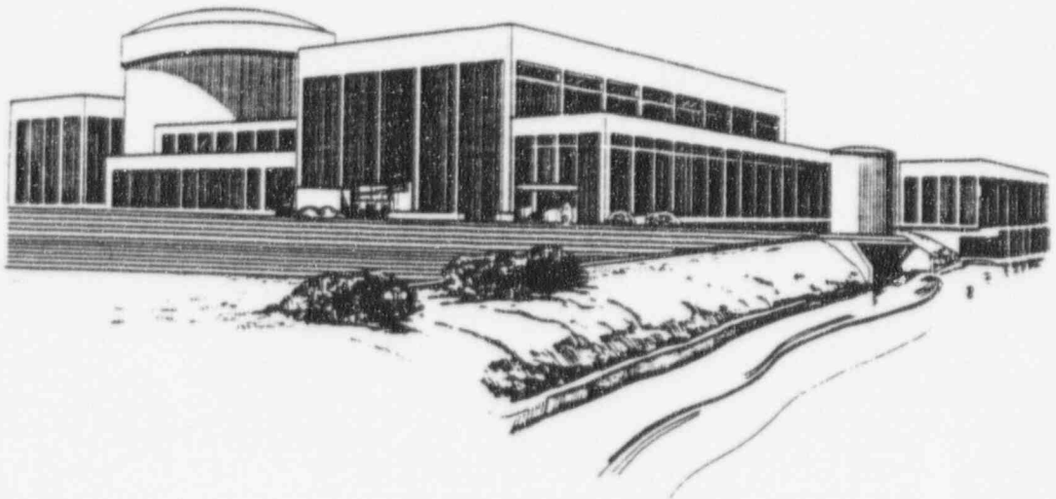
Omaha Public Power District

FORT CALHOUN STATION PERFORMANCE INDICATORS



FEBRUARY 1995

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

OMAHA PUBLIC POWER DISTRICT
FORT CALHOUN STATION
PERFORMANCE INDICATORS REPORT

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

FEBRUARY 1995

FORT CALHOUN STATION
FEBRUARY 1995 MONTHLY OPERATING REPORT

OPERATIONS SUMMARY

During the month of February 1995, Fort Calhoun Station (FCS) operated at a nominal 100% power until February 11, 1995, at which time a 1%/day coastdown was initiated in preparation for the 1995 Refueling Outage. On February 18, a plant shutdown was initiated when the seal bleedoff temperature of Control Element Drive Mechanism (CEDM) #35 increased beyond 240 degrees F. The shutdown marked the start of the plant's 15th refueling outage, 19 days prior to the scheduled start date.

On February 2, 1995, the seal bleed-off temperature of CEDM #35 had increased to greater than 200 F. It was determined at that time that continued operation could be allowed with seal bleed off temperatures up to 250 degrees F. The monitoring frequency of the CEDM temperature was increased and the status was reported to management daily.

Late February 17, 1995, the CEDM #35 seal bleed-off temperature spiked above 240 degrees F. Containment activity and Reactor Coolant System (RCS) leak rate also increased. Plant management determined that a plant shutdown was appropriate. Operations initiated the power reduction at 1-2% per hour. The CEDM bleed off-temperature, RCS leak rate, and containment activity were closely monitored during the power reduction. The decision was made t begin the refueling outage early as a result of the forced shutdown. On February 20, at 1220 hours, the main generator breakers were opened, marking the start of the 1995 refueling outage. RCS cooldown and depressurization continued and the plant was placed on shutdown cooling on February 22, 1995.

On February 9, during testing of the Post Accident Sampling System (PASS) Reactor Coolant High Pressure Sample (RCHPS) sequence in the accident mode, an RCS leak was identified on outboard containment isolation valve HCV-500A. The leak occurred between the valve body and its diaphragm. Due to the potential loss of containment integrity, the redundant containment isolation valve, HCV-500B, was immediately deactivated and locked closed. Successful local leak rate tests were performed on each valve individually prior to declaring them operable. The leak on HCV-500A was caused by leakage past reactor coolant sample isolation valve HCV-2500. Since a flow path had not yet been established back to the Reactor Coolant Drain Tank (RCDT) by the PASS's programmable controller, overpressurization of the valve diaphragms occurred. The PASS's programmable controller is tagged-out pending reprogramming to compensate for the leakage through these valves. The RCS HCV-2500 series sample valves are scheduled for refurbishment during the 1995 Refueling Outage.

FORT CALHOUN STATION
FEBRUARY 1995 MONTHLY OPERATING REPORT

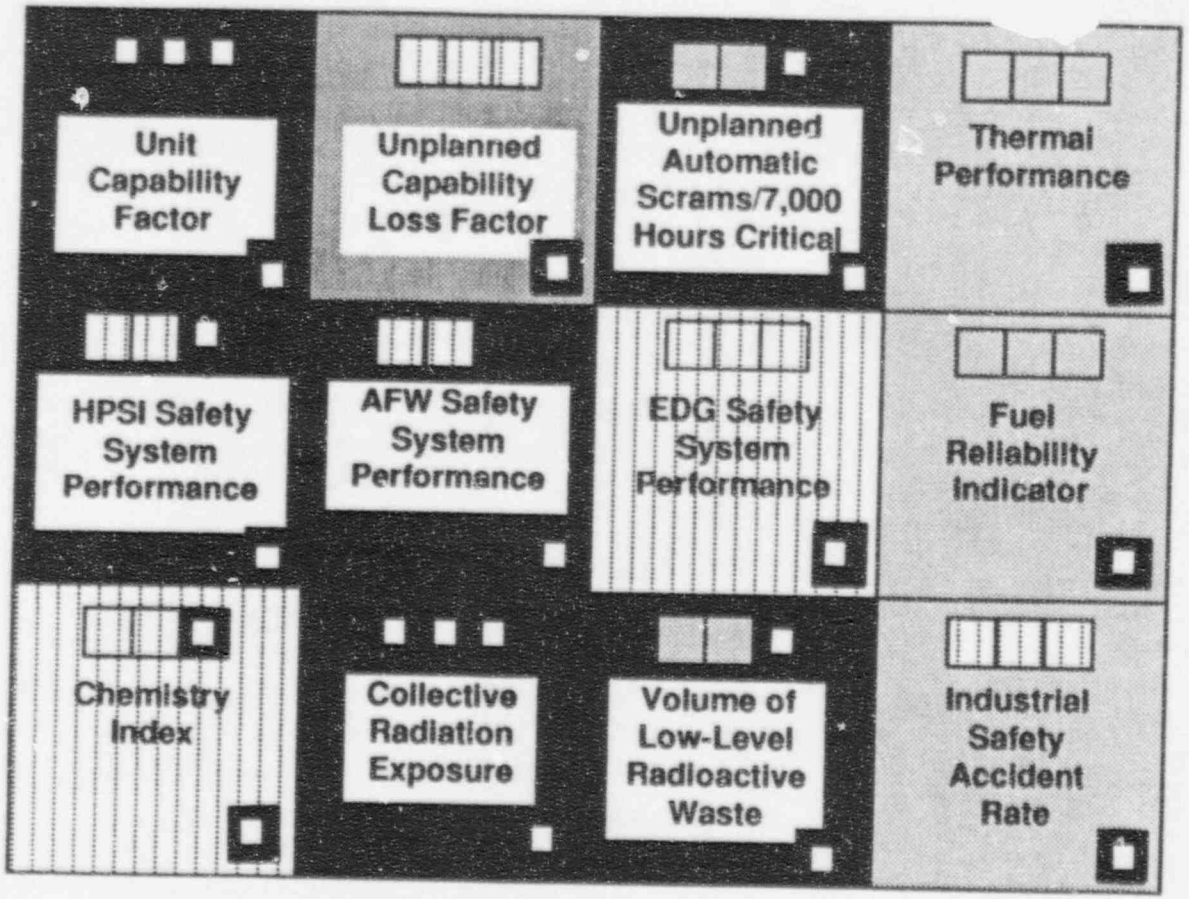
OPERATIONS SUMMARY (continued)

Activities continued to support the refueling outage. Critical path evolutions that were completed to date to support removal of the Reactor Vessel (RV) head included: missile shield removal, uncoupling of CEAs, drain down to mid-loop to dump steam generator tubes, RV head detensioning and head stud removal.

The following NRC inspection was completed during this reporting period:

IER No. 95-02	Resident Monthly Inspection
IER No. 95-03	Security Inspection

There were no Licensee Event Reports submitted during this reporting period.



Year-To-Date Value Performance Categories

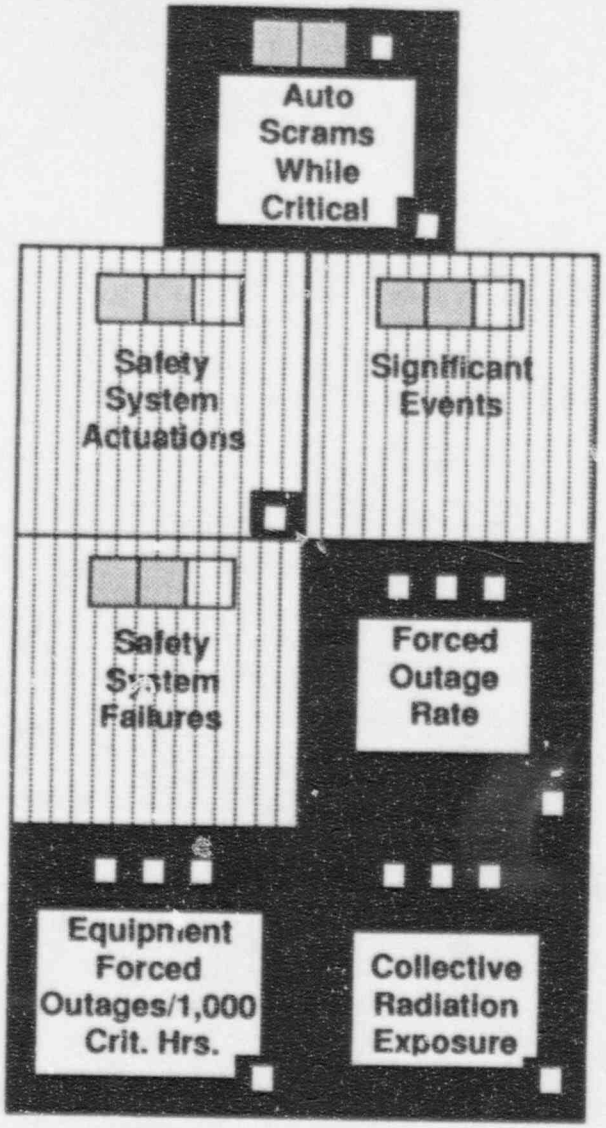
- Performance in Industry Upper 10% and better than 1995 OPPD goal
- Performance Better Than 1995 OPPD Goal
- Performance Not Meeting 1995 OPPD Goal

Nov. '94	Dec. '94	Jan. '95

February 1995 Year-To-Date Value Performance

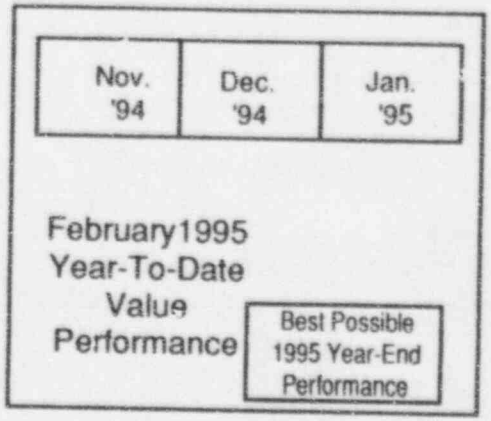
Best Possible 1995 Year-End Performance

INPO PERFORMANCE INDICATORS



Year-To-Date Value Performance Categories

- Performance Better Than Industry Average Trend
- Performance Better Than 1995 OPPD Goal
- Performance Not Meeting 1995 OPPD Goal or Industry Average Trend



NRC PERFORMANCE INDICATORS

FORT CALHOUN STATION PERFORMANCE INDICATORS REPORT
FEBRUARY 1995 - 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 performance indicators exhibited positive trends for the reporting month:

Industrial Safety Accident Rate - INPO
(Page 2)

High Pressure Safety Injection System Safety System Performance
(Page 8)

Auxiliary Feedwater System Safety System Performance
(Page 9)

Emergency Diesel Generator Unit Reliability
(Page 11)

Diesel Generator Reliability (25 Demands)
(Page 12)

Number of Missed Surveillance Tests Resulting In Licensee Event Reports
(Page 20)

Forced Outage Rate
(Page 23)

Unplanned Auto Scrams per 7,000 Hours Cticial
(Page 28)

Gross Heat Rate
(Page 31)

Equipment Forced Outages Per 1,000 Critical Hours
(Page 34)

Primary System Chemistry Percent of Hours Out of Limit
(Page 38)

Secondary System Chemistry
(Page 39)

Cents Per Kilowatt Hour
(Page 41)

Ratio of Preventive to Total Maintenance & Preventive Maintenance Items Overdue
(Page 46)

In-Line Chemistry Instruments Out-of-Service
(Page 51)

Hazardous Waste Produced
(Page 52)

Contaminated Radiation Controlled Area
(Page 53)

End of Positive Trend Report.

ADVERSE TREND REPORT

A Performance Indicator with data representing 3 consecutive months of declining performance; or four or more consecutive months of 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 exhibited an adverse trend for the reporting month:

Fuel Reliability Indicator
(Page 14)
An adverse trend is indicated based on the FRI value for the reporting month exceeding the 1995 Fort Calhoun monthly goal of less than 5.0×10^{-4}, and the potential for 1 or 2 defective fuel rods in the core.

End of Adverse Trend Report.

FORT CALHOUN STATION PERFORMANCE INDICATORS REPORT
FEBRUARY 1995 - SUMMARY

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 are cited as needing increased management attention for the reporting month:

Control Room Equipment Deficiencies
(Page 15)
The total number of control room equipment deficiencies at the end of the reporting month has exceeded the Fort Calhoun monthly goal of ≤45 since March 1994.

Thermal Performance
(Page 32)
Initial results from testing have confirmed losses in plant electrical output are occurring due to conservatively over calculating Reactor thermal power based on a secondary side heat balance. Nozzle fouling occurs after prolonged operation at steady power. Applying the results of study (a final report will be presented following the outage) will take place over the next year to improve plant output and heat rate.

Maintenance Workload Backlogs
(Page 45)
The backlog of non-outage MWOs for corrective maintenance has exceeded the 1994 monthly goal of a maximum of 400 since August 1994.

Per cent of Total MWO's Completed per month Identified as Rework
(Page 47)
Rework as identified has exceed the FCS goal of <3%.

End of Management Attention Report.

PERFORMANCE INDICATOR REPORT IMPROVEMENTS/CHAN GES

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

Violation Trend
(Page 18)
This indicator has been revised to indicate a 12-month trend for Cited and Non-Cited violations, as well as Cited Violations for the top quartile plant in Region IV.

Table of Contents/Summary

DIVISION AND DEPARTMENT PERFORMANCE INDICATORS

ACTION PLANS, DEFINITIONS, SEP INDEX & DISTRIBUTION LIST

OPPD NUCLEAR ORGANIZATION GOALS

Vice President - 1995 Priorities

MISSION

The safe, reliable and cost effective 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**

Supports: April 1994 Corporate Strategic Plan Goal 3, Obj; 3 & 4

A proactive, self-critical and safety conscious culture is exhibited throughout the nuclear organization. Individuals demonstrate professionalism through self-ownership and personal initiative and open communication.

1995 Priorities:

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

Objectives to support SAFE OPERATIONS.

OBJECTIVE 1-1:

No challenges to a nuclear safety system.

OBJECTIVE 1-2:

Conduct activities in accordance with applicable policies, technical specifications, procedures, standing orders and work instructions.

- Less than 1.4 NRC violations per 1,000 inspection hours.
- Fewer significant Corrective Action Documents (CADs) originating from activities.

OBJECTIVE 1-3:

Identify conditions BEFORE they affect plant safety and reliability.

OBJECTIVE 1-4:

Achieve all safety-related 1995 performance indicator goals in the Performance Indicator Report.

OBJECTIVE 1-5:

Zero Lost Time Injuries and recordable injuries rate BELOW 1.5 percent.

Goals Source: Scofield (Manager)

x

GOAL 2: PERFORMANCE
Supports: April 1994 Corporate Strategic Plan Goal 3, Obj: 2 and Goal 4, Obj: 1

Achieve high standards of performance at Fort Calhoun Station resulting in safe, reliable and cost effective power production.

1995 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.
- Identify Programmatic performance problems through effective self assessment.

Objectives to support PERFORMANCE:

OBJECTIVE 2-1:
Achieve an annual plant capacity factor of 79% and a unit capability factor of 81%.

OBJECTIVE 2-2:
Execute the 1995 refueling outage in 49 days; emphasize shutdown plant safety.

OBJECTIVE 2-3:
Achieve all performance related 1995 performance indicator goals in the Performance Indicator Report.

OBJECTIVE 2-4:
All projects and programs are planned, scheduled, and accomplished according to schedules, resource constraints, and requirements.

OBJECTIVE 2-5:
Team/*Individual* ownership, accountability, performance and teamwork is evident by **improved plant reliability; improved ratings both INPO and NRC; reduced number of human performance errors and identification of performance problems by effective self assessment** *and for individuals as measured by the successful completion of department goals & objectives and other specific measures.*

GOAL 3: COSTS

Supports: April 1994 Corporate Strategic Plan Goal 2, Obj; 1, 2 and 3 and Goal 6, Obj: 1

Operate Fort Calhoun Station in a manner that cost effectively maintains nuclear generation as an economically viable contribution to OPPD's "bottom line". Cost consciousness is exhibited at all levels of the organization.

1995 Priorities:

- Maintain total O & M and Capital expenditures within budget.
- Streamline work processes to improve cost effectiveness.

Objectives to support COSTS:

OBJECTIVE 3-1:

Conduct the nuclear programs, projects, and activities within the approved Capital and O & M budgets.

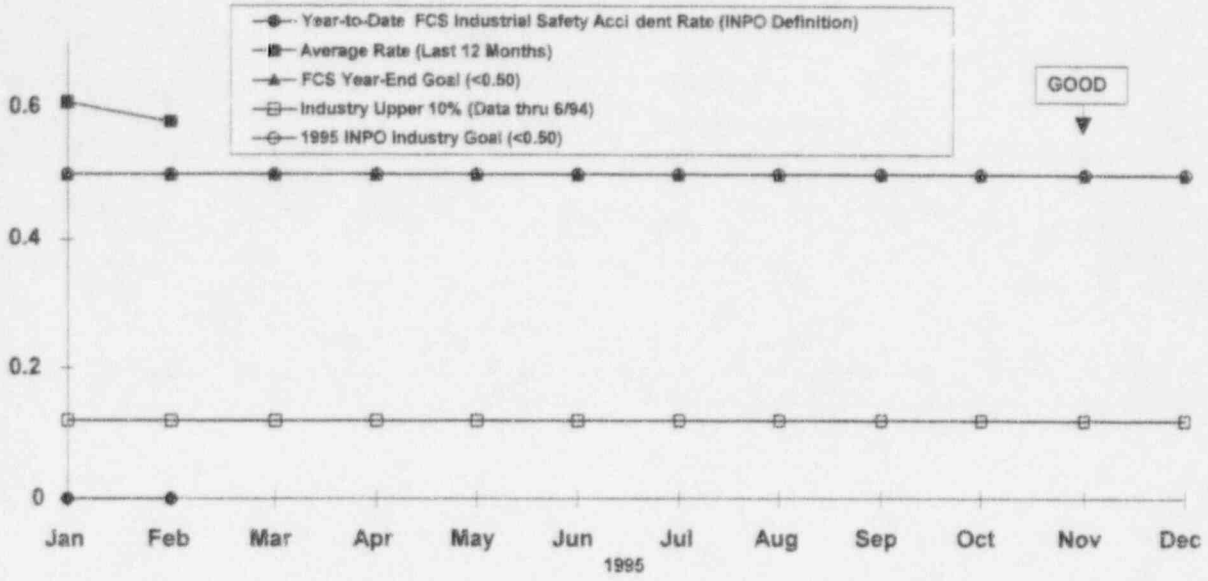
OBJECTIVE 3-2:

Implement nuclear related Opportunity Review recommendations according to approved schedules and attain the estimated cost savings.

Goals Source: Scofield (Manager)

SAFE OPERATIONS

Goal: A proactive, self-critical and safety conscious culture is exhibited throughout the nuclear organization. Individuals demonstrate professionalism through self-ownership and personal initiative and open communication



INDUSTRIAL SAFETY ACCIDENT RATE - INPO

As stated in INPO's December 1993 publication 'Detailed Descriptions of World Association of Nuclear Operators (WANO) Performance Indicators and Other Indicators for Use at U.S. Nuclear Power Plant': "The purpose of this indicator is to monitor progress in improving industrial safety performance for utility personnel permanently assigned to the station."

The INPO industrial safety accident rate value year to date was **0.0** at the end of **February 1995**. The value for the 12 months from **March 1, 1994**, through **February 28, 1995**, was **0.42**.

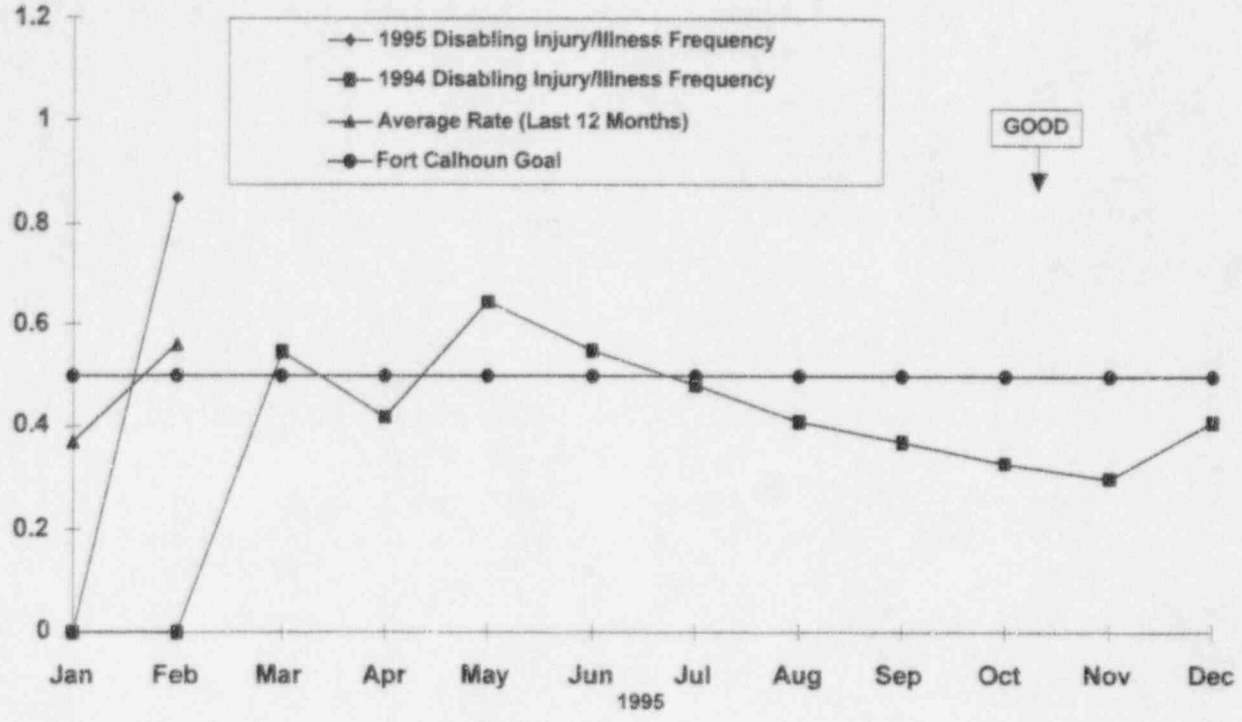
There were no lost-time accidents and no restricted-time accidents in **February 1995.** There has been **no** restricted and **no** lost-time accidents during the year 1995.

The values for this indicator are determined as follows:

$$\frac{\text{(number of restricted-time accidents + lost-time accidents + fatalities) x 200,000}}{\text{(number of station person-hours worked)}}$$

The 1995 Fort Calhoun year-end goal is $\leq$0.50. The 1995 INPO industry goal is $\leq$0.50. The approximate industry upper ten percentile value (for the period from 7/93 through 6/94) is 0.12.

Data Source: Sorensen/Skaggs (Manager/Source)
Chase/Booth (Manager/Source)
Accountability: Chase/Conner
Adverse Trend: None



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

This indicator shows the 1995 disabling injury/illness frequency rate. The 1994 disabling injury/illness frequency rate is also shown.

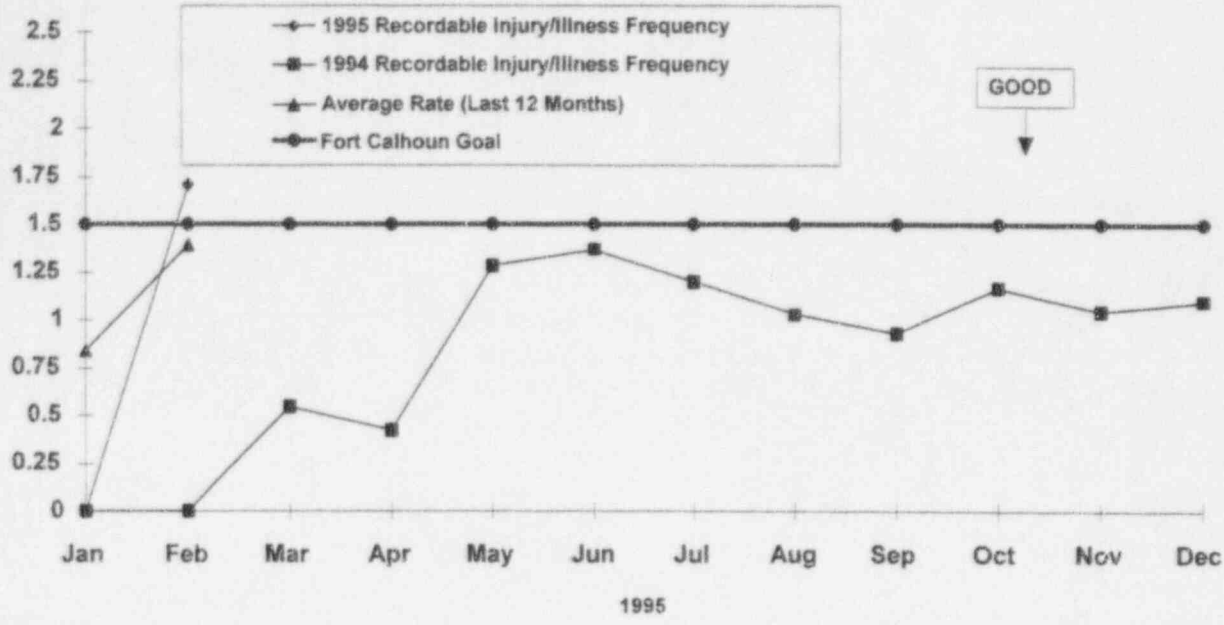
The disabling injury/illness frequency rate year to date was **0.85** at the end of **February 1995**. There was **one** disabling injury/illness reported for the month. There has been **one** disabling injury in 1995. This disabling injury occurred as **the result of an employee climbing stairs. When he got to the top step, he placed his foot down on other side of a ledge, and twisted his ankle.**

The disabling injury/illness frequency rate for the 12 months from **March 1, 1994**, through **February 1995**, was **0.56**.

The 1995 Fort Calhoun year-end goal for this indicator is a maximum value of 0.5.

Date Source: Sorensen/Skaggs (Manager/Source)
Accountability: Chase/Conner
Adverse Trend: None

SEP 25, 26 & 27



RECORDABLE INJURY/ILLNESS FREQUENCY RATE (LOST-TIME ACCIDENT RATE)

This indicator shows the 1995 recordable injury/illness frequency rate. The 1994 recordable injury/illness cases frequency rate is also shown.

A recordable injury/illness case is reported if personnel from any of the Nuclear Division 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.

There have been **two** recordable injury/illness cases in 1995. The recordable injury/illness cases frequency rate year to date was **1.71** at the end of **February 1995**. There were **two** recordable injury/illness cases reported for the month of **February**: **(1) a fall on ice resulting in a sore left wrist and (2) a security officer broke a tooth while practicing self defense tactics.**

The recordable injury/illness cases frequency rate for the 12 months from **March 1, 1994**, through **February 28, 1995**, was **1.39.**

The 1995 Fort Calhoun year-end goal for this indicator is a maximum value of 1.5.

Data Source: Sorensen/Skaggs (Manager/Source)
Accountability: Conner
Adverse Trend: None

SEP 15, 25, 26 & 27

This performance indicator has been cancelled and will be replaced by a new graph in next month's report.

CLEAN CONTROLLED AREA CONTAMINATIONS ≥1,000 DISINTEGRATIONS/ MINUTE PER PROBE AREA

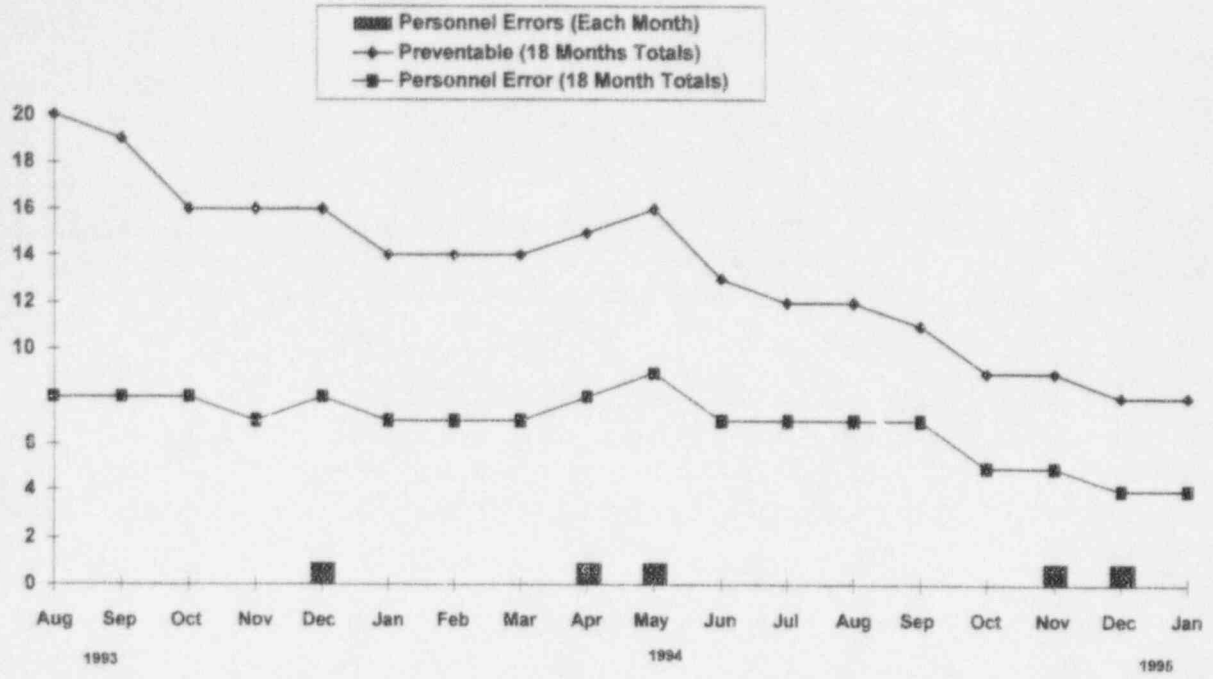
This indicator shows the Personnel Contamination Events in the Clean Controlled Area for contaminations ≥1,000 disintegrations/minute per probe area for the reporting month. This includes the contamination events associated with the spent fuel rerack project.

