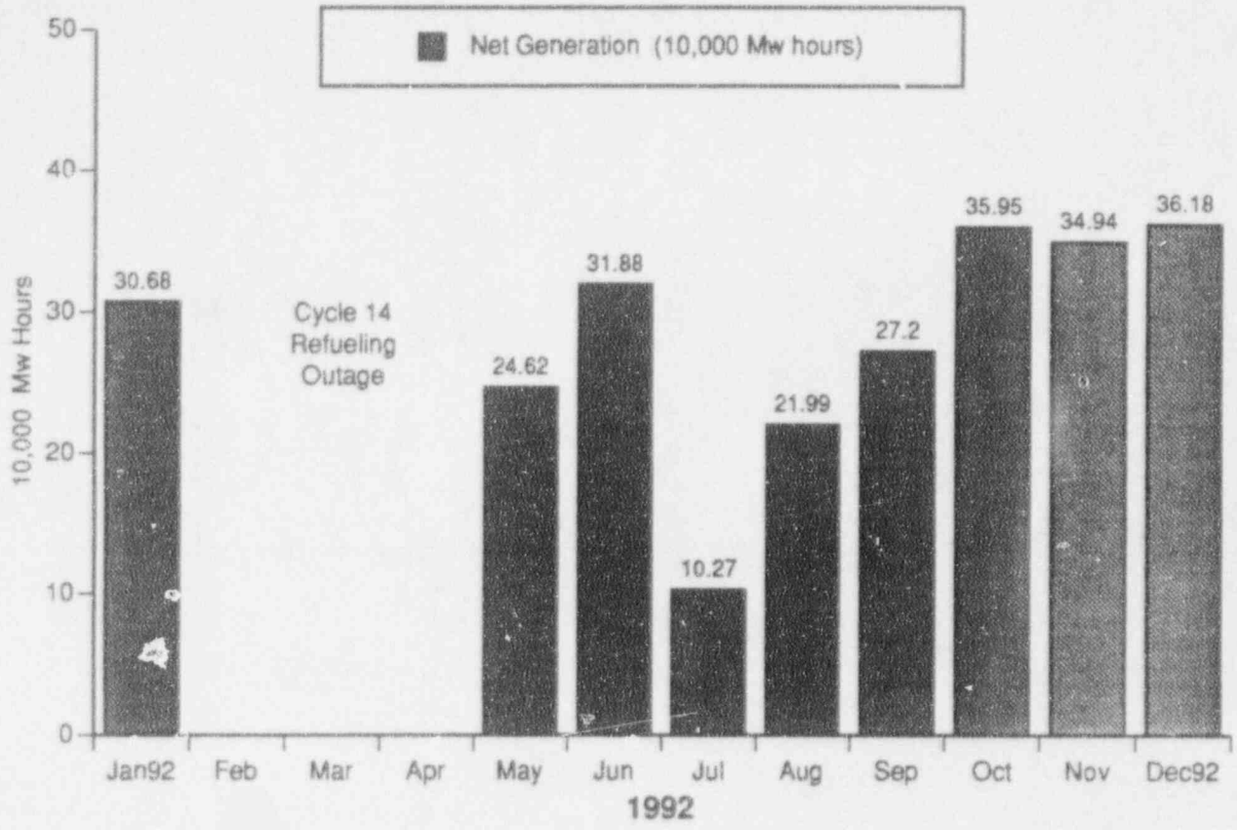
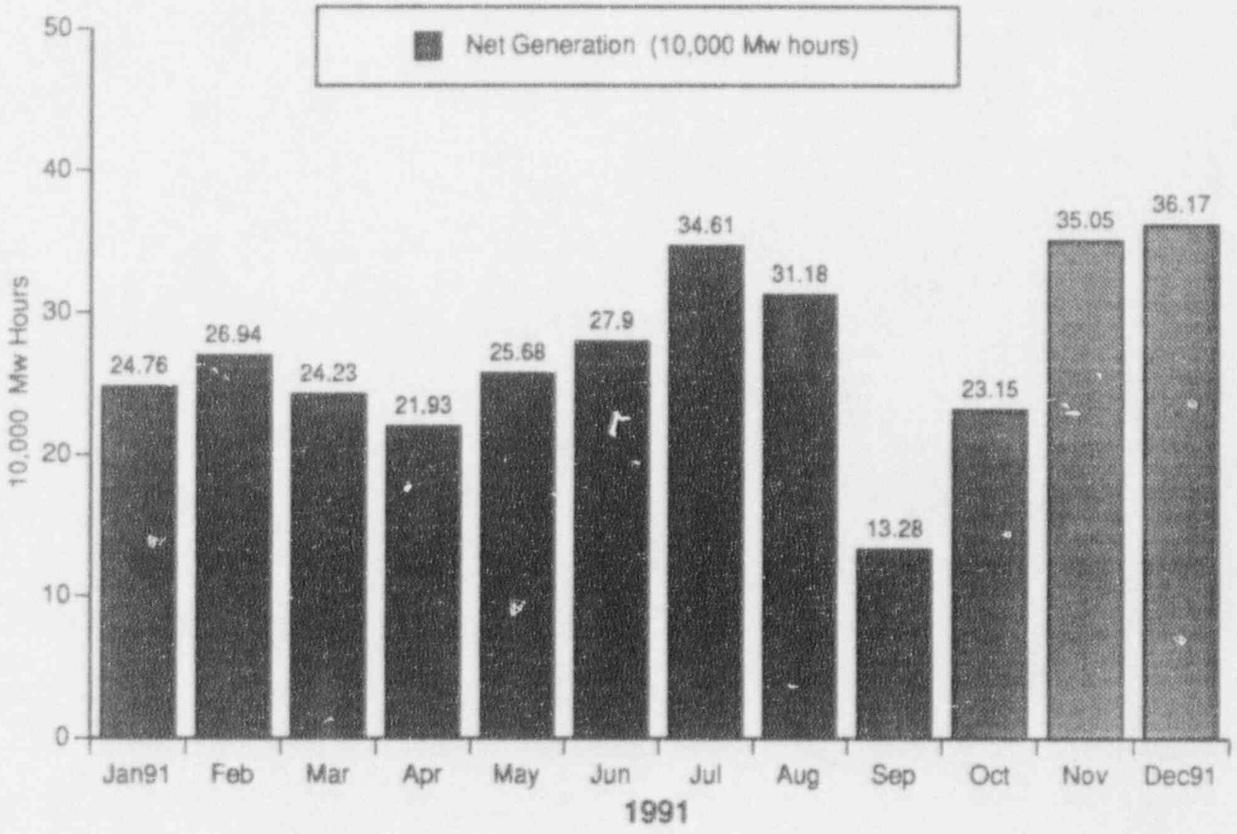
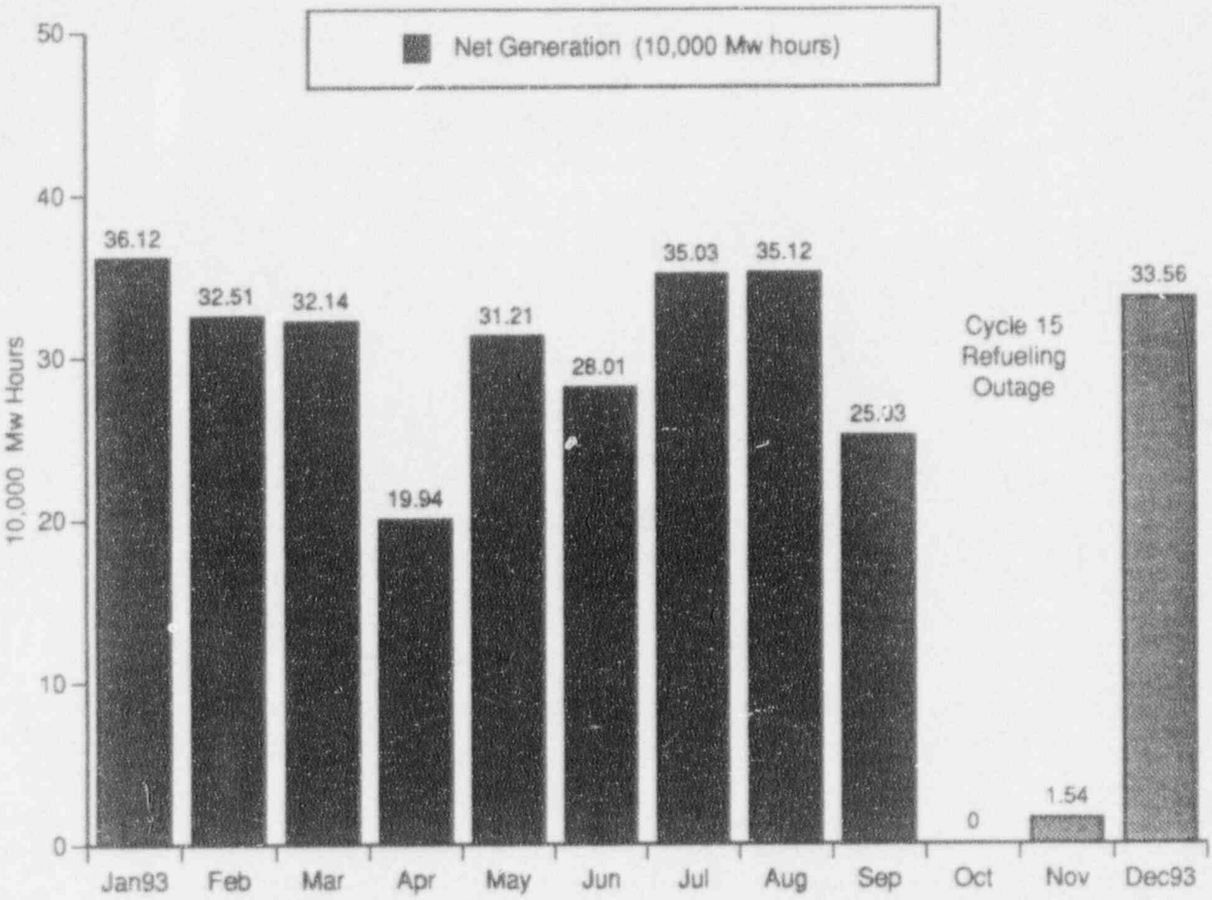
PERFORMANCE

Goal: To strive for Excellence in Operations utilizing the highest standards of performance at Fort Calhoun Station that result in safe, reliable plant operation in power production.


Net Generation (10,000 Mw hours)
10,000 Mw Hours
50
40
30
20
10
0
30.68
Cycle 14
Refueling
Outage
24.62
31.88
10.27
21.99
27.2
35.95
34.94
36.18
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Net Generation (10,000 Mw hours)
10,000 Mw Hours
50
40
30
20
10
0
24.76
26.94
24.23
21.93
25.68
27.9
34.61
31.18
13.28
23.15
35.05
36.17
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



STATION NET GENERATION

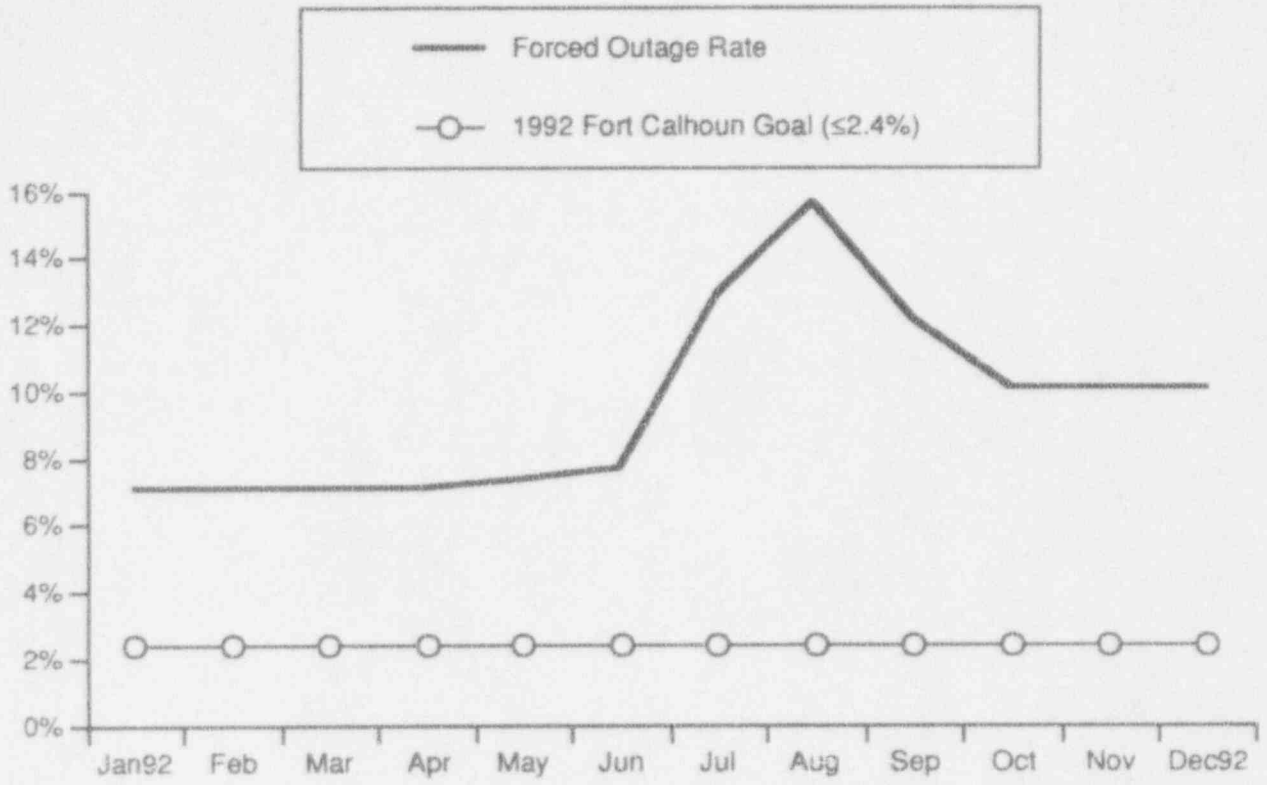
During the month of December 1993 a net total of 335,608 MWH was generated by the Fort Calhoun Station. Energy losses for the month are attributable to the rampup from the Cycle 15 refueling outage and a forced outage that began on December 6 and ended on December 7. The outage was caused by an EHC test failure.

Energy losses for September, October and November 1993 are attributable to the shutdown for the Cycle 15 refueling outage, which began on September 25 and ended on November 26.

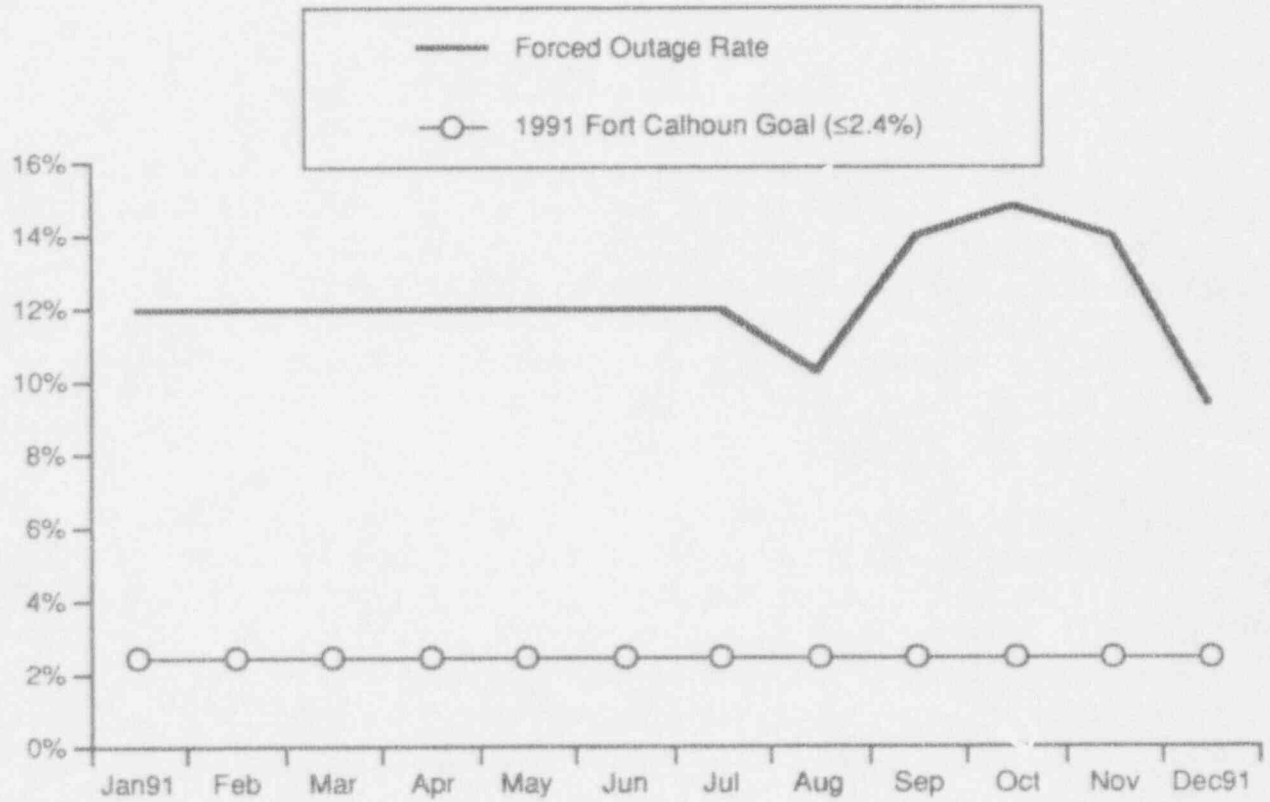
Unplanned energy losses for the months of June and July were attributable to a forced outage that began on June 24 when the inadvertent jarring of a 345 KV fault relay in the switchyard caused a turbine and reactor trip. The plant returned to 100% power on July 2nd.

Planned energy losses for the months of April and May were the result of a maintenance outage.

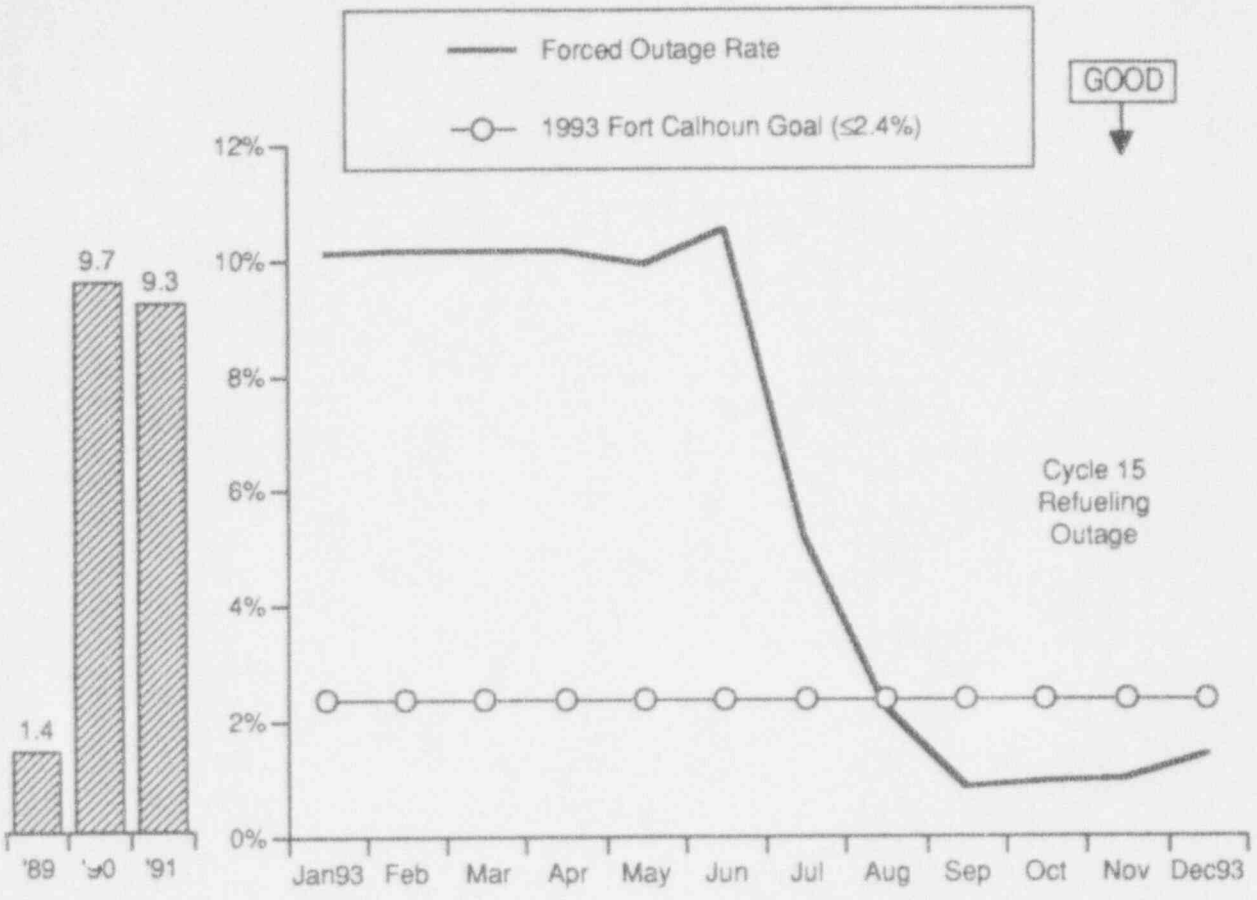
Data Source: Station Generation Report
Accountability: Chase
Adverse Trend: None


Forced Outage Rate
1992 Fort Calhoun Goal (≤2.4%)
16%
14%
12%
10%
8%
6%
4%
2%
0%
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92

1992


Forced Outage Rate
1991 Fort Calhoun Goal (≤2.4%)
16%
14%
12%
10%
8%
6%
4%
2%
0%
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91

1991



FORCED OUTAGE RATE

The forced outage rate (FOR) was reported as 1.38% for the twelve months from January 1, 1993 to December 31, 1993. A forced outage occurred on December 6 when the plant tripped during weekly testing of the turbine EHC system. The generator was off-line for 27.1 hours.

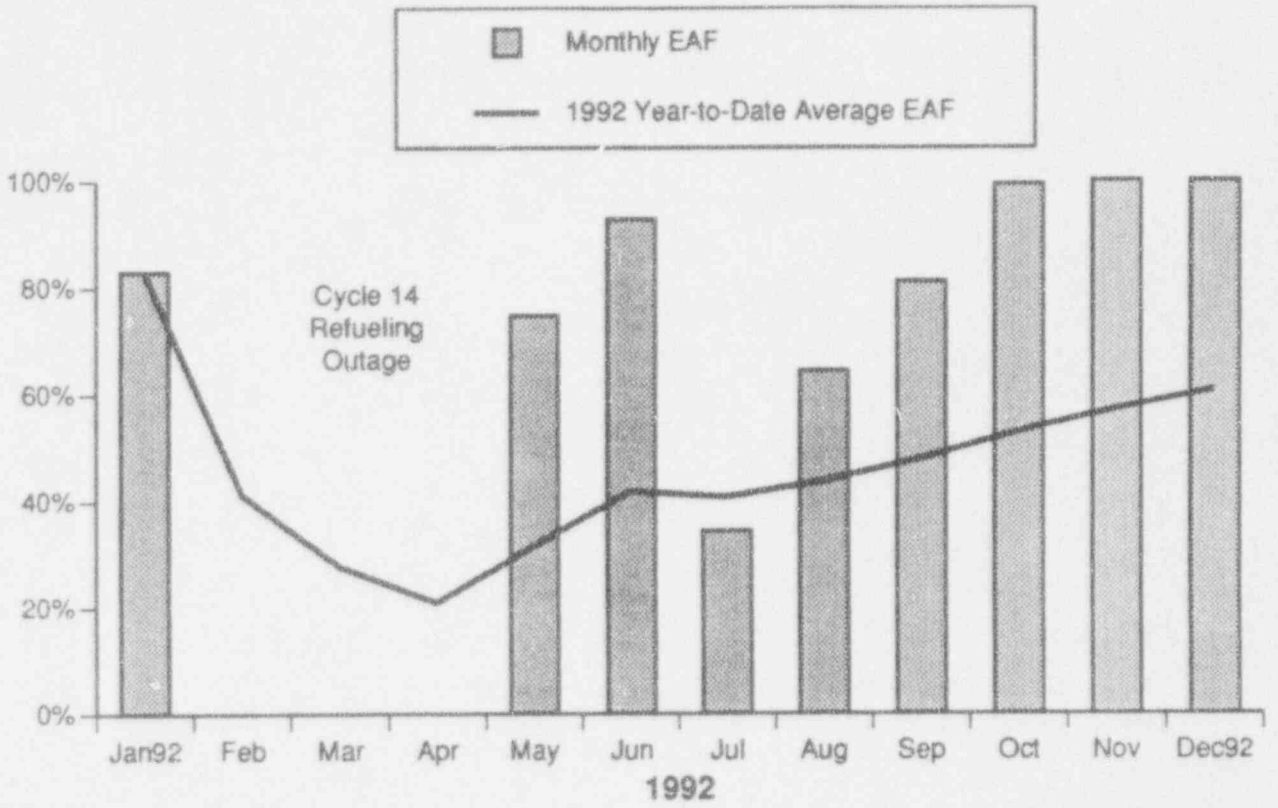
There was one forced outage during the month of June 1993. This outage, which occurred when the inadvertent jarring of a 345 KV fault relay in the switchyard caused a turbine and reactor trip, lasted 70.6 hours.

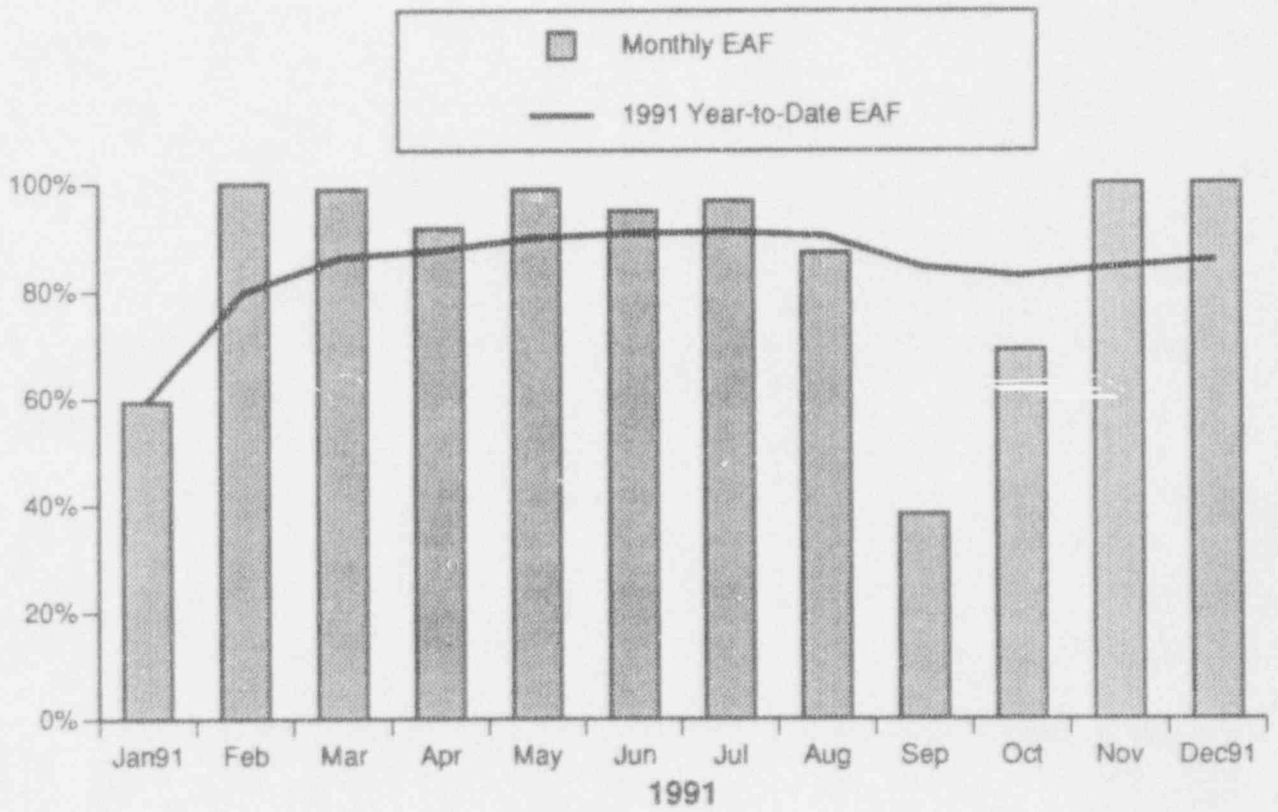
The 1993 Fort Calhoun goal for the Forced Outage Rate was a maximum of 2.4%.

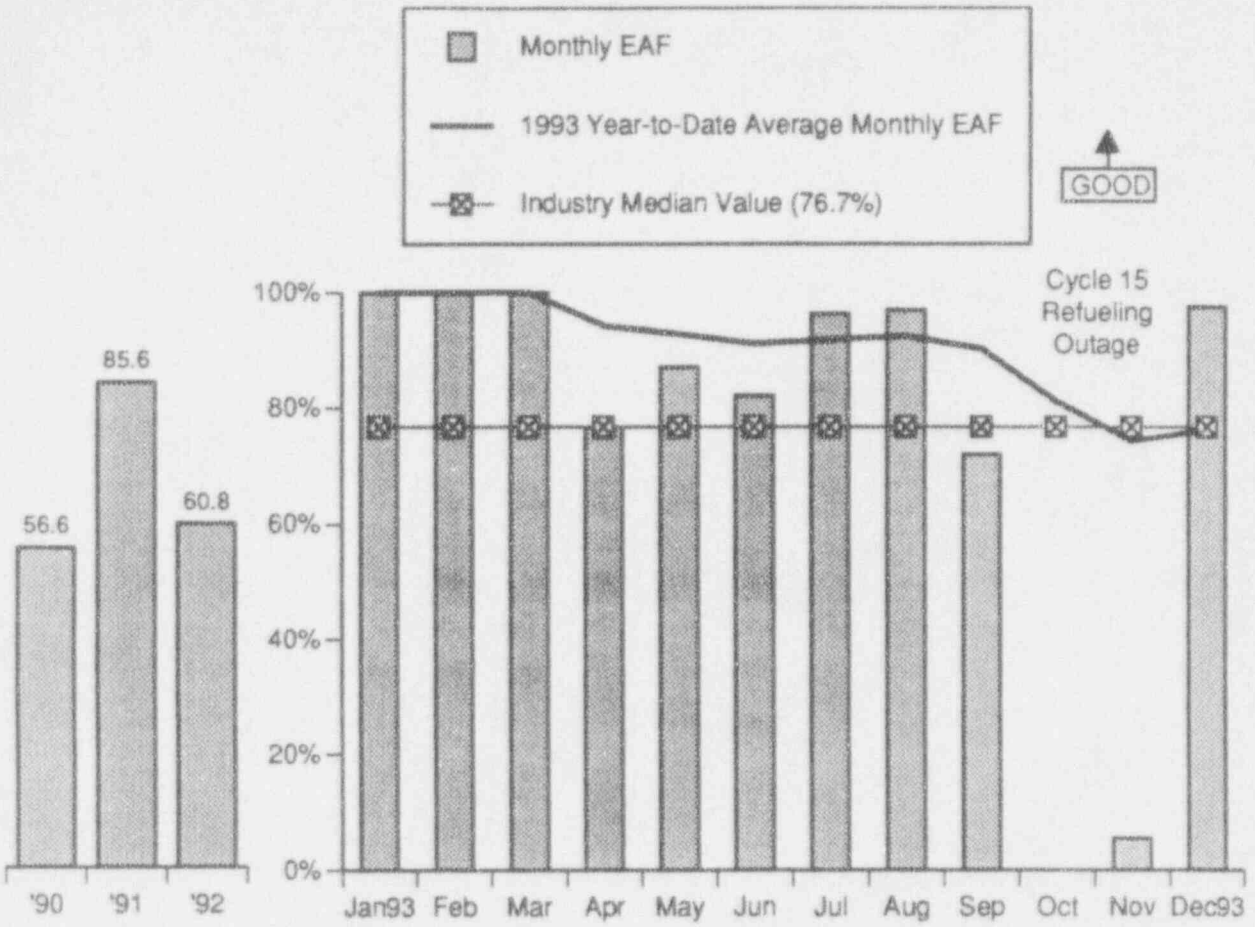
Data Source: Monthly Operations Report & NERC GAD Forms

Accountability: Chase

Positive Trend


Monthly EAF
1992 Year-to-Date Average EAF
100%
80%
60%
40%
20%
0%
Cycle 14
Refueling
Outage
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Monthly EAF
1991 Year-to-Date EAF
100%
80%
60%
40%
20%
0%
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



EQUIVALENT AVAILABILITY FACTOR

This indicator shows the plant monthly Equivalent Availability Factor (EAF), the year-to-date average monthly EAF for 1993, and the EAF for the previous 3 years.

The EAF for December 1993 was reported as 95.7%. Energy losses for the month were due to rampup from the Cycle 15 Refueling Outage and a reactor trip that occurred on December 6 during weekly testing of the EHC system. The year-to-date average monthly EAF was reported as 76.2% at the end of December.

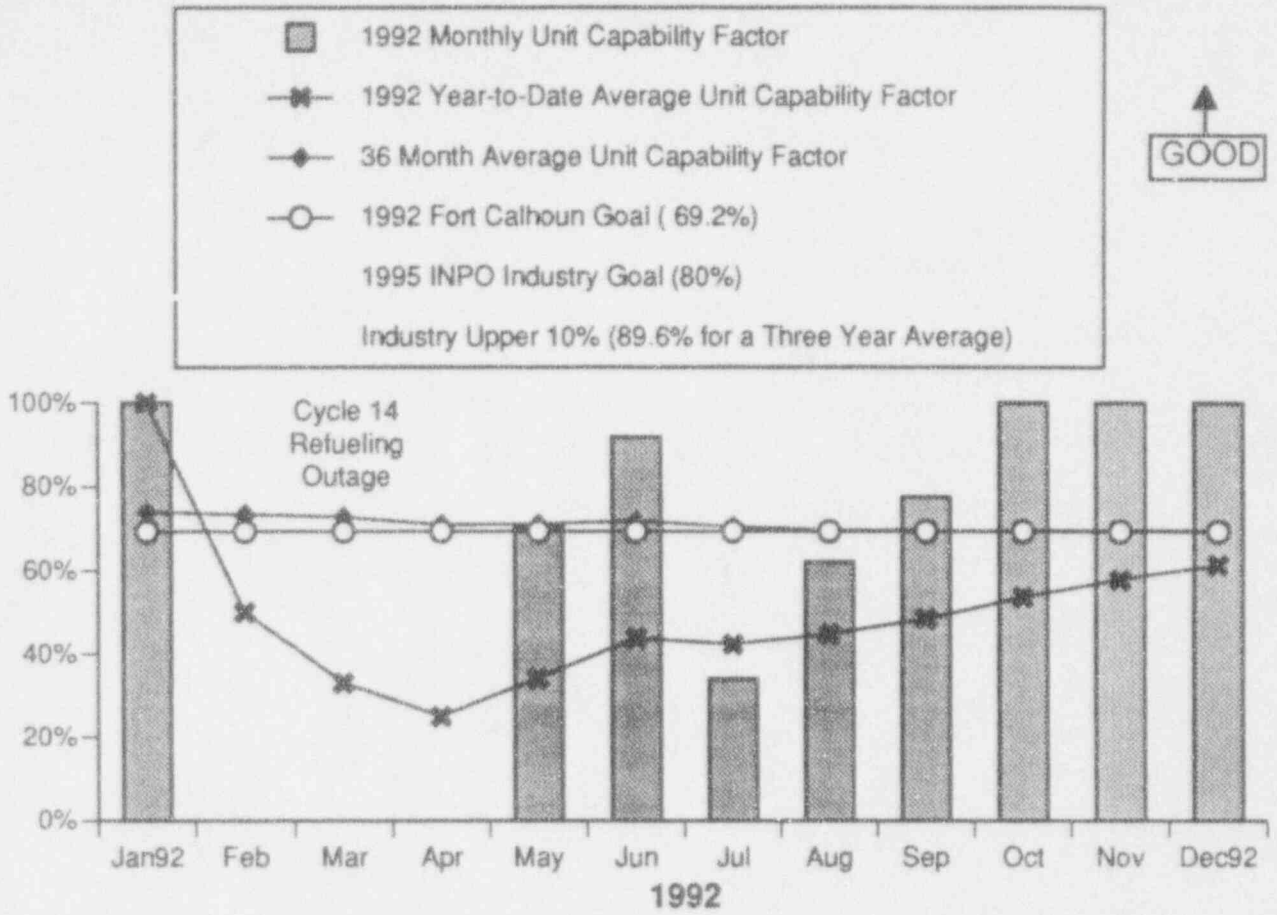
The April, May and June 1993 EAF values are the result of a maintenance outage and a forced outage that occurred when the inadvertent jarring of a 345 KV fault relay in the switchyard caused a turbine and reactor trip.

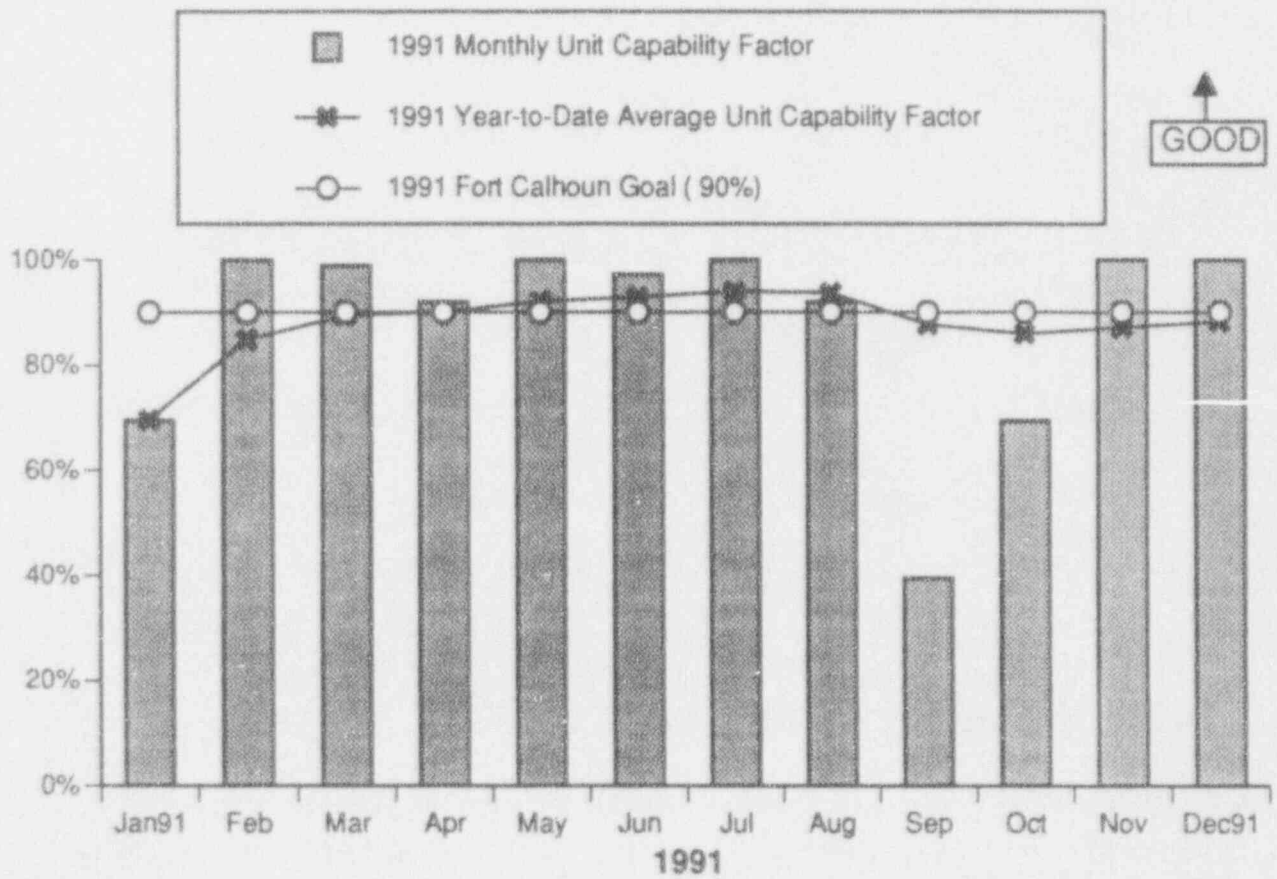
The industry median EAF value for the three year period from 7/90 through 6/93 was 76.7%.

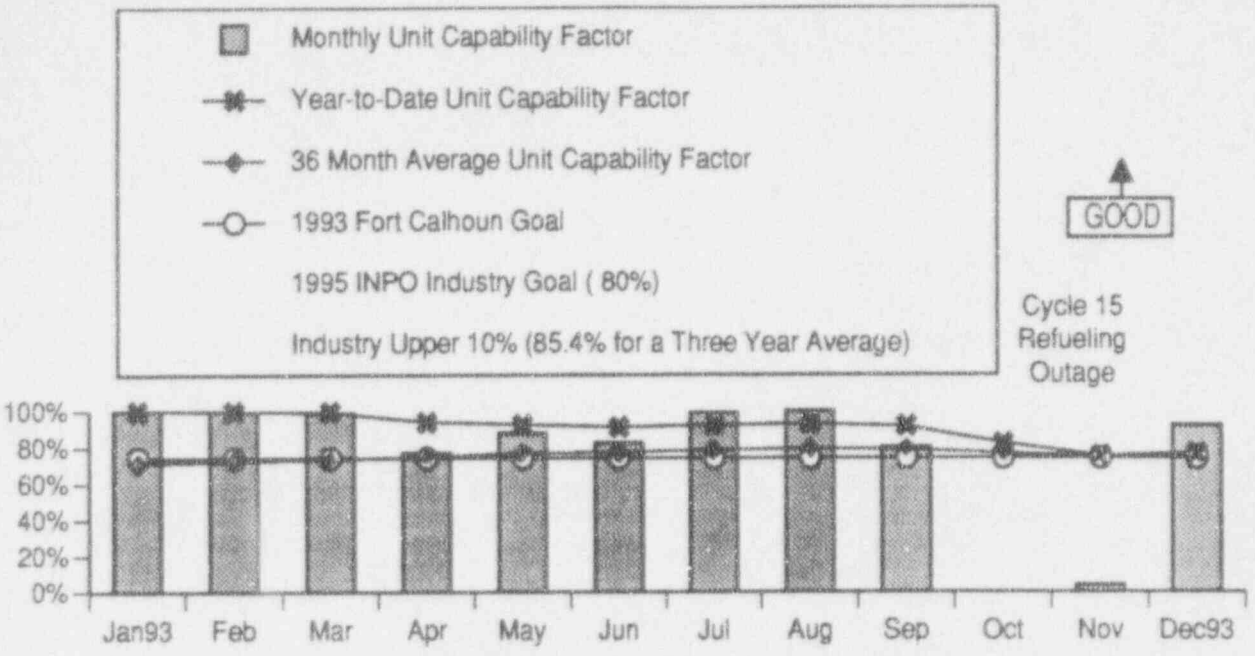
Data Source: Dietz/Parra (Manager/Source)

Accountability: Chase

Adverse Trend: None


1992 Monthly Unit Capability Factor
1992 Year-to-Date Average Unit Capability Factor
36 Month Average Unit Capability Factor
1992 Fort Calhoun Goal (69.2%)
1995 INPO Industry Goal (80%)
Industry Upper 10% (89.6% for a Three Year Average)
GOOD
100%
80%
60%
40%
20%
0%
Cycle 14
Refueling
Outage
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


1991 Monthly Unit Capability Factor
1991 Year-to-Date Average Unit Capability Factor
1991 Fort Calhoun Goal (90%)
GOOD
100%
80%
60%
40%
20%
0%
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



UNIT CAPABILITY FACTOR

This indicator shows the plant monthly Unit Capability Factor (UCF) value, the 1993 and 1992 year-to-date UCFs, the goals, the 36 month average UCFs, the 1995 INPO industry goal and the approximate industry upper ten percentile value. UCF is defined as the ratio of the available energy generation over a given period of time to the reference energy generation (the energy that could be produced if the unit were operated continuously at full power under reference ambient conditions) over the same time period, expressed as a percentage.

The UCF for December 1993 was reported as 92.4%. Energy losses for the month were due to rampup from the Cycle 15 Refueling Outage and a plant trip that occurred on December 6 during testing of the EHC system. The 1993 UCF was reported as 76.8%. The 36 month average UCF was reported as 75.4% at the end of December.

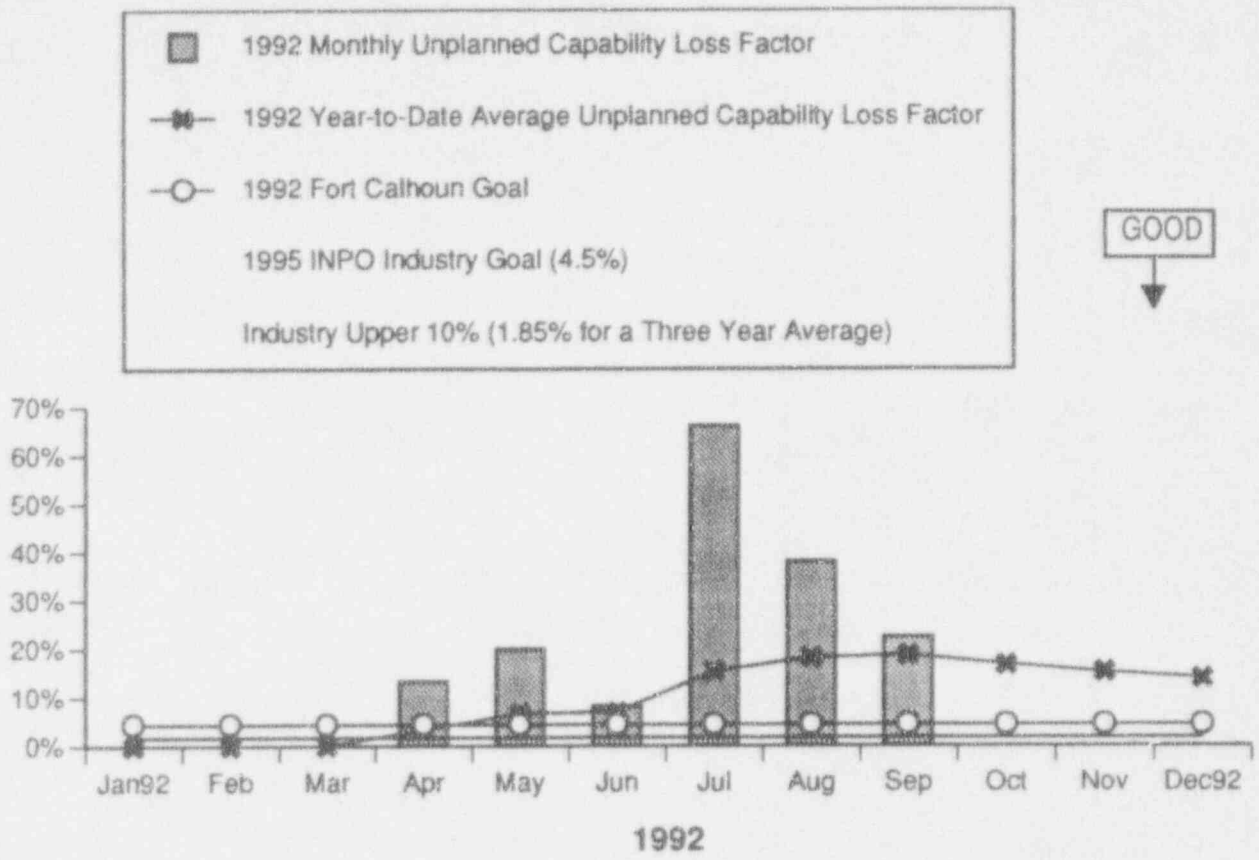
The UCF for June 1993 was reported as 82.6%. Energy losses for the month were due to Moderator Coefficient Testing and a forced outage from June 24 through June 27.

The UCF for May 1993 was reported as 88%. Energy losses for the month were due to the maintenance outage that began on April 24 and continued through May 1 and the subsequent rampup. The UCF was reported as 77.1% for the month of April 1993. Planned energy losses for April were the result of the maintenance outage from April 24 through 30.

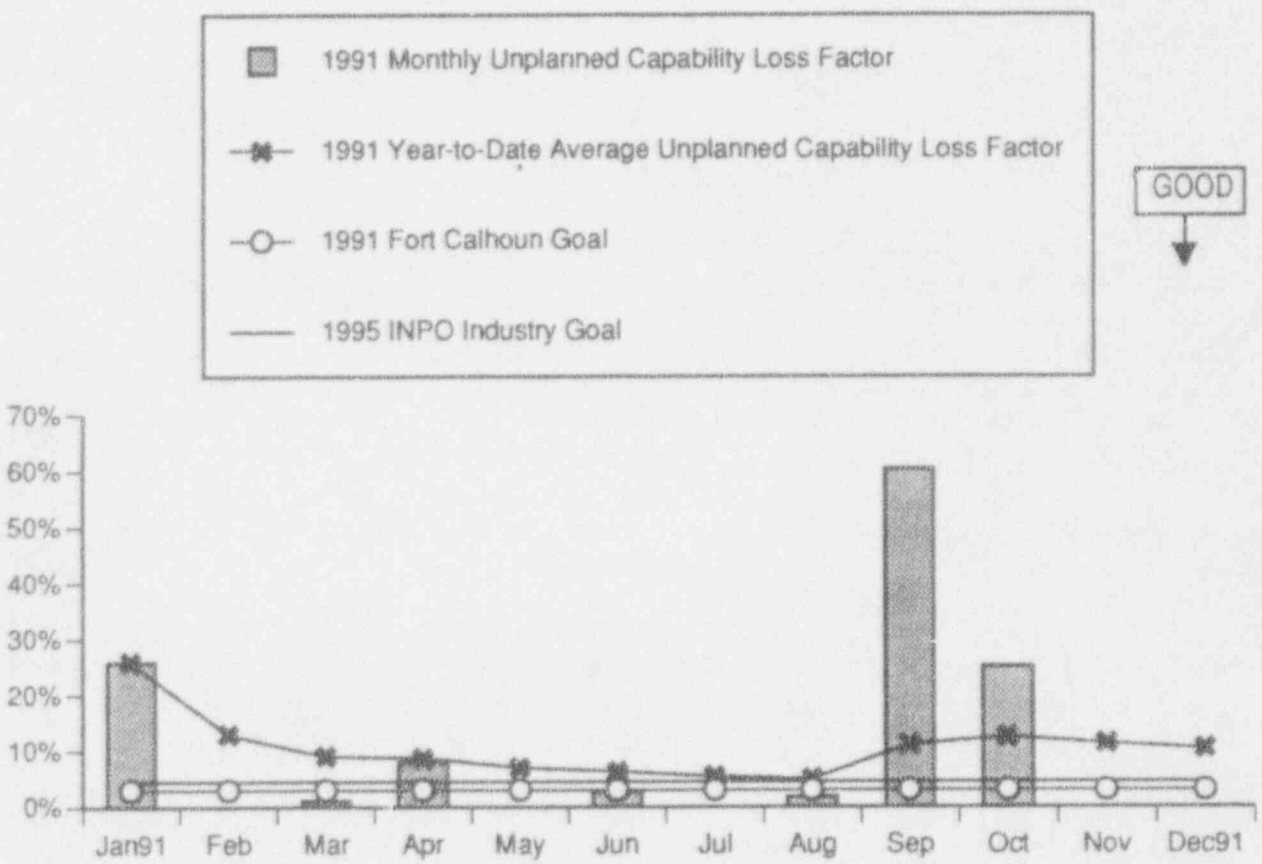
The 1995 INPO industry goal is 80% and the industry upper ten percentile value (for the three year period from 7/90 through 6/93) is approximately 85.4%.

The 1993 Fort Calhoun goal for Unit Capability Factor was 74.1%. The basis for this goal was 56 days for the Cycle 15 Refueling Outage, 20 days rampup (10 full power equivalent days), unplanned loss of 11.5 full power equivalent days, and 10 day ramp up (5 full power equivalent days), mini outage of 7 full power equivalent days, and 10 day ramp up (5 full power equivalent days).

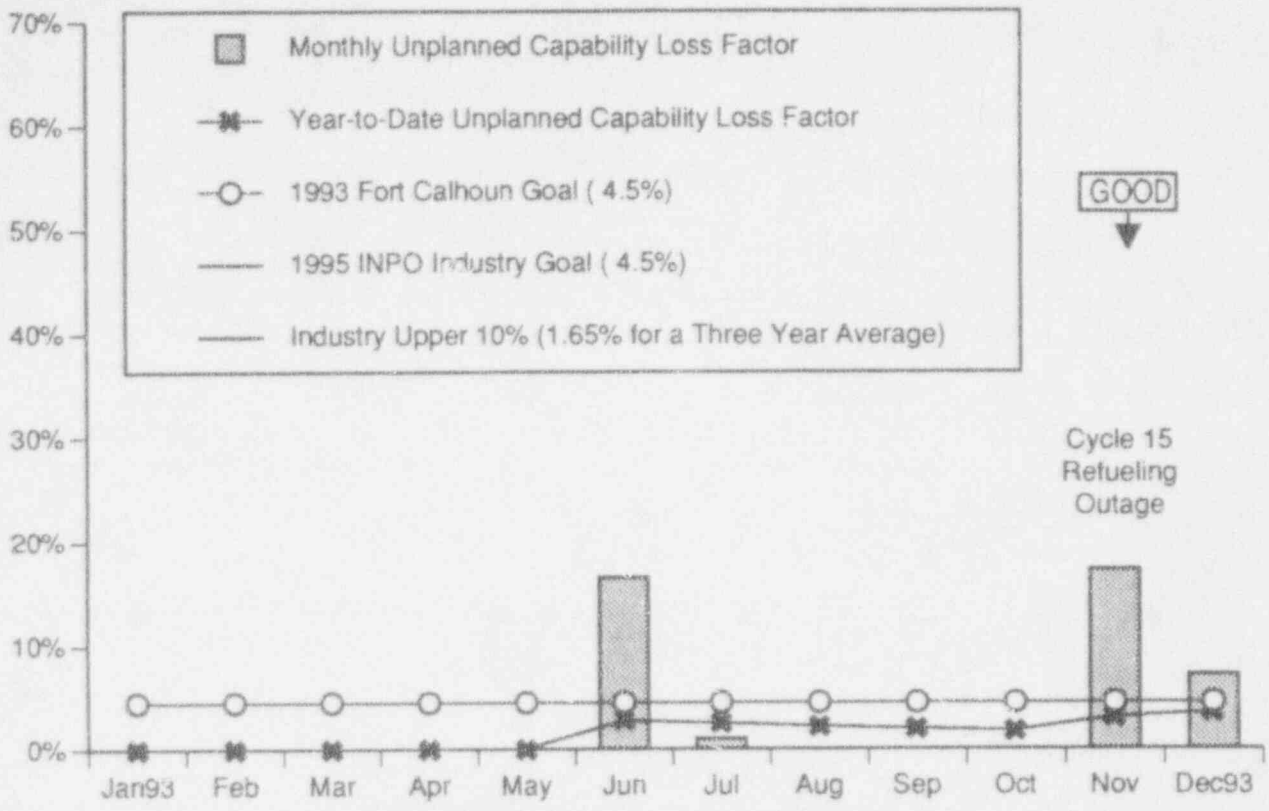
Data Source: Generation Totals Report & Monthly Operating Report
Accountability: Chase
Positive Trend


1992 Monthly Unplanned Capability Loss Factor
1992 Year-to-Date Average Unplanned Capability Loss Factor
1992 Fort Calhoun Goal
1995 INPO Industry Goal (4.5%)
Industry Upper 10% (1.85% for a Three Year Average)
GOOD
70%
60%
50%
40%
30%
20%
10%
0%
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92

1992


1991 Monthly Unplanned Capability Loss Factor
1991 Year-to-Date Average Unplanned Capability Loss Factor
1991 Fort Calhoun Goal
1995 INPO Industry Goal
GOOD
70%
60%
50%
40%
30%
20%
10%
0%
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91

1991



UNPLANNED CAPABILITY LOSS FACTOR

This indicator shows the plant monthly Unplanned Capability Loss Factor (UCLF), the 1993 year-to-date UCLF, the goal, the 1995 INPO industry goal and the approximate industry upper ten percentile value. UCLF is defined as the ratio of the unplanned energy losses during a given period of time, to the reference energy generation (the energy that could be produced if the unit were operated continuously at full power under reference ambient conditions), expressed as a percentage.

