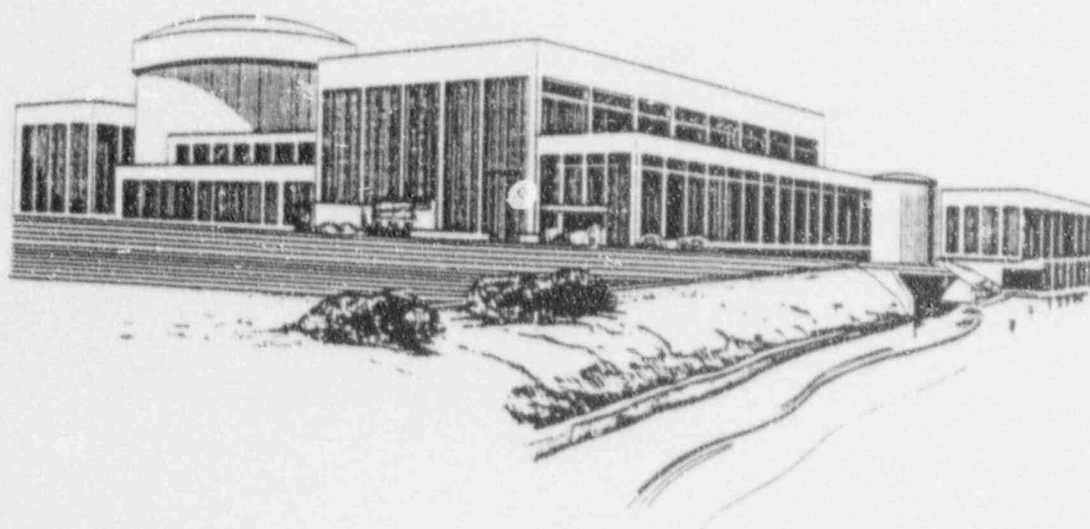


# FORT CALHOUN STATION PERFORMANCE INDICATORS

MARCH 1992



Prepared by:

Production Engineering Division  
System Engineering  
Test and Performance Group

9204300305 920423  
PDR ADOCK 05000285  
R PDR

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

OMAHA PUBLIC POWER DISTRICT  
FORT CALHOUN STATION  
PERFORMANCE INDICATORS REPORT

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

**MARCH 1992**

# ABSTRACT

## PURPOSE

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

## SCOPE

The conditions, goals, and projections reflected within this report are current as of the end of the month being reported, unless otherwise stated.

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

- 1) Data was selected which most effectively monitors Fort Calhoun's performance in key areas.
- 2) Established corporate goals and industry information were included for comparison.
- 3) Formal definitions were developed for each performance parameter to ensure consistency in future reports and allow comparison with industry averages where appropriate.

Comments and input are encouraged to ensure that this program is tailored to address the areas which are most meaningful to the people using the report. Please refer comments to the System Engineering Department's Test and Performance Group. To increase personnel awareness of Fort Calhoun Station's plant performance, it is suggested that this report be distributed throughout your respective departments.

## REFERENCES

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

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

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



## FOREWORD

This report is being produced in an abbreviated form during the Cycle 14 Refueling Outage to allow many performance indicator data sources to devote more time to outage activities. Publication of all indicators will resume in the May 1992 report.

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## INPO INDUSTRY KEY PARAMETERS

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	<u>INDUSTRY</u> <u>MEDIAN</u>	<u>OPPD</u> <u>GOAL</u>	<u>OPPD</u> <u>THIS MONTH</u>	<u>OPPD</u> <u>LAST MONTH</u>	<u>TREND</u>	
SAFETY SYSTEM PERFORMANCE:						
EMERGENCY AC POWER SYSTEM .....	NA	0.024	0	0	I	3
COLLECTIVE RADIATION EXPOSURE (Man-Rem) .....	216/YR	250/YR	175.1	65.5	NA	5
VOLUME OF LOW-LEVEL SOLID RADIOACTIVE WASTE (Cubic Ft.) .....	4,166/YR	3,000/YR	1.7	0	NA	6
INDUSTRIAL SAFETY ACCIDENT RATE/DISABLING						
INJURY/ILLNESS FREQUENCY RATE .....	0.76	0.3	0	0	I	7

## OPERATIONS

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	<u>INDUSTRY</u> <u>MEDIAN</u>	<u>OPPD</u> <u>GOAL</u>	<u>OPPD</u> <u>THIS MONTH</u>	<u>OPPD</u> <u>LAST MONTH</u>	<u>TREND</u>	
UNPLANNED SAFETY SYSTEM ACTUATIONS - (INPO DEFINITION) .....	0	0	0	0	I	1
UNPLANNED SAFETY SYSTEM ACTUATIONS - (NRC DEFINITION) .....	0	0	0	0	I	2
PLANNED CAPABILITY LOSS FACTOR .....	18.3%	28.3%	100%	100%	NA	4
OPERATIONS AND MAINTENANCE BUDGET .....	NA	NA	NA	NA	NA	8
DOCUMENT REVIEW .....	NA	NA	NA	NA	NA	9

## MAINTENANCE

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	<u>INDUSTRY</u> <u>MEDIAN</u>	<u>OPPD</u> <u>GOAL</u>	<u>OPPD</u> <u>THIS MONTH</u>	<u>OPPD</u> <u>LAST MONTH</u>	<u>TREND</u>	
DIESEL GENERATOR UNAVAILABILITY .....	NA	NA	NA	NA	NA	10
AGE OF OUTSTANDING MAINTENANCE WORK ORDERS (CORRECTIVE NON-OUTAGE) .....	NA	NA	NA	NA	NA	11
MAINTENANCE WORK ORDER BREAKDOWN (CORRECTIVE NON-OUTAGE) .....	NA	NA	NA	NA	NA	12
CORRECTIVE MAINTENANCE BACKLOG GREATER THAN 3 MONTHS OLD (NON-OUTAGE) .....	NA	NA	50.4%	58%	NA	13
RATIO OF PREVENTIVE TO TOTAL MAINTENANCE .....	NA	NA	77.4%	80.8%	NA	14
NUMBER OF OUT-OF-SERVICE CONTROL ROOM INSTRUMENTS .....	NA	<13	9	11	I	15

MAINTENANCE (cont'd)

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
MAINTENANCE OVERTIME .....	NA	10%	40.4%	38.2%	NA	16
PROCEDURAL NONCOMPLIANCE INCIDENTS (MAINTENANCE) .....	NA	NA	2	0	D	17
MAINTENANCE WORK ORDER BACKLOG (CORRECTIVE NON-OUTAGE MAINTENANCE) .....	NA	<350	339	250	D	18
NUMBER OF MISSED SURVEILLANCE TESTS RESULTING IN LICENSEE EVENT REPORTS .....	NA	0	0	0	I	19
MAINTENANCE EFFECTIVENESS .....	NA	NA	NA	NA	NA	20
CHECK VALVE FAILURE RATE .....	NA	2.00E-6	6.07E-7	6.08E-7	NA	21

CHEMISTRY AND RADIOLOGICAL PROTECTION

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
COLLECTIVE RADIATION EXPOSURE (Man-Rem) .....	216/YR	250/YR	175.1	65.5	NA	5
VOLUME OF LOW-LEVEL SOLID RADIOACTIVE WASTE (Cubic Ft.) .....	4,166/YR	3,000/YR	1.7	0	NA	6
MAXIMUM INDIVIDUAL RADIATION EXPOSURE (mRem) .....	NA	1,500/YR	857	772	NA	22
TOTAL SKIN AND CLOTHING CONTAMINATIONS .....	NA	144	129	30	NA	23
DECONTAMINATED RADIATION CONTROLLED AREA .....	NA	88%	85.9%	85.8%	NA	24
RADIOLOGICAL WORK PRACTICES PROGRAM .....	NA	NA	59	15	D	25
NUMBER OF HOT SPOTS .....	NA	NA	61	64	I	26
GASEOUS RADIOACTIVE WASTE BEING DISCHARGED TO THE ENVIRONMENT (curies) .....	NA	340	358.5	NA	NA	27
LIQUID RADIOACTIVE WASTE BEING DISCHARGED TO THE ENVIRONMENT (curies) .....	NA	225	176.1	NA	I	28

SECURITY

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
LOGGABLE/REPORTABLE INCIDENTS (SECURITY) .....	NA	NA	57	75	NA	29
SECURITY NON-SYSTEM FAILURES .....	NA	NA	NA	NA	NA	30

SECURITY (cont'd)

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
SECURITY SYSTEM FAILURES .....	NA	NA	NA	NA	NA	31

MATERIALS AND OUTSIDE SERVICES

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
EXPEDITED PURCHASES .....	NA	0.5%	3.15%	0.76%	NMA	32

DESIGN ENGINEERING

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
TEMPORARY MODIFICATIONS (EXCLUDING SCAFFOLDING) .....	NA	0	28	32	NA	33

INDUSTRIAL SAFETY

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
DISABLING INJURY/ILLNESS FREQUENCY RATE .....	0.76	0.3	0	0	1	7
RECORDABLE INJURY/ILLNESS CASES FREQUENCY RATE .....	NA	2.0	0.60	1.0	1	34

HUMAN RESOURCES

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
NUMBER OF PERSONNEL ERRORS REPORTED IN LERs .....	NA	NA	1	2	1	35
LER ROOT CAUSE BREAKDOWN .....	NA	NA	NA	NA	NA	36
STAFFING LEVEL .....	NA	NA	NA	NA	NA	37

TRAINING AND QUALIFICATION

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
LICENSED OPERATOR REQUALIFICATION TRAINING .....	NA	NA	NA	NA	NA	38
LICENSE CANDIDATE EXAMS .....	NA	NA	NA	NA	NA	39
HOTLINE TRAINING MEMOS .....	NA	NA	NA	NA	NA	40

REFUELING OUTAGE

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
EMERGENT MWOs APPROVED FOR INCLUSION IN THE CYCLE 14 REFUELING OUTAGE .....	NA	59/wk	NA	NA	A	41

QUALITY ASSURANCE

PAGE

	INDUSTRY MEDIAN	OPPD GOAL	OPPD THIS MONTH	OPPD LAST MONTH	TREND	
VIOLATIONS PER 1,000 INSPECTION HOURS .....	NA	1.5	1.51	1.52	NMA	42
CUMULATIVE VIOLATIONS AND NCVs (TWELVE-MONTH RUNNING TOTAL) .....	NA	NA	6/4	6/4	NA	43
CARs ISSUED vs. SIGNIF. CARs vs. NRC VIOLATIONS ISSUED vs. LERs REPORTED .....	NA	NA	NA	NA	NA	44

PERFORMANCE INDICATOR DEFINITIONS ..... 45

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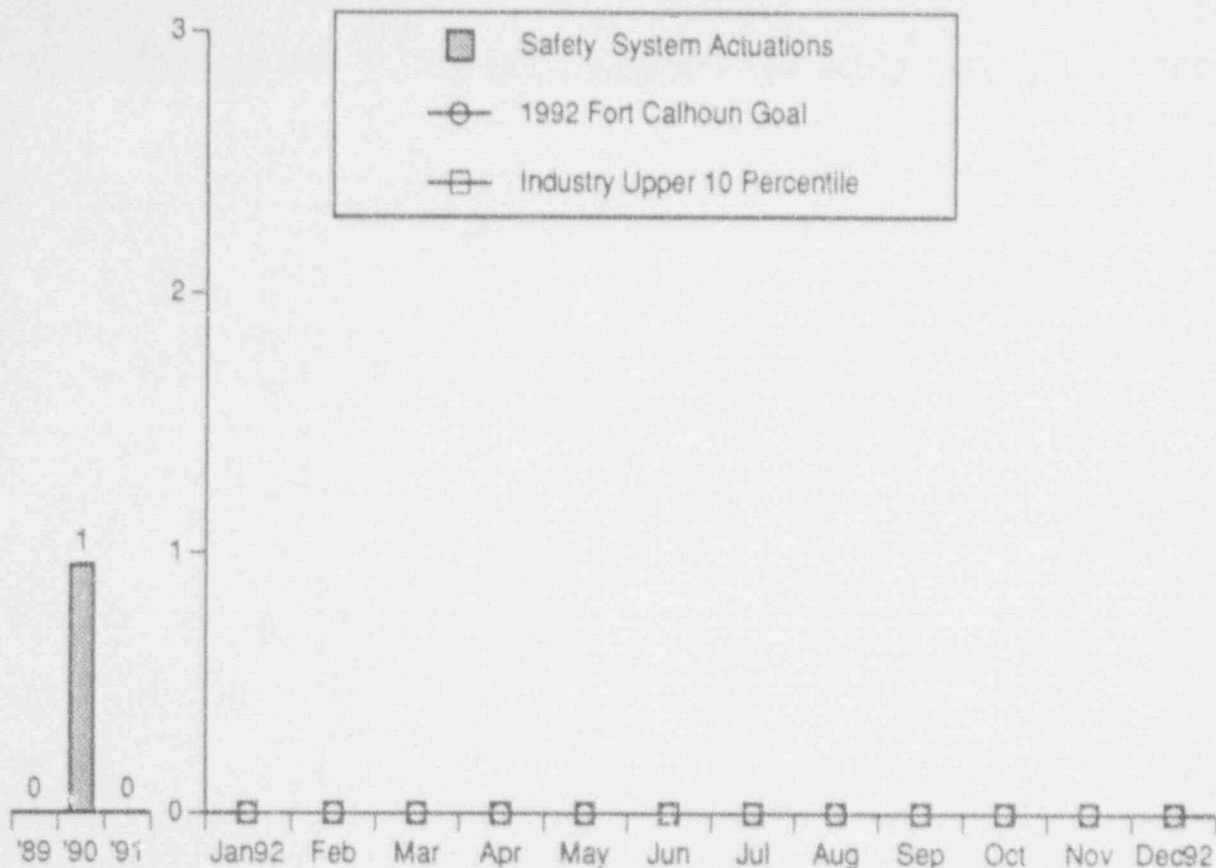
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INDICATORS NEEDING INCREASED MANAGEMENT ATTENTION REPORT ..... 52

PERFORMANCE INDICATOR REPORT IMPROVEMENTS/CHANGES ..... 52

TABLE OF CONTENTS/SUMMARY TREND SYMBOLS

A = ADVERSE TREND  
 I = IMPROVED PERFORMANCE  
 D = DECLINING PERFORMANCE  
 NMA = NEEDS MANAGEMENT ATTENTION  
 NA = NOT APPLICABLE/AVAILABLE



#### UNPLANNED SAFETY SYSTEM ACTUATIONS - (INPO DEFINITION)

There were no unplanned safety system actuations during the month of March 1992.

The 1992 goal for the number of unplanned safety system actuations is zero.

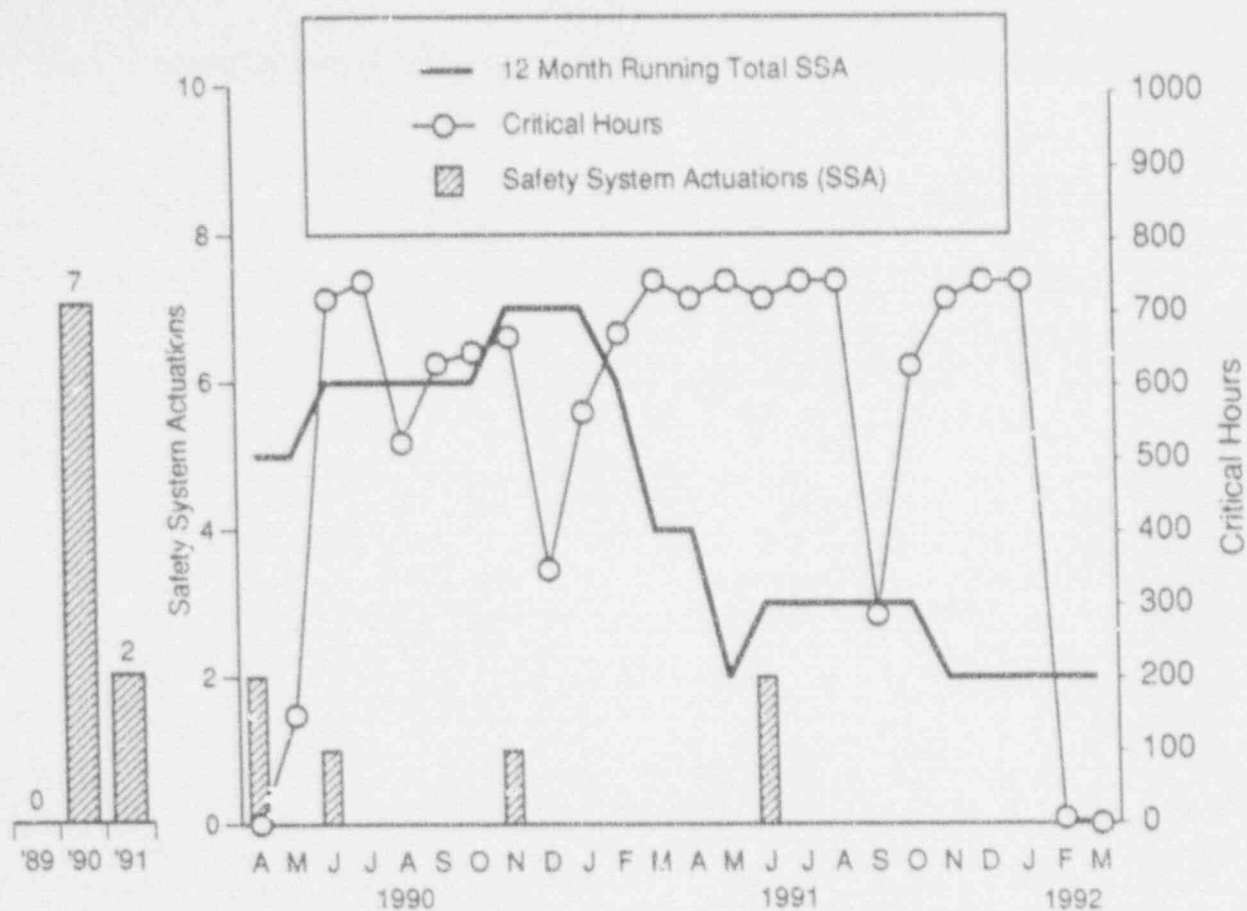
The industry upper ten percentile value for the number of unplanned safety system actuations per year is zero. The Fort Calhoun Station is currently performing in the upper ten percentile of nuclear power plants for this indicator.

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

Accountability: Jaworski/Foley/Ronning

Adverse Trend: None





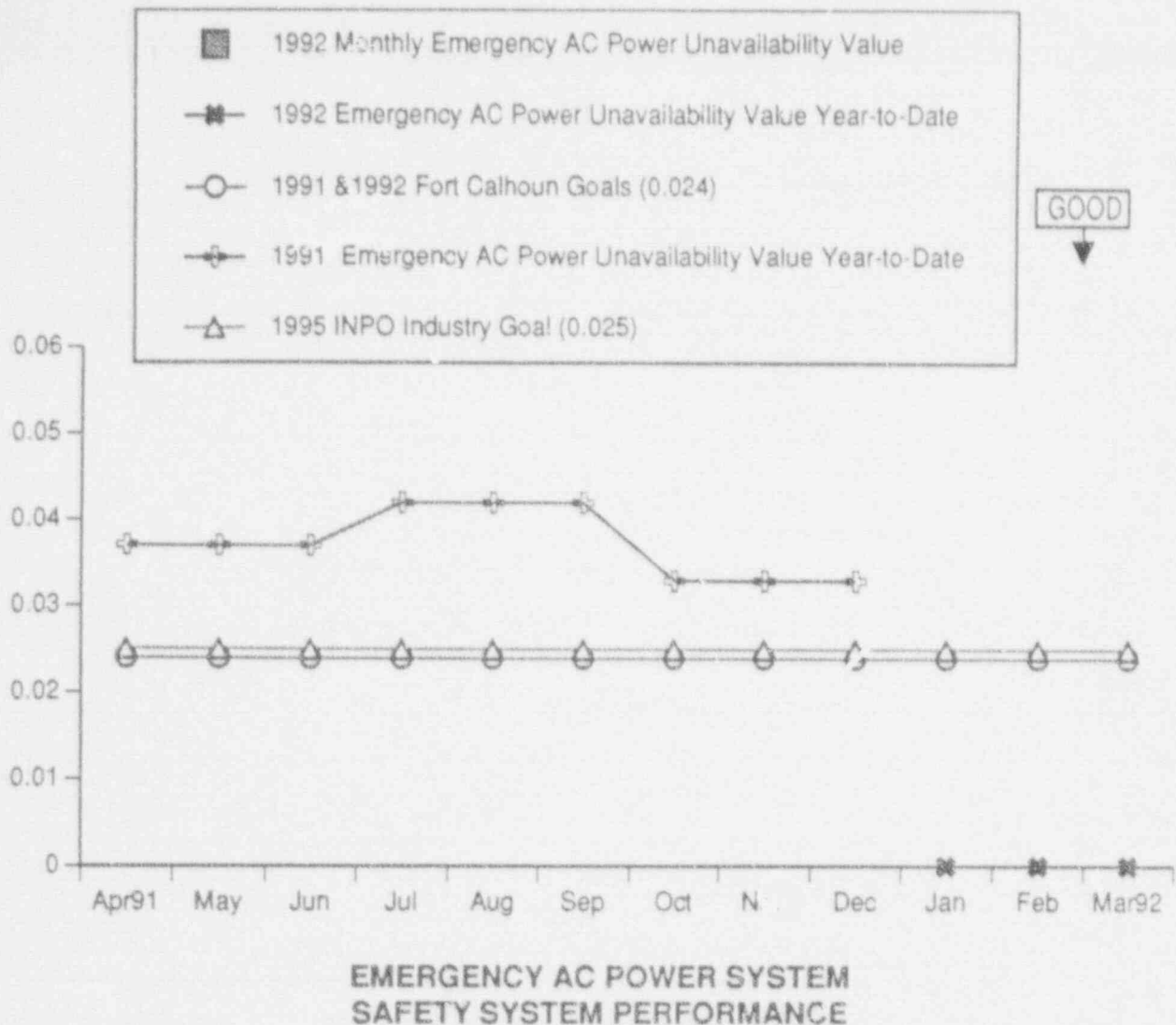
### UNPLANNED SAFETY SYSTEM ACTUATIONS - (NRC DEFINITION)

This indicator shows the number of unplanned safety system actuations (SSAs) which include 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.

The last event of this type occurred in June 1991 when there were two anticipatory signal starts for DG-2. The first start occurred after a control relay was bumped causing a momentary loss of power to safety bus 1A4. DG-2 started a second time when a breaker trip occurred during DG-1 breaker synchronization. DG-2 was not required to provide power to the safety bus in either of these situations.

The majority of SSAs displayed above were related to 1990 Refueling Outage activities. These were reviewed under the Safety System Actuation Reduction Program. The goal of the Program (now complete) was to reduce the number of SSAs at Fort Calhoun. The 1992 Fort Calhoun goal for this indicator is a maximum of three.

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



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.