There were 0 contamination events in January 1995. There has been a total of 0 contamination events in 1995.

The 1995 year-end goal for this indicator is a maximum of 54 contamination events.

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

SEP 15 & 54



PREVENTABLE/PERSONNEL ERROR LERs

This indicator depicts 18-month totals for numbers of "Preventable" and "Personnel Error" LERs.

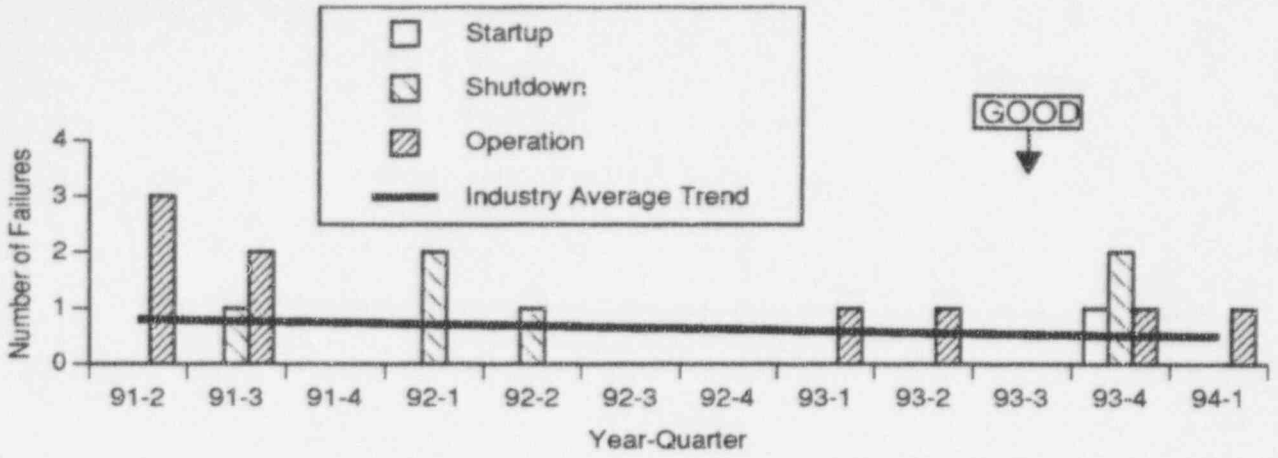
The graph shows the 18-month totals for preventable LERs, the 18-month totals for Personnel Error LERs and the Personnel Error totals for each month. The LERs are trended based on the LER event date as opposed to the LER report date.

In **January 1995**, there were **no** events which was subsequently reported as an LER. No LERs were categorized as Preventable or as a Personnel Error.

The total preventable/personnel error LERs for the year 1995 (through **January 31, 1995**) is **zero**. The total Personnel Error LERs for the **year 1995** is **zero**. The total Preventable LERs for the year is **zero.**

The 1995 goal for this indicator are that the year-end values for the 18-month totals be no more than 12 Preventable and 5 Personnel Error LERs. (Note: Because this indicator is based on an 18-month period, the 1994 year-end totals will include LERs occurring in 1995, 1994 and the last 5 months of 1993).

Date Source: Trausch/Cavanaugh (Manager/Source)
Accountability: Chase
Adverse Trend: None



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 first quarter of 1993 and the first quarter of 1994:

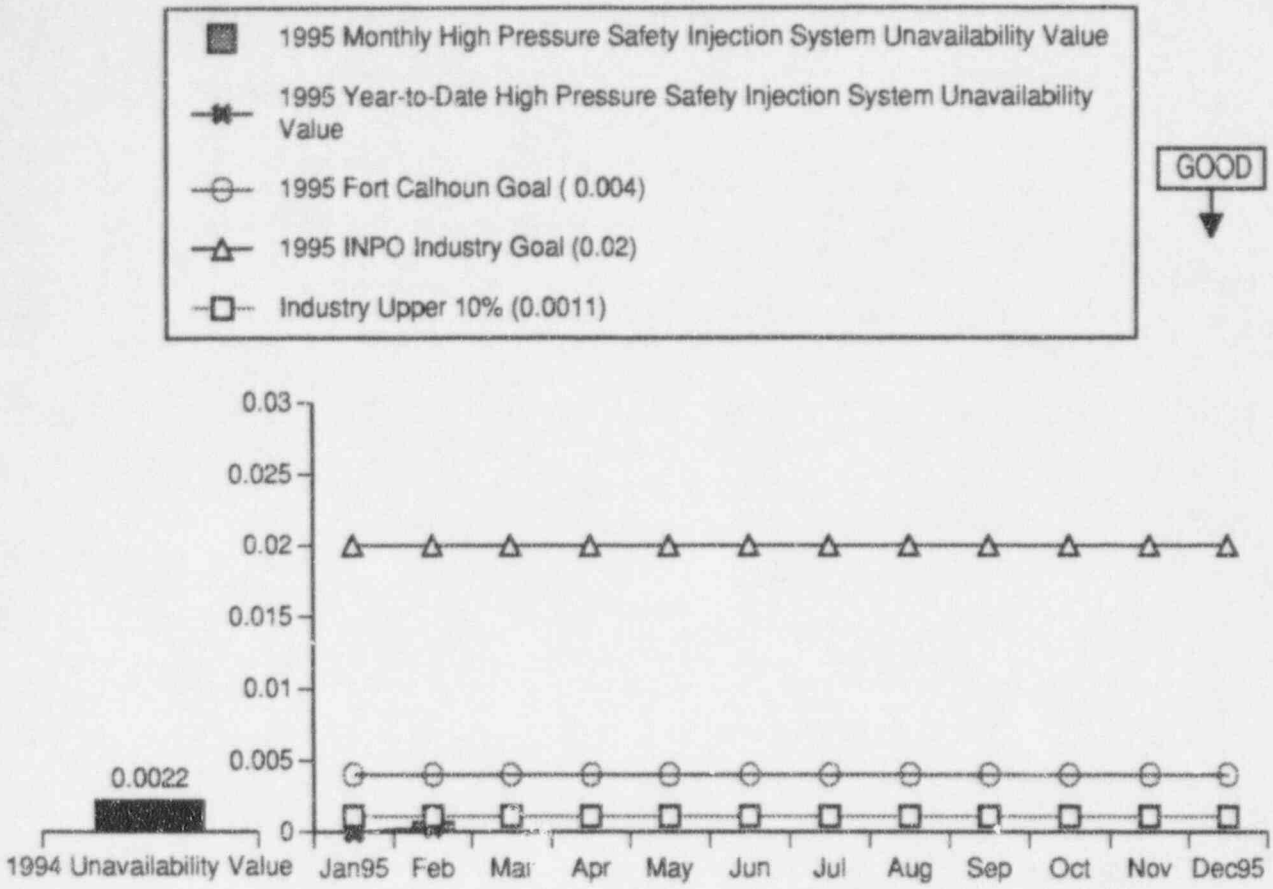
First Quarter 1993: The SG low pressure scram signal block reset values, for all 4 channels of both SGs, were greater than the allowed limits, rendering this scram input inoperable during certain operating conditions.

Second Quarter 1993: A section of the piping configuration for the borated water source of the safety injection system was not seismically qualified. This could have resulted in a failure of the system to meet design requirements during a seismic event.

Fourth Quarter 1993: 1) During surveillance testing, both PORVs for the LTOP system failed to open during multiple attempts. The failures were a result of differential expansion caused by a loop seal, inappropriate venting line back pressure, and cracked valve disks; 2) Calibration errors of the offsite power low signal relays could have prevented offsite power from tripping and the EDGs from starting in the required amount of time during a degraded voltage condition; 3) Both AFW pumps were inoperable when one was removed from service for testing and the control switch for the other pump's steam supply valve was out of the auto position; 4) Only one train of control room ventilation was placed in recirc when both toxic gas monitors became inoperable. Later during surveillance, the other train auto-started and brought outside air into the control room for a six minute period.

First Quarter 1994: A design basis review determined that an ESF relay could result in loss of safety injection and spray flow, due to premature actuation of recirculation flow.

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



HIGH PRESSURE SAFETY INJECTION SYSTEM
SAFETY SYSTEM PERFORMANCE

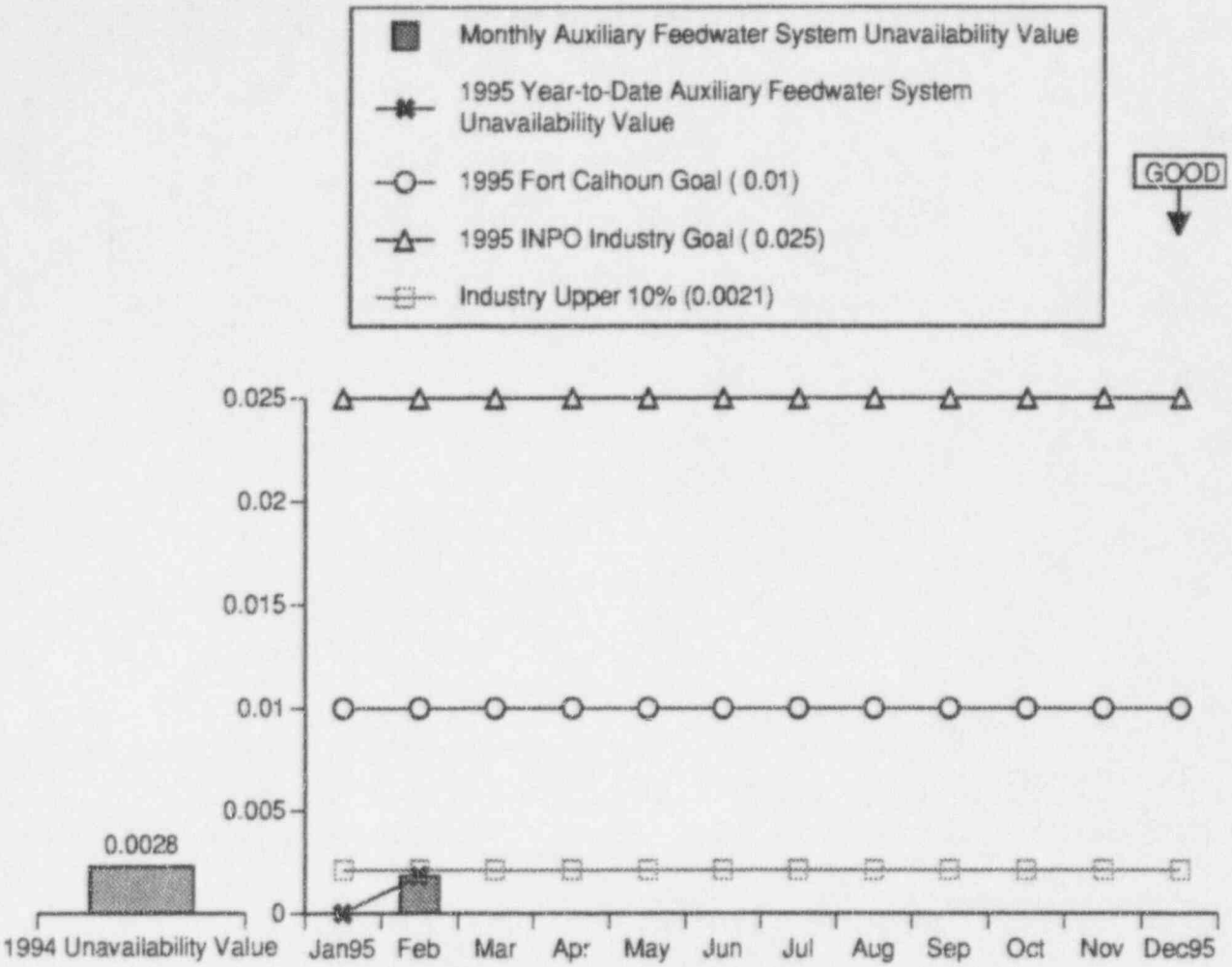
This indicator shows the High Pressure Safety Injection System unavailability value, as defined by INPO in the Safety System Performance Indicator Definitions, for the reporting month.

The High Pressure Safety Injection System unavailability value for the month of February 1995 was 0.0007. There was 1.03 hours of planned unavailability for surveillance tests, and no hours of unplanned unavailability, during the month. The 1995 year-to-date HPSI unavailability value was 0.0003 at the end of the month. The unavailability value for the last 12 months was 0.0023.

There has been no hours of unplanned unavailability for the HPSI system in 1995.

The 1995 Fort Calhoun year-end goal for this indicator is a maximum value of 0.004. The 1995 INPO industry goal is 0.02 and the industry upper ten percentile value (for the three year period from 7/91 through 6/94) is approximately 0.001.

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



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.

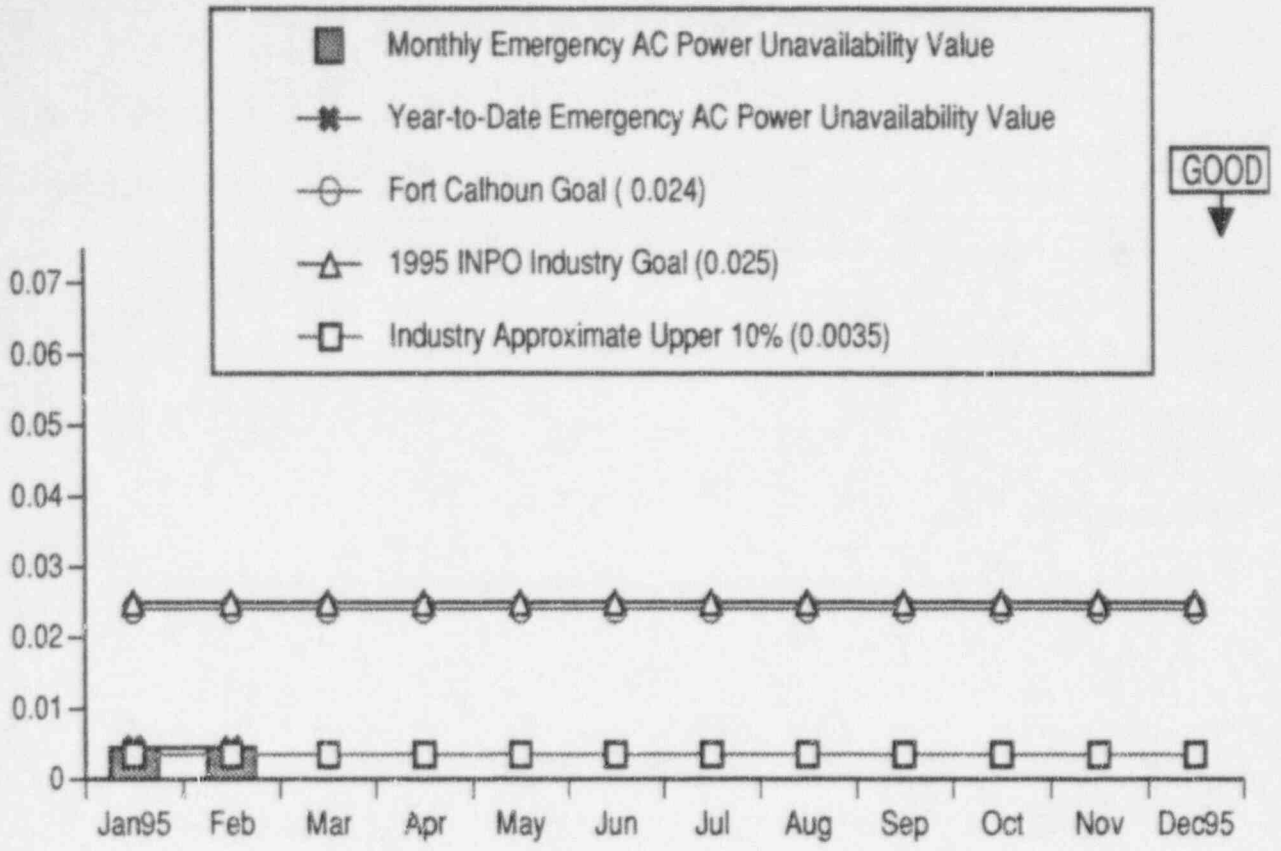
The Auxiliary Feedwater System Unavailability Value for February 1995 was 0.0018. There were 1.7 hours of planned and no hours of unplanned unavailability during the month. The year-to-date unavailability value was 0.0018 and the value for the last 12 months was 0.0027 at the end of the month.

There has been a total of 1.7 hours of planned unavailability and 0.0 hours of unplanned unavailability for the auxiliary feedwater system in 1995.

The 1995 Fort Calhoun year-end goal for this indicator is a maximum value of 0.01.

The 1995 INPO industry goal is 0.025 and the industry upper ten percentile value is approximately 0.002.

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



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.

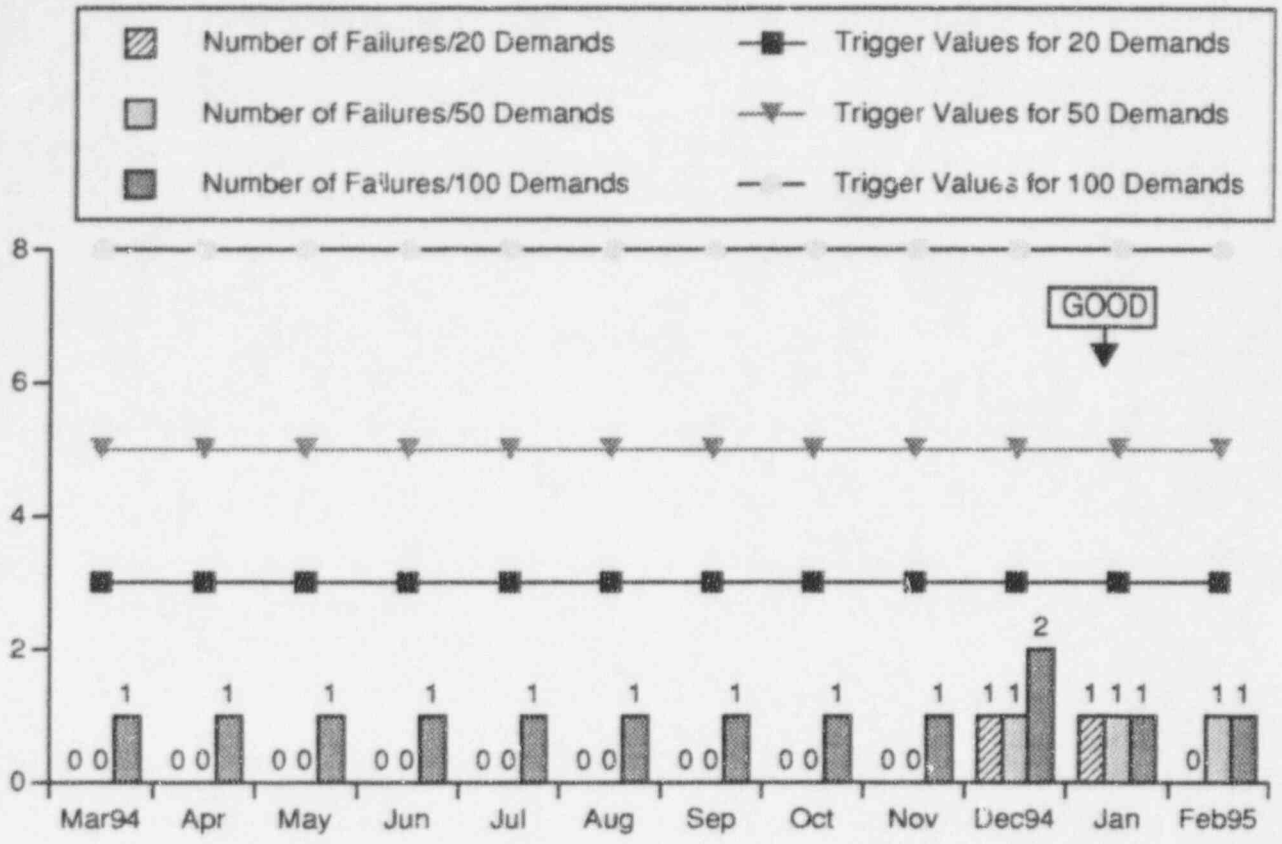
The Emergency AC Power System unavailability value for February 1995 was 0.0045. During the month, there were 6.0 hours of planned unavailability for testing, and 0.0 hours of unplanned unavailability. The Emergency AC Power System unavailability value year-to-date was 0.0045 and the value for the last 12 months was 0.01 at the end of the month.

There has been a total of 12.7 hours of planned unavailability and 0.0 hours of unplanned unavailability for the emergency AC power system in 1995.

The 1995 Fort Calhoun year-end goal for this indicator is a maximum value of 0.024.

The 1995 INPO industry goal is 0.025 and the industry upper ten percentile value is approximately 0.0035.

Data Source: Jaworski/Ronning
Accountability: Jaworski/Ronning
Adverse Trend: None

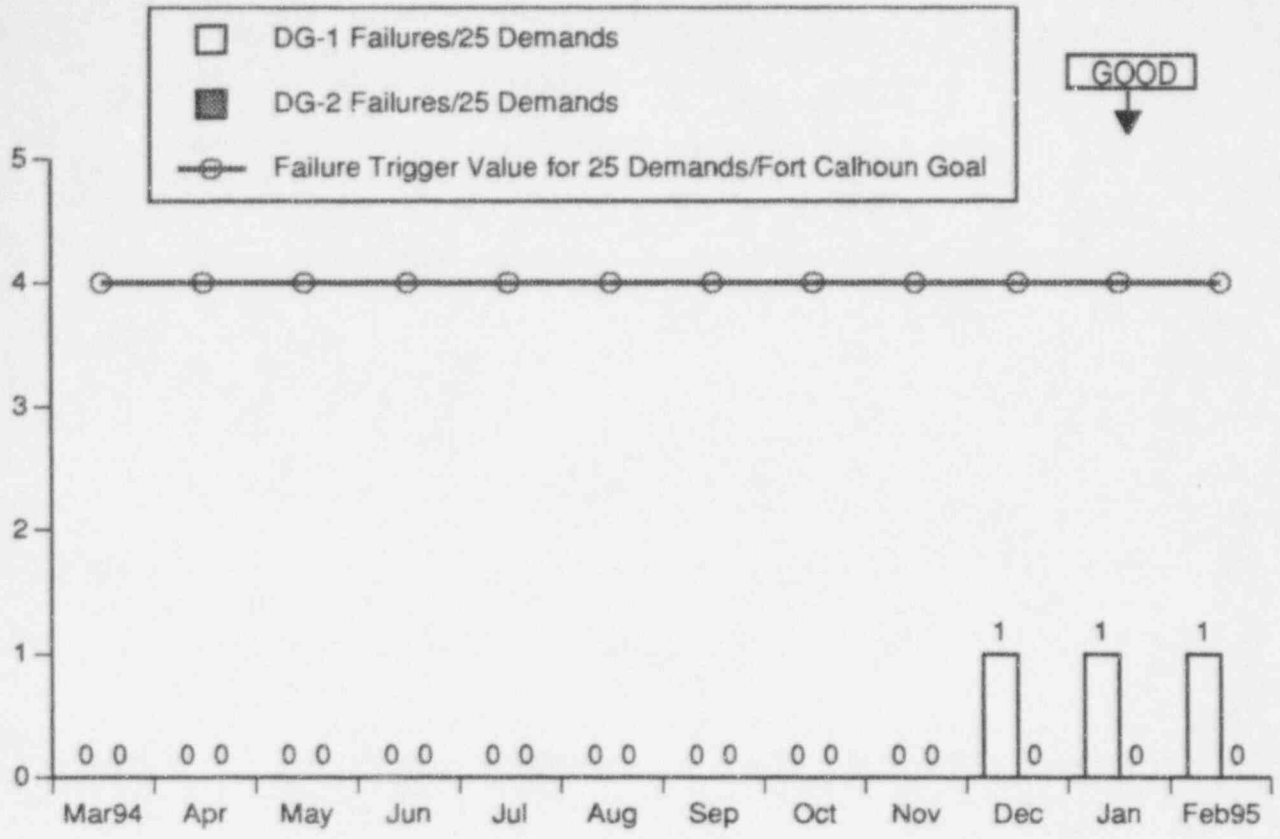


EMERGENCY DIESEL GENERATOR UNIT RELIABILITY

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 1995 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



DIESEL GENERATOR RELIABILITY (25 DEMANDS)

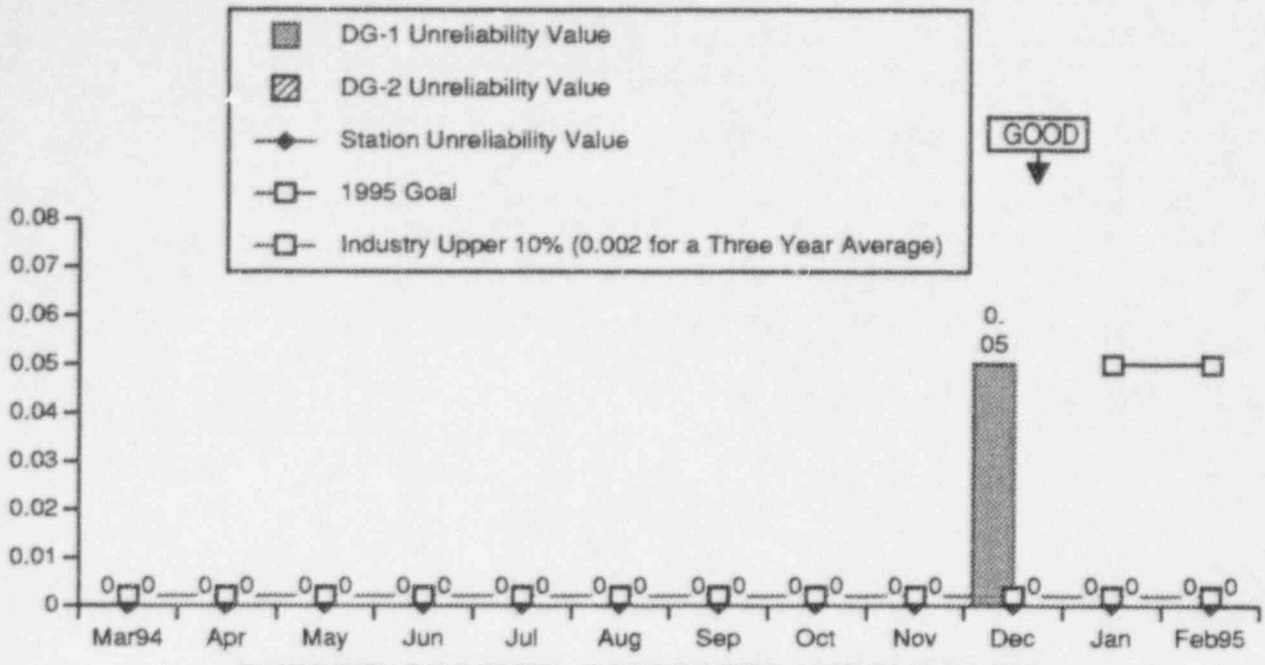
This indicator shows the number of failures experienced by each emergency diesel generator during the last 25 start demands and the last 25 load-run demands. A trigger value of 4 failures within the last 25 demands is also shown. This trigger value of 4 failures within 25 demands is the Fort Calhoun goal for 1995.

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 experienced one failure during the last 25 demands on the unit. On December 8, 1994, DG-1 failed its monthly surveillance test because the inlet air damper would not open. The cause of the failure was found to be ice buildup on the damper louvers from a previous snowstorm.

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



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 February 1995 was 0.00. The 1995 goal for this indicator is a maximum value of 0.05.

For DG-1: There were 4 start demands for the reporting month without a failure. In addition, there was 1 load-run demand without a failure.

For DG-2: There were 6 start demands for the reporting month without a failure. In addition, there was 1 load-run demand without a failure.

Emergency diesel generator unreliability is calculated as follows:

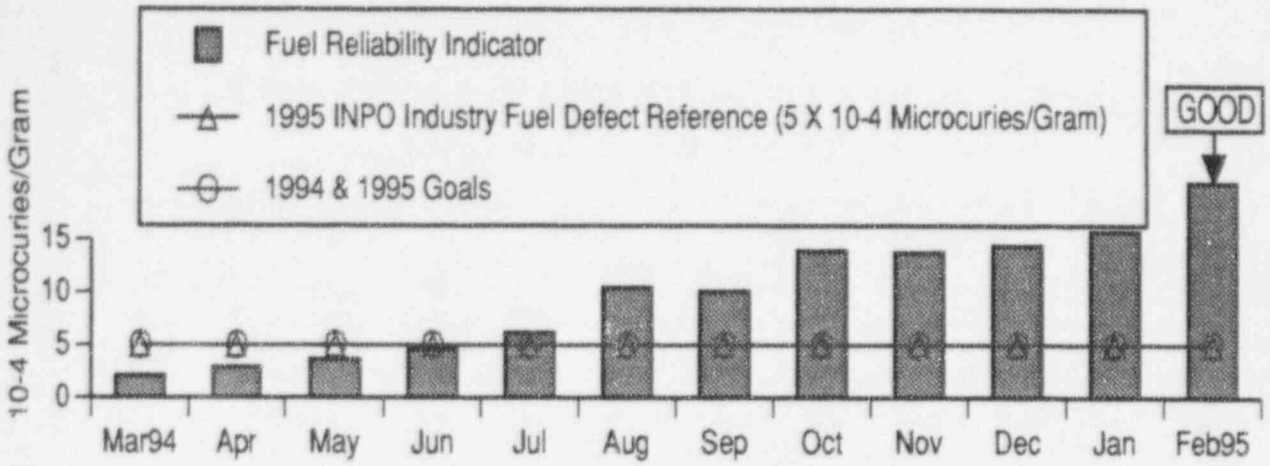
value per DG = SU + LU - (SU x LU)

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
Adverse Trend: None



FUEL RELIABILITY INDICATOR

The Fuel Reliability Indicator (FRI) value for February 1995 was 20.32 x 10-4 microcuries/gram. The purpose of the FRI is to monitor industry progress in achieving and maintaining a high level of fuel integrity.