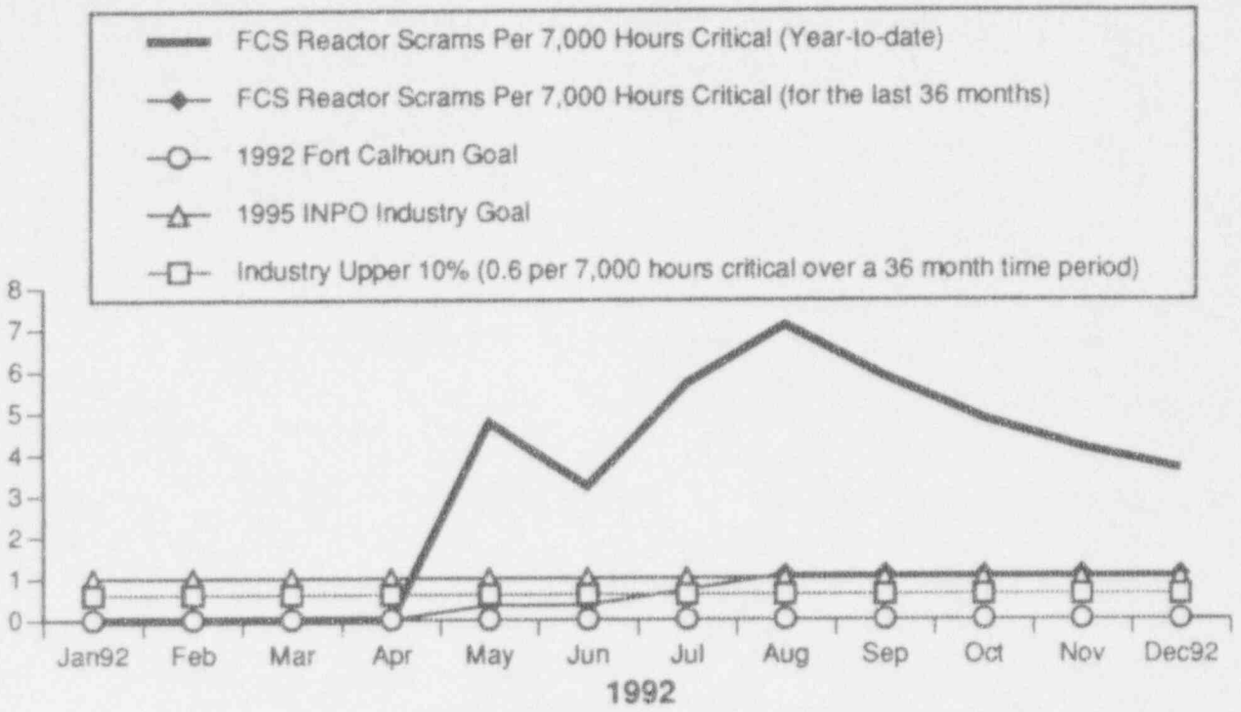
The UCLF for the month of December 1993 was reported as 7.2%. Unplanned energy losses for the month were the result of a plant trip that occurred on December 6 during EHC testing. The 1993 UCLF was 3.5%. The 36 month average UCLF was reported as 9.3% at the end of November.

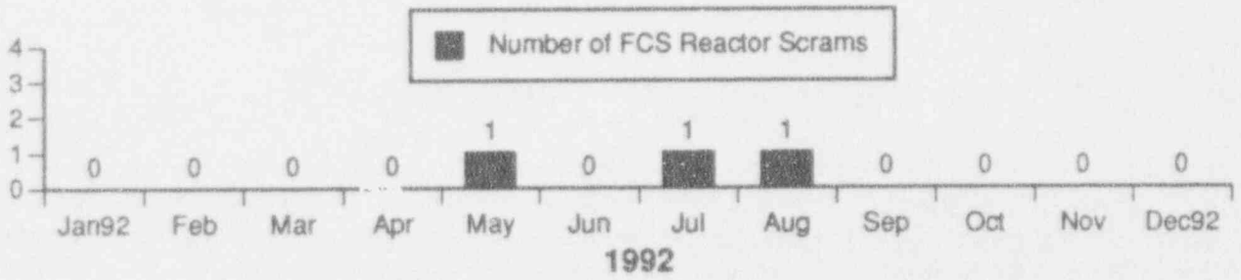
The UCLF was reported as 16.6% for the month of June 1993. Unplanned energy losses for the month were the result of a forced outage that occurred as a result of the inadvertent jarring of a 345 KV fault relay in the switchyard.

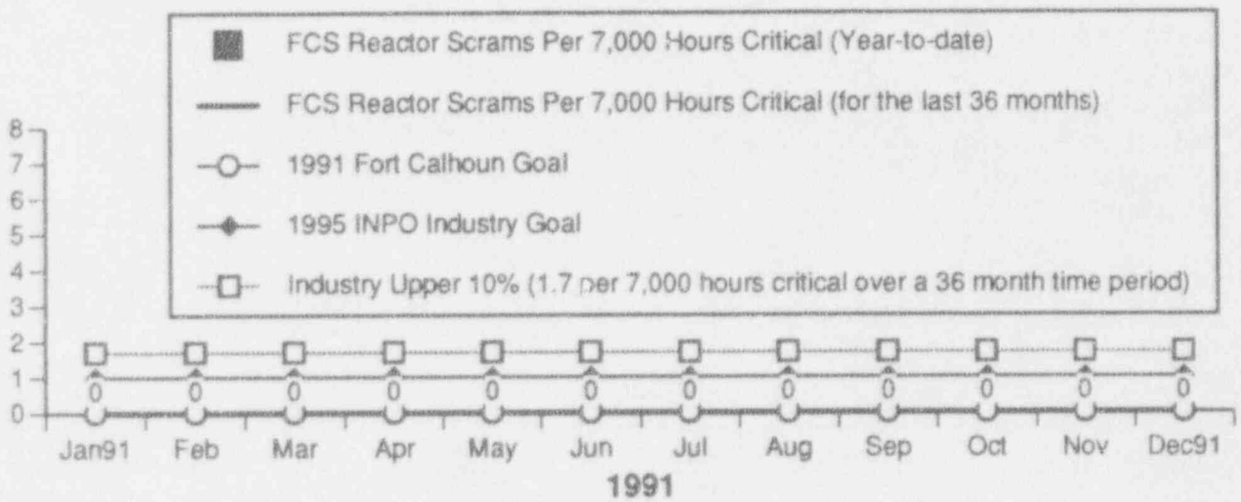
The 1995 INPO industry goal is 4.5% and the industry upper ten percentile value (for the three year period from 7/90 through 6/93) is approximately 1.65%.

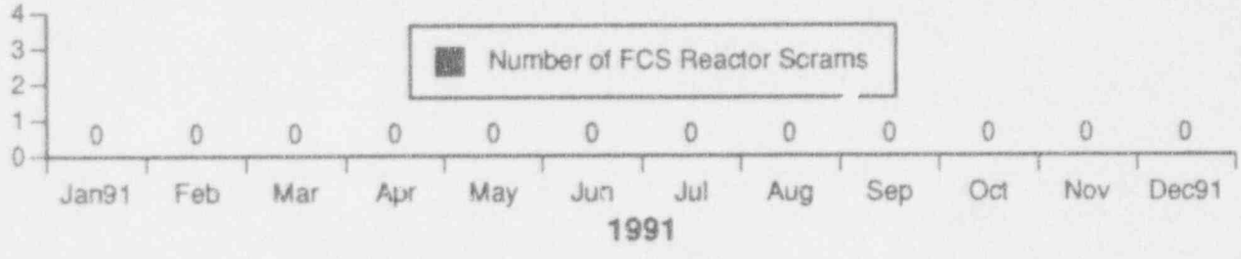
The 1993 Fort Calhoun goal for Unplanned Capability Loss Factor was 4.5%. The basis for this goal was an unplanned loss of 11.5 full power equivalent days and 10 day rampup (5 full power equivalent days).

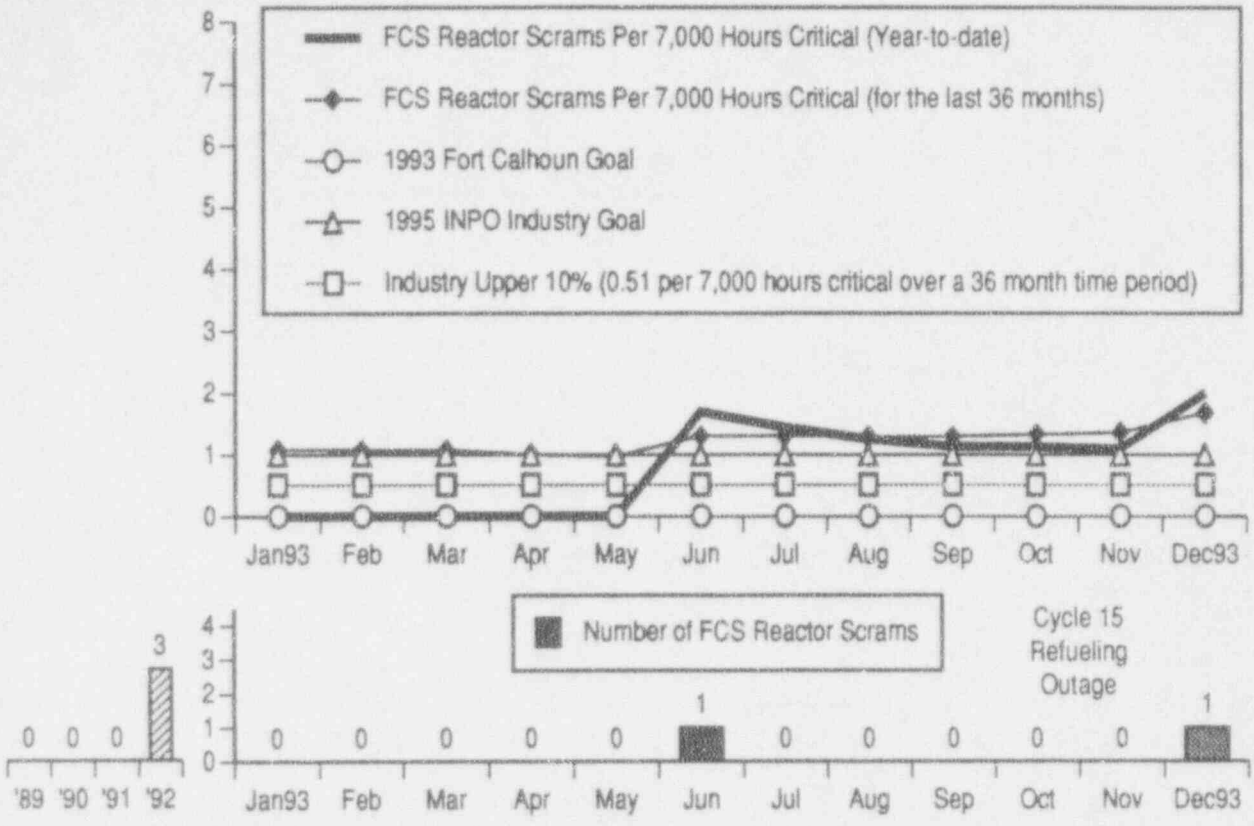
Data Source: Generation Totals Report & Monthly Operating Report
Accountability: Chase
Positive Trend


FCS Reactor Scrams Per 7,000 Hours Critical (Year-to-date)
FCS Reactor Scrams Per 7,000 Hours Critical (for the last 36 months)
1992 Fort Calhoun Goal
1995 INPO Industry Goal
Industry Upper 10% (0.6 per 7,000 hours critical over a 36 month time period)
0 1 2 3 4 5 6 7 8
Jan92 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec92
1992


Number of FCS Reactor Scrams
0 1 2 3 4
0 0 0 0 1 0 1 1 0 0 0 0
Jan92 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec92
1992


FCS Reactor Scrams Per 7,000 Hours Critical (Year-to-date)
FCS Reactor Scrams Per 7,000 Hours Critical (for the last 36 months)
1991 Fort Calhoun Goal
1995 INPO Industry Goal
Industry Upper 10% (1.7 per 7,000 hours critical over a 36 month time period)
0 1 2 3 4 5 6 7 8
Jan91 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec91
1991


Number of FCS Reactor Scrams
0 1 2 3 4
0 0 0 0 0 0 0 0 0 0 0 0
Jan91 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec91
1991



UNPLANNED AUTOMATIC REACTOR SCRAMS PER 7,000 HOURS CRITICAL

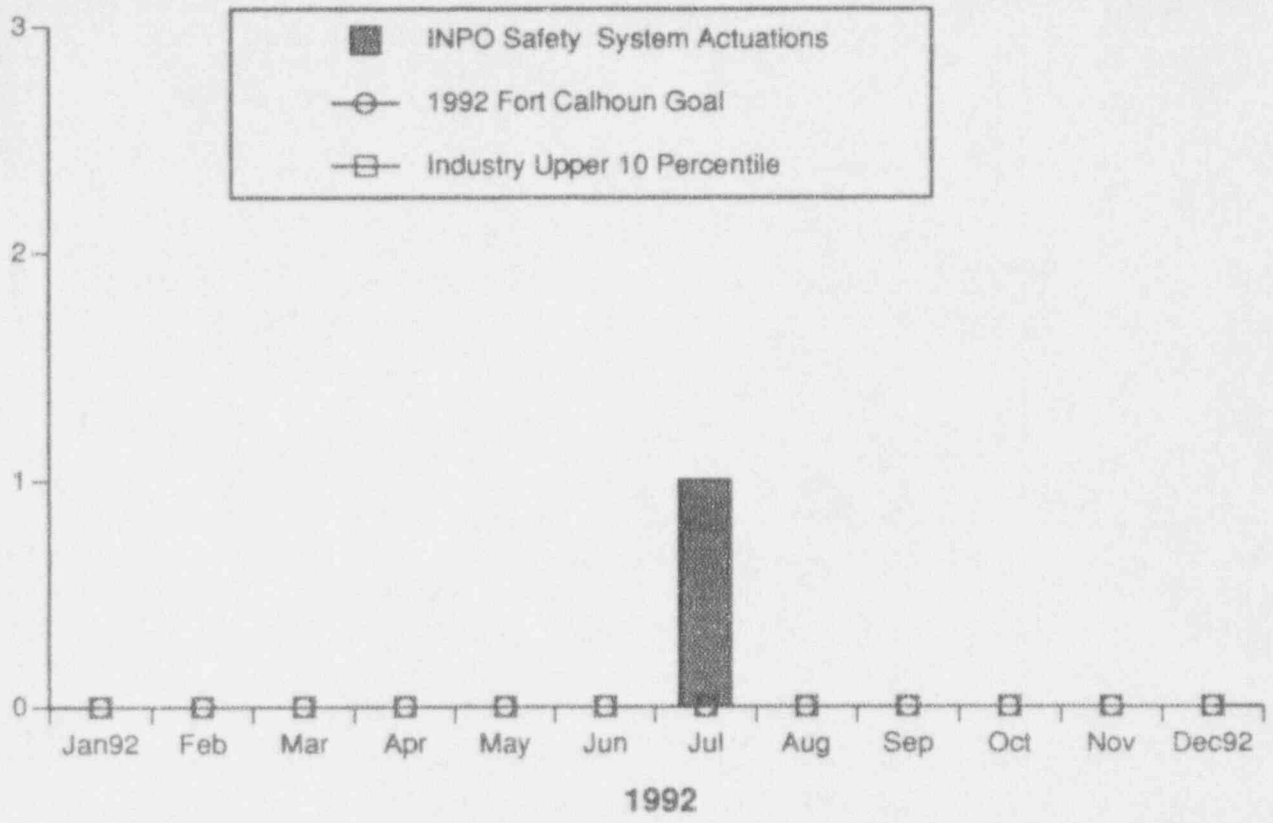
The upper graph shows the number of unplanned automatic reactor scrams per 7,000 hours critical (as defined in INPO's 12/92 publication "Detailed Descriptions of International Nuclear Power Plant Performance Indicators and Other Indicators") for Fort Calhoun Station. This value is calculated by multiplying the total number of scrams in a specified time period by 7,000 hours, then dividing that number by the total number of critical hours in the same time period. The lower graph shows the number of unplanned automatic reactor scrams that occurred during each month for the last twelve months.

The 1993 station value is 1.98 at the end of December. An unplanned automatic reactor scram occurred on December 6 during EHC testing. The value for the last 36 months is 1.67.

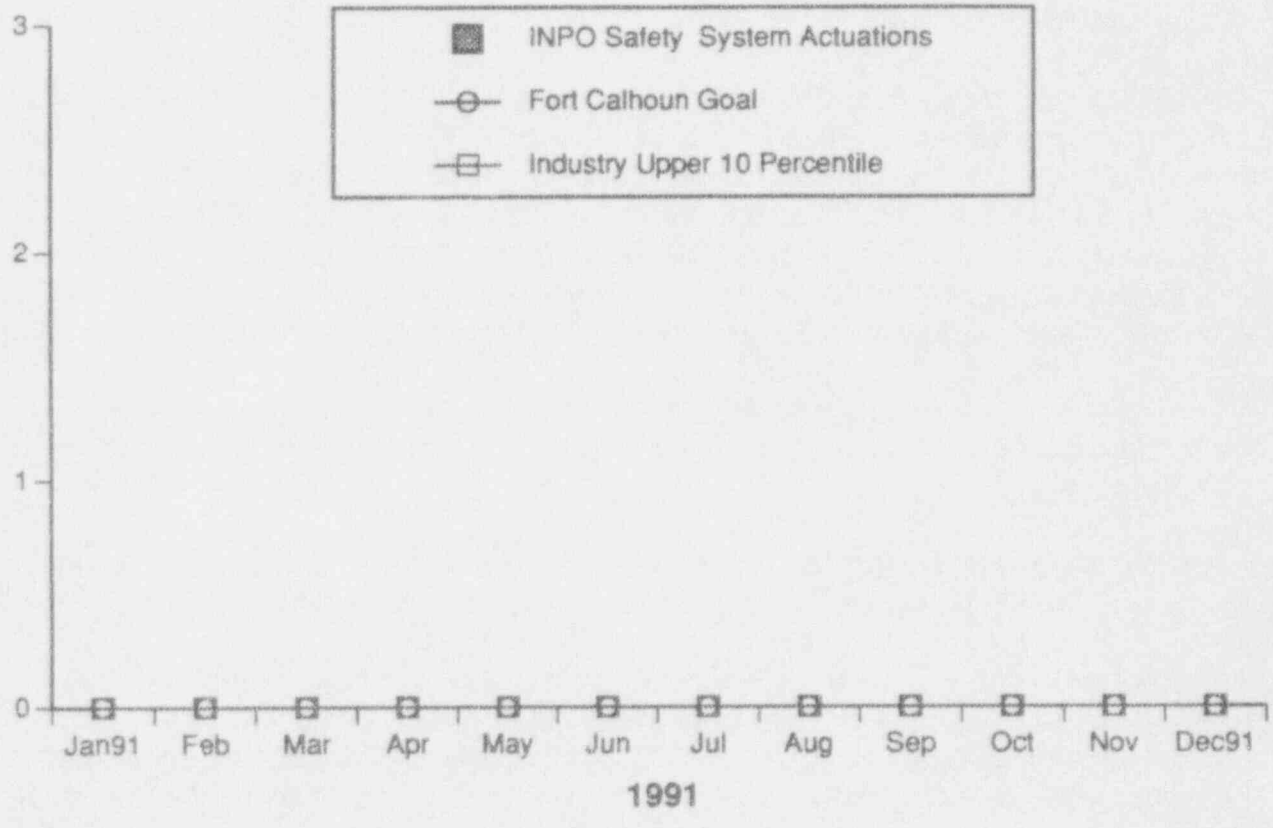
An unplanned automatic reactor scram occurred on June 24, 1993 when the inadvertent jarring of a 345 KV fault relay in the switchyard caused a turbine and reactor trip.

The 1993 and 1992 goals for unplanned automatic reactor scrams per 7,000 hours critical have been set at zero. The 1995 INPO industry goal is a maximum of one unplanned automatic reactor scram per 7,000 hours critical. The industry upper ten percentile value is approximately 0.51 scrams per 7,000 hours critical for the 36 month time period from 7/90 through 6/93.

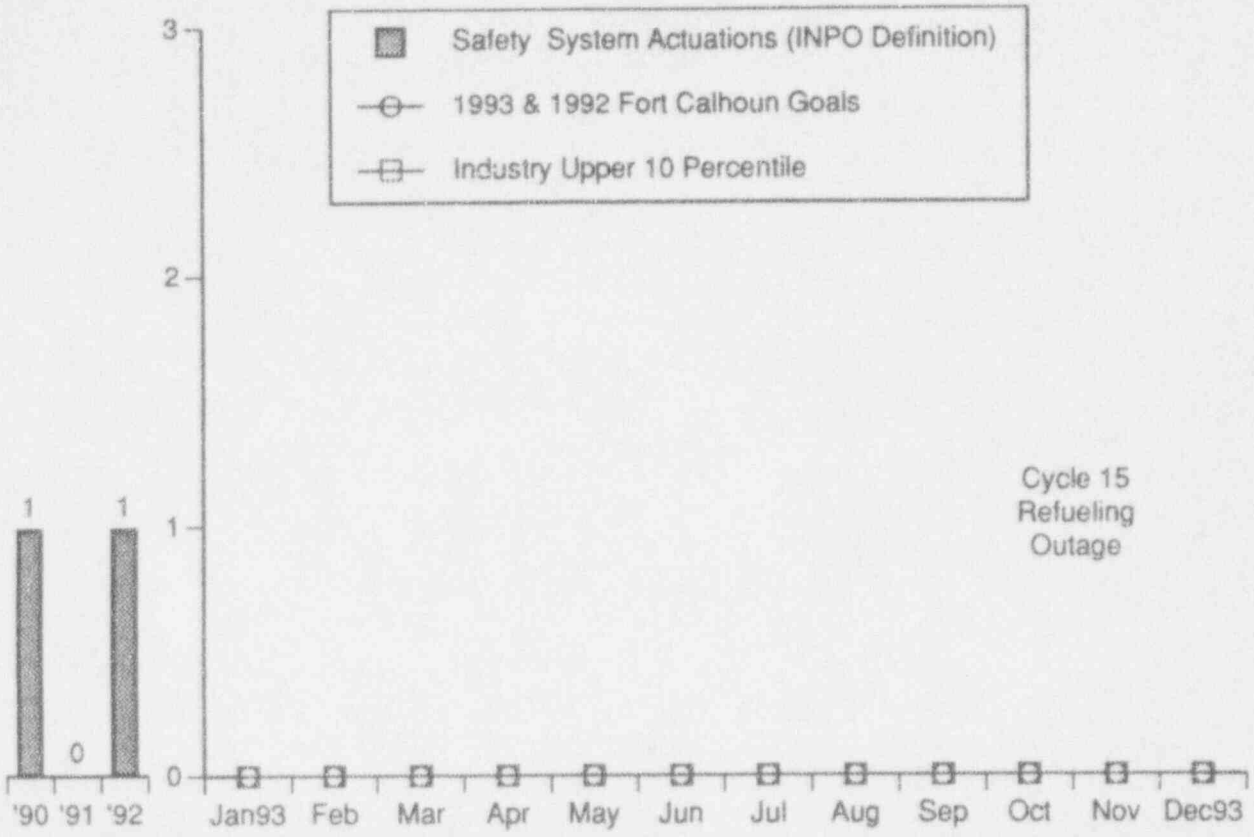
Data Source: Monthly Operations Report & Plant Licensee Event Reports (LERs)
Accountability: Chase
Adverse Trend: None


INPO Safety System Actuations
1992 Fort Calhoun Goal
Industry Upper 10 Percentile
3
2
1
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92

1992


INPO Safety System Actuations
Fort Calhoun Goal
Industry Upper 10 Percentile
3
2
1
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91

1991



UNPLANNED SAFETY SYSTEM ACTUATIONS - (INPO DEFINITION)

There were no INPO unplanned safety system actuations during the month of December 1993. The Cycle 15 Refueling Outage, which began on September 25, ended on November 26.

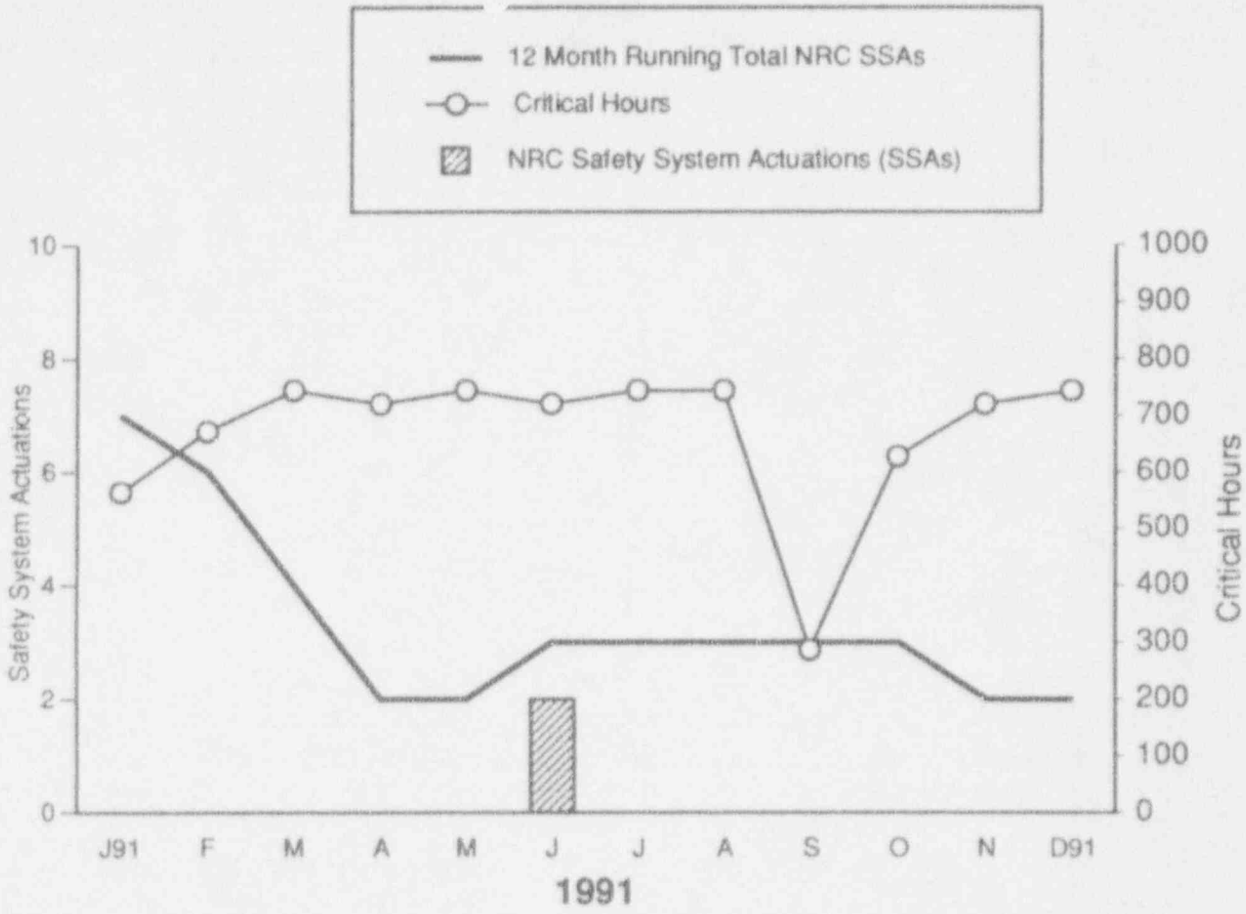
The last INPO unplanned safety system actuation occurred during the month of July 1992 and was due to the loss of an inverter and the subsequent reactor trip on 7/3/92.

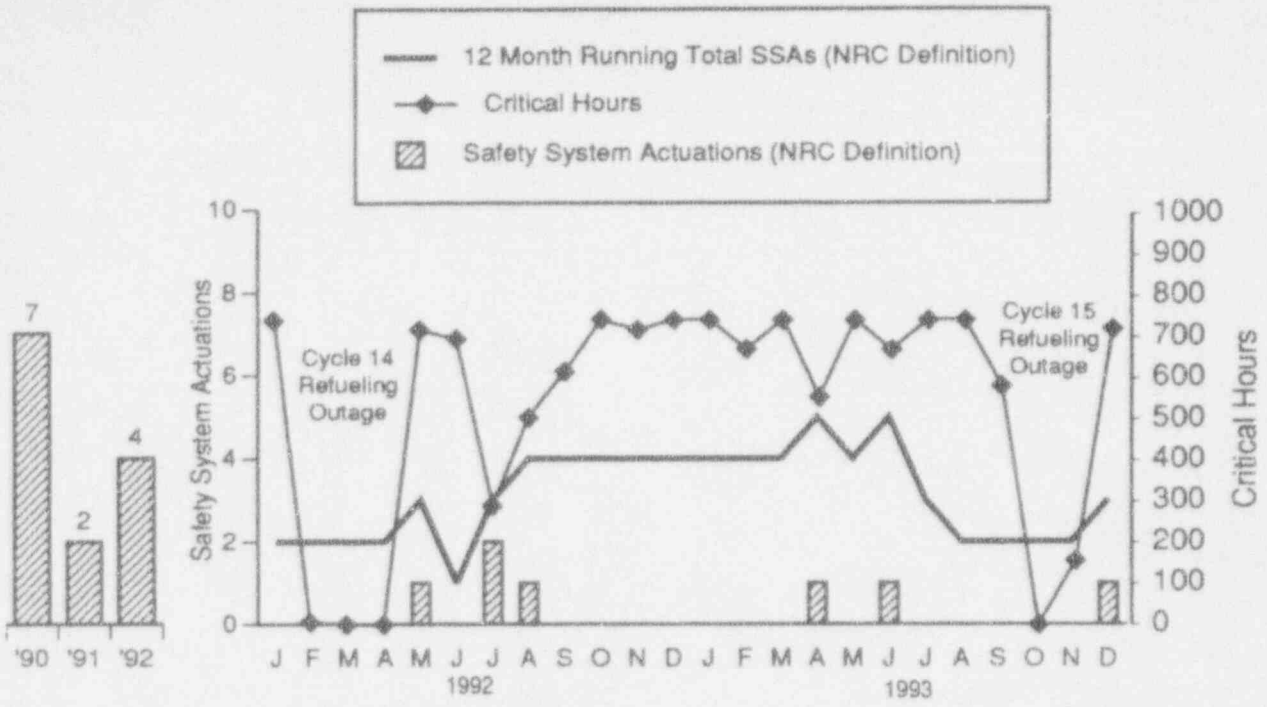
The 1993 goal for the number of INPO unplanned safety system actuations is zero.

Data Source: Monthly Operations Report & Plant Licensee Event Reports (LERs)

Accountability: Jaworski/Foley/Ronning

Positive Trend


12 Month Running Total NRC SSAs
Critical Hours
NRC Safety System Actuations (SSAs)
Safety System Actuations
Critical Hours
10
8
6
4
2
0
1000
900
800
700
600
500
400
300
200
100
0
J91
F
M
A
M
J
J
A
S
O
N
D91
1991



UNPLANNED SAFETY SYSTEM ACTUATIONS - (NRC DEFINITION)

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

An unplanned safety system actuation occurred in December 1993 when the main turbine and reactor tripped during Electro-Hydraulic Control pump start testing.

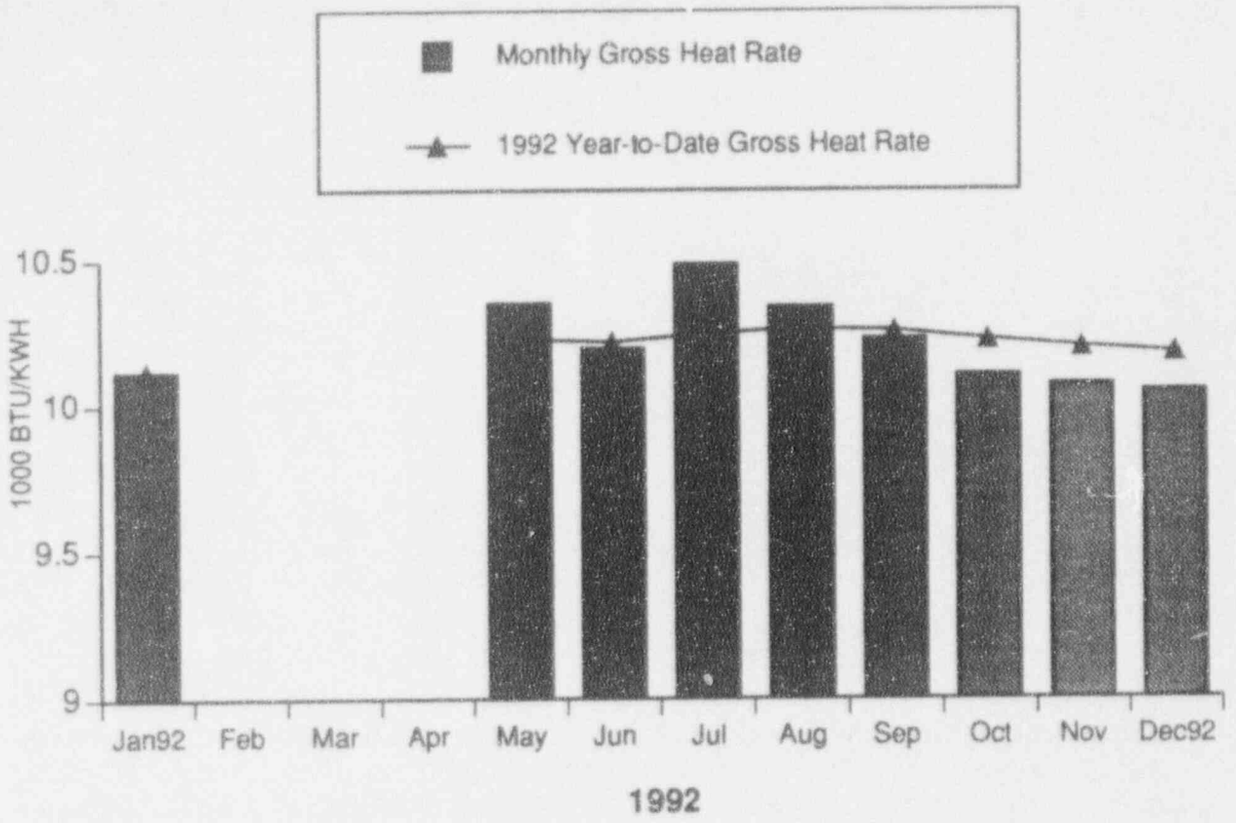
An unplanned safety system actuation occurred in June 1993 when the inadvertent jarring of a 345 KV fault relay in the switchyard caused a turbine and reactor trip.

An unplanned safety system actuation occurred on April 30, 1993 when a non-licensed operator mistakenly opened the wrong potential fuse drawer causing a low voltage alarm on bus 1A1, a loadshed on bus 1A1 and an auto start of an EDG.

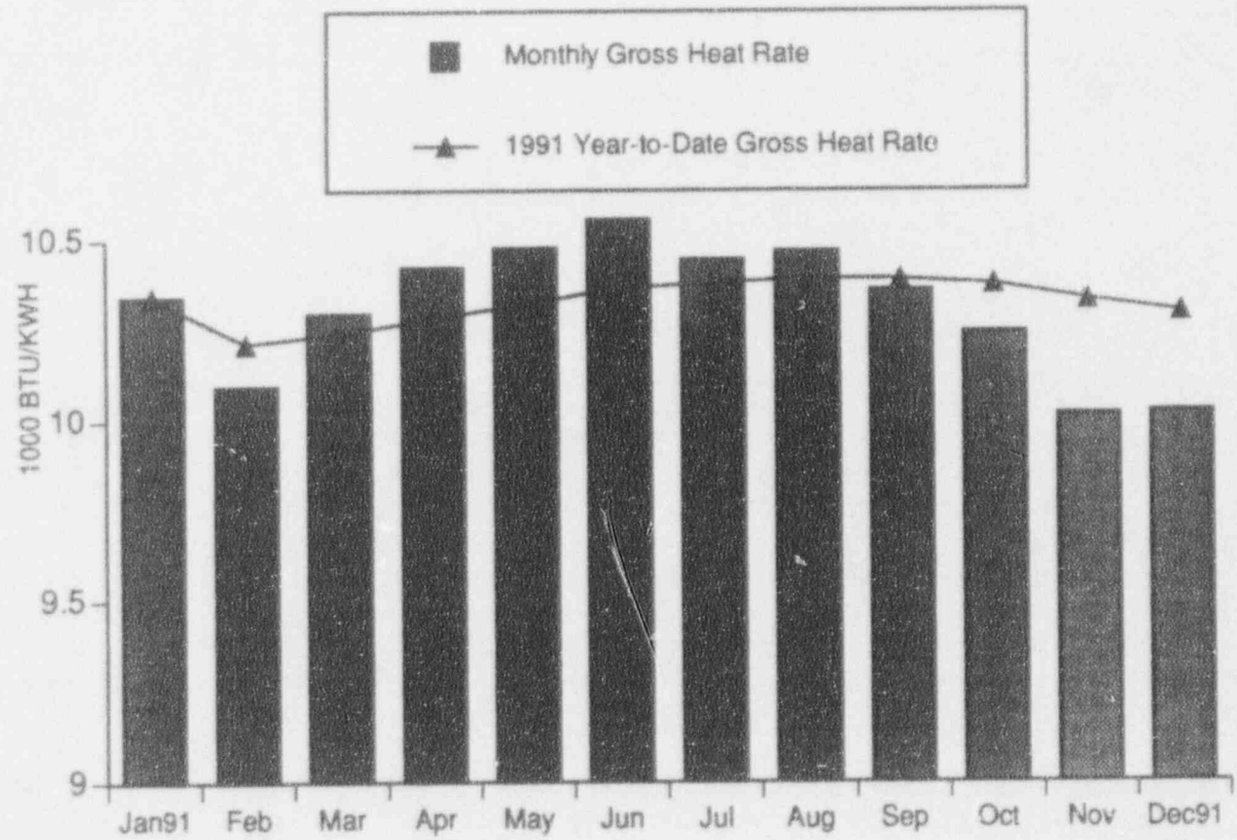
An unplanned safety system actuation occurred on August 22, 1992 due to the failure of an AC/DC converter in the Turbine Electro Hydraulic Control system. Pressurizer safety vaive RC-142 then opened prior to reaching design pressure during a plant transient and trip. Two unplanned safety system actuations occurred in July 1992: 1) On July 3 there was an inverter failure and the subsequent reactor trip; 2) On July 23 there was an unplanned diesel generator start when an operator performing a surveillance test inadvertently pushed the normal start button instead of the alarm acknowledge button. An unplanned safety system actuation occurred on May 14, 1992 when the turbine generator tripped on a false high level moisture separator trip signal which caused a simultaneous reactor trip and subsequent anticipatory start signal to both diesel generators.

There have been 0.75 unplanned safety system actuations/quarter for the last 12 months. The 1993 and 1992 Fort Calhoun goals for this indicator are 0.

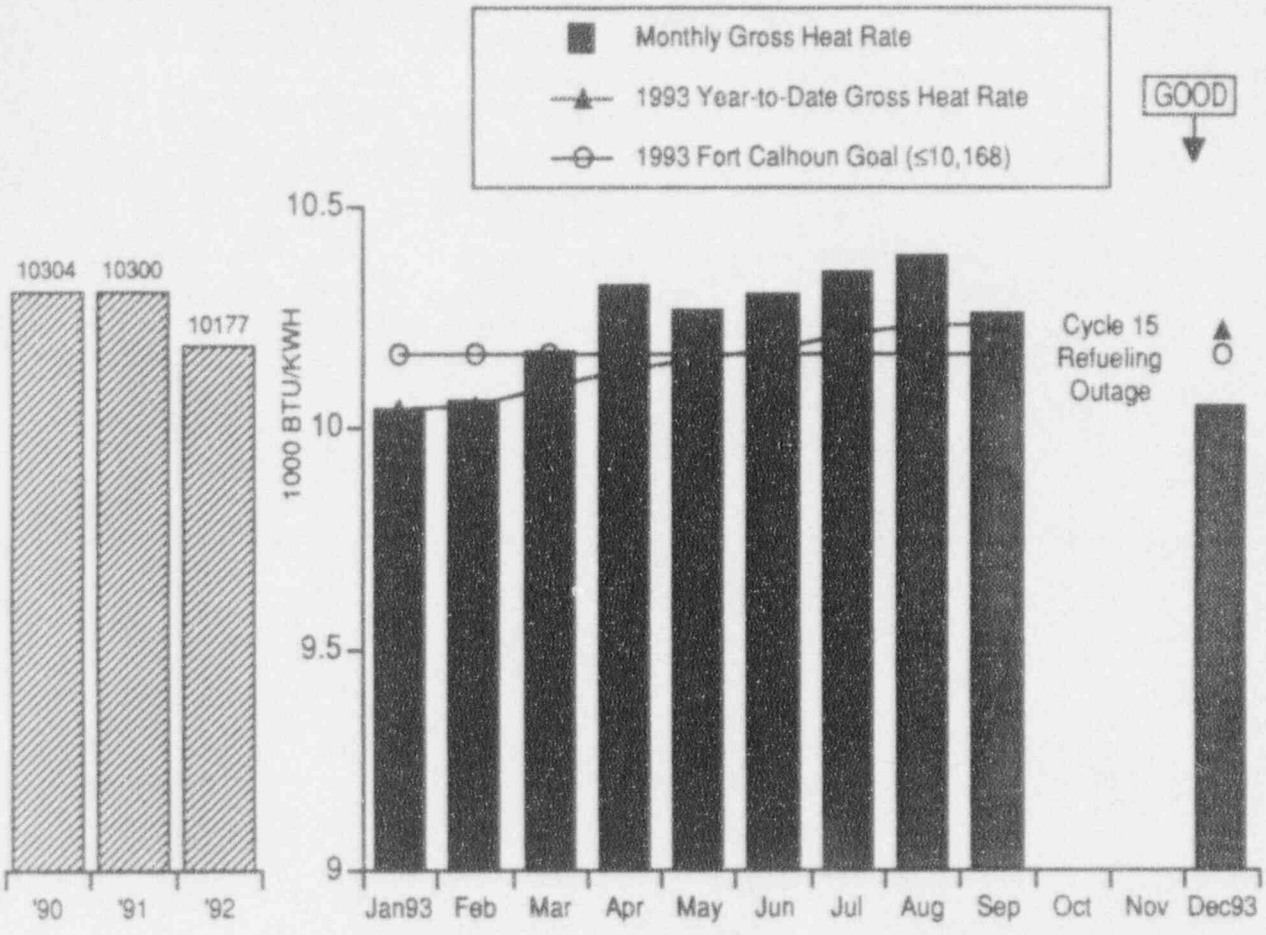
Data Source: Monthly Operations Report & Plant Licensee Event Reports (LERs)
Accountability: Jaworski/Foley/Ronning
Adverse Trend: None


Monthly Gross Heat Rate
1992 Year-to-Date Gross Heat Rate
1000 BTU/KWH
10.5
10
9.5
9
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92

1992


Monthly Gross Heat Rate
1991 Year-to-Date Gross Heat Rate
1000 BTU/KWH
10.5
10
9.5
9
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91

1991



GROSS HEAT RATE

This indicator shows the Gross Heat Rate (GHR) for the reporting month, the year-to-date GHR, the 1993 goal and the year-end GHR for the previous 3 years.

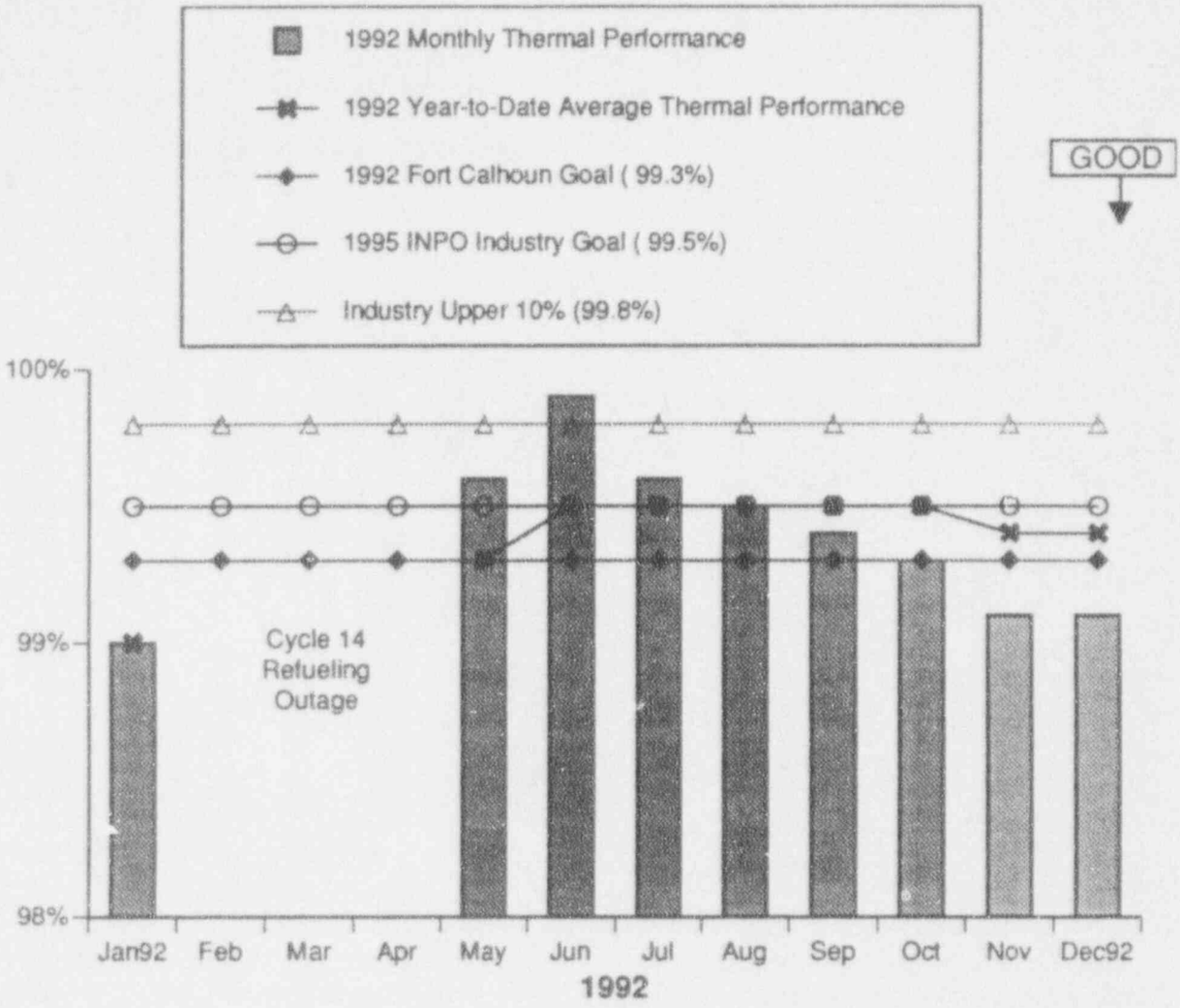
The gross heat rate for Fort Calhoun Station was 10,051 for the month of December 1993. The GHR for the year was 10,223.

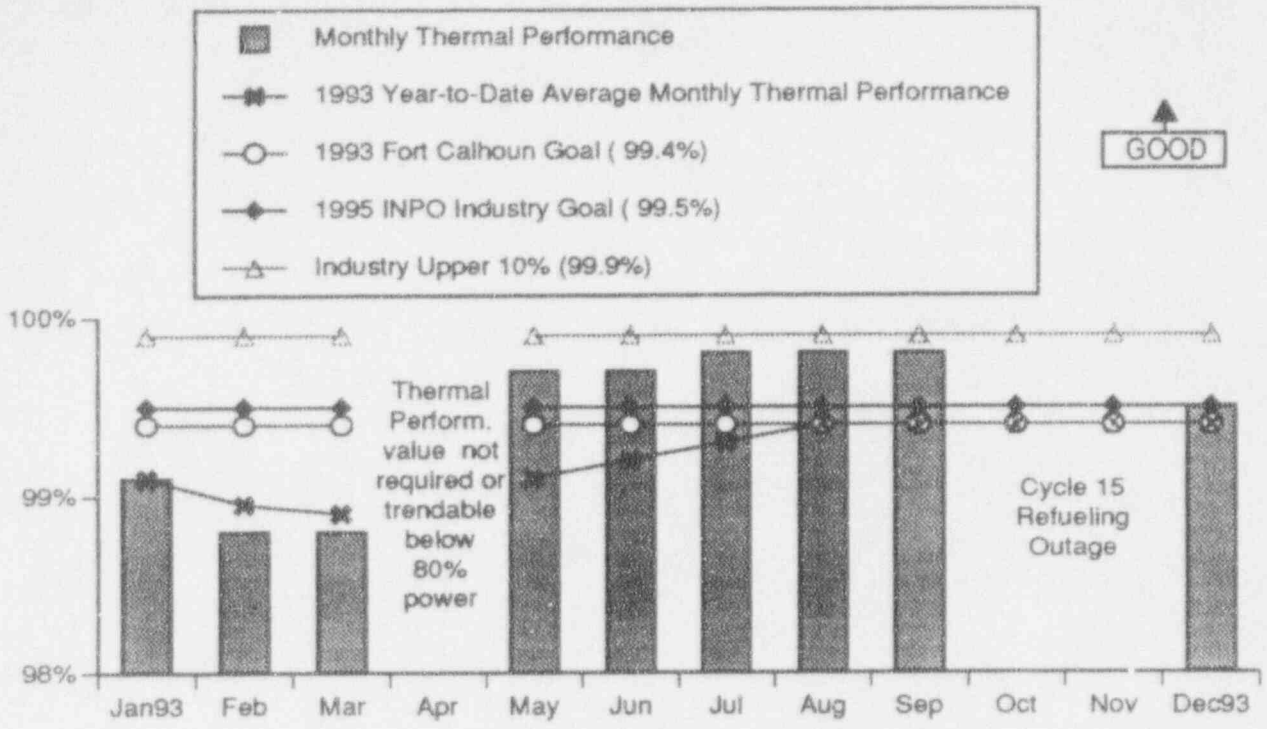
The GHR was not calculated for the months of October and November 1993 because of the Cycle 15 Refueling Outage.

The GHR varies with fluctuations in river water temperature. In general, the GHR improves during the winter months and degrades during the summer. This is because the gross heat rate is not normalized to the design river water temperature of 60 degrees Fahrenheit.

The 1993 year-end gross heat rate goal is a maximum of 10,168 BTU/KWH.

Data Source: Holthaus/Gray (Manager/Source)
Accountability: Chase/Jaworski
Adverse Trend: None


1992 Monthly Thermal Performance
1992 Year-to-Date Average Thermal Performance
1992 Fort Calhoun Goal (99.3%)
1995 INPO Industry Goal (99.5%)
Industry Upper 10% (99.8%)
GOOD
100%
99%
98%
Cycle 14
Refueling
Outage
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992



THERMAL PERFORMANCE

This indicator shows the Thermal Performance value for the reporting month, the year-to-date average thermal performance value, the 1993 and 1992 Fort Calhoun goals, the 1995 INPO industry goal and the approximate industry upper ten percentile value.

The thermal performance value for December 1993 was 99.54%. The average monthly thermal performance value from January through December (excluding April, October and November) was 99.4%.

The thermal performance value for the months of November and October 1993 was not calculated due to the Cycle 15 Refueling Outage. The thermal performance value for April 1993 could not be caiculated (per INPO guidance) because the plant was operated at less than 80% power from April 1 through 23 prior to the maintenance outage.

The decline in thermal performance values through March was attributed to circulating water flow reductions possibly caused by condenser fouling and/or circ. water pump degradation. Inspection of CW-1B during the "B" cell outage on 4/93 showed no abnormal degradation of the pump impeller. Inspections during the April maintenance outage indicated considerable fouling of condenser tubes, a leaking divider plate gasket in FW-4B, and a torn backwash valve seat. The condenser was cleaned and equipment repairs made.

The 1993 Fort Calhoun Goal for this indicator was a minimum of 99.4%. The 1995 INPO industry goal is 99.5% and the industry upper ten percentile value (for the one year period from 7/92 through 6/93) is approximately 99.9%.