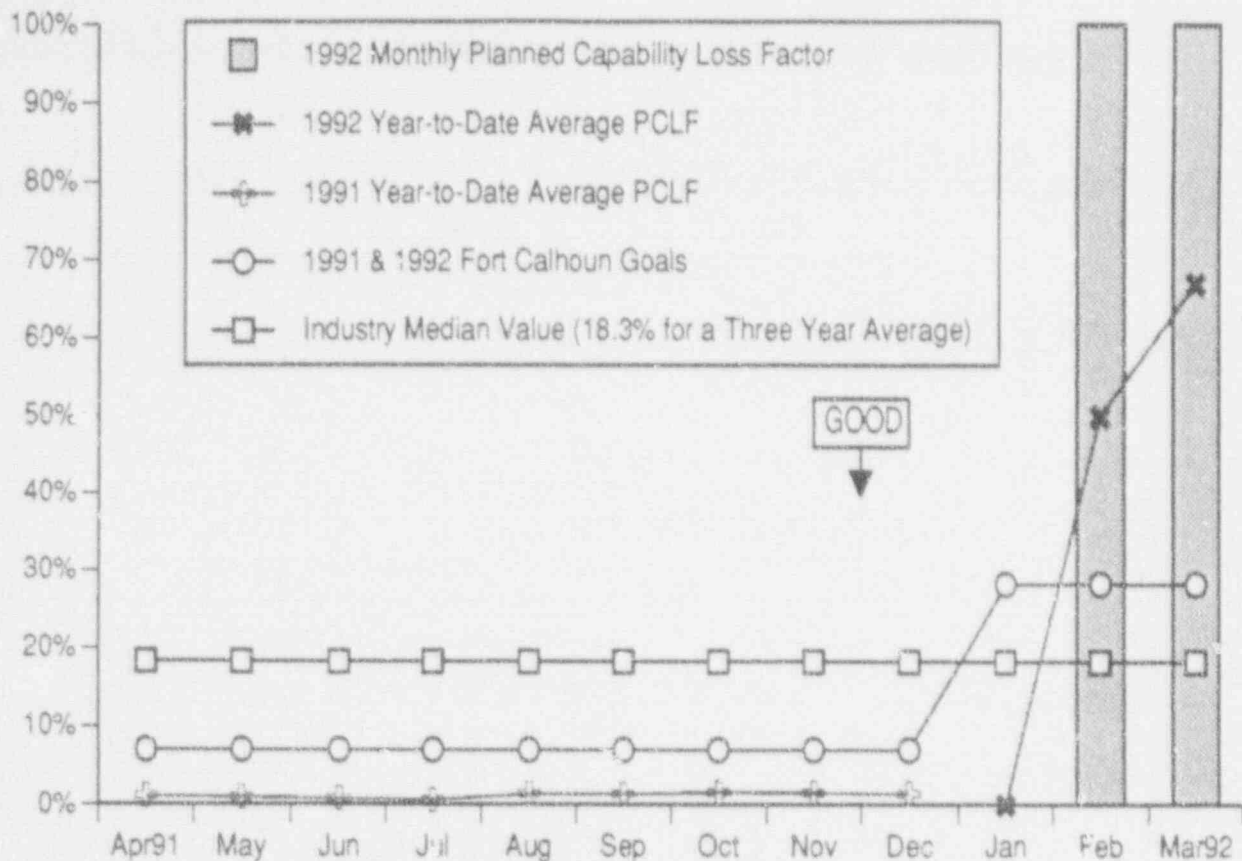
The Emergency AC Power System unavailability value for March 1992 is zero. The Emergency AC Power System unavailability value year-to-date is zero.

The 1992 and 1991 Fort Calhoun year-end goals for this indicator are 0.024. The 1995 INPO industry goal is 0.025.

Data Source: Jaworski/Ronning

Accountability: Jaworski/Ronning

Adverse Trend: None



### PLANNED CAPABILITY LOSS FACTOR

This indicator shows the plant monthly Planned Capability Loss Factor (PCLF), the PCLF year-to-date average, and the Fort Calhoun yearly average PCLF goals for 1991 and 1992. Planned Capability Loss Factor is defined as the ratio of the planned 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 PCLF was reported as 100% for the month of March 1992 due to the Cycle 14 Refueling Outage. The year-to-date average PCLF for 1992 is 67%.

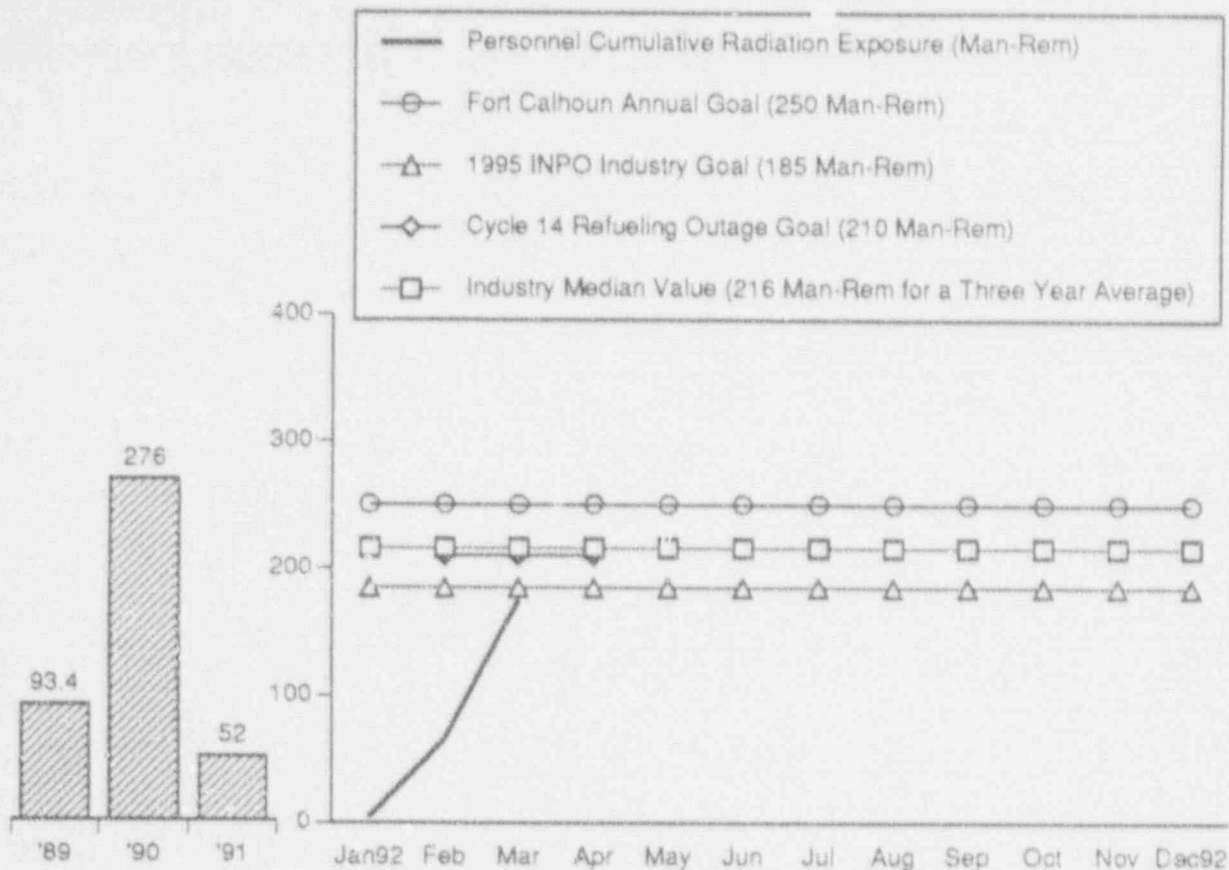
The 1992 Fort Calhoun yearly average Planned Capability Loss Factor goal is 28.3%. The 1991 goal was 7%.

The PCLF industry median value (for the three year period from 1/89 through 12/91) is 18.3%.

Data Source: Generation Totals Report & Monthly Operating Report

Accountability: Patterson

Adverse Trend: None



### COLLECTIVE RADIATION EXPOSURE

During March 1992, 109.5 man-rem was recorded by TLDs worn by personnel while working at the Fort Calhoun Station during the Cycle 14 Refueling Outage. The year-to-date exposure is 175.1 man-rem.

The Fort Calhoun goal for personnel radiation exposure (cumulative) during 1992 is 250 man-rem. The total Cycle 14 refueling outage goal is 210 man-rem.

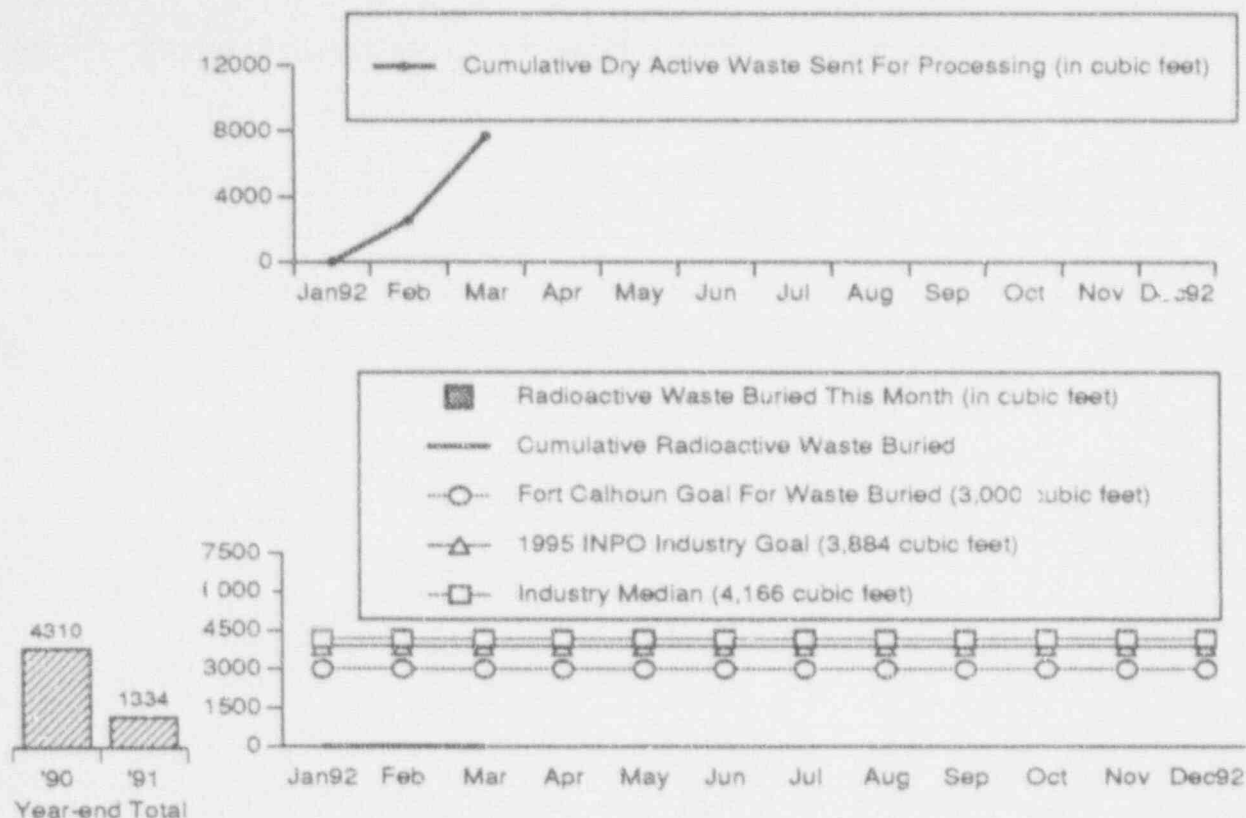
The 1995 INPO industry goal is 185 man-rem per year. The industry median value (for the three year period from 1/89 through 12/91) is 216 man-rem per year.

Data Source: Patterson/Williams (Manager/Source)

Accountability: Patterson/Lovett

Adverse Trend: None

SEP 54



### VOLUME OF LOW-LEVEL SOLID RADIOACTIVE WASTE

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

The monthly and cumulative volumes of radioactive waste which were buried during the month of March 1992 have been revised. These revisions are due to the delay involved in the shipping for processing, the processing, and the burying of radioactive waste.

Cumulative amount of solid radwaste shipped off-site for processing (cubic feet)	7,680
Volume of solid radioactive waste which was buried during the month of March (cubic feet)	1.7
Cumulative volume of solid radioactive waste buried in 1992 (cubic feet)	1.7
Amount of solid radioactive waste in temporary storage (cubic feet)	0.0

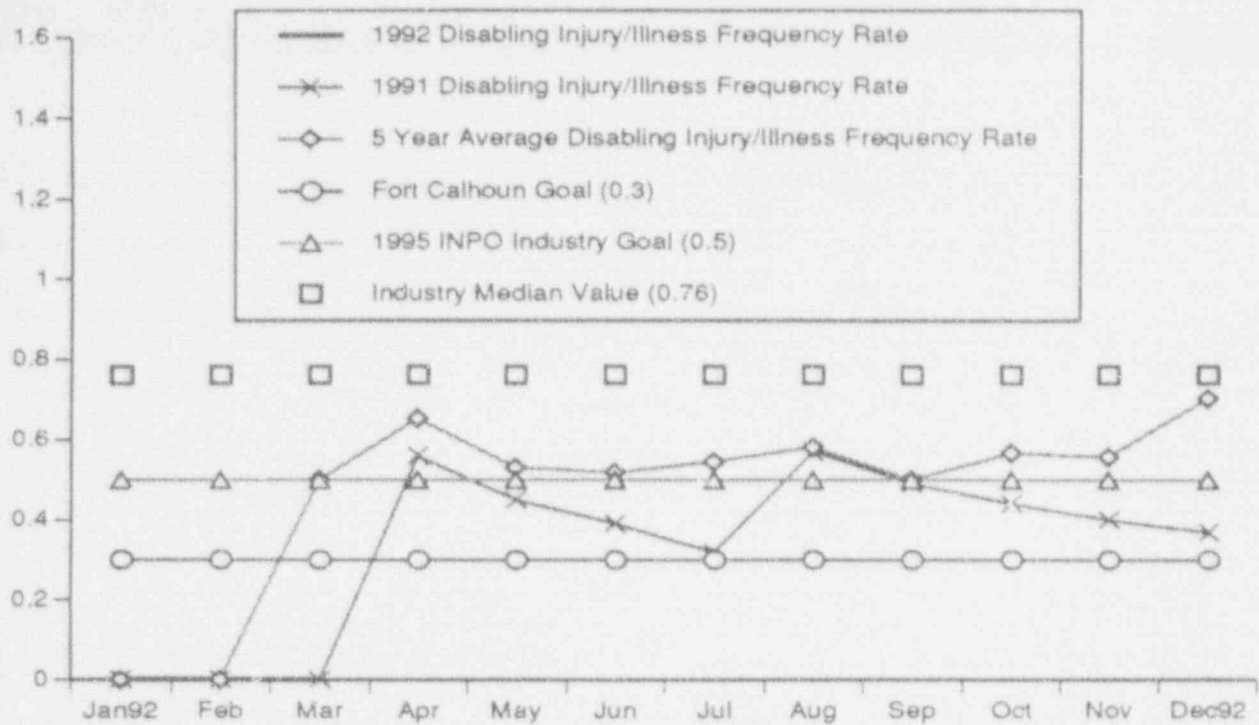
The 1992 Fort Calhoun goal for the volume of solid radioactive waste which has been buried is 3,000 cubic feet. The 1995 INPO industry goal is 110 cubic meters (3,884 cubic feet) per year. The industry median value is 118 cubic meters (4,166 cubic feet) per year.

Data Source: Patterson/Breuer (Manager/Source)

Accountability: Patterson/Bilau

Adverse Trend: None

SEP 54



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

This indicator shows the 1992 monthly disabling injury/illness frequency rate, the 1991 disabling injury/illness frequency rate and the 5 year average (from 1987 through 1991) of the corresponding monthly disabling injury/illness frequency rates.

There were no (zero) lost time accidents reported at the Fort Calhoun Station in March 1992. The total number of lost time accidents that have been reported during 1992 is zero. The 1992 disabling injury/illness frequency rate goal was set at 0.3. The 1995 INPO Industry goal is 0.50.

The disabling injury/illness rate for the past twelve months is 0.34.

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

Year	Year-End Rate
1989	0.4
1990	0.5
1991	0.4

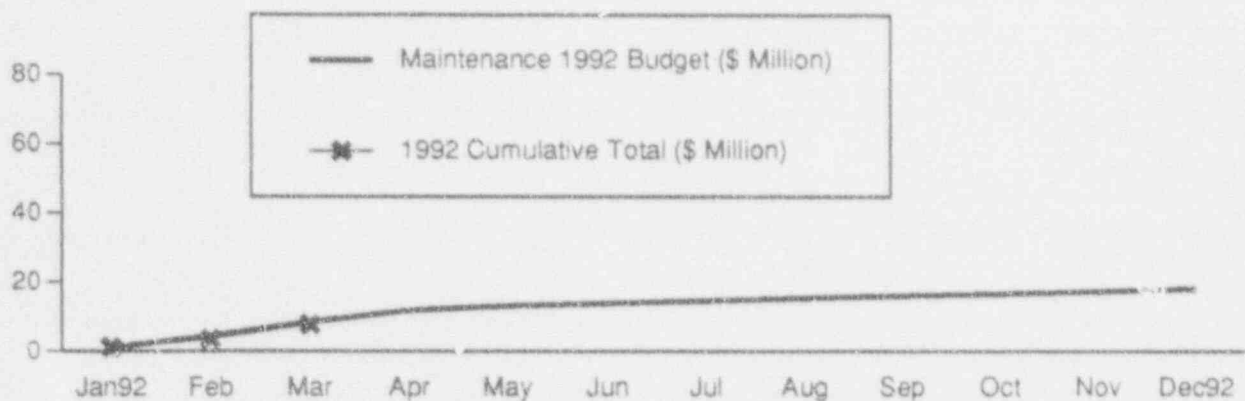
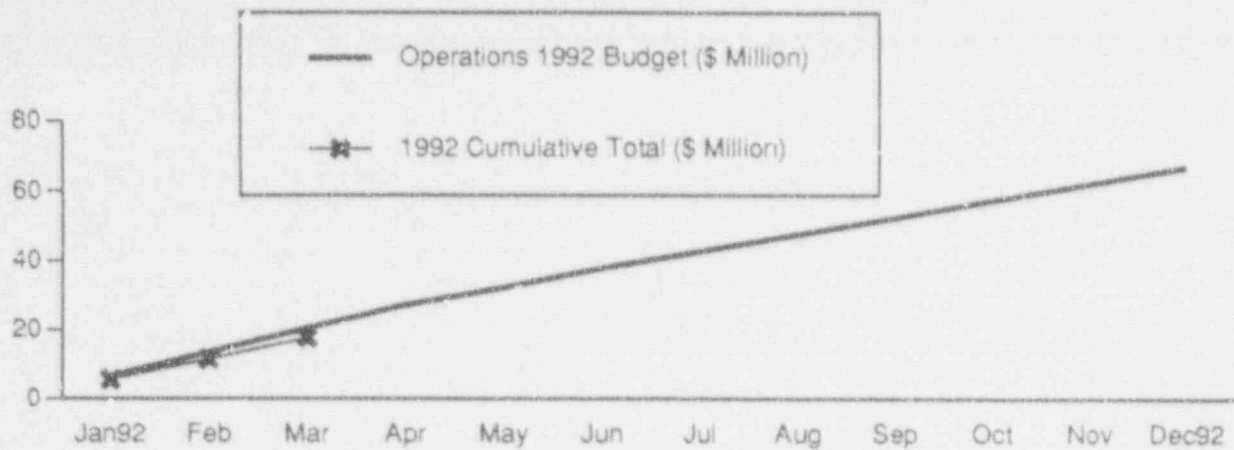
Data Source: Sorenson/Skaggs (Manager/Source)

Accountability: Patterson/Richard

Positive Trend

SEP 25 & 26





### OPERATIONS AND MAINTENANCE BUDGET

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

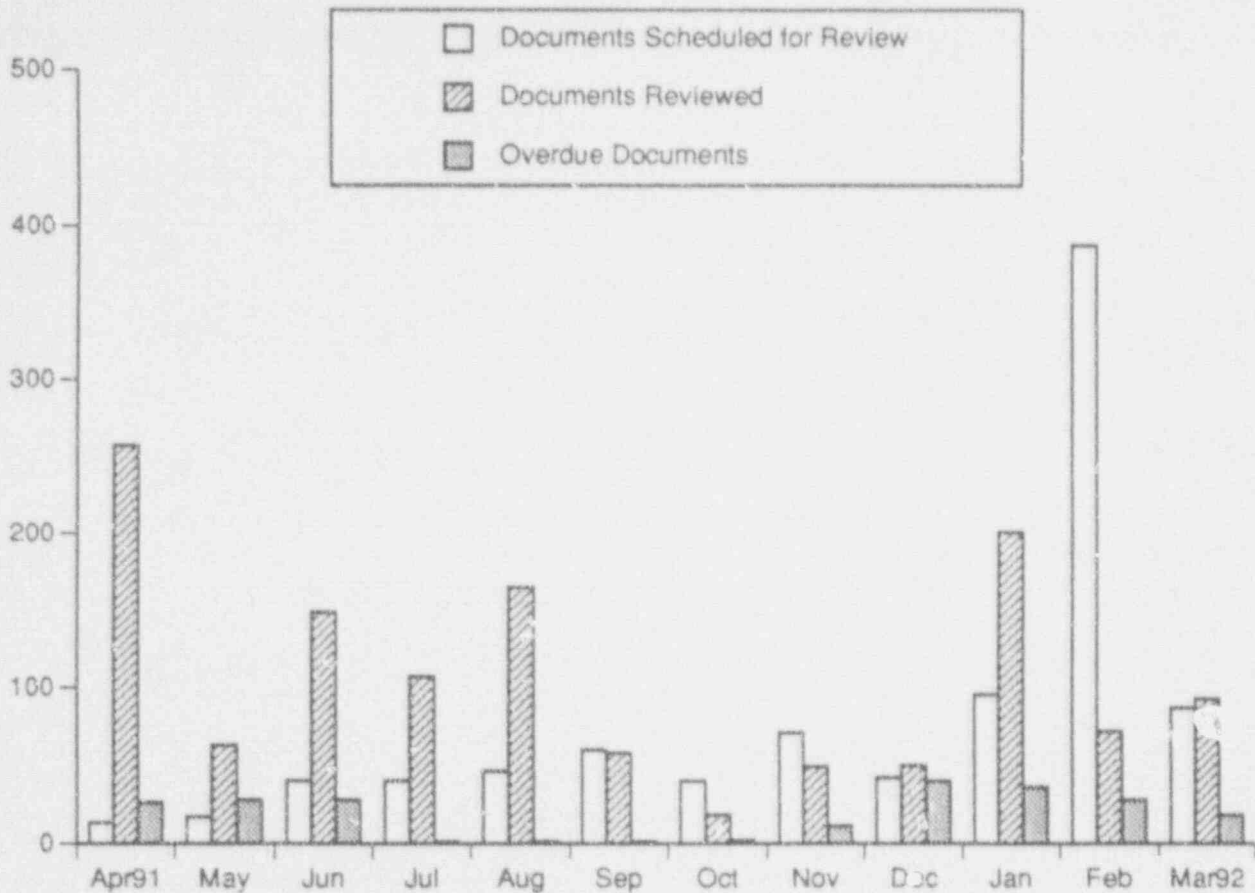
The budget year-to-date for Operations was 20,225,000 dollars for March 1992 while the actual cumulative expenditures through March totaled 17,486,348 dollars. The 1992 year-end budget for operations has been revised to 66,560,800 dollars, which is a reduction of 100,000 dollars.

The budget year-to-date for Maintenance was 8,453,800 dollars for March 1992 while the actual cumulative expenditures through March totaled 7,884,713 dollars.

Data Source: Gleason/Parent (Manager/Source)

Accountability: Scofield

Adverse Trend: None



### 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 March 1992 there were 93 document reviews completed while 87 document reviews were scheduled. At the end of March, there were 18 document reviews overdue.