The February Fuel Reliability Indicator (FRI) value, 20.32 x 10-4 microcuries/gram, which is greater than the INPO zero defect threshold value, indicates potential defects in the core. Fission product activity data from Cycle 15 full power operation, power reductions and shutdowns show a steady Xenon-133 activity increase and minimal Iodine spiking.

The plant operated at full power during the first ten days of the month and above 95% until the 16th. A shutdown occurred on the 21st of February. The February FRI was calculated based on the average fission product activities present in the reactor coolant during the steady state full power operation days, February 1 through 16.

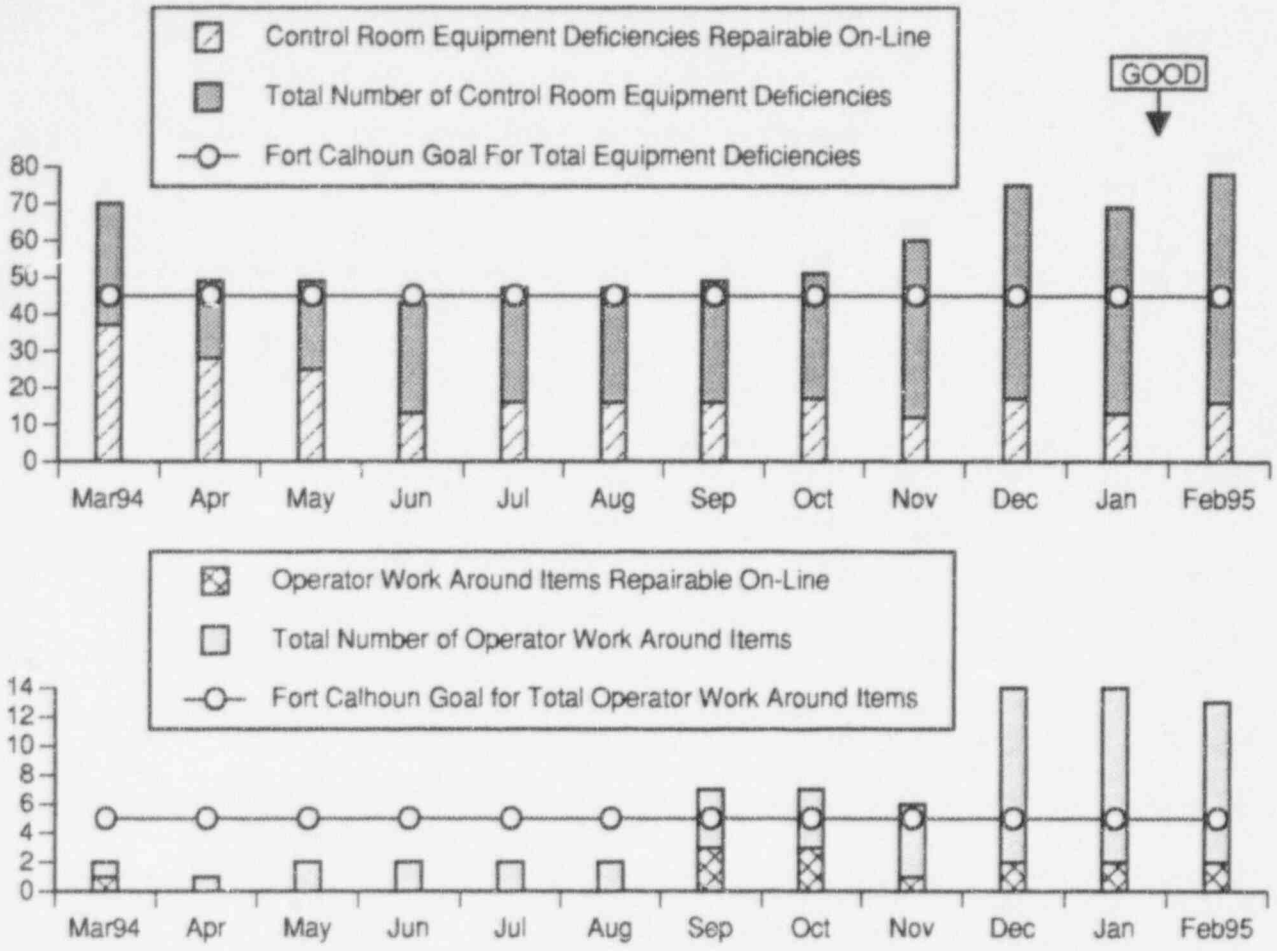
The February Fri value of 20.32 x 10-4 microcuries/gram indicated an increase, from the January value of 15.69 x 10-4 microcuries/gram. The 20.32 x 10-4 microcuries/gram exceeds the 1995 operational goal.

Fission product activity data from February full power operation showed a slight Xenon-133 activity increase but no iodine spiking. The Westinghouse technical expert on fuel reliability concluded that there is most likely one or two defective fuel assemblies (operated at core average assembly power levels) in the Cycle 15 core. This prediction is based on a change in the Xe-133 to I-131 ratio and the Cs-134 to Cs-137 ratio determined during reactor coolant chemistry analysis performed during the 24-hour period following shutdown.

Siemens Power Corporation was selected to provide failed fuel inspection services consisting of sipping and ultrasonic testing, and Westinghouse the fuel vendor, was notified that a reconstitution effort would be required.

The INPO September 1992 report, "Performance Indicators for US 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 x 10-4 microcuries/gram indicates a high probability of reactor core 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 Threshold." Each utility will evaluate whether the core is defect free or not. The 1995 Fort Calhoun Station FRI Performance Indicator goal is to maintain a monthly FRI below 5.0 x 10-4 microcures/gram.

Data Source: Holthaus/Weber
Accountability: Chase/Spilker
Adverse Trend: An Adverse Trend is indicated based on continued increases in the FRI value.



NUMBER OF CONTROL ROOM EQUIPMENT DEFICIENCIES

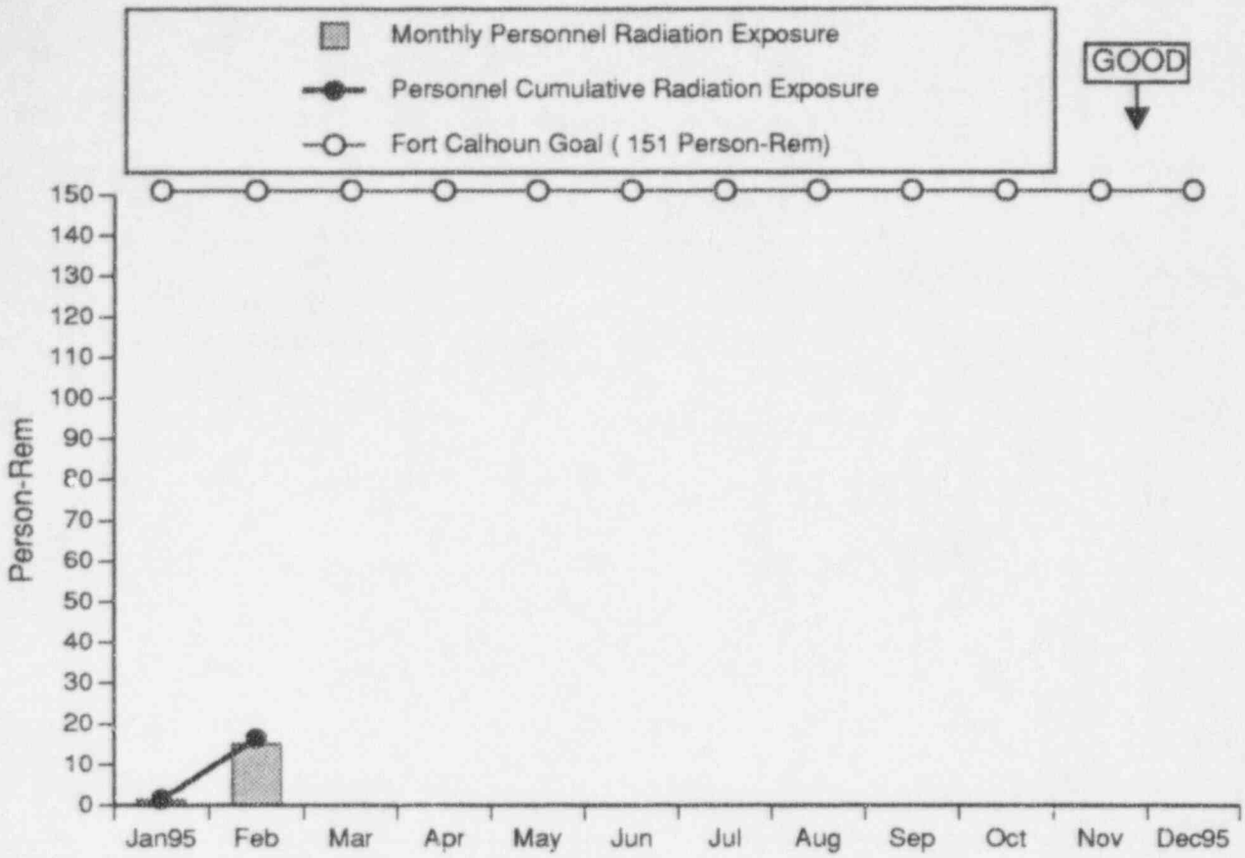
This indicator shows the number of control room equipment deficiencies that are repairable during plant operations (on-line), the number of outstanding control room equipment deficiencies, the number of Operator Work Around (OWA) Items repairable on-line, the number of outstanding OWAs and the Fort Calhoun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

There was a total of 62 control room equipment deficiencies at the end of February 1995. 16 of these deficiencies are repairable on-line and 46 require a plant outage to repair.

There were 11 OWA items identified at the end month on equipment tags: VA-46A on C/R Panel AI-106A; CH-208, FIA-3115, PT-3196, RC-3A-1, RC-3C and RC-3D on C/R Panel CB-1/2/3; FW-54, ,HIC-1180, and MOV-D1 on C/R Panel CB-10/11; and M/0500 on C/R Panel CB-4. 9 OWAs require an outage to repair.

The 1995 Fort Calhoun monthly goal for this indicator is a maximum of 45 deficiencies and 5 OWAs. This indicator is expected to be within the goal following the 1995 refueling outage.

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



COLLECTIVE RADIATION EXPOSURE

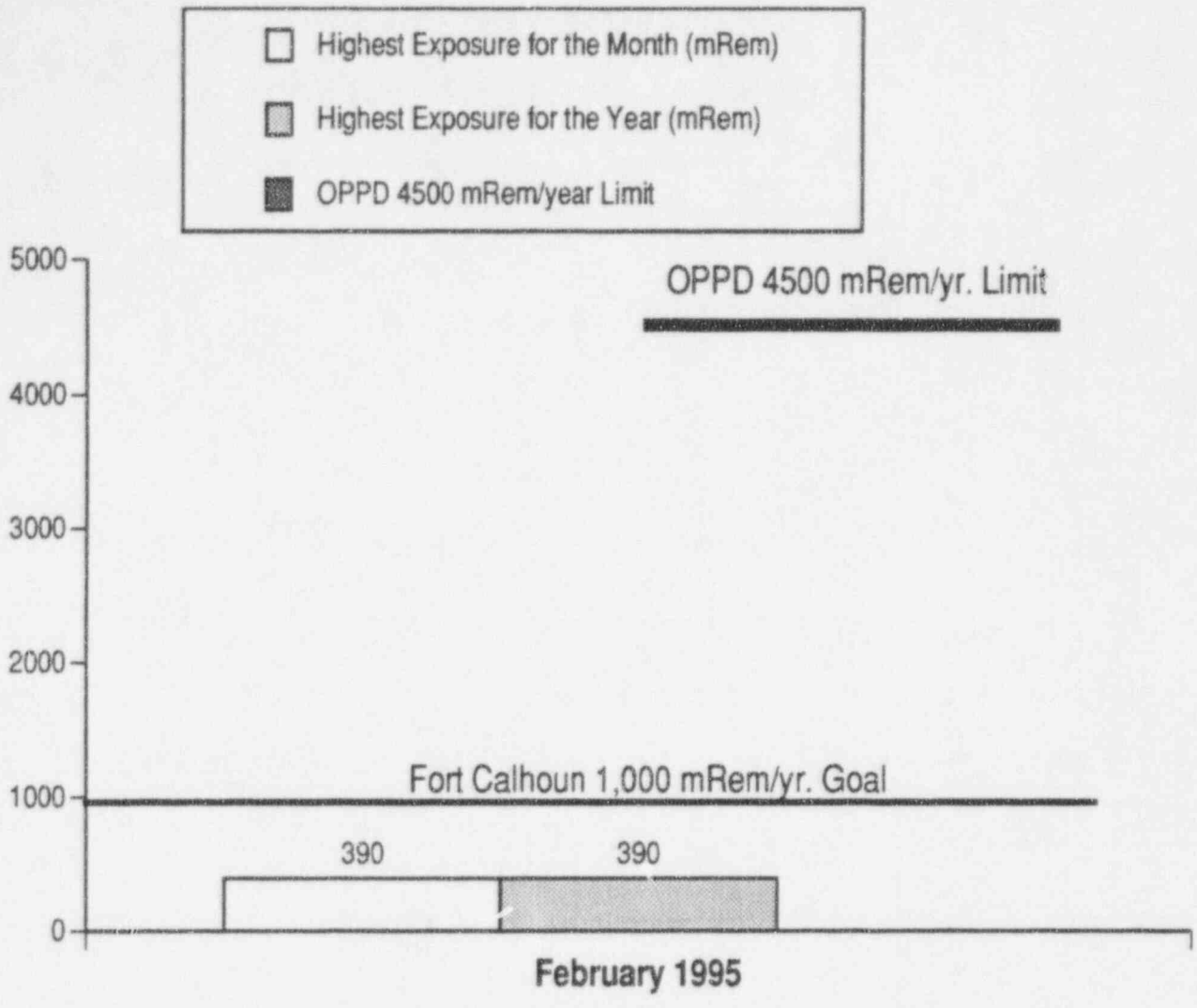
The 1995 Fort Calhoun goal for collective radiation exposure is less than 151 person-Rem.

The exposure for February 1995 was 14.939 person-Rem.
The year-to-date exposure was 16.263 person-Rem.

The 1995 INPO industry goal for collective radiation exposure is 185 person-rem per year. The approximate industry upper ten percentile value (for the three-year period from 7/91 through 6/94) is 106 person-rem per year. The yearly average for Fort Calhoun Station for the three years from 3/92 through 2/95 was 128.581 person-rem per year.

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

SEP 54



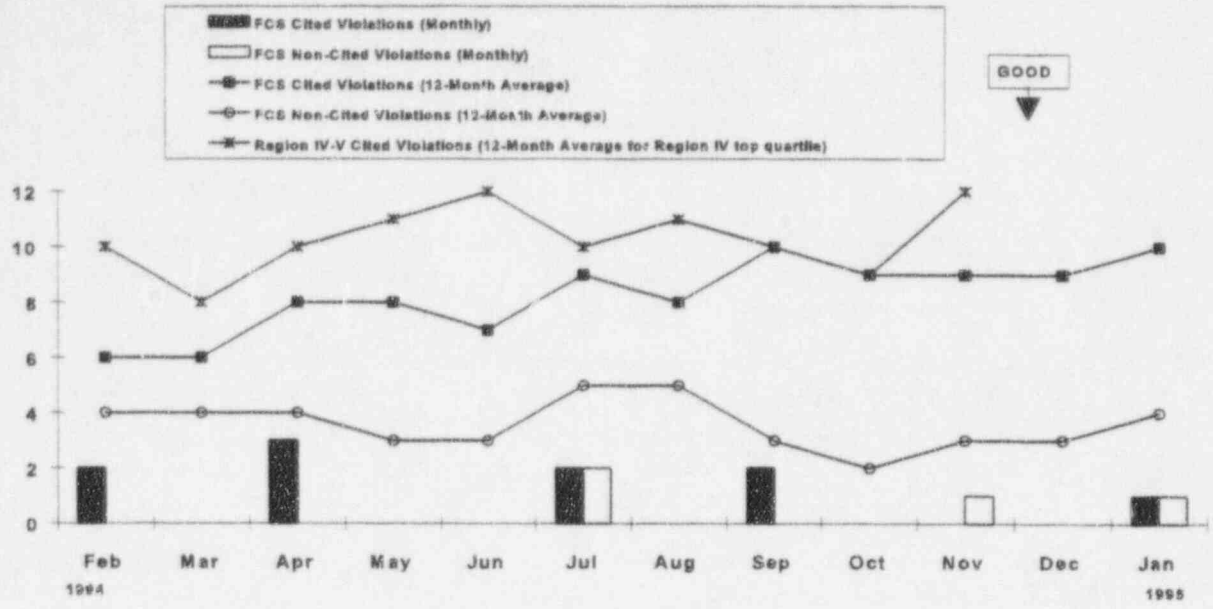
MAXIMUM INDIVIDUAL RADIATION EXPOSURE

During February 1995, an individual accumulated 390 mRem, which was the highest individual exposure for the month.

The maximum individual exposure for the year was 390 mRem at the end of February.

The OPPD limit for the maximum yearly individual radiation exposure is 4,500 mRem/year. The 1995 Fort Calhoun year-end goal is a maximum of 1,000 mRem.

Date Source: Chase/Little (Manager/Source)
Accountability: Chase/Lovett
Adverse Trend: None



VIOLATION TREND

This new indicator illustrates a 12-month trend for Fort Calhoun Station Cited Violations, Non-Cited Violations. Additionally, Cited Violations for the Top Quartile plant in Region IV will be trended. The Fort Calhoun Station cited and non-cited violations will be illustrated monthly for the past 12 months.

The trend for the top quartile Region IV plant will lag two-three months behind the Fort Calhoun Station violation trend. This is necessary to compile the information from the other Region IV plants.

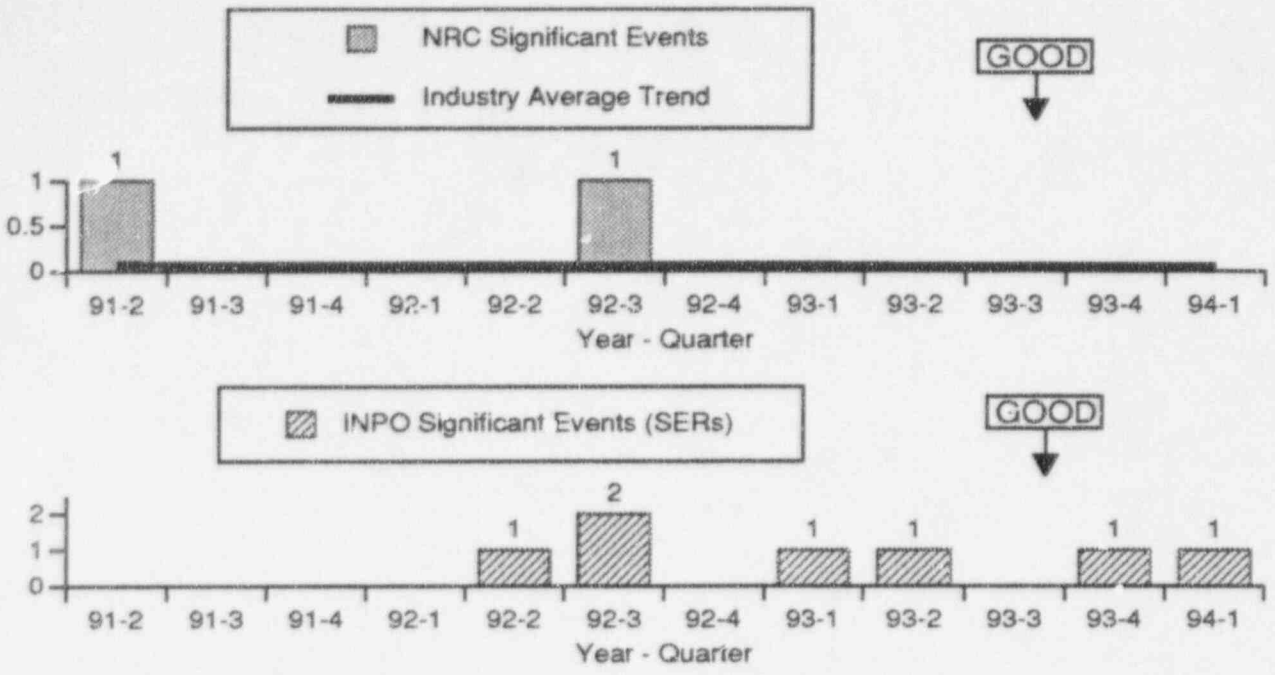
IER No.	Title
95-02	Resident Monthly Inspection

To date, OPPD has received **no** violations for inspections conducted in 1995.

Level III Violations	(0)
Level IV Violations	(0)
Level V Violations	(0)
Non-Cited Violations	(0)

The 1995 Fort Calhoun Station goal for this performance indicator is to be at or below the cited violation trend for the top quartile in Region IV.

Date Source: Trausch/Cavanaugh (Manager/Source)
Accountability: Trausch
Adverse Trend: An adverse trend is indicated based on not meeting the goal.



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 1994:

Second Quarter 1991: Safety related electrical 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 fourth quarter of 1991 and the first quarter of 1994:

Second Quarter 1992: Intake of Transuranics during Letdown Filter Change-out.

Third Quarter 1992: 1) RC-142 LOCA; and 2) Premature Lift of RC-142.

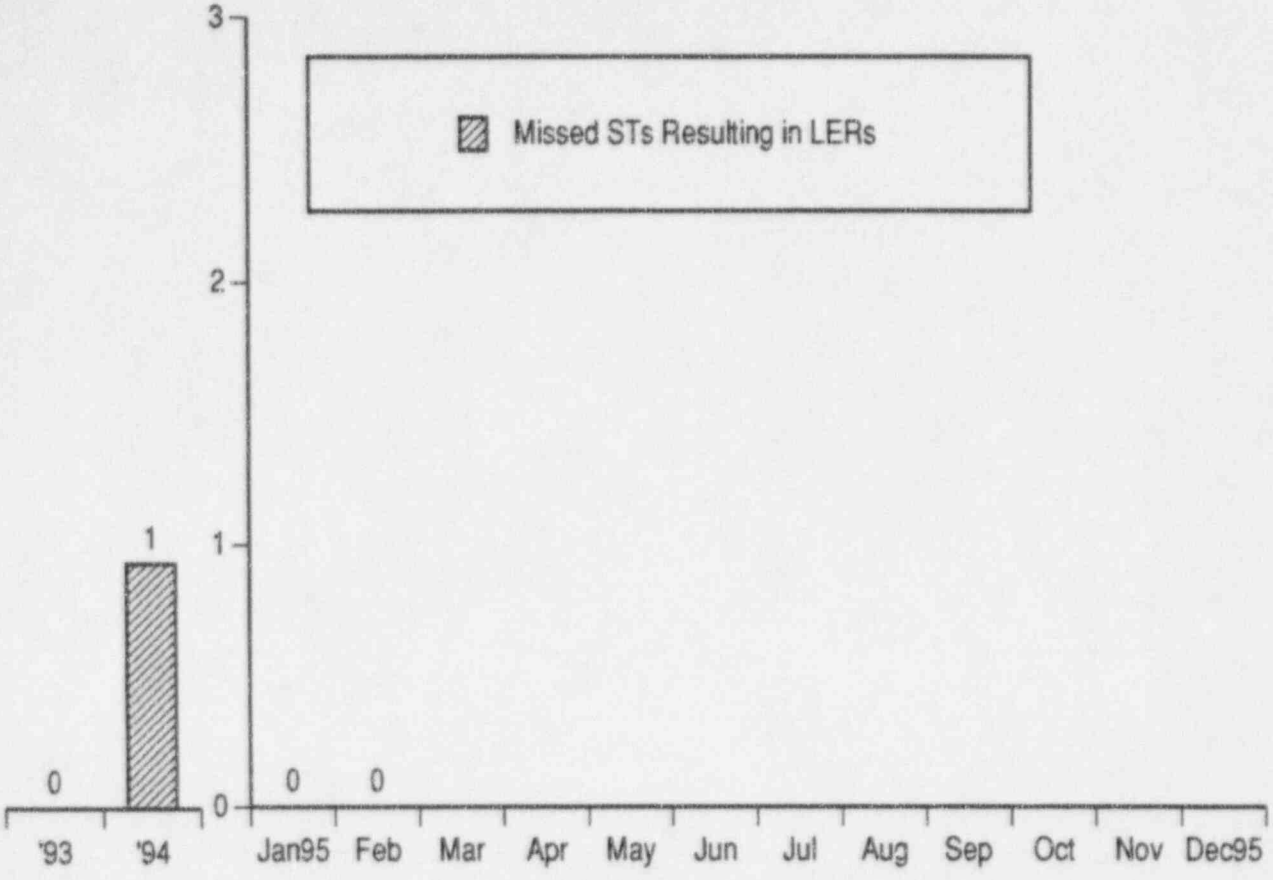
First Quarter 1993: Inoperability of Power Range Nuclear Instrumentation Safety Channel D.

Second Quarter 1993: SBFU Breaker Relay (Switchyard) Plant Trip

Fourth Quarter 1993: Unexpected CEA Withdrawal.

First Quarter 1994: Unplanned dilution of Boron concentration in the RCS.

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



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 February 1995.

On December 28, 1994, during the performance of OP-ST- SHIFT-0001, data was not entered for Steam Generator level per Surveillance Requirements.

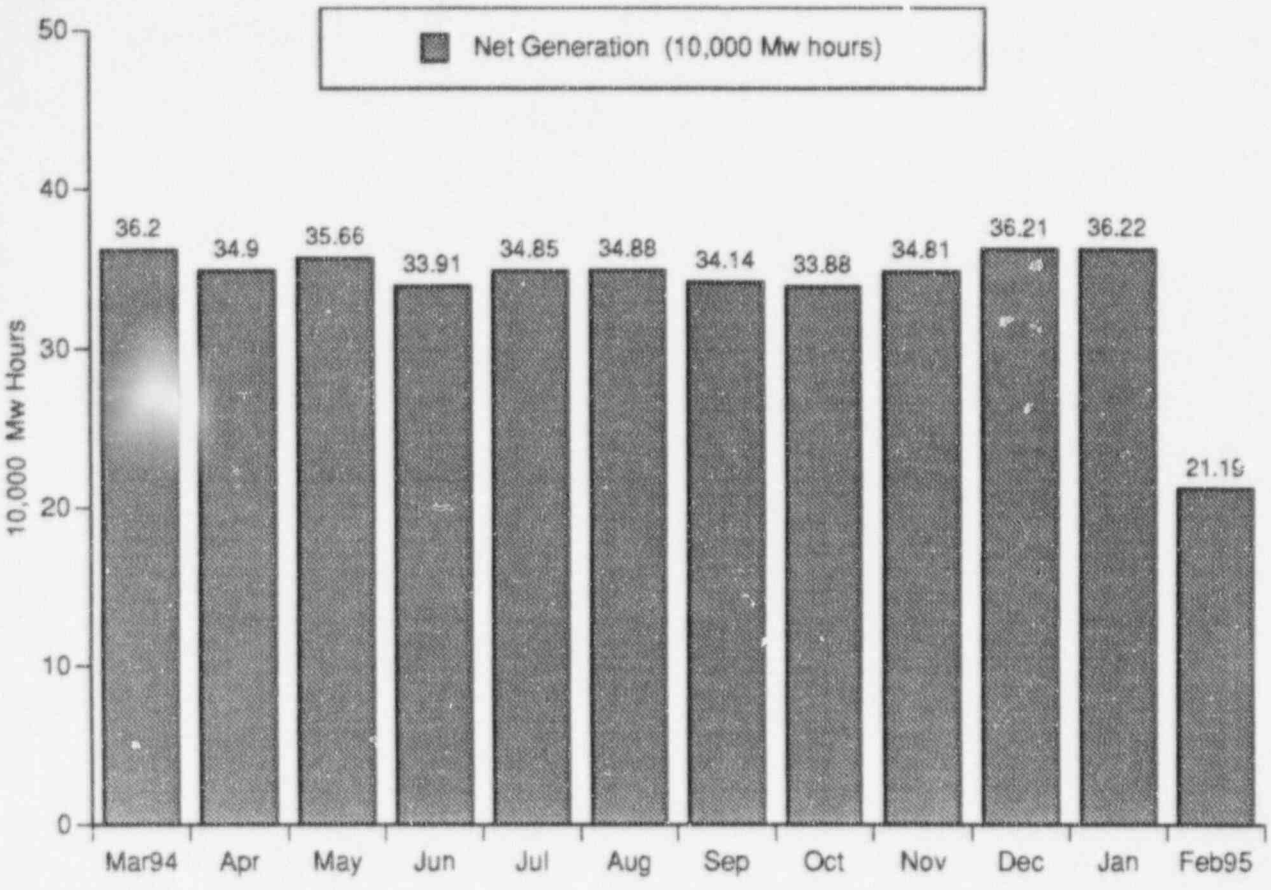
The 1995 Fort Calhoun monthly goal for this indicator is 0.

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

SEP 60 & 61

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.