Data Source: Jaworski/Popek
Accountability: Jaworski/Popek
Positive Trend

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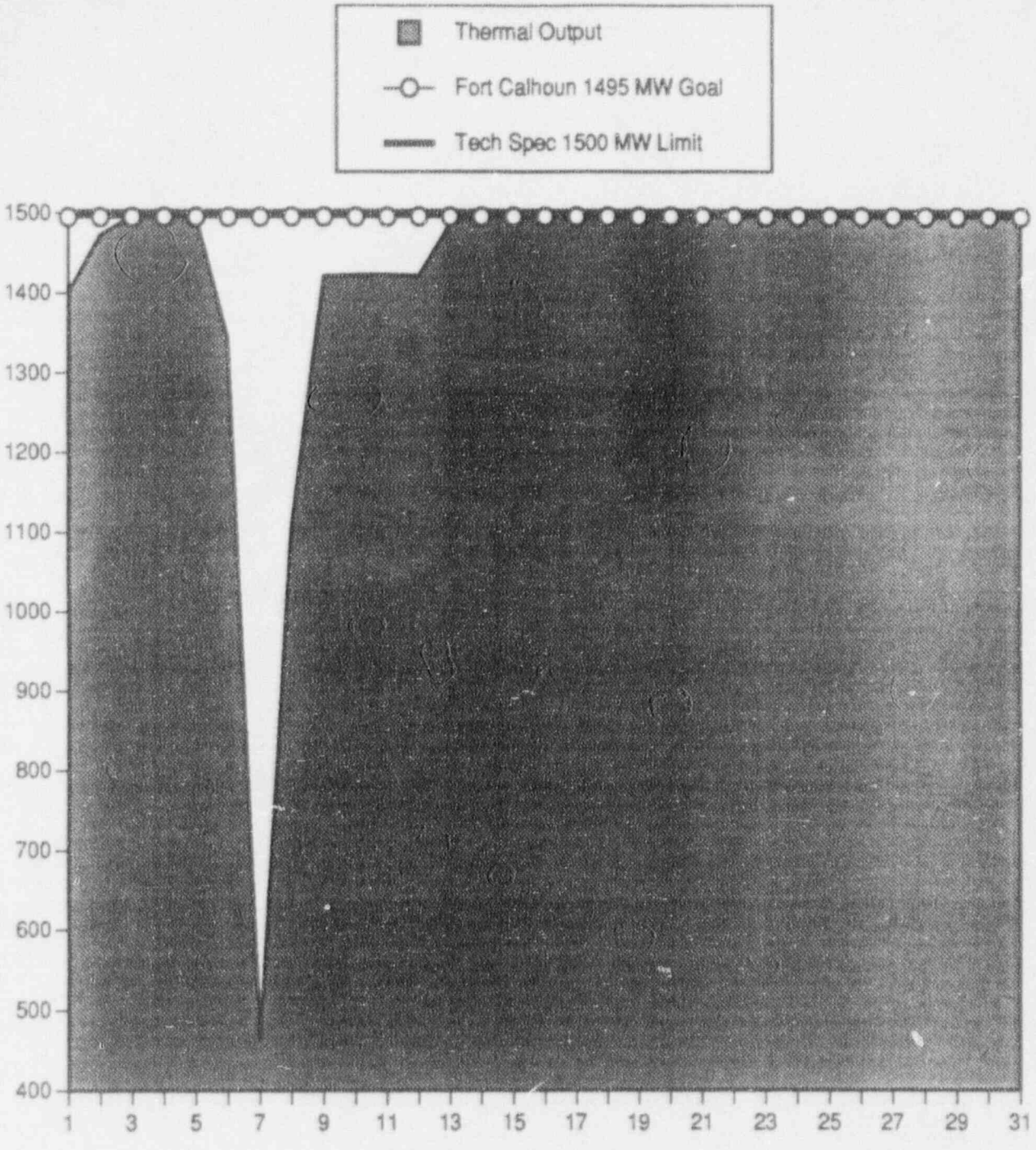
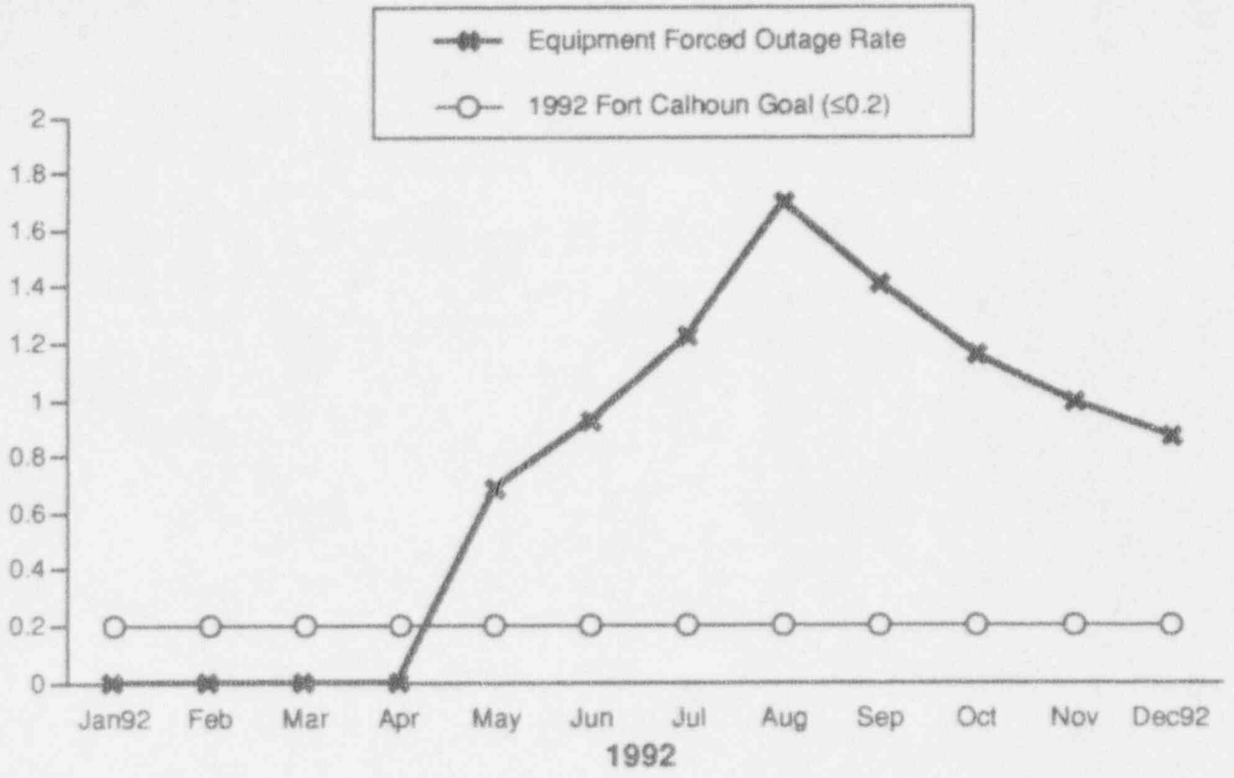
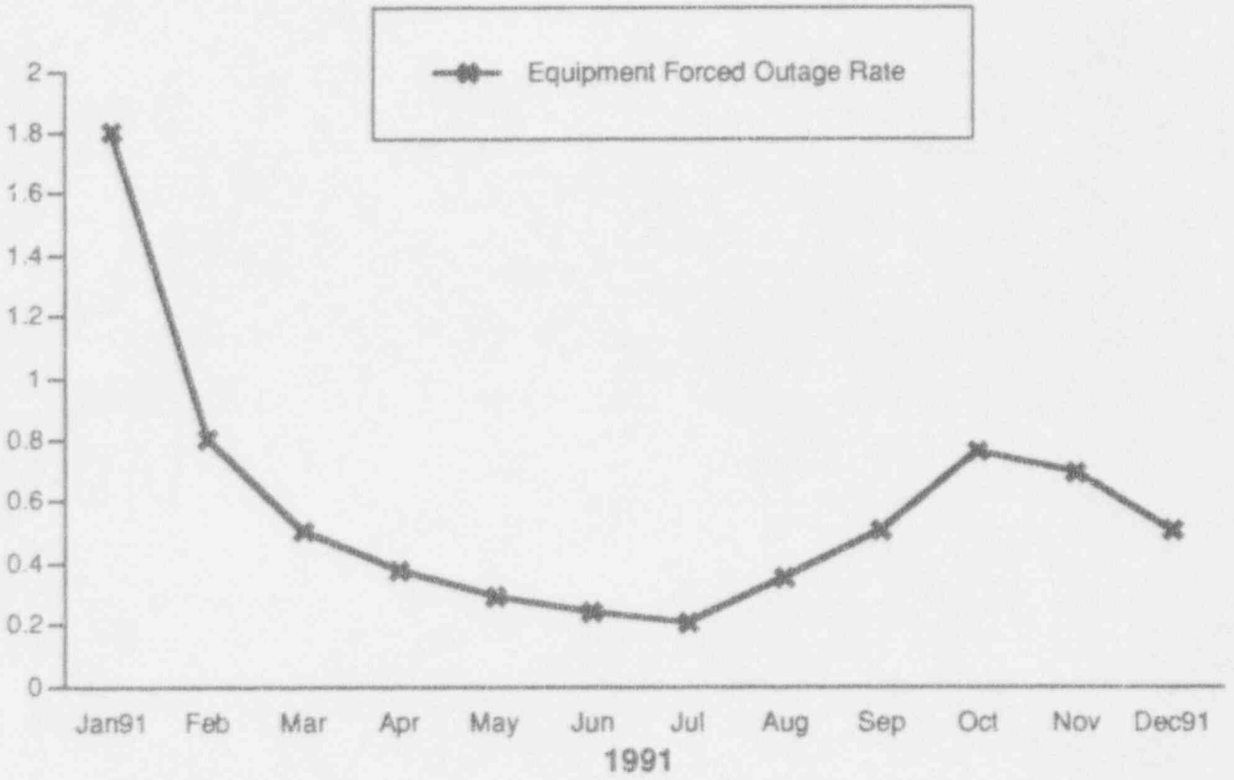


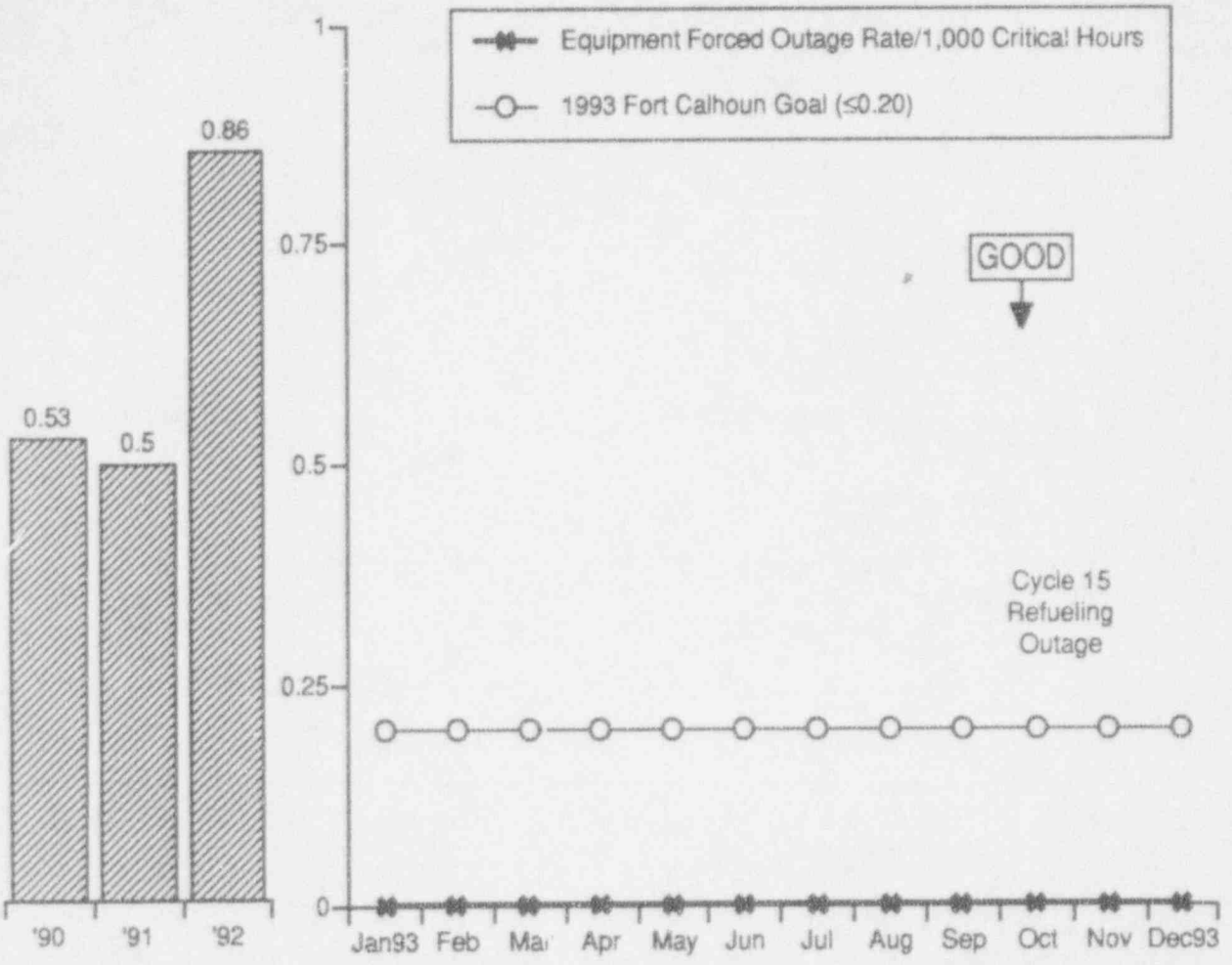
DAILY THERMAL OUTPUT

The thermal output graph displays the daily operating power level during December 1993, the 1500 thermal megawatt average technical specification limit, and the 1495 thermal megawatt Fort Calhoun goal. The Cycle 15 Refueling Outage ended on November 26. On December 6 a reactor trip occurred during weekly testing of the turbine EHC system.

Data Source: Holthaus/Gray (Manager/Source)
Accountability: Chase/Tills
Adverse Trend: None


Equipment Forced Outage Rate
1992 Fort Calhoun Goal (≤0.2)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Equipment Forced Outage Rate
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



EQUIPMENT FORCED OUTAGES PER 1,000 CRITICAL HOURS

The equipment forced outage rate per 1,000 critical hours was 0.0 for the months from January through December 1993. The value for the last 12 months is 0.0.

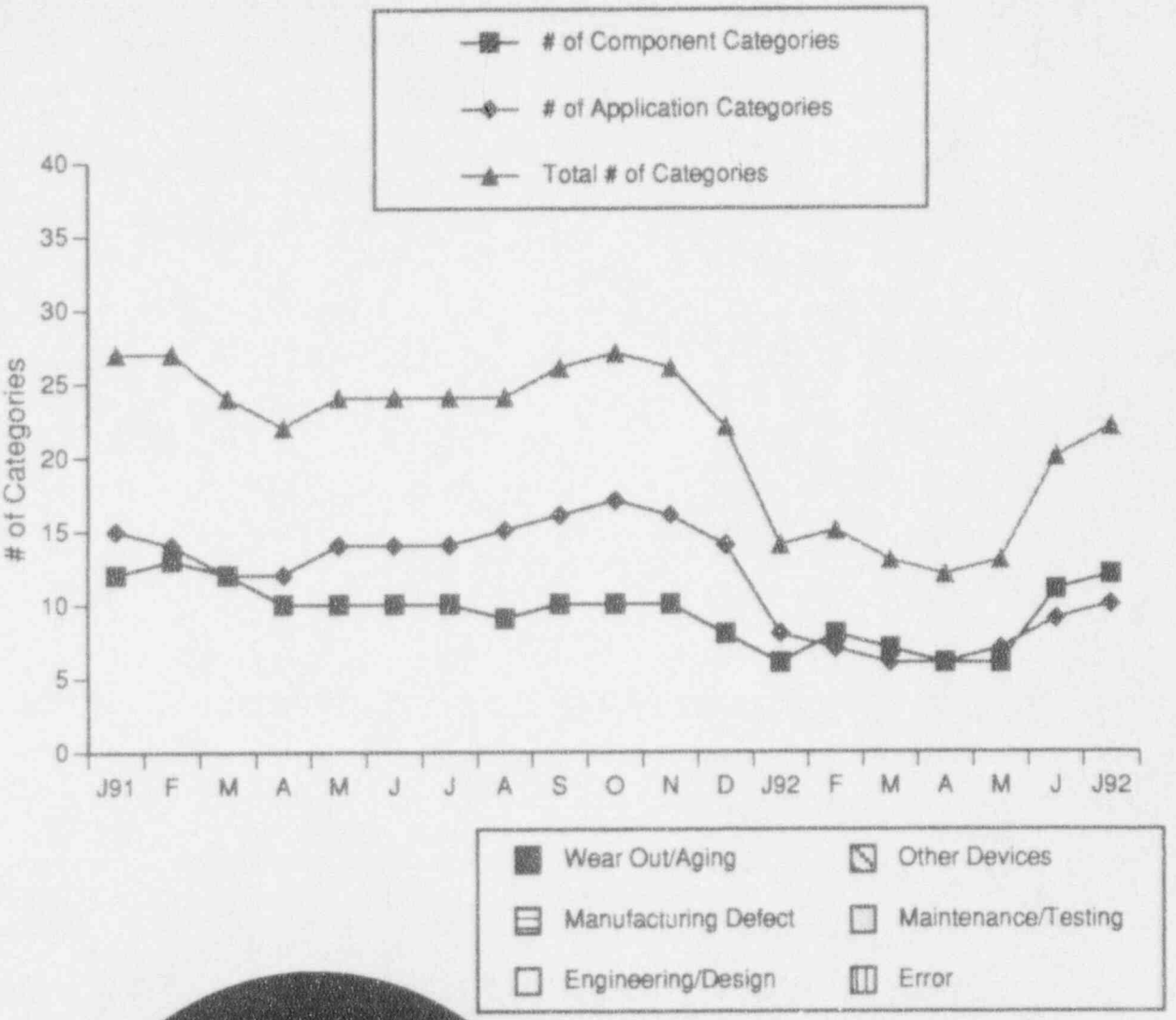
The last equipment forced outage occurred in August 1992 and continued through September. It was due to the failure of an AC/DC converter in the Turbine Electro Hydraulic control System.

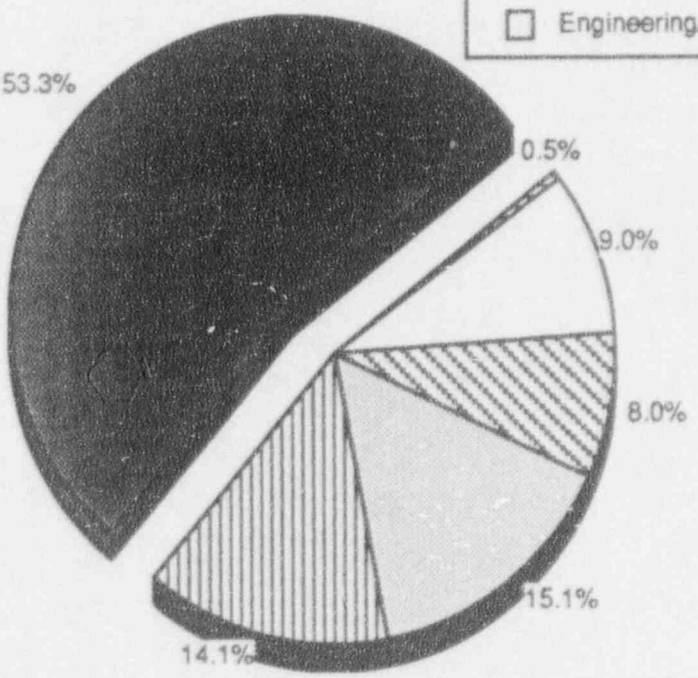
The 1993 Fort Calhoun goal for this indicator is a maximum value of 0.20.

Data Source: Monthly Operations Report & Plant Licensee Event Reports (LERs)

Accountability: Chase/Jaworski

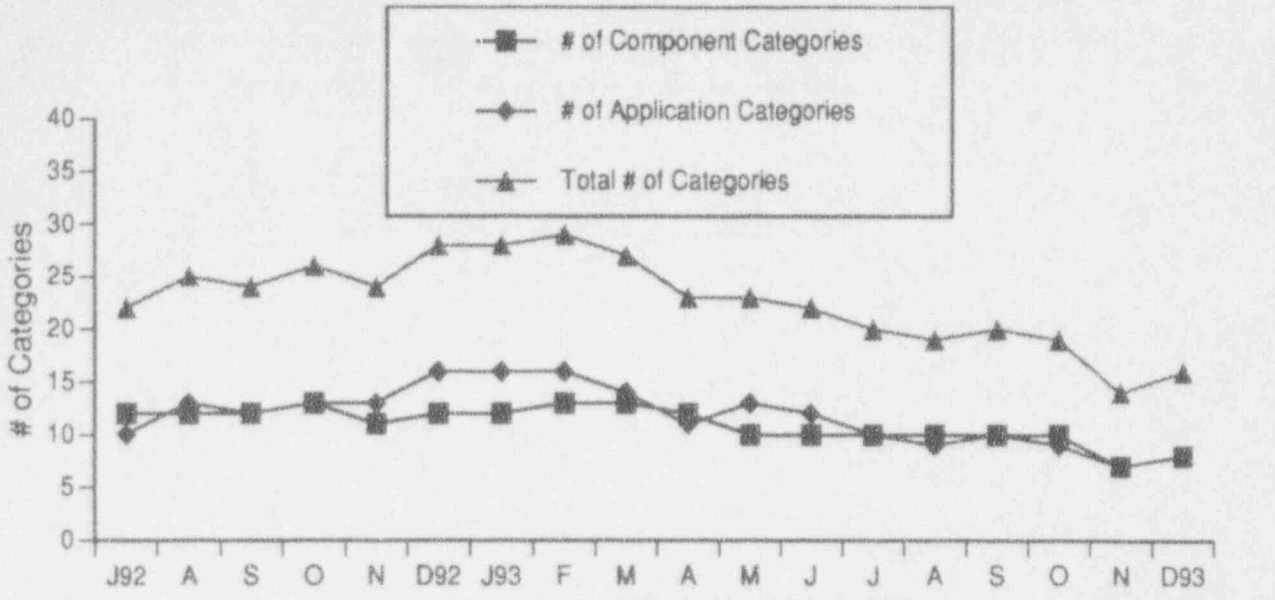
Positive Trend

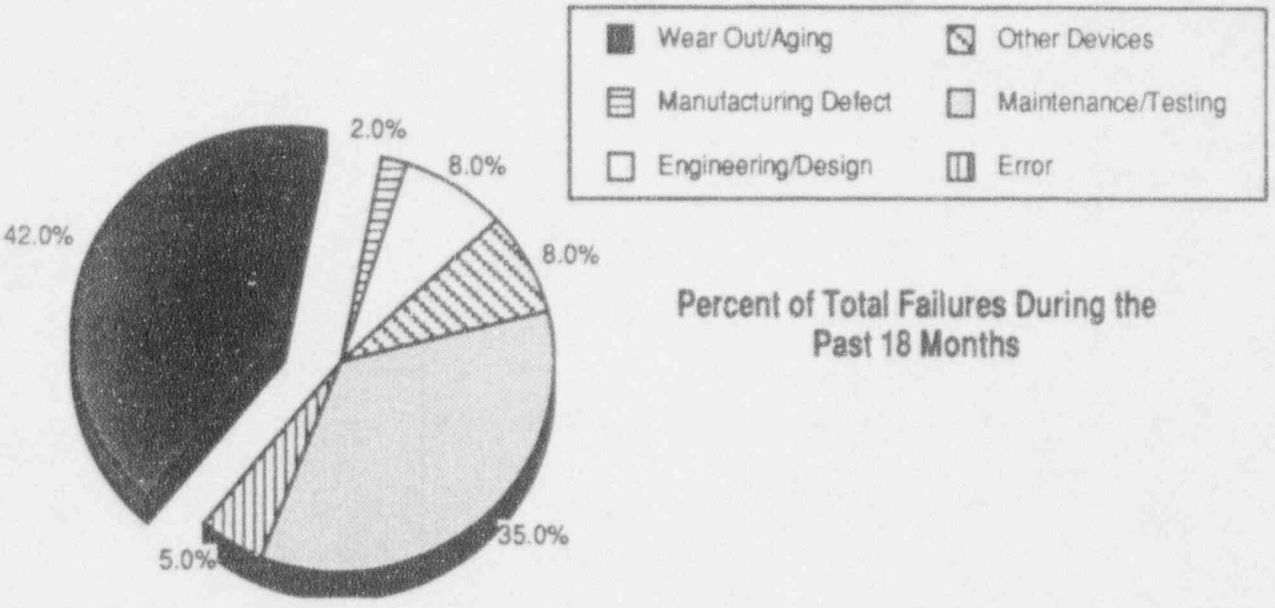




Percent of Total Failures During the Past 18 Months

DECEMBER 1992





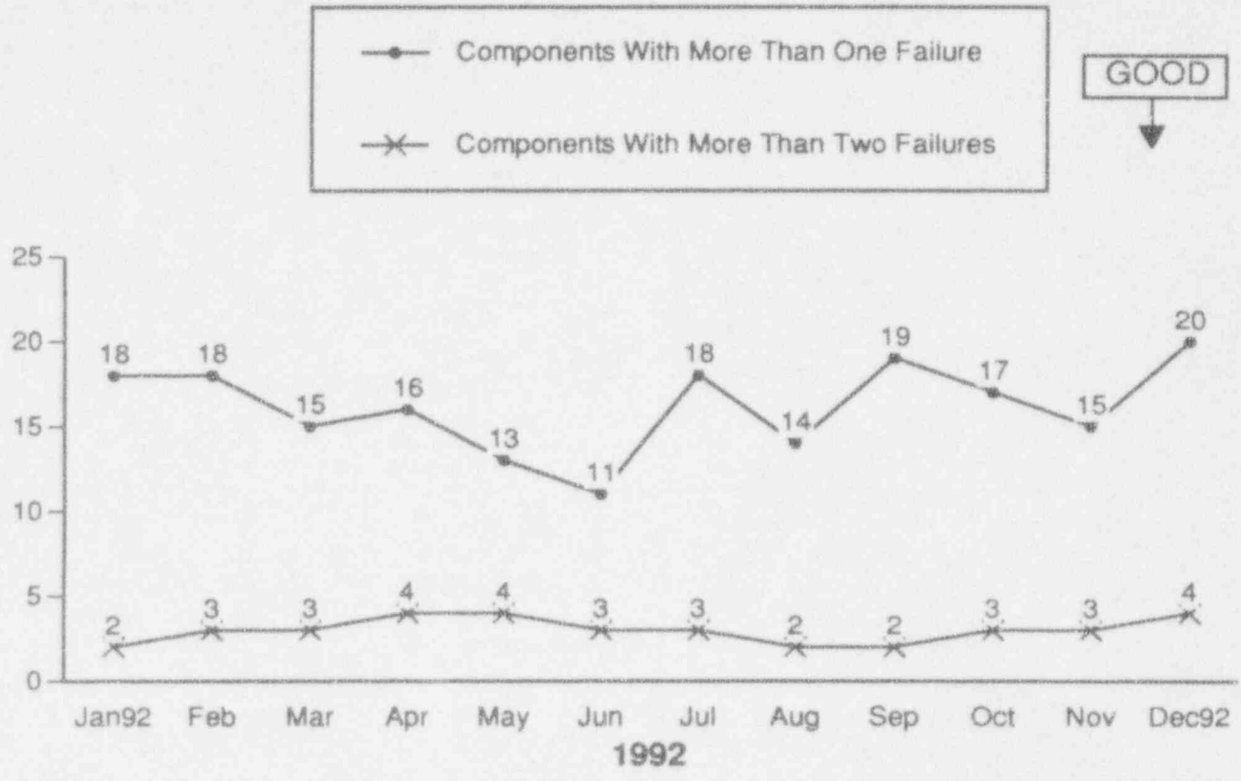
Percent of Total Failures During the Past 18 Months

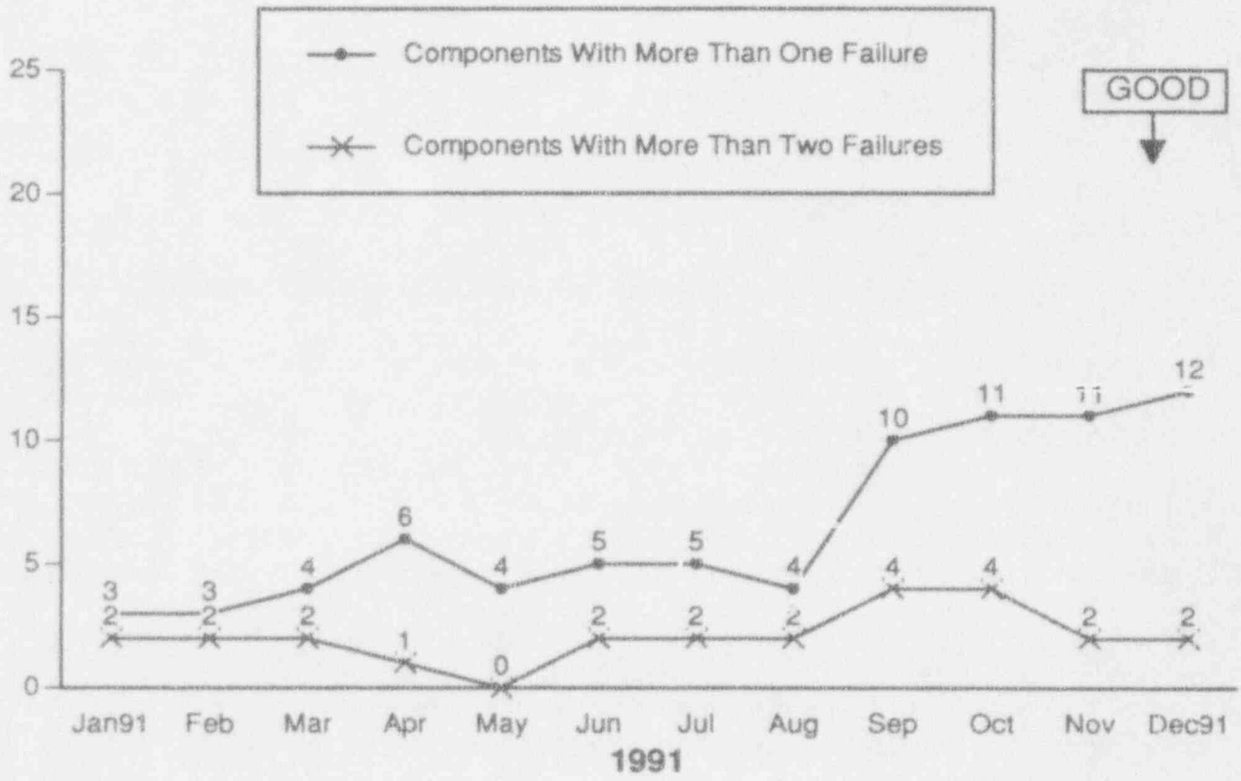
COMPONENT FAILURE ANALYSIS REPORT (CFAR) SUMMARY

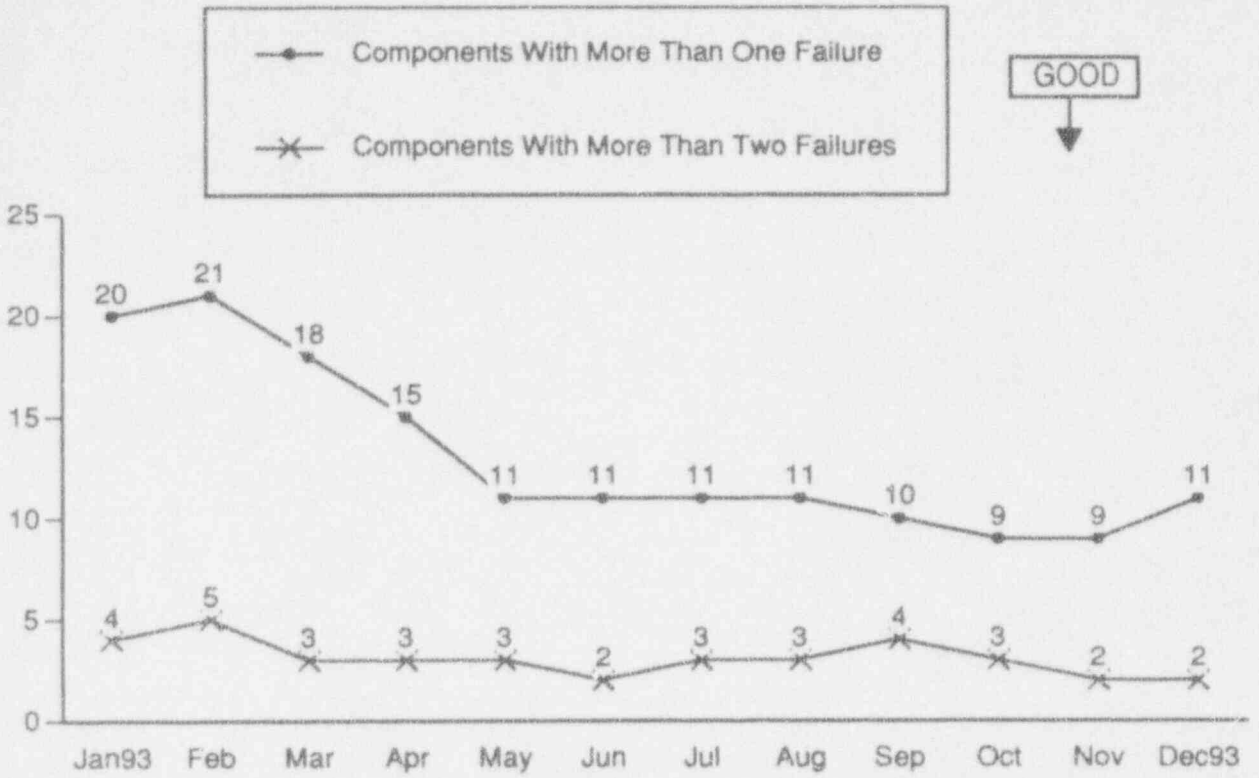
The top chart illustrates the number of component categories, application categories and total categories in which the Fort Calhoun Station has significantly higher (1.645 standard deviations) failure rates than the industry failure rates during the past 18 months (from April 1992 through September 1993). Fort Calhoun Station reported a higher failure rate in 8 of the 87 component categories (valves, pumps, motors, etc.) during the past 18 months. The station reported a higher failure rate in 8 of the 173 application categories (main steam stop valves, auxiliary/ emergency feedwater pumps, control element drive motors, etc.) during the past 18 months.

The pie chart depicts the breakdown by INPO cause categories (see the "Definitions" section of this report for descriptions of these categories) for the 100 failure reports that were submitted to INPO by Fort Calhoun Station during the past 18 months. Of these, the failure cause was known for 86. The pie chart reflects known failure causes.

Data Source: Jaworski/Dowdy (Manager/Source)
Accountability: Jaworski/Dowdy
Adverse Trend: None


Components With More Than One Failure
Components With More Than Two Failures
GOOD
25
20
15
10
5
0
18 18 15 16 13 11 18 14 19 17 15 20
2 3 3 4 4 3 3 2 2 3 3 4
Jan92 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec92
1992


Components With More Than One Failure
Components With More Than Two Failures
GOOD
25
20
15
10
5
0
3 3 4 6 4 5 5 4 10 11 11 12
2 2 2 1 0 2 2 2 4 4 2 2
Jan91 Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec91
1991



REPEAT FAILURES

The Repeat Failures Indicator (formerly called the "Maintenance Effectiveness" performance indicator) was developed in response to guidelines set forth by the Nuclear Regulatory Commission's Office for Analysis and Evaluation of Operational Data (NRC/AEOD). The NRC requirement for a Maintenance Effectiveness Performance Indicator has been dropped, but station management considers it useful to continue to track repetitive component failures using the Nuclear Plant Reliability Data System (NPRDS).

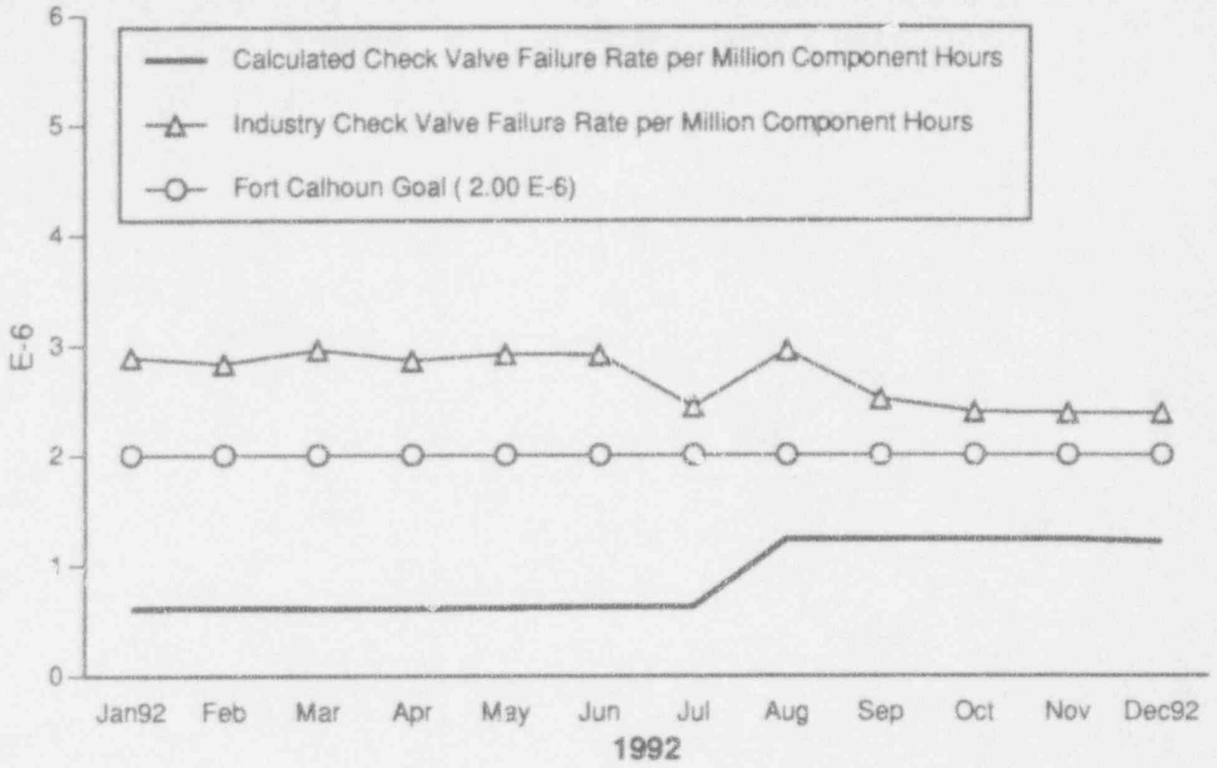
This indicator shows the number of NPRDS components with more than one failure during the last eighteen months and the number of NPRDS components with more than two failures during the last eighteen months.

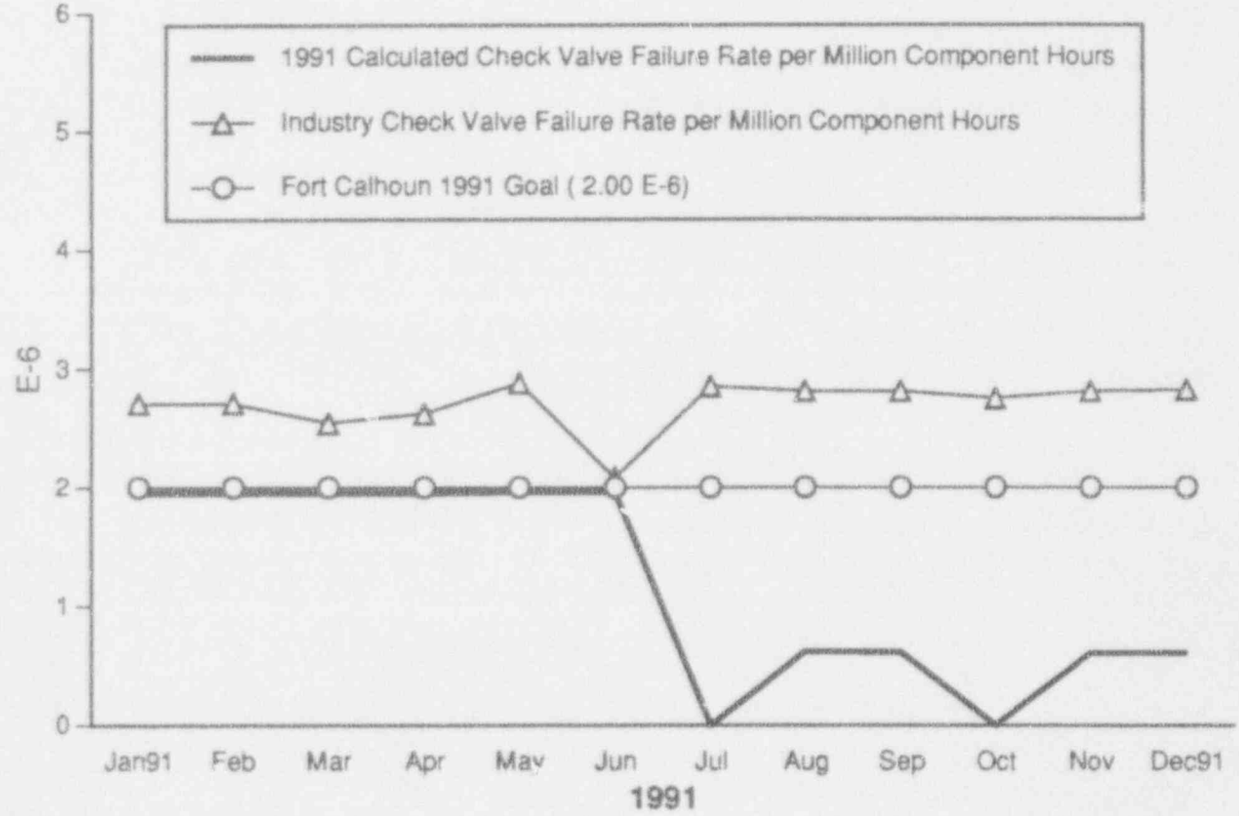
During the last 18 reporting months there were 11 NPRDS components with more than 1 failure. 2 of the 11 had more than two failures. The tag numbers of the components with more than two failures are AC-10C and CH-1B. Recommendations and actions to correct these repeat component failures are listed in the quarterly Component Failure Analysis Report.

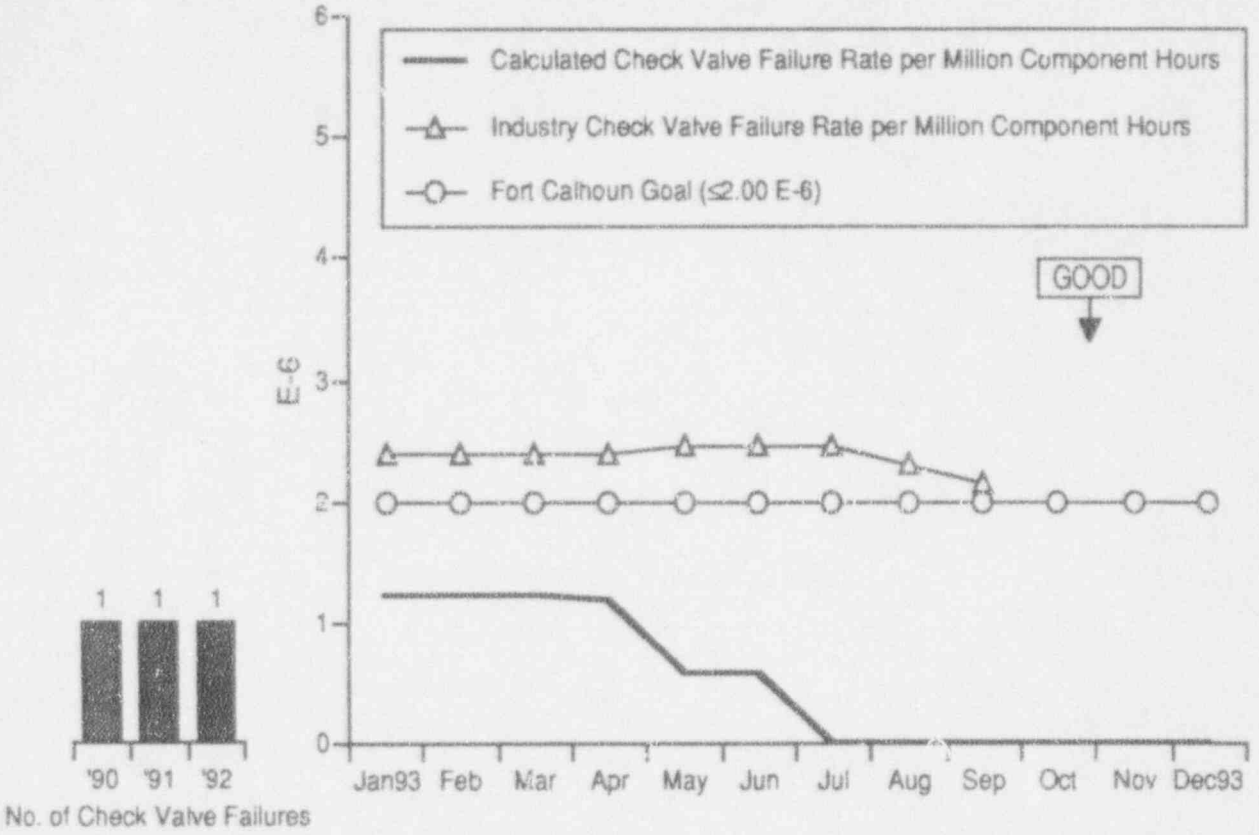
Data Source: Jaworski/Dowdy (Manager/Source)

Accountability: Chase/Bobba

Adverse Trend: None


Calculated Check Valve Failure Rate per Million Component Hours
Industry Check Valve Failure Rate per Million Component Hours
Fort Calhoun Goal (2.00 E-6)
E-6
0
1
2
3
4
5
6
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


1991 Calculated Check Valve Failure Rate per Million Component Hours
Industry Check Valve Failure Rate per Million Component Hours
Fort Calhoun 1991 Goal (2.00 E-6)
E-6
0
1
2
3
4
5
6
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



CHECK VALVE FAILURE RATE

This indicator shows the calculated Fort Calhoun check valve failure rate, the Fort Calhoun goal and the industry check valve failure rate. This rate is based upon failures during the previous 18 months. The number of check valve failures at Fort Calhoun Station for the previous three years are shown on the left.

The data for the industry check valve failure rate is three months behind the reporting month due to the time involved in collecting and processing the data.

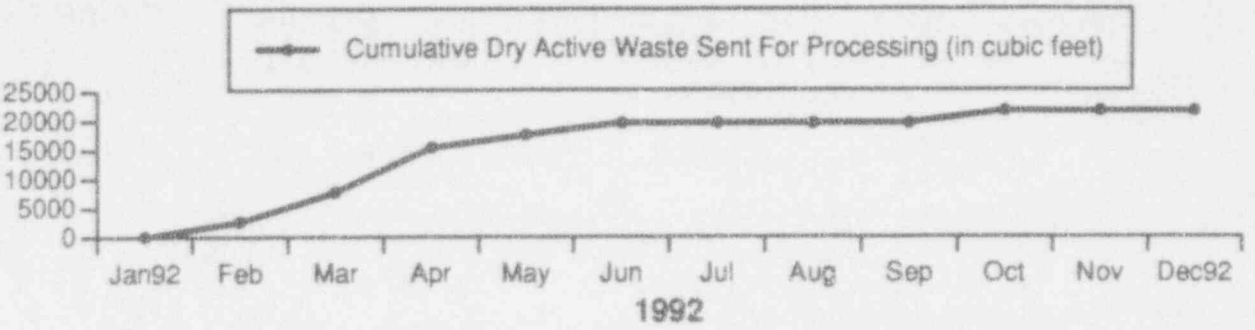
For September 1993, the Fort Calhoun Station reported an actual check valve failure rate of 0.0, while the industry reported an actual failure rate of 2.16 E-6. At the end of December 1993, the Fort Calhoun Station reported a calculated check valve failure rate of 0.0045 E-6.

The 1993 Fort Calhoun goal for this indicator is a maximum failure rate of 2.00 E-6.

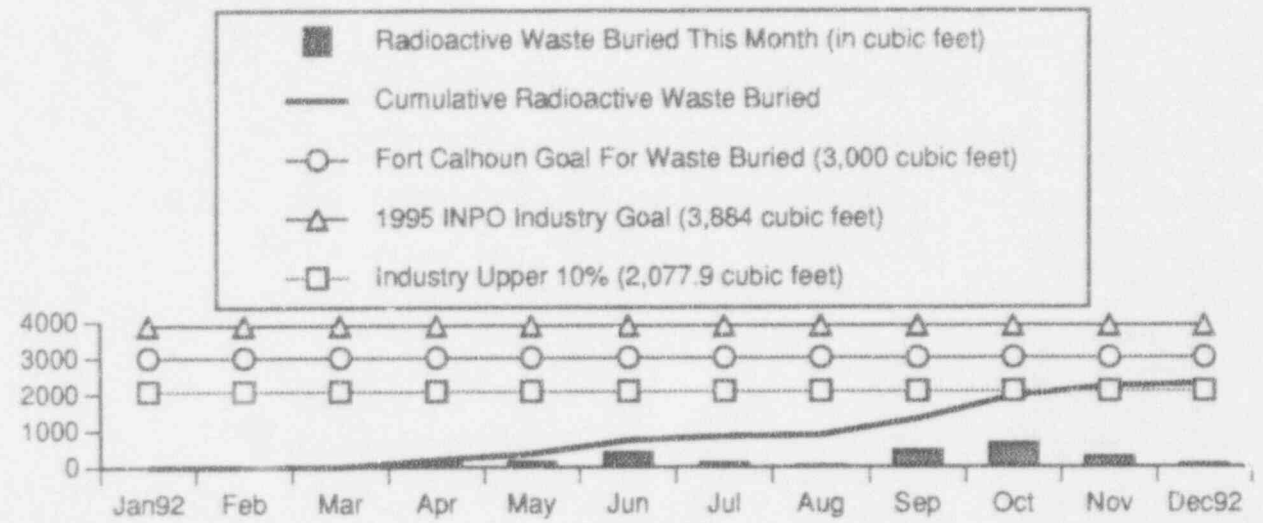
Data Source: Jaworski/Dowdy (Manager/Source)

Accountability: Jaworski/Rollins

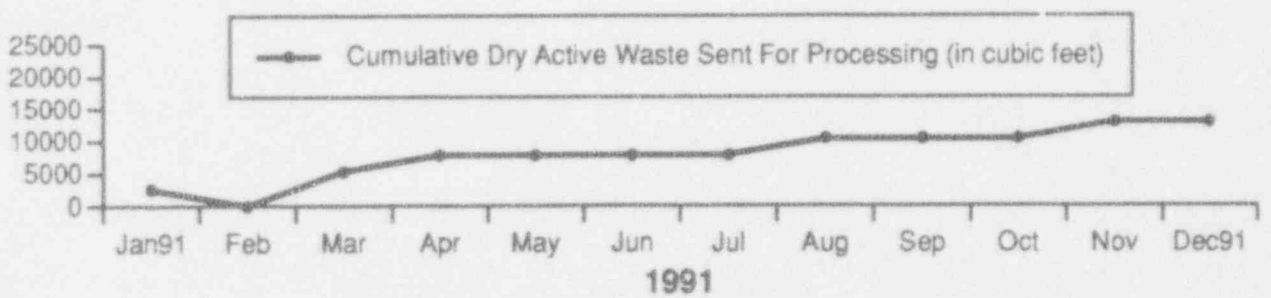
Positive Trend SEP 43



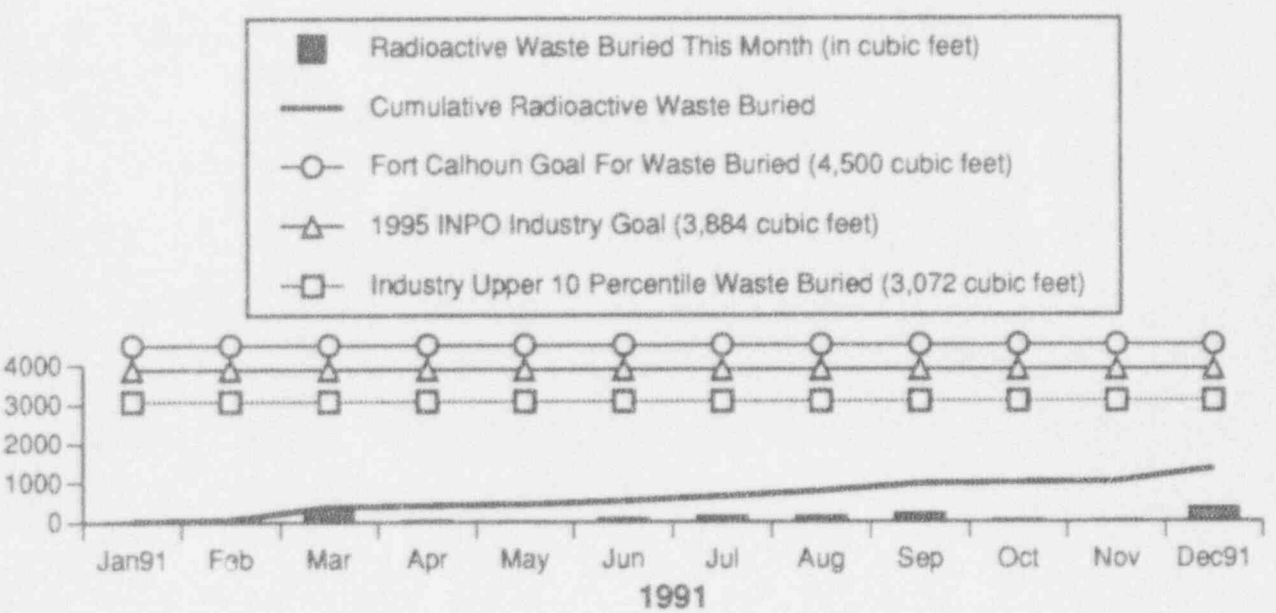
1992



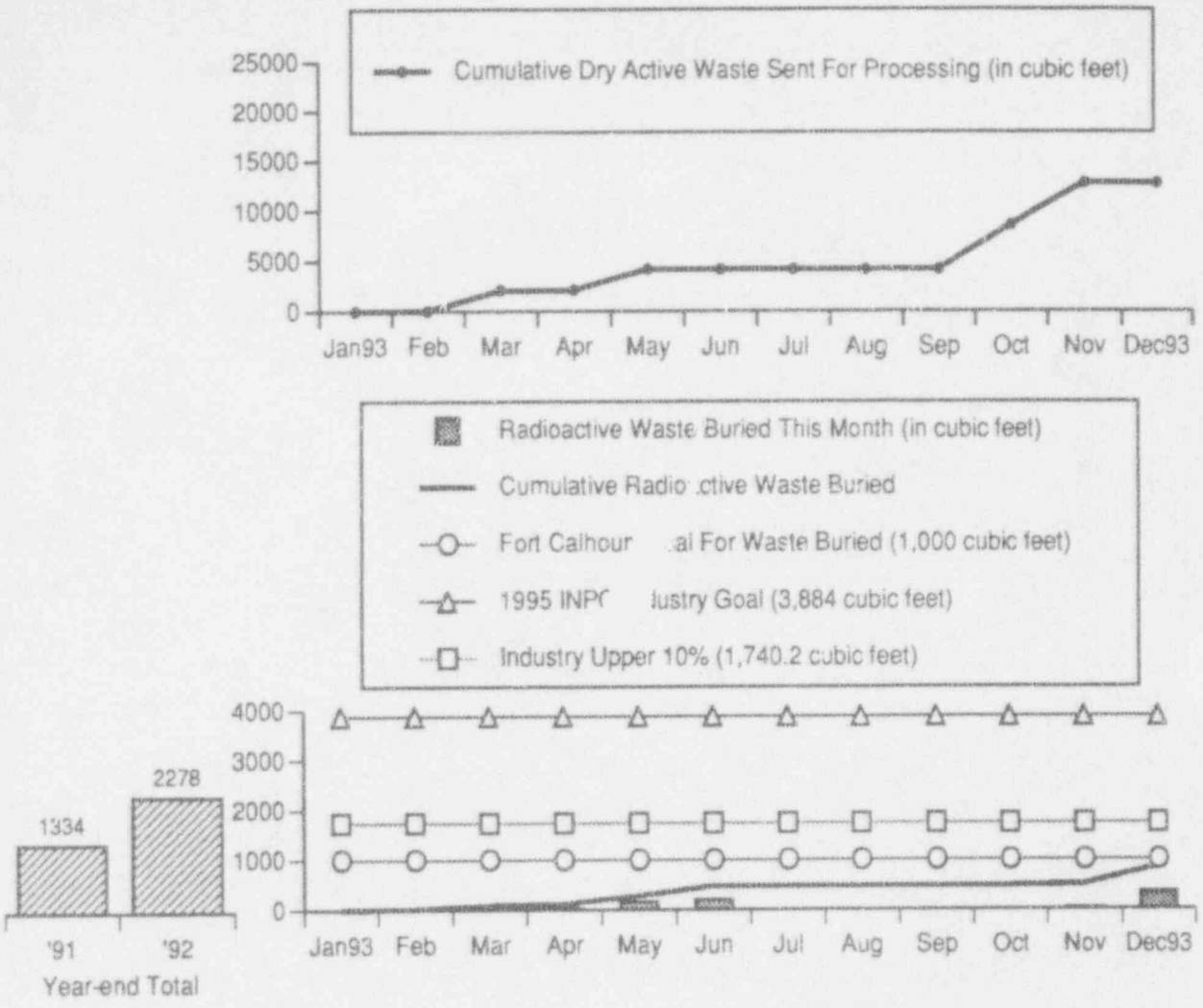
1992



1991



1991



VOLUME OF LOW-LEVEL SOLID RADIOACTIVE WASTE

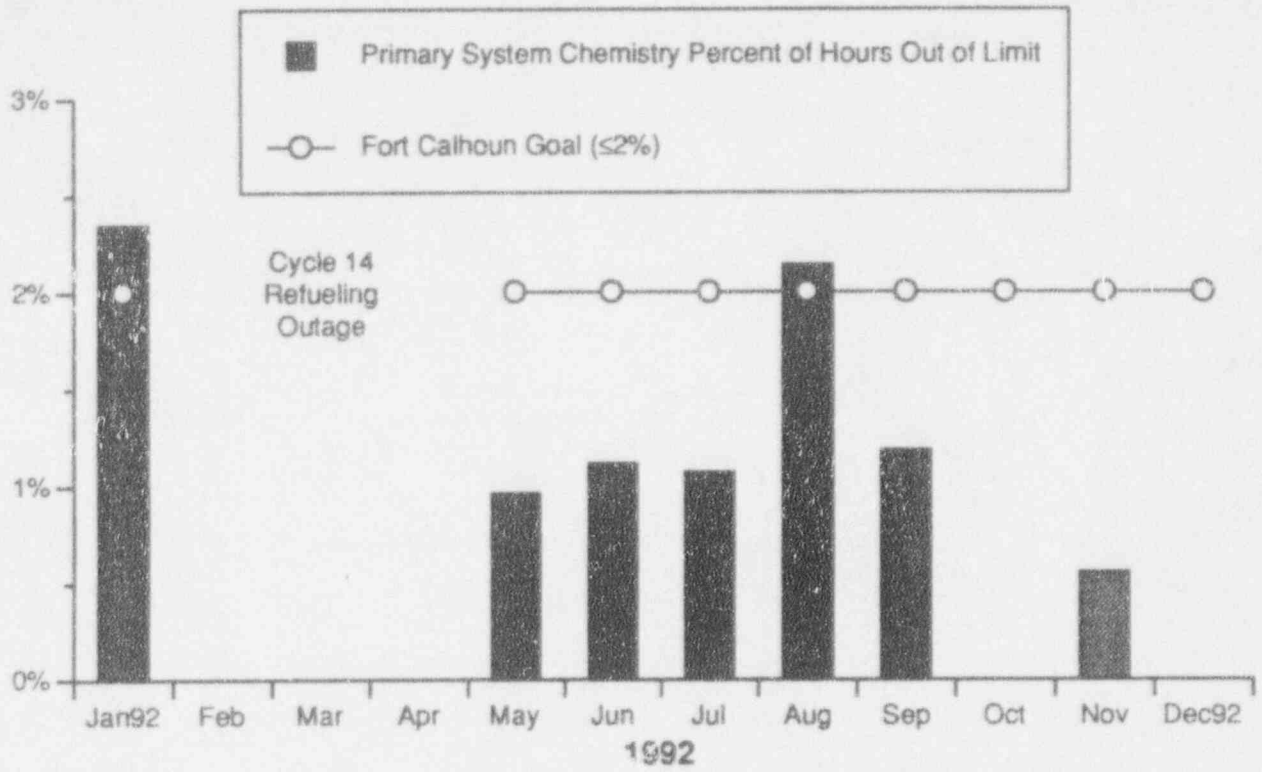
The upper graph shows the volume of dry radioactive waste sent for processing. The lower graph shows the volume of the monthly radioactive waste buried, the cumulative annual total for radioactive waste buried, and the year-end totals for radioactive waste buried the previous 2 years.