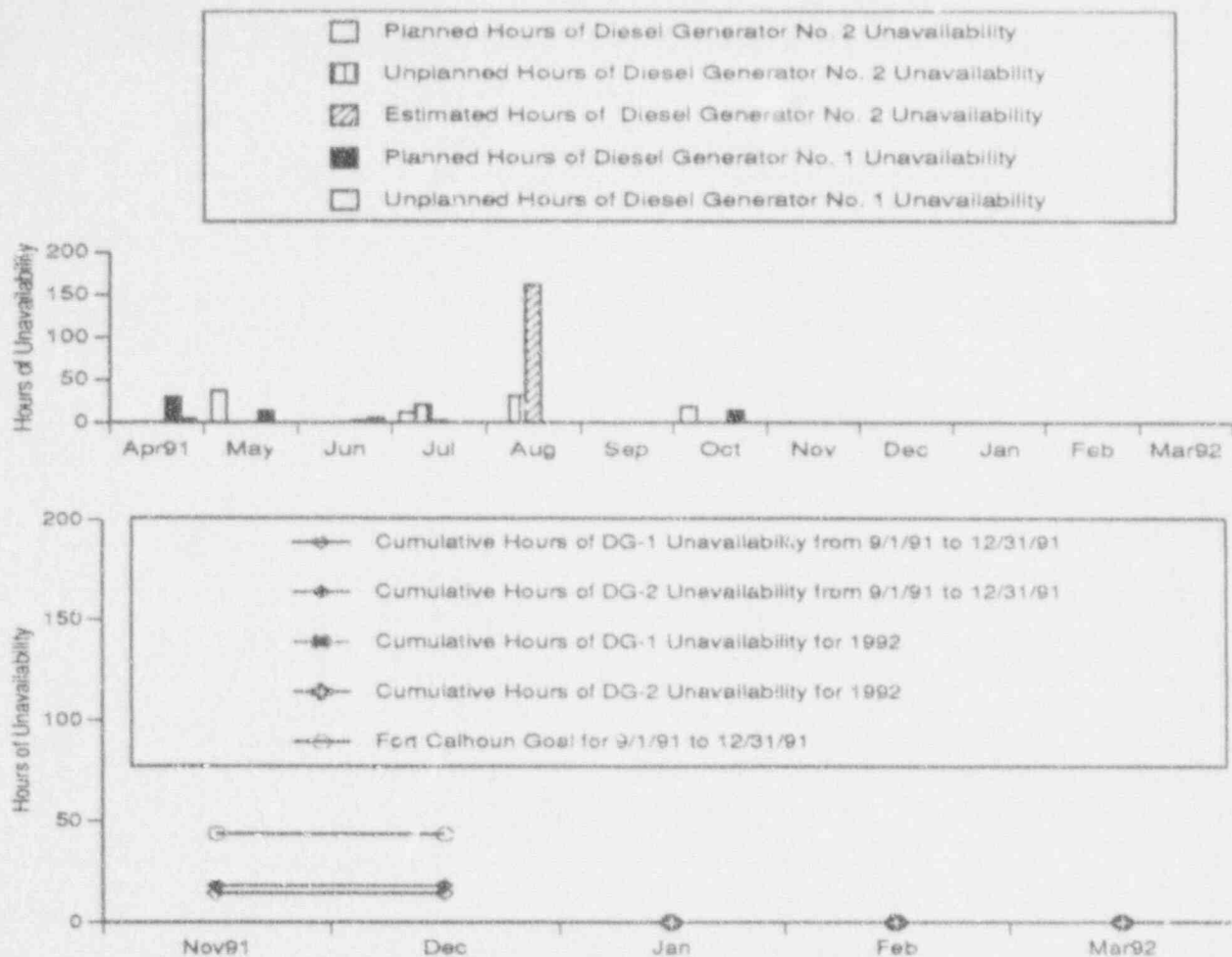
During the month of March there were 30 new or renamed documents reviewed. These new or renamed documents will need to be reviewed again in 1994.

Data Source: Patterson/McKay (Manager/Source)

Accountability: Patterson/Jaworski

Adverse Trend: None

SEP 46



### DIESEL GENERATOR UNAVAILABILITY

This indicator provides a monthly illustration of diesel generator unavailability. The top graph shows the diesel generator planned, unplanned, and estimated unavailable hours for DG-1 and DG-2 for each month. The lower graph shows the cumulative hours of unavailability for each diesel generator for two time periods: from October through December 1991 and for January through March 1992.

There were no (zero) unavailable hours for DG-1 and DG-2 during the month of March 1992. The 1992 Fort Calhoun yearly goal is not to exceed 210.24 unavailable hours per diesel generator.

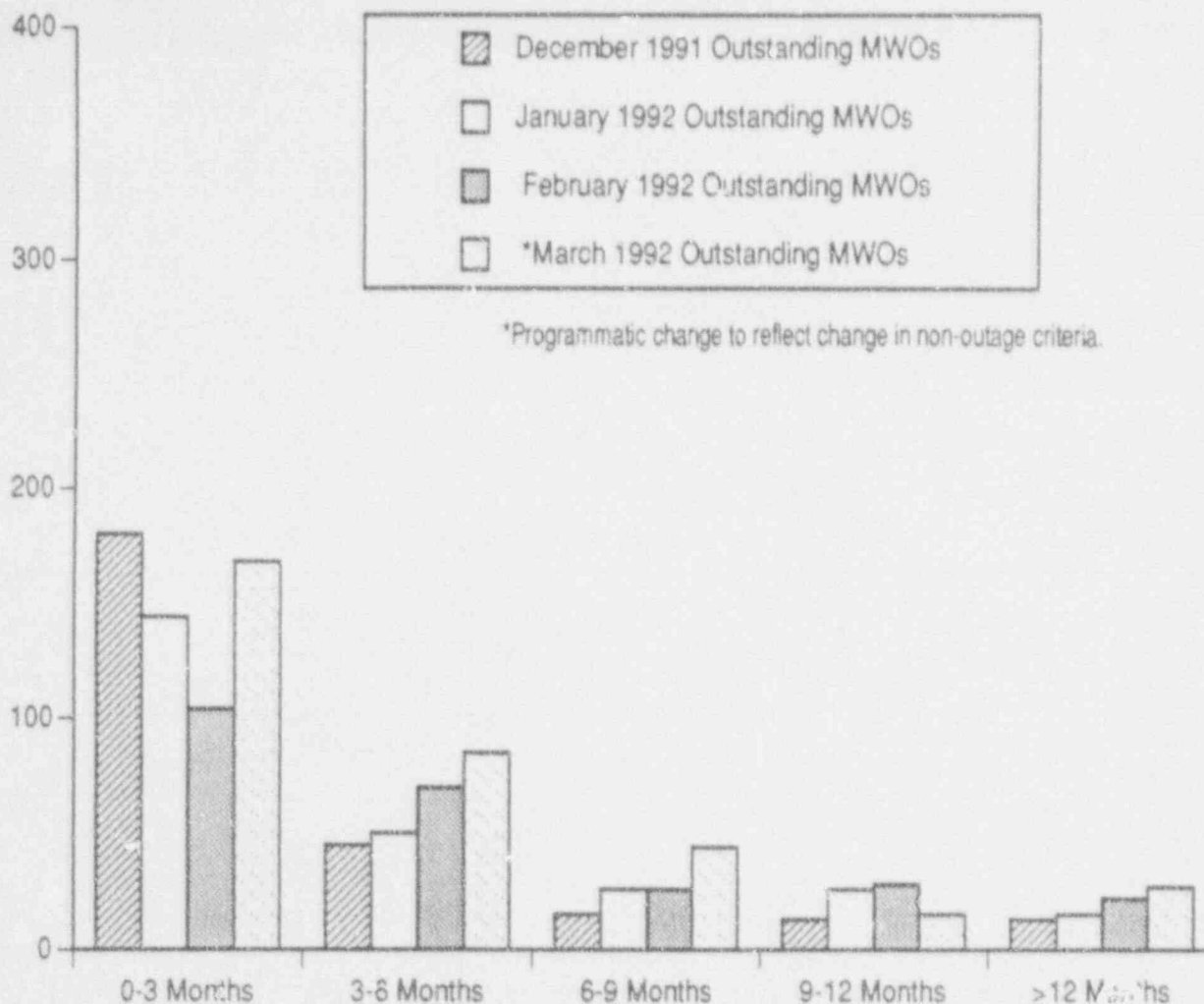
Fort Calhoun met the goal of 43.8 unavailable hours per DG for the last four months of 1991. This goal is based on the 1990 INPO industry median value for diesel generator unavailable hours.

The 14.4 hours of DG-1 unavailability and 18.3 hours of DG-2 unavailability for the last four months of 1991 were attributable to planned maintenance activities.

Data Source: Jaworski/Ronning (Manager/Source)

Accountability: Jaworski/Ronning

Adverse Trend: None



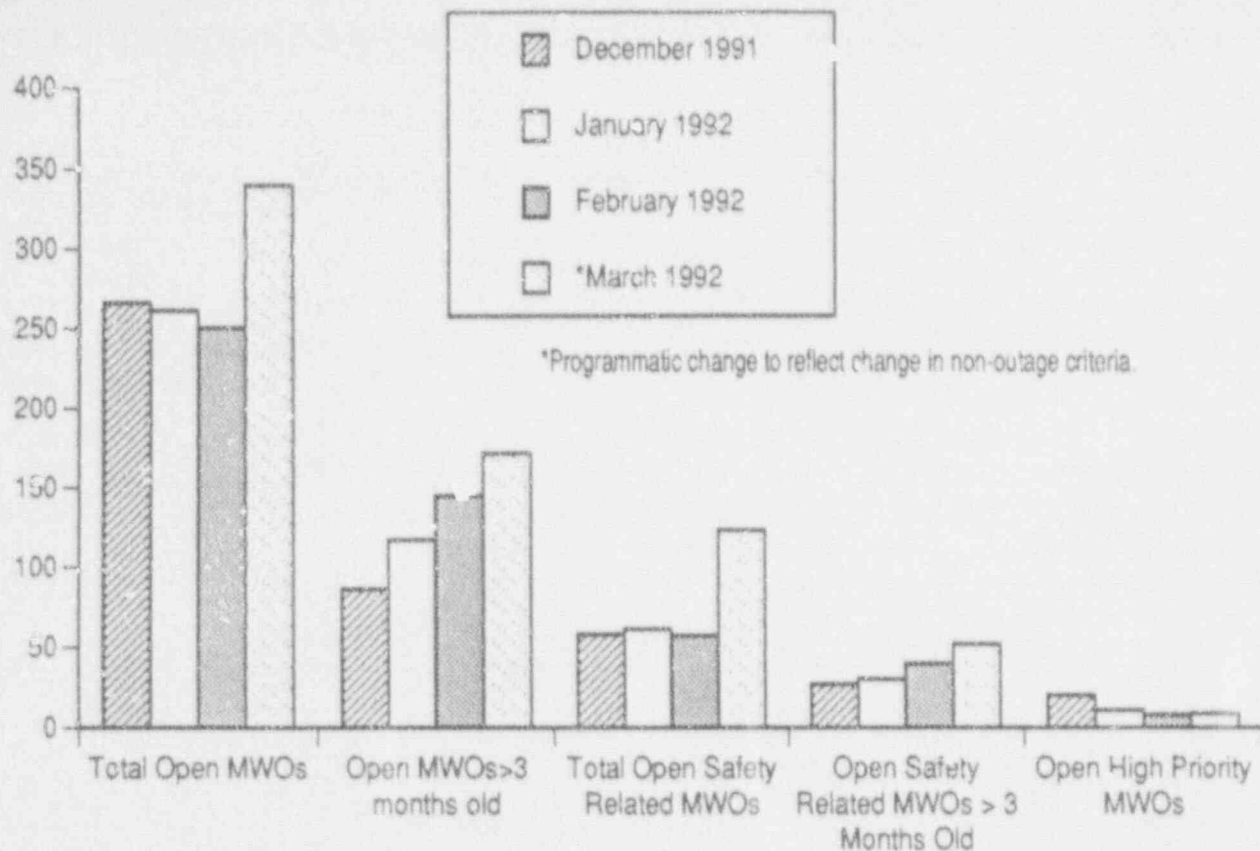
### AGE OF OUTSTANDING MAINTENANCE WORK ORDERS (CORRECTIVE NON-OUTAGE)

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

Data Source: Patterson/Schmitz (Manager/Source)

Accountability: Patterson/ Bobba

Adverse Trend: Because we are currently in the Cycle 14 Refueling Outage, an adverse trend is not indicated based on three consecutive months of increasing values for corrective non-outage MWOs 3 - 6 months old and MWOs >12 months old.



### MAINTENANCE WORK ORDER BREAKDOWN (CORRECTIVE NON-OUTAGE)

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

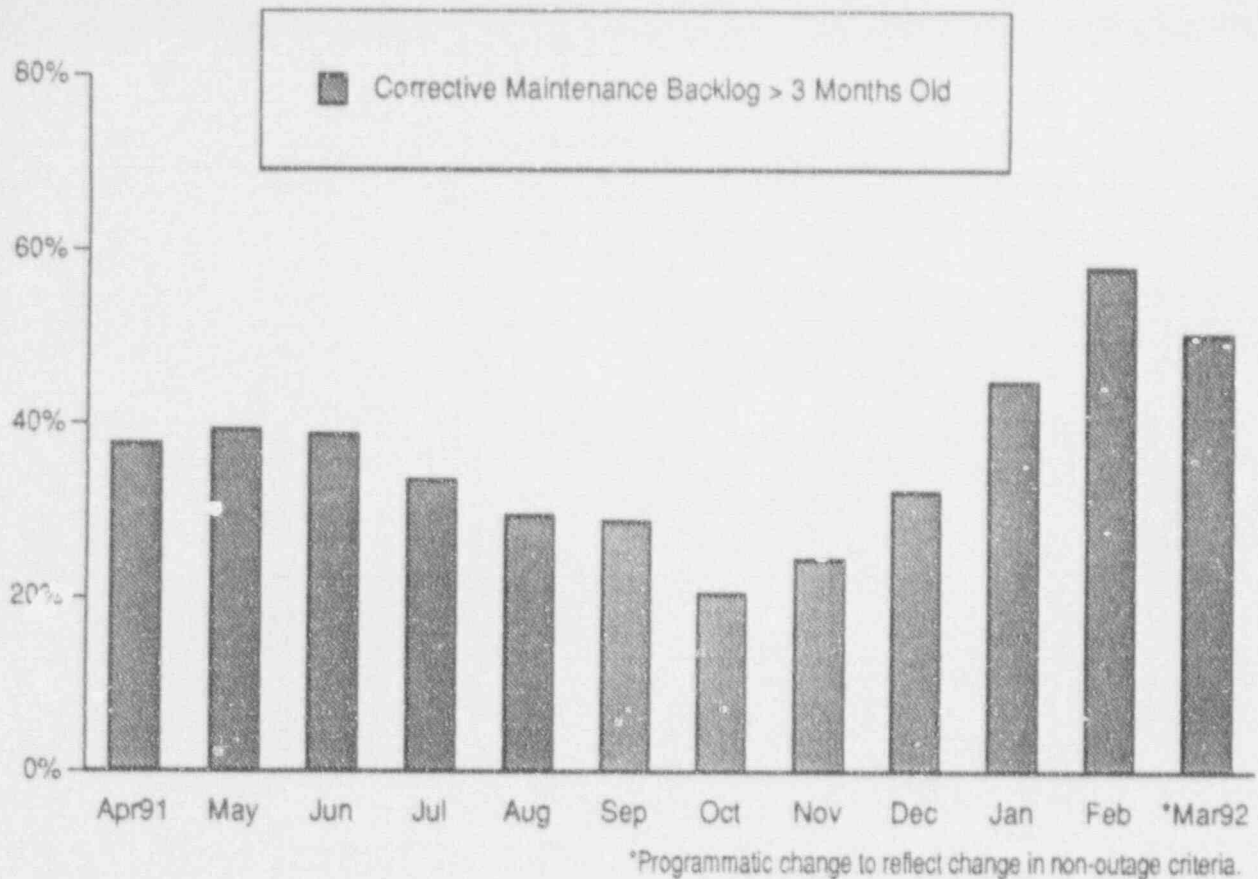
The number of open MWOs >3 months old is increasing because on-line activities must be scheduled beyond the end of the Cycle 14 Refueling Outage.

Data Source: Patterson/Schmitz (Manager/Source)

Accountability: Patterson/ Bobba

Adverse Trend: Because we are currently in the Cycle 14 Refueling Outage, an adverse trend is not indicated based on increasing values for three consecutive months for corrective non-outage Open MWOs >3 months old and Open Safety Related MWOs >3 months old.

SEP 36



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

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

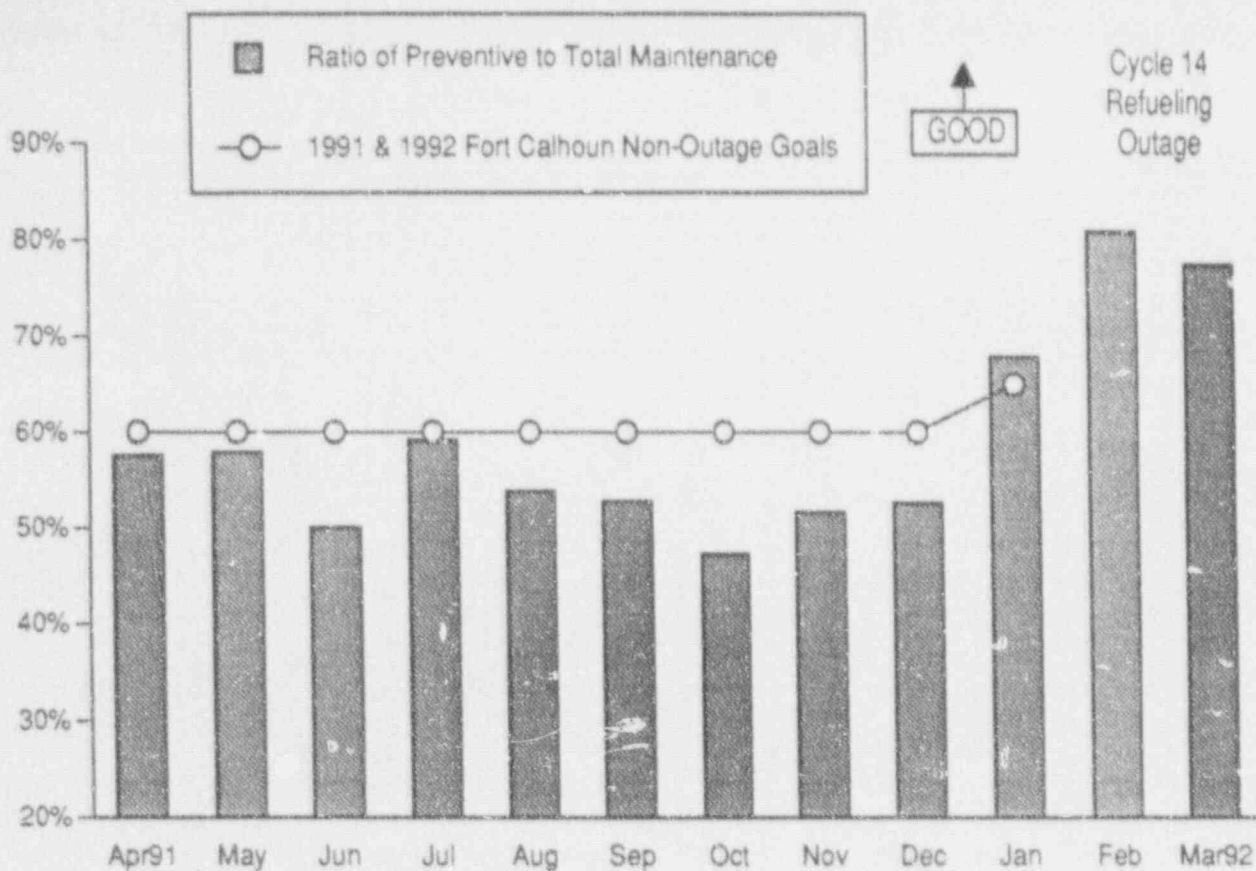
The percentage of open corrective non-outage maintenance work orders that were greater than three months old at the end of March 1992 was reported as 50.44%.

Data Source: Patterson/Schmitz (Manager/Source)

Accountability: Patterson/ Bobba

Adverse Trend: None





### RATIO OF PREVENTIVE TO TOTAL MAINTENANCE

This indicator shows the ratio of completed preventive maintenance to total completed maintenance.

The ratio of preventive to total maintenance was 77.4% in March 1992 during the Cycle 14 Refueling Outage. The values for this indicator decreased during September and October 1991 due to a greater emphasis being placed on completion of MWO work during the battery outage.

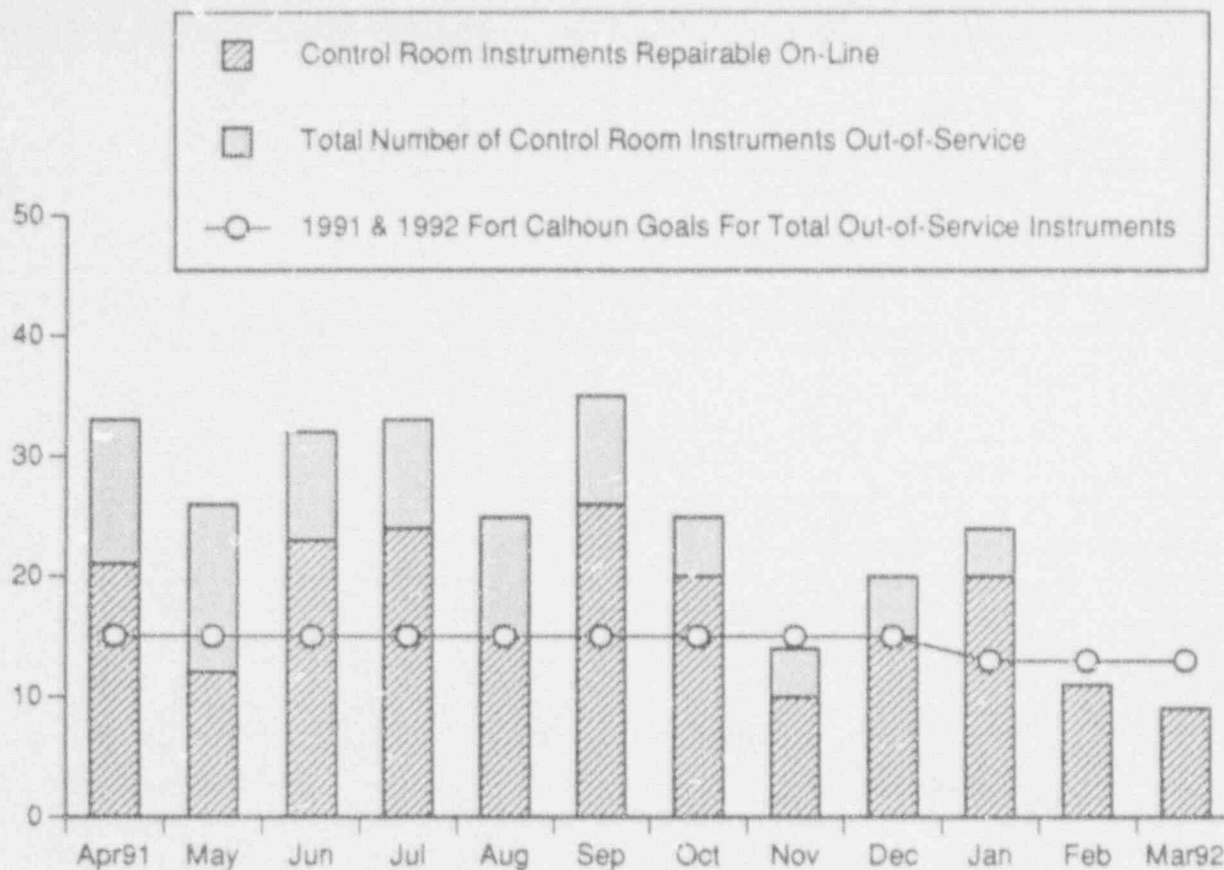
The 1992 Fort Calhoun goal is to attain a ratio of non-outage preventive to total maintenance greater than 65%. The 1991 Fort Calhoun goal was to attain a ratio of non-outage preventive to total maintenance greater than 60%.