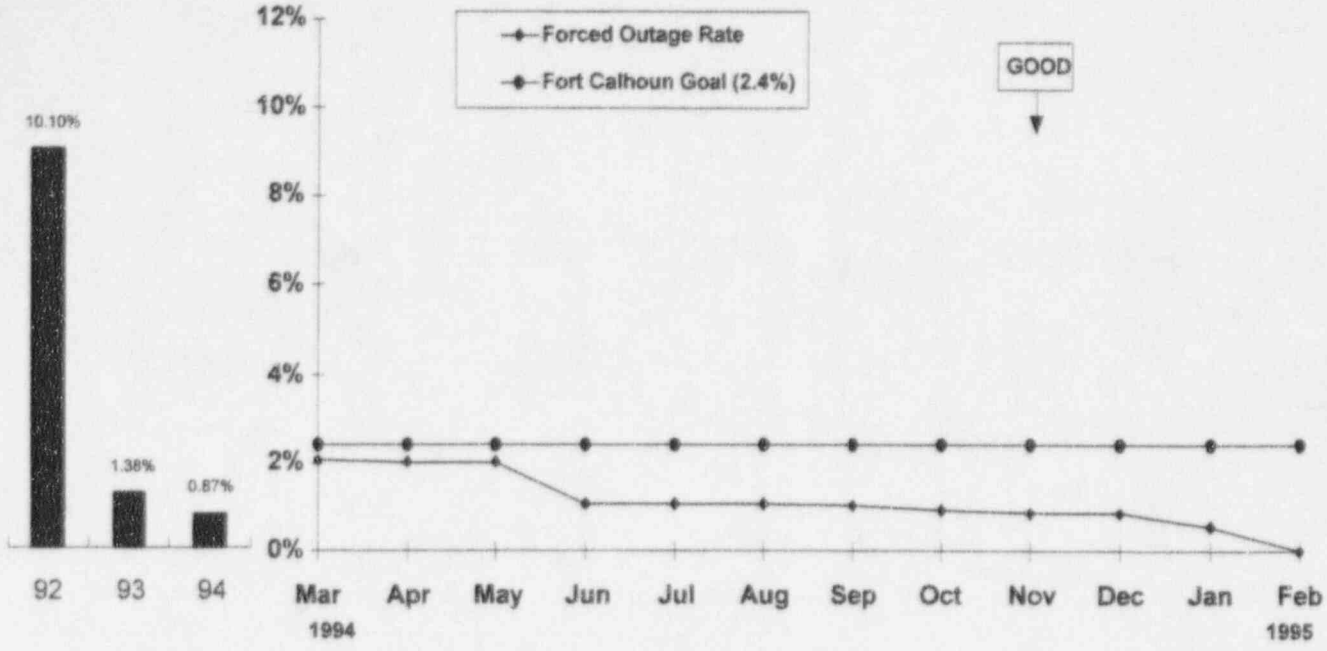


STATION NET GENERATION

During the month of February 1995, a net total of 211,926 MWH was generated by the Fort Calhoun Station. Cumulative net generation for Cycle 15 was 5,043,886 at the end of the month. Planned energy losses for the month were attributable to the coastdown for the refueling outage which began on February 20.

Unplanned energy losses for the month of February 1995 were attributable to a problem with the control element assembly seal leakage, which prompted the decision to begin the 1995 refueling outage earlier than planned.

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



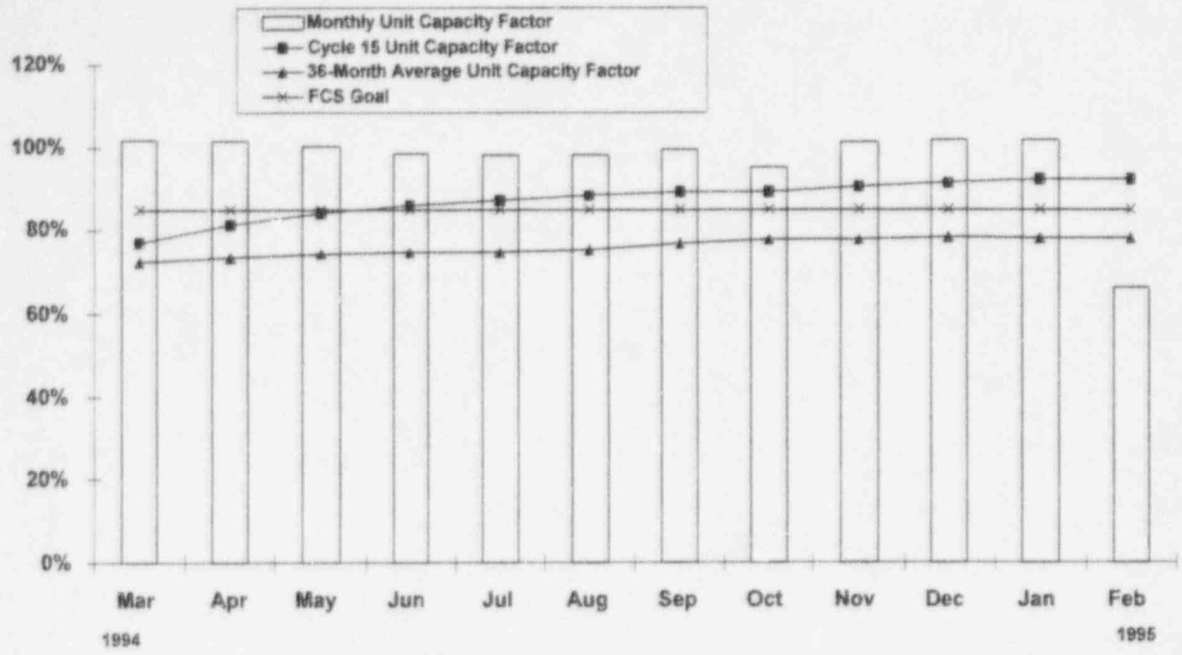
FORCED OUTAGE RATE

The forced outage rate (FOR) was reported as **0.0%** for the twelve months from **March 1, 1994, through February 28, 1995.** The 1995 year-to-date FOR was **0.0%** at the end of the month.

During the month of February, Fort Calhoun Station operated at a nominal 100% power until February 18. A plant shutdown was initiated when the bleedoff temperature of Control Element Drive Mechanism #35 increased beyond 240 degrees F. The shutdown marked the strart of the plant's 15th refueling outage, 19 days prior to the originally scheduled start date.

The 1995 Fort Calhoun year-end goal for this indicator is a maximum value of 2.4%.

Data Source: Monthly Operations Report
Accountability: Chase
Positive Trend



UNIT CAPACITY FACTOR

This indicator shows the plant monthly Unit Capacity Factor, the Unit Capacity Factor for the current fuel cycle and the 36-month average Unit Capacity Factor.

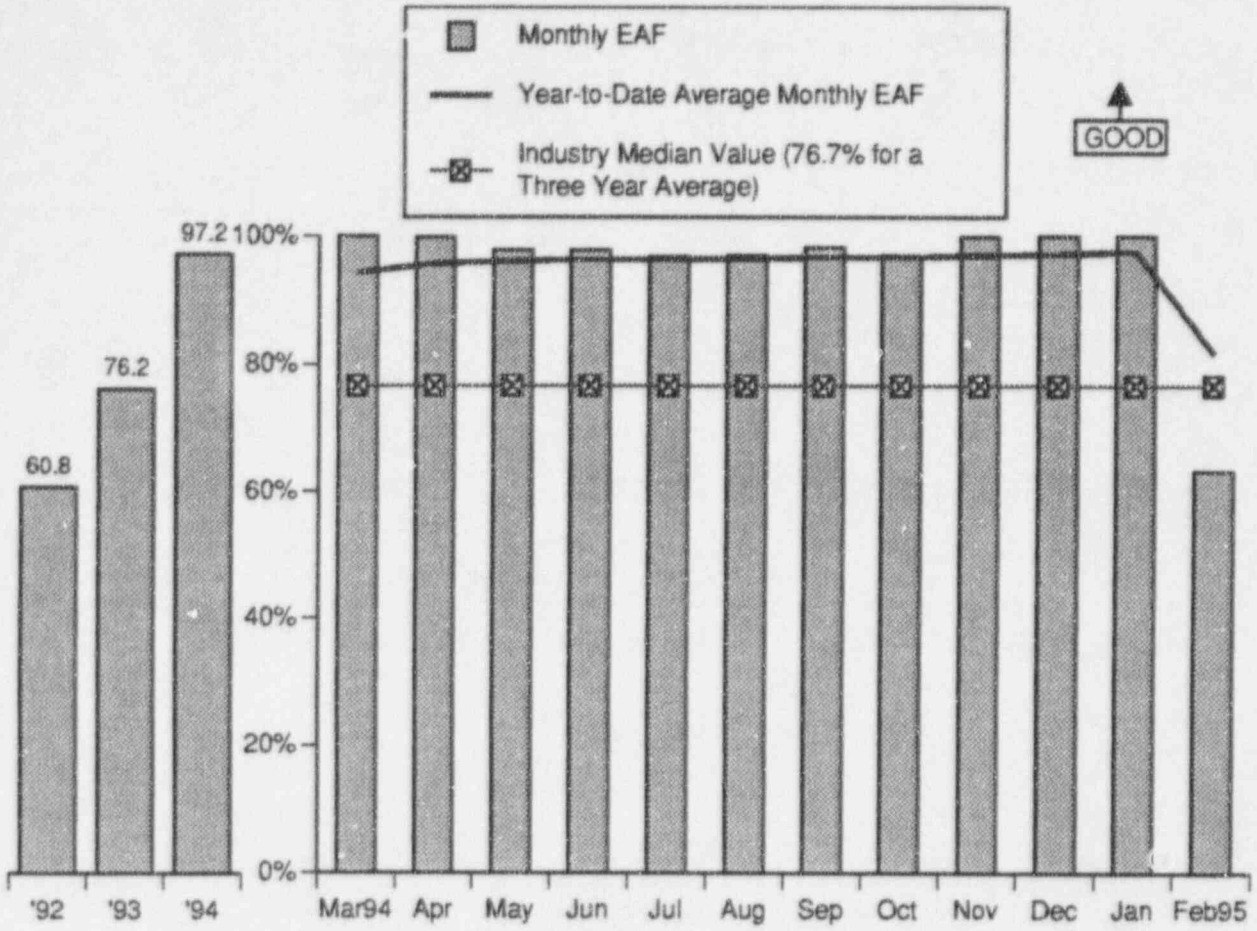
The Unit Capacity Factor of **February 1995** was reported as **66.0%**. During the month of February, Fort Calhoun Station operated at a nominal 100% power until February 18. A plant shutdown was initiated when the bleedoff temperature of Control Element Drive Mechanism #35 increased beyond 240 degrees F. The shutdown marked the start of the plant's 15th refueling outage, 19 days prior to the originally scheduled start date.

At the end of the month, the Cycle 15 Unit Capacity Factor was **90.1%**, and the Unit Capacity Factor for the last 36 months was **79.8%**.

The Unit Capacity Factor is computed as follows:

$$\frac{\text{Net Electrical Energy Generated (MWH)}}{\text{Maximum Dependable Capacity (Mwe) X Gross Hours in the Reporting Period}}$$

Data Source: Monthly Operating Report
Accountability: Chase
Positive Trend



EQUIVALENT AVAILABILITY FACTOR

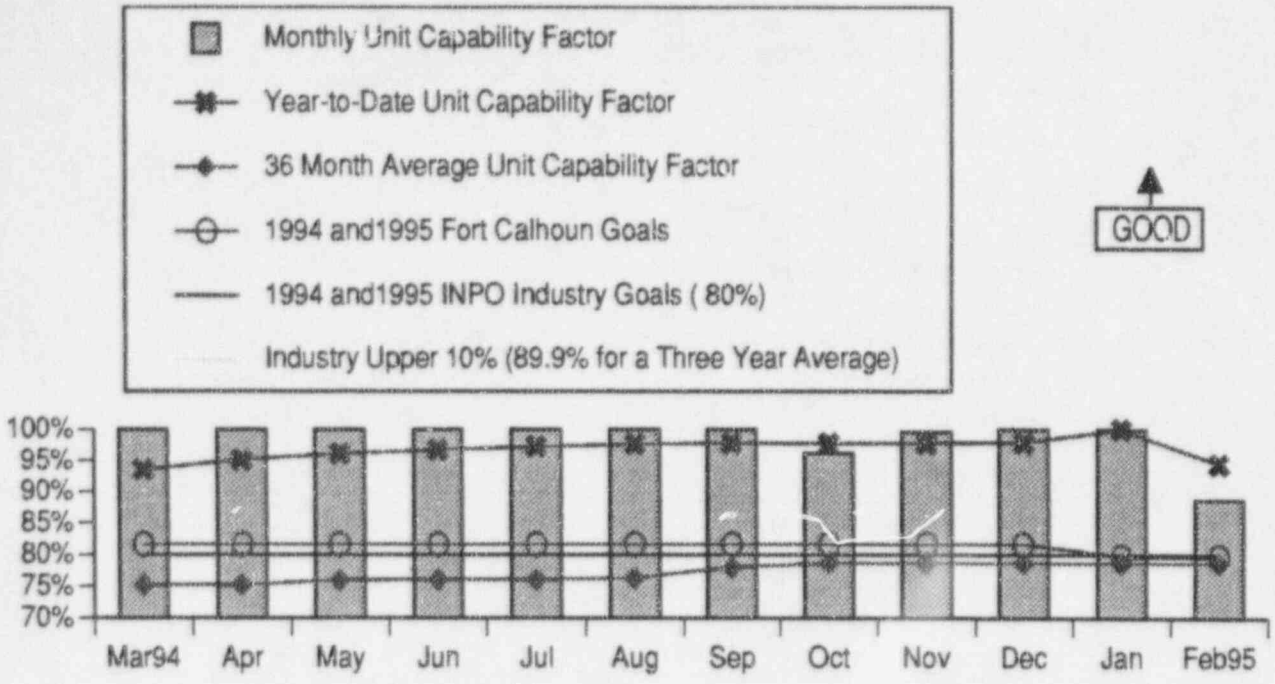
This indicator shows the plant monthly Equivalent Availability Factor (EAF), the year-to-date average monthly EAF, and the year-end average monthly EAF for the previous 3 years.

The EAF for February 1995 was reported as 63.3%. The year-to-date monthly average EAF was 81.7% at the end of the month.

Unplanned energy losses for the month of February 1995 were due to a problem with a control element assembly seal leakage of reactor coolant, which prompted the decision to begin the 1995 refueling outage earlier than planned. Planned energy losses for the month were attributable to the coastdown for the refueling outage.

The Fort Calhoun average monthly EAF for the three years prior to this report was 80.3%. 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



UNIT CAPABILITY FACTOR

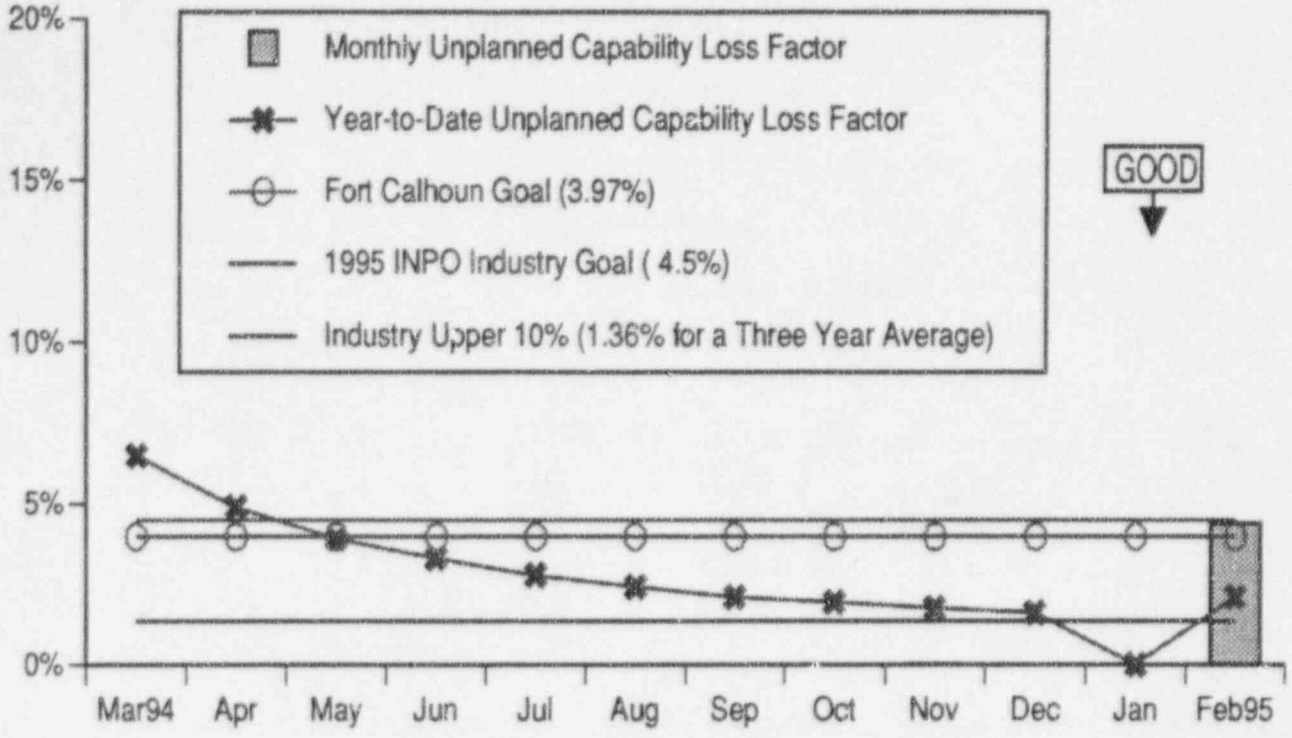
This indicator shows the plant monthly Unit Capability Factor (UCF) value, the year-to-date UCFs, the 36 month average UCFs, and the UCF goals. UCF is defined as the ratio of the available energy generation over a given period of time to the reference energy generation (the energy that could be produced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

The UCF for February 1995 was reported as 88.6%. The year-to-date UCF was 94.5%, the UCF for the last 12 months was 98.8%, and the 36-month average UCF was reported as 81.2% at the end of the month.

Unplanned energy losses for the month of February 1995 were due to a problem with a control element assembly seal leakage of reactor coolant, which prompted the decision to begin the 1995 refueling outage earlier than planned. Planned energy losses for the month were attributable to the coastdown for the refueling outage.

The 1995 INPO industry goal is 80% and the industry upper ten percentile value (for the three year period from 7/91 through 6/94) is approximately 89.9%. The 1995 Fort Calhoun year-end goal for this indicator is a minimum of 79.65%.

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



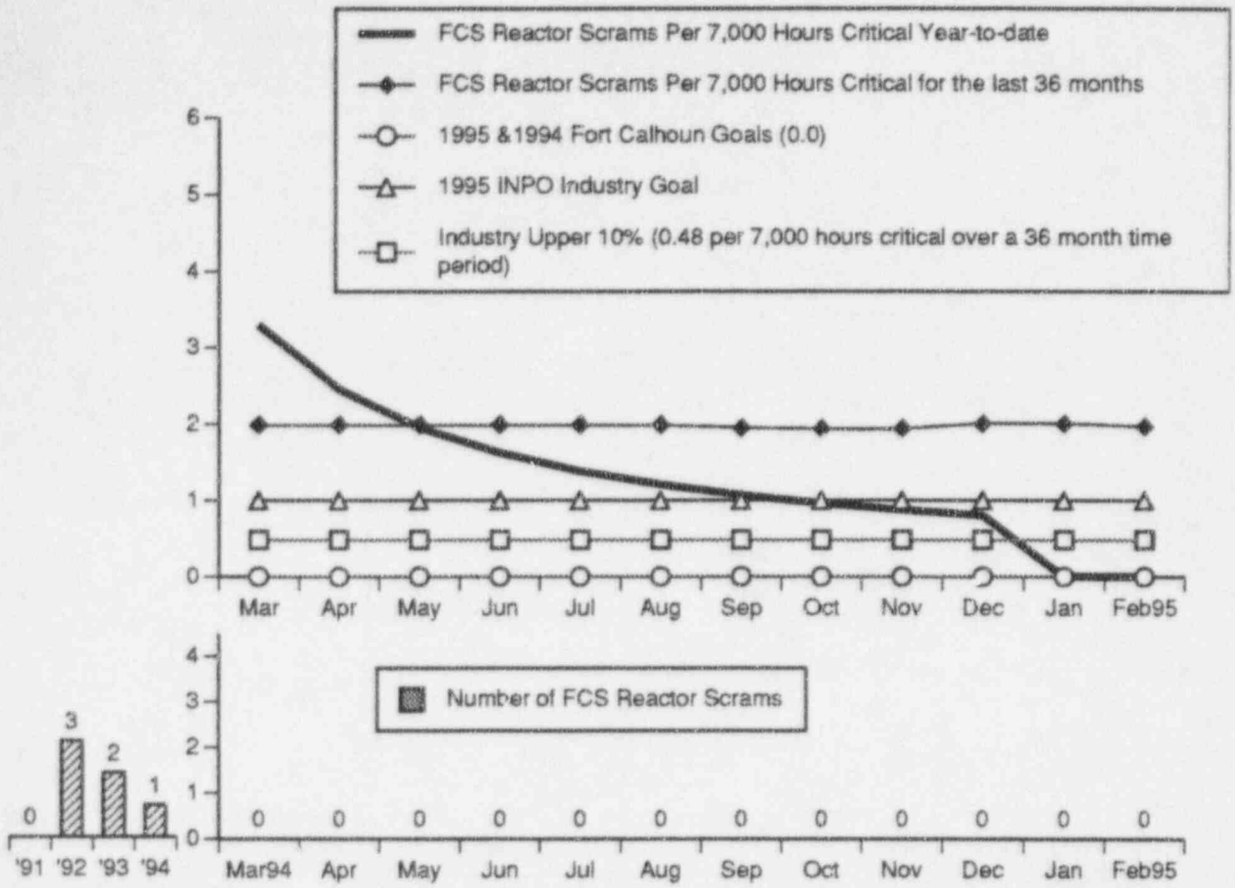
UNPLANNED CAPABILITY LOSS FACTOR

This indicator shows the plant monthly Unplanned Capability Loss Factor (UCLF), the year-to-date UCLF and the goal. 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 February 1995 was reported as 4.4%. An unplanned energy loss was reported during the period from February 18 to February 21, 1995, of 15,147 Mwh. The year-to-date UCLF was 2.1%, the UCLF for the last 12 months was 0.34%, and the 36-month average UCLF was reported as 5.74% at the end of the month.

The 1995 INPO industry goal is 4.5% and the industry upper ten percentile value (for the three year period from 7/91 through 6/94) is approximately 1.36%. The 1995 Fort Calhoun year-end goal for this indicator is a maximum value of 3.97%.

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



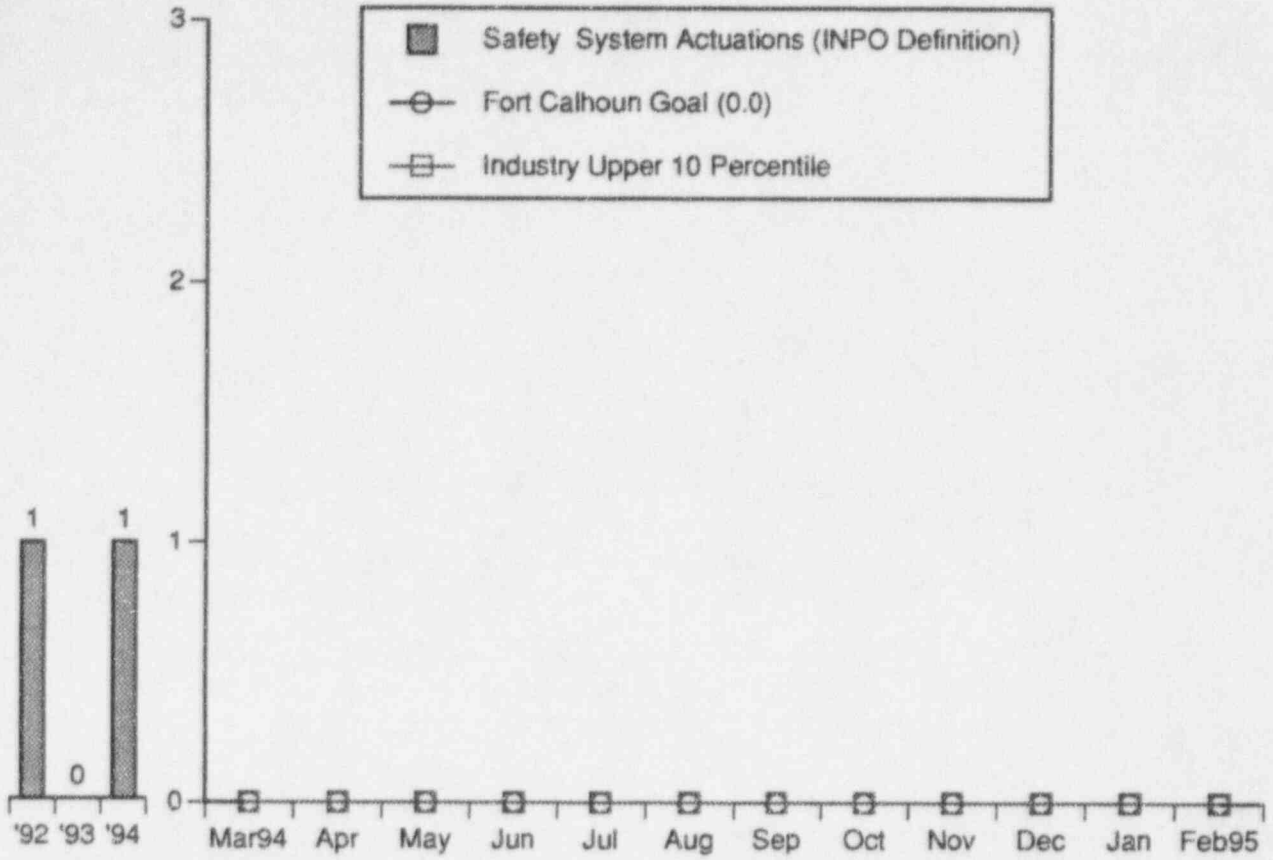
UNPLANNED AUTOMATIC REACTOR SCRAMS PER 7,000 HOURS CRITICAL

The upper graph shows the number of unplanned automatic reactor scrams per 7,000 hours critical (as defined in INPO's 12/93 publication "Detailed Descriptions of International Nuclear Power Plant Performance Indicators and Other Indicators") for Fort Calhoun Station. The lower graph shows the number of unplanned automatic reactor scrams that occurred during each month for the last twelve months.

The year-to-date station value was 0.0 at the end of February 1995. The value for the 12 months from March 1, 1994, through February 28, 1995, was 0.0. The value for the last 36 months was 1.97.

The 1995 Fort Calhoun goal for this indicator is 0. The 1995 INPO industry goal is a maximum of 1 unplanned automatic reactor scram per 7,000 hours critical. The industry upper ten percentile value is approximately 0.48 scrams per 7,000 hours critical for the 36-month time period from 7/91 through 6/94.

Data Source: Monthly Operations Report & Plant Licensee Event Reports (LERs)
Accountability: Chase
Positive Trend



UNPLANNED SAFETY SYSTEM ACTUATIONS - (INPO DEFINITION)

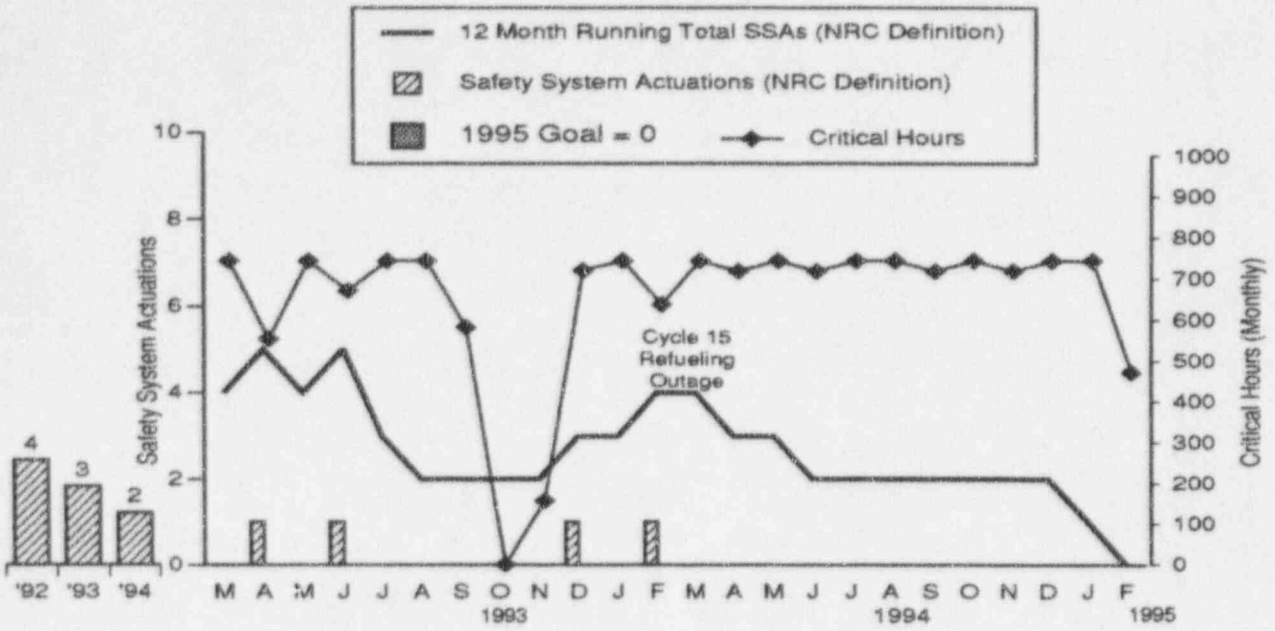
There were no INPO unplanned safety system actuations during the month of February 1995.

There was 1 INPO unplanned safety system actuation during the month of February 1994. It occurred on February 11 when supervisory relay 86B/CPHSS failed, which resulted in tripping relay 86B/CPHS. The CPHS relay trip actuated the Safety Injection Actuation Signal, Containment Isolation Actuation Signal, Ventilation Isolation Actuation Signal and Steam Generator Isolation Signal. The Steam Generator Isolation Signal automatically closed both main steam isolation valves, which resulted in a concurrent turbine and reactor trip.

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

The 1995 Fort Calhoun goal for this indicator is 0.

Data Source: Monthly Operations 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 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.