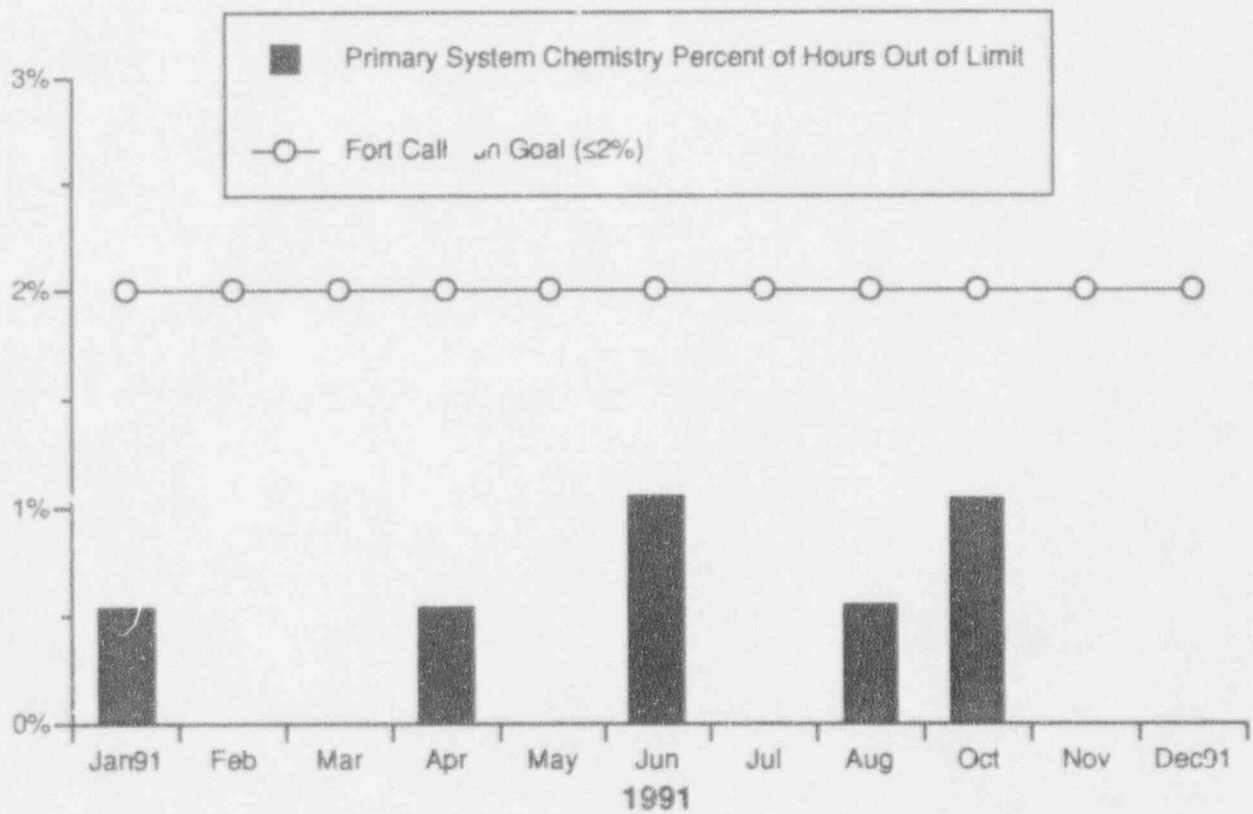
Cumulative amount of solid radwaste shipped off-site for processing (cubic feet)	12,740.0
Amount of solid radwaste shipped off-site for processing during December (cubic feet)	0.0
Volume of Solid Radwaste Buried during December (cubic feet)	352.6
Cumulative volume of solid radioactive waste buried in 1993 (cubic feet)	857.8
Amount of solid radioactive waste in temporary storage (cubic feet)	0.0

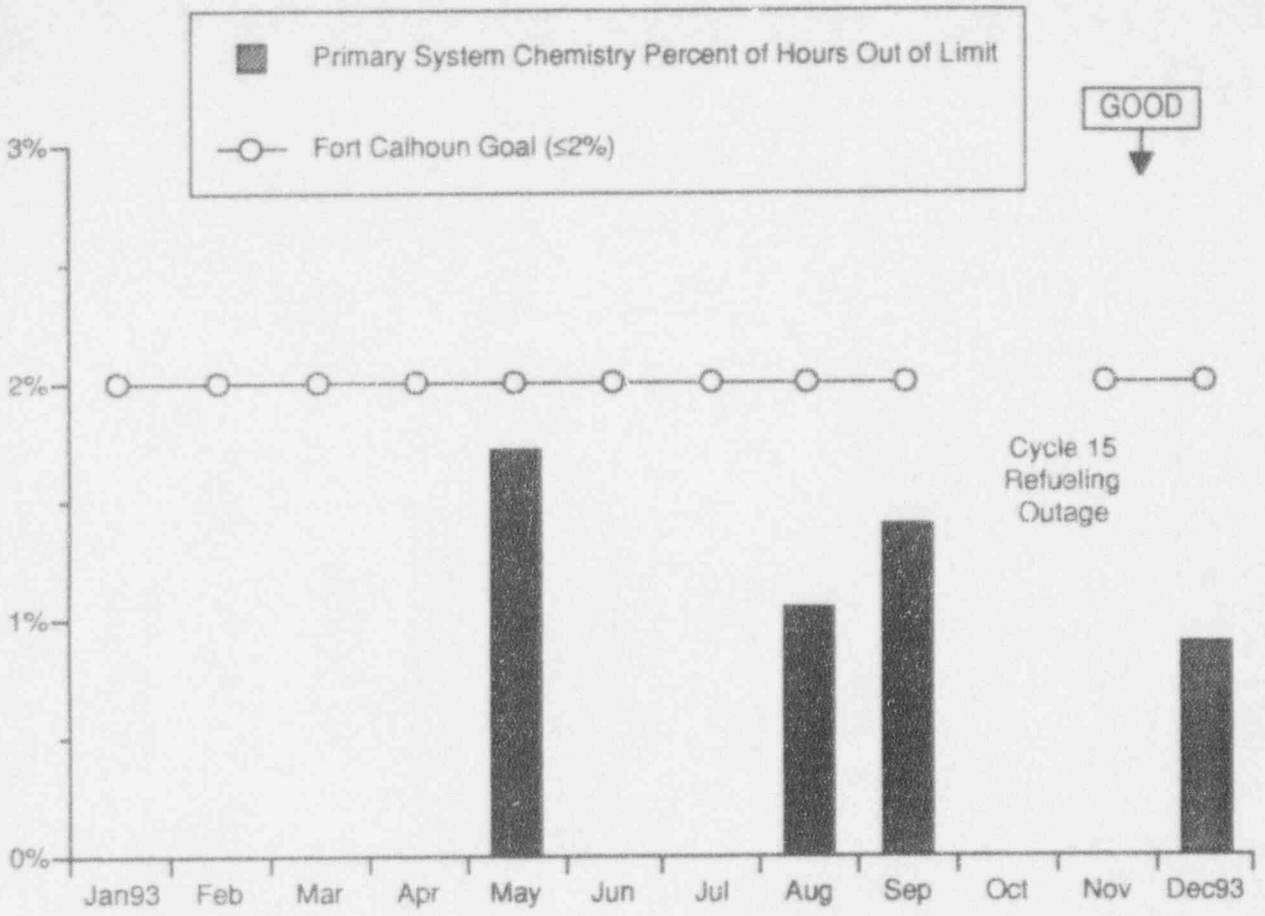
The 1993 Fort Calhoun goal for the volume of solid radioactive waste which has been buried is 1,000 cubic feet. The 1995 INPO industry goal is 110 cubic meters (3,884 cubic feet) per year. The industry upper ten percentile value from 7/90 through 6/93 is approximately 49.27 cubic meters (1,740.22 cubic feet) per year.

Data Source: Chase/Breuer (Manager/Source)
Accountability: Chase/Lovett
Positive Trend

SEP 54


Primary System Chemistry Percent of Hours Out of Limit
Fort Calhoun Goal (≤2%)
Cycle 14
Refueling
Outage
3%
2%
1%
0%
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Primary System Chemistry Percent of Hours Out of Limit
Fort Call on Goal (≤2%)
3%
2%
1%
0%
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Oct
Nov
Dec91
1991



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 key parameters are: lithium, dissolved oxygen, chlorides, fluoride, hydrogen and suspended solids. 100% equates to all six parameters being out of limit for the month.

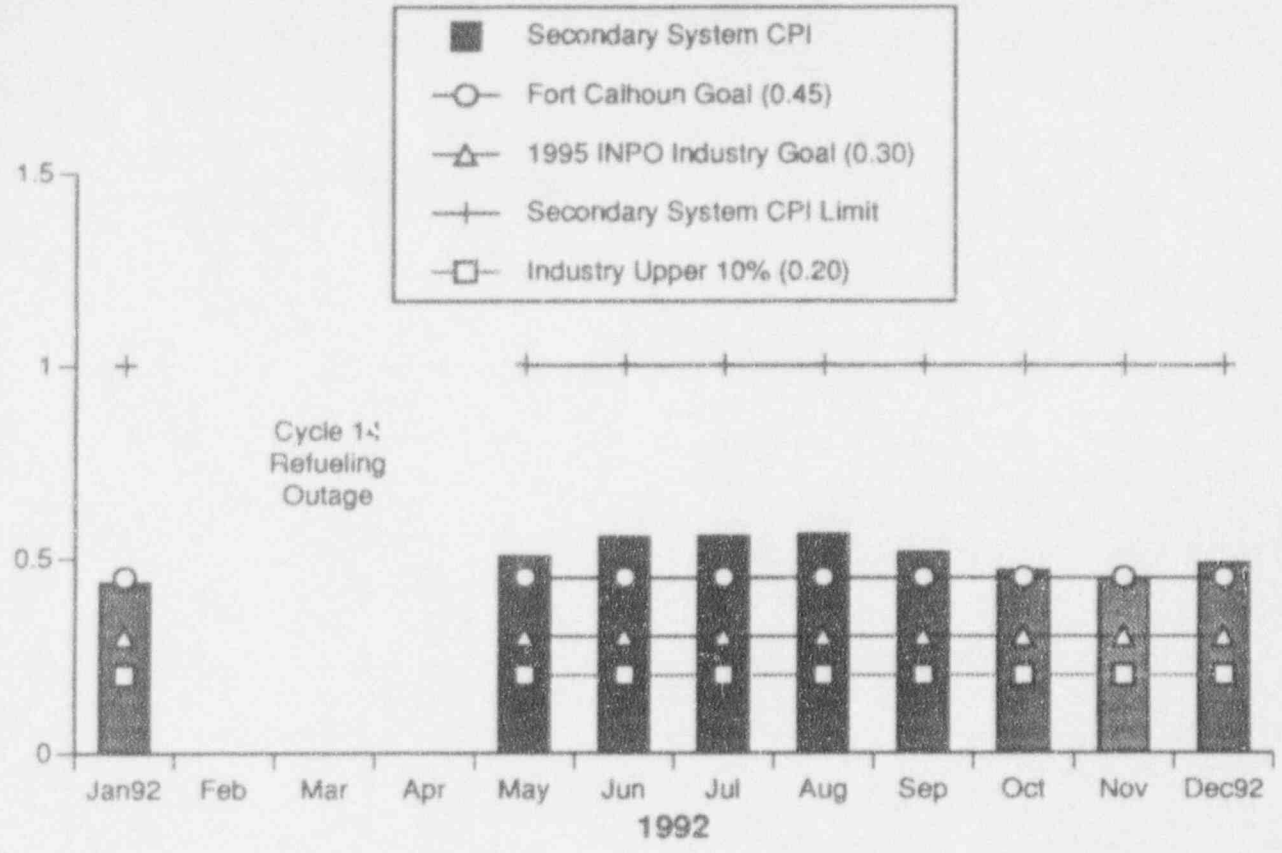
The Primary System Chemistry Percent of Hours Out of Limit was 0.9% for the month of December 1993.

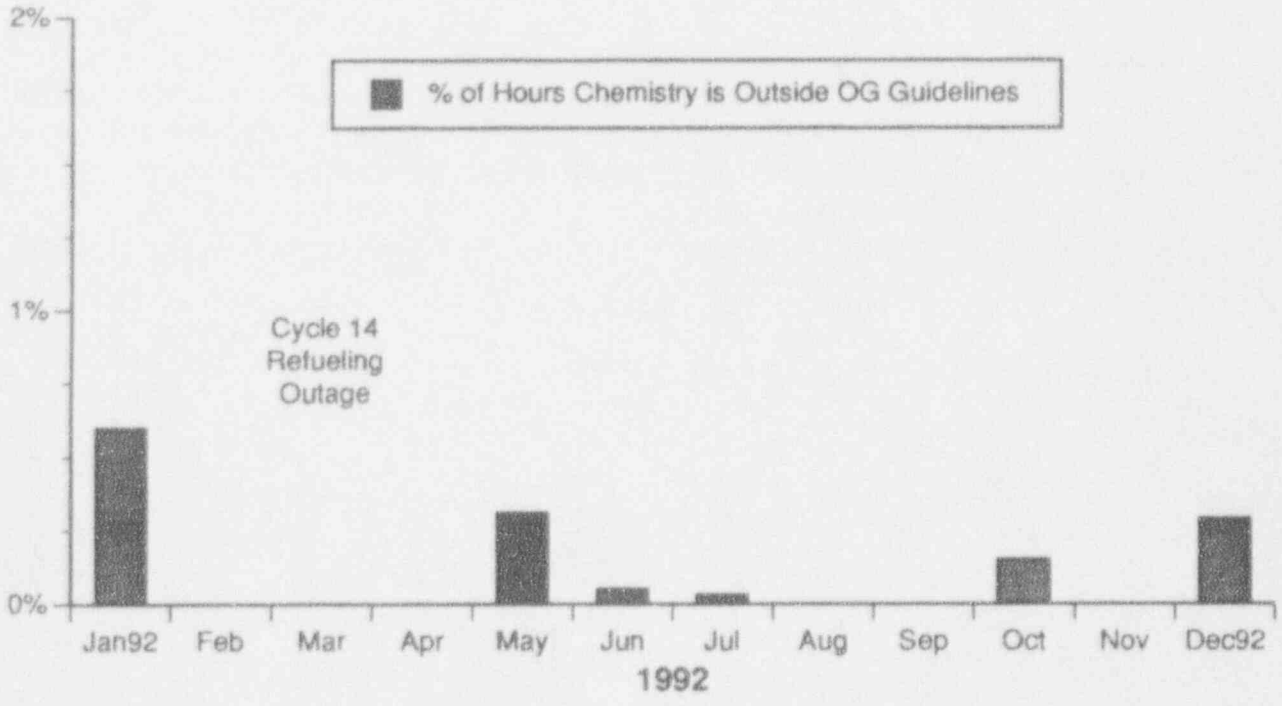
The 1993 Fort Calhoun monthly goal for this indicator is a maximum of 2% Hours Out of Limit.

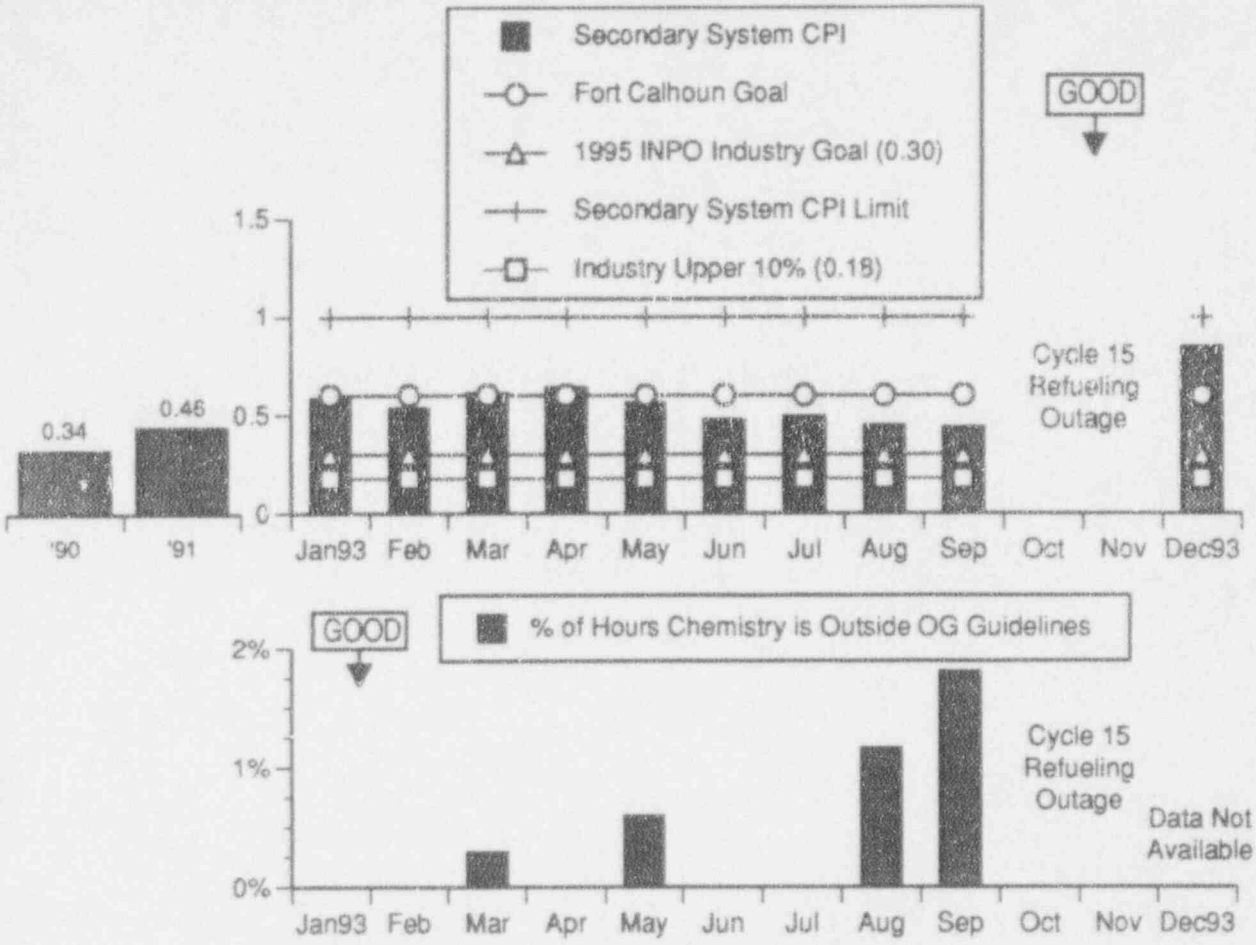
Data Source: Smith/Spires (Manager/Source)

Accountability: Chase/Smith

Positive Trend


Secondary System CPI
Fort Calhoun Goal (0.45)
1995 INPO Industry Goal (0.30)
Secondary System CPI Limit
Industry Upper 10% (0.20)
1.5
1
0.5
0
Cycle 14
Refueling
Outage
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


% of Hours Chemistry is Outside OG Guidelines
2%
1%
0%
Cycle 14
Refueling
Outage
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992



SECONDARY SYSTEM CHEMISTRY

The top graph, Secondary System Chemistry Performance Index (CPI), is calculated using the following three parameters: cation conductivity in steam generator blowdown, sodium in steam generator blowdown, and condensate pump discharge dissolved oxygen. The bottom graph shows the percent of total hours of 13 parameters exceeding the Owners Group (OG) guidelines during power operation.

The INPO CPI for December 1993 was reported as 0.846. The average monthly CPI for the last 12 months (excluding October and November due to the Cycle 15 Refueling Outage) is 0.562. The OPPD CPI value for December was 1.13. The percent of hours exceeding the OG guidelines for December was not available.

The 1993 Fort Calhoun monthly goal for the CPI is a maximum value of 0.60. The INPO 1995 Industry goal is 0.30. The Fort Calhoun goal is based on site specific chemistry treatment, i.e. morpholine. The INPO goal does not consider the influence of morpholine and the by-products of morpholine from thermal decomposition.

The industry upper ten percentile value for this indicator was approximately 0.18 for the twelve months from 7/92 through 6/93.

Data Source: Smith/Spires (Manager/Source)
Accountability: Chase/Smith
Adverse Trend: None

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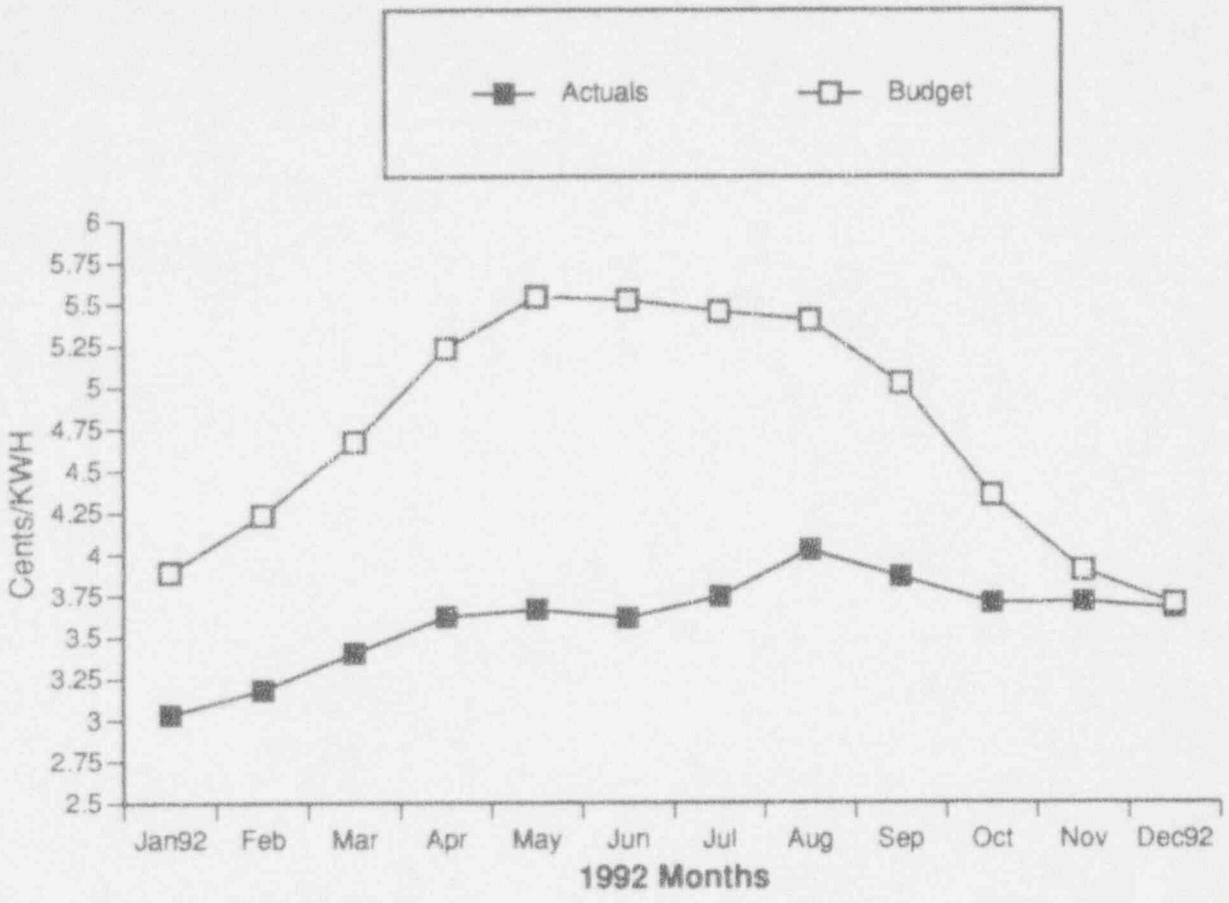
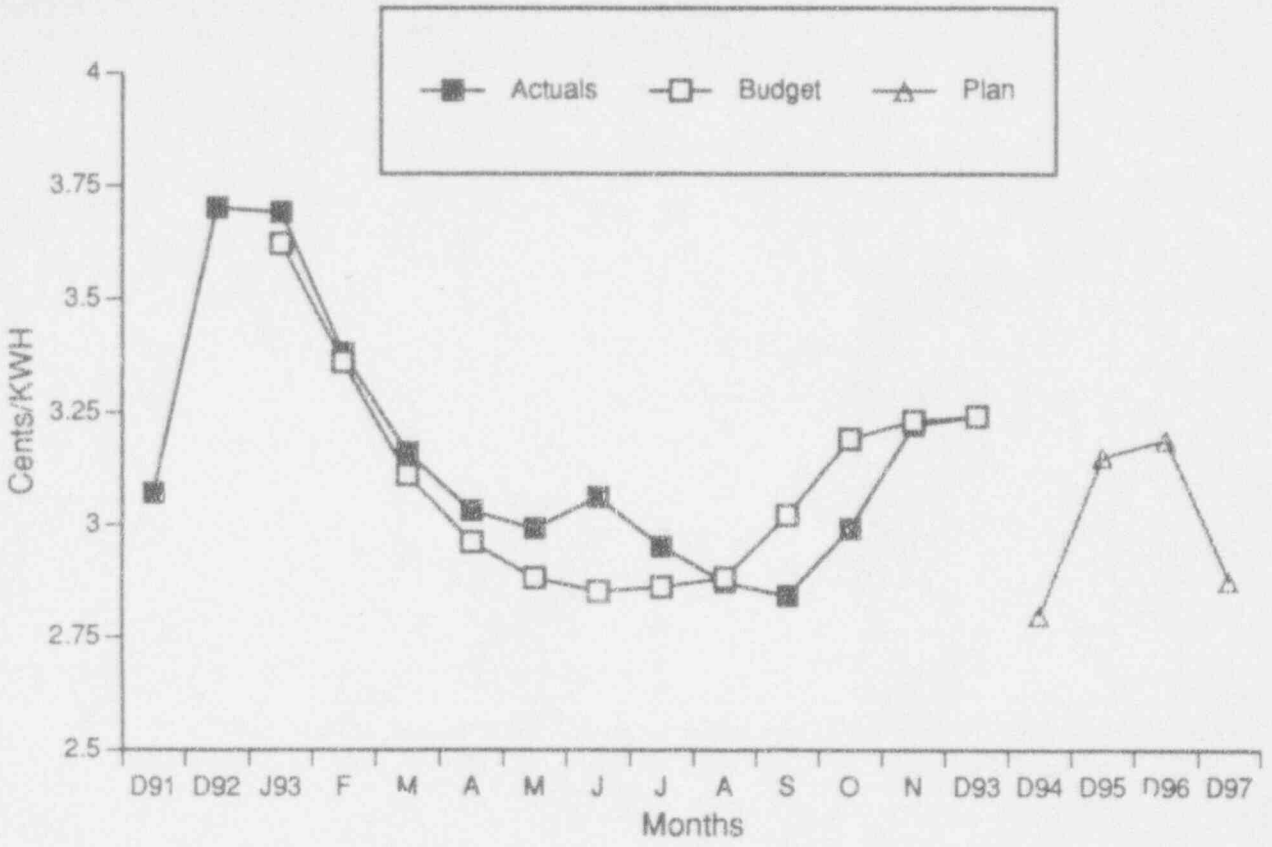
COST

Goal: To operate Fort Calhoun Station in a manner that cost effectively maintains nuclear generation as a viable source of electricity.



The unit price budget in 1992 is unusually high since the rescheduling of the Fall 1991 outage is not accounted for in the 12 - month budget average.



CENTS PER KILOWATT HOUR

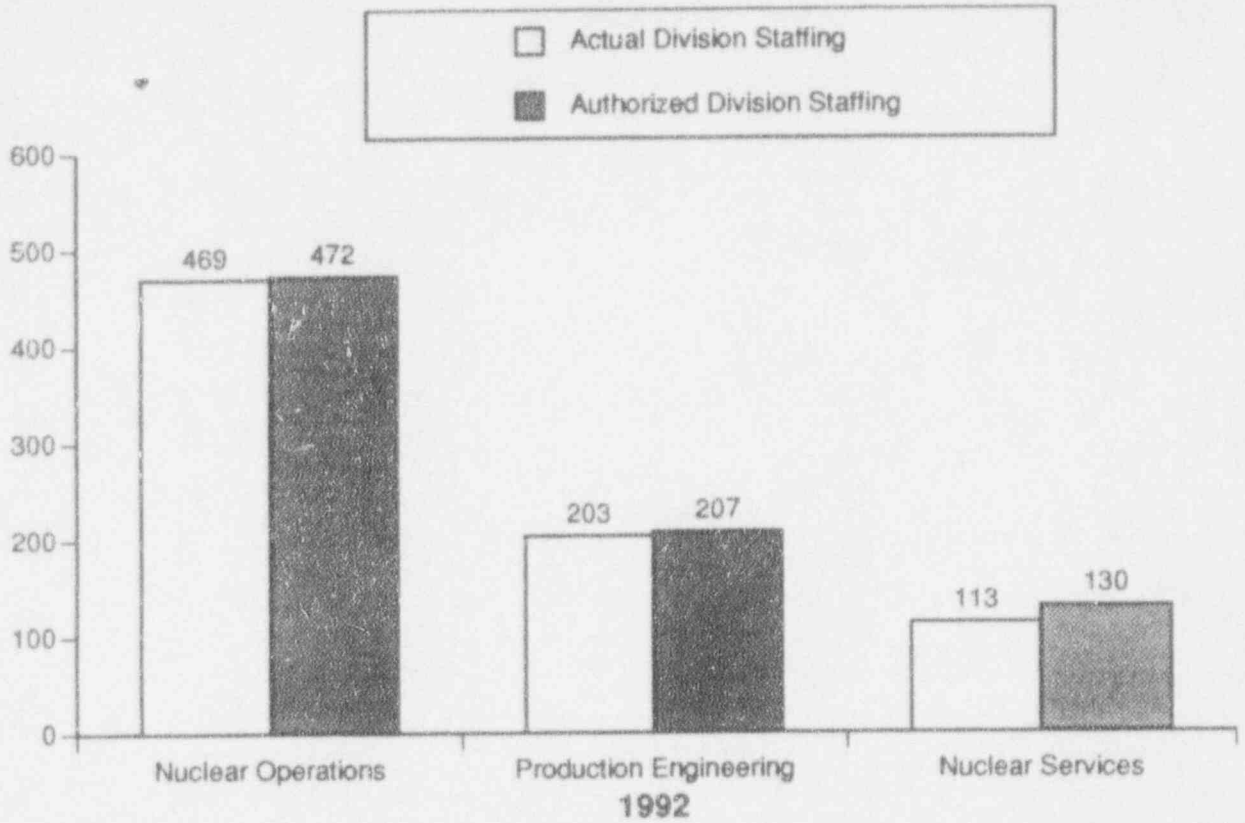
The purpose of this indicator is to quantify the economical operation of Fort Calhoun Station.

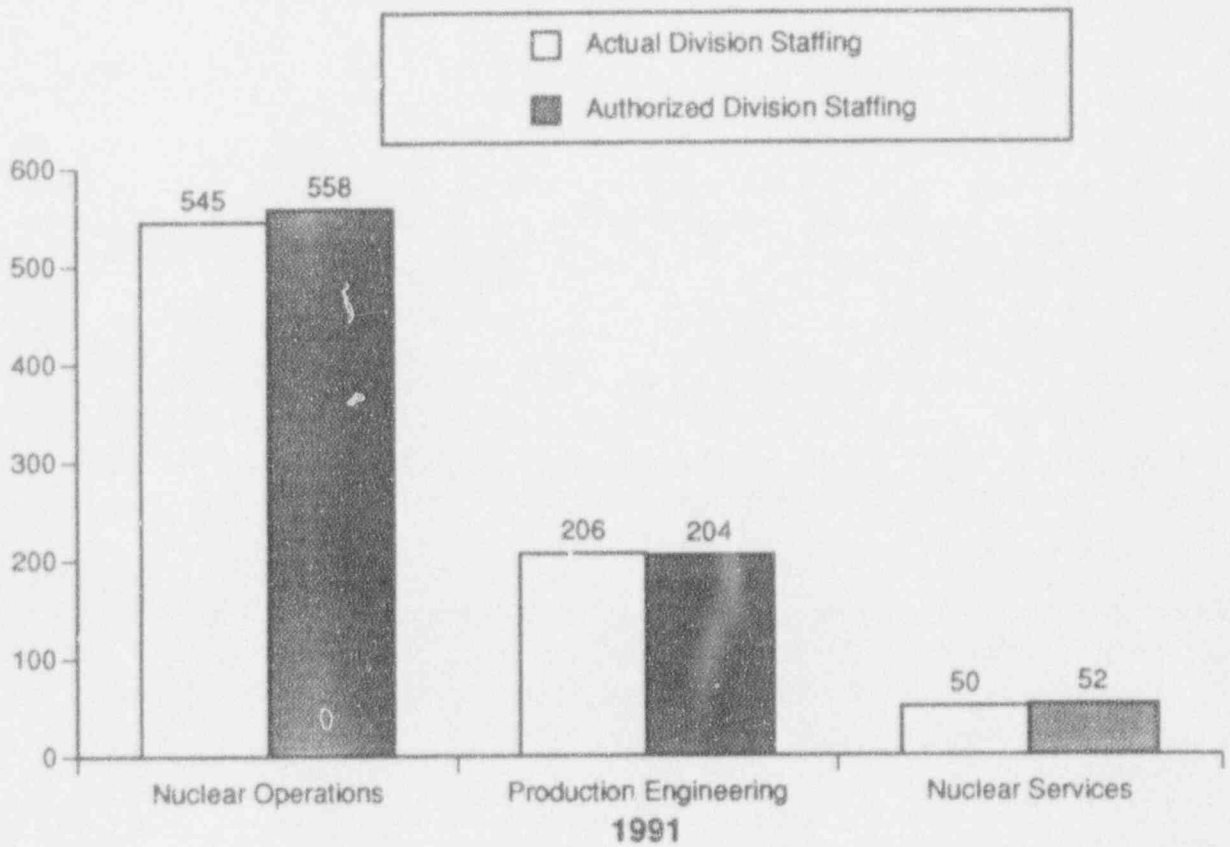
The cents per kilowatt hour indicator represents the budget and actual cents per kilowatt hour on a 12 month rolling average for the current year. The basis for the budget curve is the approved 1993 budget. The basis for the actual curve is the Financial and Operating Report.

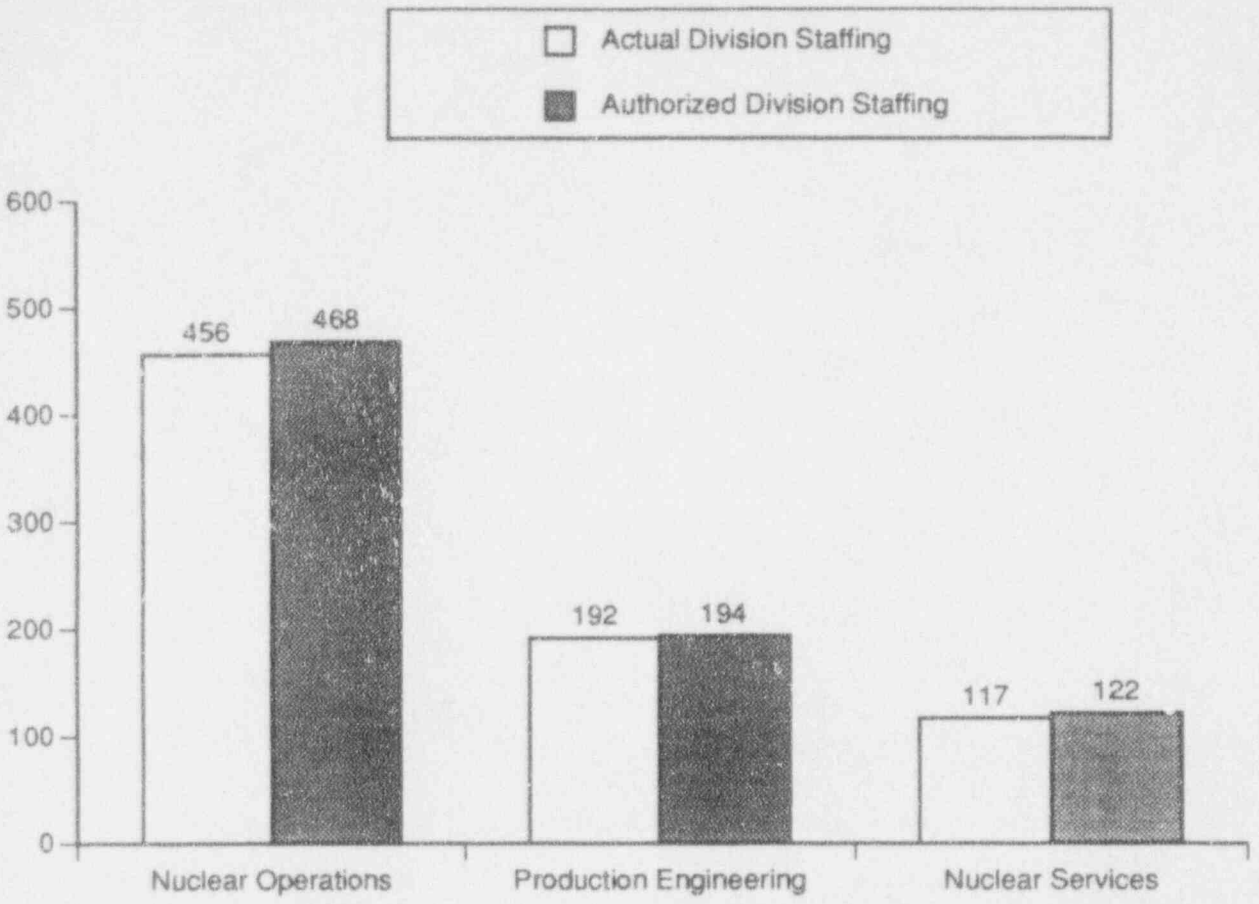
The December 31 amounts are also shown for the prior years 1991 and 1992. In addition, the report shows the plan amounts for the years 1994 through 1997 for reference. The basis for the dollars are the Nuclear Long Range Financial Plan and the 1993 Corporate Planning and Budget Review. The basis for the generation is provided by Nuclear Fuels.

The actual production expense is approximately $5 million below the revised budget. The actual generation of 3,092,354,900 KWH (net) is 155,000,000 KWH below budget. The combination of these resulted in a unit production cost of 3.24 cents/KWH.

Data Source: Scofield/Jamieson (Manager/Source)
Accountability: Scofield
Adverse Trend: None


Actual Division Staffing
Authorized Division Staffing
600
500
400
300
200
100
0
469
472
203
207
113
130
Nuclear Operations
Production Engineering
Nuclear Services
1992


Actual Division Staffing
Authorized Division Staffing
600
500
400
300
200
100
0
545
558
206
204
50
52
0
Nuclear Operations
Production Engineering
Nuclear Services
1991



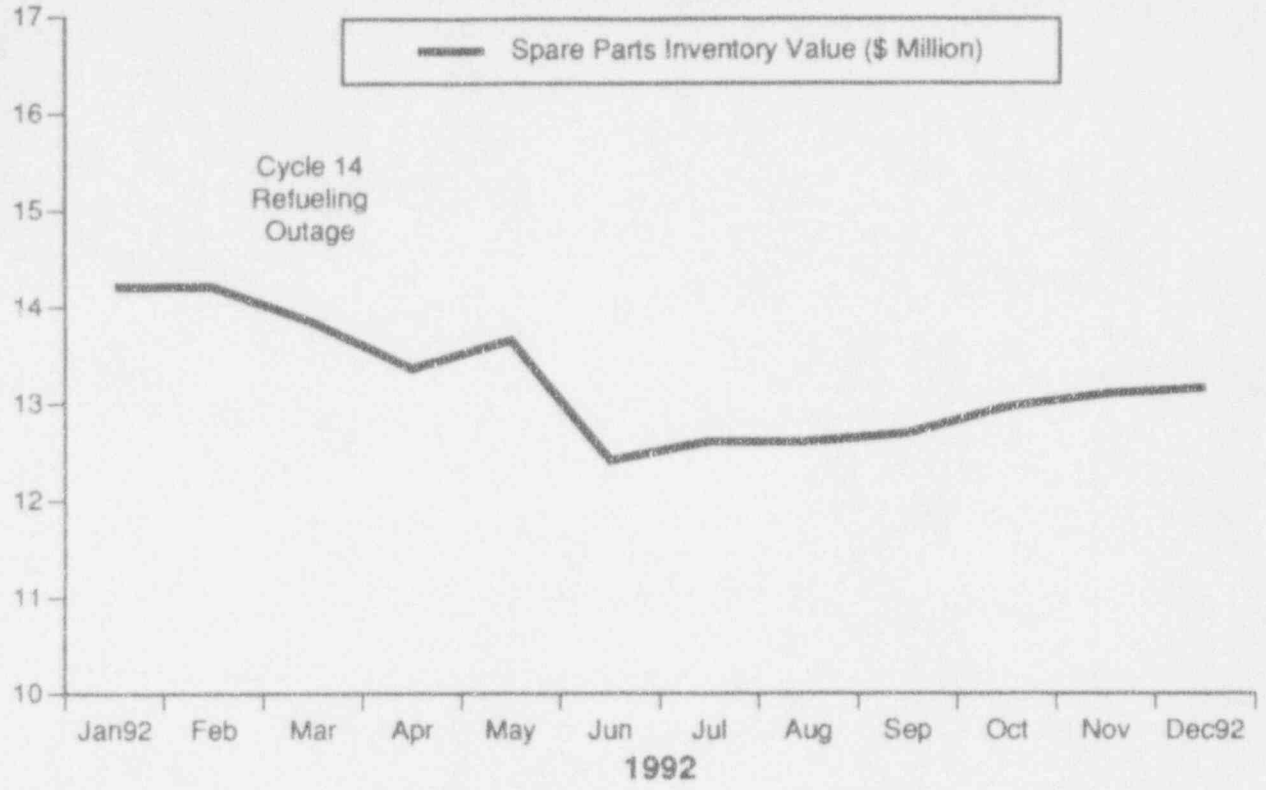
STAFFING LEVEL

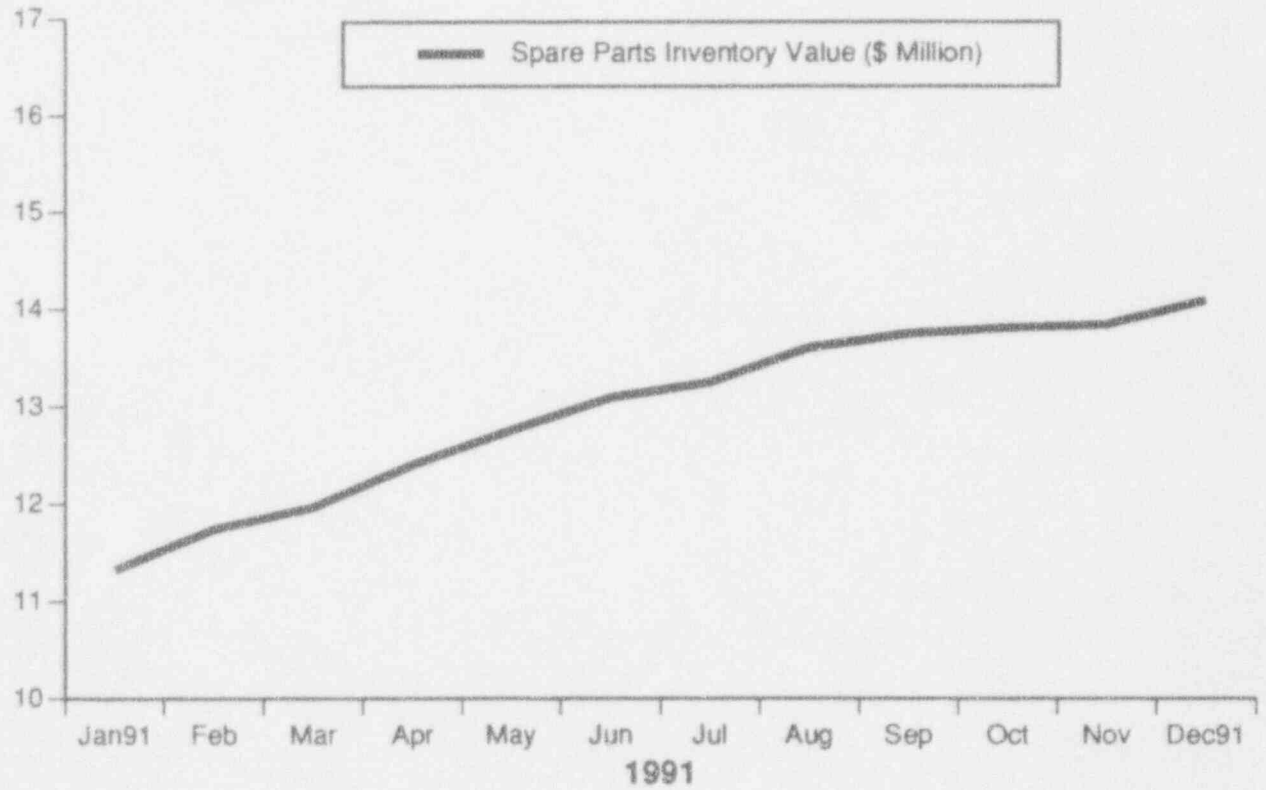
The authorized and actual staffing levels at the end of December 1993 are shown for the three Nuclear Divisions.

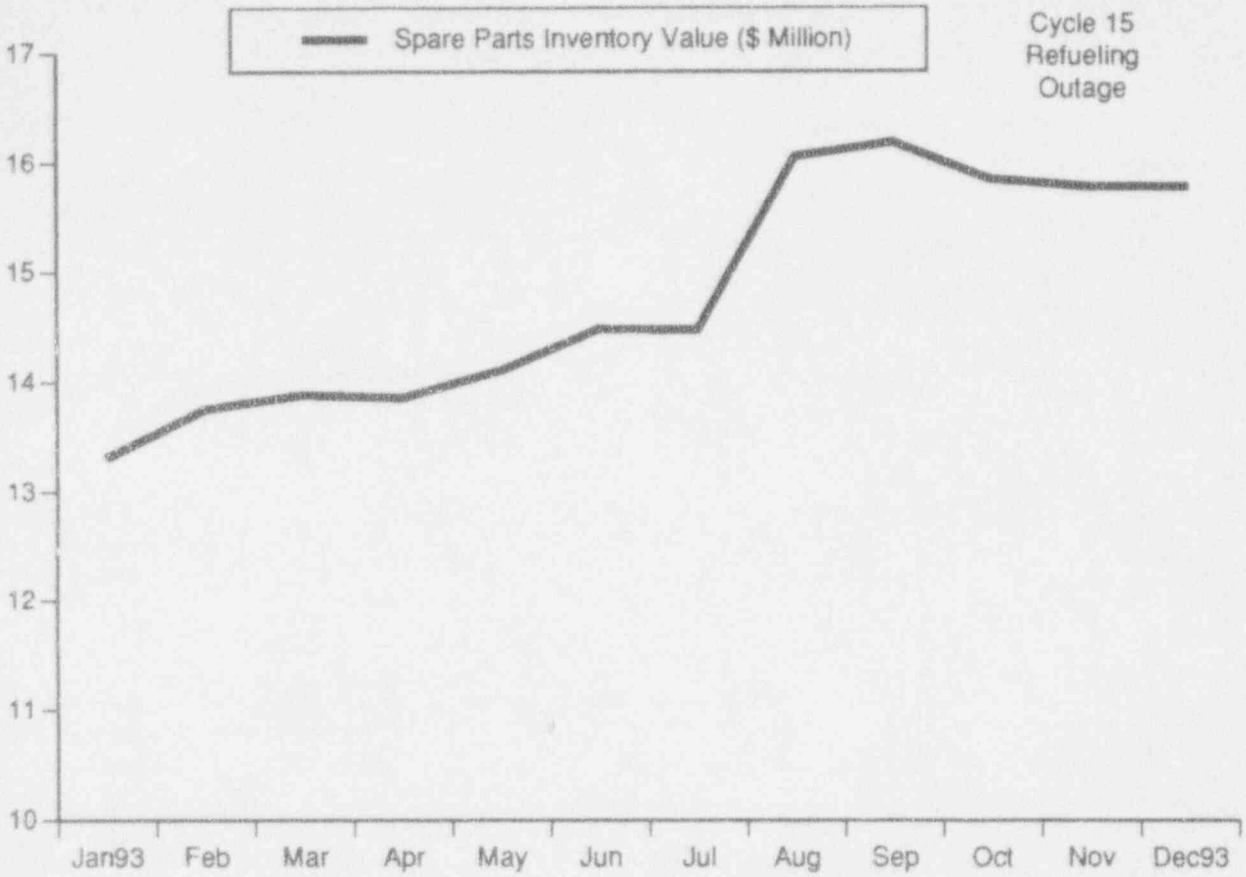
Data Source: Ponec (Manager & Source)

Accountability: Ponec

Adverse Trend: None SEP 24


Spare Parts Inventory Value ($ Million)
Cycle 14
Refueling
Outage
17
16
15
14
13
12
11
10
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Spare Parts Inventory Value ($ Million)
17
16
15
14
13
12
11
10
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



SPARE PARTS INVENTORY VALUE

The spare parts inventory value at the Fort Calhoun Station at the end of December 1993 was reported as $15,766,426. The rise in inventory value is the result of several factors:

1. Prior to July, incorrect reports from MMD gave low inventory values.

2. Significant amounts of material previously purchased as "non-stock" have been added to the inventory.

3. Significant amounts of material purchased and staged for outage use were not used and remain in the inventory.

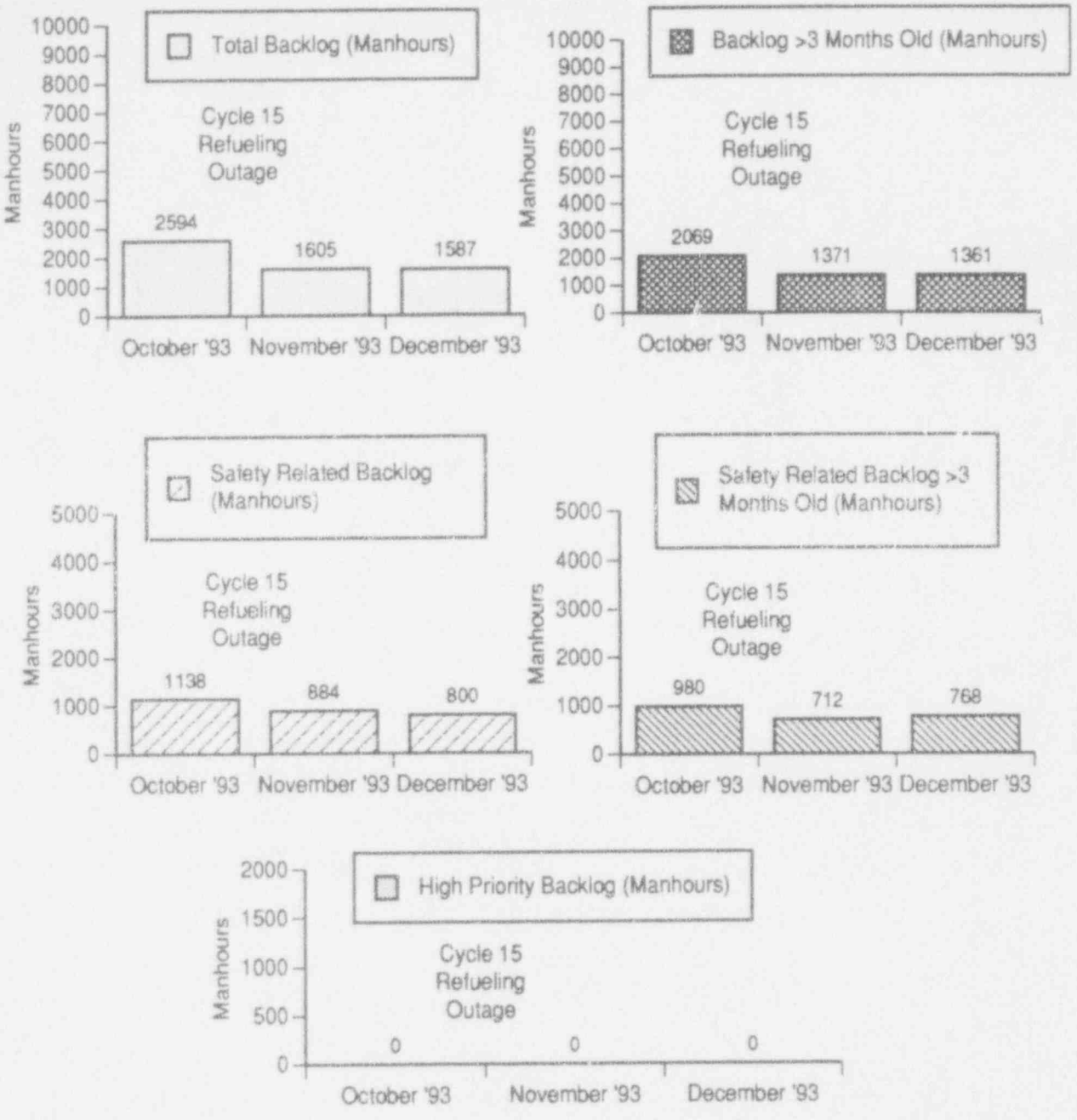
Data Source: Steele/Huliska (Manager/Source)

Accountability: Willrett/McCormick

Adverse Trend: None

DIVISION AND DEPARTMENT PERFORMANCE INDICATORS

These indicators may be deleted from this report if the responsible group contacts the Manager - Station Engineering to request their removal. Indicators referencing SEP items require documentation to ensure that the original intent and scope of the SEP item will not be altered by removal of the indicator from this report.