Accountability: Patterson/ Bobba

Data Source: Patterson/Schmitz (Manager/Source)

Adverse Trend: None

SEP 41



### NUMBER OF OUT-OF-SERVICE CONTROL ROOM INSTRUMENTS

This indicator shows the total number of out-of-service control room instruments, the number of instruments repairable during plant operations (on-line), and the 1991 and 1992 Fort Calhoun goals.

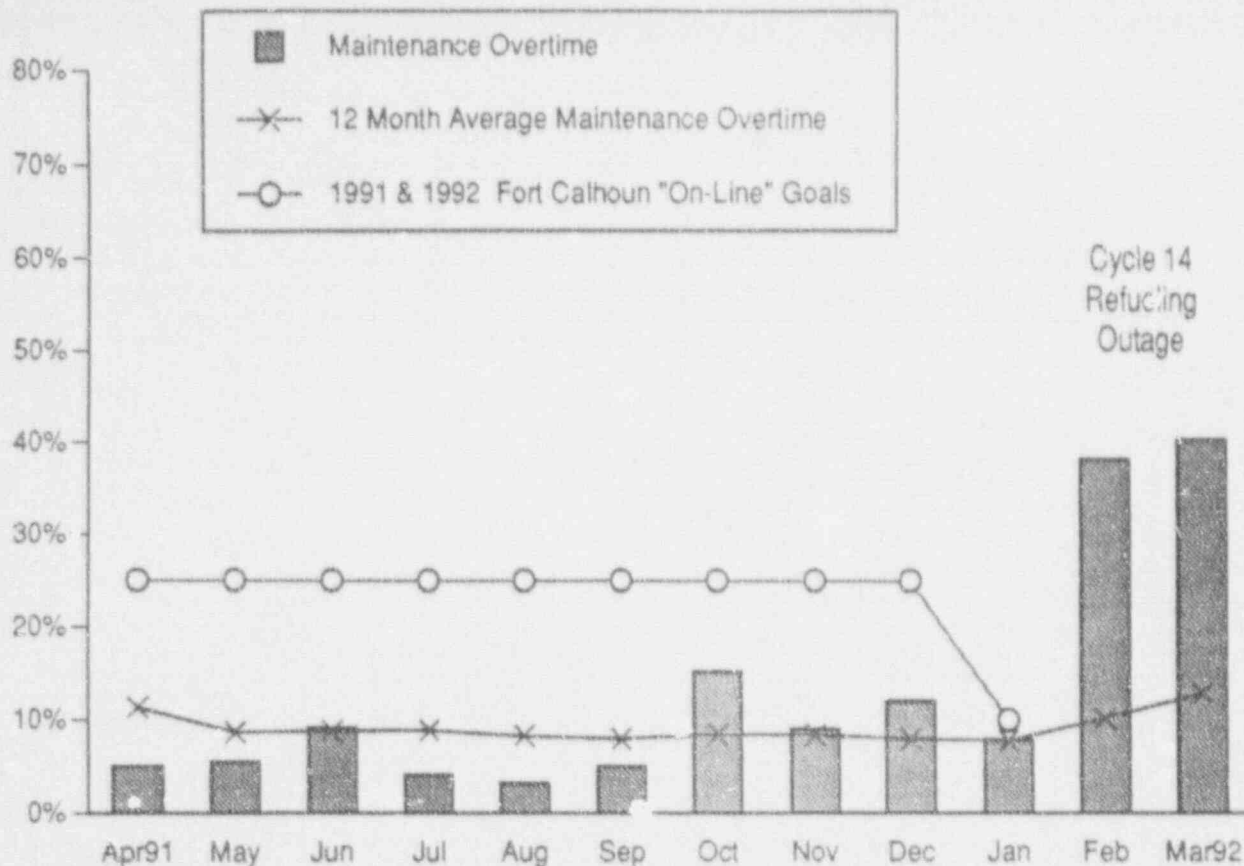
There was a total of 9 out-of-service control room instruments at the end of March 1992. None of these instruments require a plant outage to repair.

The 1992 Fort Calhoun goal is to have less than 13 out-of-service control room instruments. The 1991 Fort Calhoun goal was to have less than 14 out-of-service control room instruments.

Data Source: Patterson/Spilker (Manager/Source)

Accountability: Patterson/Bobba

Adverse Trend: None



### MAINTENANCE OVERTIME

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

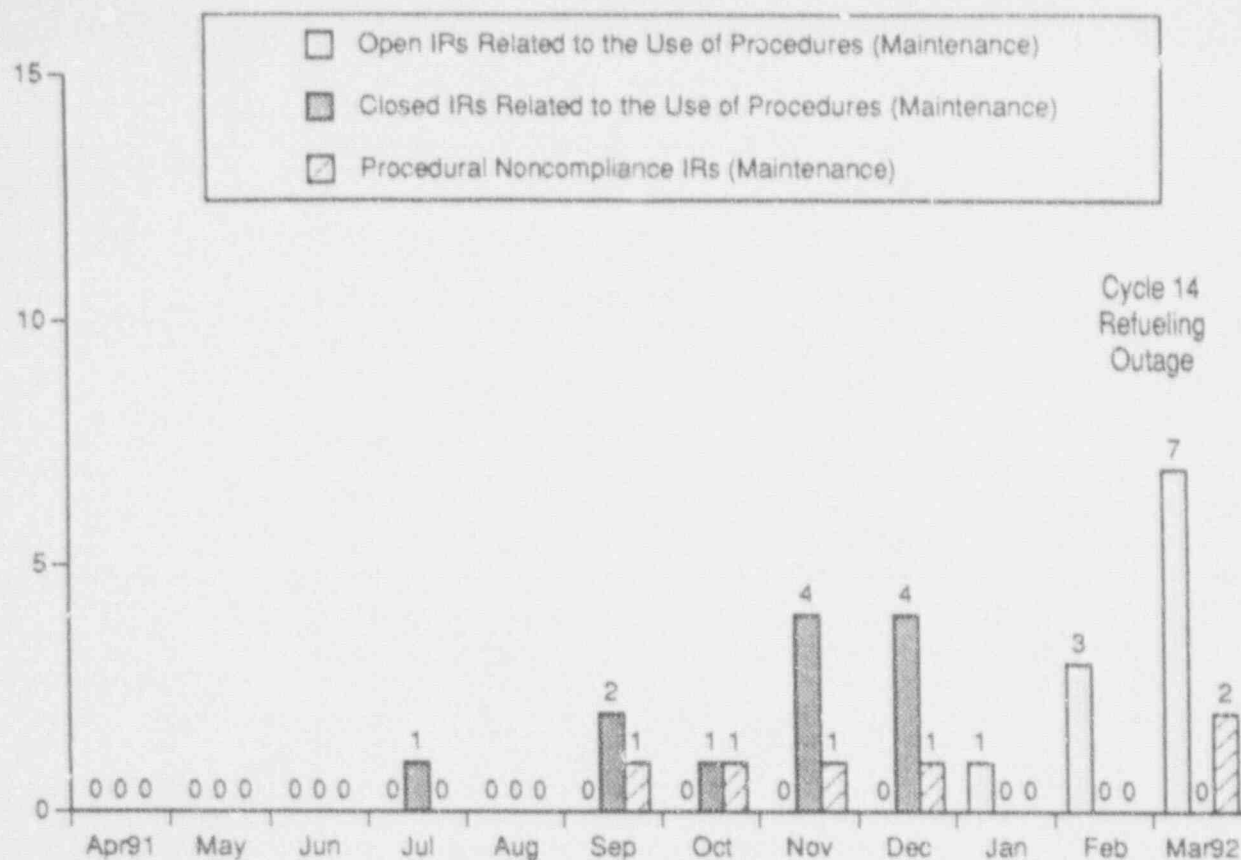
The percent of overtime hours with respect to normal hours was reported as 40.4% for the month of March 1992 during the Cycle 14 Refueling Outage. The 12 month average percentage of overtime hours with respect to normal hours was reported as 12.9%.

The 1992 Fort Calhoun goal for the "on-line" percentage of maintenance overtime hours with respect to normal hours worked is 10%.

Data Source: Patterson/Schmitz (Manager/Source)

Accountability: Patterson/Bobba

Adverse Trend: None



#### 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.

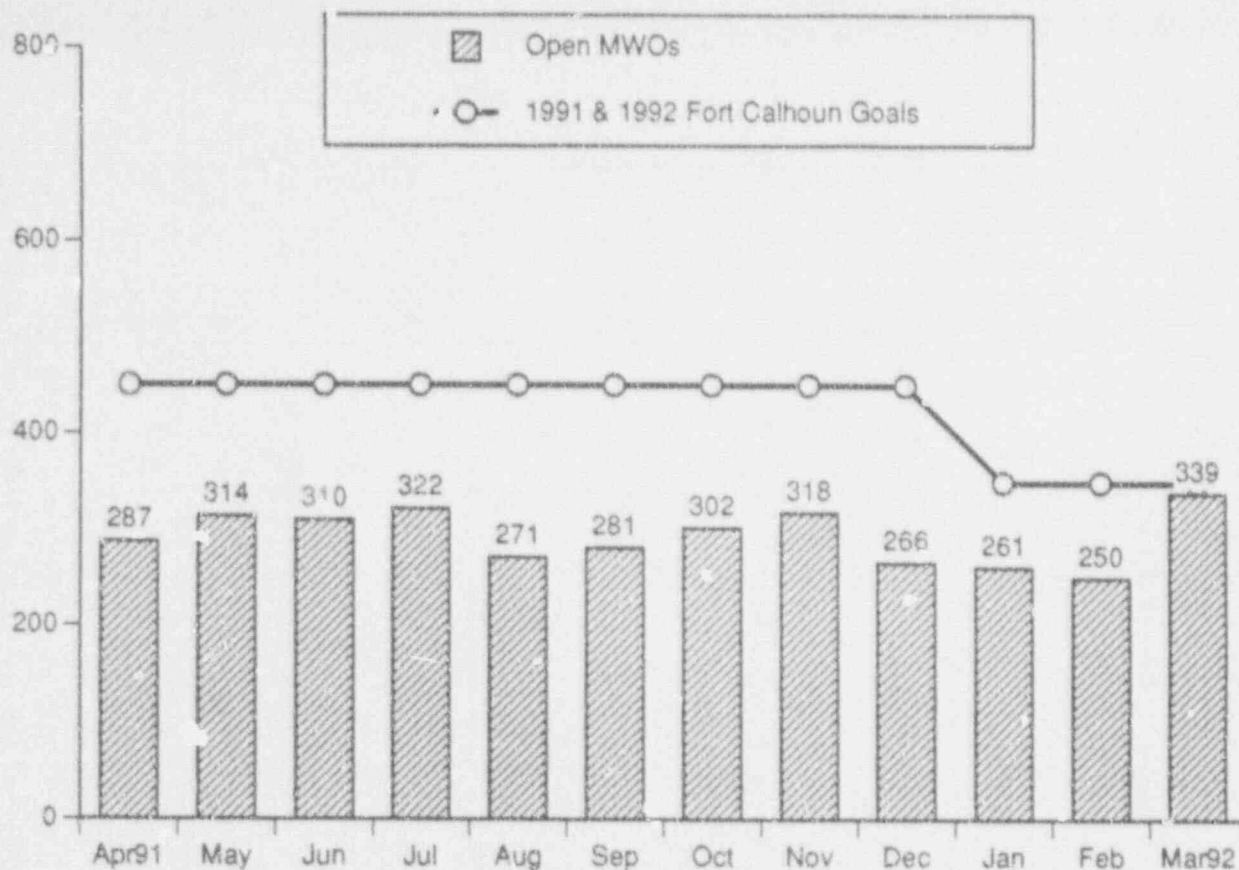
There were two procedural noncompliance incidents for maintenance reported for the month of March 1992. The incidents were: IR 920193 - While performing a surveillance test to disassemble and inspect SI-159 a stud and two nuts were replaced without an MWR being written; and IR 920218 - A surveillance test was performed twice on HCV-238 but review of the final results was not completed in 24 hours as required by the test.

Data Source: Patterson/McKay (Manager/Source)

Accountability: Patterson/Bobba

Adverse Trend: An adverse trend is not indicated, although there has been an increase in the number of open IRs related to the use of procedures for three consecutive months, because of the increase in the amount of maintenance work being performed during the Cycle 14 Refueling Outage.

SEP 15, 41 & 44



### MAINTENANCE WORK ORDER BACKLOG (CORRECTIVE NON-OUTAGE MAINTENANCE)

This indicator shows the number of corrective non-outage Maintenance Work Orders (MWOs) that were open at the end of the reporting month.

The 1992 goal for this indicator is to have less than 350 corrective non-outage maintenance work orders remaining open. The 1991 goal for this indicator was to have less than 450 corrective non-outage maintenance work orders remaining open.

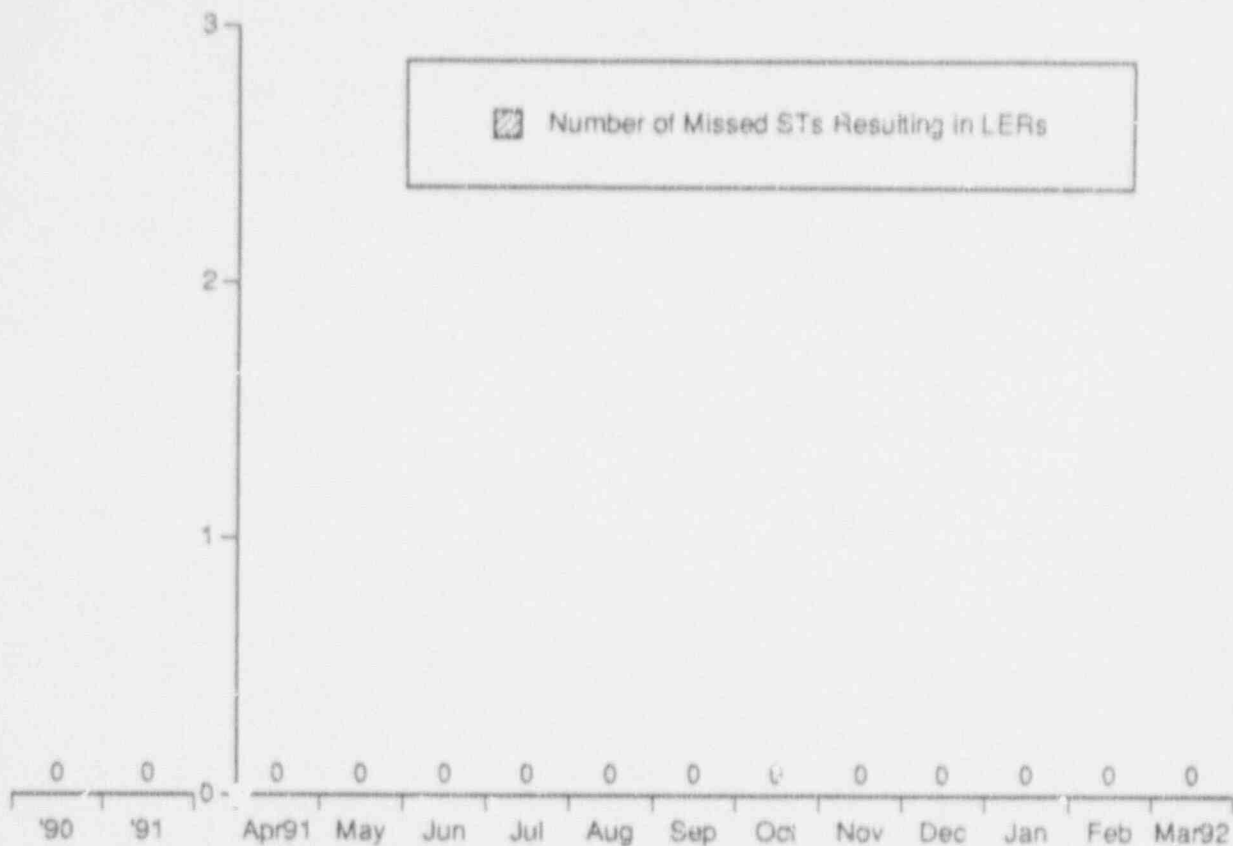
Data Source: Patterson/Schmitz (Manager/Source)

Accountability: Patterson/Bobba

Adverse Trend: None

SEP 36





### 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 this indicator for the previous two years.

During the month of March 1992, there were no missed STs that resulted in LERs.

The 1991 & 1992 Fort Calhoun goals for this indicator are zero.

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

Accountability: Patterson/Jaworski

Adverse Trend: None

SEP 60 & 61





### MAINTENANCE EFFECTIVENESS

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

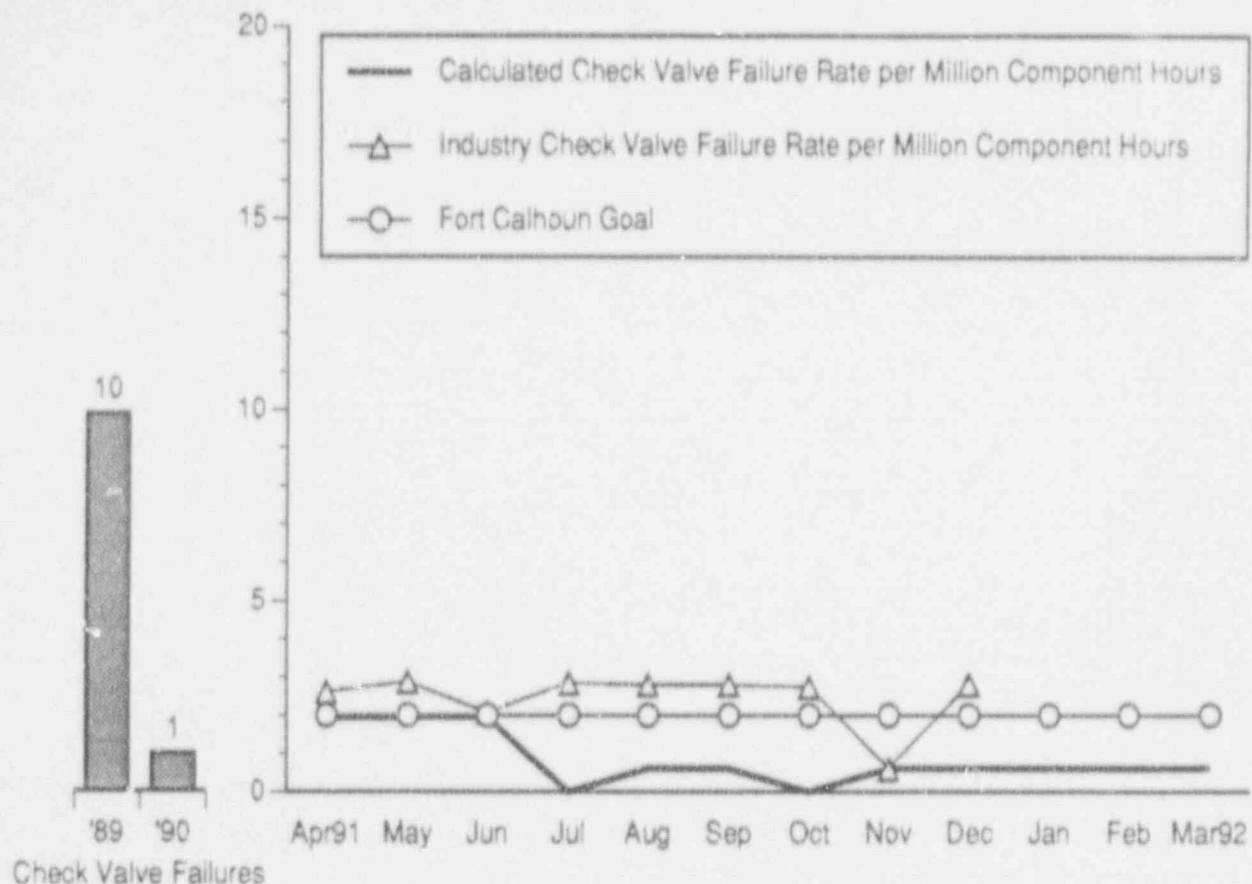
This indicator has been revised to show the number of NPRDS components with more than one failure during the last eighteen months and the number of NPRDS components with more than two failures during the last eighteen months. The number of NPRDS components with more than two failures in an eighteen month period should indicate the effectiveness of plant maintenance. (This change applies only to the September 1991 through March 1992 data. The data for April through August 1991 is based on a twelve month interval.)

During the last 18 reporting months there were 15 NPRDS components with more than 1 failure. 3 of the 15 had more than two failures. The tag numbers of the components with more than two failures are CH-1A, CH-1B, and RC-4.

Data Source: Jaworski/Dowdy (Manager/Source)

Accountability: Patterson/Bobba

Adverse Trend: None



### CHECK VALVE FAILURE RATE

This indicator shows the 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 check valve failures at Fort Calhoun Station for the previous two 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 December 1991, the Fort Calhoun Station reported an actual check valve failure rate of 6.07 E-7, while the industry reported an actual failure rate of 2.82 E-6. At the end of March 1992, the Fort Calhoun Station reported a calculated check valve failure rate of 6.07E-7.

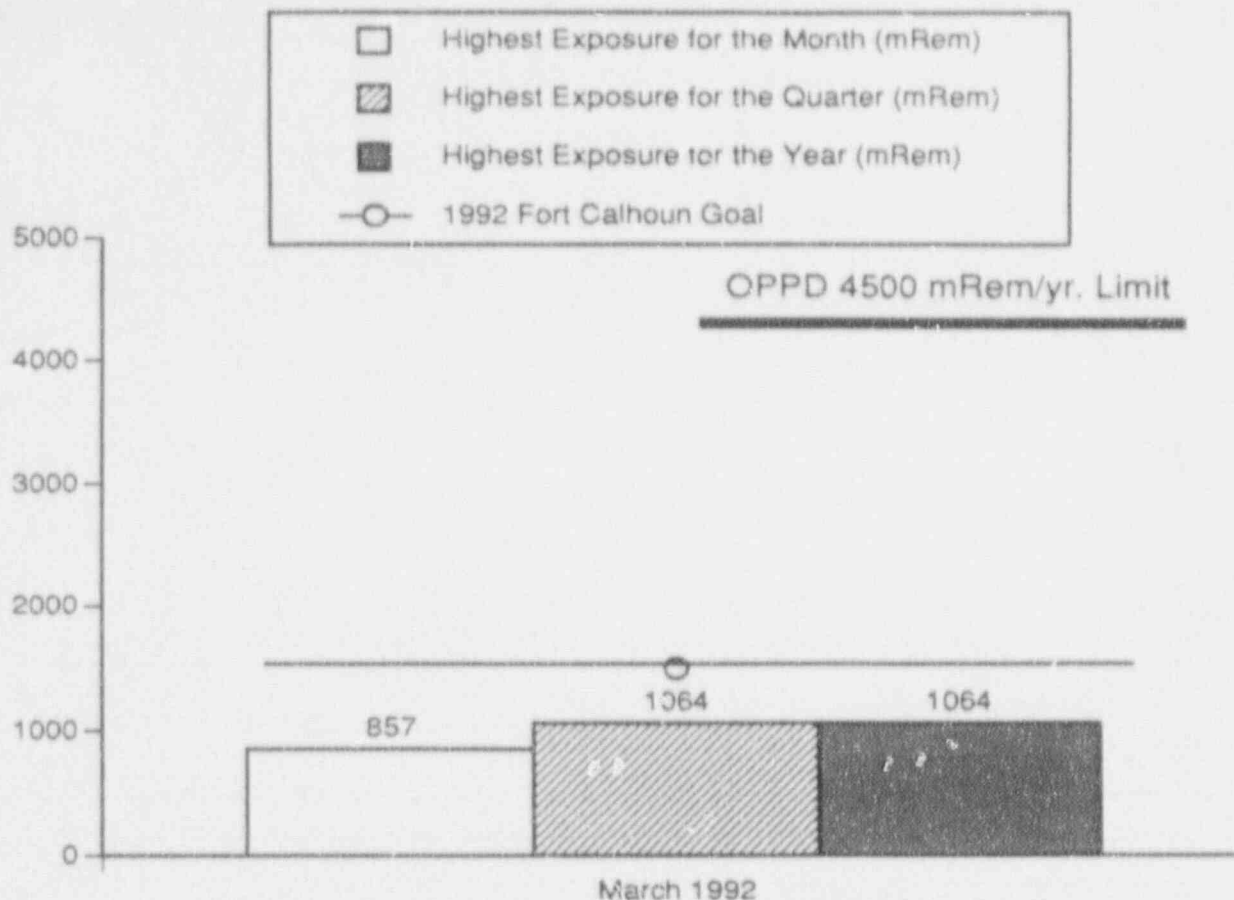
The 1992 Fort Calhoun goal for this indicator is a failure rate of 2.00 E-6.