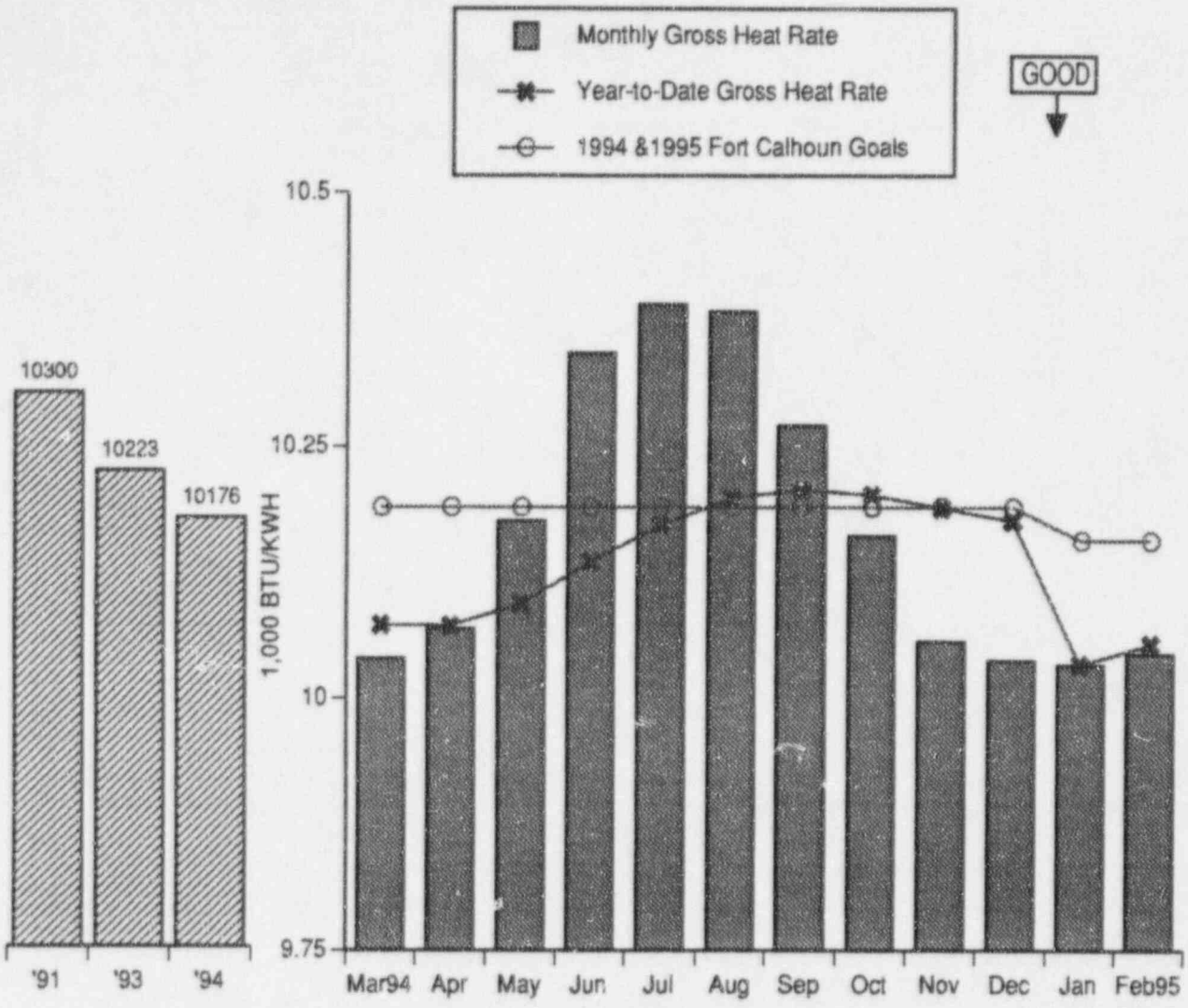
There was 1 NRC unplanned safety system actuation during the month of February 1994. It occurred on February 11 when supervisory relay 86B/CPHSS failed, which resulted in a concurrent turbine and reactor trip.

There were 3 NRC unplanned safety system actuations in 1993: 1) In December 1993 the main turbine and reactor tripped during Electro-Hydraulic Control pump start testing; 2) In June 1993 the inadvertent jarring of a 345 KV fault relay in the switchyard caused a turbine and reactor trip; and 3) In April 1993 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.

There were 4 unplanned safety system actuations in 1992: 1) In August, due to the failure of an AC/DC converter in the Turbine Electro Hydraulic Control system, pressurizer safety valve RC-142 opened prior to reaching design pressure during a plant transient and trip; 2) On July 3 there was an inverter failure and the subsequent reactor trip; 3) 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; and 4) In May 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 has been no unplanned safety system actuation in the last 12 months. The 1995 Fort Calhoun goal for this indicator is 0.

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



GROSS HEAT RATE

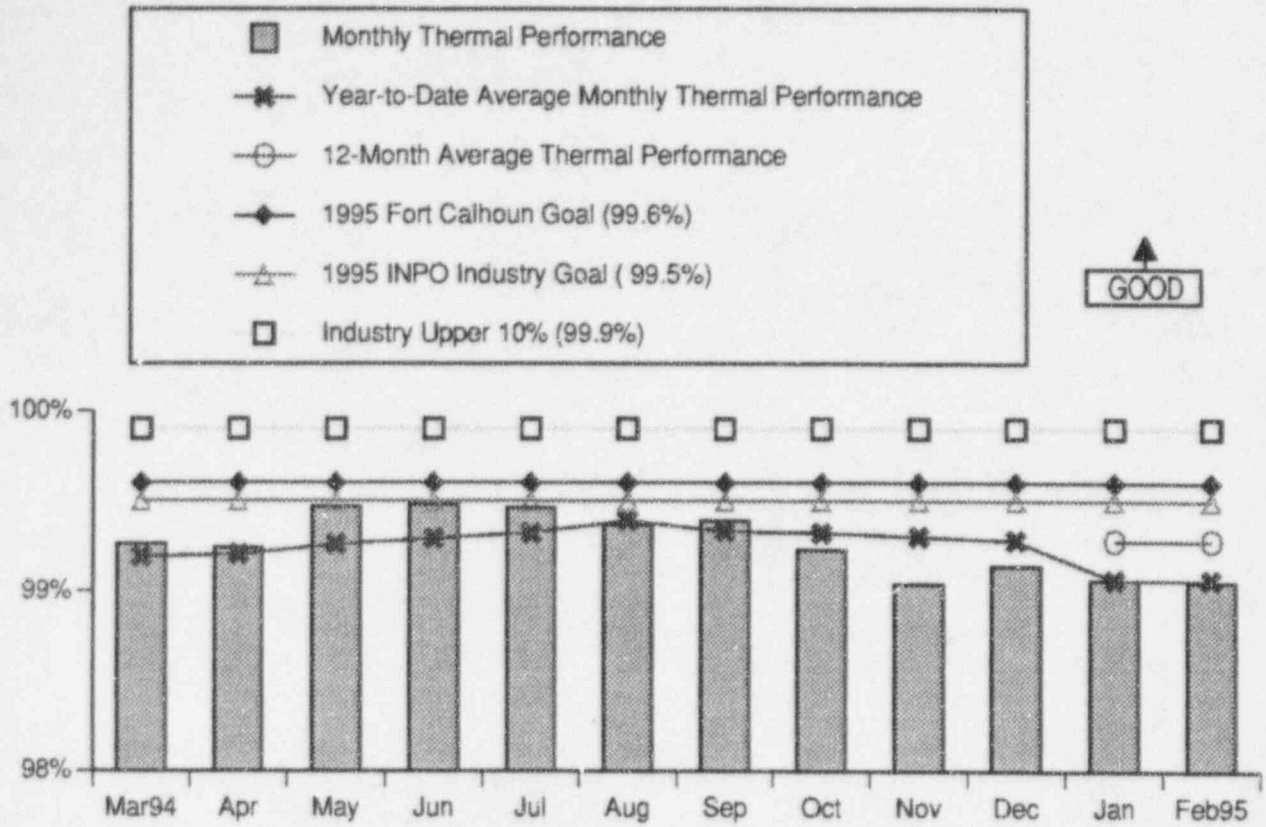
This indicator shows the Gross Heat Rate (GHR) for the reporting month, the year-to-date GHR, the goals and the year-end GHR for the previous 3 years.

The gross heat rate for Fort Calhoun Station was 10,088 for the month of January 1995. The year-to-date GHR was 10,053.

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 1995 Fort Calhoun year-end goal for this indicator is ≤10,157.

Data Source: Holthaus/Willett (Manager/Source)
Accountability: Chase/Jaworski
Positive Trend: Based on performance below goal value.



THERMAL PERFORMANCE

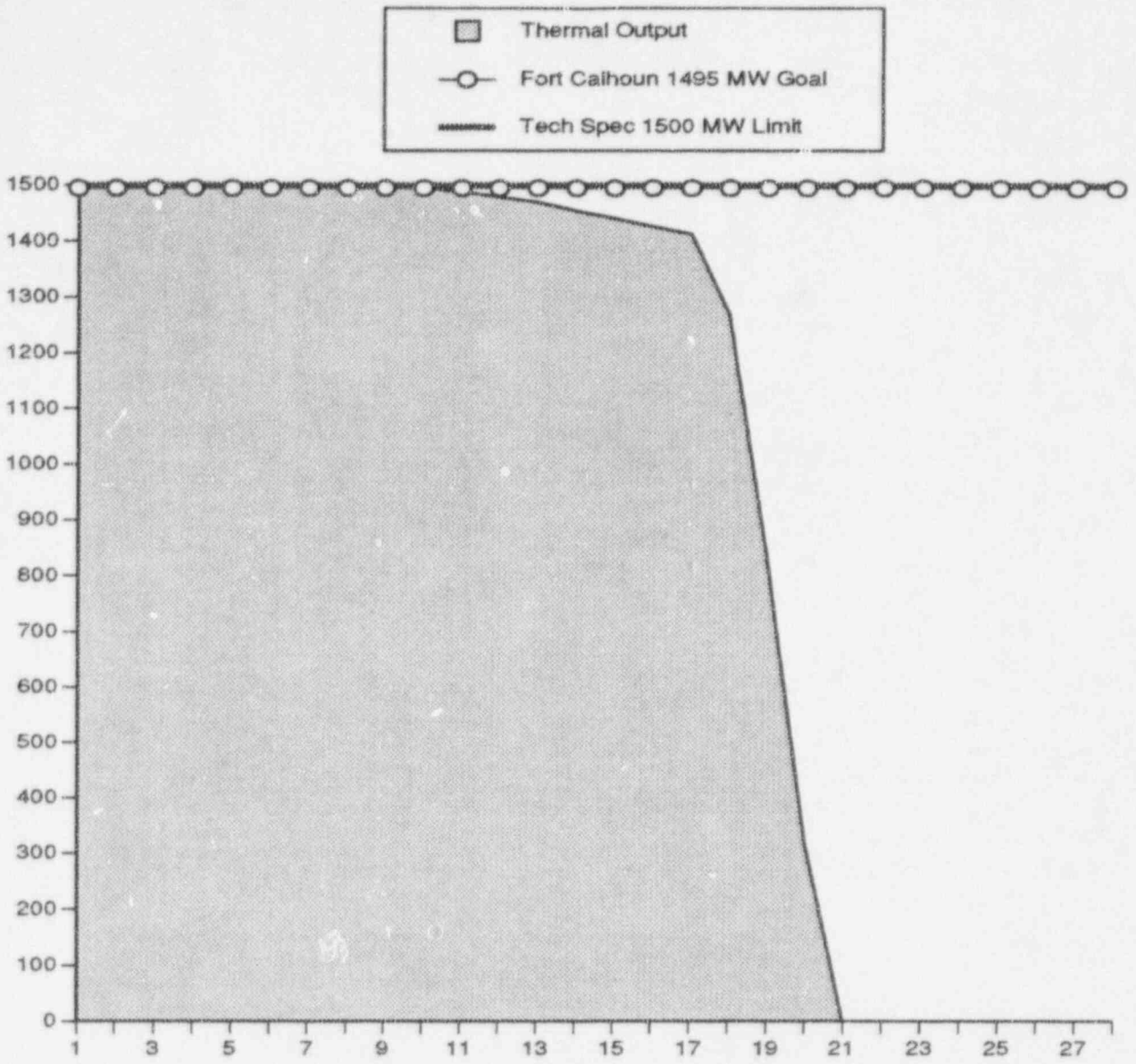
This indicator shows the Thermal Performance value for the reporting month, the year-to-date average monthly thermal performance value, the Fort Calhoun goals, the 1995 INPO industry goal and the approximate industry upper ten percentile value.

The thermal performance value for February 1995 was 99.05%. The year-to-date average monthly thermal performance value was 99.06% at the end of the month. The average monthly value for the 12 months from March 1, 1994, through January 31, 1995 was 99.3%.

Initial results from testing to verify FW flow requirements indicates biased results from plant instruments is causing the thermal performance indicator to be under-reported. Corrections to the indicator will be made upon completion of the FW Flow Nozzle Fouling Study.

The 1995 Fort Calhoun year-end goal for this indicator is a minimum of 99.6%. The 1994 Fort Calhoun goal was a minimum of 99.5%. The 1995 INPO industry goal is 99.5% and the industry upper 10 percentile value (for the 1-year period from 7/93 through 6/94) is approximately 99.9%.

Data Source: Jaworski/Popek
Accountability: Jaworski/Popek
Adverse Trend: None

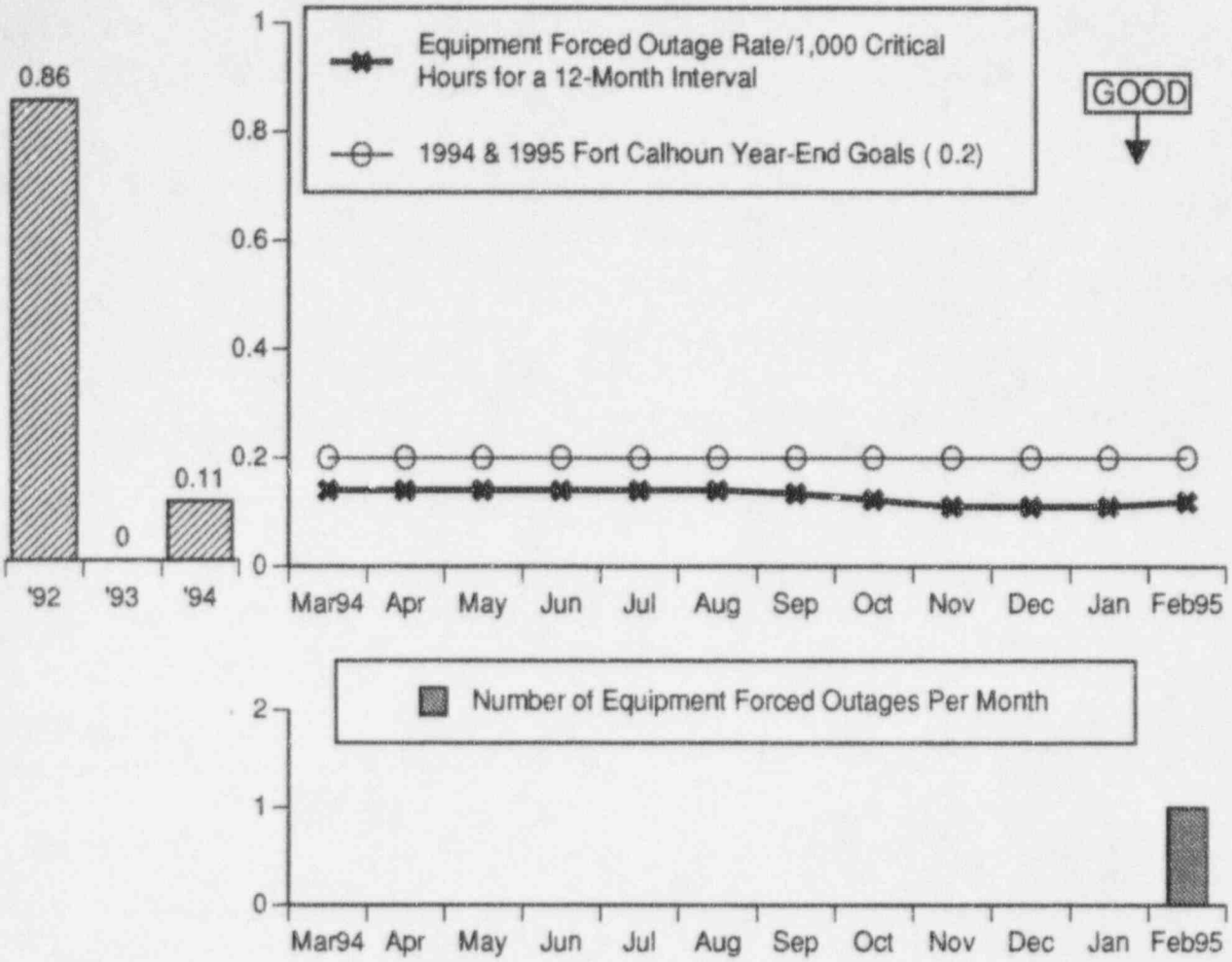


DAILY THERMAL OUTPUT

The thermal output graph displays the daily operating power level during February 1995, the 1500 thermal megawatt average technical specification limit, and the 1495 thermal megawatt Fort Calhoun goal.

Unplanned energy losses during the month were due to a problem with a control element assembly seal leakage of reactor coolant, which prompted the decision to begin the 1995 refueling outage earlier than planned. Planned energy losses for the month were attributed to the coastdown for the refueling outage. The generator was taken off-line and the reactor was taken sub-critical on February 20, 1995, at which time the FCS 1995 Refueling Outage commenced.

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



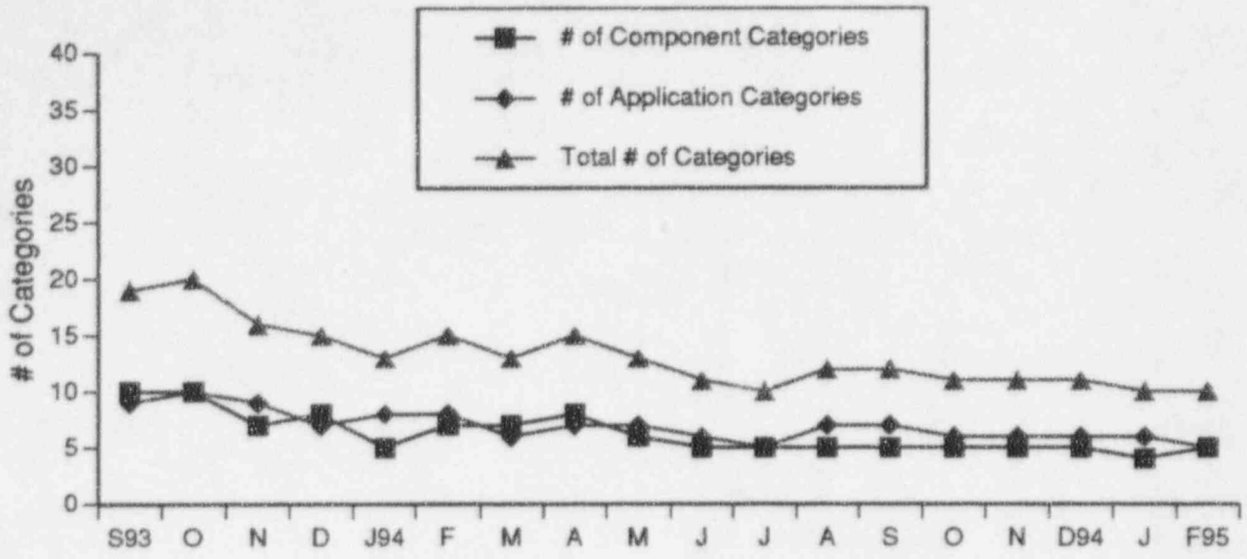
EQUIPMENT FORCED OUTAGES PER 1,000 CRITICAL HOURS

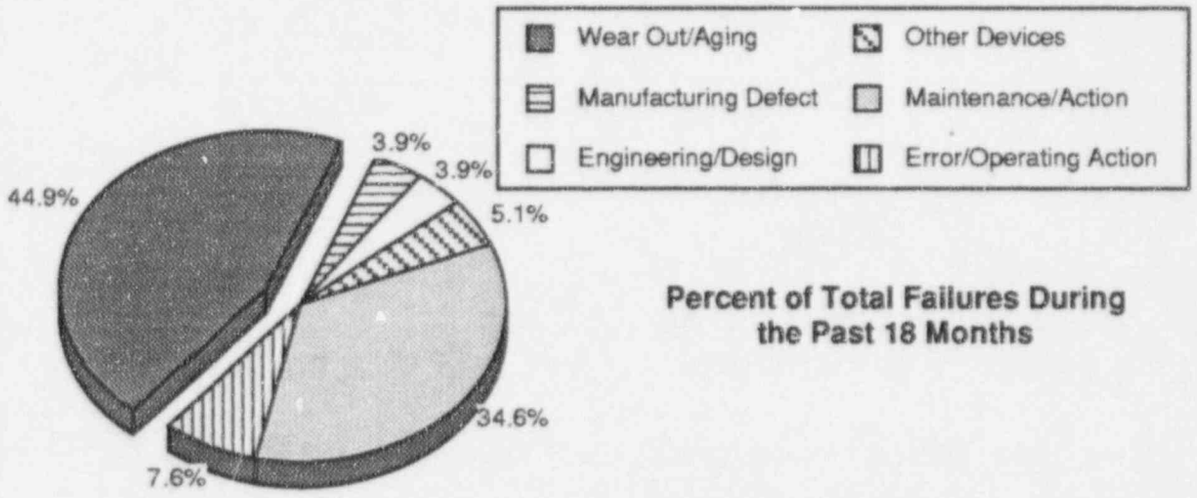
The equipment forced outage rate per 1,000 critical hours for the 12 months from March 1, 1994, through February 28, 1995, was 0.12. The rate per 1,000 critical hours for the month of February 1995 was 0.82.

An equipment forced outage occurred on February 20, 1995, when the plant experienced a problem with a control element assembly motor drive and a related small leak of reactor coolant.

The 1995 Fort Calhoun year-end 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





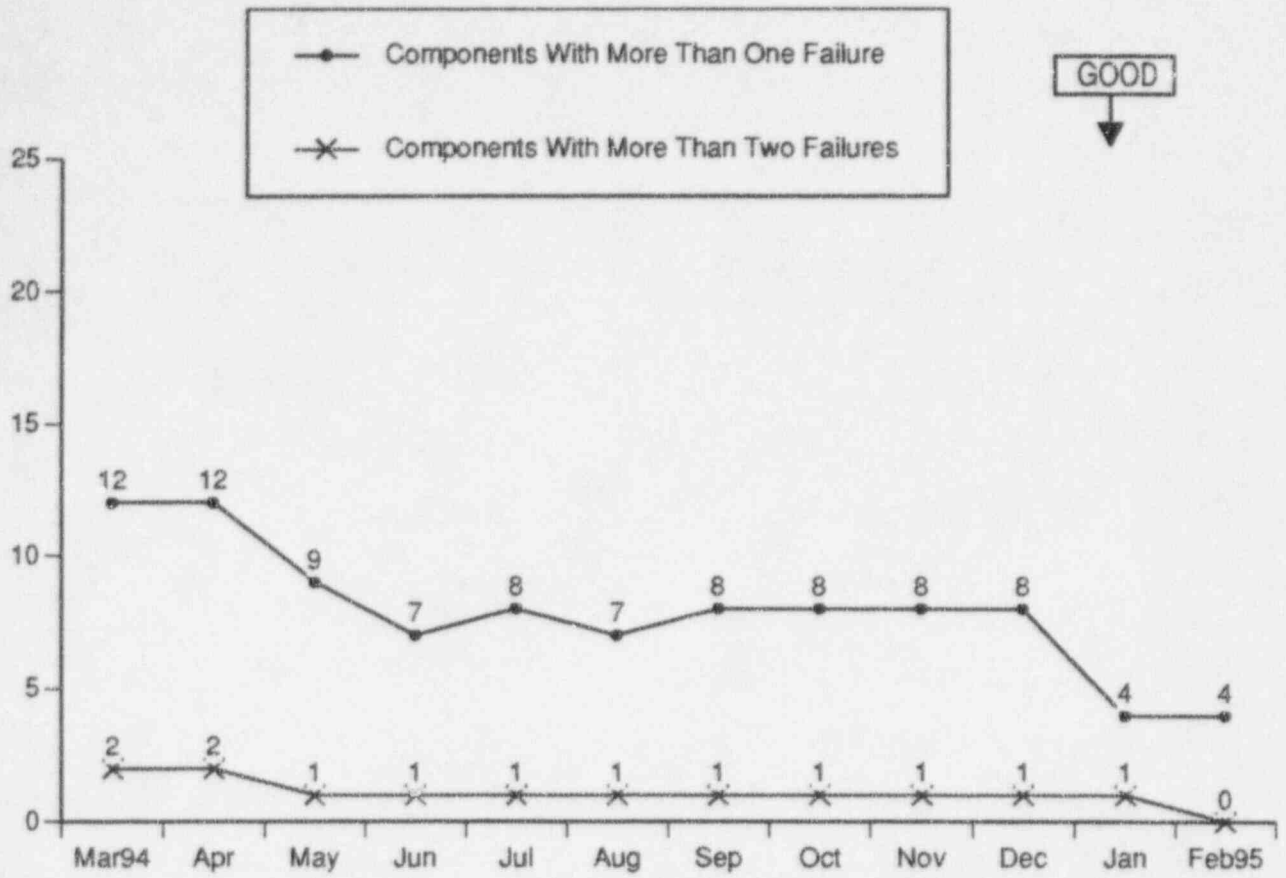
Percent of Total Failures During the Past 18 Months

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 May 1993 through October 1994). Fort Calhoun Station reported a higher failure rate in 5 of the 87 component categories (valves, pumps, motors, etc.) during the past 18 months. The station reported a higher failure rate in 5 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 90 failure reports that were submitted to INPO by Fort Calhoun Station during the past 18 months. Of these, the failure cause was known for 78. The pie chart reflects known failure causes.

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



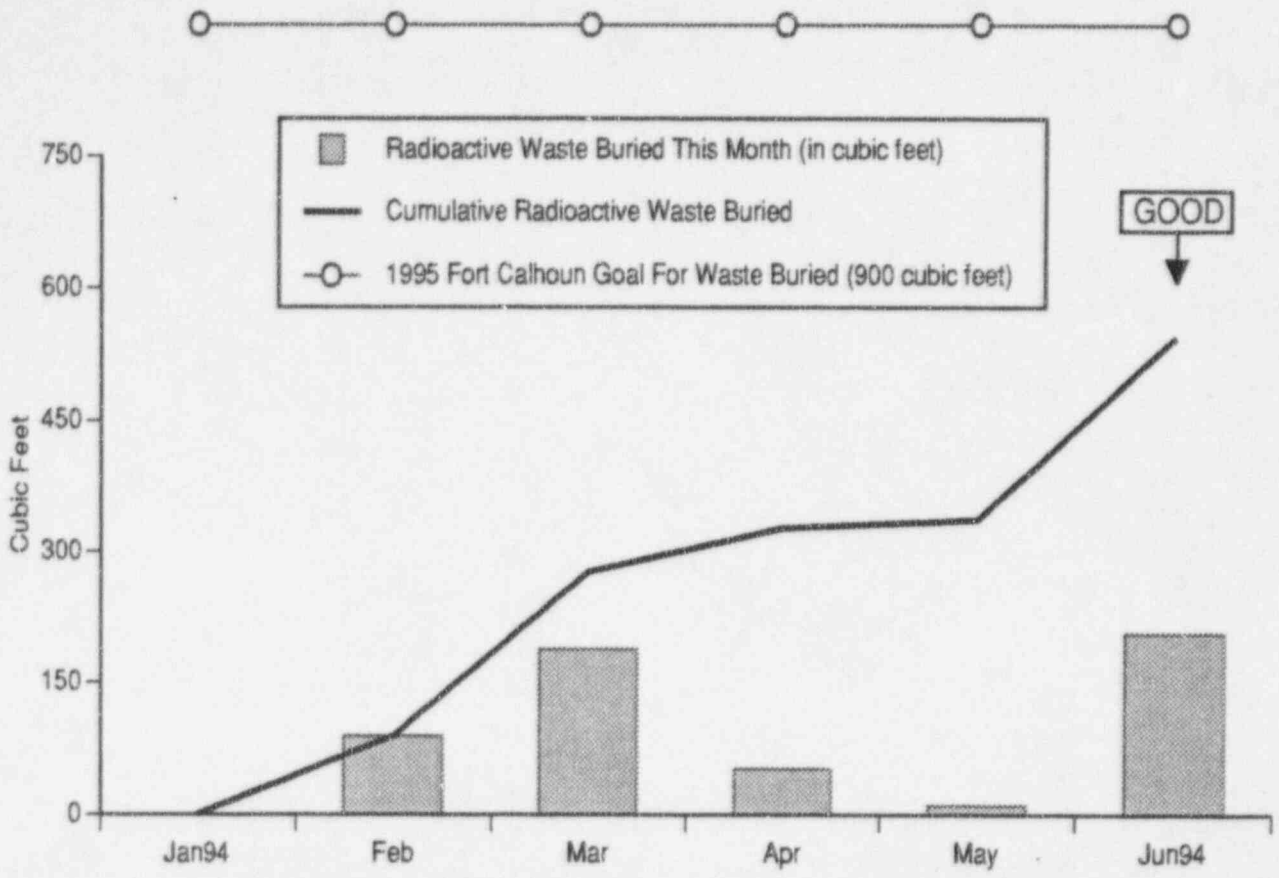
REPEAT FAILURES

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 1 failure during the eighteen month CFAR period and the number of NPRDS components with more than 2 failures during the eighteen month CFAR period.

During the last 18 reporting months there were 4 NPRDS components with more than 1 failure. None of these 4 had more than 2 failures. The tag numbers of the components with more than 1 failure are: AC-10C, CH-1C, NT-001 and RC-374. Recommendations and actions to correct these repeat component failures are listed in the quarterly Component Failure Analysis Report.