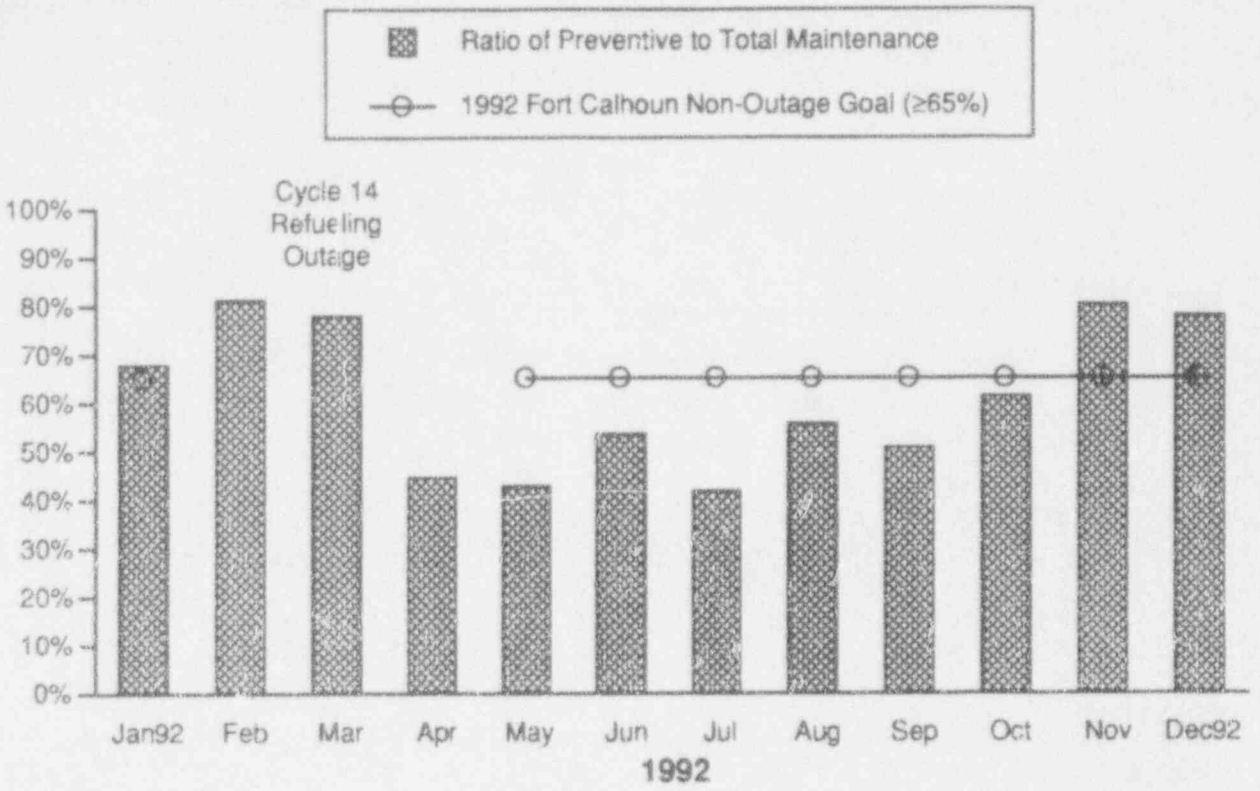
MAINTENANCE WORKLOAD BACKLOGS (CORRECTIVE NON-OUTAGE)

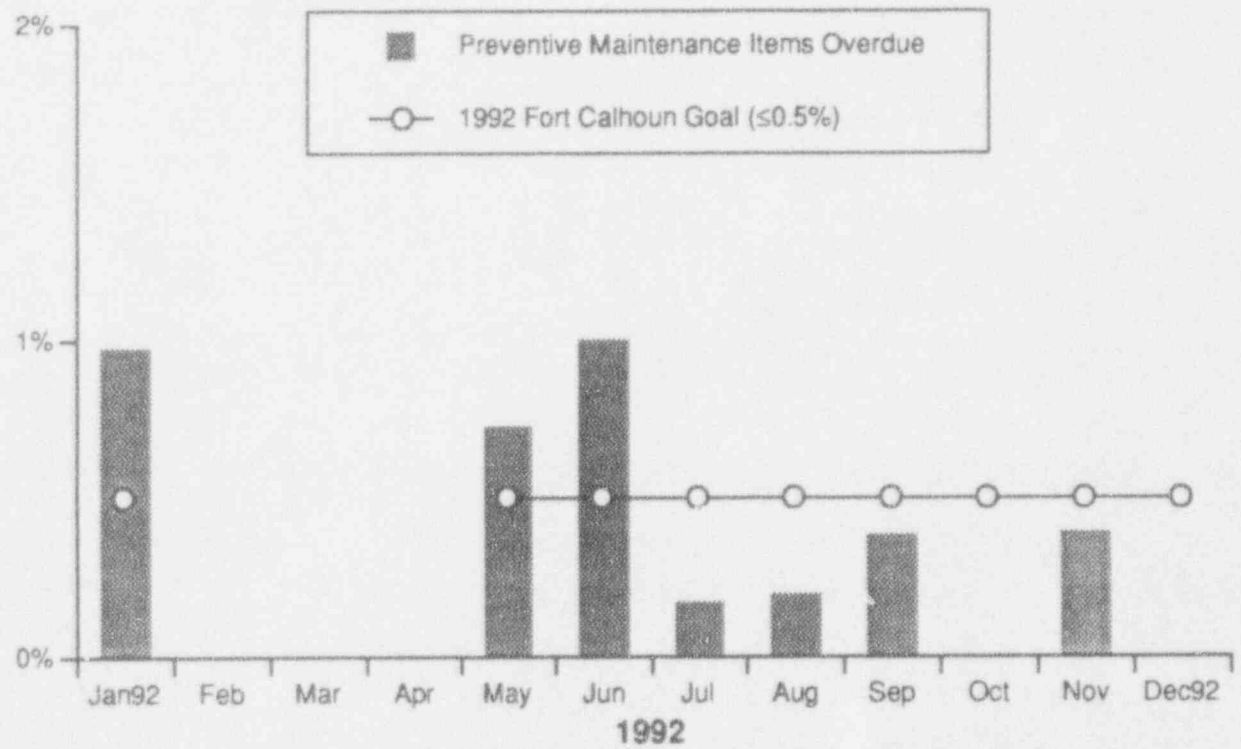
This indicator shows the estimated manhours for corrective non-outage MWOs remaining open at the end of the reporting month, along with a breakdown by several key categories.

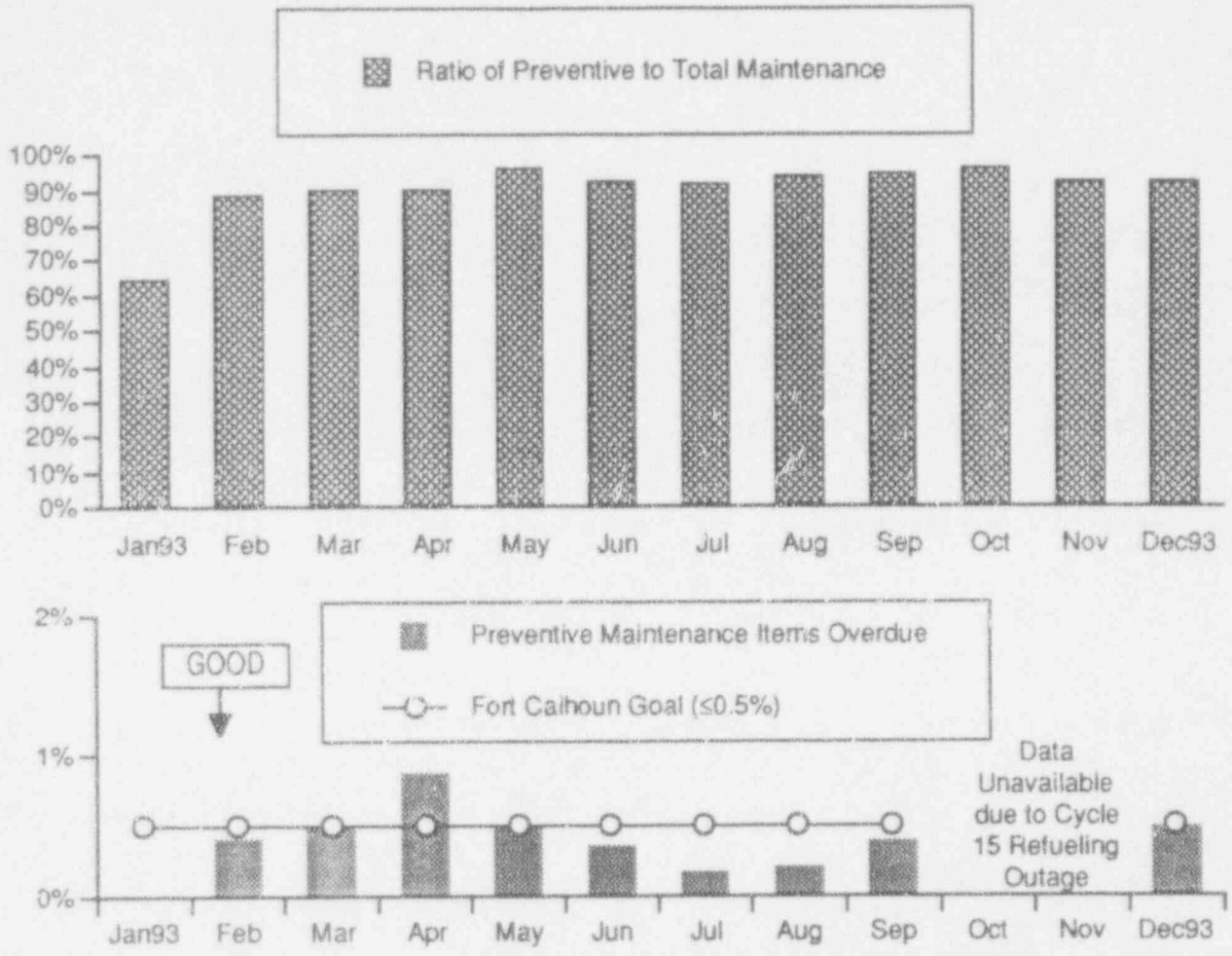
Action plans for adverse trends will not be addressed until after January 1, 1994 because of the inability to perform non-outage work during the Cycle 15 Refueling Outage.

Data Source: Chase/Schmitz (Manager/Source)
Accountability: Chase/Bobba
Adverse Trend: None

SEP 36


Ratio of Preventive to Total Maintenance
1992 Fort Calhoun Non-Outage Goal (≥65%)
Cycle 14
Refueling
Outage
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Preventive Maintenance Items Overdue
1992 Fort Calhoun Goal (≤0.5%)
2%
1%
0%
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992



RATIO OF PREVENTIVE TO TOTAL MAINTENANCE & PREVENTIVE MAINTENANCE ITEMS OVERDUE

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

The ratio of preventive to total maintenance was 92.01% in December 1993.

The lower graph shows the percentage of preventive maintenance items overdue. During December, 630 PM items were completed. 3 of these PM items (0.48% of the total) were not completed within the allowable grace period.

The 1993 Fort Calhoun goal is to have less than 0.5% per month of the preventive maintenance items overdue.

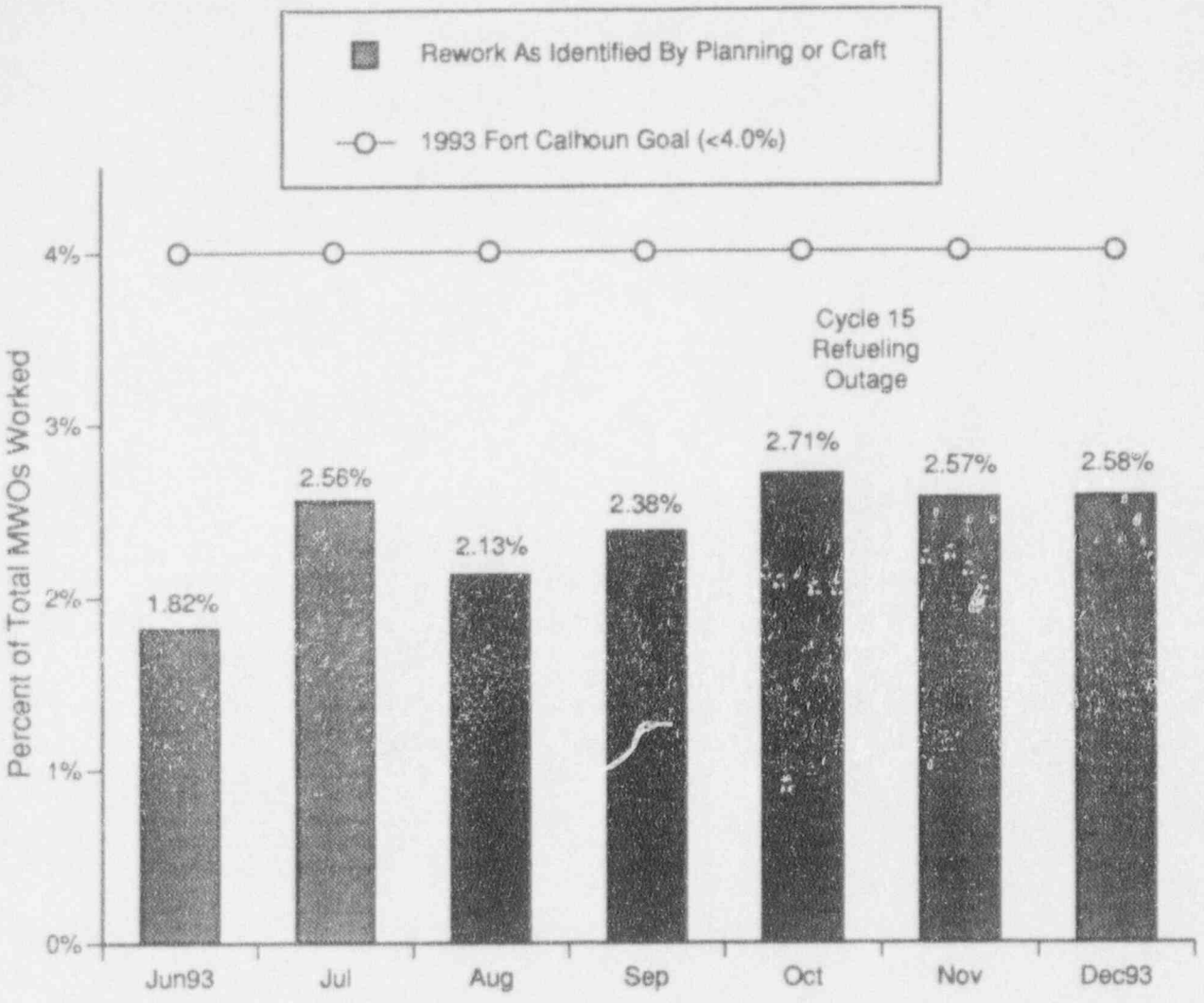
Accountability: Chase/Bobba

Data Source: Chase/Schmitz/Brady (Manager/Sources)

Adverse Trend: None

SEP 41

(This page intentionally left blank. This indicator was added to the report in 1993.)



PERCENTAGE OF TOTAL MWOs COMPLETED PER MONTH IDENTIFIED AS REWORK

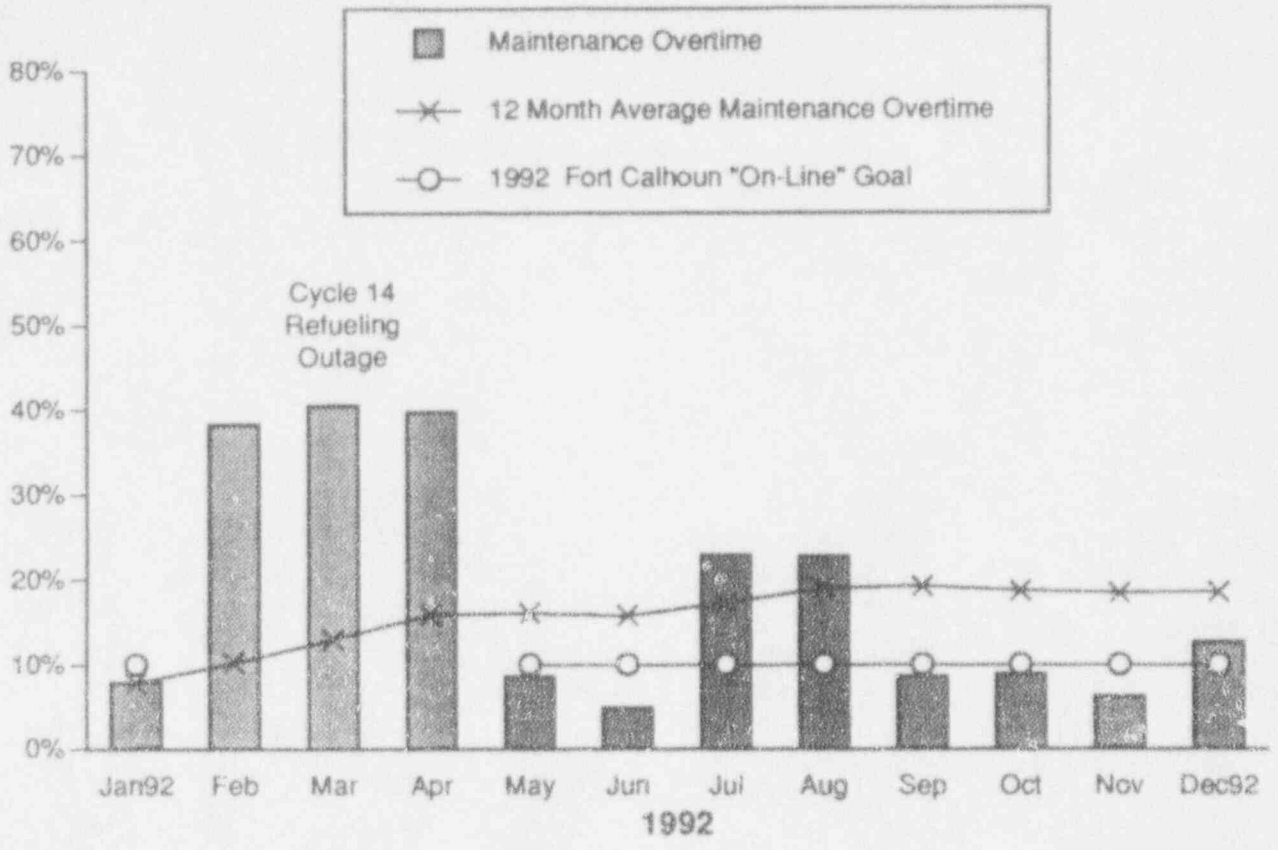
This graph indicates the percentage of total MWOs completed per month identified as rework. Rework activities are identified by maintenance planning and craft.

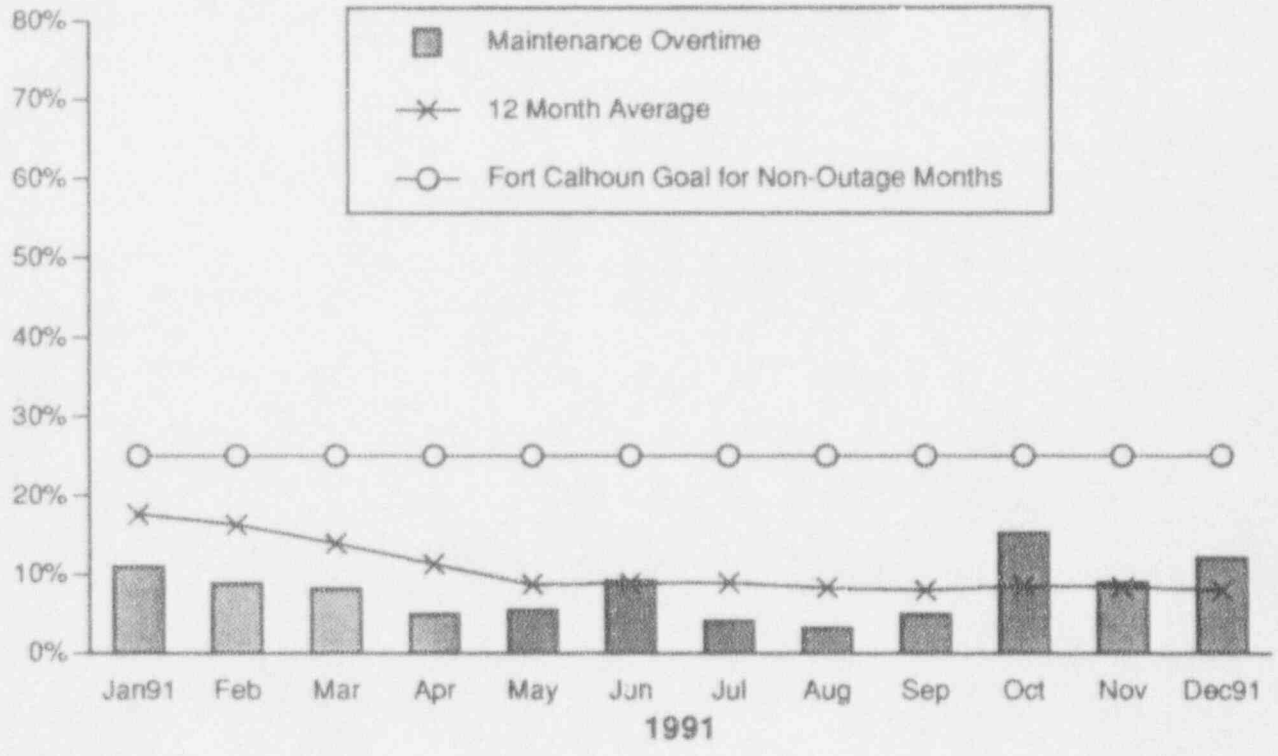
The 1993 goal for this indicator is to maintain less than 4% rework per month.

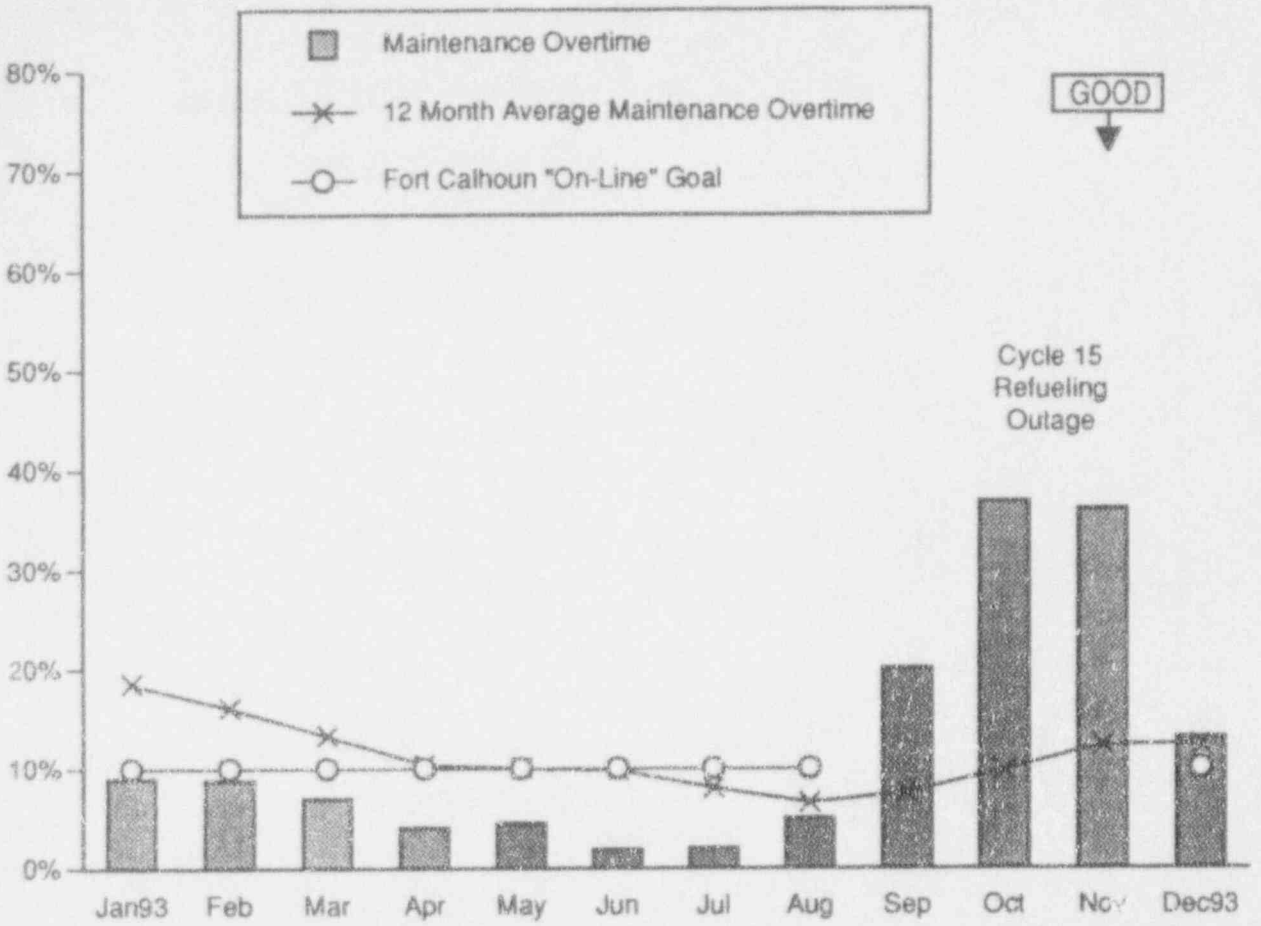
Data Source: Bobba/Schmitz (Manager/Source)

Accountability: Chase/Bobba

Positive Trend


Maintenance Overtime
12 Month Average Maintenance Overtime
1992 Fort Calhoun "On-Line" Goal
80%
70%
60%
50%
40%
30%
20%
10%
0%
Cycle 14
Refueling
Outage
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Maintenance Overtime
12 Month Average
Fort Calhoun Goal for Non-Outage Months
80%
70%
60%
50%
40%
30%
20%
10%
0%
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



MAINTENANCE OVERTIME

The Maintenance Overtime Indicator monitors the ability to perform the desired maintenance activities with the allotted resources.

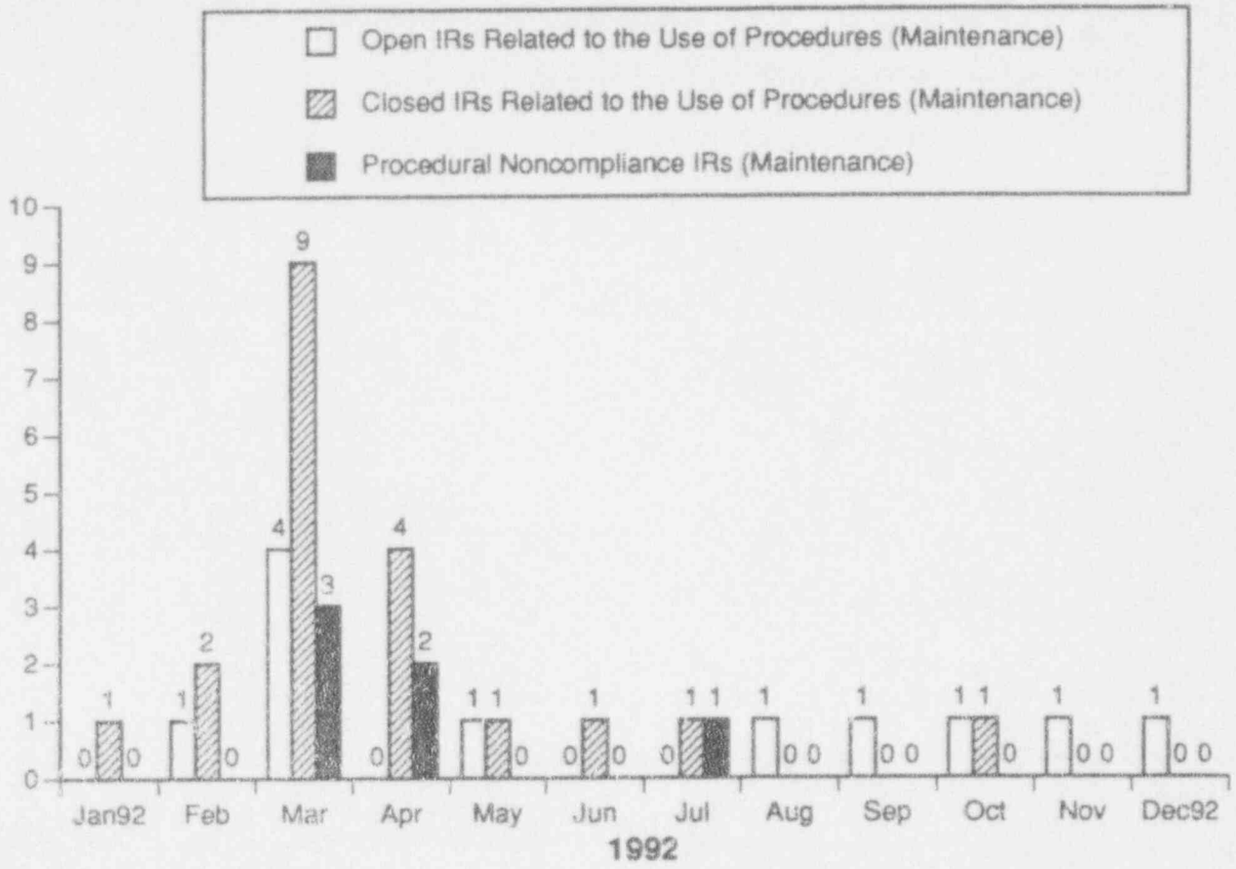
The percent of overtime hours with respect to normal hours was reported as 13.09% for the month of December 1993. The 12 month average percentage of overtime hours with respect to normal hours was reported as 12.36% at the end of the month.

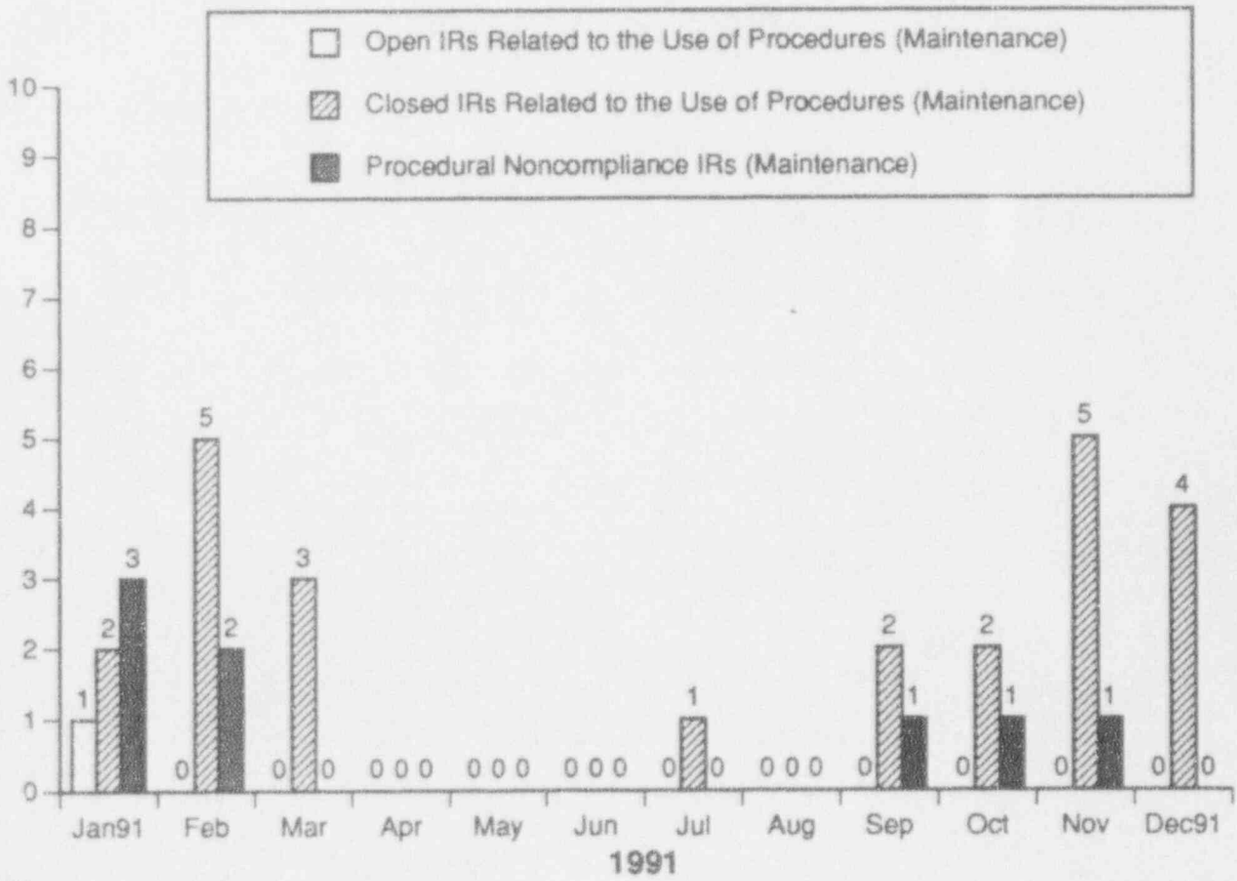
The 1993 Fort Calhoun goal for the "on-line" percentage of maintenance overtime hours worked is a maximum of 10%.

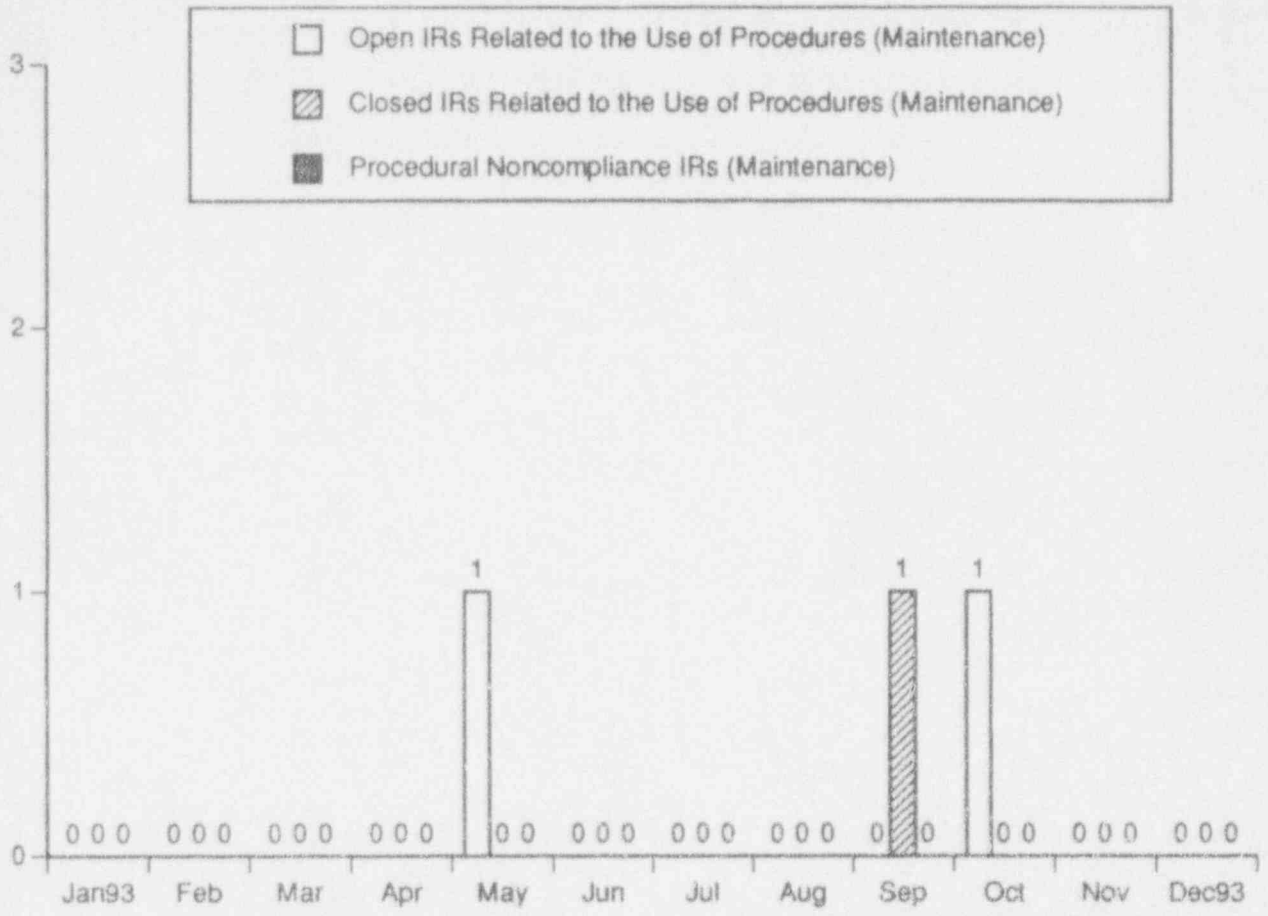
Data Source: Chase/Schmitz (Manager/Source)

Accountability: Chase/ Bobba

Adverse Trend: None


Open IRs Related to the Use of Procedures (Maintenance)
Closed IRs Related to the Use of Procedures (Maintenance)
Procedural Noncompliance IRs (Maintenance)
10
9
8
7
6
5
4
3
2
1
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Open IRs Related to the Use of Procedures (Maintenance)
Closed IRs Related to the Use of Procedures (Maintenance)
Procedural Noncompliance IRs (Maintenance)
10
9
8
7
6
5
4
3
2
1
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



PROCEDURAL NONCOMPLIANCE INCIDENTS (MAINTENANCE)

This indicator shows the number of open Maintenance Incident Reports (IRs) that are related to the use of procedures, the number of closed IRs that are related to the use of procedures, and the number of open and closed IRs that received procedural noncompliance cause codes for each of the last twelve months.

There were no procedural noncompliance incidents for maintenance reported for the month of December 1993.

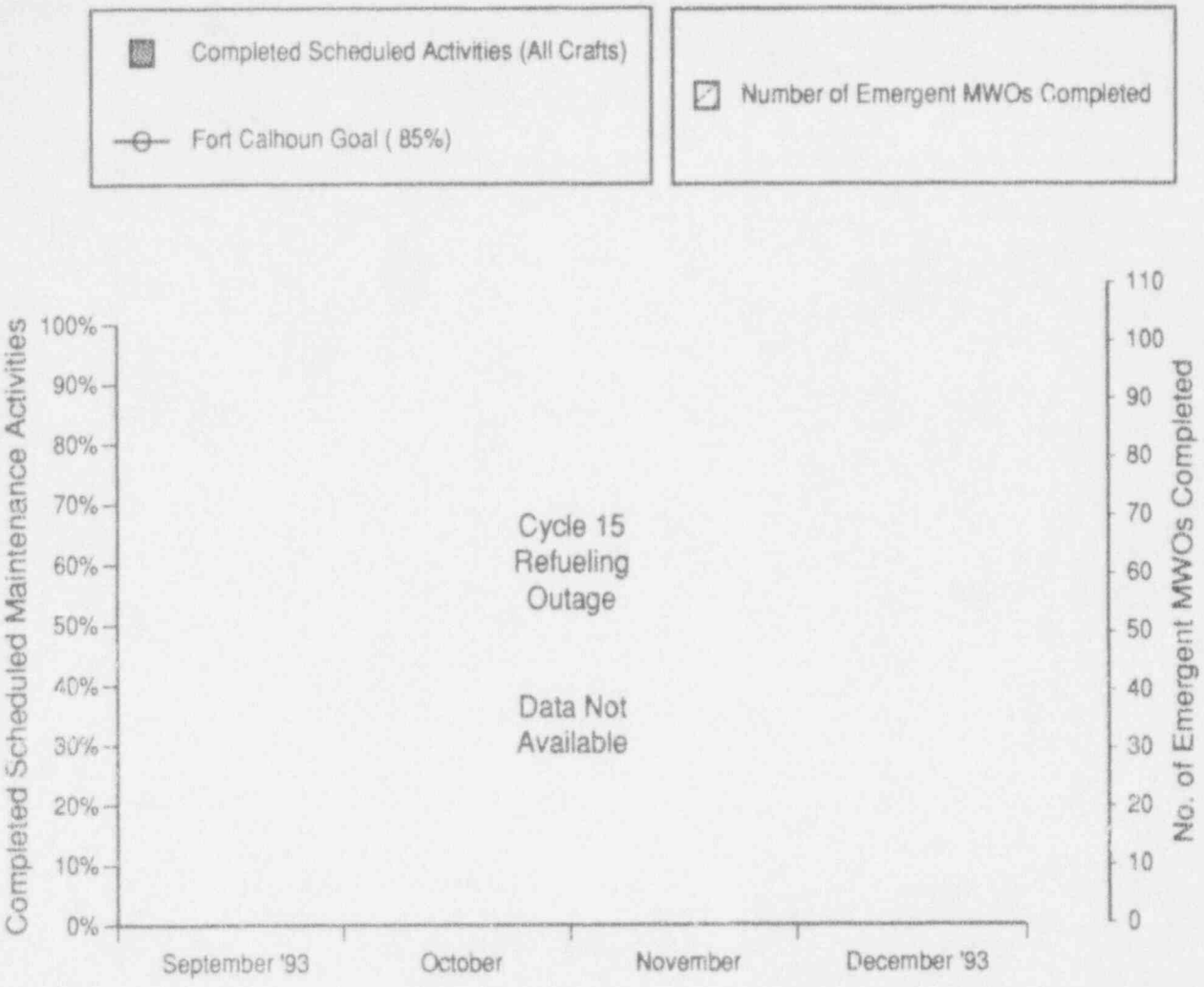
Data Source: Chase/Keister (Manager/Source)

Accountability: Chase/Bobba

Adverse Trend: None

SEP 15, 41 & 44

(This page intentionally left blank. The method of reporting this indicator was revised in 1993.)



PERCENT OF COMPLETED SCHEDULED MAINTENANCE ACTIVITIES (ALL MAINTENANCE CRAFTS)

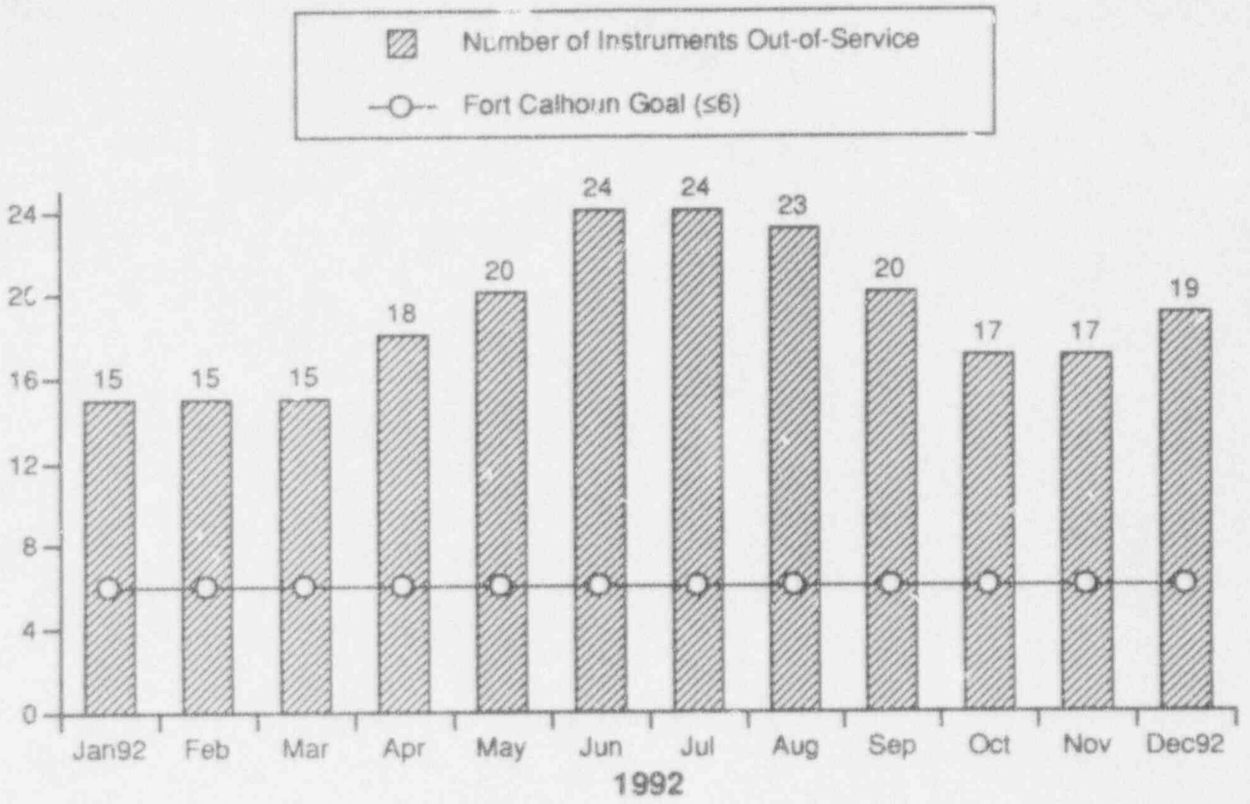
This indicator shows the percent of the number of completed maintenance activities as compared to the number of scheduled maintenance activities concerning all Maintenance Crafts. Maintenance activities include MWRs, MWOs, STs, PMOs, calibrations, and miscellaneous maintenance activities. The number of emergent MWOs completed for the month is also shown.

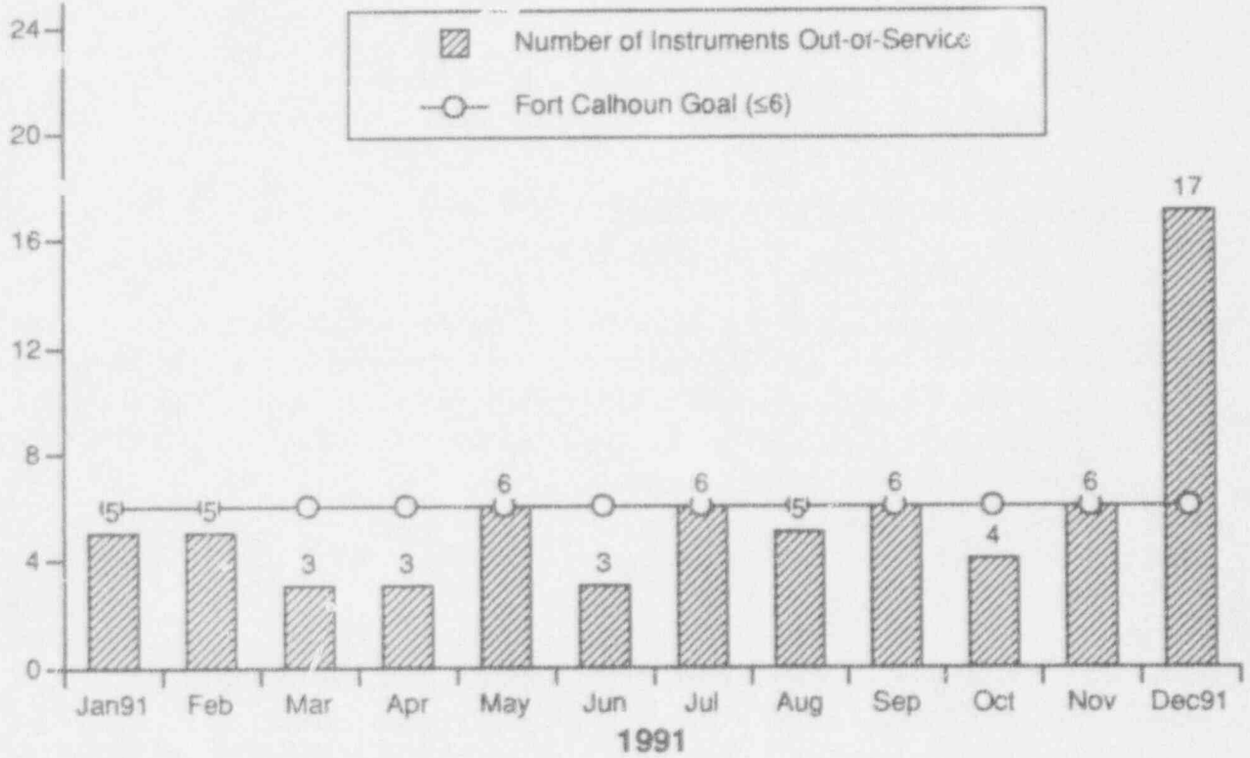
Because of the Cycle 15 Refueling Outage, data for this indicator will not be available until after the first month on-line during Cycle 15.

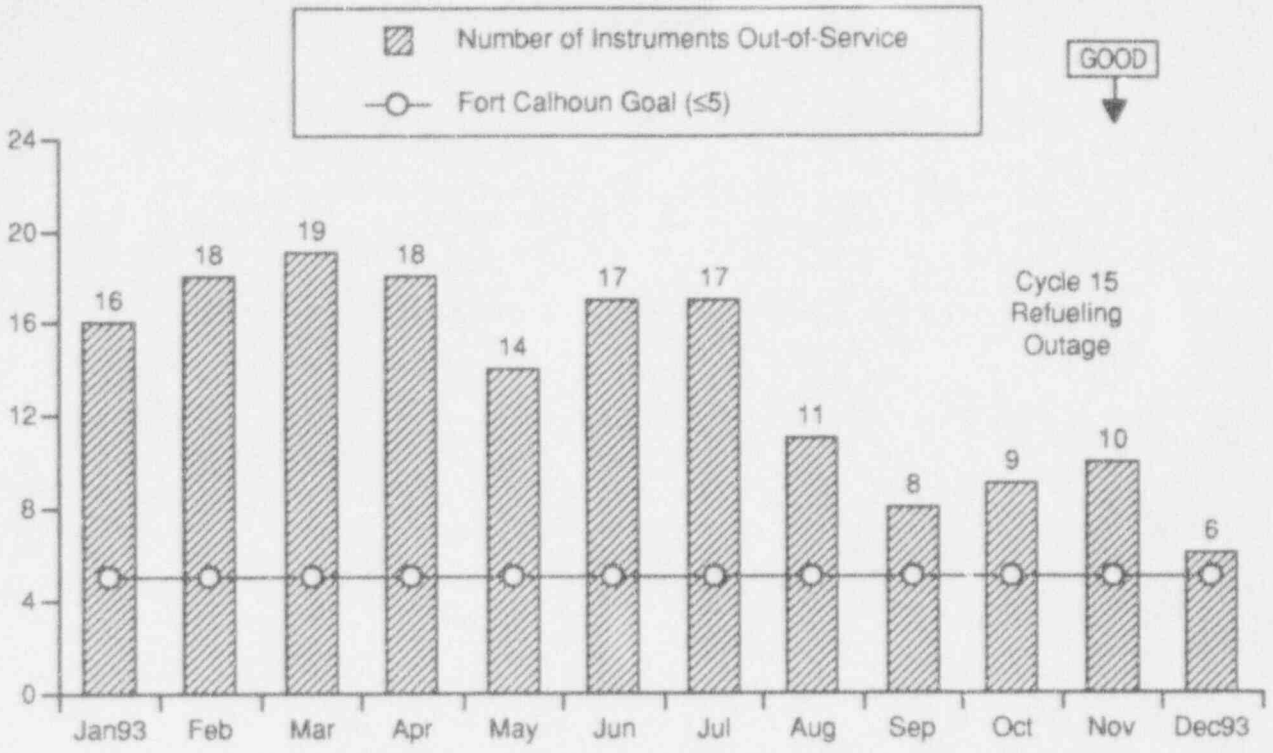
The 1993 Fort Calhoun Station monthly goal for the percent of completed scheduled maintenance activities is a minimum of 85%.

Data Source: Chase/Schmitz (Manager/Source)
Accountability: Chase/Bobba
Adverse Trend: None

SEP 33


Number of Instruments Out-of-Service
Fort Calhoun Goal (≤6)
24
20
16
12
8
4
0
15
15
15
18
20
24
24
23
20
17
17
19
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Number of Instruments Out-of-Service
Fort Calhoun Goal (≤6)
24
20
16
12
8
4
0
6
6
6
6
6
6
5
5
3
3
3
4
17
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



IN-LINE CHEMISTRY INSTRUMENTS OUT-OF-SERVICE

This indicator shows the total number of in-line chemistry system instruments 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).

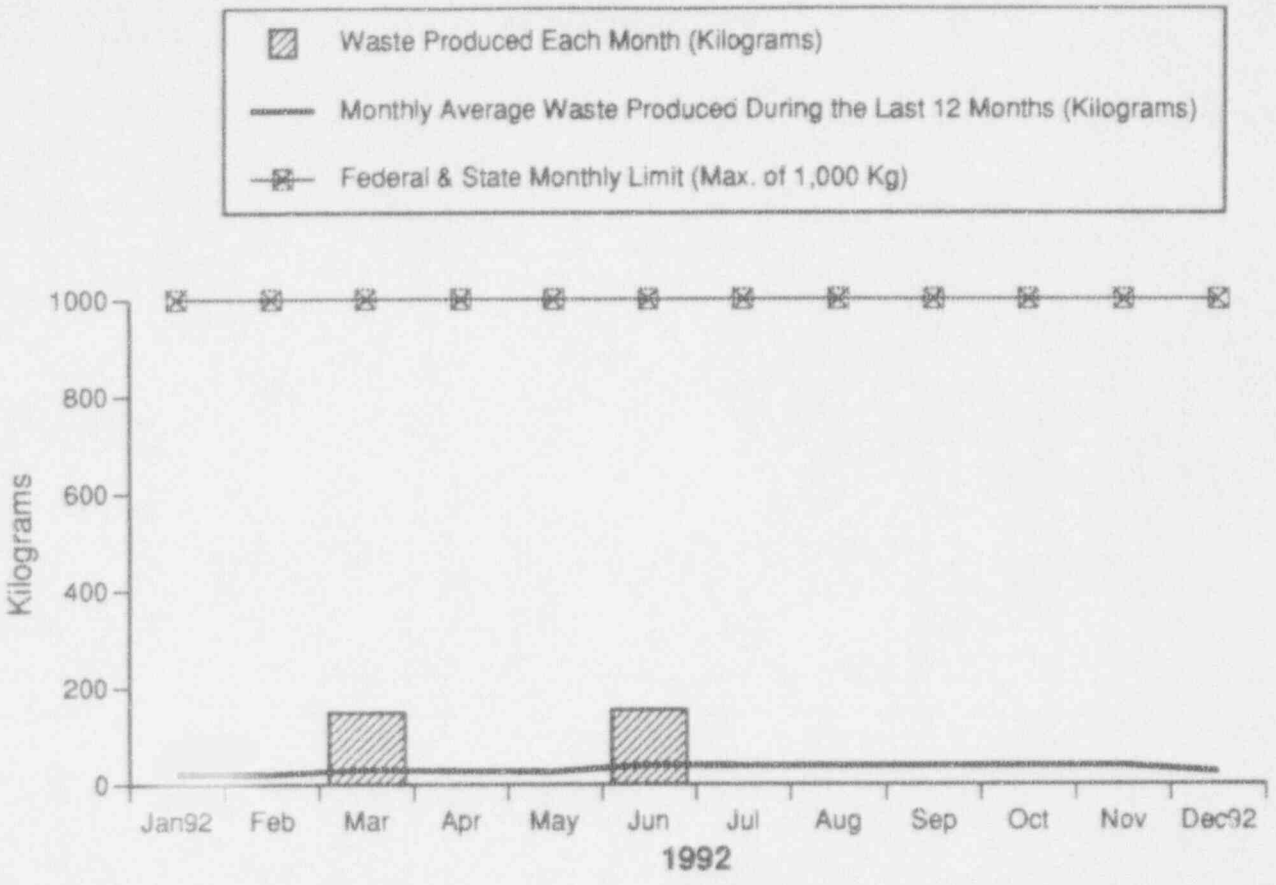
At the end of December 1993 there was a total of 6 in-line chemistry instruments out-of-service. Of these 6 instruments, 5 were from the Secondary System and 1 was from PASS.