Data Source: Jaworski/Dowdy (Manager/Source)

Accountability: Jaworski/Rollins

Adverse Trend: None

SEP 43



### MAXIMUM INDIVIDUAL RADIATION EXPOSURE

During March 1992, an individual accumulated 857 mRem which was the highest individual exposure for the month.

The maximum individual exposure for the first quarter of 1992 was 1,064 mRem.

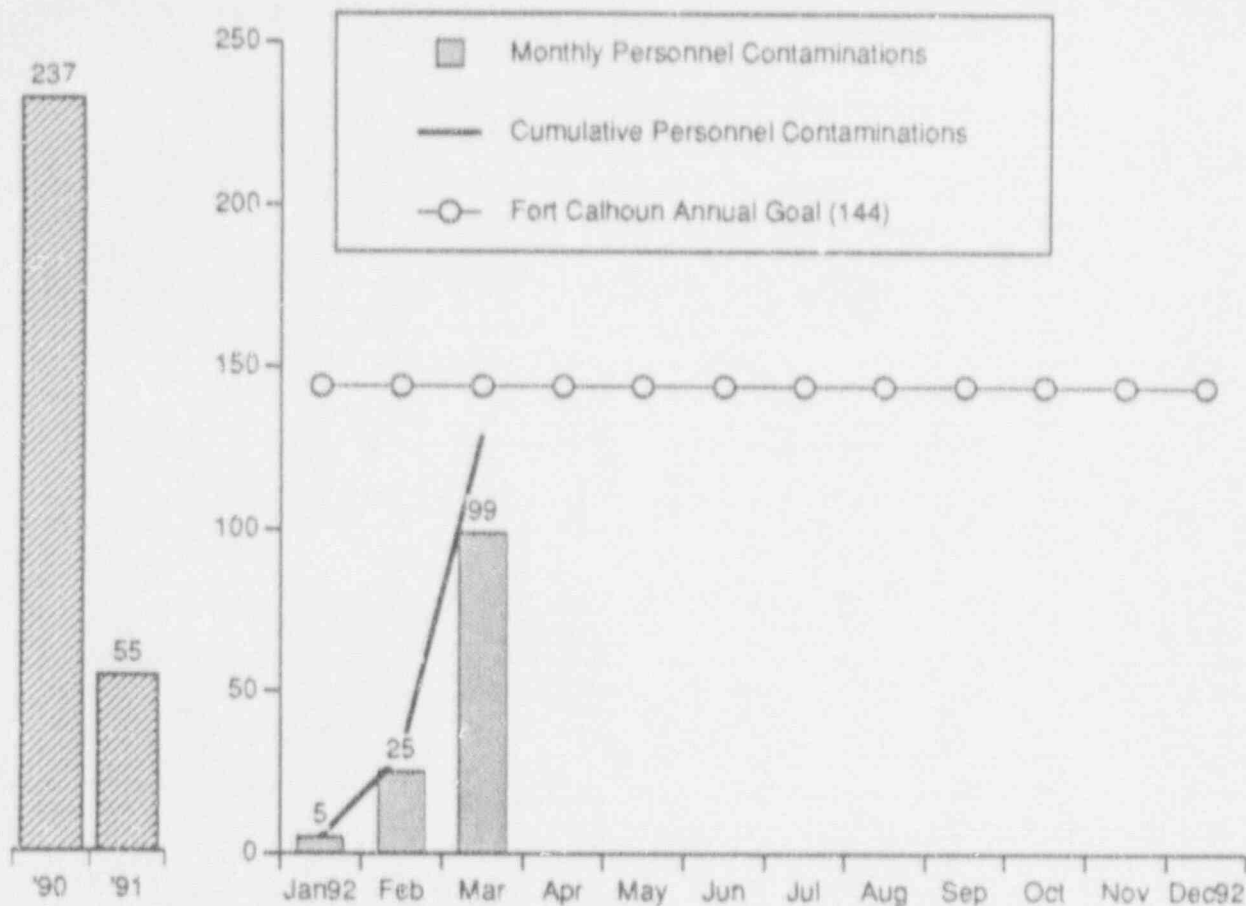
The maximum individual exposure reported for the year 1992 was 1,064 mRem.

The OPPD limit for the maximum yearly individual radiation exposure is 4,500 mRem/year. The 1992 Fort Calhoun goal is 1,500 mRem/year.

Date Source: Patterson/Williams (Manager/Source)

Accountability: Patterson/Lovett

Adverse Trend: None



### TOTAL SKIN AND CLOTHING CONTAMINATIONS

This indicator shows the number of skin and clothing contaminations for the reporting month. The number of skin and clothing contaminations has increased during the months of February and March as a result of the Cycle 14 Refueling Outage.

A total of 129 contaminations have occurred during 1992.

There was a total of 55 skin and clothing contaminations in 1991.

There was a total of 237 skin and clothing contaminations in 1990.

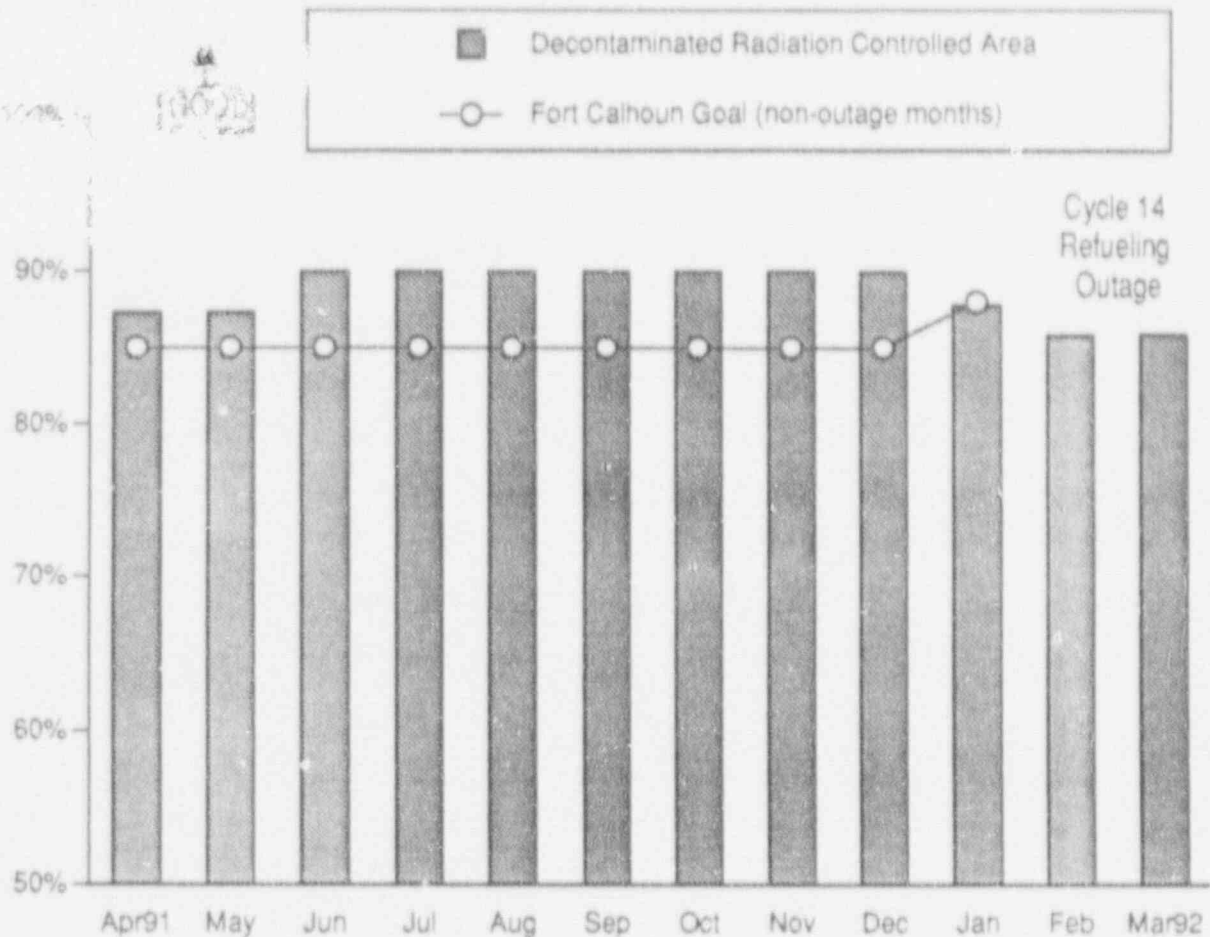
The 1992 goal for skin and clothing contaminations is 144.

Data Source: Patterson/Williams (Manager/Source)

Accountability: Patterson/Lovett

Adverse Trend: None

SEP 15 & 54



### DECONTAMINATED RADIATION CONTROLLED AREA

This indicator shows the percentage of the RCA that is decontaminated (clean) based on the total square footage, a 1991 Fort Calhoun goal of 85% decontaminated RCA for non-outage months and a 1992 goal of 88% decontaminated RCA for non-outage months.

At the end of the reporting month, 85.9% of the total square footage of the RCA was decontaminated.

Date Source: Patterson/Gundal (Manager/Source)

Accountability: Patterson/Lovett

Adverse Trend: None

SEP 54



### 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 a review of the monthly Radiological Occurrence Reports and Personnel Contamination Reports.

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 March 1992, 59 PRWPs were identified. Of the 59 PRWPs, 13 were Radiological Occurrence Reports. The number of PRWPs for this month is higher than previous months due to the Cycle 14 Refueling Outage.

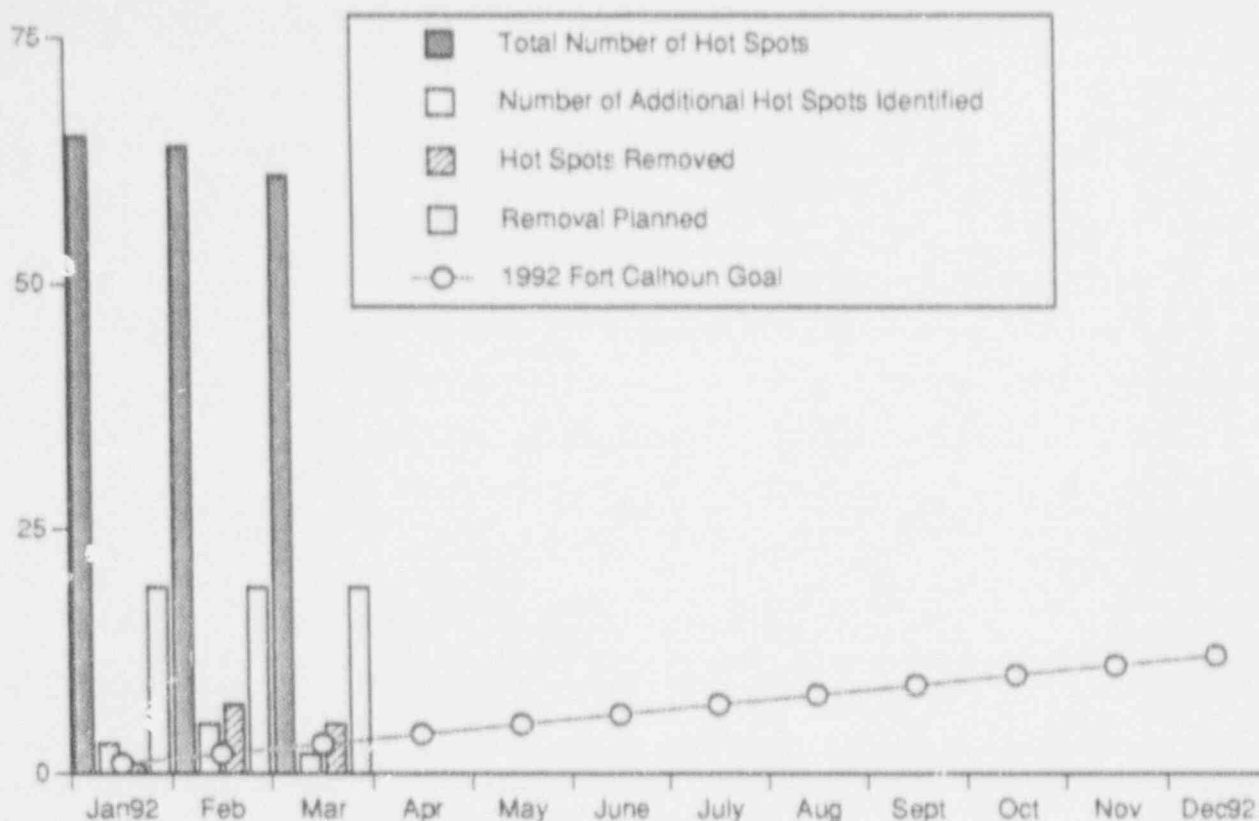
Data Source: Patterson/Williams (Manager/Source)

Accountability: Patterson/Lovett

Adverse Trend: Although the number of PRWPs identified has increased for three consecutive months, an adverse trend is not indicated since the increases in February and March are attributable to the Cycle 14 Refueling Outage.

SEP 52





#### NUMBER OF HOT SPOTS

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

At the end of March, there were 61 hot spots identified. 34 of these hot spots were considered permanent, i.e., hot spots which are not significant dose contributors or are cost prohibitive for removal. 5 hot spots were removed and two new hot spots were identified during the month.

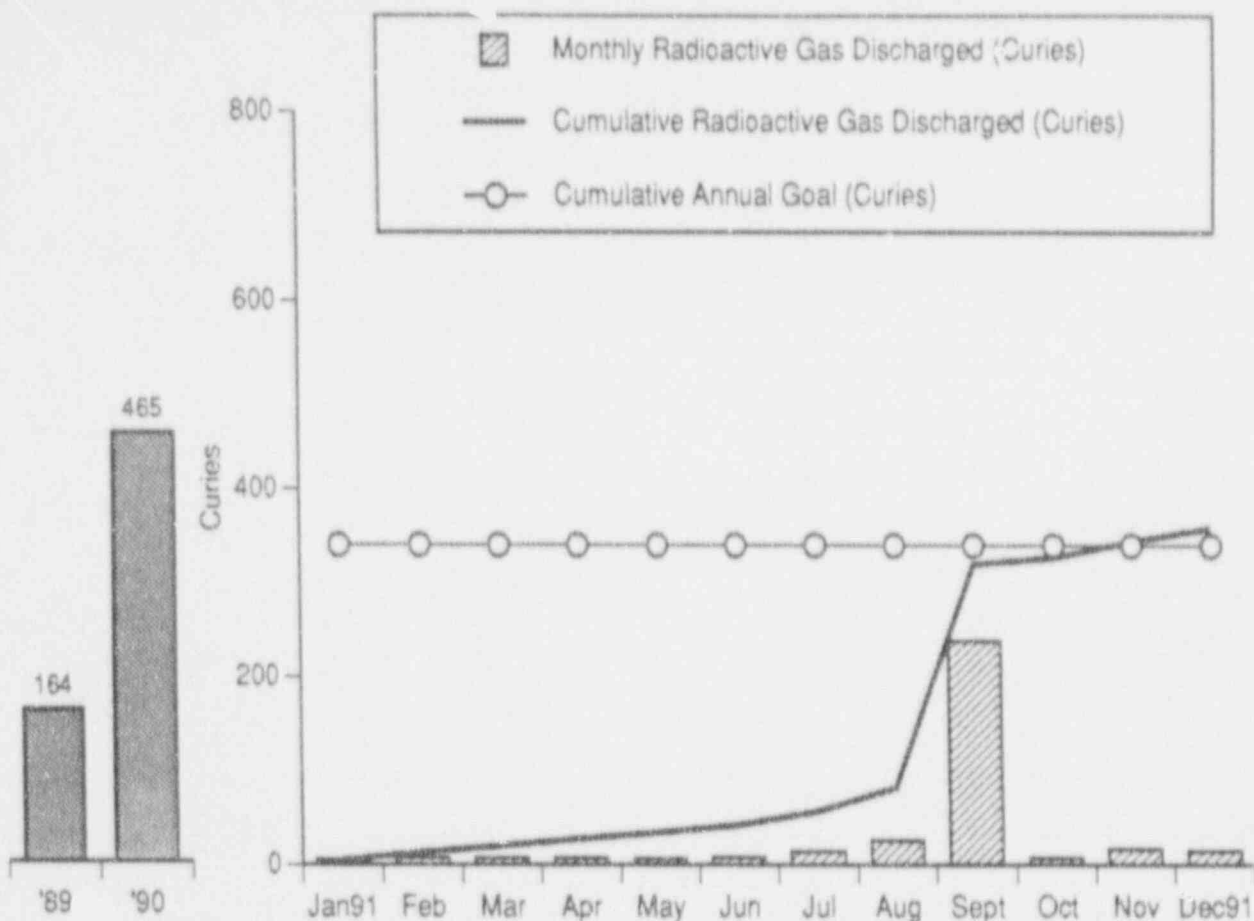
Removal is planned for 19 hot spots.

The 1992 Fort Calhoun goal is to resolve one hot spot per month. (Resolution consists of: permanent shielding, removal, or significant reduction in intensity of the source.)

Date Source: Patterson/Williams (Manager/Source)

Accountability: Patterson/Lovett

Adverse Trends: None



#### GASEOUS RADIOACTIVE WASTE BEING DISCHARGED TO THE ENVIRONMENT.

The gaseous radioactive waste being discharged to the environment is shown for January 1, 1991 through December 31, 1991. A total of 358.5 curies have been released to the environment during this time.

In September, 238.236 curies of gaseous radioactive waste was released to the environment due to containment purges required during the unscheduled maintenance outage. Most of the radioactive waste was released in the form of Xenon-133.

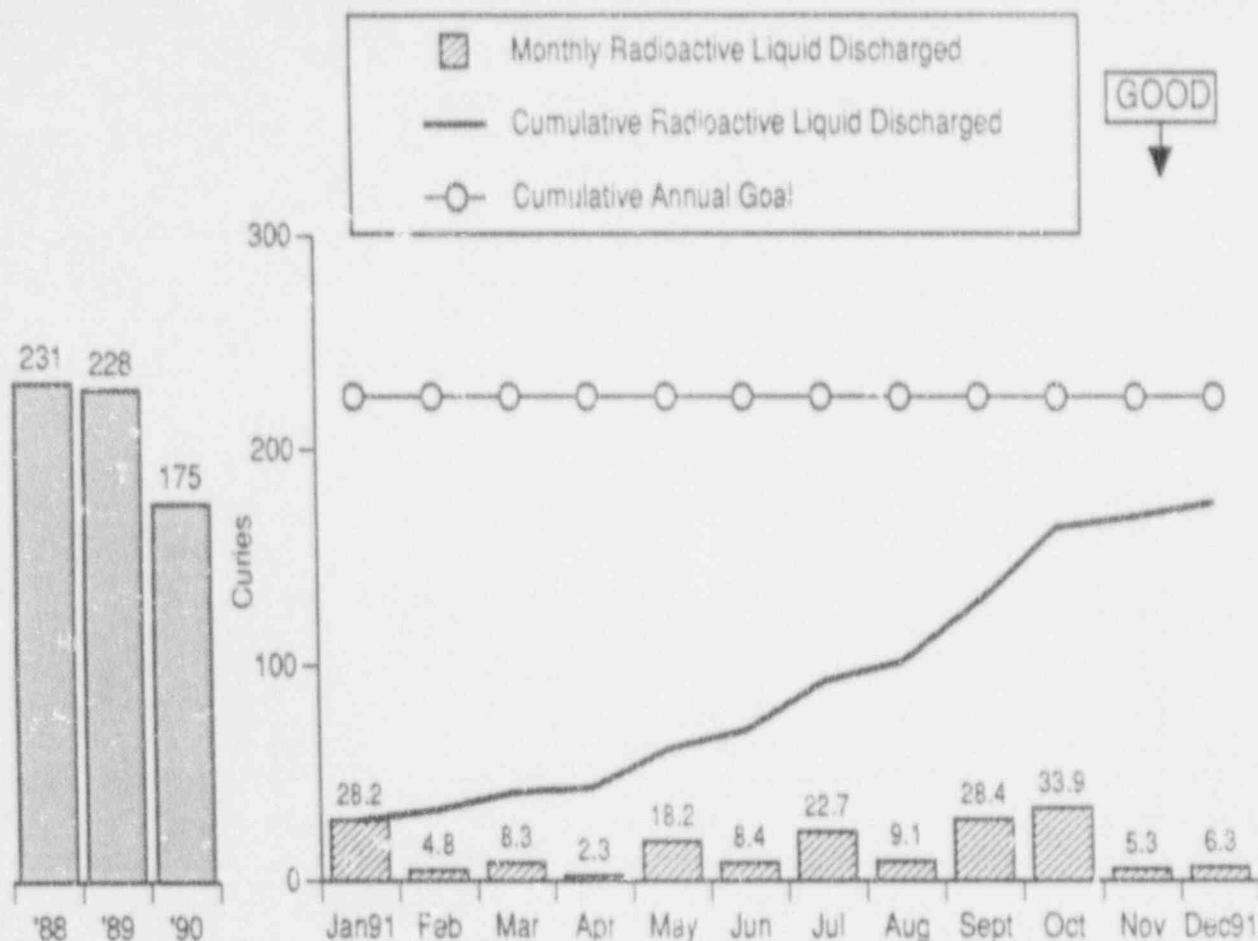
The Fort Calhoun Station cumulative annual goal for 1991 is 340 curies for this indicator.