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



VOLUME OF LOW-LEVEL SOLID RADIOACTIVE WASTE

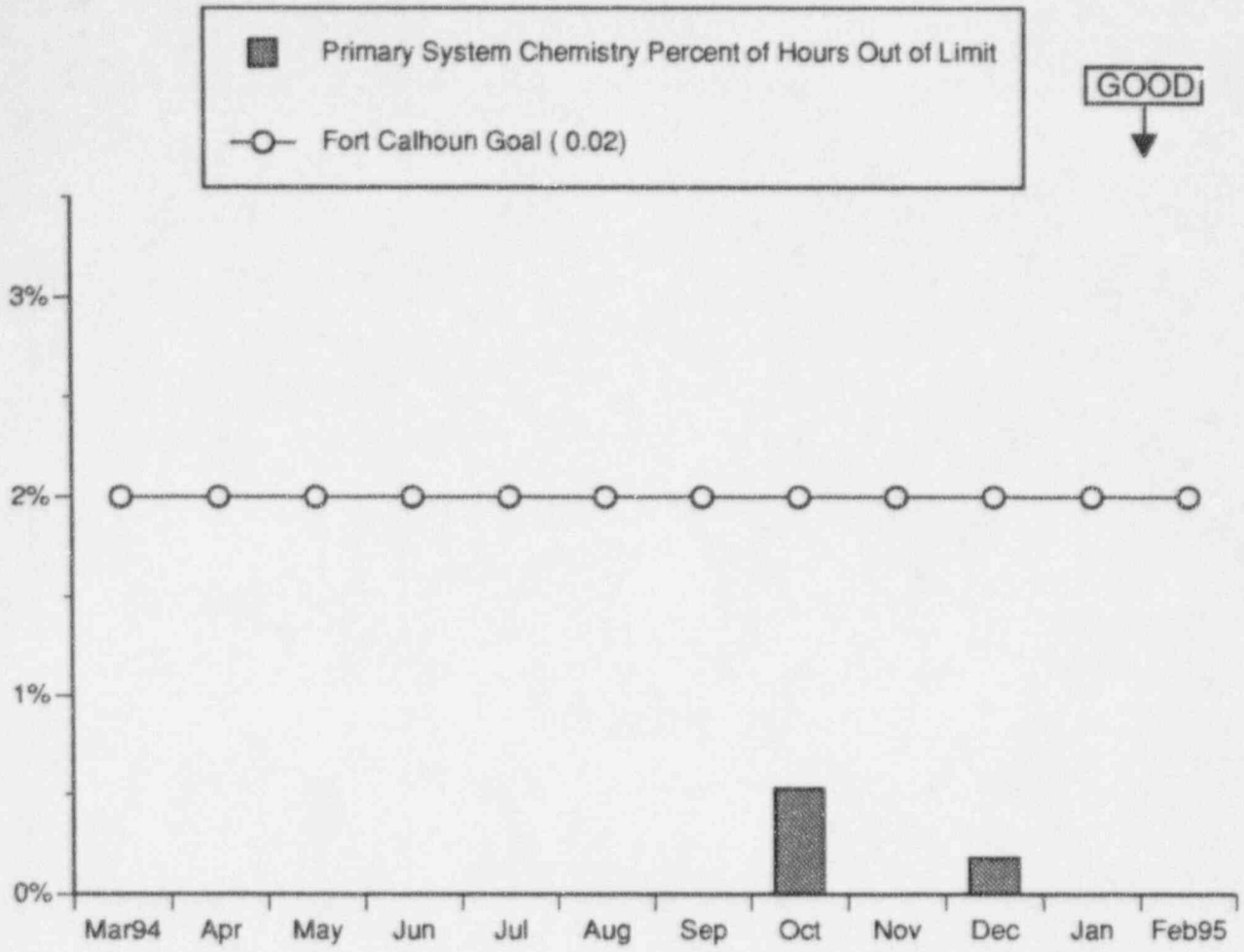
This indicator shows the volume of the monthly radioactive waste buried, the cumulative annual total for radioactive waste buried, the Fort Calhoun and INPO goals, and the approximate industry upper 10%.

Amount of solid radwaste shipped off-site for processing during January (cubic feet)	2,276
Amount of metals from rack cut-up shipped off-site for processing during January (lbs.)	30,300
Volume of Solid Radwaste Buried during January (cubic feet)	0.0
Cumulative volume of solid radioactive waste buried in 1995 (cubic feet)	0.0
Amount of solid radioactive waste in temporary storage (cubic feet)	0.0

The 1995 Fort Calhoun goal for the volume of solid radioactive waste (buried) is 900 cubic feet. The 1995 INPO industry goal is 110 cubic meters (3,884 cubic feet) per year. The industry upper ten percentile value from 7/91 through 6/94 is approximately 27.33 cubic meters (965.3 cubic feet) per year.

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

SEP 54



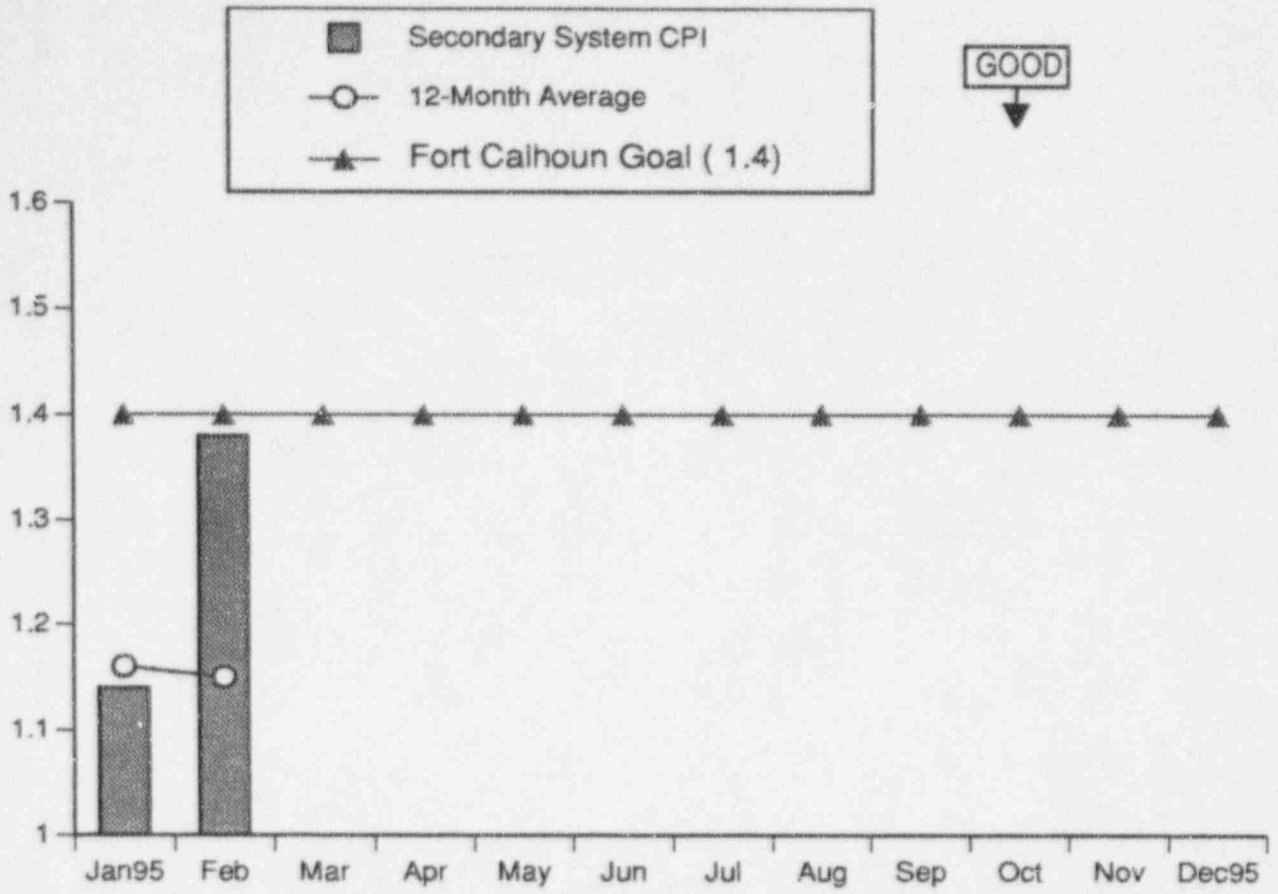
PRIMARY SYSTEM CHEMISTRY PERCENT OF HOURS OUT OF LIMIT

The Primary System Chemistry Percent of Hours Out of Limit indicator tracks the primary system chemistry performance by monitoring 6 key chemistry parameters. The key parameters are: lithium, dissolved oxygen, chlorides, fluoride, hydrogen and suspended solids. 100% equates to all 6 parameters being out of limit for the month.

The Primary System Chemistry Percent of Hours Out of Limit was 0% for the month of February 1995.

The 1995 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 CHEMISTRY

Criteria for calculating the Secondary System Chemistry Performance Index (CPI) are: 1) The plant is at greater than 30% power; and 2) the power is changing at less than 5% per day.

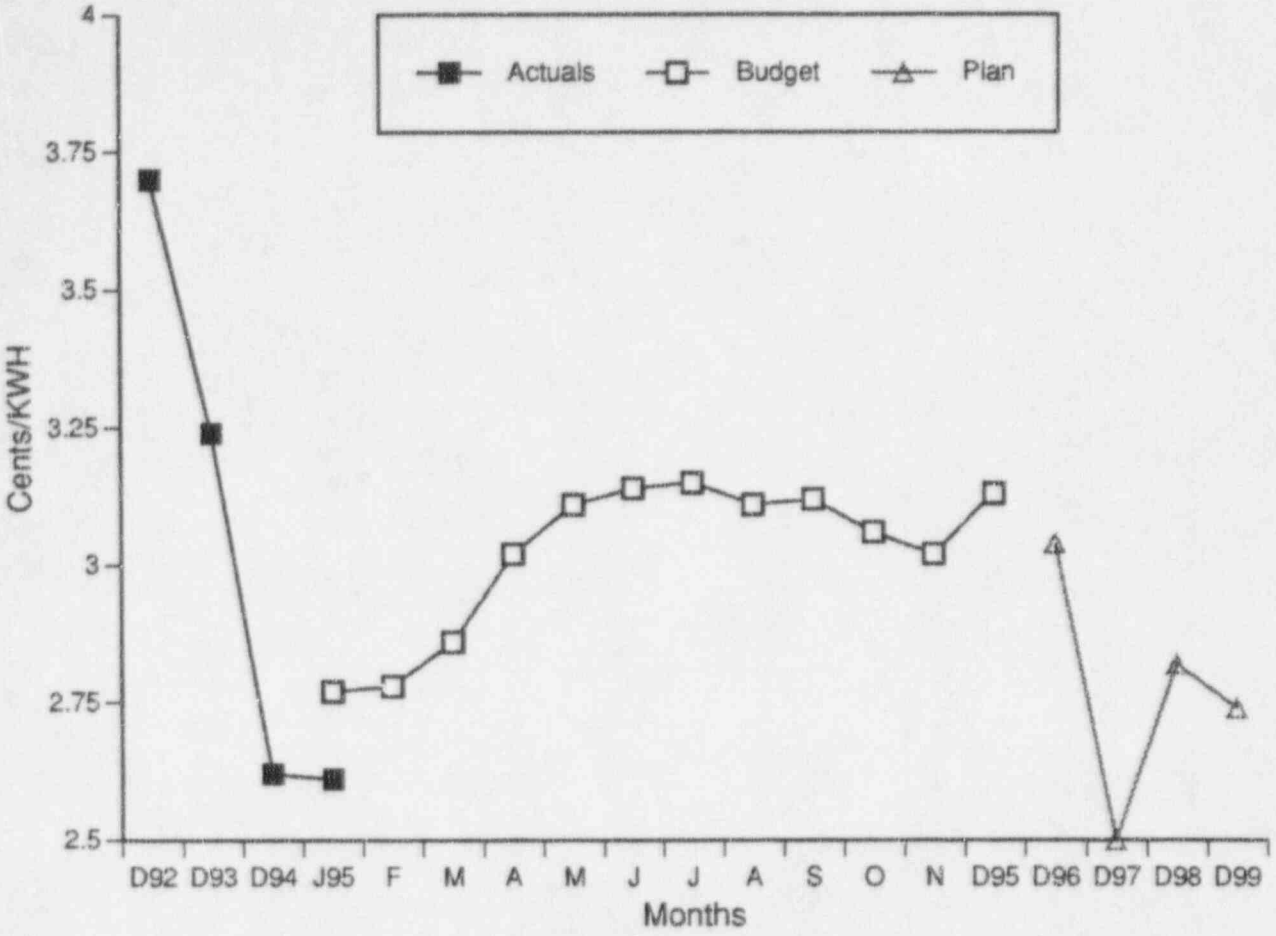
The CPI for February 1995 was 1.38. Because of plant shutdown, only February 1, 1995, to February 18, 1995, were used to calculate the CPI. The CPI is higher this month because on February 8, 1995, at 1000 hours, 'A' Condensate Pump was placed in service after maintenance. This caused Steam Generator chlorides and sodium to spike and fall to a higher steady state value. These higher values, combined with the shorter than normal reporting period resulted in the increased CPI value for February.

The 1995 Fort Calhoun monthly goal for the CPI is a maximum value of 1.40.

Data Source: Smith/Spires (Manager/Source)
Accountability: Chase/Smith
Positive Trend

COST

Goal: Operate Fort Calhoun Station in a manner that cost effectively maintains nuclear generation as an economically viable contribution to OPPD's bottom line. Cost consciousness is exhibited at all levels of the organization.



CENTS PER KILOWATT HOUR

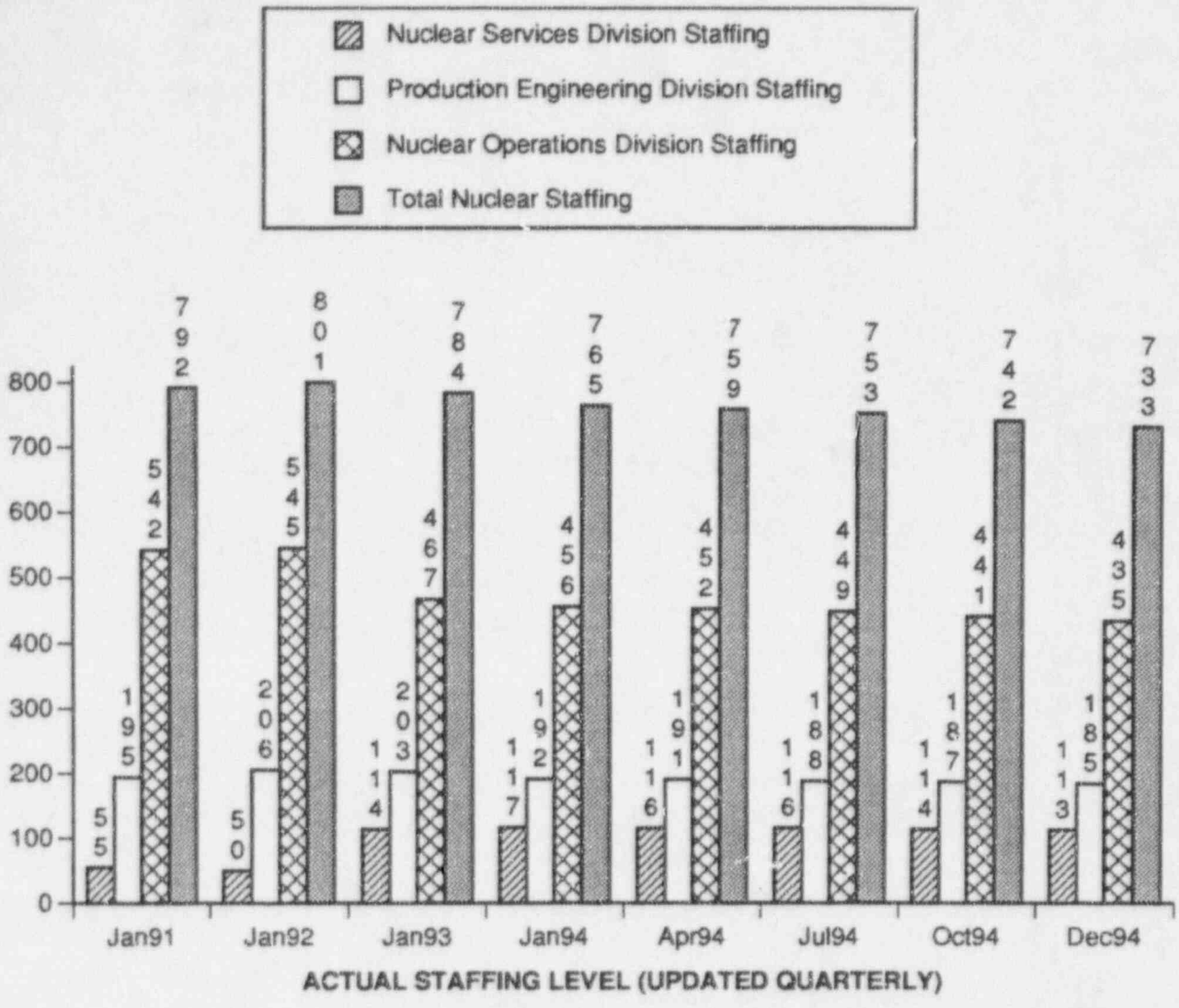
The purpose of this indicator is to quantify the economical operation of Fort Calhoun Station.

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 1994 and 1995 revised budget. The basis for the actual curve is the Financial and Operating Report.

The December 31 amounts are also shown for the prior years 1992, 1993 and 1994. In addition, the report shows the plan amounts for the years 1996 through 1999 for reference. The basis for the dollars are the Nuclear Long Range Financial Plan and the 1995 Corporate Planning and Budget Review. The basis for the generation is provided by Nuclear Fuels.

The unit price (2.61 cents per kilowatt hour for January 1995) averaged lower than budget due to expenses being below budget while generation exceeds the budget. The unit price for the current month (February 1995) is not available at this time.

Data Source: Scofield/Jamieson (Manager/Source)
Accountability: Scofield
Positive Trend



ACTUAL STAFFING LEVEL (UPDATED QUARTERLY)

STAFFING LEVEL

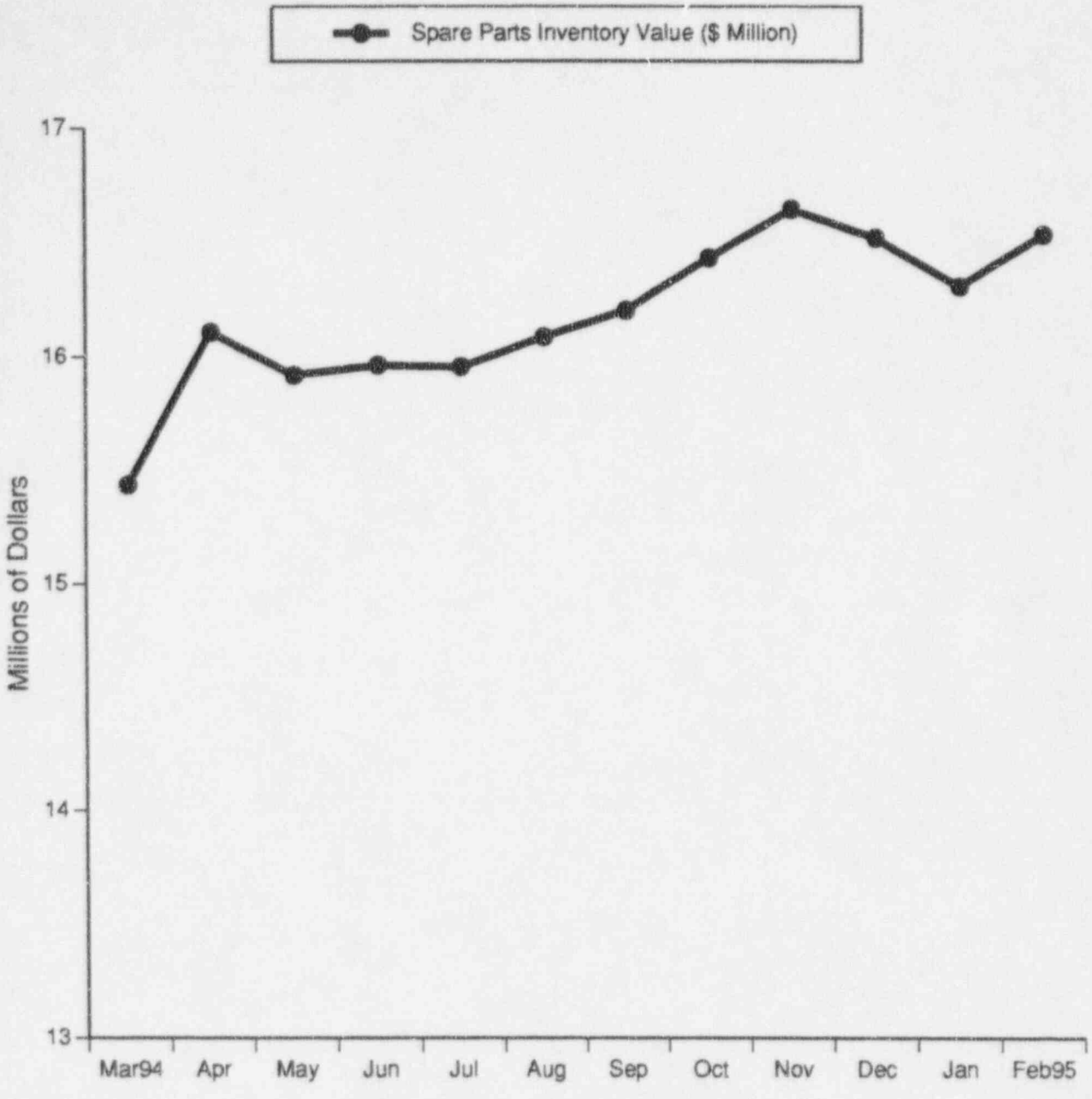
The actual staffing levels for the three Nuclear Divisions are shown on the graph above.

The authorized staffing levels for 1995 are:

1995 Authorized Staffing	
440	Nuclear Operations Division
183	Production Engineering Division
116	Nuclear Services Division

Data Source: Ponec (Manager & Source)
Accountability: Ponec
Adverse Trend: None

SEP 24



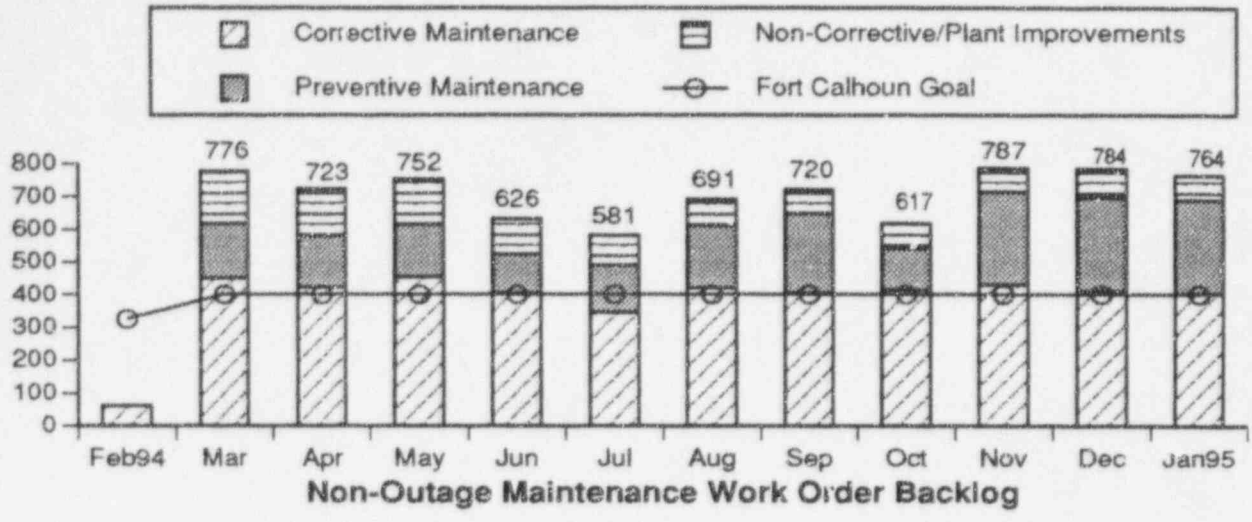
SPARE PARTS INVENTORY VALUE

The spare parts inventory value at the Fort Calhoun Station at the end of February 1995 was reported as $16,534,794.

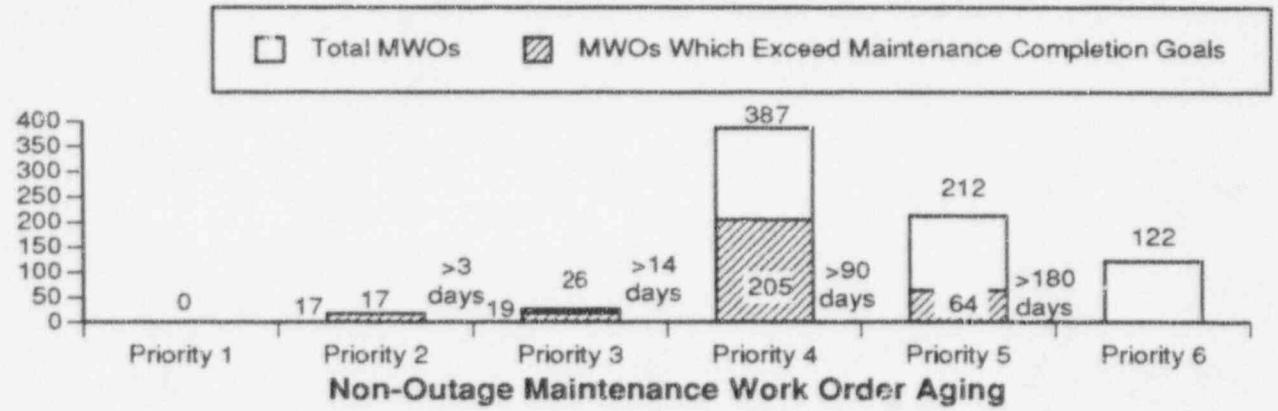
Data Source: Steele/Huliska (Manager/Source)
Accountability: Willrett/McCormick
Adverse Trend: None

DIVISION AND DEPARTMENT PERFORMANCE INDICATORS

Goal: Achieve high standards at Fort Calhoun Station resulting in safe, reliable and cost effective power production.



Non-Outage Maintenance Work Order Backlog



Non-Outage Maintenance Work Order Aging

MAINTENANCE WORKLOAD BACKLOGS

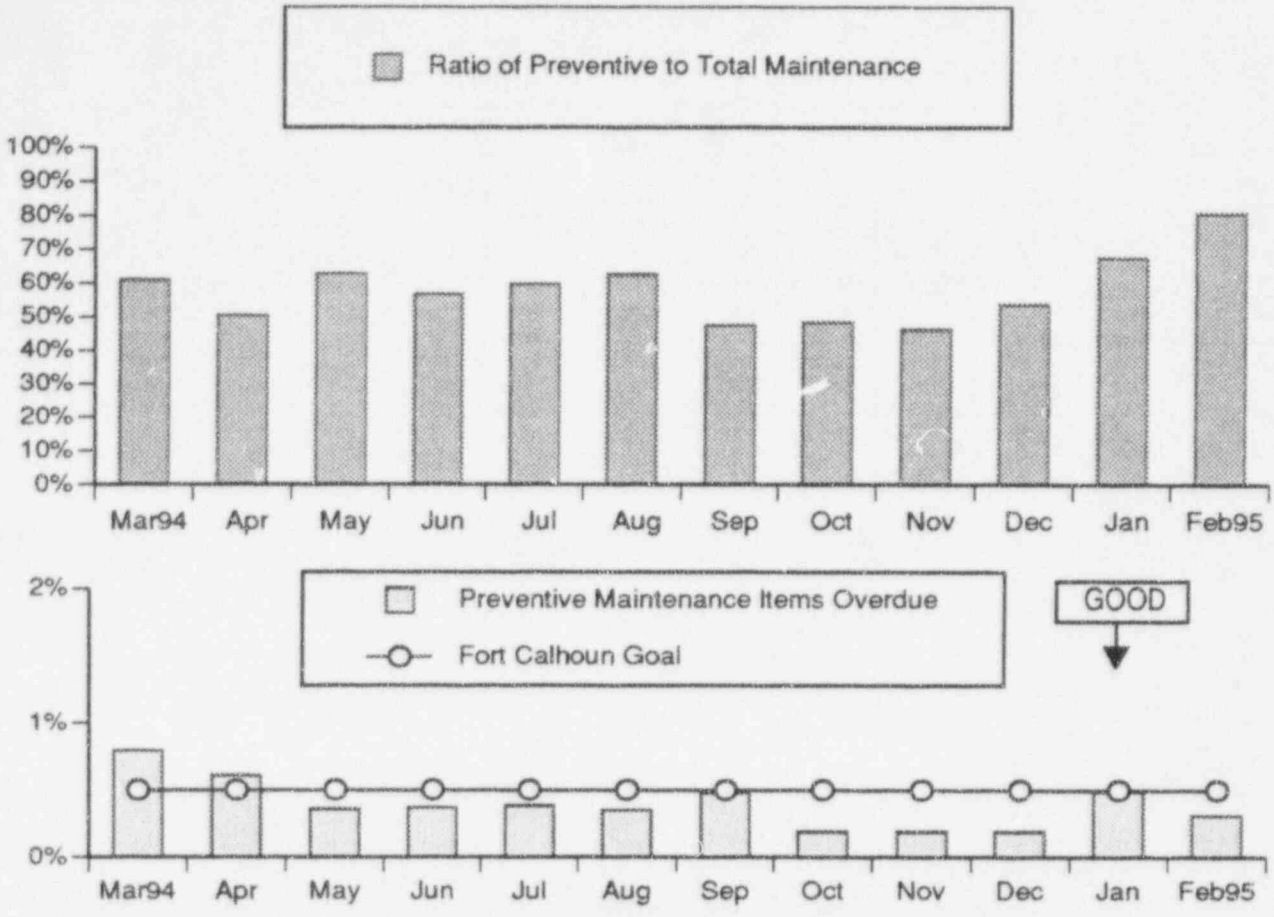
This indicator shows the backlog of non-outage Maintenance Work Orders remaining open at the end of the reporting month. It also includes a breakdown by maintenance classification and priority. The 1995 goal for this indicator is 400 non-outage corrective MWOs. To ensure that the MWO backlog is worked in a timely manner, non-outage maintenance completion goals have been established as:

		Goal
Priority 1	Emergency	N/A
Priority 2	Immediate Action	3 days
Priority 3	Operations Concern	14 days
Priority 4	Essential Corrective	90 days
Priority 5	Non-Essential Corrective	180 days
Priority 6	Non-Corrective/Plant Improvements	N/A

Improvements in the maintenance planning and scheduling process will allow more timely responses to maintenance work requests. Implementation is scheduled for 5/1/95. The large decrease in February is due to completion of many preoutage jobs and moving the remainder into the refueling outage scope.

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

SEP 36



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.