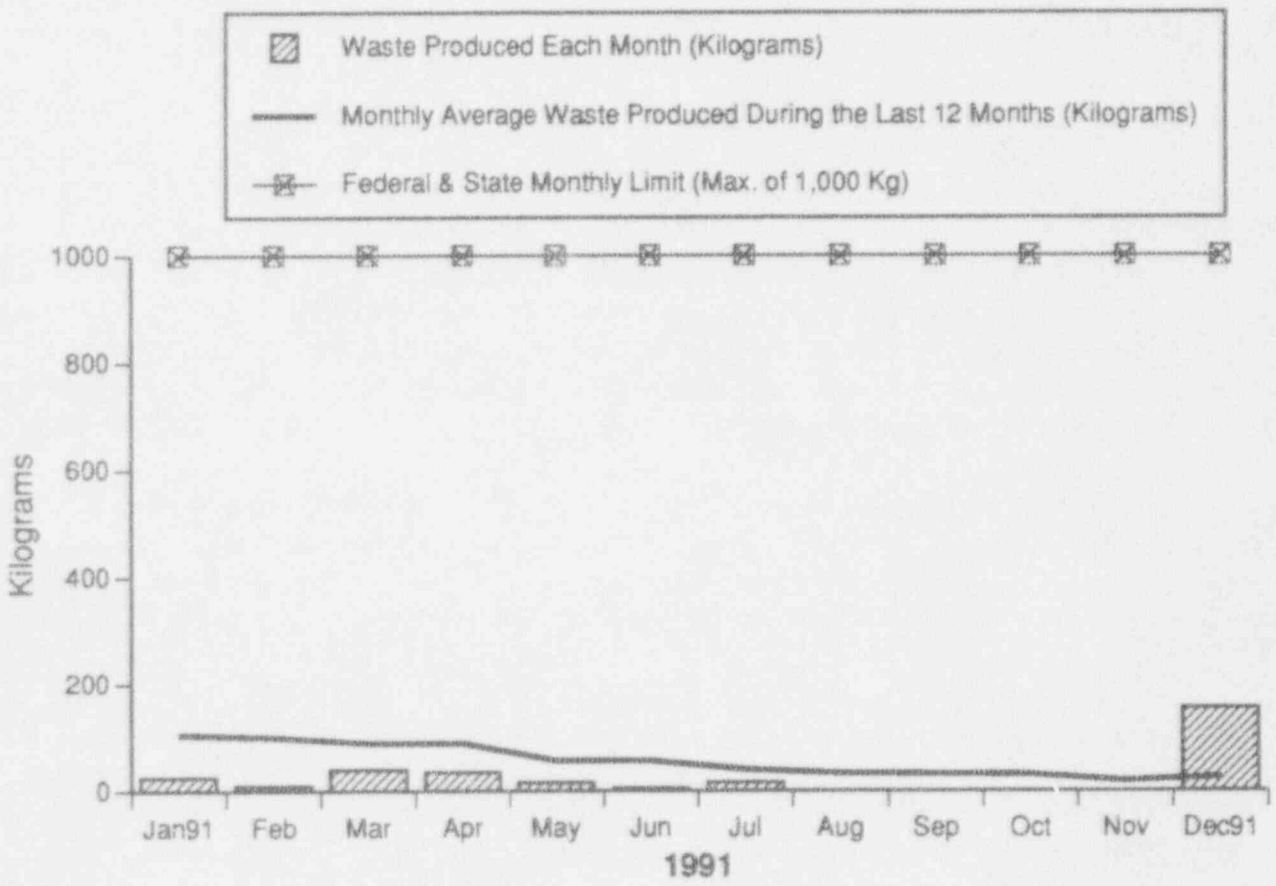
The trend for PASS instruments for this reporting period has not changed. The trend for Secondary instruments this reporting period has decreased from 9 to 5. The water plant sample panel had 2 instruments out-of-service, the secondary instrument panel had 2 instruments out-of-service and the blowdown sample panel had 1 instrument out-of-service at the end of the reporting month.

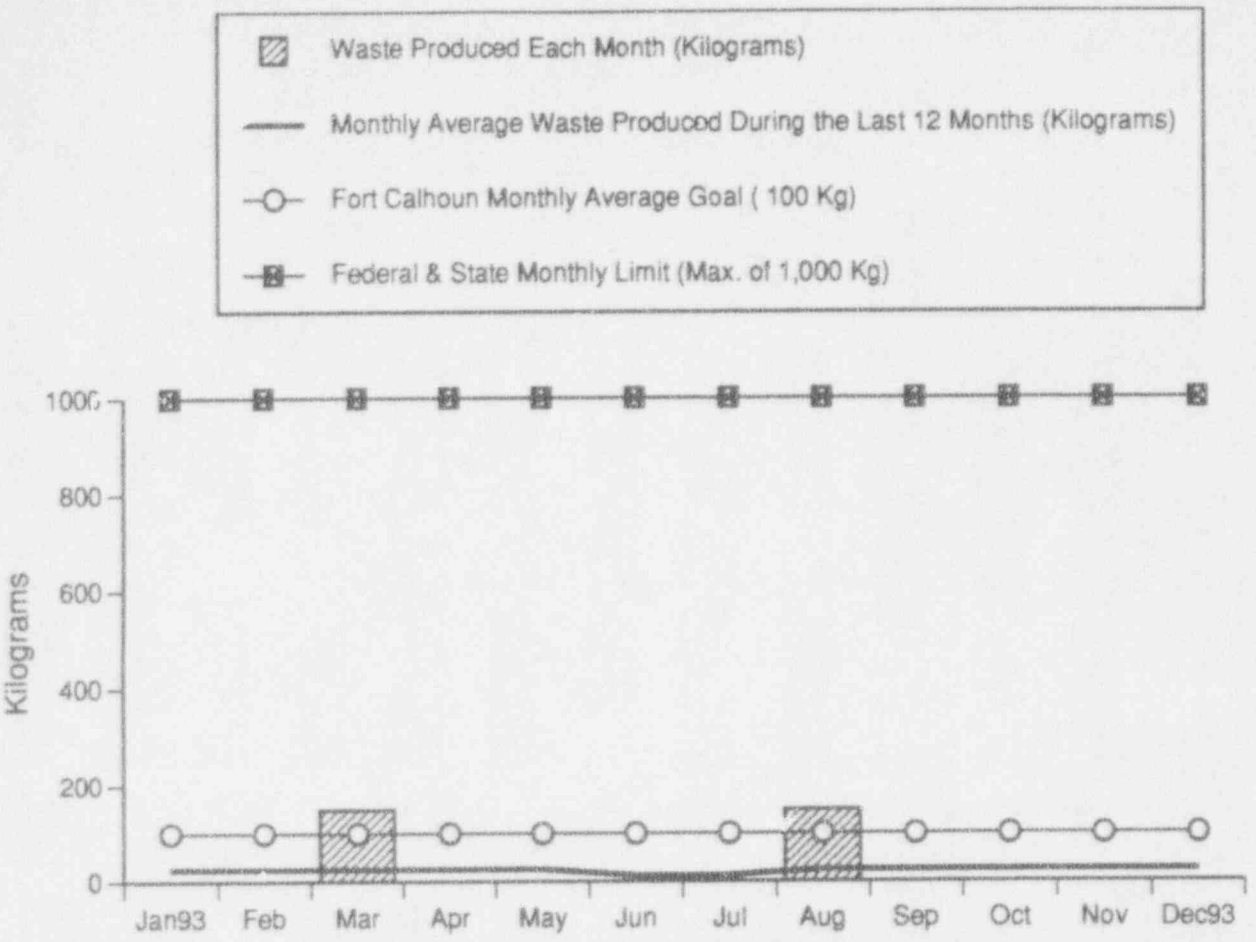
The entire instrument channel is considered inoperative if: 1) the instrument is inoperative, 2) the chart recorder associated with the instrument is inoperative, or 3) the alarm function associated with the instrument is inoperative. If any of the functions listed above are not operational, then the instrument is not performing its intended function.

The 1993 Fort Calhoun goal for the number of in-line chemistry system instruments that are out-of-service has been set at a maximum of 5. Six out-of-service chemistry instruments make up 10% of all the chemistry instruments that are counted for this indicator.

Data Source: Chase/Renaud (Manager/Source)
Accountability: Chase/Jaworski
Adverse Trend: None


Waste Produced Each Month (Kilograms)
Monthly Average Waste Produced During the Last 12 Months (Kilograms)
Federal & State Monthly Limit (Max. of 1,000 Kg)
1000
800
600
400
200
0
Kilograms
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Waste Produced Each Month (Kilograms)
Monthly Average Waste Produced During the Last 12 Months (Kilograms)
Federal & State Monthly Limit (Max. of 1,000 Kg)
1000
800
600
400
200
0
Kilograms
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



HAZARDOUS WASTE PRODUCED

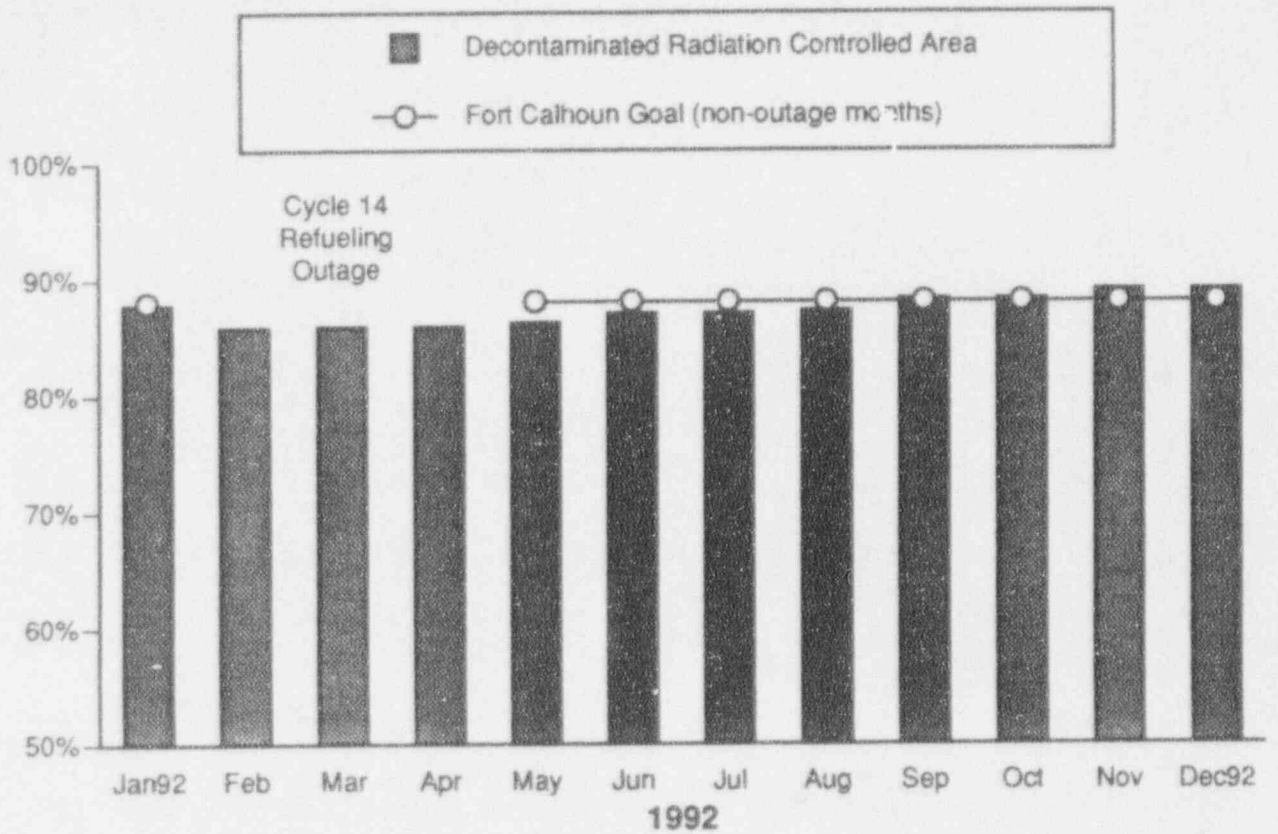
This indicator shows the total amount of hazardous waste produced by the Fort Calhoun Station each month, the monthly average goal and the monthly average total for hazardous waste produced during the last 12 months. This hazardous waste consists of non-halogenated hazardous waste, halogenated hazardous waste, and other hazardous waste produced.

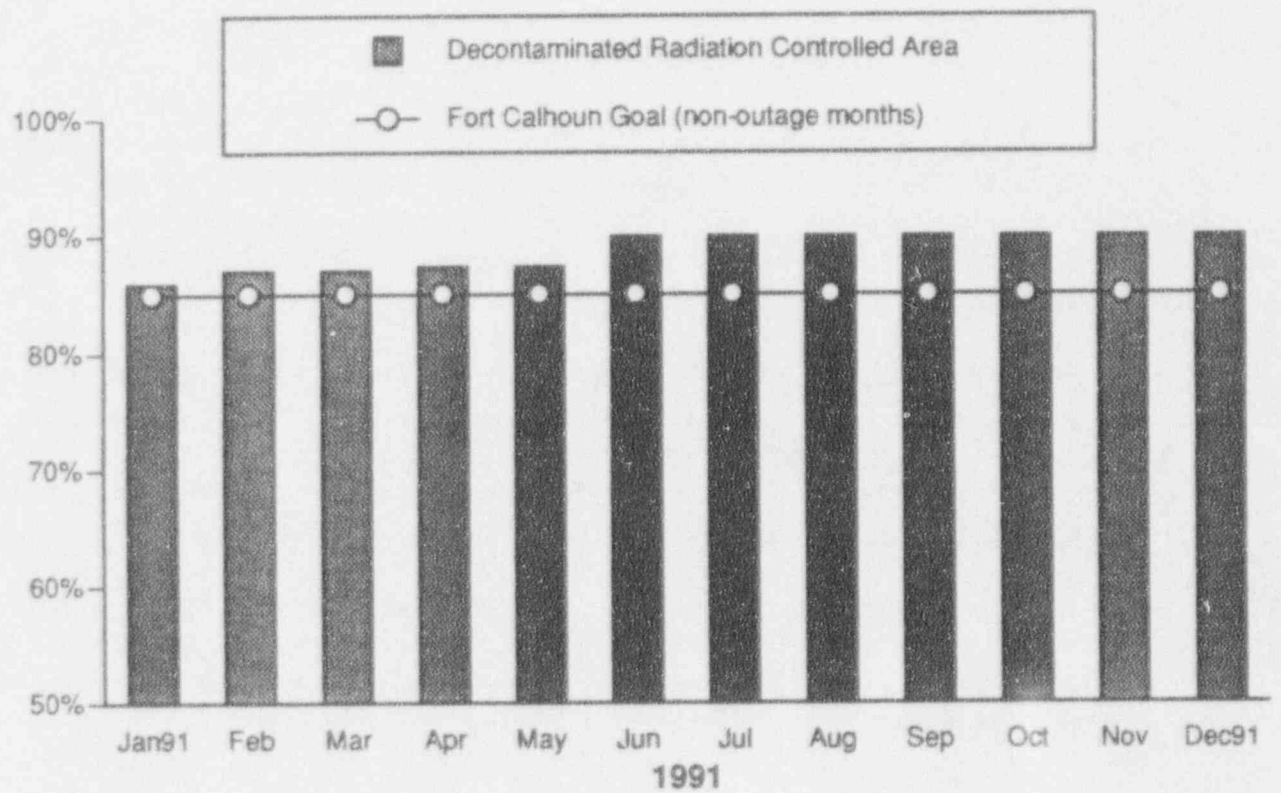
During the month of December 1993, 0.0 kilograms of non-halogenated hazardous waste was produced, 0.0 kilograms of halogenated hazardous waste was produced, and 0.0 kilograms of other hazardous waste was produced. The total for hazardous waste produced during the last 12 months is 299 kilograms. The monthly average for hazardous waste produced during the last 12 months is 24.9 kilograms.

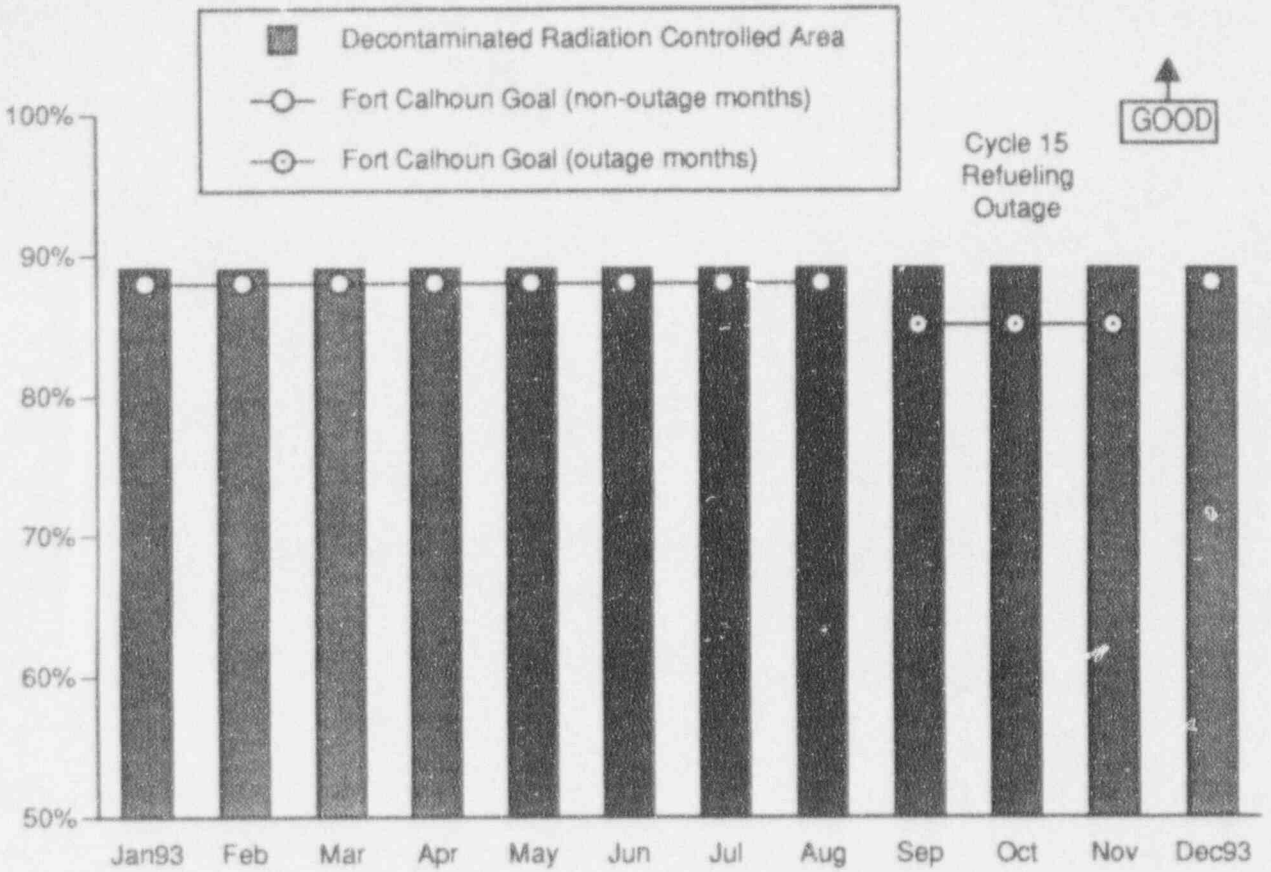
Hazardous waste is counted based upon a full drum of waste.

The 1993 and 1992 monthly average goals for hazardous waste produced are a maximum of 100 kilograms.

Date Source: Chase/Henning (Manager/Source)
Accountability: Chase/Henning
Positive Trend


Decontaminated Radiation Controlled Area
Fort Calhoun Goal (non-outage months)
100%
90%
80%
70%
60%
50%
Cycle 14
Refueling
Outage
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Decontaminated Radiation Controlled Area
Fort Calhoun Goal (non-outage months)
100%
90%
80%
70%
60%
50%
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



DECONTAMINATED RADIATION CONTROLLED AREA

This indicator shows the percentage of the RCA that is decontaminated (clean) based on the total square footage. The 1993 non-outage goal is a minimum of 88% decontaminated RCA and the outage goal is a minimum of 85% decontaminated RCA.

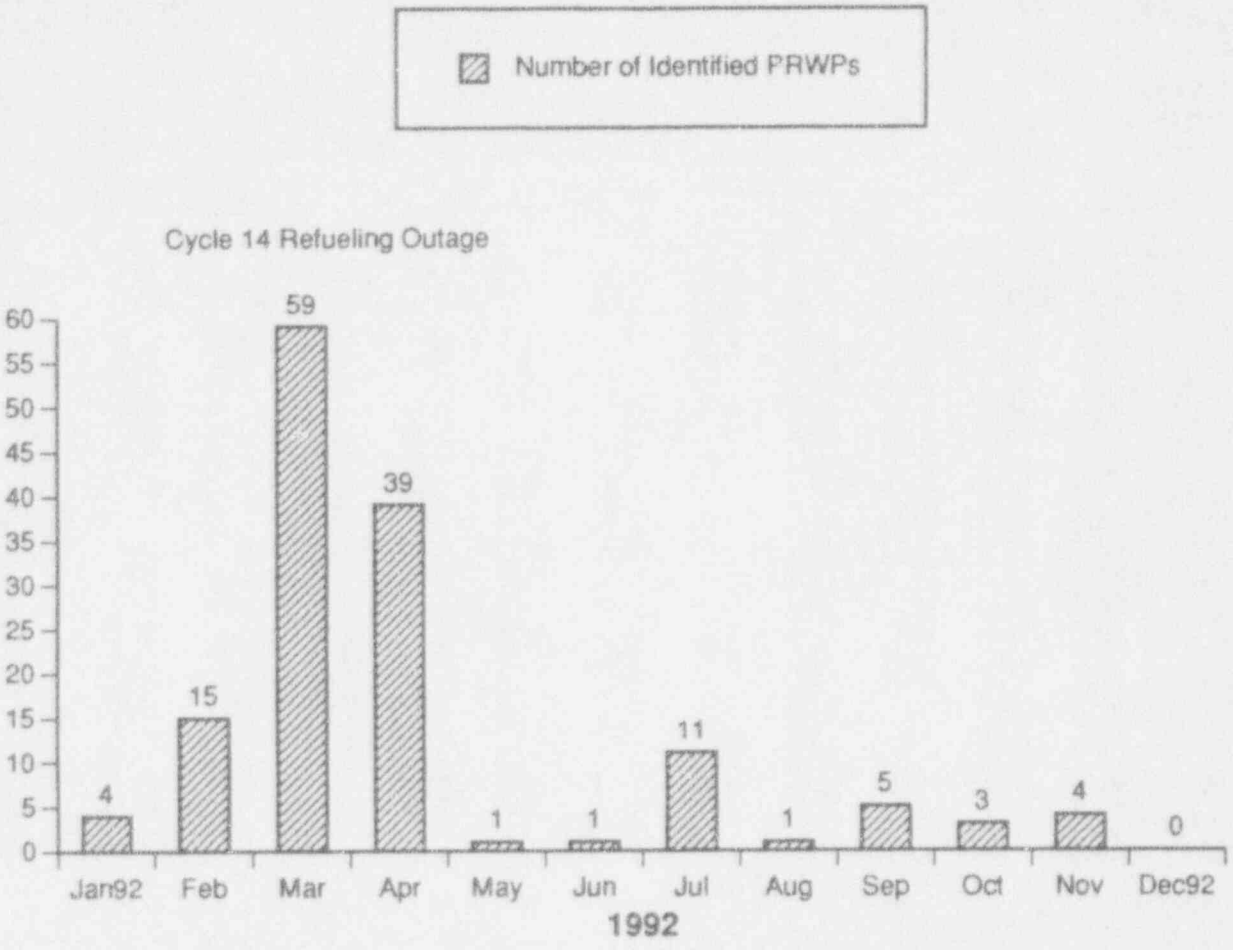
At the end of the reporting month, 89% of the total square footage of the RCA was not contaminated.

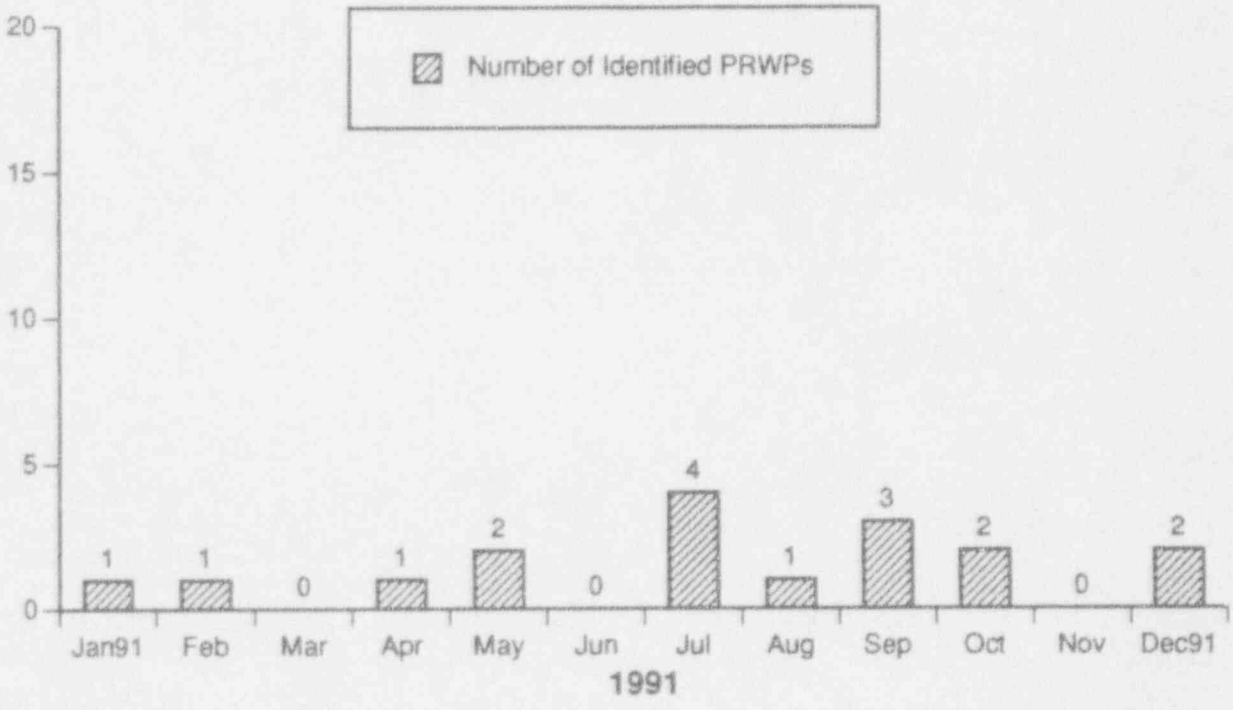
Data Source: Chase/Gundal (Manager/Source)

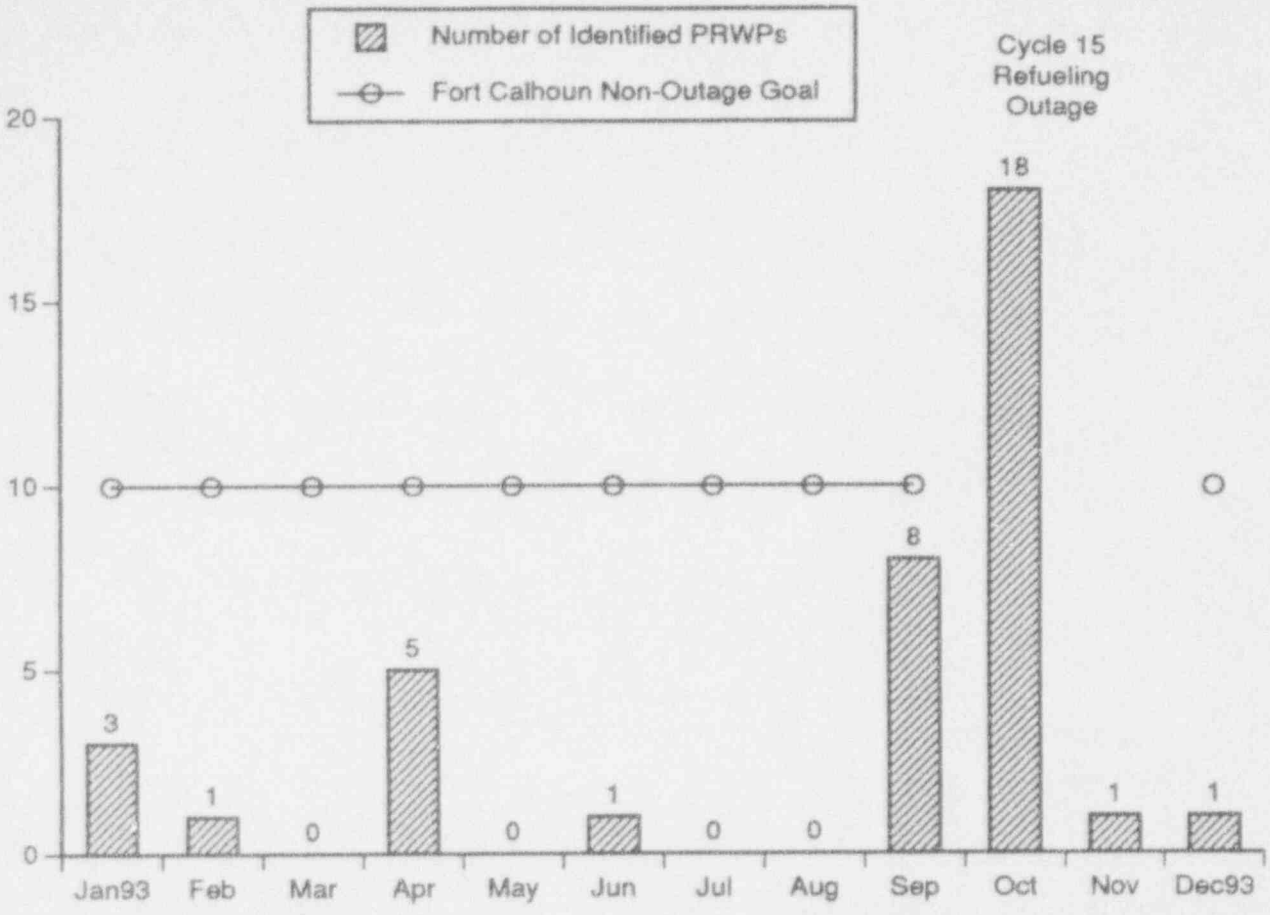
Accountability: Chase/Lovett

Positive Trend

SEP 54


Number of Identified PRWPs
Cycle 14 Refueling Outage
60
55
50
45
40
35
30
25
20
15
10
5
0
4
15
59
39
1
1
11
1
5
3
4
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Number of Identified PRWPs
20
15
10
5
0
1
1
0
1
2
0
4
1
3
2
0
2
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



RADIOLOGICAL WORK PRACTICES PROGRAM

The Radiological Work Practices Program Indicator shows the number of Poor Radiological Work Practices (PRWPs) which were identified during the reporting month. The PRWPs are identified through supervisory review of the Radiological Occurrence Reports and Personnel Contamination Reports written during the reporting month.

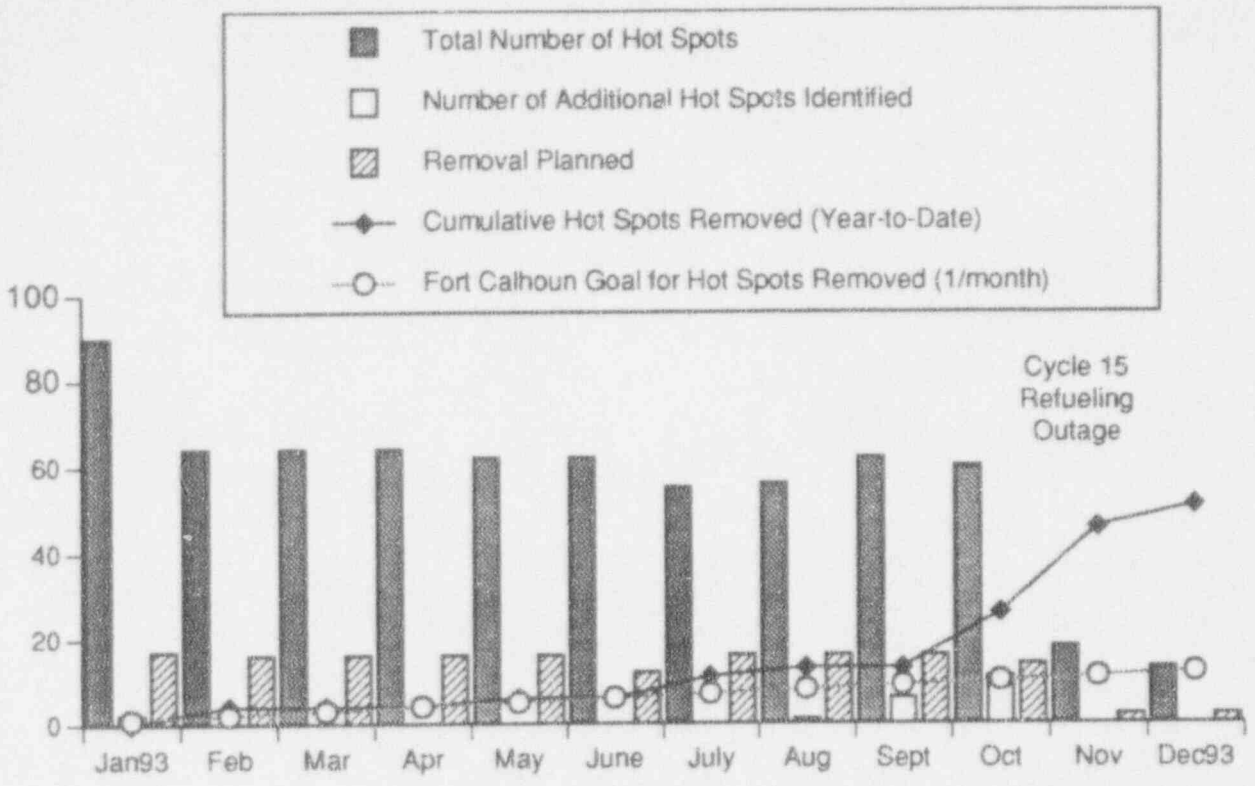
The number of PRWPs which are identified each month should indirectly provide a means to qualitatively assess supervisor accountability for their workers' radiological performance.

During the month of December 1993, there was 1 PRWP identified. The PRWP occurred when an individual removed their booties and stepped on the floor in the posted CA instead of the step off pad. The individual was immediately counseled by RP supervision and the affected area was surveyed to ensure there was not a spread of contamination. IR 93-373 was written.

The 1993 monthly non-outage goal for the number of PRWPs is a maximum of 10 per month.

Data Source: Chase/Williams (Manager/Source)
Accountability: Chase/Lovett
Adverse Trend: None

(This page intentionally left blank. This indicator was revised in 1993.)



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 in rad areas.

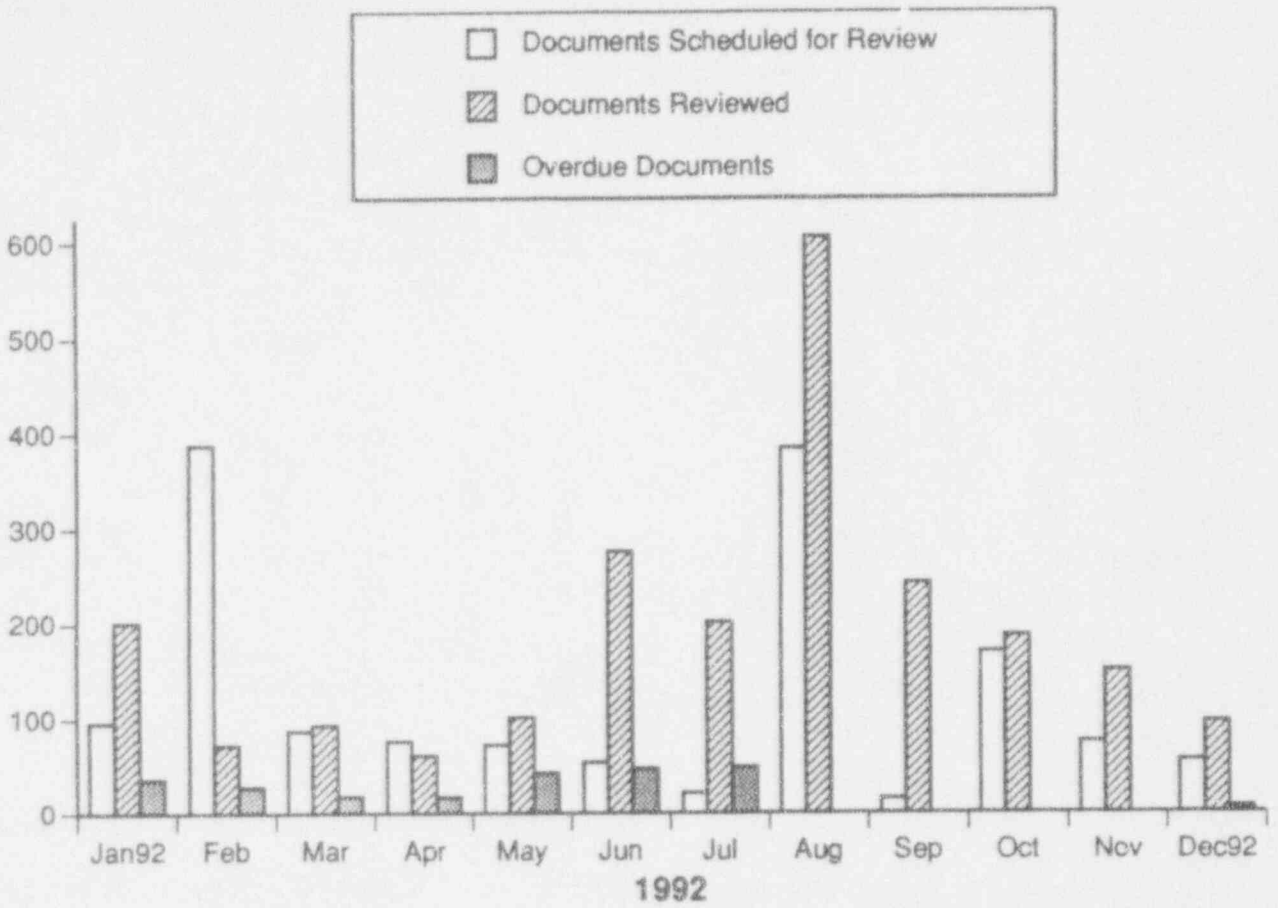
At the end of December 1993, there was a total of 13 hot spots identified. There were no new hot spots identified during the month. There were 5 hot spots removed during the month: 2 hot spots were removed in Rm 14 on a shutdown heat exchanger; 1 hot spot was removed in Rm 59 on a containment spray line; and 2 hot spots were removed in Rm 15 on a shutdown heat exchanger.

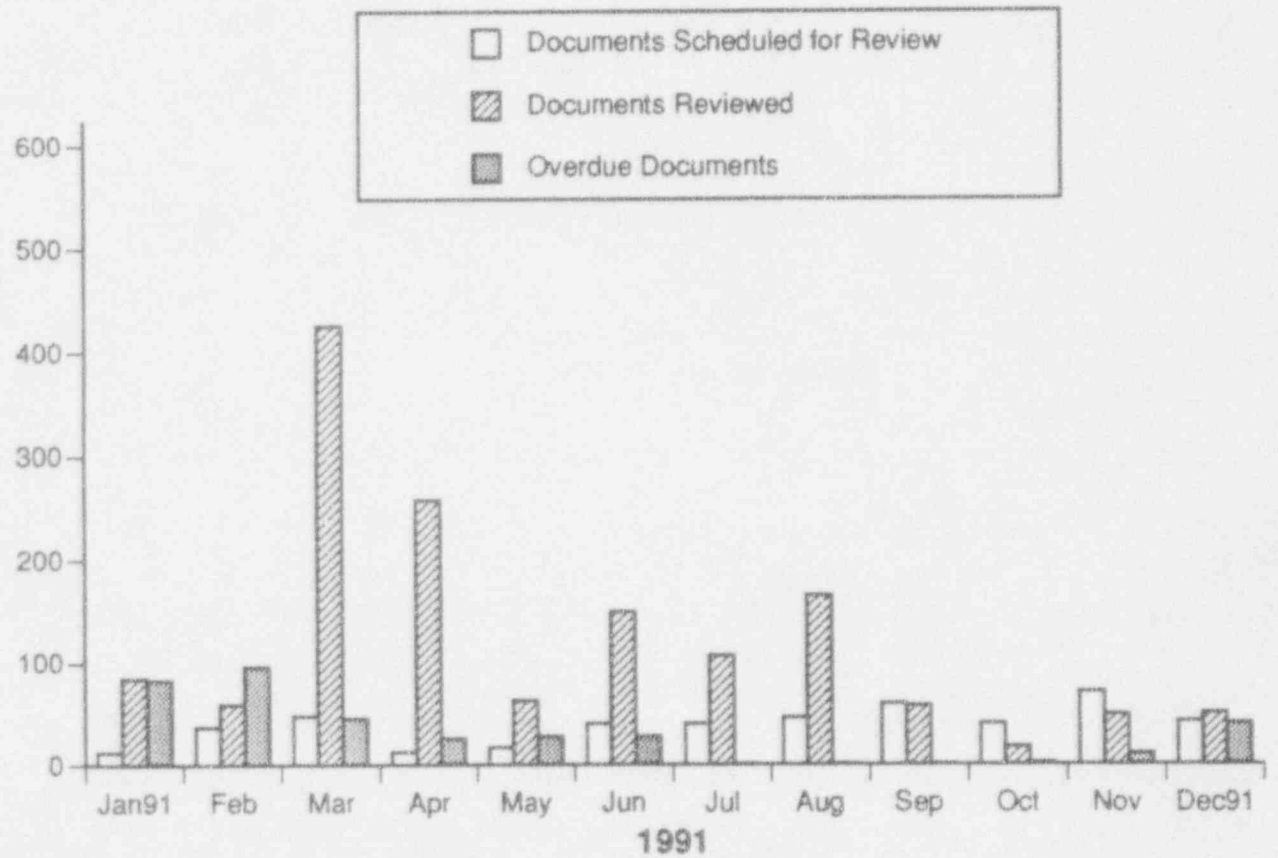
Removal is planned for 2 hot spots. There was a total of 51 hot spots removed in 1993.

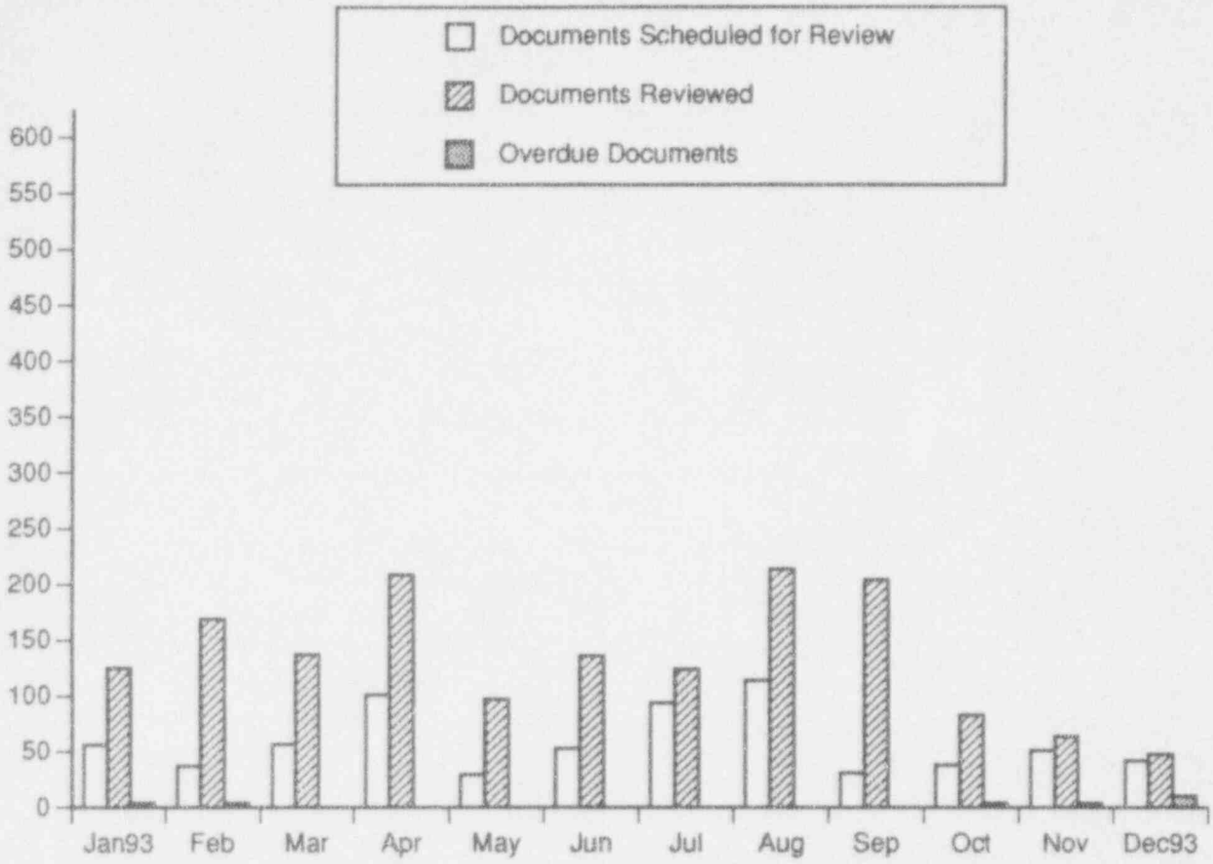
The decrease in the total number of hot spots from October to November is due to criteria defining point sources, as established in RP-306 "Hot Spot & Point Source Identification and Tracking Procedure". The total number of hot spots reported prior to November included both hot spots and point sources.

The 1993 Fort Calhoun goal was to remove three hot spots per quarter and achieve a net reduction of one hot spot per quarter.

Data Source: Chase/Williams (Manager/Source)
Accountability: Chase/Lovett
Adverse Trend: None


Documents Scheduled for Review
Documents Reviewed
Overdue Documents
600
500
400
300
200
100
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Documents Scheduled for Review
Documents Reviewed
Overdue Documents
600
500
400
300
200
100
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



DOCUMENT REVIEW

This indicator shows the number of completed, scheduled, and overdue (greater than 6 months past the scheduled due date) biennial reviews for the reporting month. These document reviews are performed in-house and include Special Procedures, the Site Security Plan, Maintenance Procedures, Preventive Maintenance Procedures, and the Operating Manual.

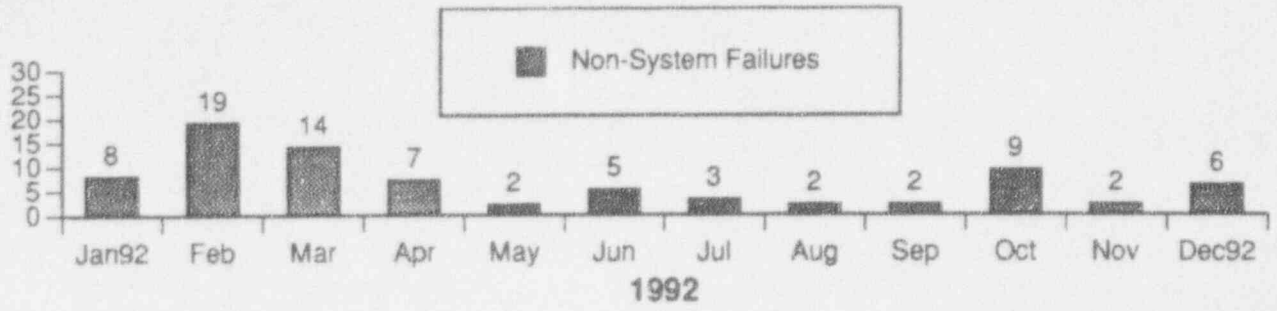
During December 1993 there were 48 document reviews completed while 42 document reviews were scheduled. At the end of December, there were 10 document reviews more than 6 months overdue.

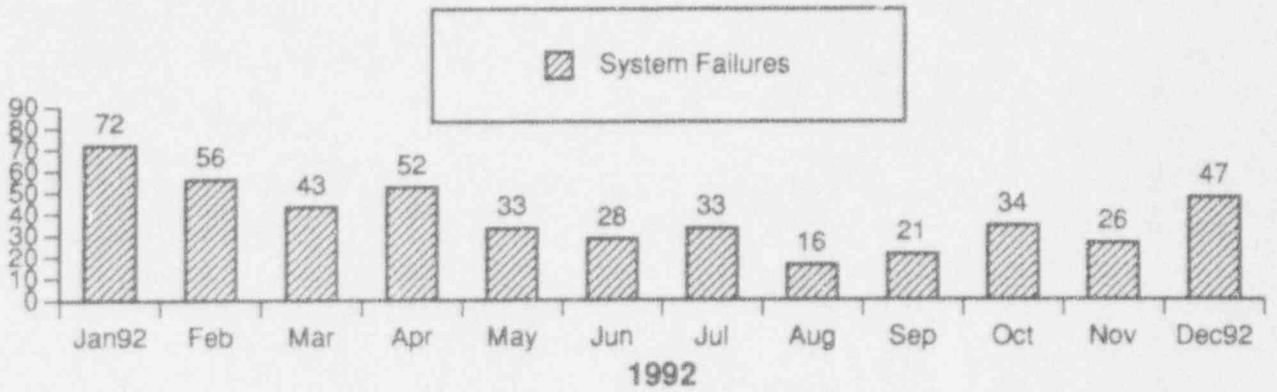
There were 5 new documents initiated in December.

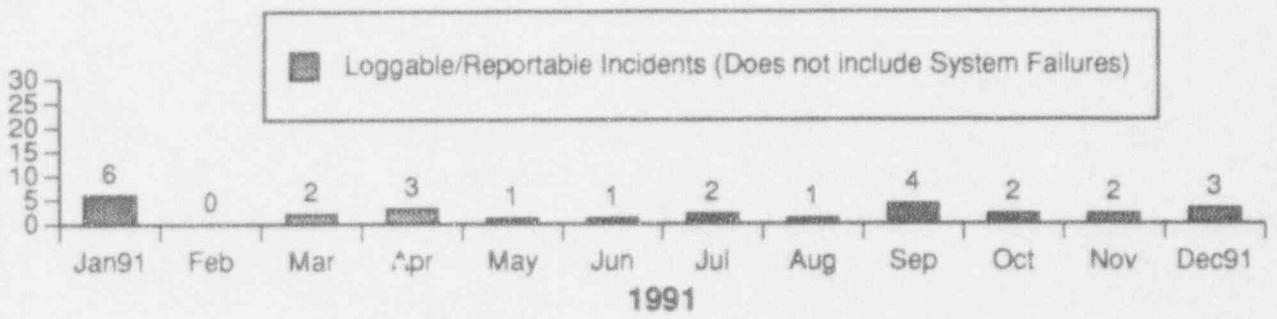
The 1993 monthly goal for this indicator is no (0) documents more than 6 months overdue.