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

Date Source: Franco/Krist (Manager/Source)

Accountability: Patterson/Trausch

Adverse Trend: None



### LIQUID RADIOACTIVE WASTE BEING DISCHARGED TO THE ENVIRONMENT

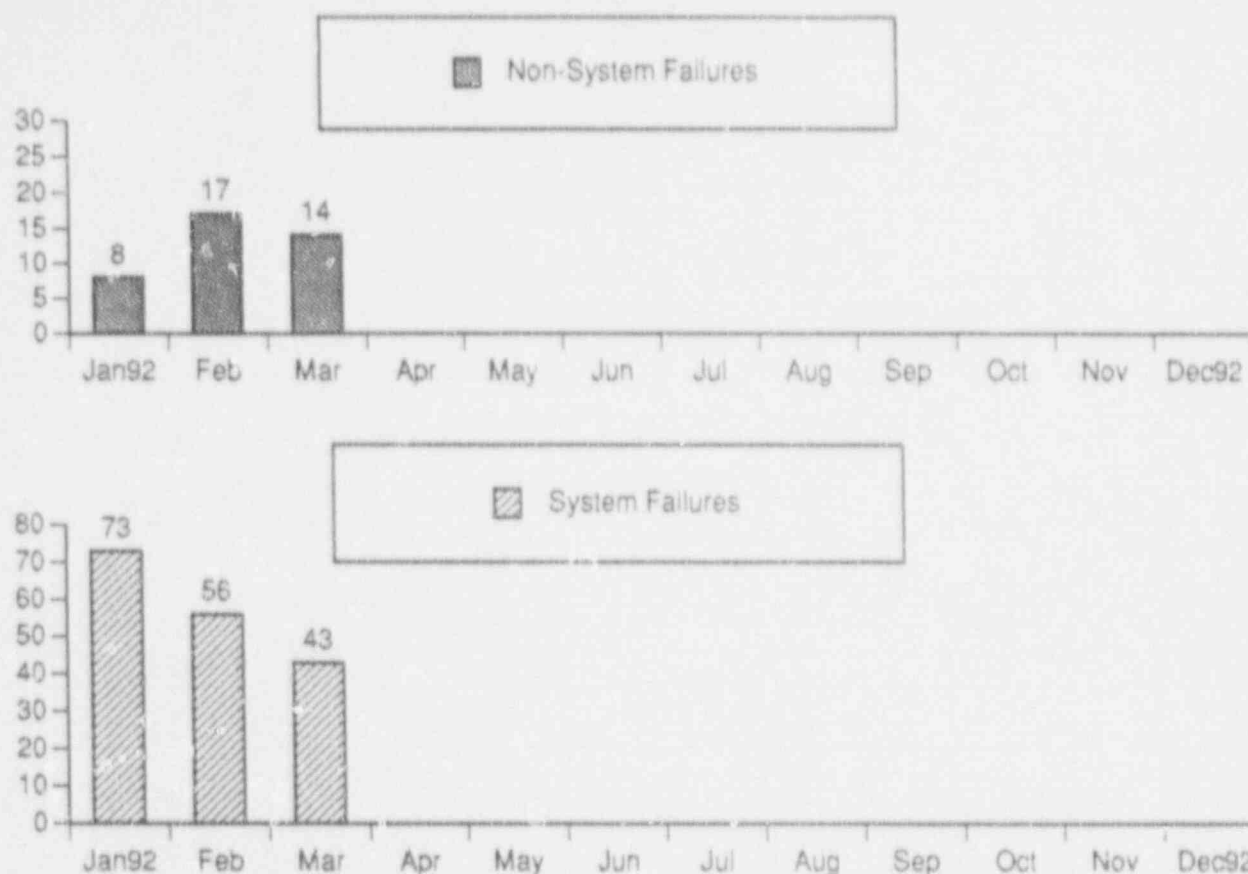
The liquid radioactive waste being discharged to the environment is shown for January 1, 1991 through December 31, 1991. The liquid radioactive waste that was discharged to the environment from all sources totaled 176.1 curies during this time. The Fort Calhoun Station cumulative annual goal for 1991 is 225 curies.

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

Data Source: Franco/Krist (Manager/Source)

Accountability: Patterson/Lovett

Adverse Trend: None



#### LOGGABLE/REPORTABLE INCIDENTS (SECURITY)

The Loggable/Reportable Incidents (Security) Indicator is depicted in two separate graphs. The first 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.

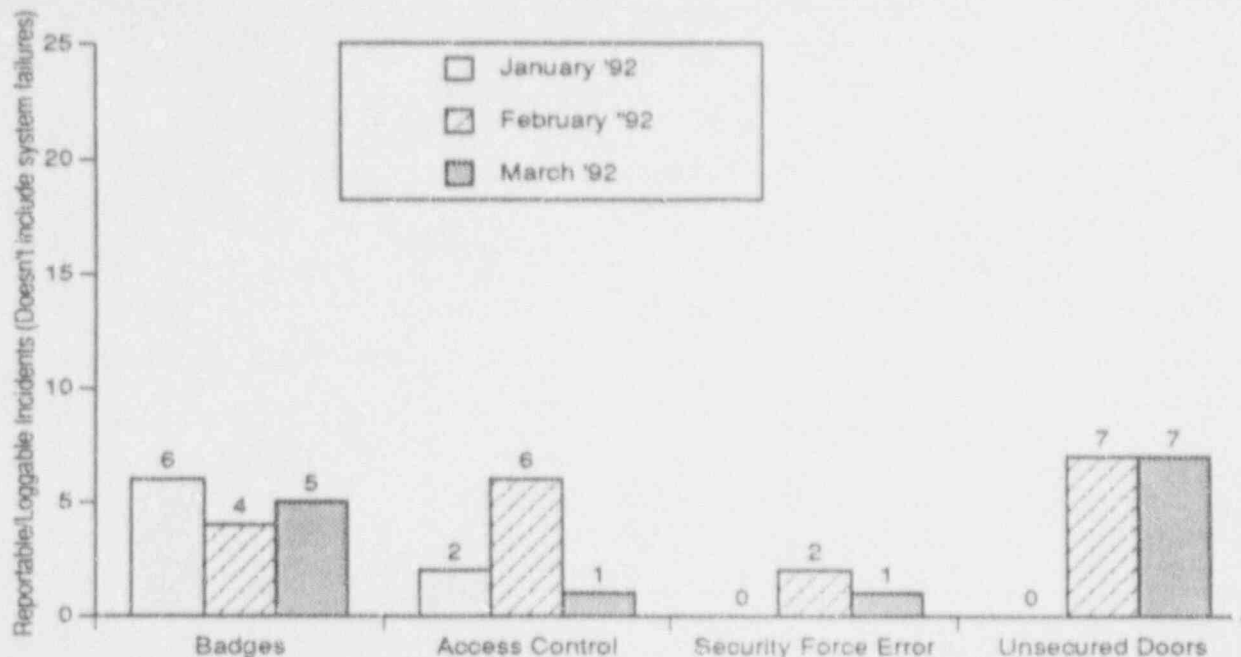
During the month of March 1992, there were 57 loggable/reportable incidents identified. System failures accounted for 43 (75%) of the loggable/reportable incidents, and 18 (41%) of these were environmental failures, which is a significant decrease from past months. During the same reporting period last year there were 43 CCTV environmental compared to only 5 this reporting month. This change is due to the acquisition of a CCD camera system, the repositioning of selected cameras, and consistent preventive maintenance. An aggressive Concentrated Awareness Training (CAT) Team program has led to a decrease in access authorization incidents.

Data Source: Sefick/Woerner (Manager/Source)

Accountability: Sefick

Adverse Trend: None

SEP 58



### SECURITY NON-SYSTEM FAILURES

This indicator shows the number of loggable/reportable non-system failures for the reporting month. These items include: Security Badges, Access Control and Authorization, Security Force Error, and Unsecured Doors.

#### Non-System Failures

#### Number of Incidents

	<u>Mar. '92</u>	<u>Feb. '92</u>
Security Badges	5	4
Access Control and Authorization	1	6
Security Force Error	1	2**
Unsecured Doors	7	7
Total	14	17

\*\*Not included in total loggables/reportables. Both incidents involved the improper issuing of security badges by the security force, therefore both incidents were counted in the Access Control and Authorization area.

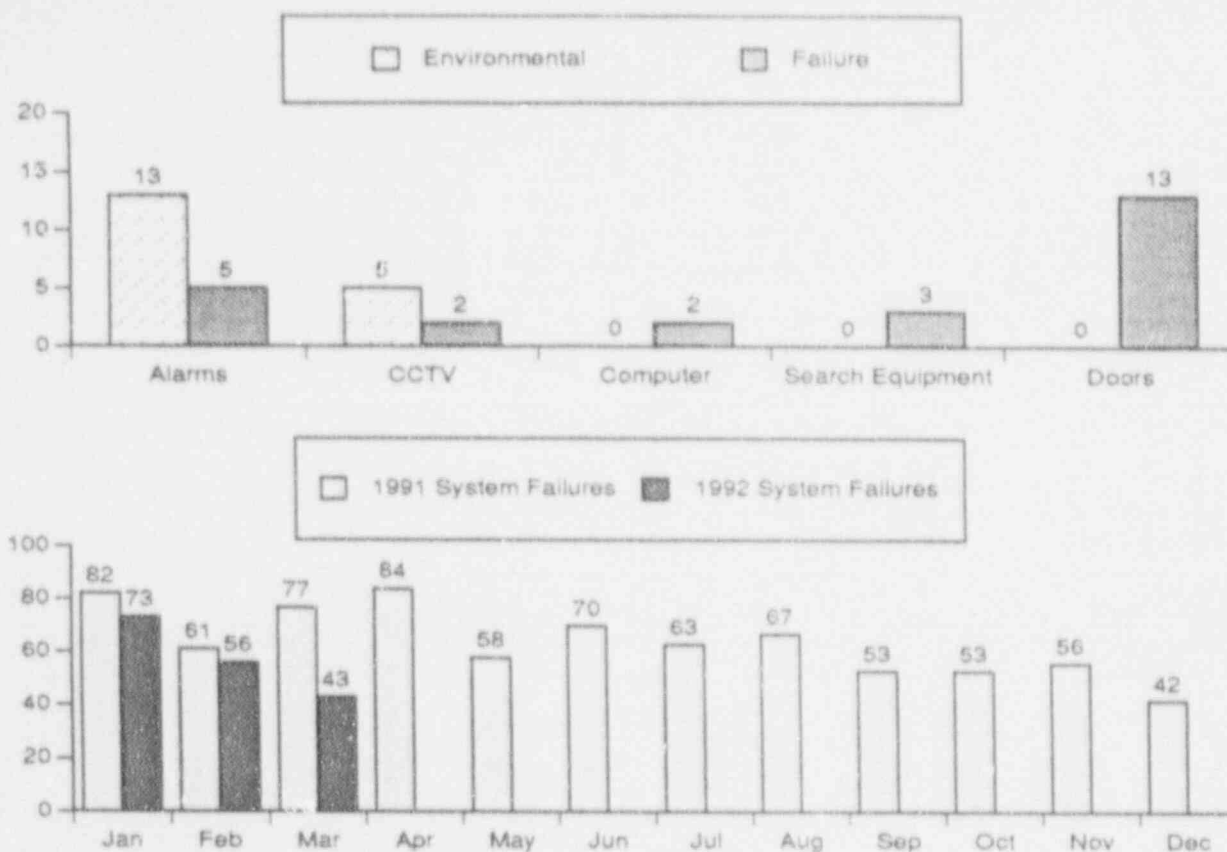
Data Source: Sefick/Woerner (Manager/Source)

Accountability: Sefick

Adverse Trend: None

SEP 58





### SECURITY SYSTEM FAILURES

This indicator shows the number of loggable/reportable system failures for the reporting month. These items include: Alarm System Failures, CCTV failures, Security Computer Failures, Search Equipment Failures, and Door Hardware Failures. Alarm systems and CCTV failures will be divided into two categories: environmental failures and failures as defined in the performance indicator definitions. Also, the 1991 and 1992 System Failures will be compared on a monthly basis.

System	Number of Incidents			
	March '92		February '92	
	Environ	Failures	Environ	Failures
Alarms	13	5	8	6
CCTV	5	2	17	1
Computer	N/A	2	N/A	4
Search Equipment	N/A	3	N/A	2
Door Hardware	N/A	13	N/A	18
Totals	18	25	25	31

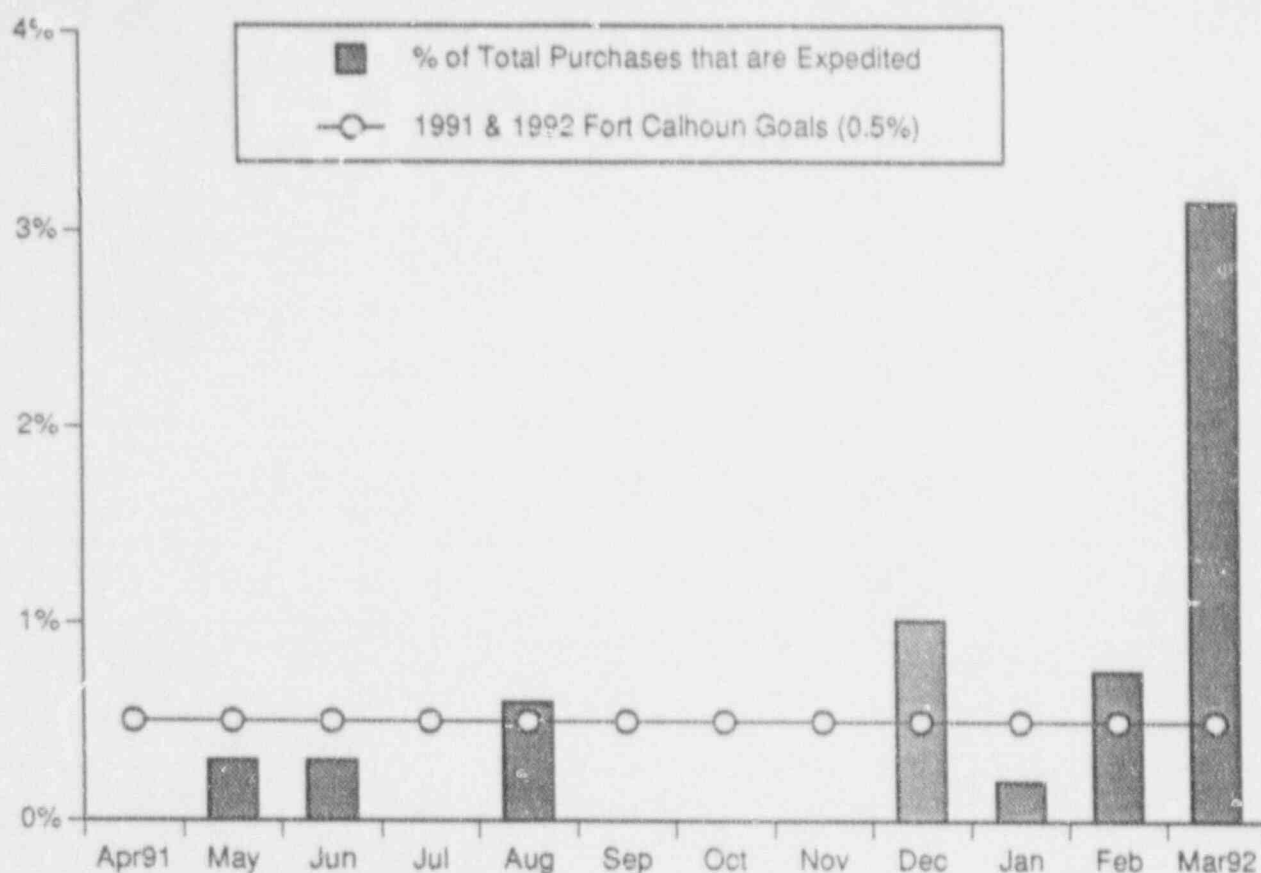
Data Source: Sefick/Woerner (Manager/Source)

Accountability: Sefick/Petersen

Adverse Trend: None

SEP 58





### EXPEDITED PURCHASES

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

During March, there was a total of 445 purchase orders generated. Of the 445 purchase orders generated, 14 (3.15%) were expedited purchases. The expedited purchases were for diesel generator parts, an expeditor's trip to St. Louis to check a program on diaphragms for T/G, a 3/4" globe valve, Eberline parts, and gaskets and fuses.

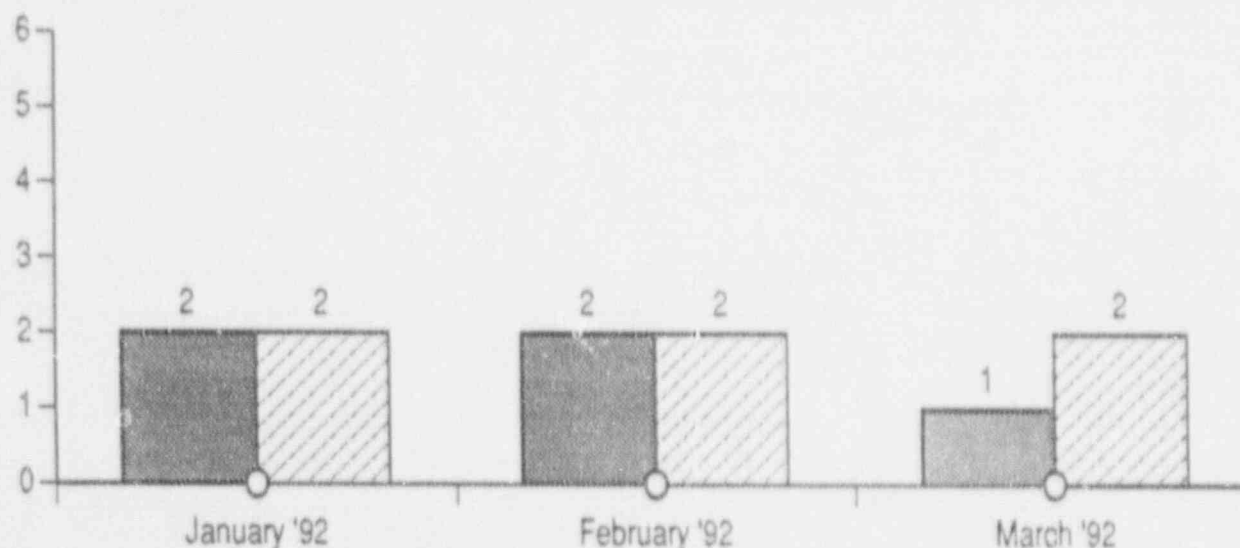
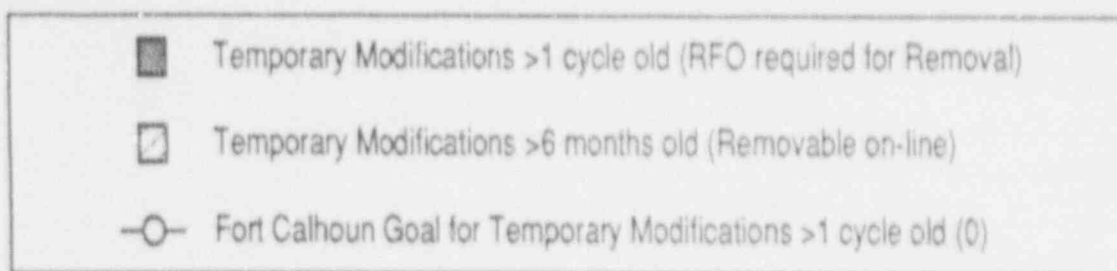
The 1992 Fort Calhoun goal for this indicator is 0.5%. The 1991 goal was 0.5%.

The number of expedited purchases has been above the Fort Calhoun goal during the months of February and March 1992 due to the ordering of items related to the Cycle 14 refueling outage.

Date Source: Willrett/Fraser (Manager/Source)

Accountability: Willrett/Fraser

Adverse Trend: None



#### TEMPORARY MODIFICATIONS (EXCLUDING SCAFFOLDING)

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 is the Fort Calhoun goal for temporary modifications.

The goal for this indicator was changed in August 1991 to be more indicative of Fort Calhoun's control and management of temporary modifications. There is currently 1 temporary modification, pressure indication for RW/CCW HXs, that is greater than one fuel cycle old. This modification is 100% ready to be removed during the 1992 refueling outage. In addition, at the end of March there were 2 temporary modifications installed that were greater than six months old that can be removed on-line. These were: handjack close of CCW/RW valves, in which OPS is reviewing a system engineering suggestion for closure, and potable water supply piping temporary repair, which is awaiting scheduling of MWOs 921203, 921204, and 921205.

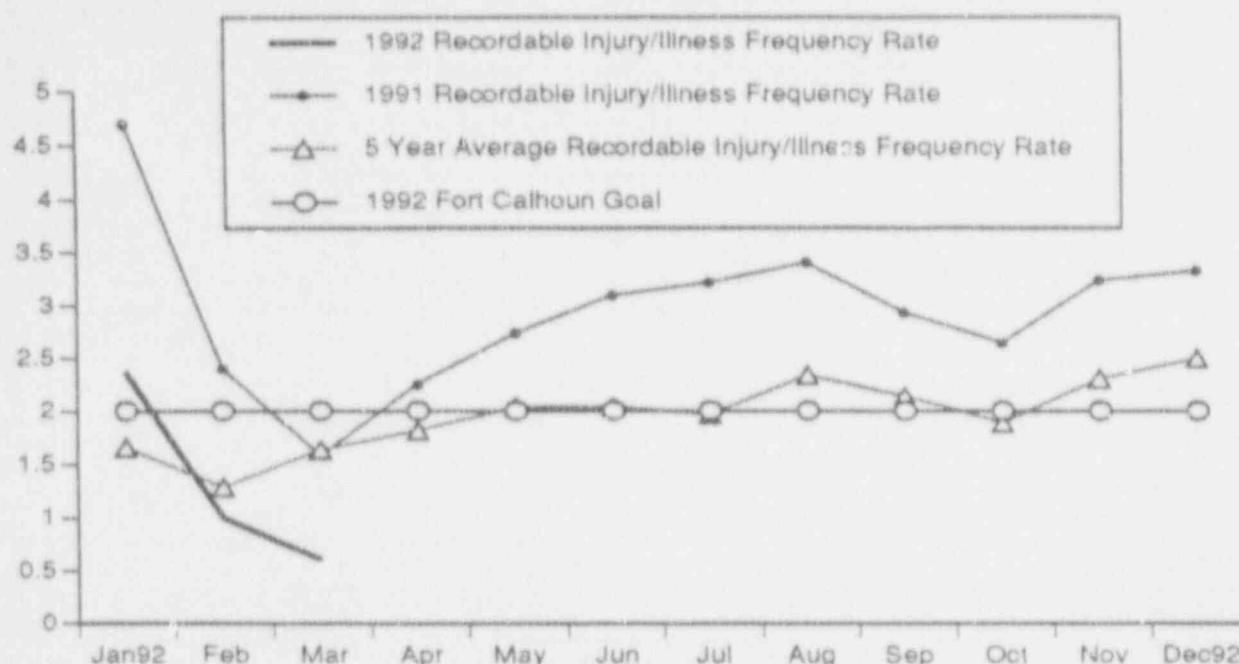
At the end of March, there was a total of 28 TMs installed in the Fort Calhoun Station. 17 of the 28 installed TMs require an outage for removal and 1 is removable on-line. In 1992 a total of 27 temporary modifications have been installed.

Data Source: Jaworski/Turner (Manager/Source)

Accountability: Jaworski/Gorence

Adverse Trend: None

SEP 62 & 71



### RECORDABLE INJURY/ILLNESS CASES FREQUENCY RATE

This indicator shows the 1992 monthly recordable injury/illness cases frequency rate in column form. The 1991 recordable injury/illness cases frequency rate and the Fort Calhoun Station 5 year average (from 1987 through 1991) recordable injury/illness cases frequency rates are also shown.

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

The recordable injury/illness rate for March was reported to be 0.60.

There were no (zero) recordable injury/illness cases reported during the month of March 1992. There has been a total of one recordable injury/illness case in 1992.

The recordable injury/illness rate for the past twelve months is 2.92.

The 1992 goal for this indicator is 2.0.