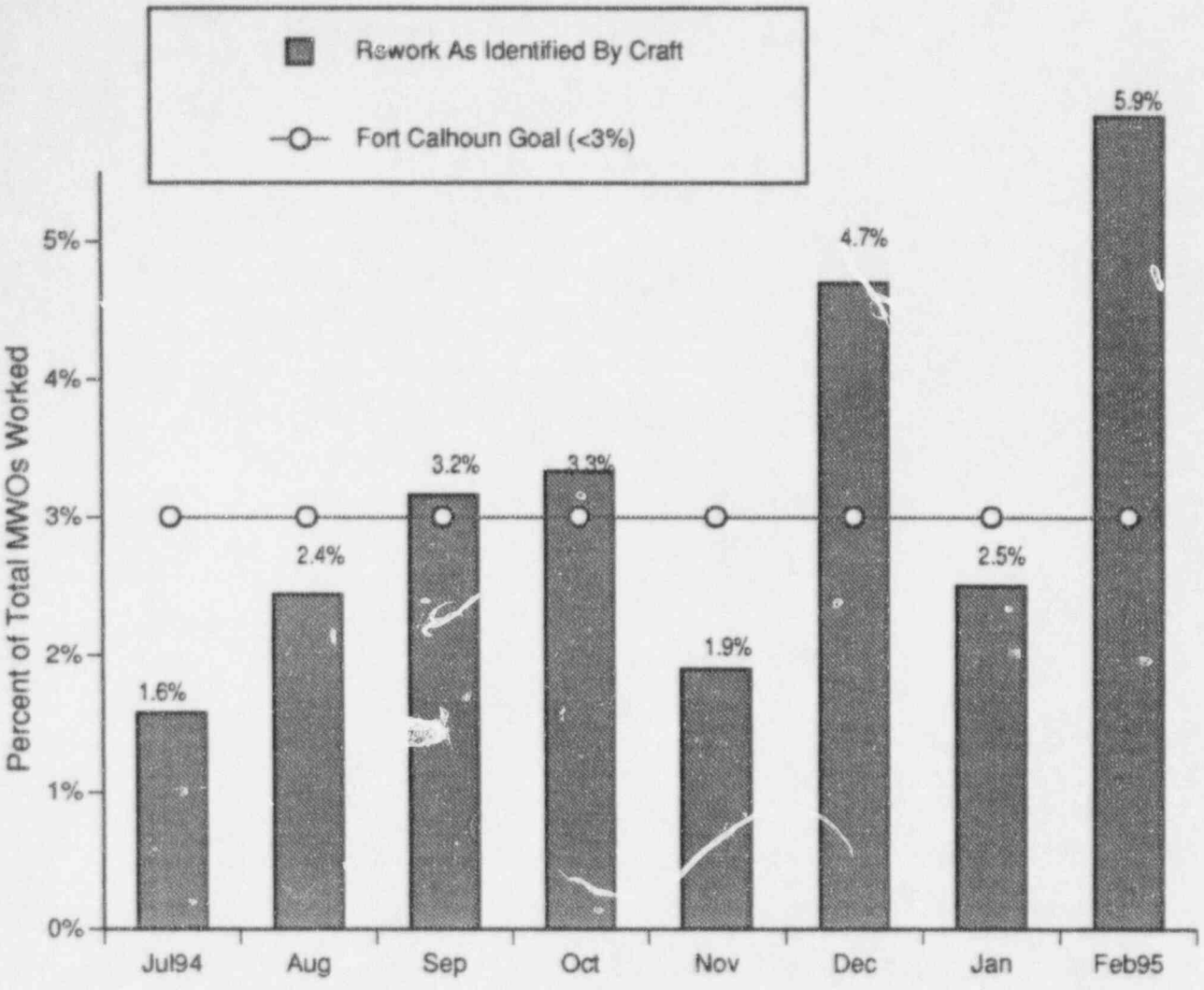
The ratio of preventive to total maintenance was 80.6% for the month of February 1995.

The lower graph shows the percentage of preventive maintenance items overdue. During February, 637 PM items were completed. 2 of these PM items (0.31% of the total) were not completed within the allowable grace period or administratively closed.

The 1995 Fort Calhoun monthly goal for the percentage of preventive maintenance items overdue is a maximum of 0.5%.

Accountability: Chase/Faulhaber
Data Source: Chase/Schmitz/Melstad (Manager/Sources)
Positive Trend

SEP 41



PERCENTAGE OF TOTAL MWOs COMPLETED PER MONTH IDENTIFIED AS REWORK

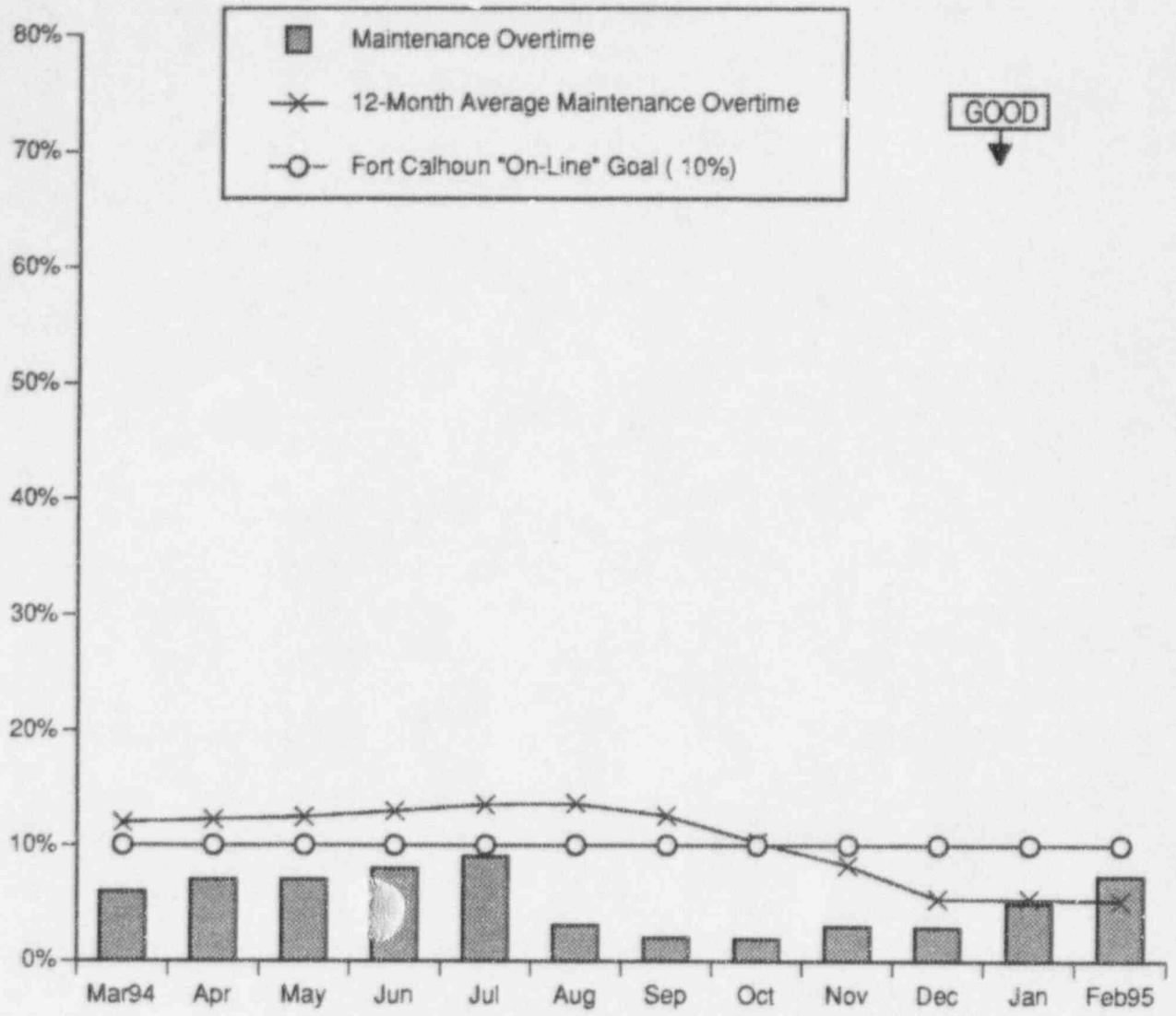
This graph indicates the percentage of total MWOs completed per month identified as rework. Rework activities are identified by maintenance planning and craft.

This indicator will be calculated from the 15th to the 15th of each month beginning with November 1994. This is due to the delay in closing open MWO's at the end of each month.

43% (6) Required additional work to fix small fluid leaks found during PMT.
7% (1) Required work to be reperformed.
50% (7) Required additional work beyond the scope of the original MWO's.

The 1995 Fort Calhoun monthly goal for this indicator is <3%.

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



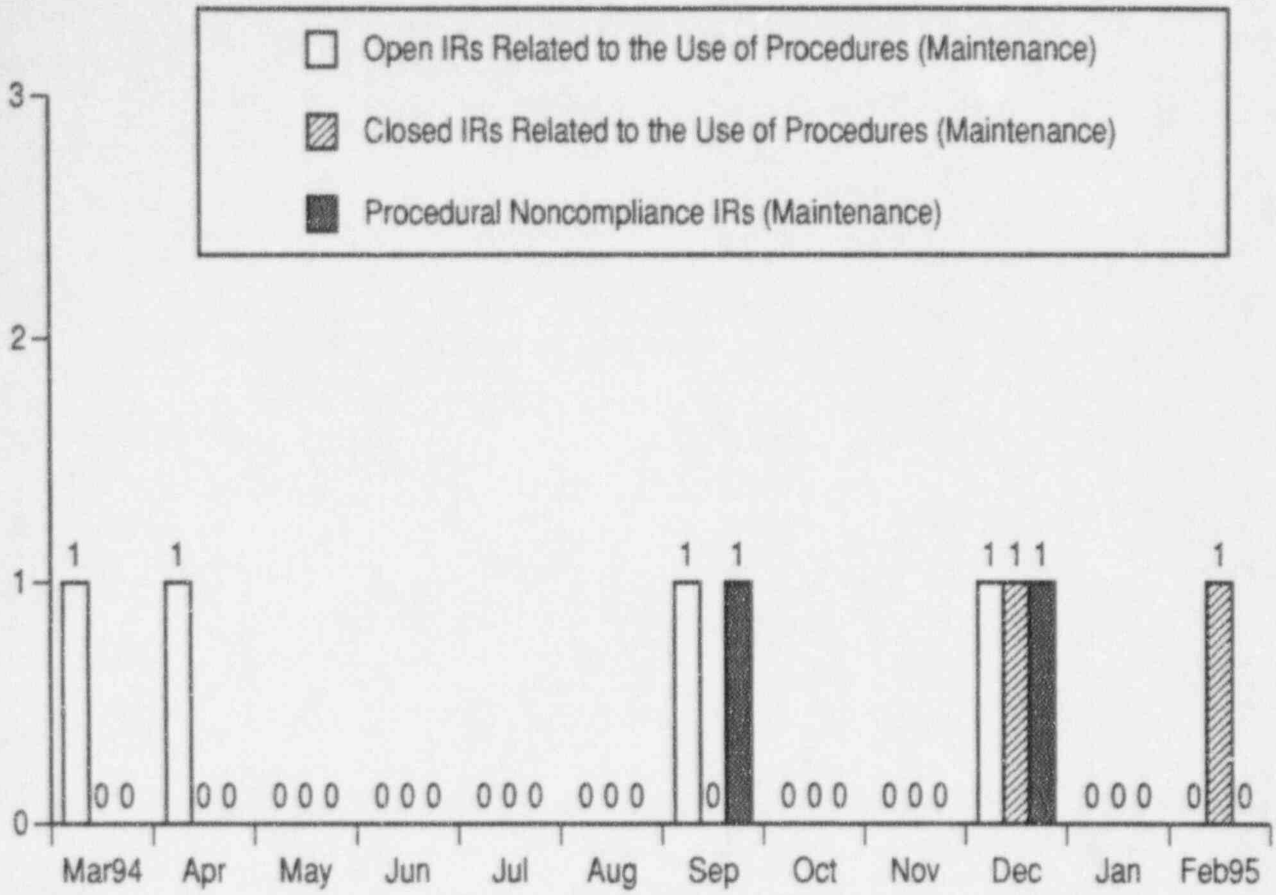
MAINTENANCE OVERTIME

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 7.3% for the month of February 1995. The 12-month average percentage of overtime hours with respect to normal hours was reported as 5.18% at the end of the month.

The 1995 Fort Calhoun monthly "on-line" goal for this indicator is a maximum value of 10%.

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



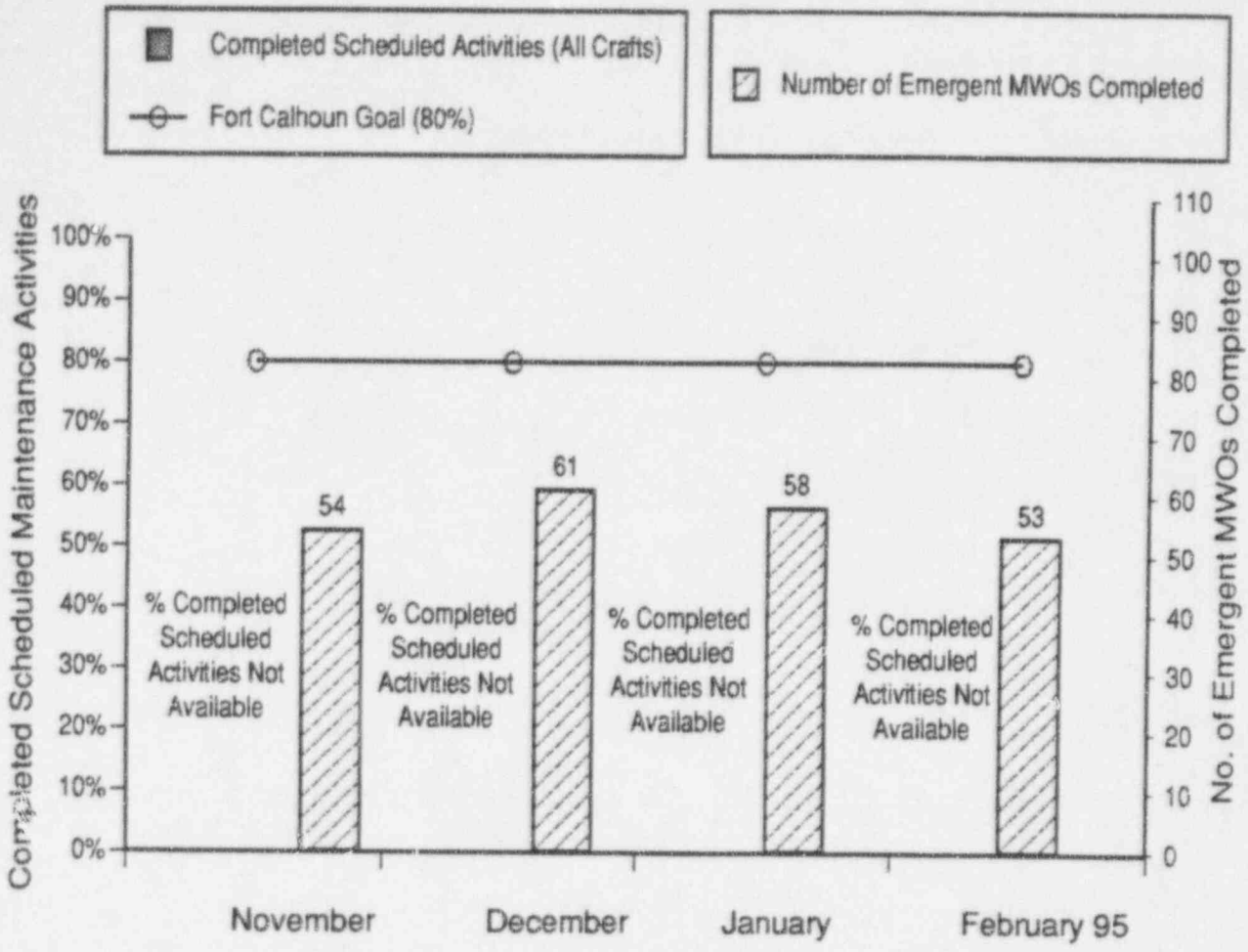
PROCEDURAL NONCOMPLIANCE INCIDENTS (MAINTENANCE)

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 for each of the last twelve months.

There were no procedural noncompliance incidents for maintenance reported for the month of February 1995.

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

SEP 15, 41 & 44



PERCENT OF COMPLETED SCHEDULED MAINTENANCE ACTIVITIES (ALL MAINTENANCE CRAFTS)

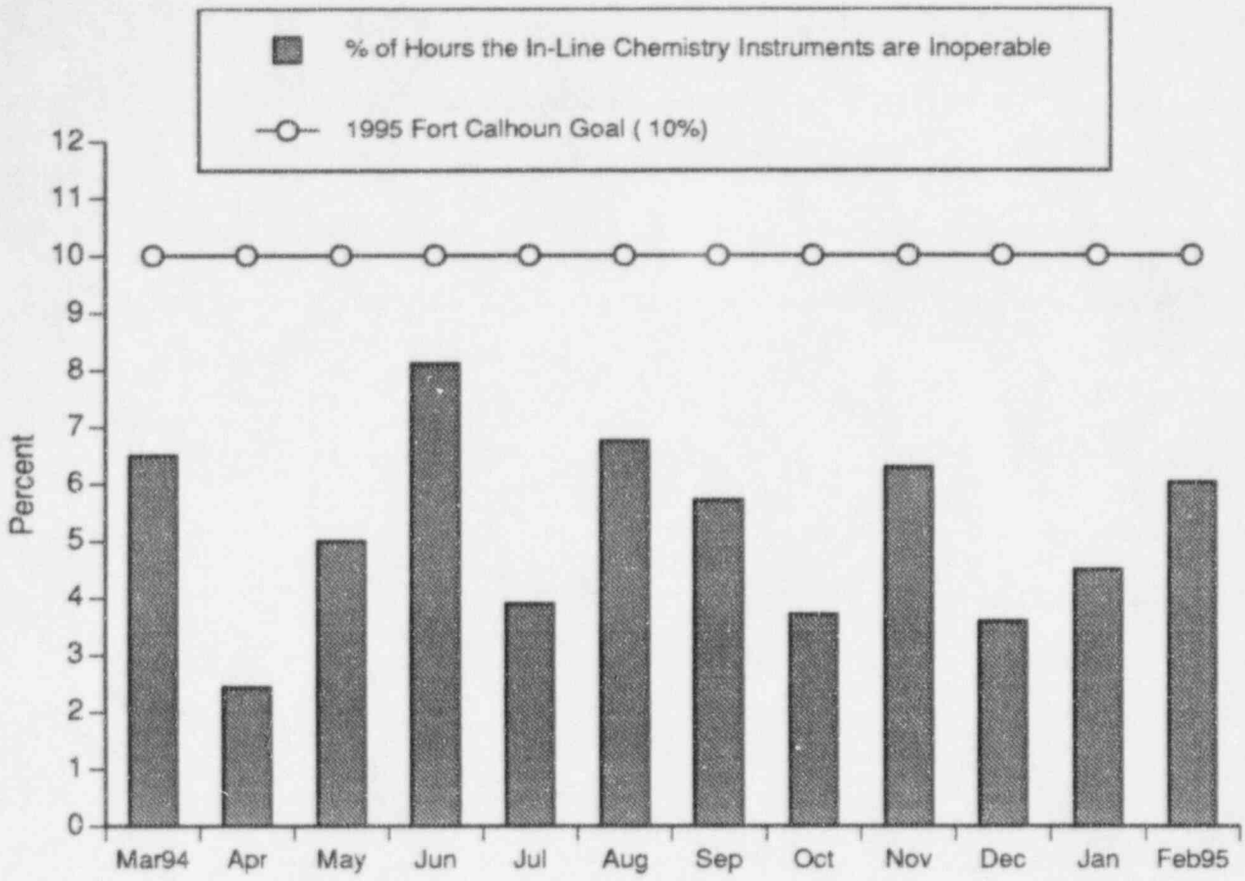
This indicator shows the percent of the number of completed scheduled maintenance activities as compared to the number of scheduled maintenance activities concerning all Maintenance Crafts. Maintenance activities include MWRs, MWOs, STs, PMOs, calibrations, and miscellaneous maintenance activities. The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

The data for this indicator will not be available until 5/1/95 due to software changes required for implementation of the Integrated Plant Schedule.

The 1995 Fort Calhoun monthly goal for completed scheduled maintenance activities is 80%.

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

SEP 33



IN-LINE CHEMISTRY INSTRUMENTS OUT-OF-SERVICE

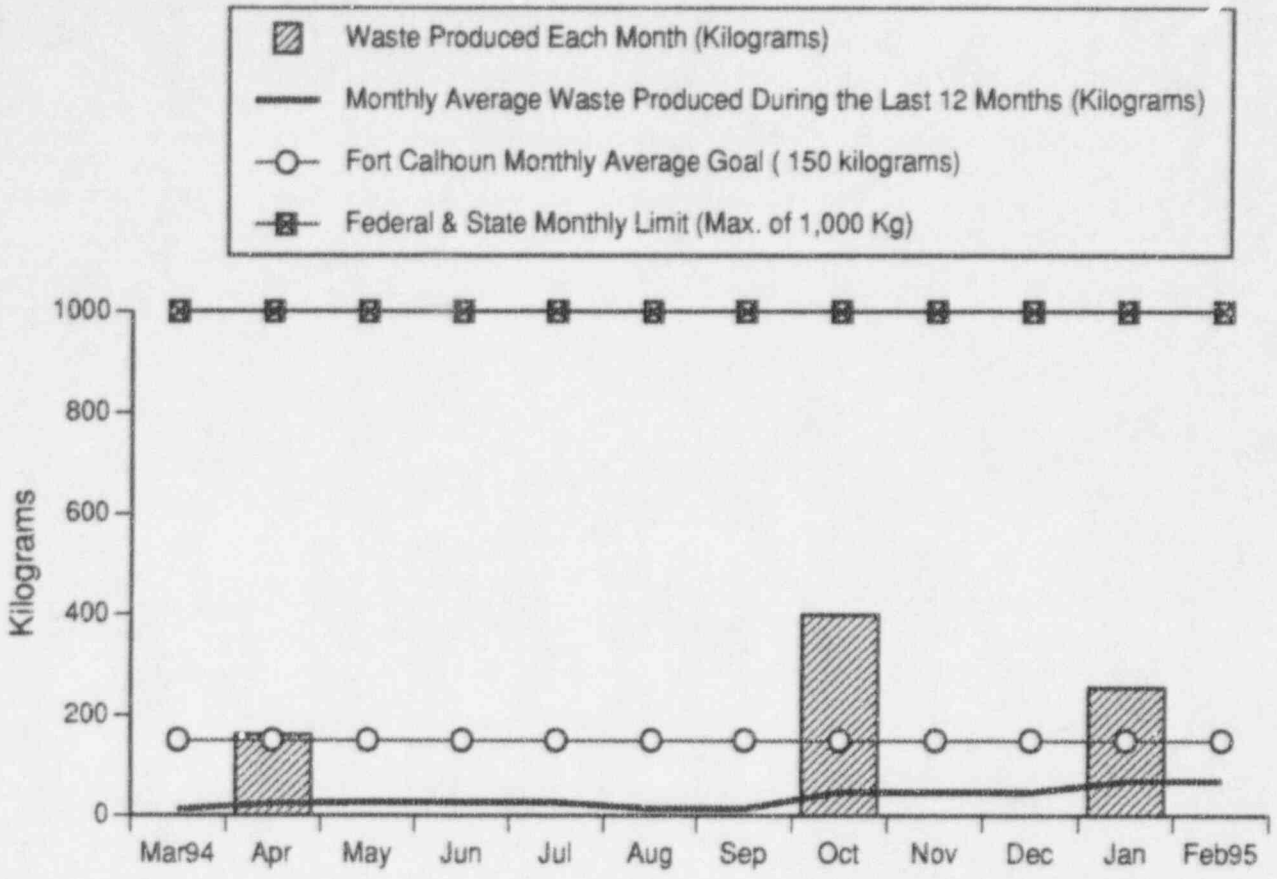
This indicator shows the percentage of hours the in-line chemistry system instruments are inoperable for the reporting month. The chemistry systems involved in this indicator include the Secondary System and the Post Accident Sampling System (PASS).

At the end of February 1995, the percentage of hours the in-line chemistry system instruments were inoperable was 6.03%.

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 1995 Fort Calhoun monthly goal for this indicator is a maximum of 10% in-line chemistry instruments inoperable. 5 out-of-service chemistry instruments make up 10% of all the chemistry instruments that are counted for this indicator.

Data Source: Chase/Reneaud (Manager/Source)
Accountability: Chase/Jaworski
Positive Trend



HAZARDOUS WASTE PRODUCED

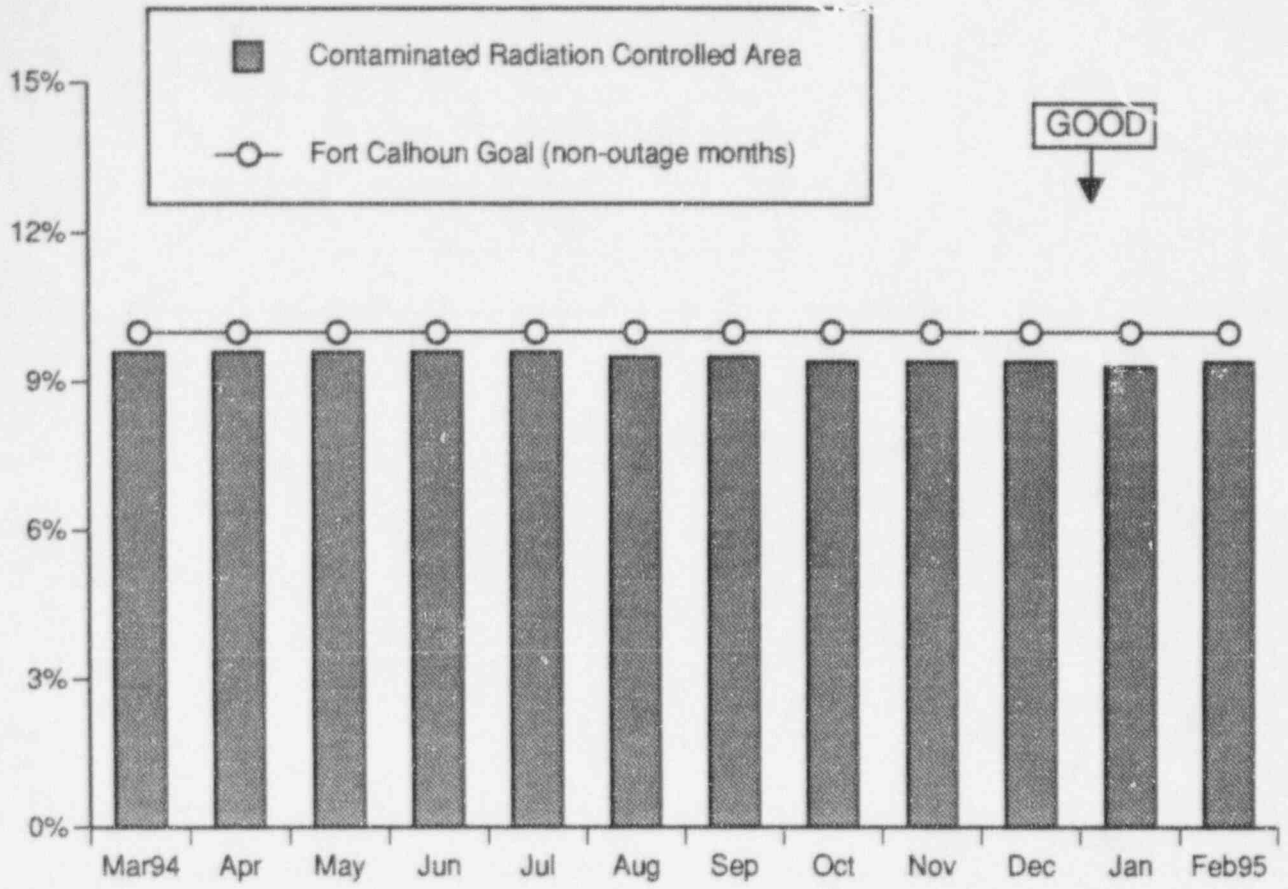
This indicator shows the total amount of hazardous waste produced by the Fort Calhoun Station each month, the monthly average goal and the monthly average total for hazardous waste produced during the last 12 months. This hazardous waste consists of non-halogenated hazardous waste, halogenated hazardous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

During the month of February 1995, 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 815.5 kilograms. The monthly average for hazardous waste produced during the last 12 months is 67.96 kilograms.

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

The 1995 Fort Calhoun monthly average goal for hazardous waste produced is a maximum of 150 kilograms.

Data Source: Chase/Carlson (Manager/Source)
Accountability: Chase/Smith
Positive Trend



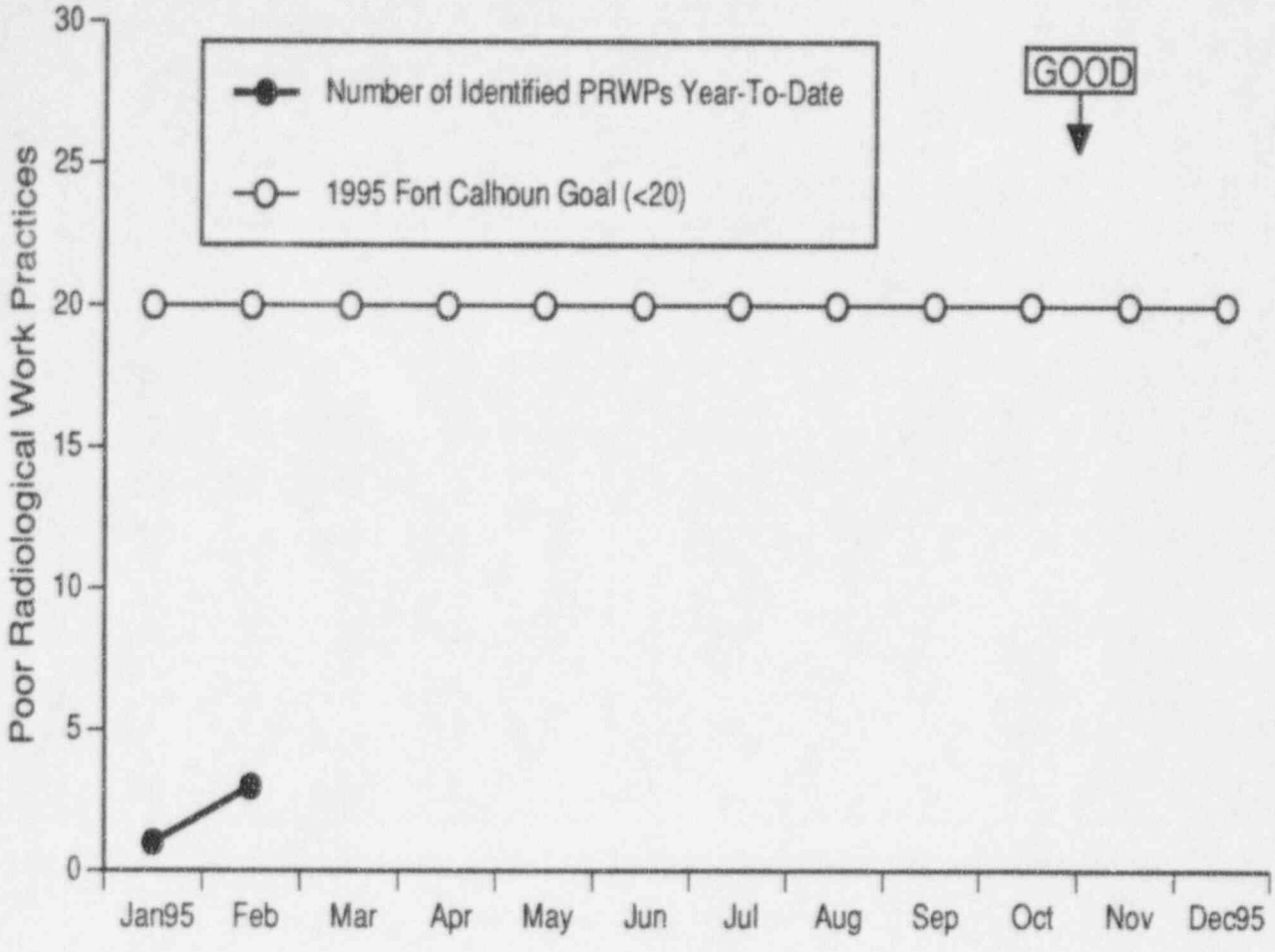
CONTAMINATED RADIATION CONTROLLED AREA

This indicator shows the percentage of the RCA that is contaminated based on the total square footage. The 1995 monthly non-outage goal is a maximum of 9.5% contaminated RCA

At the end of February 1995, the percentage of the total square footage of the RCA that was contaminated was 9.4%.