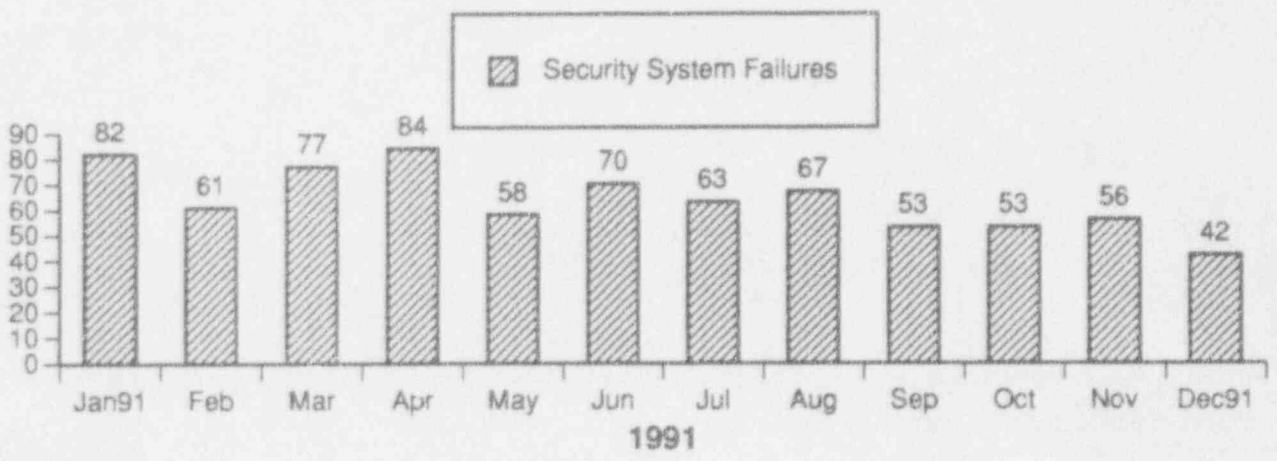
Data Source: Chase/Keister (Manager/Source)
Accountability: Chase/Jaworski
Adverse Trend: None

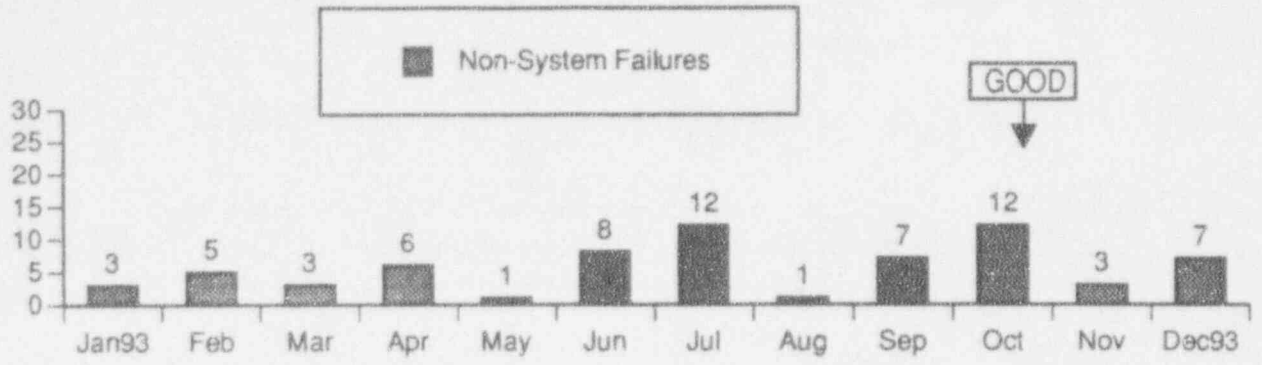
SEP 46

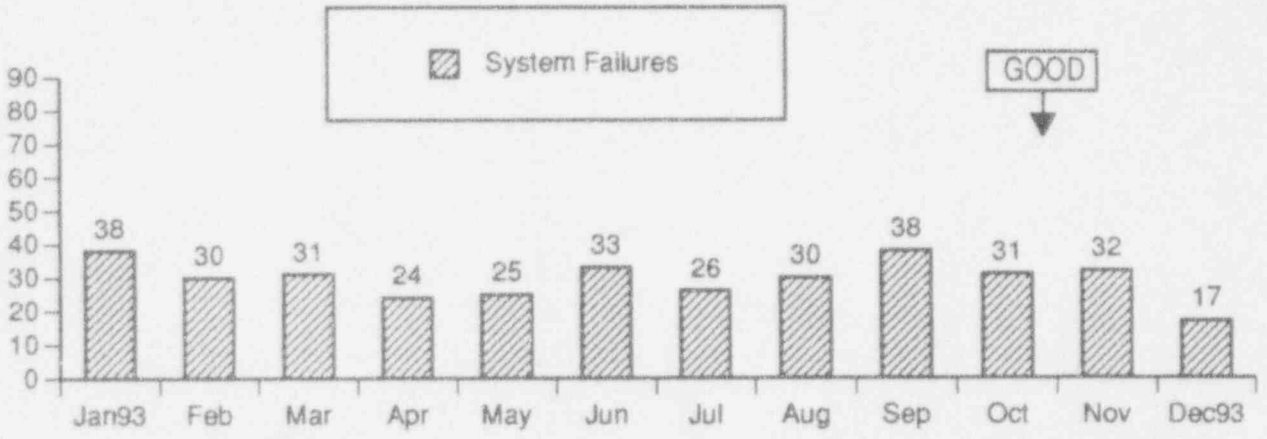

Non-System Failures
30
25
20
15
10
5
0
8
19
14
7
2
5
3
2
2
9
2
6
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


System Failures
90
80
70
60
50
40
30
20
10
0
72
56
43
52
33
28
33
16
21
34
26
47
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Loggable/Reportable Incidents (Does not include System Failures)
30
25
20
15
10
5
0
6
0
2
3
1
1
2
1
4
2
2
3
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991


Security System Failures
90
80
70
60
50
40
30
20
10
0
82
61
77
84
58
70
63
67
53
53
56
42
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991





LOGGABLE/REPORTABLE INCIDENTS (SECURITY)

The Loggable/Reportable Incidents (Security) Indicator is depicted in two separate graphs. The top graph depicts the total number of loggable/reportable non-system failures concerning Security Badges, Access Control and Authorization, Security Force Error, and Unsecured Doors. The bottom graph shows the total number of loggable/reportable incidents concerning system failures which occurred during the reporting month.

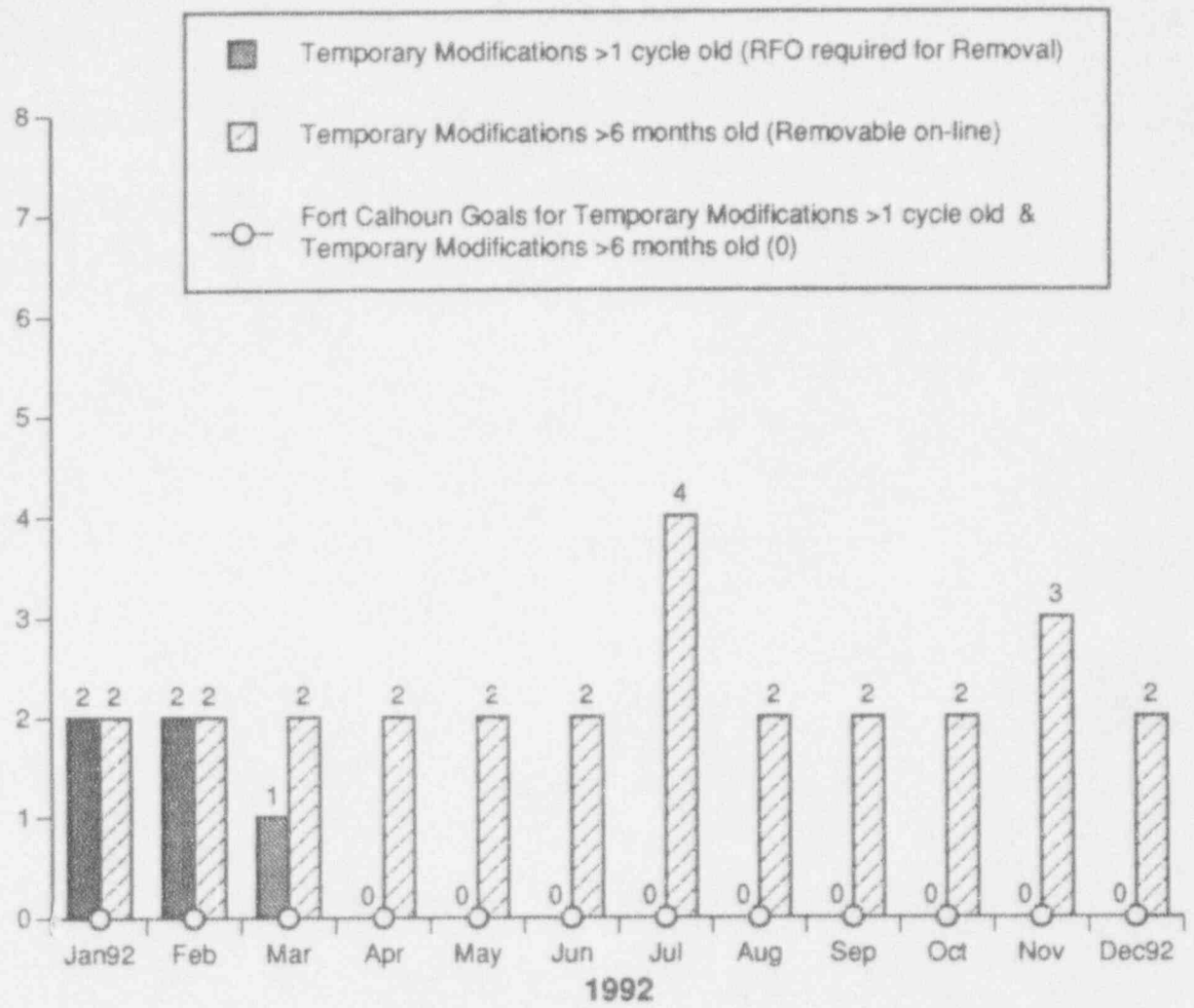
During the month of December 1993, there were 23 loggable/reportable incidents identified. System failures accounted for 17 (74%) of the loggable/reportable incidents. As depicted in the bottom graph, this was a significant decrease from the preceding month. Further, non-system failures declined in 1993 approximately 14% (from 79 to 68) from 1992, and system failures declined in 1993 approximately 23% (from 461 to 355) from 1992.

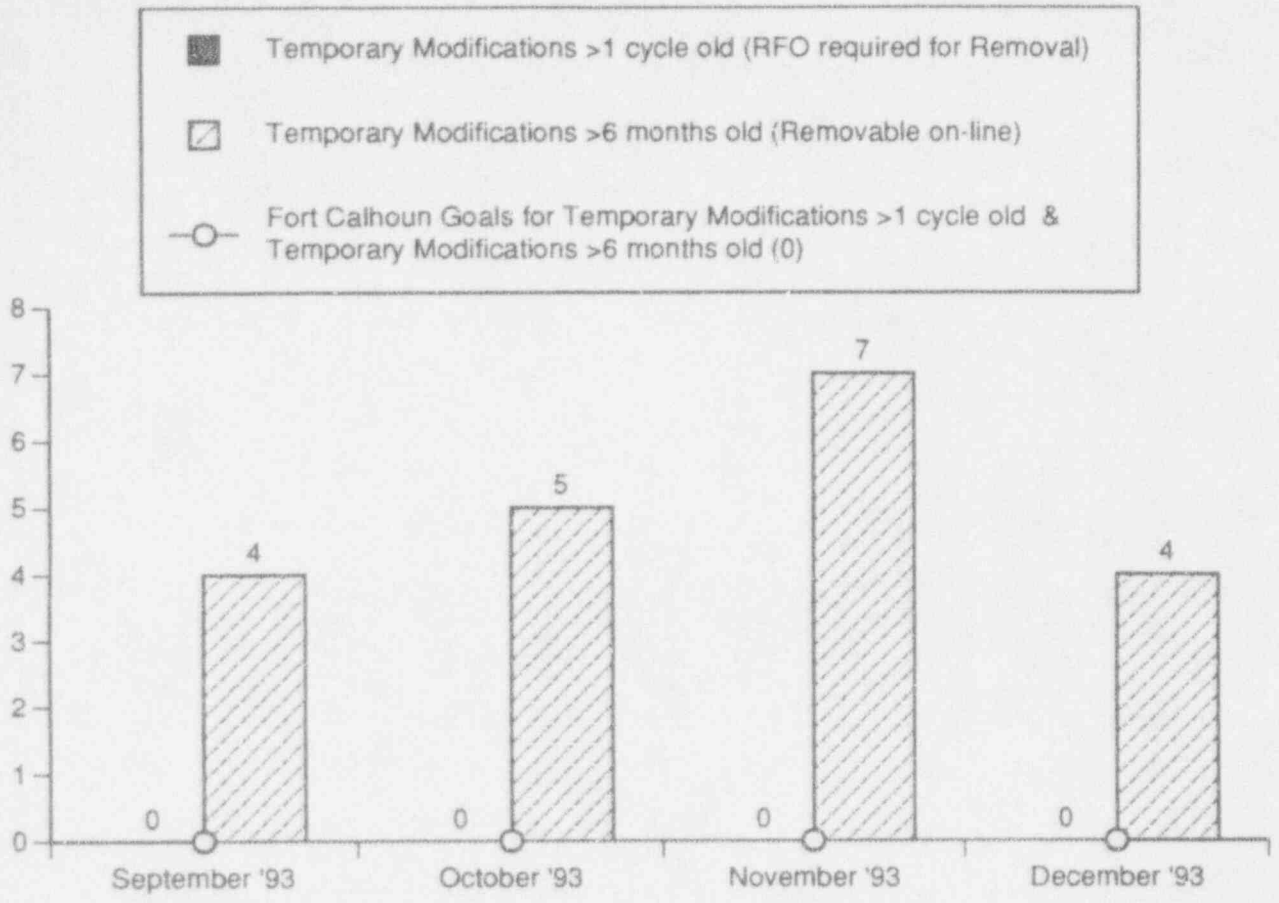
Data Source: Sefick/Woerner (Manager/Source)

Accountability: Sefick

Adverse Trend: None

SEP 58


Temporary Modifications >1 cycle old (RFO required for Removal)
Temporary Modifications >6 months old (Removable on-line)
Fort Calhoun Goals for Temporary Modifications >1 cycle old &
Temporary Modifications >6 months old (0)
8
7
6
5
4
3
2
1
0
2 2
2 2
1
2
2
2
2
4
2
2
2
3
2
0
0
0
0
0
0
0
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992



TEMPORARY MODIFICATIONS

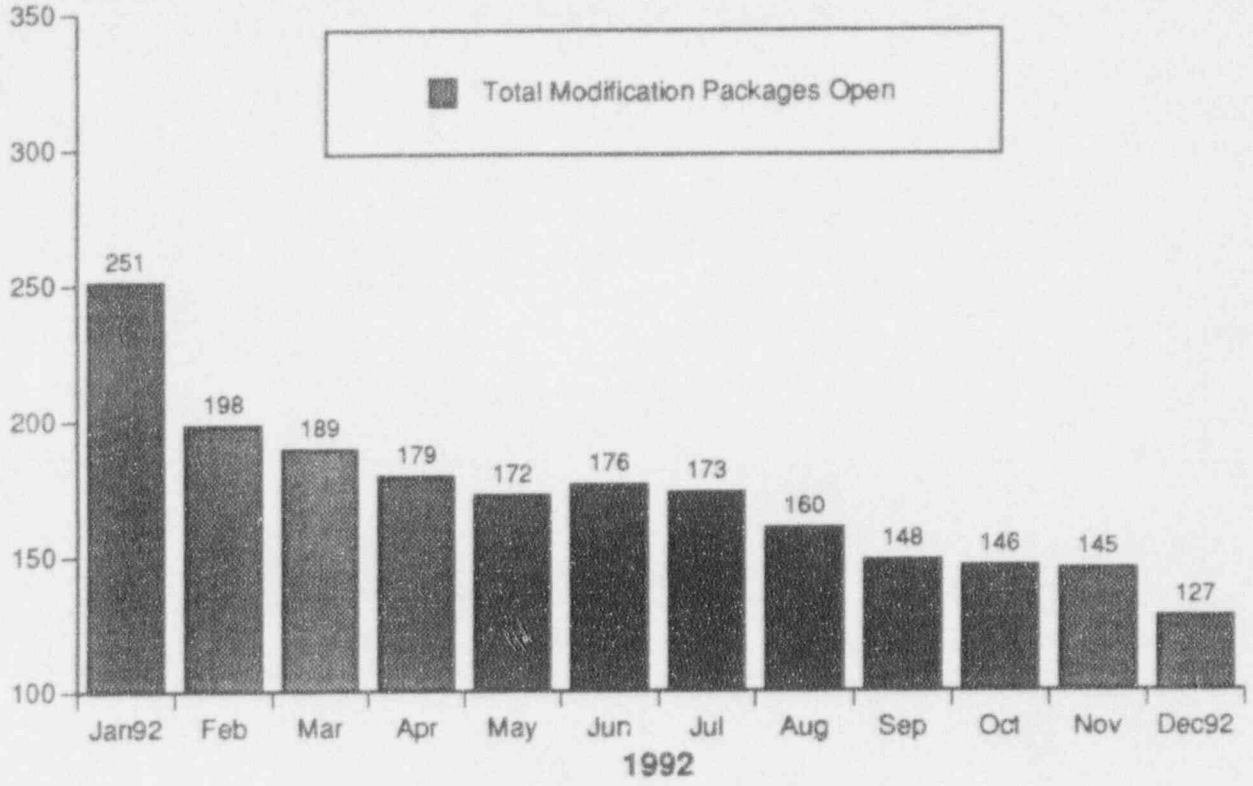
This indicator provides information on the number of temporary modifications greater than one fuel cycle old requiring a refueling outage (RFO) for removal and the number of temporary modifications removable on-line that are greater than six months old. Also provided are the Fort Calhoun goals for temporary modifications.

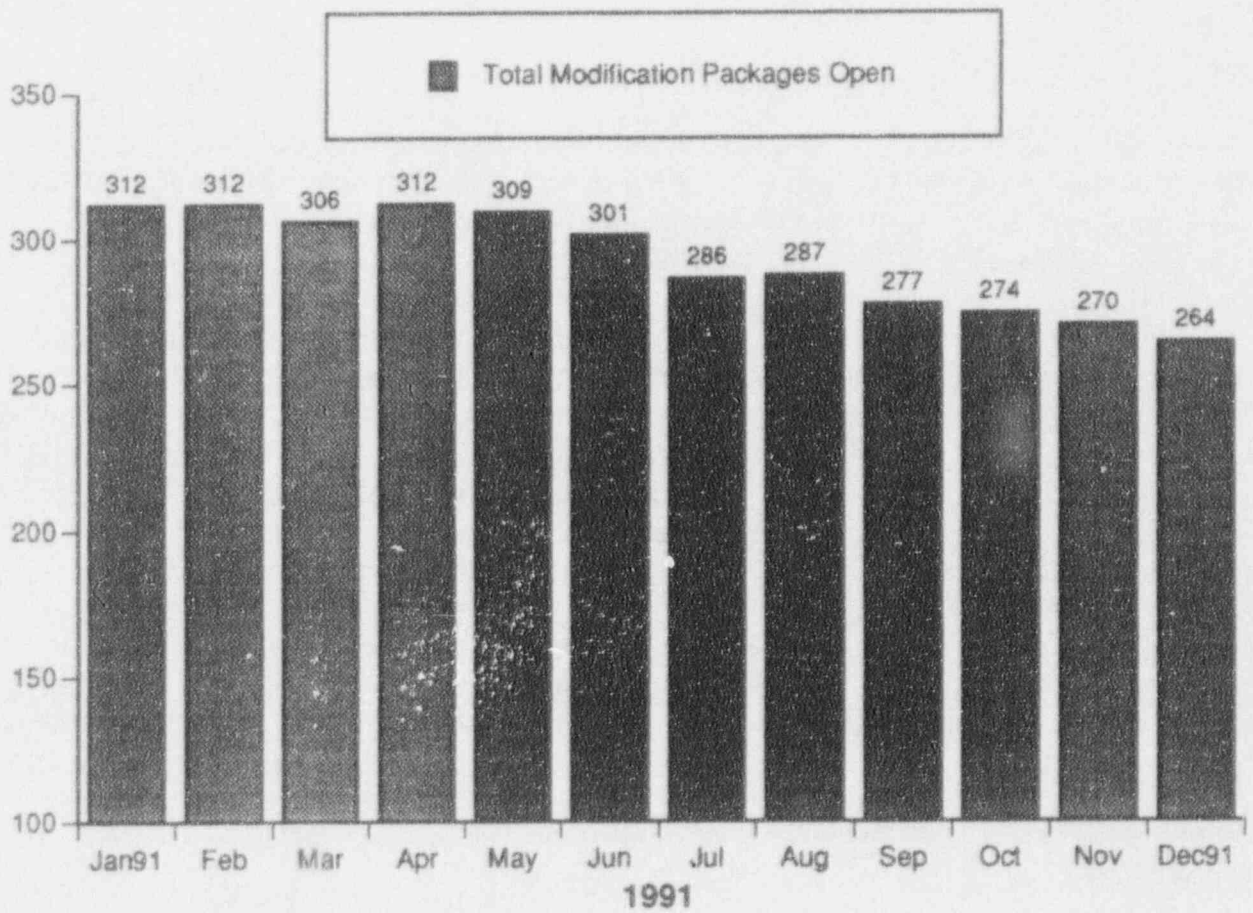
There are currently no temporary modifications that are greater than one fuel cycle old requiring a refueling outage to remove. In addition, at the end of December 1993 there were 4 temporary modifications installed that were greater than six months old that can be removed on-line. These were: 1) Local indication for BAST CH-11A and CH-11B, in which Operations is reviewing a draft FLC. After review, Licensing is to issue an FLC, and the NRC is to approve; 2) LP-30 transformer, which is awaiting NPRC review for installation date of ECN 93-183; 3) Refrigerated air dryer for Rm-057, which is awaiting installation of MR-FC-84-155D, scheduled completion date of 6/30/94; and 4) Epoxy repairs to ST-4B which is open, awaiting DEN Mechanical response.

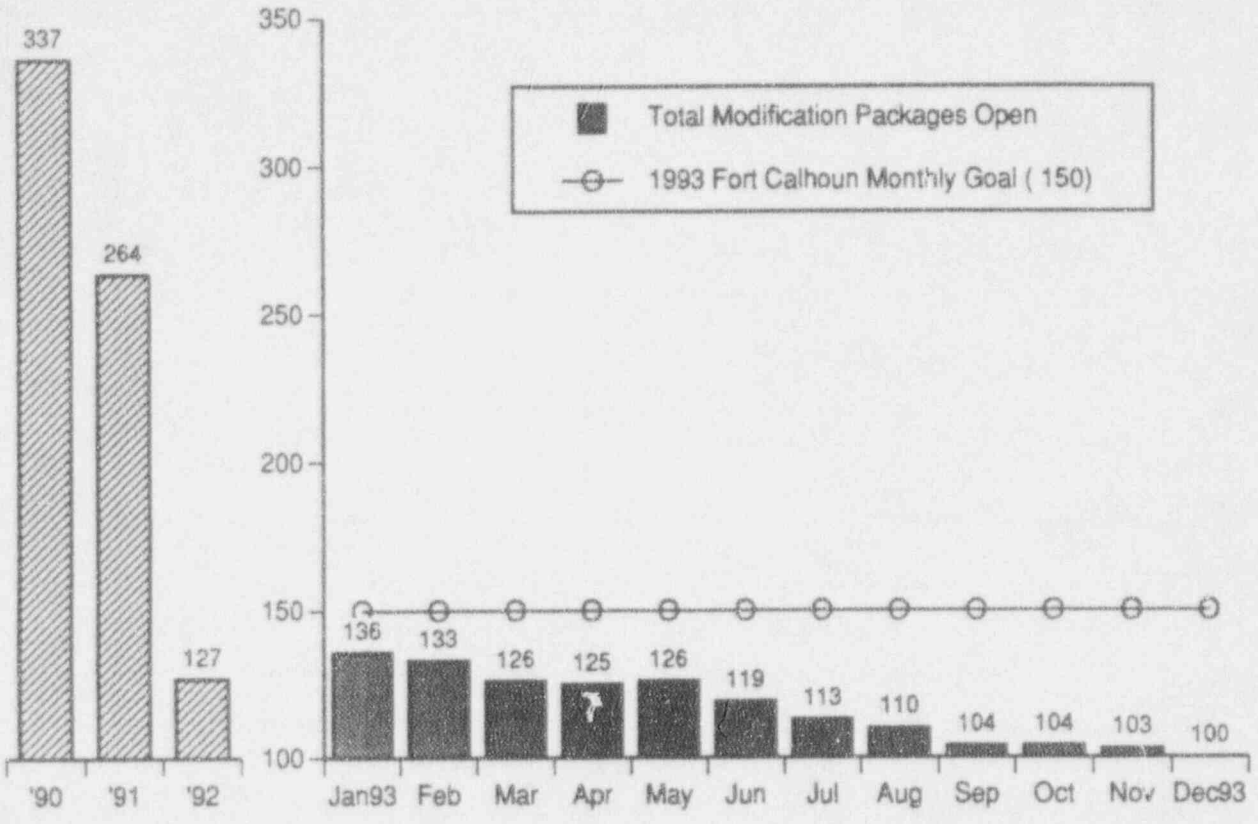
At the end of December 1993, there was a total of 14 TMs installed in the Fort Calhoun Station. 4 of the 14 installed TMs require an outage for removal and 10 are removable on-line. In 1993 a total of 65 temporary modifications were installed.

Data Source: Jaworski/Turner (Manager/Source)
Accountability: Jaworski/Gorence
Adverse Trend: None

SEP 62 & 71


Total Modification Packages Open
350
300
250
200
150
100
251
198
189
179
172
176
173
160
148
146
145
127
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Total Modification Packages Open
350
300
250
200
150
100
312
312
306
312
309
301
286
287
277
274
270
264
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



OUTSTANDING MODIFICATIONS

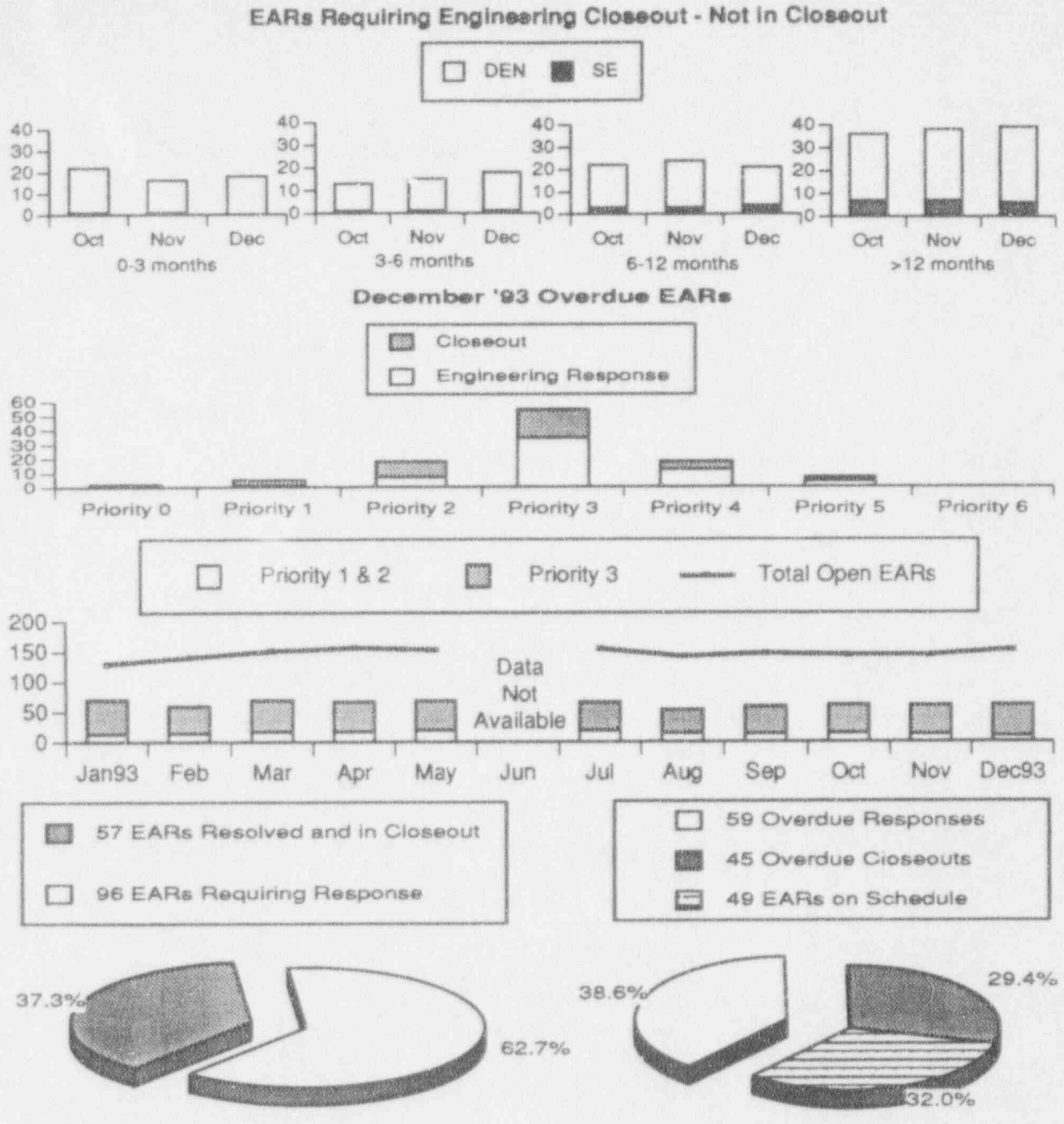
This indicator shows the total number of outstanding modifications (excluding outstanding modifications which are proposed to be cancelled).

Category	Reporting Month
Form FC-1133 Backlog/In Progress	1
Mod. Requests Being Reviewed	7
Design Engr. Backlog/In Progress	48
Construction Backlog/In Progress	34
Design Engr. Update Backlog/In Progress	10
Total	100

At the end of December 1993, 22 additional modification requests had been issued this year and 104 modification requests had been cancelled. The Nuclear Projects Review Committee (NPRC) had completed 231 backlog modification request reviews this year. The Nuclear Projects Committee (NPC) had completed 58 backlog modification request reviews this year.

The 1993 Fort Calhoun monthly goal is a maximum of 150 total outstanding modifications.

Data Source: Jaworski/Turner (Manager/Source)
Scofield/Lounsbery (Manager/Source)
Accountability: Scofield/Phelps
Positive Trend



ENGINEERING ASSISTANCE REQUEST BREAKDOWN

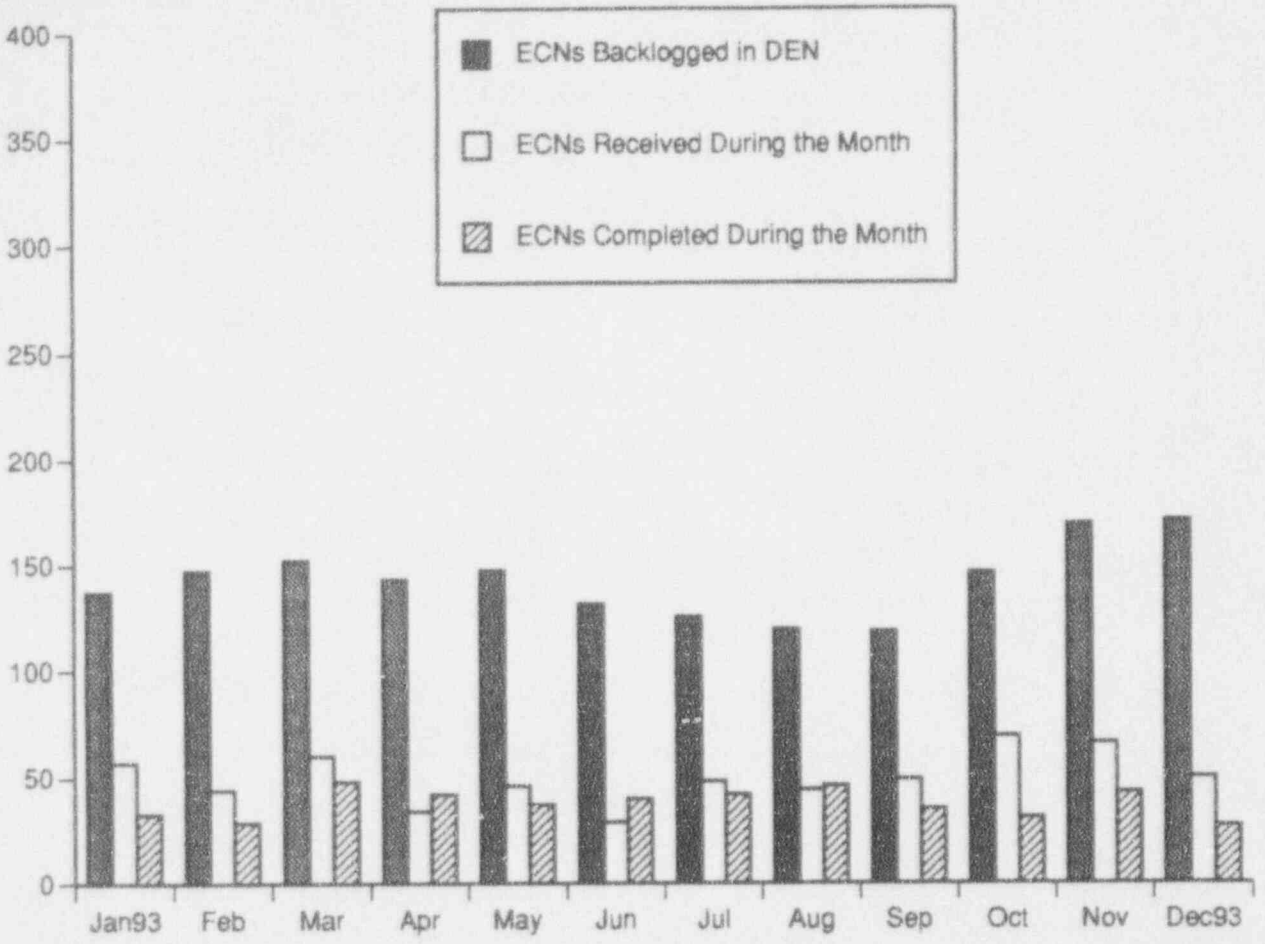
This indicator shows a breakdown of the number of EARs assigned to Design Engineering and System Engineering. The 1993 goal for this indicator is a maximum of 150 outstanding EARs.

Total EAR breakdown is as follows:

EARs opened during the month	17
EARs closed during the month	8
Total EARs open as of the end of the month	153

Data Source: Phelps/Pulverenti (Manager/Source)
Accountability: Jaworski/Phelps
Adverse Trend: None

SEP 62



ENGINEERING CHANGE NOTICE STATUS

This indicator shows the number of Engineering Change Notices (ECNs) awaiting completion by DEN, the number of ECNs opened during the reporting month, and the number of ECNs completed by DEN during the reporting month.

At the end of December 1993, there was a total of 171 DEN backlogged open ECNs. There were 50 ECNs received by DEN, and 27 ECNs completed during the month.

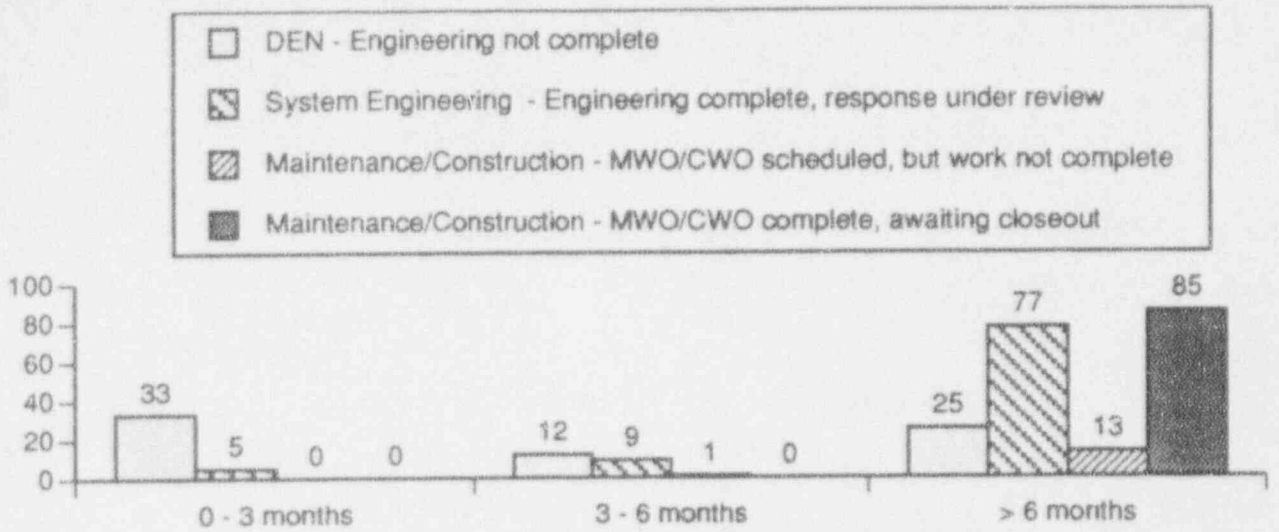
Although the number of open ECNs is currently high, activities are in progress to reduce the backlog of open ECNs.

Data Source: Phelps/Pulverenti (Manager/Source)

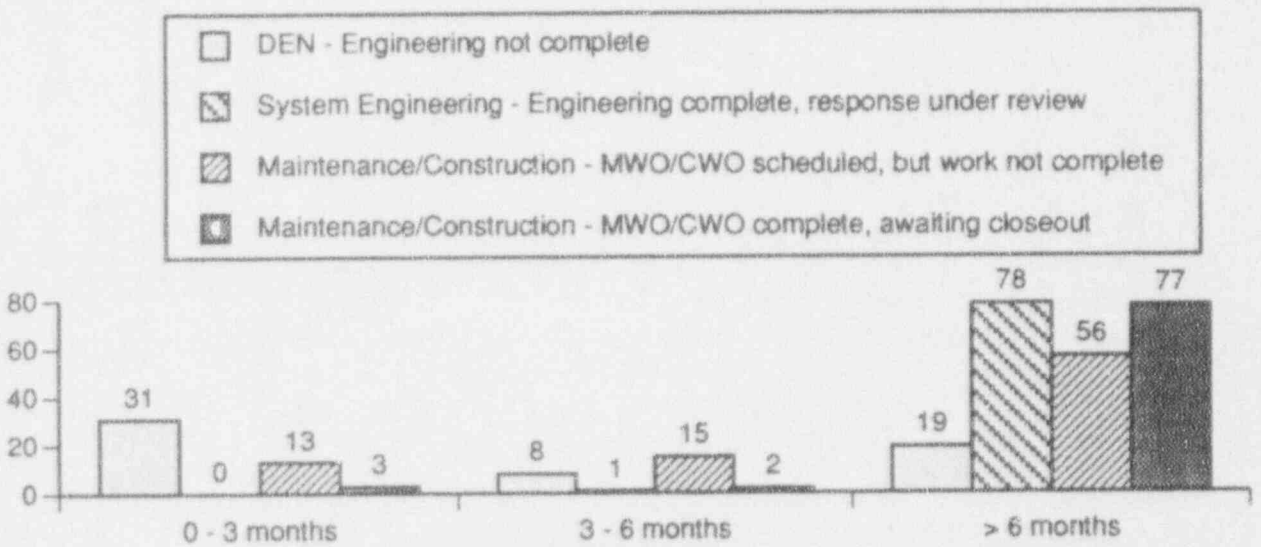
Accountability: Phelps/Jaworski

Adverse Trend: An adverse trend is indicated based on three consecutive months of increasing values for the number of ECNs backlogged in DEN.

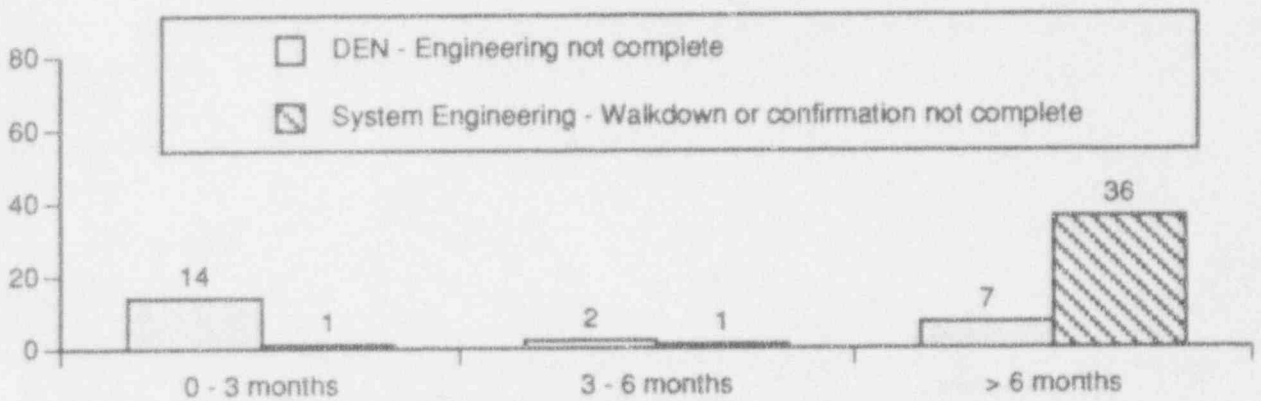
SEP 62



ECN FACILITY CHANGES OPEN - December 1992

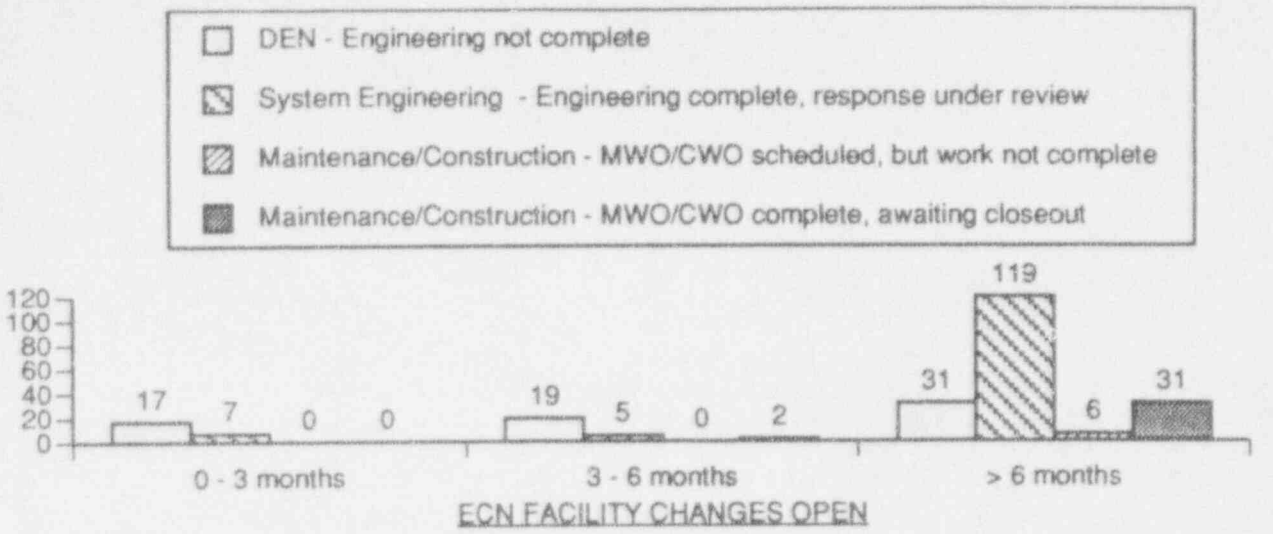


ECN SUBSTITUTE REPLACEMENT ITEMS OPEN - December 1992

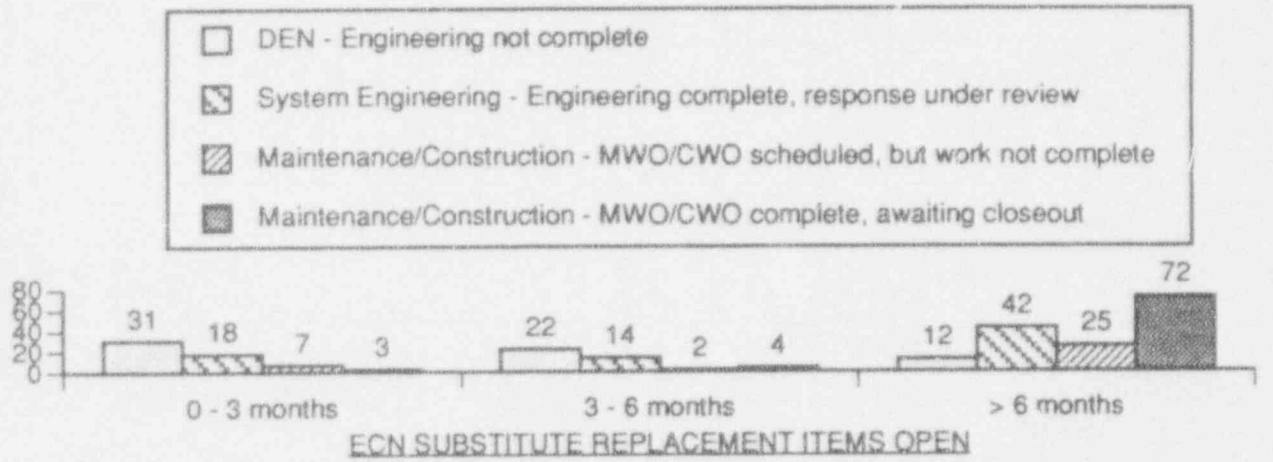


ECN DOCUMENT CHANGES OPEN - December 1992

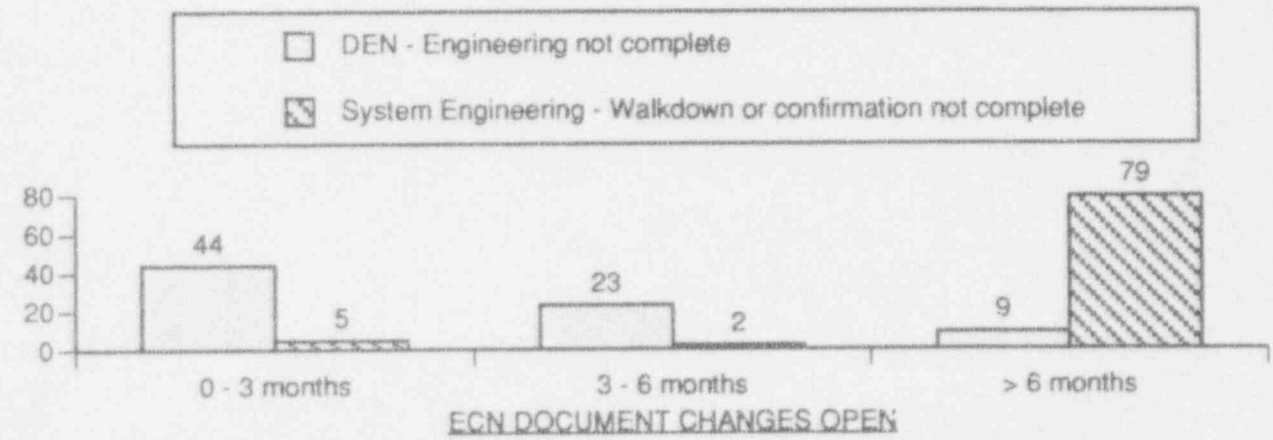
DECEMBER 1992



ECN FACILITY CHANGES OPEN



ECN SUBSTITUTE REPLACEMENT ITEMS OPEN



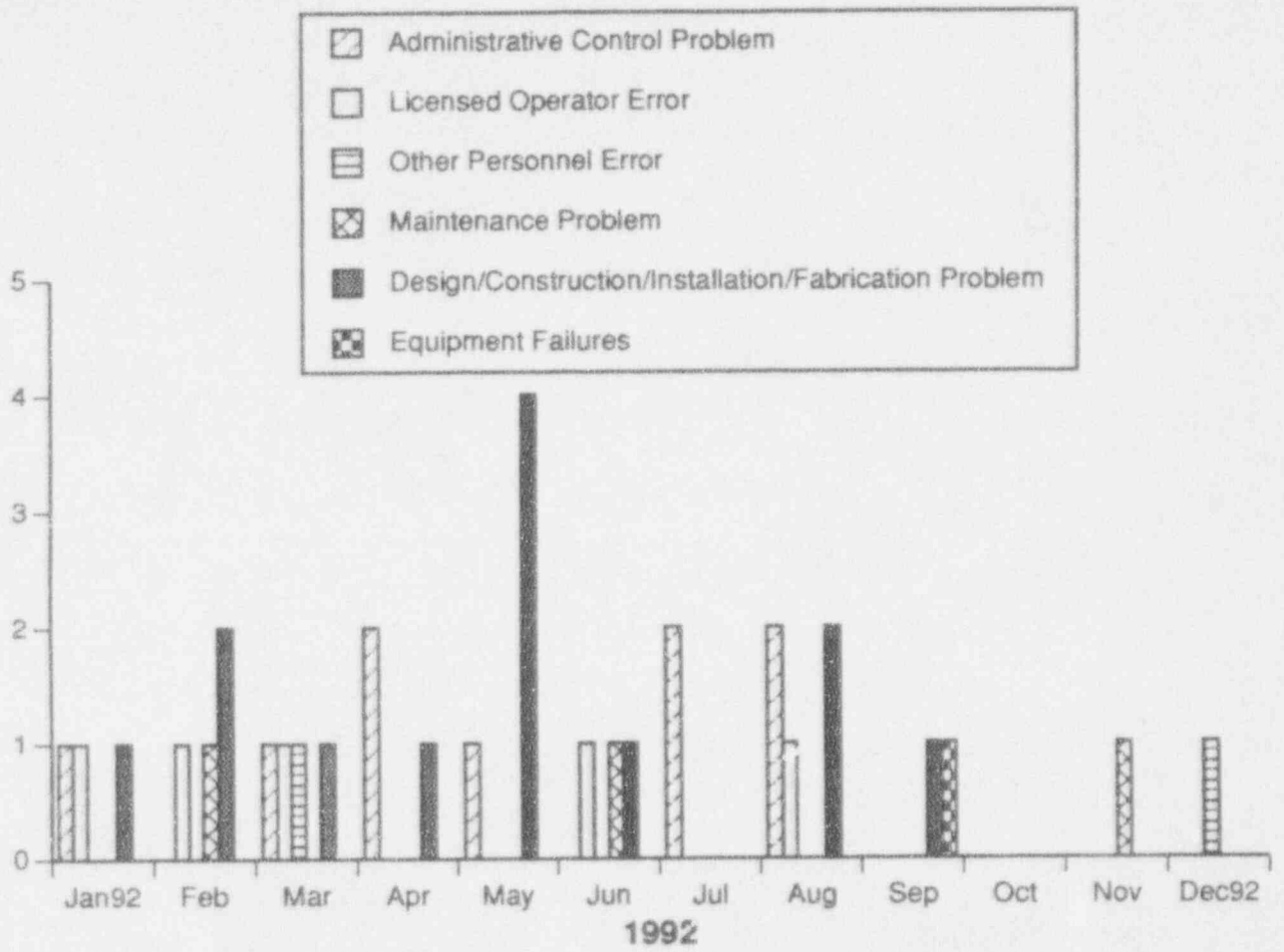
ECN DOCUMENT CHANGES OPEN

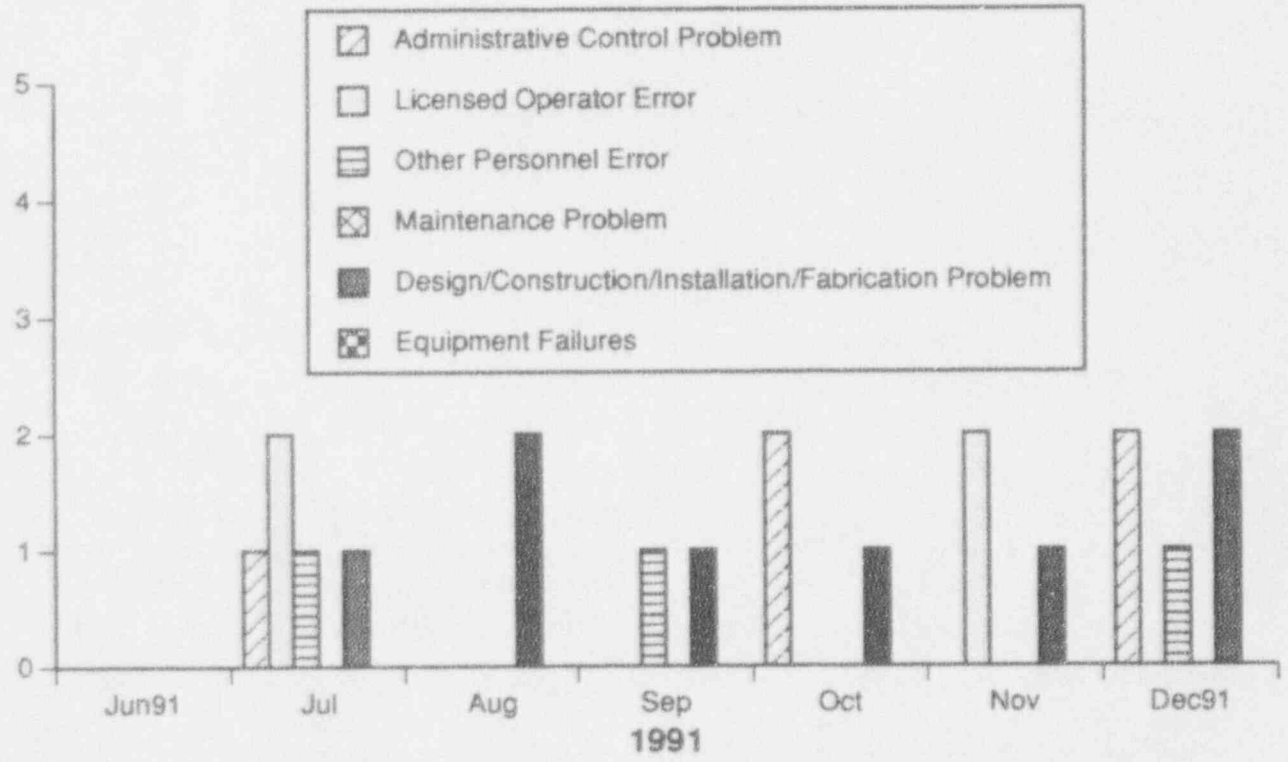
ENGINEERING CHANGE NOTICE BREAKDOWN

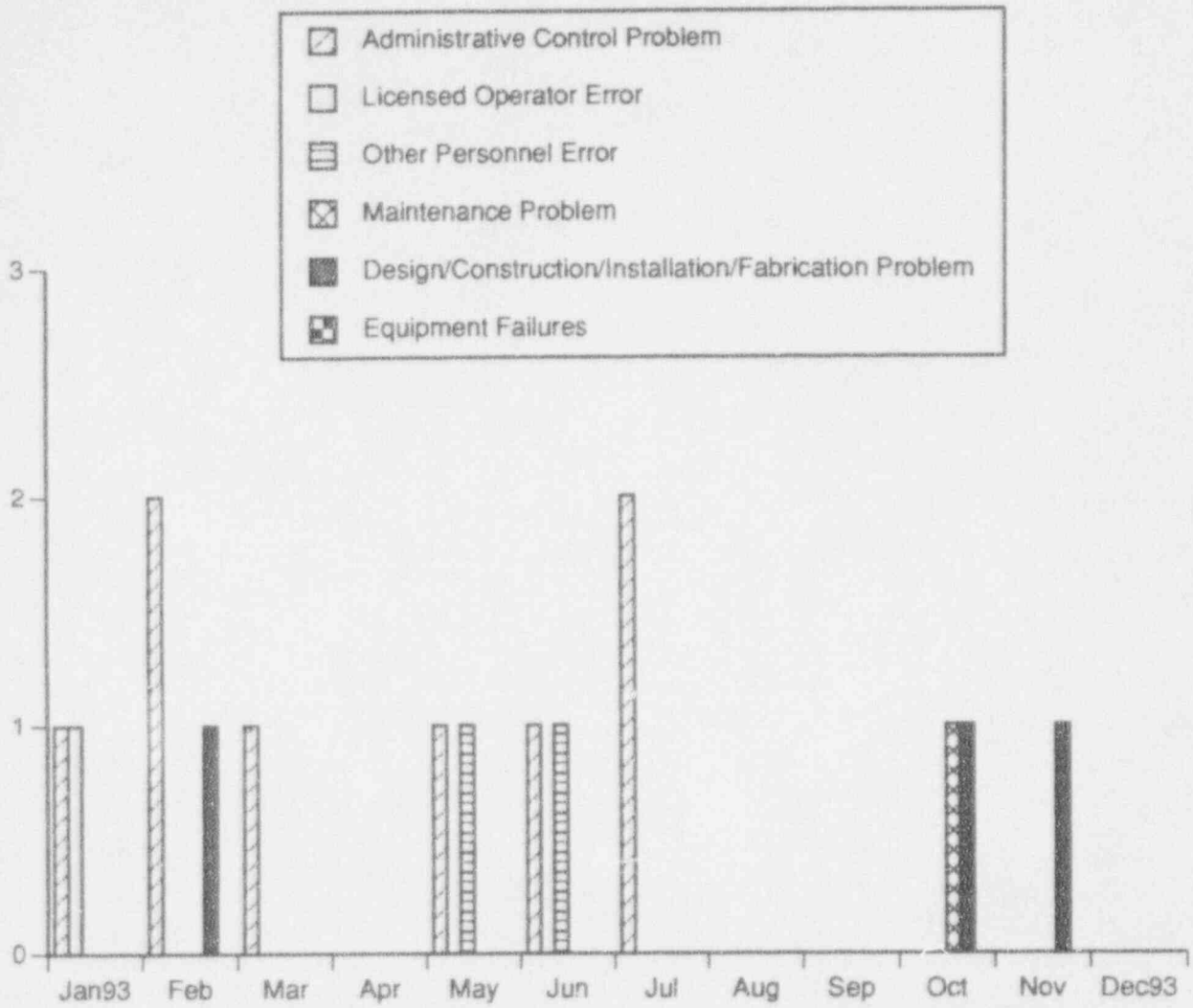
This indicator shows a breakdown of the number of Engineering Change Notices (ECNs) that are assigned to Design Engineering Nuclear (DEN), System Engineering, and Maintenance or Construction for December 1993. The graphs provide data on ECN Facility Changes Open, ECN Substitute Replacement Items Open, and ECN Document Changes Open.