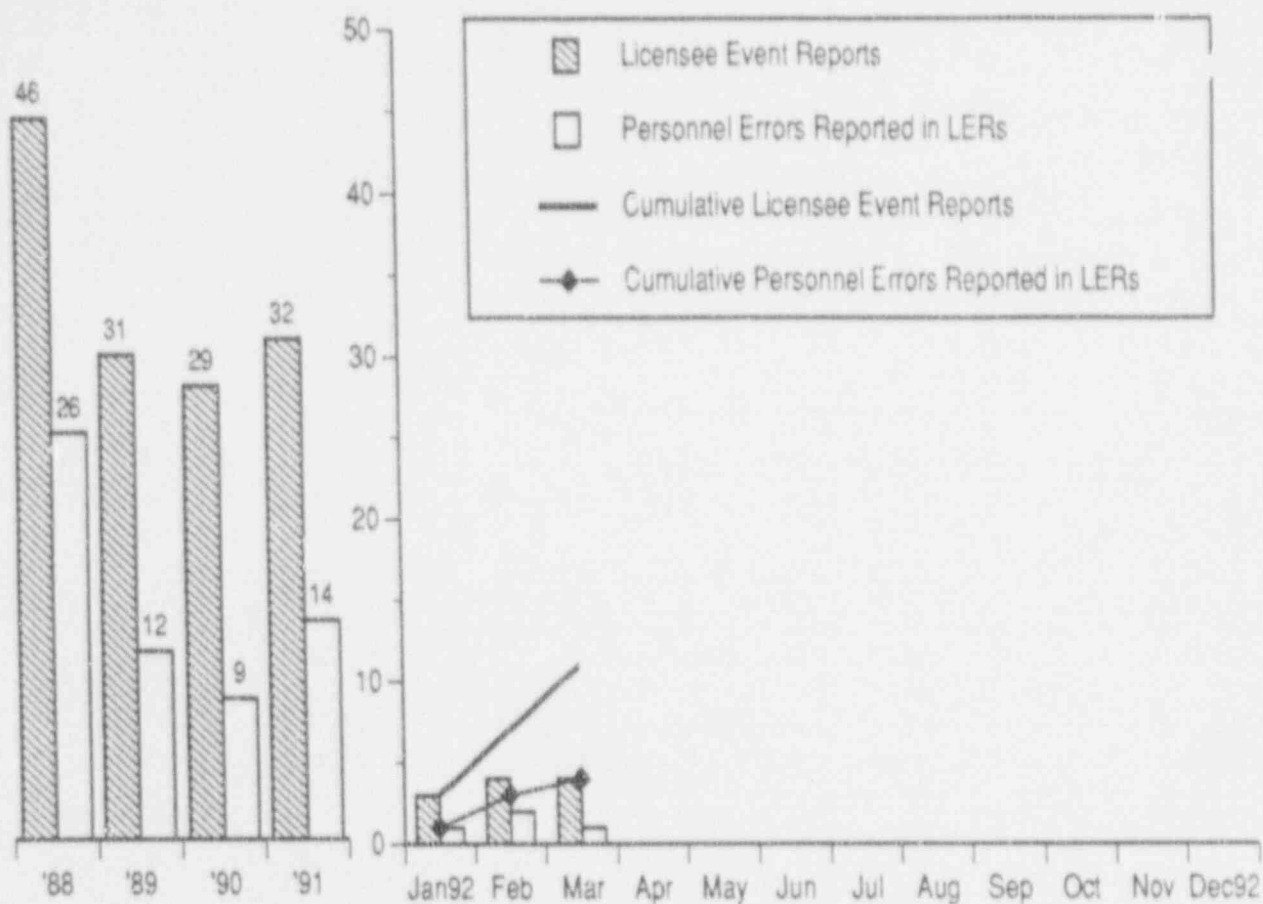
Year	Recordable Cases	Year-End Rate
1989	11	2.2
1990	11	2.1
1991	18	3.3

Data Source: Sorenson/Skaggs (Manager/Source)

Accountability: Richard

Positive Trend

SEP 15, 25 & 26



#### NUMBER OF PERSONNEL ERRORS REPORTED IN LERS

This indicator shows the number of Licensee Event Reports (LERs) with report dates during March 1992, the LERs attributed to personnel errors, and the cumulative total of both. The year-end totals for the four previous years are also shown.

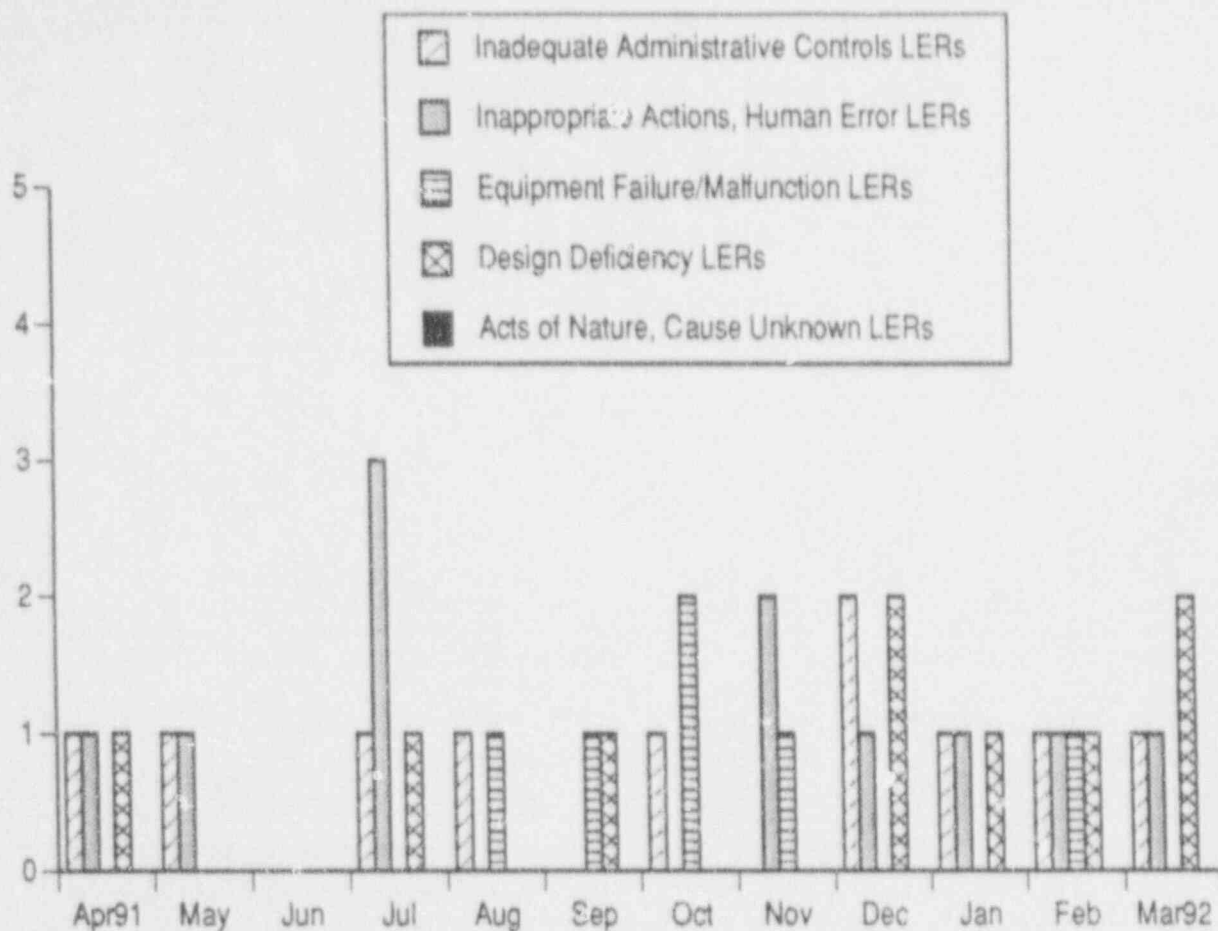
In March, there were four LERs reported. One of the LERs, LER 92-05 "RPS Actuation", was attributable to personnel error.

Data Source: Short/Howr.an (Manager/Source)

Accountability: Patterson

Adverse Trend: None

SEP 15



#### LER ROOT CAUSE BREAKDOWN

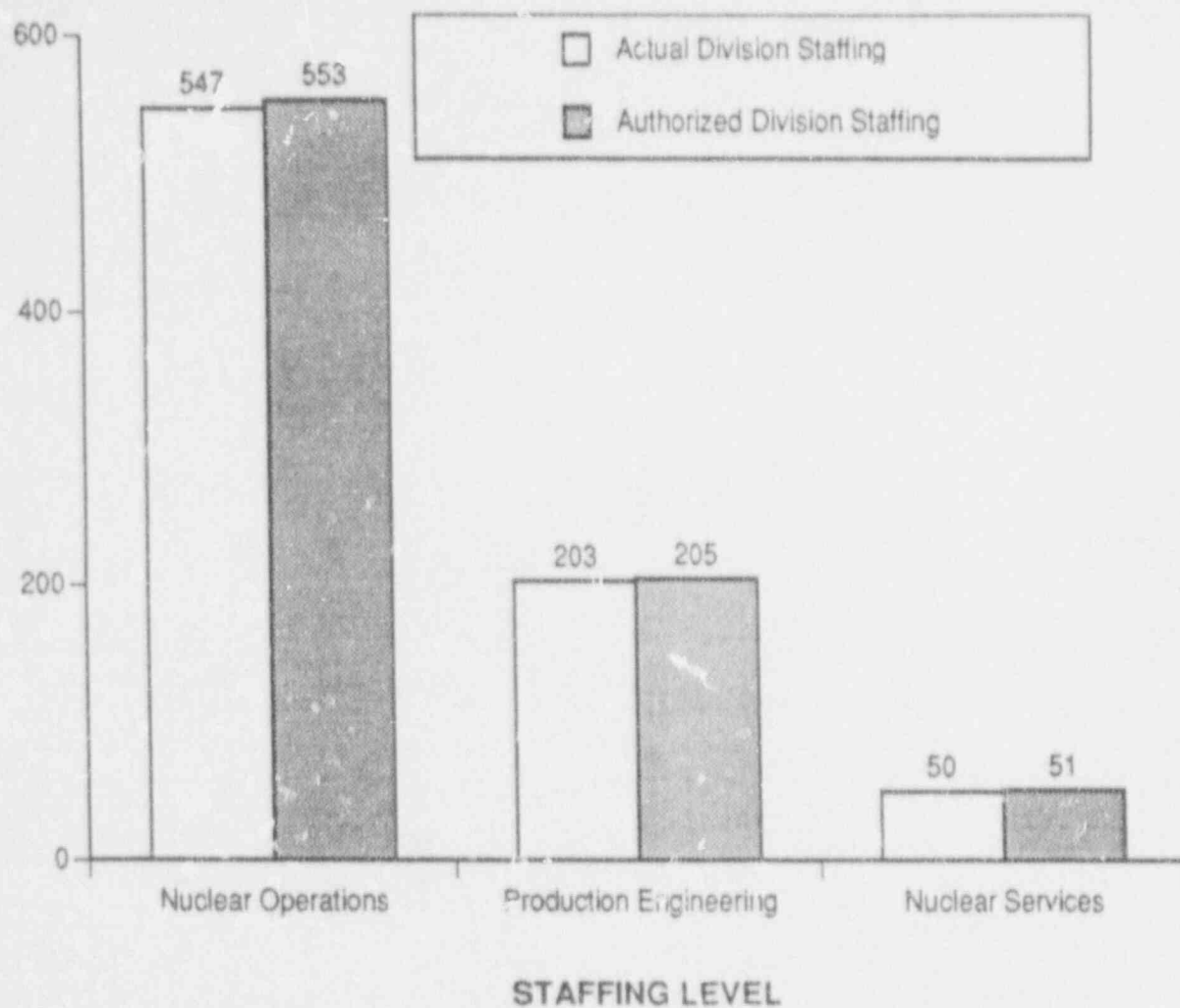
This indicator shows the LERs by report date and Root Cause Code for the months from April 1991 through March 1992.

Data Source: Short/Howman (Manager/Source)

Accountability: Patterson

Adverse Trend: None





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

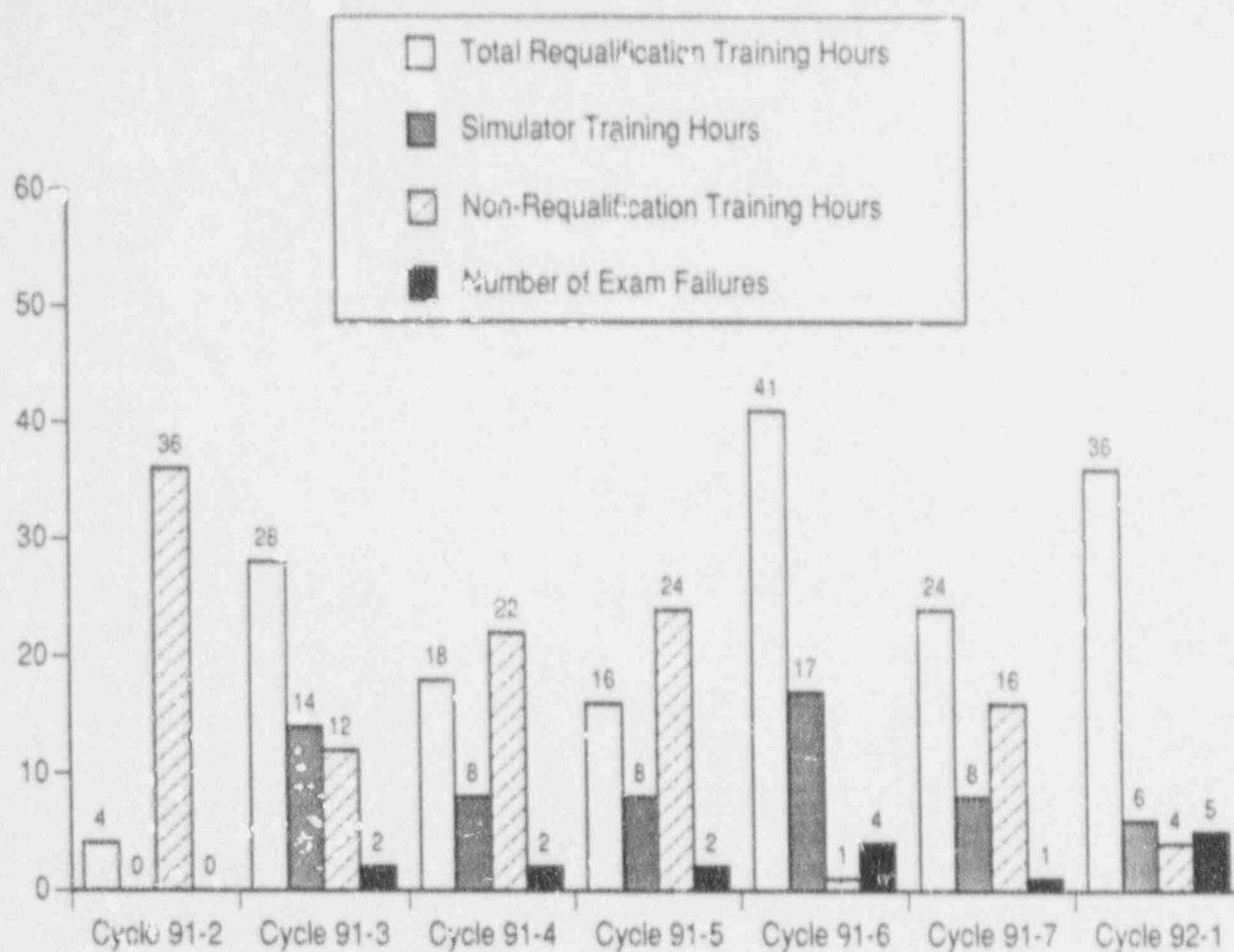
Data Source: Sorenson/Burke (Manager/Source)

Accountability: Waszak

Adverse Trend: None

SEP 24





### 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.

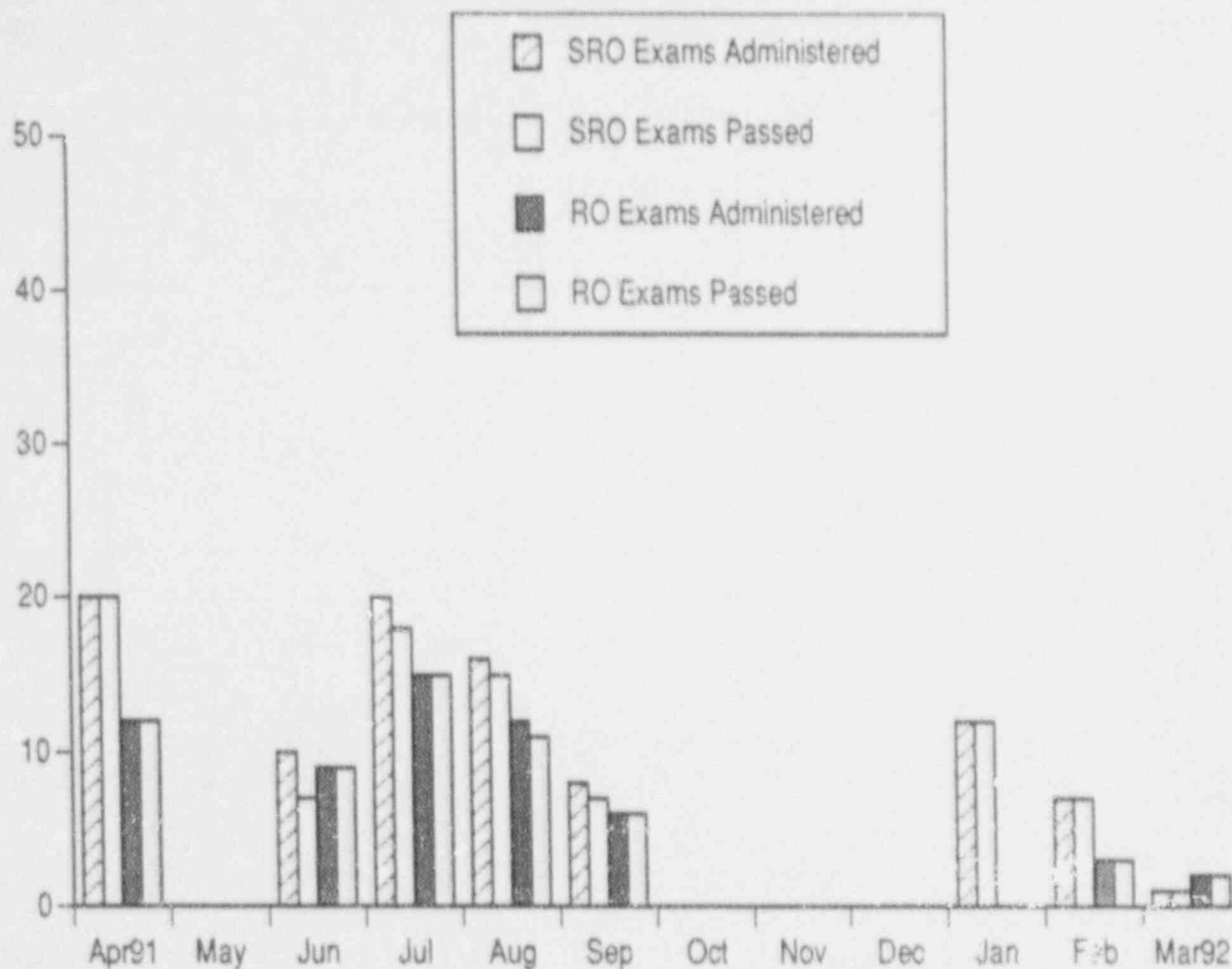
The individuals who failed exams were all remediated and approved for continued shift operations prior to the end of their scheduled Requalification Training week.

Data Source: Gasper/Guliani (Manager/Source)

Accountability: Gasper/Guliani

Adverse Trend: None

SEP 68



### 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.

During the month of March 1992, there was one internally administered SRO exam taken and it was passed. There were two internally administered RO exams given and both of these exams were passed.

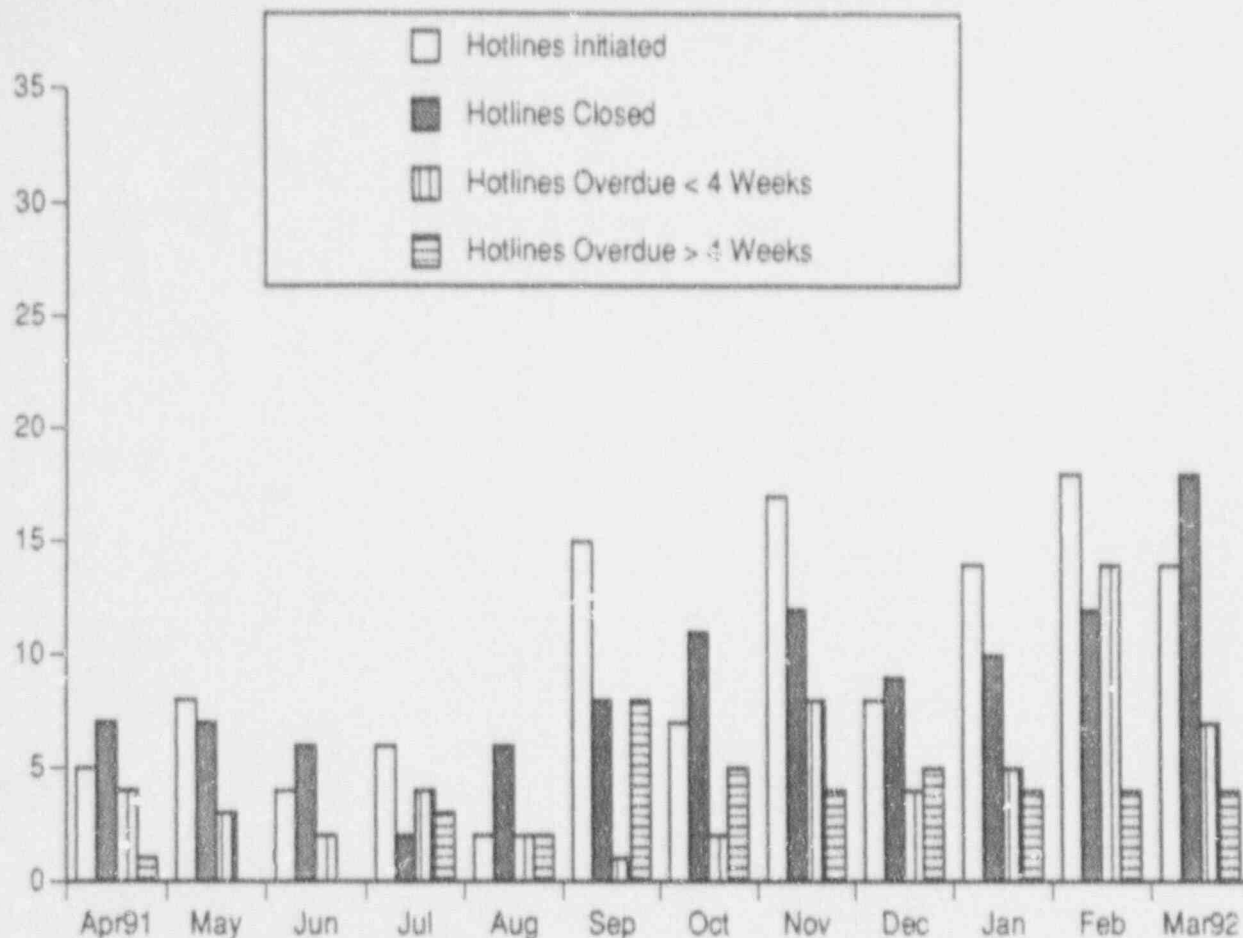
During March, there were no SRO NRC administered site specific exams or RO NRC administered generic exams given.