Data Source: Phelps/Pulverenti (Manager/Source)
Accountability: Phelps/Jaworski
Adverse Trend: None

SEP 62


Administrative Control Problem
Licensed Operator Error
Other Personnel Error
Maintenance Problem
Design/Construction/Installation/Fabrication Problem
Equipment Failures
5
4
3
2
1
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


Administrative Control Problem
Licensed Operator Error
Other Personnel Error
Maintenance Problem
Design/Construction/Installation/Fabrication Problem
Equipment Failures
5
4
3
2
1
0
Jun91
Jul
Aug
Sep
Oct
Nov
Dec91
1991



LICENSEE EVENT REPORT (LER) ROOT CAUSE BREAKDOWN

This indicator shows the LERs by report date broken down by Root Cause Code for each of the past twelve months from December 1,1992 through November 30, 1993. This indicator is one month behind the reporting month due to the time required for processing the data.

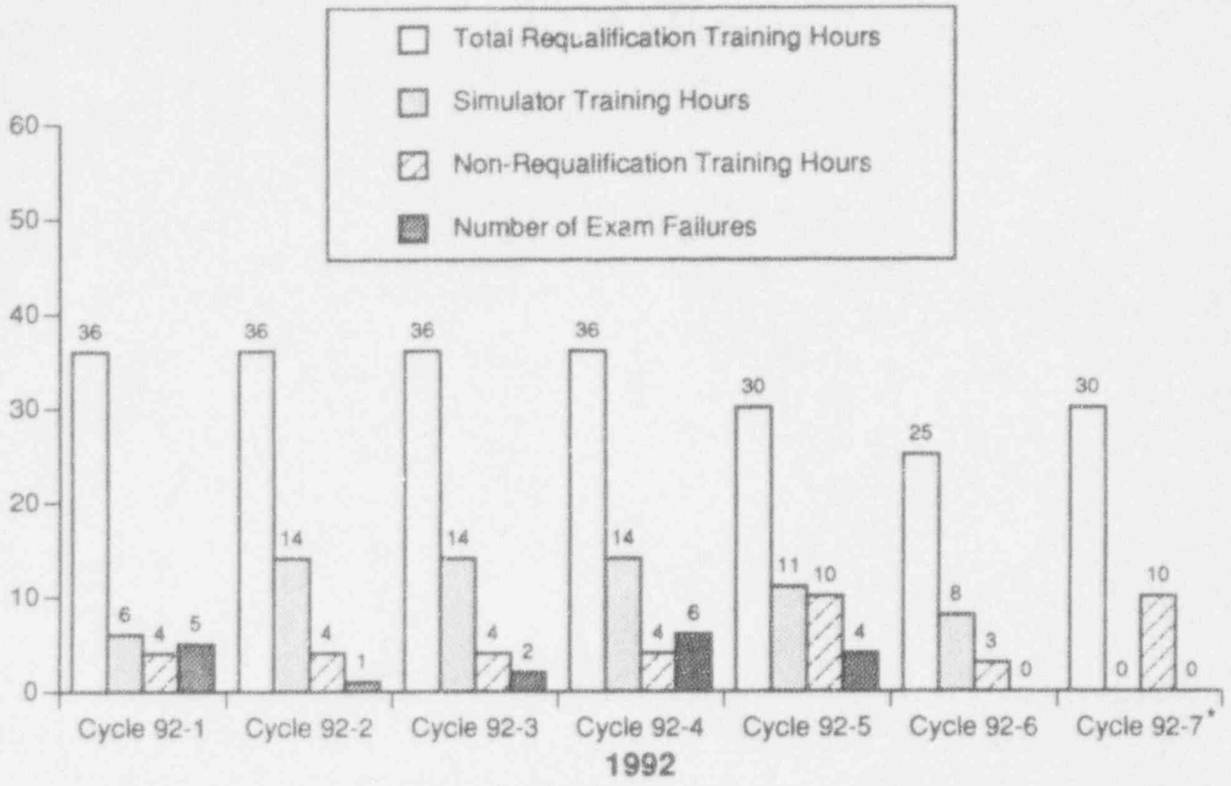
The cause codes are intended to identify possible programmatic deficiencies. For detailed descriptions of these codes, see the "Performance Indicator Definitions" section of this report.

There was 1 LER submitted in November 1993.

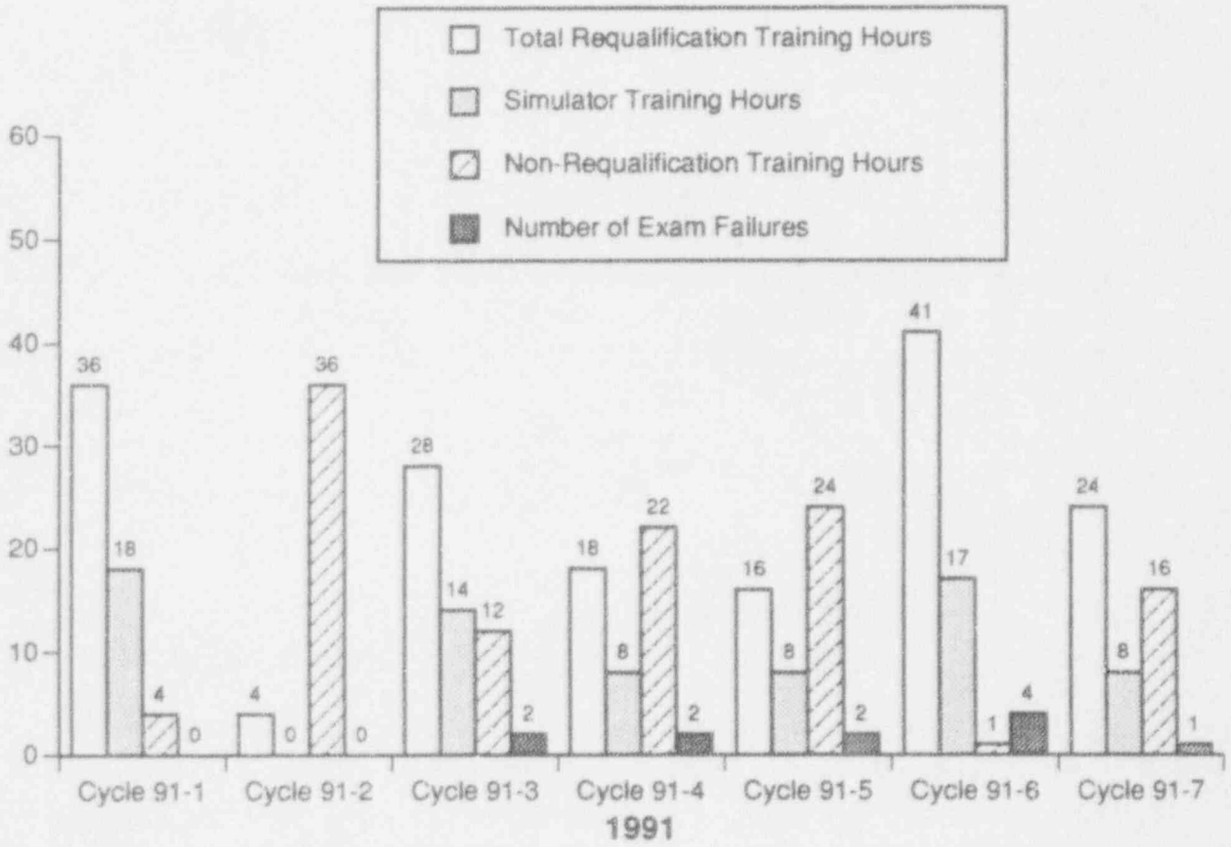
Data Source: Short/Cavanaugh (Manager/Source)

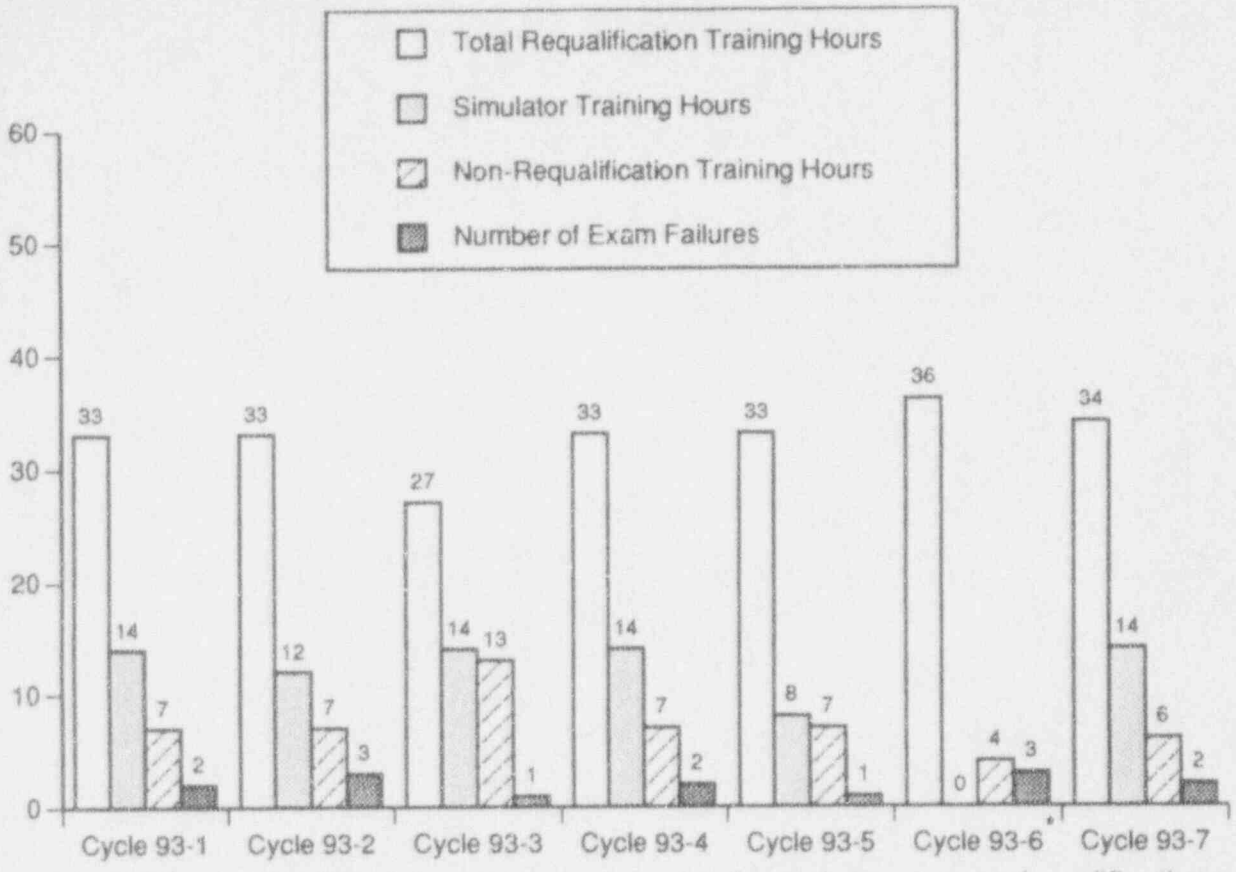
Accountability: Chase

Adverse Trend: None



*Note: The Simulator was out-of-service for maintenance and modificationsduring Cycle 92-7.





*Note: The Simulator was out-of-service for maintenance and modifications during Cycle 93-6.

LICENSED OPERATOR REQUALIFICATION TRAINING

This indicator provides information on the total number of hours of training given to each crew during each cycle. The Simulator training hours shown on the graph are a subset of the total training hours. Non-Requalification Training Hours are used for AOP/EOP verification & validation, INPO commitments, GET, Fire Brigade, Safety Meetings, and Division Manager lunches.

Exam failures are defined as failures in the written, simulator, and Job Performance Measures (JPMs) segments of the Licensed Operator Requalification Training.

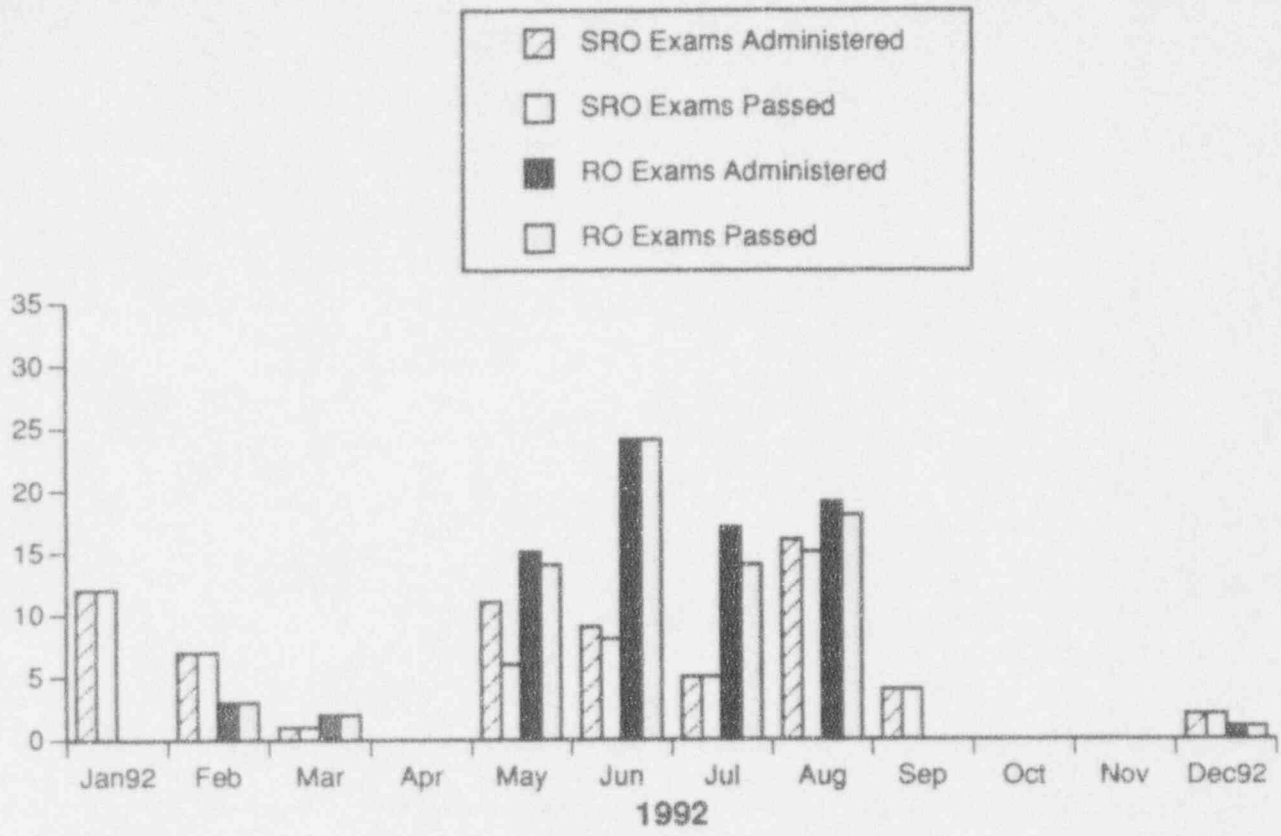
There were 2 simulator exam failures during Cycle 93-7. There were no written exam failures. The individuals who failed the simulator exam were remediated prior to the end of the week.

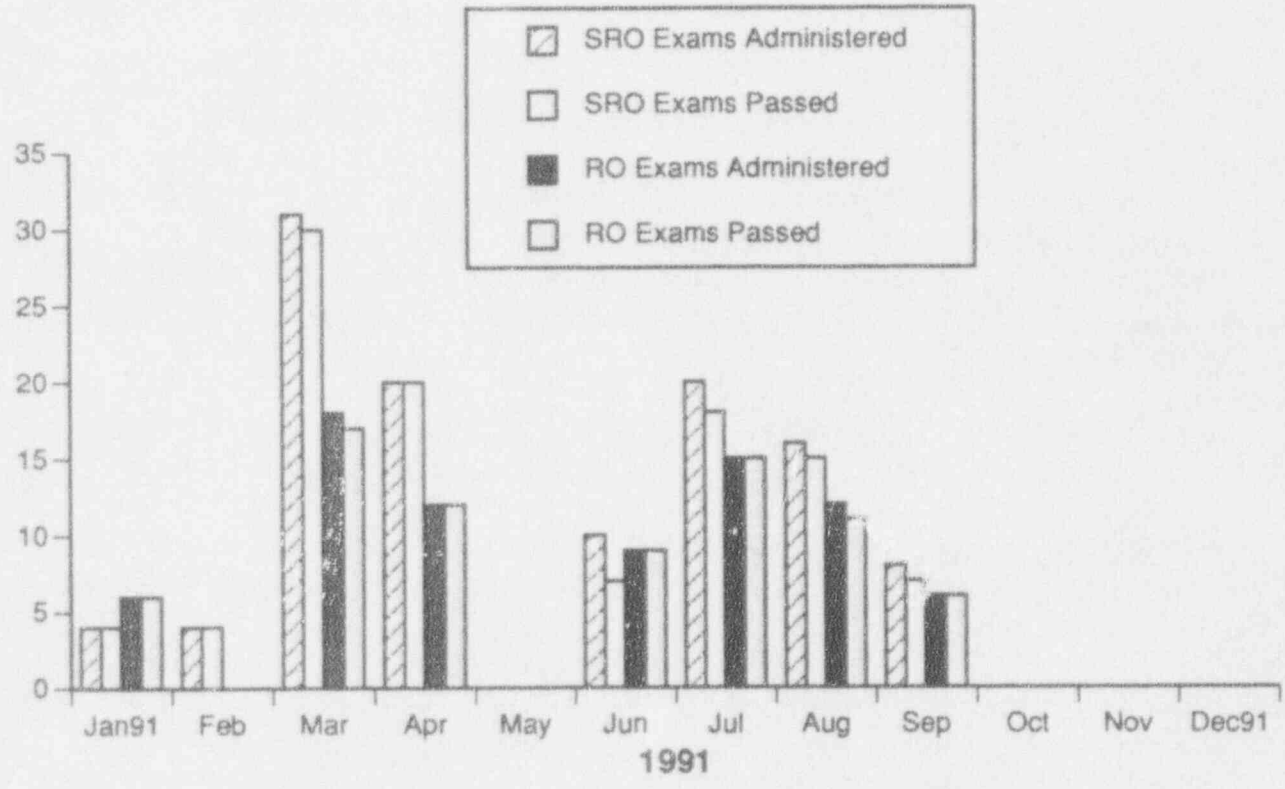
Data Source: Gasper/Lazar (Manager/Source)

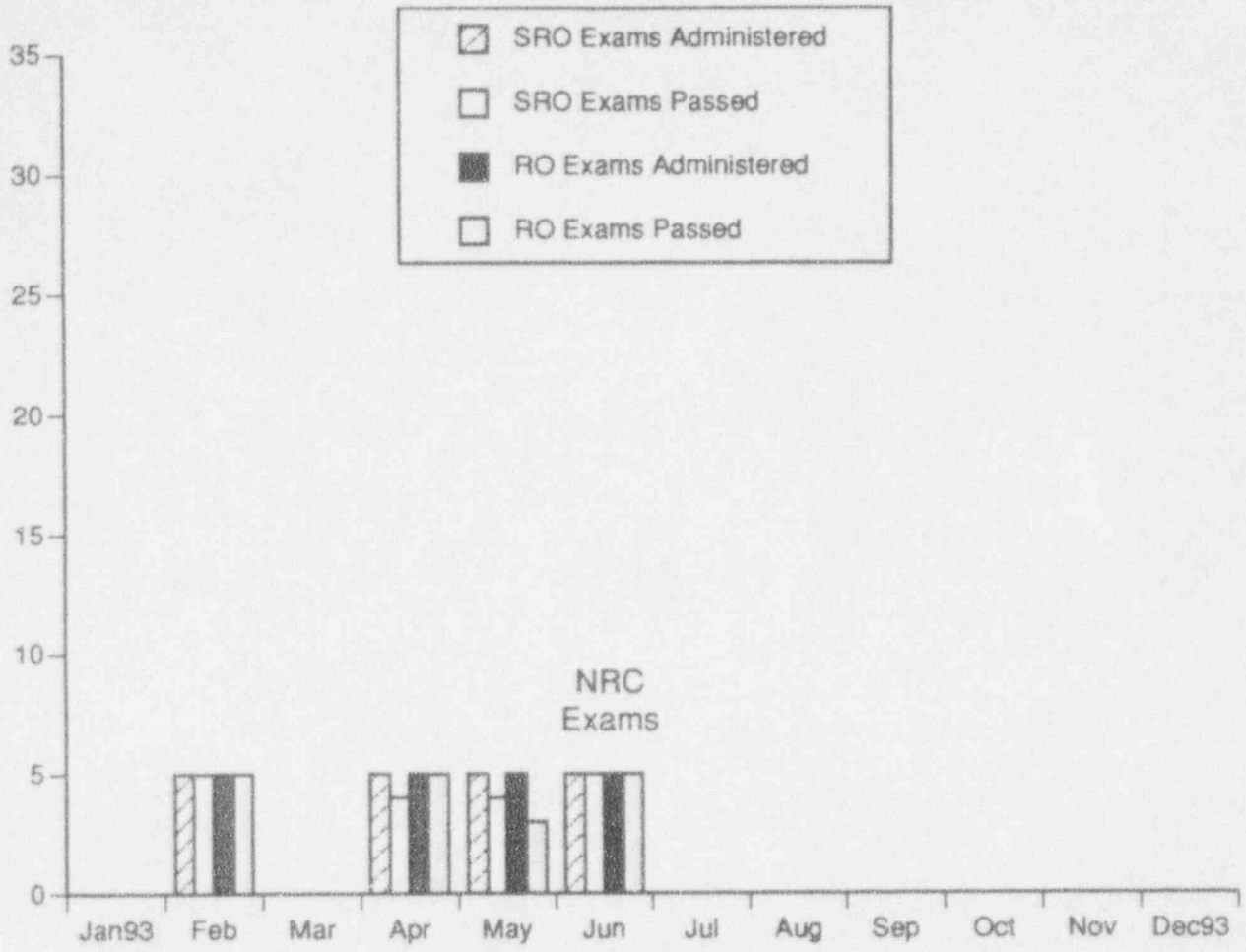
Accountability: Gasper/Lazar

Adverse Trend: None

SEP 68


SRO Exams Administered
SRO Exams Passed
RO Exams Administered
RO Exams Passed
35
30
25
20
15
10
5
0
Jan92
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec92
1992


SRO Exams Administered
SRO Exams Passed
RO Exams Administered
RO Exams Passed
35
30
25
20
15
10
5
0
Jan91
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec91
1991



LICENSE CANDIDATE EXAMS

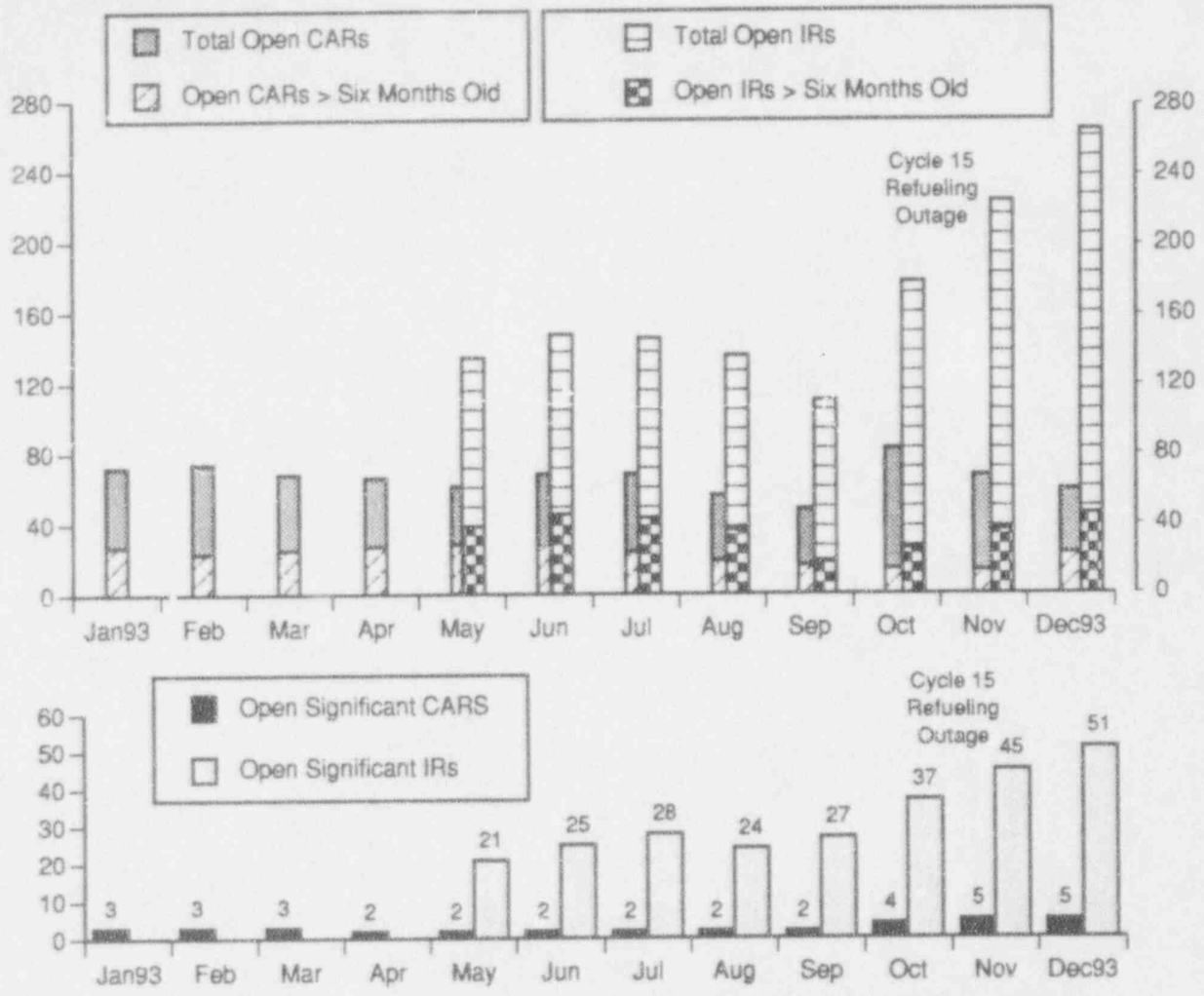
This indicator shows the number of Senior Reactor Operator (SRO) and Reactor Operator (RO) quizzes and exams taken and passed each month. These internally administered quizzes and exams are used to plot the SRO and RO candidates' monthly progress.

There were no OPPD Reactor Operator or Senior Reactor Operator exams administered during December 1993.

Currently, there is no Hot License class being conducted. The next class is tentatively scheduled to begin in April 1994.

Data Source: Gasper/Lazar (Manager/Source)
Accountability: Gasper/Lazar
Adverse Trend: None

SEP 68



OPEN CORRECTIVE ACTION REPORTS AND INCIDENT REPORTS

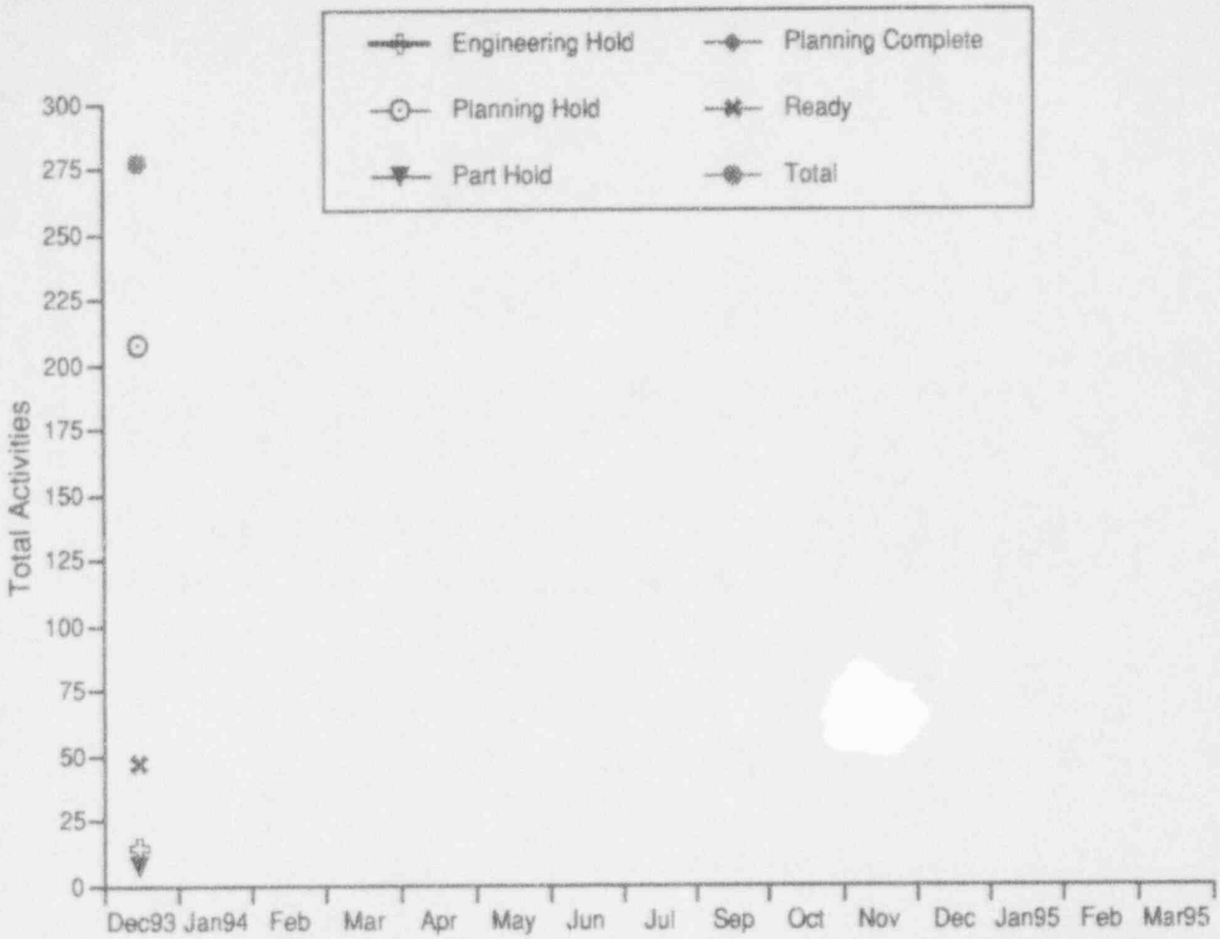
This indicator shows the total number of open Corrective Action Reports (CARs), CARs >6 months old, the total number of Open IRs, IRs >6 months old, the number of open significant CARs and the number of open significant IRs.

At the end of December 1993 there were 59 open CARs. 23 of these CARs were greater than 6 months old. There were 5 Open Significant CARs at the end of the month.

Also, at the end of December there were 266 open IRs. 46 of these IRs were greater than 6 months old. There were 51 Open Significant IRs at the end of the month.

The 1993 monthly goal for the number of CARs greater than 6 months old is a maximum of 30.

Data Source: Orr/Gurtis (Manager/Source) & CHAMPS
Accountability: Andrews/Gambhir/Gates
Adverse Trend: Although the number of IRs has increased, an adverse trend is not indicated because the increase is a result of the Cycle 15 Refueling Outage and revised IR definitions.



MWO PLANNING STATUS (CYCLE 16 REF' 'NG OUTAGE)

This indicator shows the total number of Maintenance Work Requests (MWRs) and Maintenance Work Orders (MWOs) that have been approved for inclusion in the Cycle 15 Refueling Outage. This graph indicates:

•Parts Holds (part hold removed when parts are staged and ready for use)

•Engineering Holds (Engineering hold removed when appropriate engineering paper-work or support is received for the package)

•Planning Holds (Planning hold removed when planning is completed to the point when package is ready or other support is necessary to continue the planning process)

•Planning Complete (status given when only items keeping the job from being ready to work are parts or engineering support)

•Ready (status when all planning, supporting documentation, and parts are ready to go)

Data Source: Chase/Schmitz (Manager/Source)
Accountability: Chase/Johansen
Adverse Trend: None

SEP 31

ACTION PLANS FOR ADVERSE TRENDS

ACTION PLANS FOR ADVERSE TRENDS

This section lists action plans that have been developed for the performance indicators cited as exhibiting adverse trends during the three months preceding this report.

There have been no performance indicators cited as exhibiting adverse trends during the three months preceding this report.

The action plan for **Engineering Change Notice Status** (page 117 of this report) will be included in the January 1994 report.

PERFORMANCE INDICATOR DEFINITIONS

AUXILIARY FEEDWATER SYSTEM SAFETY SYSTEM PERFORMANCE
The sum of the known (planned and unplanned) unavailable hours and the estimated unavailable hours for the auxiliary feedwater system for the reporting period divided by the critical hours for the reporting period multiplied by the number of trains in the auxiliary feedwater system.

CHECK VALVE FAILURE RATE
Compares the Fort Calhoun check valve failure rate to the industry check valve failure rate (failures per 1 million component hours). The data for the industry failure rate is three months behind the PI Report reporting month. This indicator tracks performance for SEP #43.

COLLECTIVE RADIATION EXPOSURE
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 person-rem. This indicator tracks radiological work performance for SEP #54.

COMPONENT FAILURE ANALYSIS REPORT (CFAR) SUMMARY
The number of INPO categories for Fort Calhoun Station with significantly higher (1.645 standard deviations) failure rates than the rest of the industry for an eighteen month time period. Failures are reported as component (i.e. pumps, motors, valves, etc.) and application (i.e. charging pumps, main steam stop valves, control element drive motors, etc.) categories.
Failure Cause Categories are:
Wear Out/Aging - a failure thought to be the consequence of expected wear or aging.
Manufacturing Defect - a failure attributable to inadequate assembly or initial quality of the responsible component or system.
Engineering/Design - a failure attributable to the inadequate design of the responsible component or system.
Other Devices - a failure attributable to a failure or misoperation of another component or system, including associated devices.
Maintenance/Testing - a failure that is a result of improper maintenance or testing, lack of maintenance, or personnel errors that occur during maintenance or testing activities performed on the responsible component or system, including failure to follow procedures.
Errors - failures attributable to incorrect procedures that were followed as written, improper installation of equipment, and personnel errors (including failure to follow procedures properly). Also included in this category are failures for which the cause is unknown or cannot be assigned to any of the preceding categories.

CENTS PER KILOWATT HOUR
The purpose of this indicator is to quantify the economical operation of Fort Calhoun Station. The cents per kilowatt hour indicator represents the budget and actual cents per kilowatt hour on a 12 month rolling average for the current year. The basis for the budget curve is the approved 1993 budget. The basis for the actual curve is the Financial and Operating Report.

CONTAMINATIONS ≥2,000 COUNTS/MINUTE PER PROBE AREA
Reportable skin and clothing contaminations. This indicator tracks personnel performance for SEP #15 & 54.

DAILY THERMAL OUTPUT
This indicator shows the daily core thermal output as measured from computer point XC105 (in thermal megawatts). The 1500 MW Tech Spec limit, and the unmet portion of the 1495 MW FCS daily goal for the reporting month are also shown.

DIESEL GENERATOR RELIABILITY (25 DEMANDS)
This indicator shows the number of failures occurring for each emergency diesel generator during the last 25 start demands and the last 25 load-run demands.

DECONTAMINATED RADIATION CONTROLLED AREA
The percentage of the Radiation Controlled Area, which includes the auxiliary building, the radwaste building, and areas of the C/RP building, that is decontaminated based on the total square footage. This indicator tracks performance for SEP # 54.

DISABLING INJURY/ILLNESS 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 SEP #25 & 26.

DOCUMENT REVIEW (BIENNIAL)
The Document Review Indicator shows the number of documents reviewed, the number of documents scheduled for review, and the number of document reviews that are overdue for the reporting month. A document review is considered overdue if the review is not complete within 6 months of the assigned due date. This indicator tracks performance for SEP #46.

EMERGENCY AC POWER SYSTEM SAFETY SYSTEM PERFORMANCE
The sum of the known (planned and unplanned) unavailable and the estimated unavailable hours for the emergency AC power system for the reporting period divided by the number of hours in the reporting period multiplied by the number of trains in the emergency AC power system.

PERFORMANCE INDICATOR DEFINITIONS

EMERGENCY DIESEL GENERATOR UNIT RELIABILITY

This indicator shows 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 demand failures are less than the trigger values.

1) 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.

2) 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.

3) 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 criteria:

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

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

C) 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.

4) 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.

5) 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:

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

B) Malfunction of equipment that is not required during an emergency.

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

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

E) 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.

EMERGENCY DIESEL GENERATOR UNRELIABILITY

This indicator measures the total unreliability of emergency diesel generators. In general, unreliability is the ratio of unsuccessful operations (starts or load-runs) to the number of valid demands. Total unreliability is a combination of start unreliability and load-run unreliability.

ENGINEERING ASSISTANCE REQUEST (EAR) BREAKDOWN

This indicator shows a breakdown, by age and priority of the EAR, of the number of EARs assigned to Design Engineering Nuclear and System Engineering. This indicator tracks performance for SEP #62.

ENGINEERING CHANGE NOTICE (ECN) BREAKDOWN

This indicator breaks down the number of Engineering Change Notices (ECNs) that are assigned to Design Engineering Nuclear (DEN), System Engineering, and Maintenance. The graphs provide data on ECN Facility Changes open, ECN Substitute Replacement Parts open, and ECN Document Changes open. This indicator tracks performance for SEP #62.

ENGINEERING CHANGE NOTICE (ECN) STATUS

The number of ECNs that were opened, ECNs that were completed, and open backlog ECNs awaiting completion by DEN for the reporting month. This indicator tracks performance for SEP #62.

EQUIPMENT FORCED OUTAGES PER 1,000 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.

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 start-up failures and events initiated while the unit is in reserve shutdown (i.e., the unit is available but not in service).

PERFORMANCE INDICATOR DEFINITIONS

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 operation for at least three days at a power level that does not vary more than + or - 5%. Plants should collect data for this indicator at a power level above 85%, when possible. Plants that did not operate at steady-state power above 85% should collect data for this indicator at the highest steady-state power level attained during the month.

The density correction factor is the ratio of the specific volume of coolant at the RCS operating temperature (540 degrees F., Vf = 0.02146) divided by the specific volume of coolant at normal letdown temperature (120 degrees F at outlet of the letdown cooling heat exchanger, Vf = 0.016204), which results in a density correction factor for FCS equal to 1.32.

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 FCS each month.

HIGH PRESSURE SAFETY INJECTION SYSTEM SAFETY SYSTEM PERFORMANCE

The sum of the known (planned and unplanned) unavailable hours and the estimated unavailable hours for the high pressure safety injection system for the reporting period divided by the critical hours for the reporting period multiplied by the number of trains in the high pressure safety injection system.

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).

LICENSE CANDIDATE EXAMS

This indicator shows the number of SRO and/or RO quizzes and exams that are administered and passed each month. This indicator tracks training performance for SEP #68.

LICENSED OPERATOR REQUALIFICATION TRAINING

The total number of hours of training given to each crew during each cycle. Also provided are the simulator training hours (which are a subset of the total training hours), the number of non-requalification training hours and the number of exam failures. This indicator tracks training performance for SEP #68.

LICENSEE EVENT REPORT (LER) ROOT CAUSE BREAKDOWN

This indicator shows the number and root cause code for Licensee Event Reports. The root cause codes are as follows:

1) Administrative Control Problem - Management and supervisory deficiencies that affect plant programs or activities (i.e., poor planning, breakdown or lack of adequate management or supervisory control, incorrect procedures, etc.)

2) Licensed Operator Error - This cause code captures errors of omission/commission by licensed reactor operators during plant activities.

3) Other Personnel Error - Errors of omission/commission committed by non-licensed personnel involved in plant activities.

4) Maintenance Problem - The intent of this cause code is to capture the full range of problems which can be attributed in any way to programmatic deficiencies in the maintenance functional organization. Activities included in this category are maintenance, testing, surveillance, calibration and radiation protection.

5) Design/Construction/Installation/Fabrication Problem - This cause code covers a full range of programmatic deficiencies in the areas of design, construction, installation, and fabrication (i.e., loss of control power due to underrated fuse, equipment not qualified for the environment, etc.).

6) Equipment Failures (Electronic Piece-Parts or Environmental-Related Failures) - This code is used for spurious failures of electronic piece-parts and failures due to meteorological conditions such as lightning, ice, high winds, etc. Generally, it includes spurious or one-time failures. Electric components included in this category are circuit cards, rectifiers, bistables, fuses, capacitors, diodes, resistors, etc.

LOGGABLE/REPORTABLE INCIDENTS (SECURITY)

The total number of security incidents for the reporting month depicted in two graphs. This indicator tracks security performance for SEP #58.

MAINTENANCE OVERTIME

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

MAINTENANCE WORKLOAD BACKLOGS

This indicator is a breakdown of the manhours associated corrective non-outage maintenance work orders by several categories. Safety related MWOs are those MWOs in which the Equipment Data Base in CHAMPS has identified the equipment as Critical Quality Equipment (CQE). Therefore, this indicator is identifying those MWOs that have been identified as CQE and reports the number of estimated manhours associated with the backlog. This indicator tracks maintenance performance for SEP #36.

MAXIMUM INDIVIDUAL RADIATION EXPOSURE

The total maximum amount of radiation received by an individual person working at FCS on a monthly, quarterly, and annual basis.

PERFORMANCE INDICATOR DEFINITIONS

MWO PLANNING STATUS (CYCLE 15 REFUELING OUTAGE)

The total number of Maintenance Work Orders that have been approved for inclusion in the Cycle 15 Refueling Outage and the number that are ready to work (parts staged, planning complete, and all other paperwork ready for field use). Also included is the number of MWOs that have engineering holds (ECNs, procedures and other miscellaneous engineering holds), parts hold, (parts staged, not yet inspected, parts not yet arrived) and planning hold (job scope not yet completed). Maintenance Work Requests (MWRs) are also shown that have been identified for the Cycle 15 Refueling Outage and have not yet been converted to MWOs.

NUMBER OF CONTROL ROOM EQUIPMENT DEFICIENCIES

A control room equipment deficiency (CRD) is defined as any component which is operated or controlled from the Control Room, provides indication or alarm to the Control Room, provides testing capabilities from the Control Room, provides automatic actions from or to the Control Room, or provides a passive function for the Control Room and has been identified as deficient, i.e., does not perform under all conditions as designed. This definition also applies to the Alternate Shutdown Panels AI-179, AI-185, and AI-212.

A plant component which is deficient or inoperable is considered an "Operator Work Around (OWA) Item" if some other action is required by an operator to compensate for the condition of the component. Some examples of OWAs are: 1) The control room level indicator does not work but a local sightglass can be read by an Operator out in the plant; 2) A deficient pump cannot be repaired because replacement parts require a long lead time for purchase/delivery, thus requiring the redundant pump to be operated continuously; 3) Special actions are required by an Operator because of equipment design problems. These actions may be described in Operations Memorandums, Operator Notes, or may require changes to Operating Procedures. 4) Deficient plant equipment that is required to be used during Emergency Operating Procedures or Abnormal Operating Procedures. 5) System indication that provides critical information during normal or abnormal operations.

NUMBER OF HOT SPOTS

The number of radiological hot spots which have been identified and documented to exist at FCS 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 PERSONNEL ERRORS REPORTED IN LERS

The number of Licensee Event Reports (LERs) attributed to personnel error on the original LER submittal. A Personnel Error is an event for which the root cause is inappropriate action on the part of one or more specified individuals (as opposed to being attributed to a department or a general group). Also, the inappropriate action must have occurred within approximately two years of the "Event Date" specified in the LER. This indicator trends personnel performance for SEP #15.

NUMBER OF MISSED SURVEILLANCE TESTS RESULTING IN LICENSEE EVENT REPORTS

The number of Surveillance Tests (STs) that result in Licensee Event Reports (LERs) during the reporting month. This indicator tracks missed STs for SEP #60 & 61.

OPEN CORRECTIVE ACTION REPORTS & INCIDENT REPORTS

This indicator displays the total number of open Corrective Action Reports (CARs), the number of CARs that are older than six months and the number of open significant CARs. Also displayed are the number of open Incident Reports (IRs), the number of IRs that are greater than six months old and the number of open significant IRs.

OUTSTANDING MODIFICATIONS

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

1) Form FC-1133 Backlog/In Progress. This number represents modification requests that have not been plant approved during the reporting month.

2) Modification Requests Being Reviewed. This category includes:

A.) Modification Requests that are not yet reviewed.

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

C.) 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.

3) Design Engineering Backlog/In Progress. Nuclear Planning has assigned a year in which construction will be completed and design work may be in progress.

4) 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).

5) Design Engineering Update Backlog/In Progress. PED has received the Modification Completion Report but the drawings have not been updated.

The above mentioned outstanding modifications do not include modifications which are proposed for cancellation.

OVERALL PROJECT STATUS (REFUELING OUTAGE)

This indicator shows the status of the projects which are in the scope of the Refueling Outage.

PERFORMANCE INDICATOR DEFINITIONS

PERCENTAGE OF TOTAL MWOs COMPLETED PER MONTH IDENTIFIED AS REWORK

The percentage of total MWOs completed per month identified as rework. Rework activities are identified by maintenance planning and craft. Rework is: Any maintenance work repeated to correct a deficiency which has re-occurred within 60 days following similar work activities. Any additional work required to correct deficiencies discovered during a failed Post Maintenance Test to ensure the component/system passes subsequent Post Maintenance Tests. This definition can be found in S. O. M-101.

PERCENT OF COMPLETED SCHEDULED MAINTENANCE ACTIVITIES

The % of the number of completed maintenance activities as compared to the number of scheduled maintenance activities each month. This % is shown for all maintenance crafts. Also shown are the number of emergent MWOs. Maintenance activities include MWRs, MWOs, STs, PMOs, calibrations, and other miscellaneous activities. This indicator tracks Maintenance performance for SEP #33.

PRIMARY SYSTEM CHEMISTRY % OF HOURS OUT OF LIMIT

The % 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 IRs related to the use of procedures (includes the number of closed IRs caused by procedural noncompliance), and the number of closed procedural noncompliance IRs. This indicator trends personnel performance for SEP #15, 41 & 44.

PROGRESS OF REFUELING OUTAGE MODIFICATION PLANNING (FROZEN SCOPE OF 24 MODIFICATIONS)

This indicator shows the status of modifications approved for completion during the Refueling Outage.

RADIOLOGICAL WORK PRACTICES PROGRAM

The number of identified poor radiological work practices (PRWPs) for the reporting month. This indicator tracks radiological work performance for SEP #52.

RATIO OF PREVENTIVE TO TOTAL MAINTENANCE & PREVENTIVE MAINTENANCE ITEMS OVERDUE

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. Also displayed are the % of preventive maintenance items in the month that were not completed by the scheduled date plus a grace period equal to 25 % of the scheduled interval. This indicator tracks preventive maintenance activities for SEP #41.

RECORDABLE INJURY/ILLNESS CASES FREQUENCY RATE

The number of injuries requiring more than normal first aid per 200,000 man-hours worked. This indicator trends personnel performance for SEP #15, 25 & 26.

REPEAT FAILURES

The number of Nuclear Plant Reliability Data System (NPRDS) components with more than 1 failure and the number of NPRDS components with more than 2 failures for the last eighteen months.

SAFETY SYSTEM FAILURES

Safety system failures are any events or conditions that could prevent the fulfillment of the safety functions of structures or systems. If a system consists of multiple redundant subsystems or trains, failure of all trains constitutes a safety system failure. Failure of one of two or more trains is not counted as a safety system failure. The definition for the indicator parallels NRC reporting requirements in 10 CFR 50.72 and 10 CFR 50.73. The following is a list of the major safety systems, subsystems, and components monitored for this indicator: Accident Monitoring Instrumentation, Auxiliary (and Emergency) Feedwater System, Combustible Gas Control, Component Cooling Water System, Containment and Containment Isolation, Containment Coolant Systems, Control Room Emergency Ventilation System, Emergency Core Cooling Systems, Engineered Safety Features Instrumentation, Essential Compressed Air Systems, Essential or Emergency Service Water, Fire Detection or Suppression Systems, Isolation Condenser, Low Temperature Overpressure Protection, Main Steam Line Isolation Valves, Onsite Emergency AC & DC Power w/Distribution, Radiation Monitoring Instrumentation, Reactor Coolant System, Reactor Core Isolation Cooling System, Reactor Trip System and Instrumentation, Recirculation Pump Trip Actuation Instrumentation, Residual Heat Removal Systems, Safety Valves, Spent Fuel Systems, Standby Liquid Control System and Ultimate Heat Sink.

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 when the plant is operated at greater than 30 percent power.

The CPI is calculated using the following equation: CPI = (Ka/0.8) + (Na/20) + (O_2/10) / 3 where the following are monthly averages of: Ka = average blowdown cation conductivity, Na = average blowdown sodium concentration, O_2 = average condensate pump discharge dissolved oxygen concentration.

PERFORMANCE INDICATOR DEFINITIONS

SIGNIFICANT EVENTS

Significant events are those events identified by NRC staff through detailed screening and evaluation of operating experience. The screening process includes the daily review and discussion of all reported operating reactor events, as well as other operational data such as special tests or construction activities. An event identified from the screening process as a significant event candidate is further evaluated to determine if any actual or potential threat to the health and safety of the public was involved. Specific examples of the type of criteria are summarized as follows: 1) Degradation of important safety equipment; 2) Unexpected plant response to a transient; 3) Degradation of fuel integrity, primary coolant pressure boundary, important associated features; 4) Scram with complication; 5) Unplanned release of radioactivity; 6) Operation outside the limits of the Technical Specifications; 7) Other.
INPO significant events reported in this indicator are SERs (Significant Event Reports) which inform utilities of significant events and lessons learned identified through the SEE-IN screening process.

SPARE PARTS INVENTORY VALUE

The dollar value of the spare parts inventory value for FCS during the reporting period.

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. This indicator tracks performance for SEP #24.

STATION NET GENERATION

The net generation (sum) produced by the FCS during the reporting month.

TEMPORARY MODIFICATIONS

The number of temporary mechanical and electrical configurations to the plant's systems.
1) 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.
2) 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.
3) Scaffolding is not considered a temporary modification. Jumpers and blocks which are installed and for which MRs have been submitted will be considered as temporary modifications until final resolution of the MR and the jumper or block is removed or is permanently recorded on the drawings. This indicator tracks temporary modifications for SEP #62 & 71.

THERMAL PERFORMANCE

The ratio of the design gross heat rate (corrected) to the adjusted actual gross heat rate, expressed as a percentage.

UNIT CAPABILITY FACTOR

The ratio of the available energy generation over a given time period to the reference energy generation (the energy that could be produced if the unit were operated continuously at full power under reference ambient conditions) over the same time period, expressed as a percentage.

UNPLANNED AUTOMATIC REACTOR SCRAMS PER 7,000 CRITICAL HOURS

This indicator is defined as the number of unplanned automatic scrams (reactor protection system logic actuations) that occur per 7,000 hours of critical operation. The value for this indicator is calculated by multiplying the total number of unplanned automatic reactor scrams in a specific time period by 7,000 hours, then dividing that number by the total number of hours critical in the same time period. The indicator is further defined as follows:
1) Unplanned means that the scram was not an anticipated part of a planned test.
2) Scram means the automatic shutdown of the reactor by a rapid insertion of negative reactivity (e.g., by control rods, liquid injection system, etc.) 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.
3) 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, in manual turbine trip switches (or push-buttons) provided in the main control room.
4) Critical means that during the steady-state condition of the reactor prior to the scram, the effective multiplication factor (k_{eff}) was essentially equal to one.

UNPLANNED CAPABILITY LOSS FACTOR

The ratio of the unplanned energy losses during a given period of time, to the reference energy generation (the energy that could be produced if the unit were operated continuously at full power under reference ambient conditions) over the same time period, expressed as a percentage.

UNPLANNED SAFETY SYSTEM ACTUATIONS - (INPO DEFINITION)

This indicator is defined as the sum of the following safety system actuations:
1) 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.
2) 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 1,000 INSPECTION HOURS

This indicator is defined as the number of violations sited in NRC inspection reports for FCS per 1,000 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 burial. This indicator also shows the volume of low-level radioactive waste which is in temporary storage, the amount of radioactive oil that has been shipped off-site for processing, and the volume of solid dry radioactive waste which has been shipped off-site for processing. 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 radioactive 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 SEP #54.

SAFETY ENHANCEMENT PROGRAM INDEX

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

SAFETY ENHANCEMENT PROGRAM INDEX (continued)

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FORT CALHOUN STATION
OPERATING CYCLES AND REFUELING OUTAGE DATES

Event	Date Range	Production (MWH)	Cumulative (MWH)
Cycle 1	09/26/73 -02/01/75	3,299,639	3,299,639
1st Refueling	02/01/75 -05/09/75	*	*
Cycle 2	05/09/75 -10/01/76	3,853,322	7,152,961
2nd Refueling	10/01/76 -12/13/76	*	*
Cycle 3	12/13/76 - 9/30/77	2,805,927	9,958,888
3rd Refueling	09/30/77 -12/09/77	*	*
Cycle 4	12/09/77 - 10/14/78	3,026,832	12,985,720
4th Refueling	10/14/78 - 12/24/78	*	*
Cycle 5	12/24/78 - 01/18/80	3,882,734	16,868,454
5th Refueling	01/18/80 - 06/11/80	*	*
Cycle 6	06/11/80 - 09/18/81	3,899,714	20,768,168
6th Refueling	09/18/81 - 12/21/81	*	*
Cycle 7	12/21/81 - 12/06/82	3,561,866	24,330,034
7th Refueling	12/06/82 - 04/07/83	*	*
Cycle 8	04/07/83 - 03/03/84	3,406,371	27,736,405
8th Refueling	03/03/84 - 07/12/84	*	*
Cycle 9	07/12/84 - 09/28/85	4,741,488	32,477,893
9th Refueling	09/28/85 - 01/16/86	*	*
Cycle 10	01/16/86 - 03/07/87	4,356,753	36,834,646
10th Refueling	03/07/87 - 06/08/87	*	*
Cycle 11	06/08/87 - 09/27/88	4,936,859	41,771,505
11th Refueling	09/27/88 - 01/31/89	*	*
Cycle 12	01/31/89 - 02/17/90	3,817,954	45,589,459
12th Refueling	02/17/90 - 05/29/90	*	*
Cycle 13	05/29/90 - 02/01/92	5,451,069	51,040,528
13th Refueling	02/01/92 - 05/03/92	*	*
Cycle 14#	05/03/92 -09/25/93	4,981,485	56,022,013
14th Refueling	09/25/93 - 11/26/93	*	*
Cycle 15	11/26/93 - 03/11/95	*	*
15th Refueling	03/11/95 - 04/29/95	(Planned Dates)	

FORT CALHOUN STATION
CURRENT PRODUCTION AND OPERATIONS "RECORDS"

First Sustained Reaction	August 5, 1973 (5:47 p.m.)
First Electricity Supplied to the System	August 25, 1973
Commercial Operation (180,000 KWH)	September 26, 1973
Achieved Full Power (100%)	May 4, 1974
Longest Run (477 days)	June 8, 1987-Sept. 27,1988
Highest Monthly Net Generation (364,468,800 KWH)	October 1987
Most Productive Fuel Cycle (5,451,069 MWH)(Cycle 13)	May 29, 1990-Feb. 1,1992