Data Source: Gasper/Herman (Manager/Source)

Accountability: Gasper/Lazar

Adverse Trend: None

SEP 68



### HOTLINE TRAINING MEMOS

This indicator shows the number of Hotline Training Memos that were initiated, returned for close out, overdue less than four weeks, and overdue greater than four weeks for the reporting month.

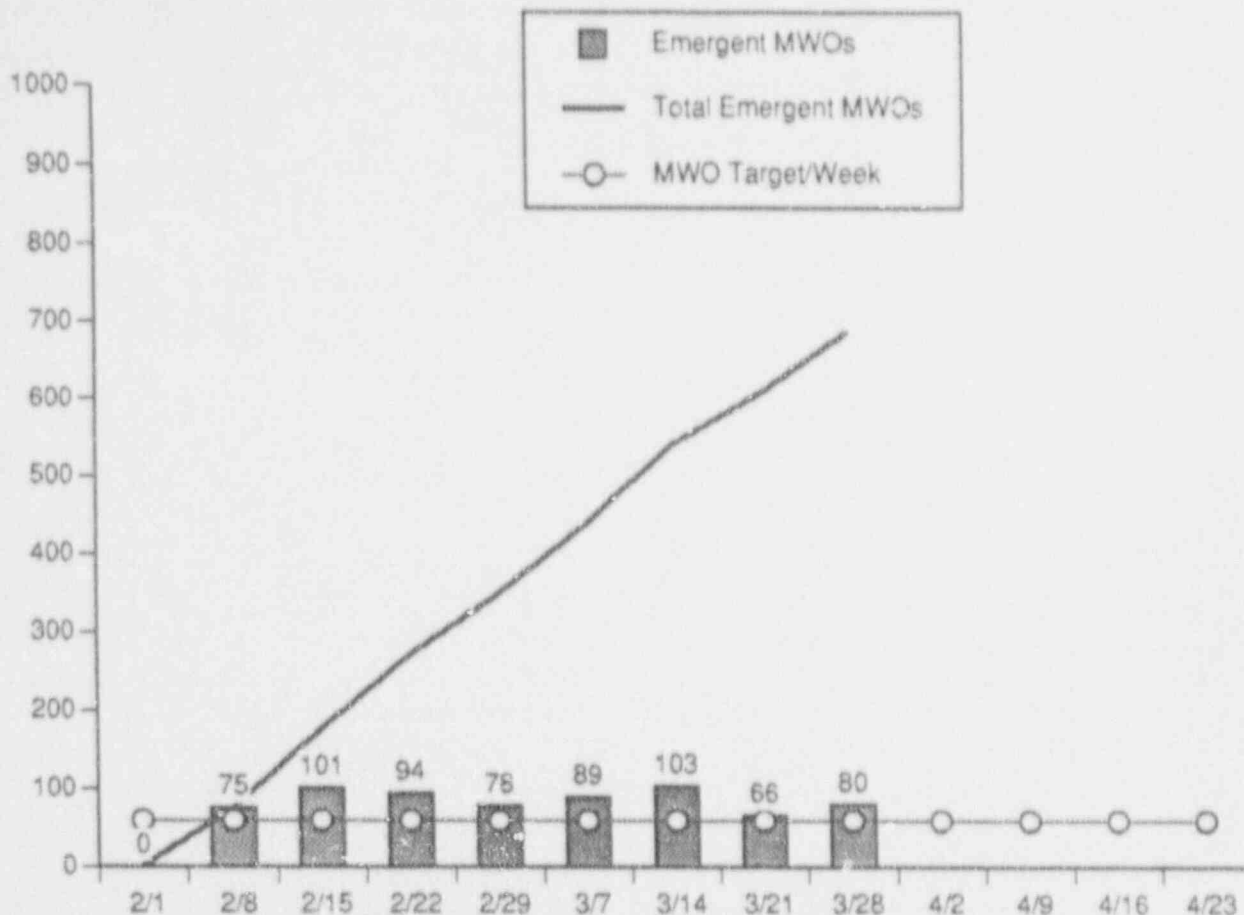
#### March 1992

Initiated Hotlines	14
Closed Hotlines	18
Hotlines Overdue < 4 wks.	7
Hotlines Overdue > 4 wks.	4

Data Source: Gasper/Newhouse (Manager/Source)

Accountability: Gasper

Adverse Trend: None



#### EMERGENT MWOs APPROVED FOR INCLUSION IN THE CYCLE 14 REFUELING OUTAGE

This indicator shows the total number of Emergent Maintenance Work Orders (MWOs) approved for inclusion in the Cycle 14 Refueling Outage scope. The total number of MWOs and PMOs in the outage schedule on 2/1/92 was 3,509. The goal for the outage is to maintain emergent work at less than 20%, or no more than 702 emergent MWOs, during the outage. This number represents 59 MWOs per week for the twelve week outage.

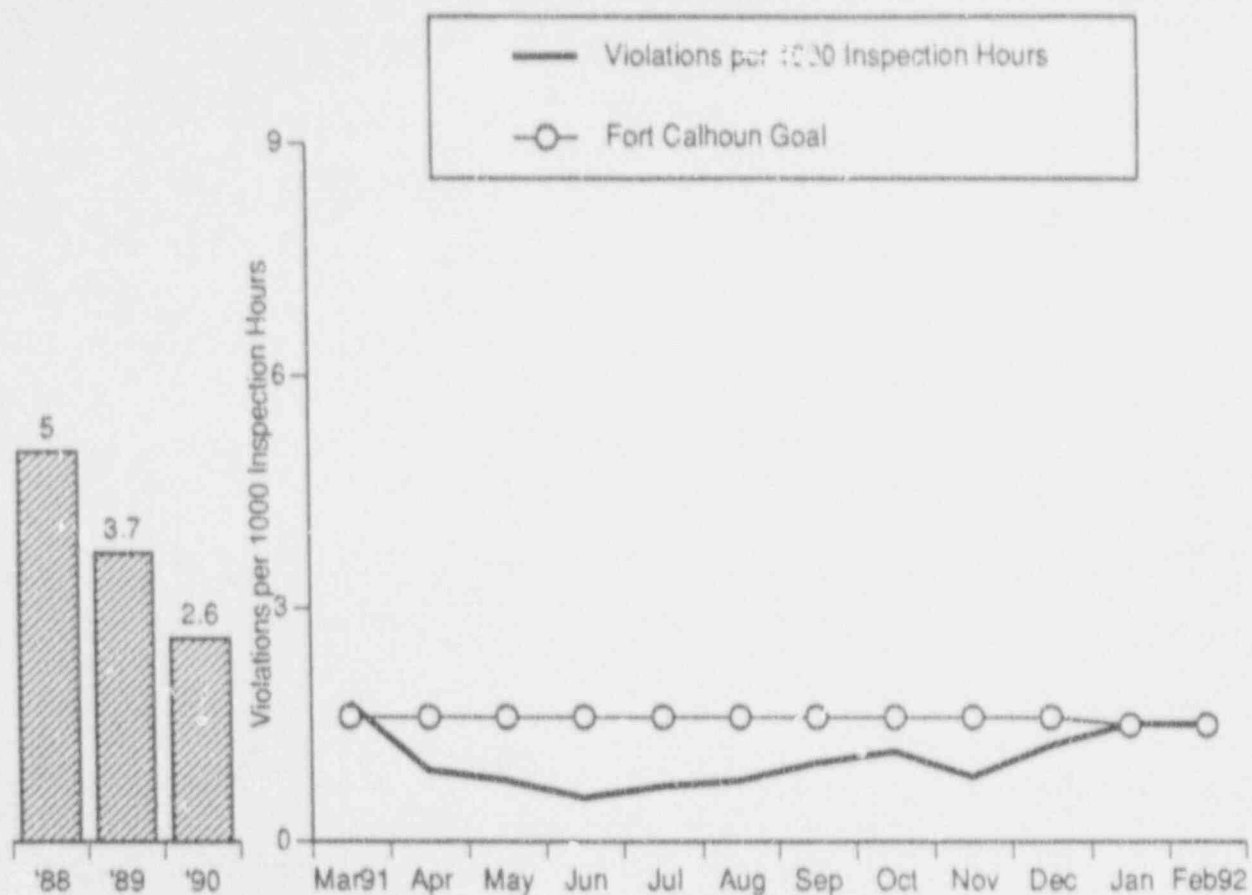
Approximately 1,993 emergent MWOs were generated during the 1990 refueling outage.

Data Source: Patterson/Dunham (Manager/Source)

Accountability: Patterson/Clemens

Adverse Trend: Because the amount of emergent work is exceeding the target for each week, the Supervisor, Outage Projects has determined that an adverse trend is indicated.

SEP 31



### 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 1.51 for the twelve months from March 1, 1991 through February 29, 1992.

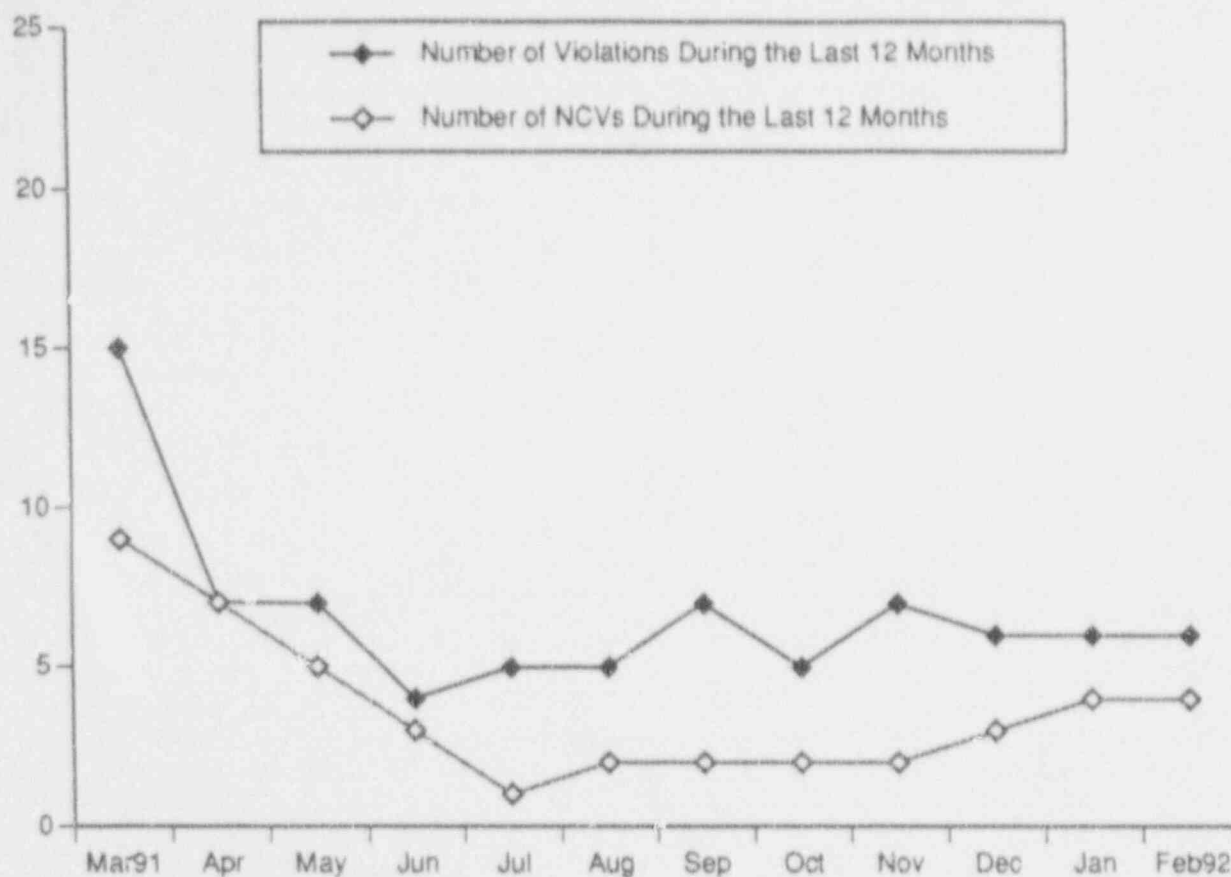
The 1992 Fort Calhoun Goal is 1.5 violations per 1,000 inspection hours for 1992. The 1991 goal was 1.6 violations per 1,000 inspection hours.

Data Source: Short/Howman (Manager/Source)

Accountability: Short

Adverse Trend: None





#### CUMULATIVE VIOLATIONS AND NCVs (TWELVE-MONTH RUNNING TOTAL)

The Cumulative Violations and Non-Cited Violations (NCVs) indicator shows the cumulative number of violations and the cumulative number of NCVs for the last twelve months.

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

Data Source: Short/Howman (Manager/Source)

Accountability: Short

Adverse Trend: None



1991 SALP Funct. Area	CARs	Signif. CARs	NRC Viola.	LERs
A) Plant Operations	30	1	1	6
B) Radiolog. Controls	12	0	3	0
C) Maint/Surveil.	66	0	2	9
D) Emergency Preparedness	16	0	0	0
E) Security	5	0	1	3
F) Engr/Tech Support	93	3	1	12
G) Safety Assess. Qual. Verif.	27	1	1	2
H) Other	0	0	0	0
Total	249	5	9	32

1992 SALP Funct. Area	CARs	Signif. CARs	NRC Viola.	LERs
A) Plant Operations	2	0	0	4 (1)
B) Radiolog. Controls	5 (3)	0	0	0
C) Maint/Surveil.	47 (26)	1 (1)	0	2 (1)
D) Emergency Preparedness	4	1	1	0
E) Security	1	0	0	0
F) Engr/Tech Support	10 (7)	0	0	5 (2)
G) Safety Assess. Qual. Verif.	9 (2)	0	0	0
H) Other	0	0	0	0
Total	78 (38)	2 (1)	1	11 (4)

Note: ( ) Indicate values for the reporting month.

#### **CARs ISSUED vs. SIGNIFICANT CARs vs NRC VIOLATIONS ISSUED vs. LERs REPORTED**

The above matrix shows the number of Corrective Action Reports (CARs) issued by the Nuclear Services Division (NSD) vs. the number of Significant CARs issued by NSD vs. the number of violations issued by the NRC for the Fort Calhoun Station in 1991 and 1992. Included in these tables are the number of Licensee Event Reports (LERs) identified by the station each year. The number of NRC violations reported is one month behind the reporting month due to the time involved in collecting and processing the violations.

Data Source: Orr/Gurtis (Manager/Source)  
Short/Howman (Manager/Source)

Accountability: Andrews/Gambhir/Gates

Adverse Trend: None

SEP 15, 20, 21

## PERFORMANCE INDICATOR DEFINITIONS

### AGE OF OUTSTANDING MAINTENANCE WORK ORDERS

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

### CARs ISSUED vs. SIGNIFICANT CARs vs. NRC VIOLATIONS vs. LERs REPORTED

Provides a comparison of CARs issued, NRC violations, and LERs reported. This indicator tracks performance for SEP #15, 20, & 21.

### 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 man-rem. This indicator tracks radiological work performance for SEP #54.

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

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

### CUMULATIVE VIOLATIONS & NON-CITED VIOLATIONS (12 MONTH RUNNING TOTAL)

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

### 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.

### DIESEL GENERATOR UNAVAILABILITY

This indicator provides monthly data on the number of hours of diesel generator planned and unplanned unavailability. The Fort Calhoun goal for the second half of 1991 for the number of unavailable hours per diesel generator has been established based upon the 1990 industry median value provided by INPO.

### 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

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.

### EMERGENT MWOs APPROVED FOR INCLUSION IN THE CYCLE 14 REFUELING OUTAGE

The total number of Emergent Maintenance Work Orders (MWOs) approved for inclusion in the Cycle 14 Refueling Outage scope. This indicator tracks performance for SEP #31.

### EXPEDITED PURCHASES

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

### GASEOUS RADIOACTIVE WASTE BEING DISCHARGED TO THE ENVIRONMENT

This indicator displays the total number of Curies of all gaseous radioactive nuclides released from FCS.

### HOTLINE TRAINING MEMOS

The number of Hotline Training Memos (HTMs) that are initiated, closed, and overdue less or greater than 4 weeks for the indicated month. A HTM is a training document sent out for immediate review. The HTM should be reviewed and signed within 5 days of its receipt.

### LER ROOT CAUSE BREAKDOWN

This indicator shows the number and root cause type for License Event Reports.

## PERFORMANCE INDICATOR DEFINITIONS (cont'd)

### 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.

### LIQUID RADIOACTIVE WASTE BEING DISCHARGED TO THE ENVIRONMENT

This indicator displays the volume of liquid radioactive waste released from the radioactive waste monitor tanks, to include releases through the plant blowdown if radioactive nuclides are detected in the blowdown system. The curies from all releases from FCS to the Missouri River are also shown.

### 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 EFFECTIVENESS

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.

### MAINTENANCE WORK ORDER BACKLOG

The number of corrective non-outage maintenance work orders that remain open at the end of the reporting month. This indicator was added to the PI Report to trend open corrective non-outage maintenance work orders as stated in SEP #36.

### MAINTENANCE WORK ORDER BREAKDOWN (CORRECTIVE NON-OUTAGE MAINTENANCE)

This indicator is a breakdown of corrective non-outage maintenance work orders by several categories that remain open at the end of the reporting month. This indicator tracks maintenance performance for SEP #36.

### MAINTENANCE OVERTIME

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

### MAXIMUM INDIVIDUAL RADIATION EXPOSURE

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

### 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 OUT-OF-SERVICE CONTROL ROOM INSTRUMENTS

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

### NUMBER OF 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.

### NUMBER OF PERSONNEL ERRORS REPORTED IN LERS

The number of Licensee Event Reports (LERs) attributed to personnel error on the original LER submittal. This indicator trends personnel performance for SEP #15.

### OPERATIONS AND MAINTENANCE BUDGET

The year-to-date budget compared to the actual expenditures for Operations and Maintenance departments.

### PLANNED CAPABILITY LOSS FACTOR

The ratio of the planned 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.

### PROCEDURAL NONCOMPLIANCE INCIDENTS (MAINTENANCE)

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

### RADIOLOGICAL WORK PRACTICES PROGRAM

The number of identified poor radiological work practices (PRWP) for the reporting month. This indicator tracks radiological work performance for SEP #53.

## PERFORMANCE INDICATOR DEFINITIONS (cont'd)

### RATIO OF PREVENTIVE TO TOTAL MAINTENANCE

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

### SECURITY NON-SYSTEM FAILURES

The following components are the types of loggable/reportable non-system failures represented in this indicator. Incidents in this category include security badges, access control and authorization, security force error, and unsecured doors.

1) Security Badges - Incidents associated with improper use and handling of security badges. Incidents include security badges that are lost, taken out of the protected area, out of control on-site, or inadvertently destroyed or broken.

2) Access Control and Authorization - Administrative and procedural errors associated with the use of the card-access system such as tailgating, incorrect security badge issued, and improper escort procedures. This also includes incidents that were caused by incorrect access authorization information entered into the security system computer.

3) Security Force Error - Events caused by members of the security force that are found to be inattentive to their duties or who neglected to properly perform assigned functions (e.g., required search procedure or patrol).

4) Unsecured Doors - Doors which are found to be unsecured with no compensatory officer posted or where the individual causing the alarm did not remain at the alarmed door until a security officer responded. Events where an unsecured door is caused by air pressure are included in this category unless there is an indication that an adjustment was made to the door.

This indicator tracks security performance for SEP #58.

### SECURITY SYSTEM FAILURES

The following components are the types of loggable/reportable SECURITY SYSTEM FAILURES represented in this indicator. Incidents in this category include alarm system failures, CCTV failures, security computer failures, search equipment failures, and door hardware failures. These system failures are further categorized as follows:

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

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

3) CCTV Failures - Mechanical failures to all CCTV hardware components.

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

5) Security Computer Failures - Failure of the multiplexer, central processing unit, and other computer hardware and software. This category does not include software problems caused by operator error in using the software.

6) Search Equipment Failures - Failures of x-ray, metal, or explosive detectors and other equipment used to search for contraband. This also includes incidents where the search equipment is found to be defective or did not function properly during testing.

7) Door Hardware Failures - Failure of the door alarm and other door hardware such as latches, electric strikes, doorknobs, locks, etc.

8) 1991 versus 1992 System Failures - Statistics from 1991 will be compared on a monthly basis with 1992 loggable/reportable system failures.

This indicator tracks security performance for SEP #58.

### 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.

### 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.



## PERFORMANCE INDICATOR DEFINITIONS (cont'd)

### TOTAL SKIN AND CLOTHING CONTAMINATIONS

The number of skin and clothing contaminations for the reporting month.

### 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 safety injection system, the low pressure safety 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 cited 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 (when data is available), 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.

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## POSITIVE TREND REPORT

The Positive Trend Report highlights several Performance Indicators with data representing continued performance above the stated goal and indicators with data representing significant improvement in recent months.

The following indicators have been selected as exhibiting positive trends:

### Disabling Injury/Illness Frequency Rate

(Page 7)

The Disabling Injury/Illness rate for the first three months of 1992 is zero.

### Recordable Injury/Illness Cases Frequency Rate

(Page 34)

The Recordable Injury/Illness Cases Frequency Rate (0.60) has shown improvement for the first three months of 1992.

End of Positive Trend Report

## ADVERSE TREND REPORT

A Performance Indicator which has data representing three (3) consecutive months of declining performance constitutes an adverse trend. The Adverse Trend Report explains the conditions under which certain indicators are showing adverse trends. An explanation will be provided for indicators with data representing three months of declining performance that have been labeled as adverse trends.

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

### Emergent MWOs Approved for Inclusion in the Cycle 14 Refueling Outage

(Page 41)

This indicator has been determined to be exhibiting an adverse trend by the Supervisor, Outage Projects because the amount of emergent work has exceeded the weekly target of 59 MWOs for each week during the refueling outage.

End of Adverse Trend Report.

## INDICATORS NEEDING INCREASED MANAGEMENT ATTENTION REPORT

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

### Expedited Purchases

(Page 32)

The percentage of expedited purchases compared to total purchases for the reporting month (3.15%) exceeds the Fort Calhoun goal of 0.5%.

### Violations per 1,000 Inspection Hours

(Page 42)

The violations per 1,000 inspection hours for the reporting month (1.51) exceeds the Fort Calhoun goal of 1.50.

End of Management Attention Report.

## PERFORMANCE INDICATOR REPORT IMPROVEMENTS/CHANGES

This report has been abbreviated to allow some performance indicator data sources to devote more time to refueling outage activities. Publication of all indicators will resume with the May 1992 report.

All performance indicator graphs have been revised to represent monthly data and year-end data for previous years with columns. Fort Calhoun goal, year-to-date averages, industry medians and INPO goals are represented with lines.

INPO Industry Key Parameters indicators have been revised to include the industry median values published in the INPO 1991 Year-End Report.

### Number of Hot Spots

(Page 26)

This indicator has been revised to include hot spots removed and hot spots planned for removal.

### Liquid Radioactive Waste Being Discharged to the Environment

(Page 28)

This indicator has been revised to show the monthly liquid radioactive waste discharged in curies only. The graph illustrating releases in thousands of gallons has been deleted for purposes of clarity and because INPO does not require this information.

End of Indicator Improvement/Changes Report.

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 - 03/30/77	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 - 04/26/92	(Planned Dates)	
Cycle 14#	04/26/92 - 09/19/93	*	*
14th Refueling	09/19/93 - 11/13/93	*	*
Cycle 15	11/13/93 - 03/12/95	*	*
15th Refueling	03/12/95 - 05/06/95	*	*

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