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

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

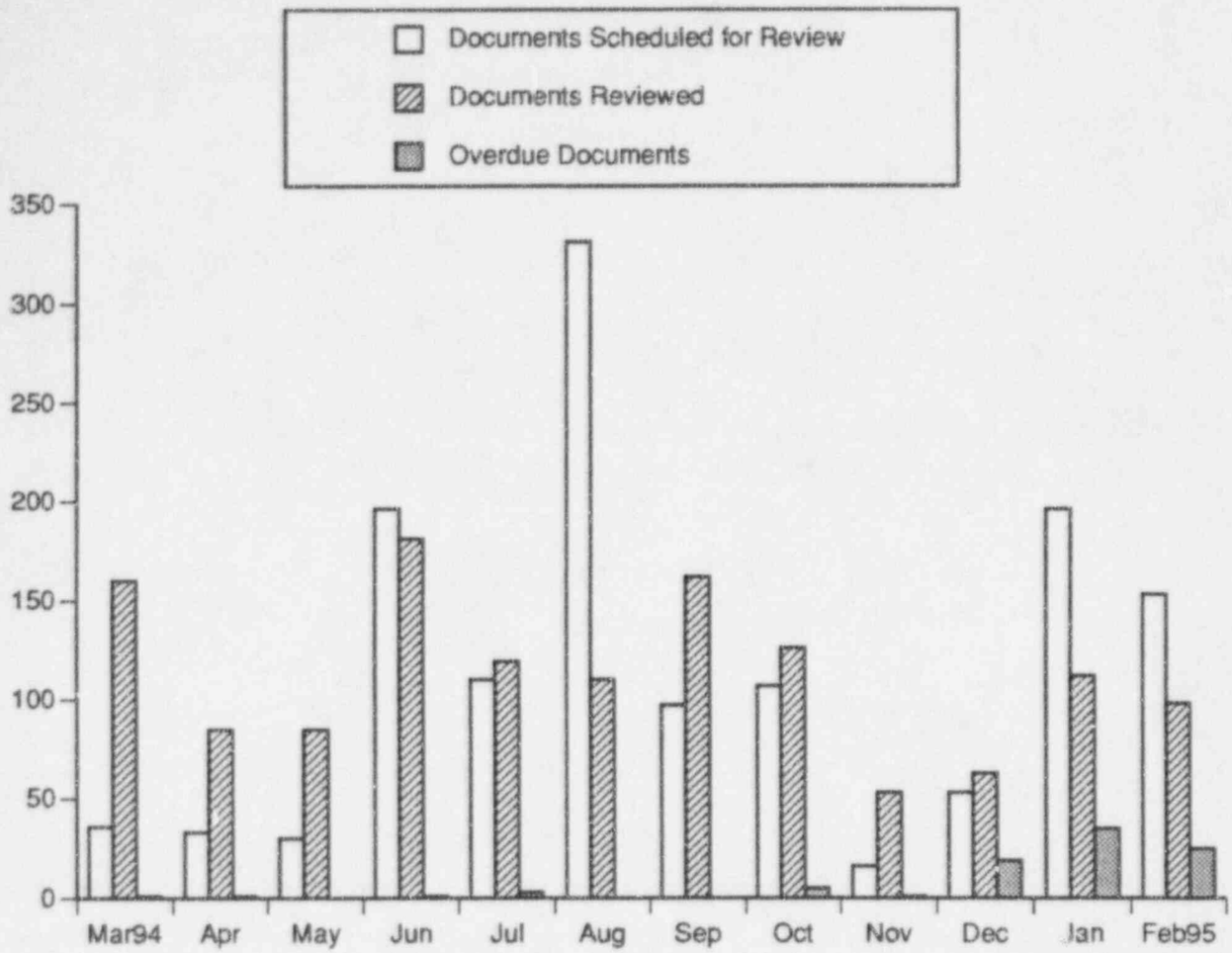
During the month of February 1995, there were 3 PRWPs identified.

There has been 4 PRWPs in 1995.

The 1995 year-end goal for the number of PRWPs is a maximum of 20.

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

SEP 52



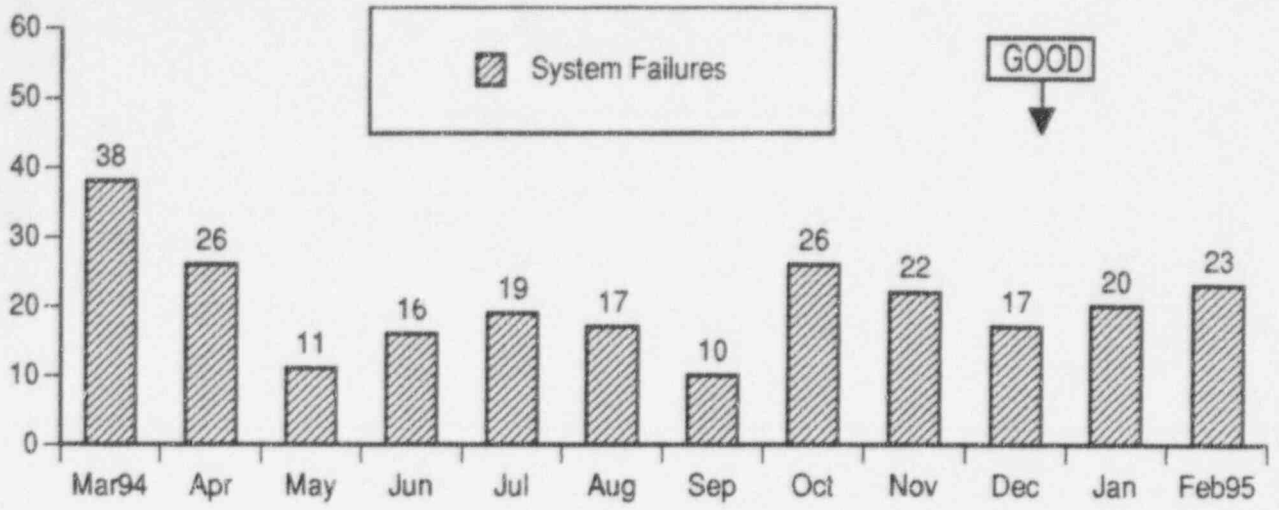
DOCUMENT REVIEW

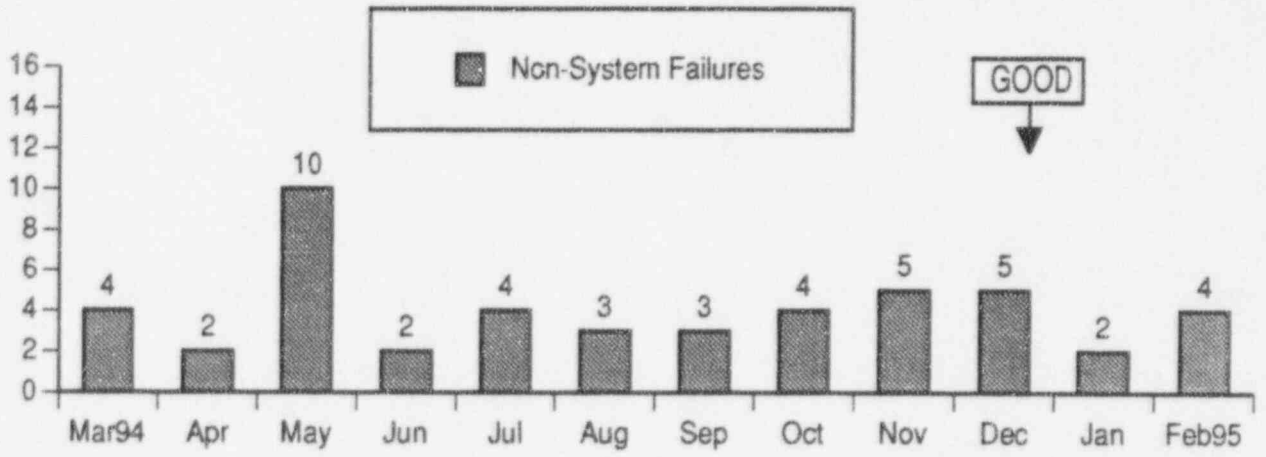
This indicator shows the number of completed, scheduled, and overdue (greater than 6 months past the scheduled due date) biennial reviews for the reporting month. These document reviews are performed in-house and include Special Procedures, the Site Security Plan, Maintenance Procedures, Preventive Maintenance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

During February 1995, there were 153 document reviews scheduled, while 98 document reviews were completed. At the end of the month, there were 25 document reviews more than 6 months overdue. There were 48 new documents initiated in February.

Data Source: Chase/Plath
Accountability: Chase/Jaworski
Adverse Trend: None

SEP 46





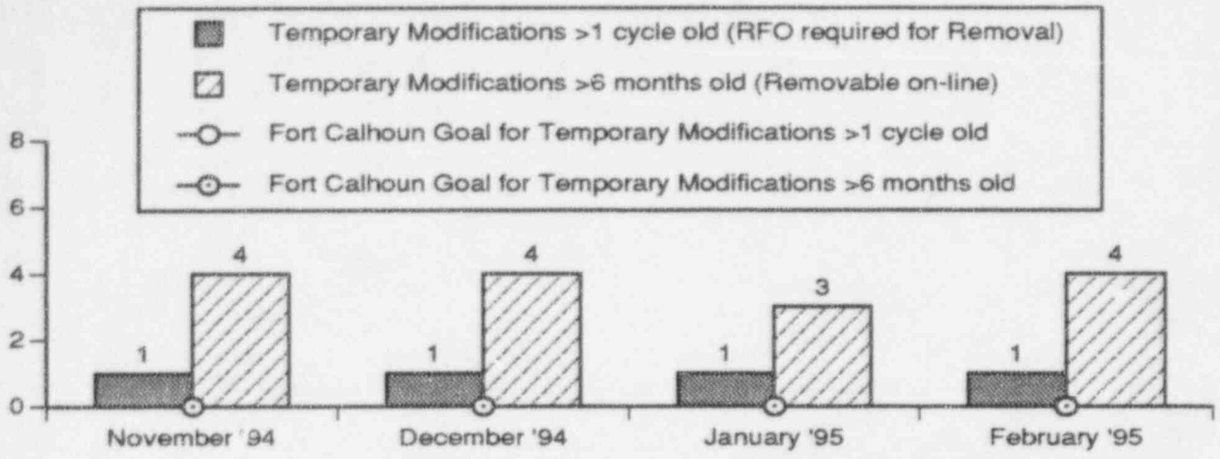
LOGGABLE/REPORTABLE INCIDENTS (SECURITY)

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

During the month of January 1995, there were 27 loggable/reportable incidents identified. System failures accounted for 85% of the loggable/reportable incidents. Eighteen (18) of the twenty -three (23) system failures were environmental failures due to inclement weather and sun glare. Non-system failures consisted of two (2) unattended security badge incidents, one (1) tailgating incident, and one (1) security force error.

Data Source: Sefick/Woerner (Manager/Source)
Accountability: Sefick
Adverse Trend: None

SEP 58



TEMPORARY MODIFICATIONS

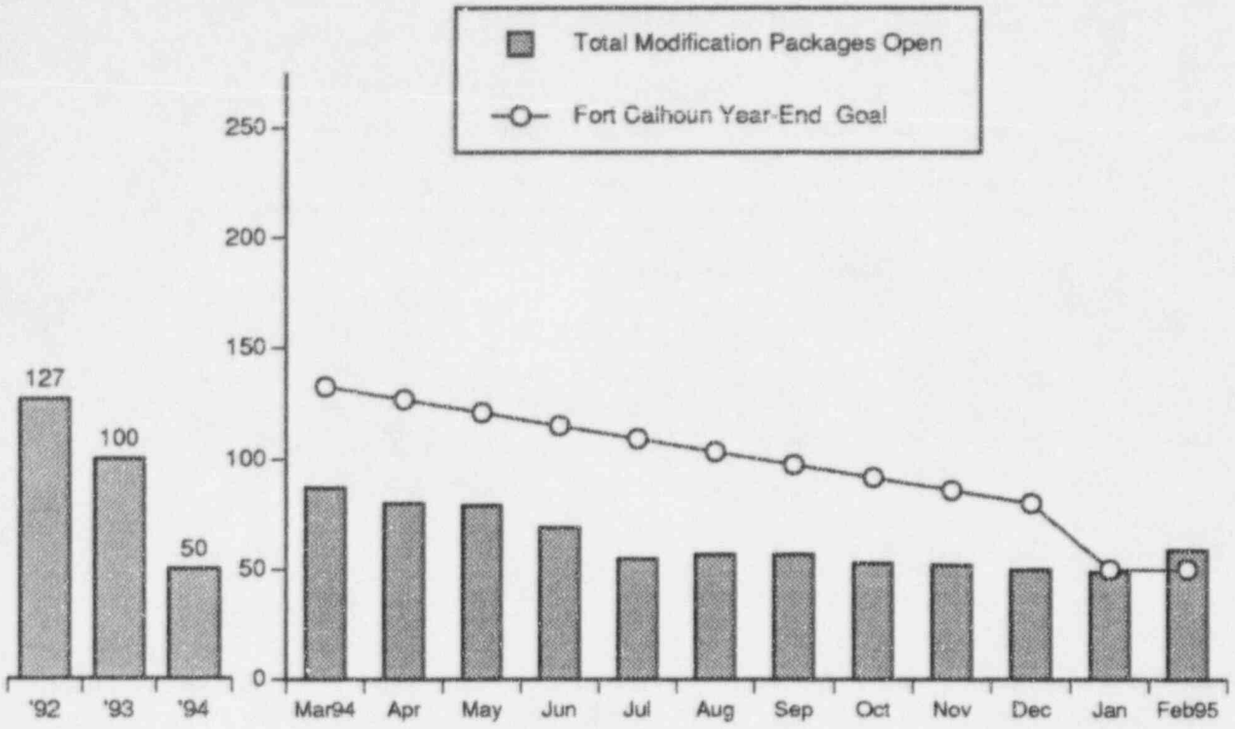
This indicator provides information on the number of temporary modifications greater than one fuel cycle old requiring a refueling outage (RFO) for removal and the number of temporary modifications removable on-line that are greater than six months old. The 1995 Fort Calhoun monthly goals for this indicator are zero, however, specific temporary modifications have been approved by management to exceed these goals due to cost effectiveness considerations. These are listed below.

There is currently 1 temporary modification that is greater than one fuel cycle old requiring a refueling outage to remove: Epoxy repairs to ST-4B, which is awaiting completion of MWO 931325, scheduled start date 1995 Refueling Outage. This temporary modification was previously included in the on-line removable >6 months old classification, but was re-classified as an outage modification to save engineering resources from completing 1 ECN to allow the epoxy repair to remain in place and a second ECN to remove it during the 1995 refueling outage. In addition, at the end of February 1995 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) Swap leads for DG-1 outage; and 3) Rubber patch on surface sluice line, which is awaiting completion of MWO 940774, has been re-scheduled for the 1995 Refueling Outage; and 4) Control system for intensifier on HCV-2987, which is awaiting completion of ECN 94-280, scheduled for completion as 1995 on-line.

Currently, 2 temporary modifications are over the goal of 6 months. The other 2 are exceptions to the goal as described in letter PED-STE-94-042.

At the end of February, 1995, there was a total of 29 TMs installed in the Fort Calhoun Station. 19 of the 29 installed TMs require an outage for removal and 10 are removable on-line. In 1995 a total of 5 temporary modifications have been installed.

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



OUTSTANDING MODIFICATIONS

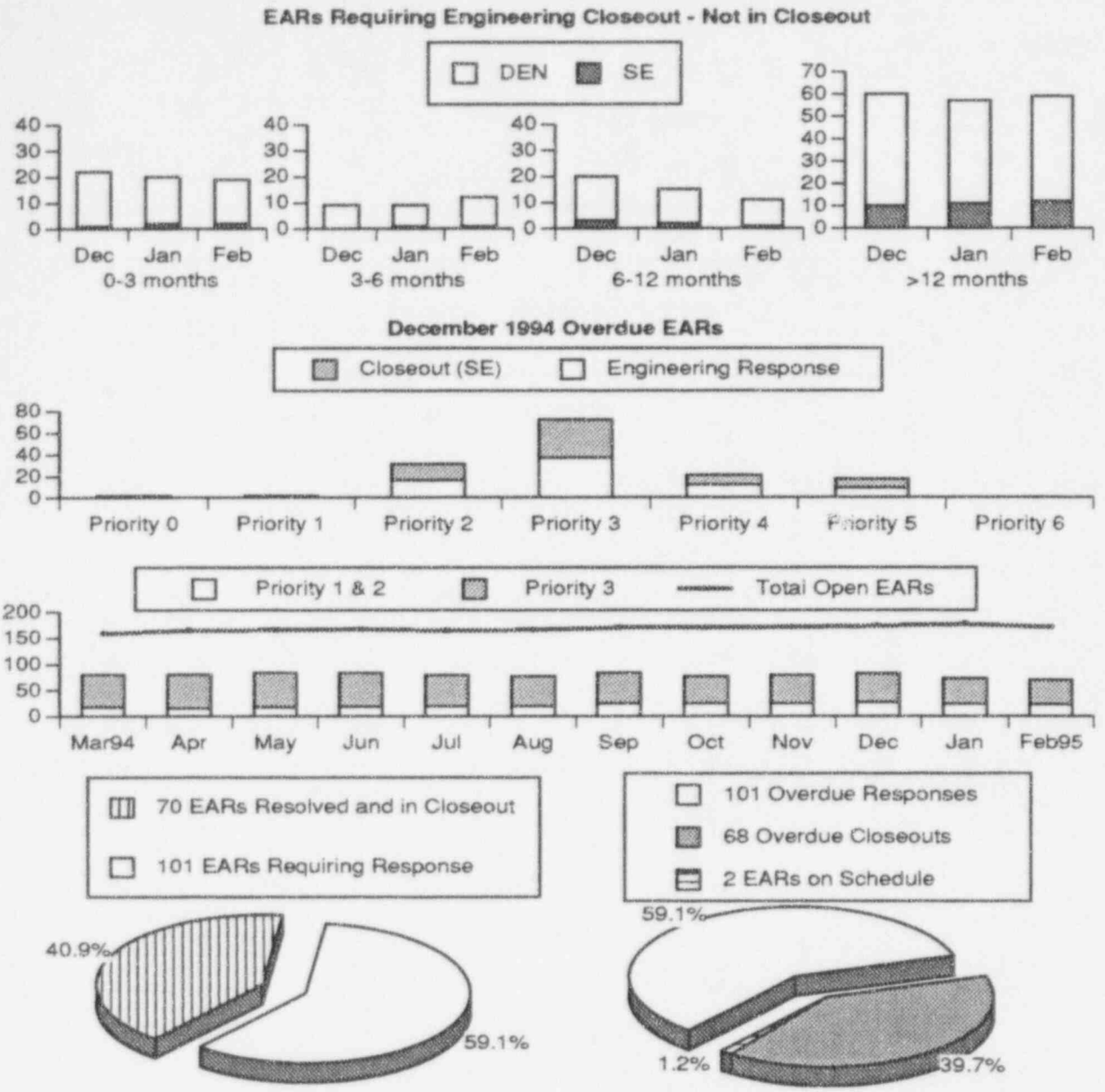
This indicator shows the total number of outstanding modifications (excluding outstanding modifications which are proposed to be cancelled).

Category	Reporting Month
Form FC-1133 Backlog/In Progress	1
Mod. Requests Being Reviewed	0
Design Engr. Backlog/In Progress	26
Construction Backlog/In Progress	30
Design Engr. Update Backlog/In Progress	2
Total =	59

At the end of February 1995, 2 additional modification requests had been issued this year and no modification requests had been cancelled. The Nuclear Projects Review Committee (NPRC) had completed 8 backlog modification request reviews this year. The Nuclear Projects Committee (NPC) had completed 2 backlog modification request reviews this year.

The 1995 year-end Fort Calhoun goal for this indicator is a maximum of 50 outstanding modifications.

Data Source: Jaworski/Turner (Manager/Source)
Scofield/Lounsbery (Manager/Source)
Accountability: Scofield/Phelps
Adverse Trend: None



ENGINEERING ASSISTANCE REQUEST BREAKDOWN

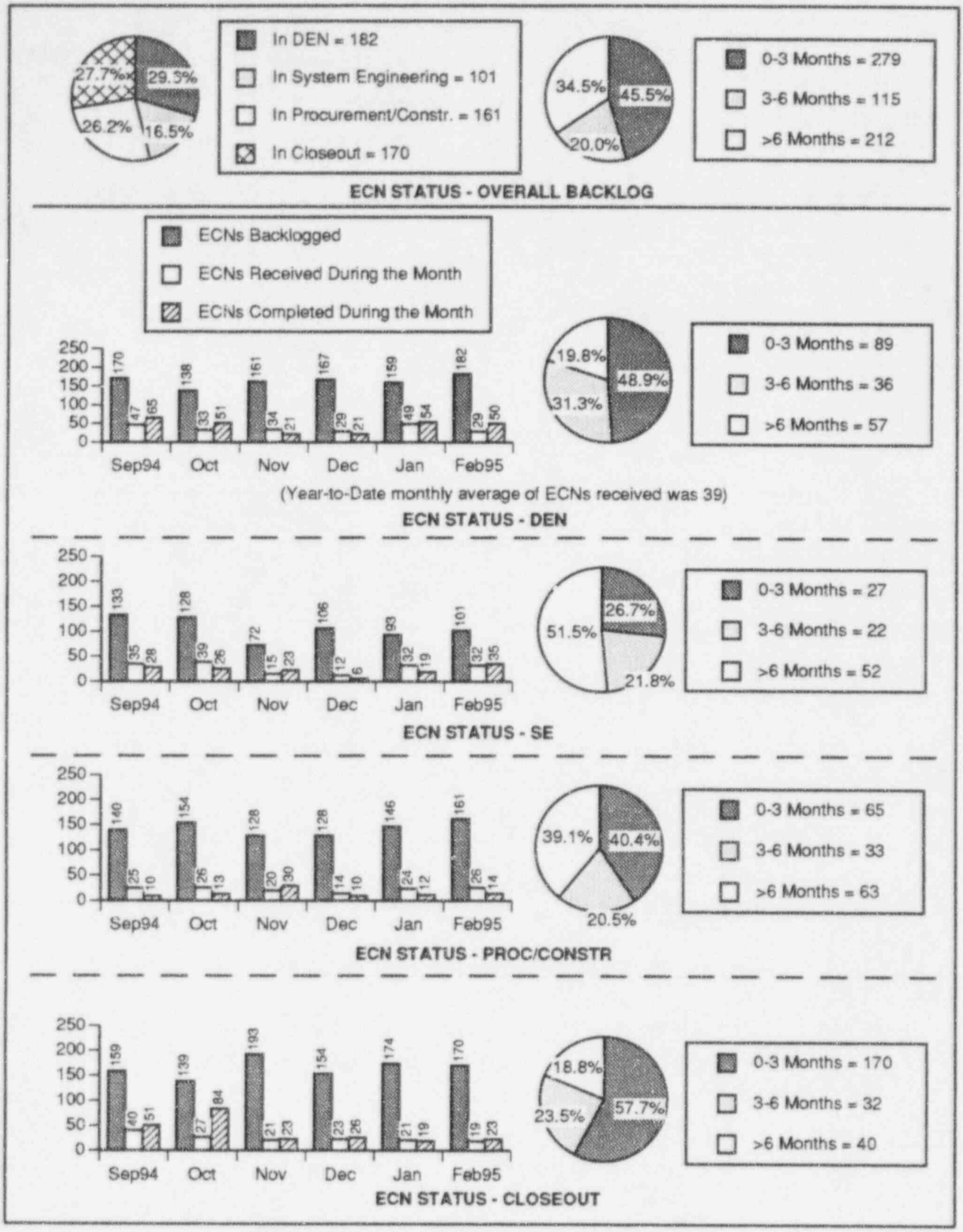
This indicator shows a breakdown of the number of EARs assigned to Design Engineering and System Engineering. The 1994 year-end goal for this indicator is a maximum of 140 outstanding EARs.

Total EAR breakdown is as follows:

EARs opened during the month	23
EARs closed during the month	28
Total EARs open as of the end of the month	171

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

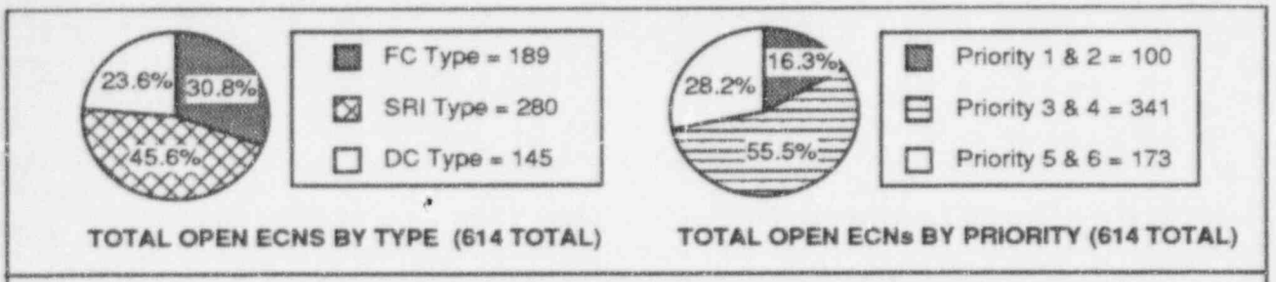
SEP 62

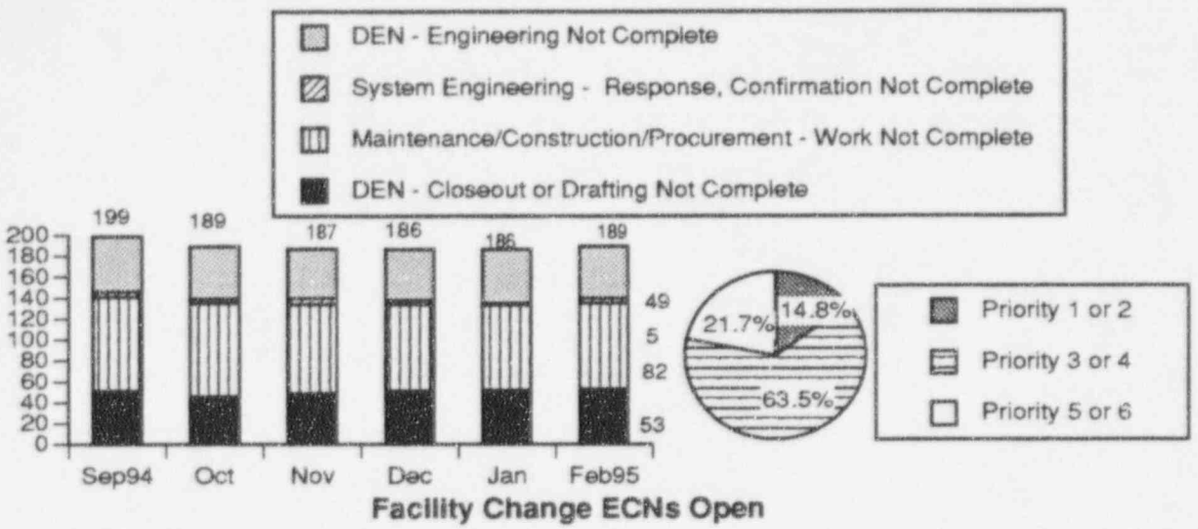


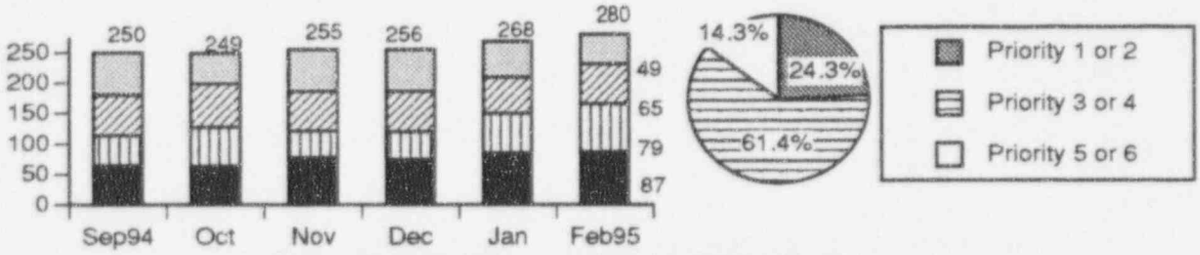
ENGINEERING CHANGE NOTICE STATUS

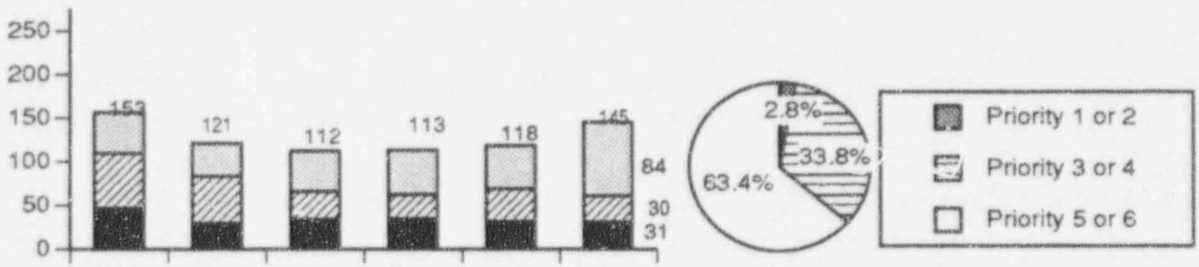
Data Source: Skiles/Mikkelsen (Manager/Source)
Accountability: Skiles/Jaworski
Adverse Trend: None

SEP 62



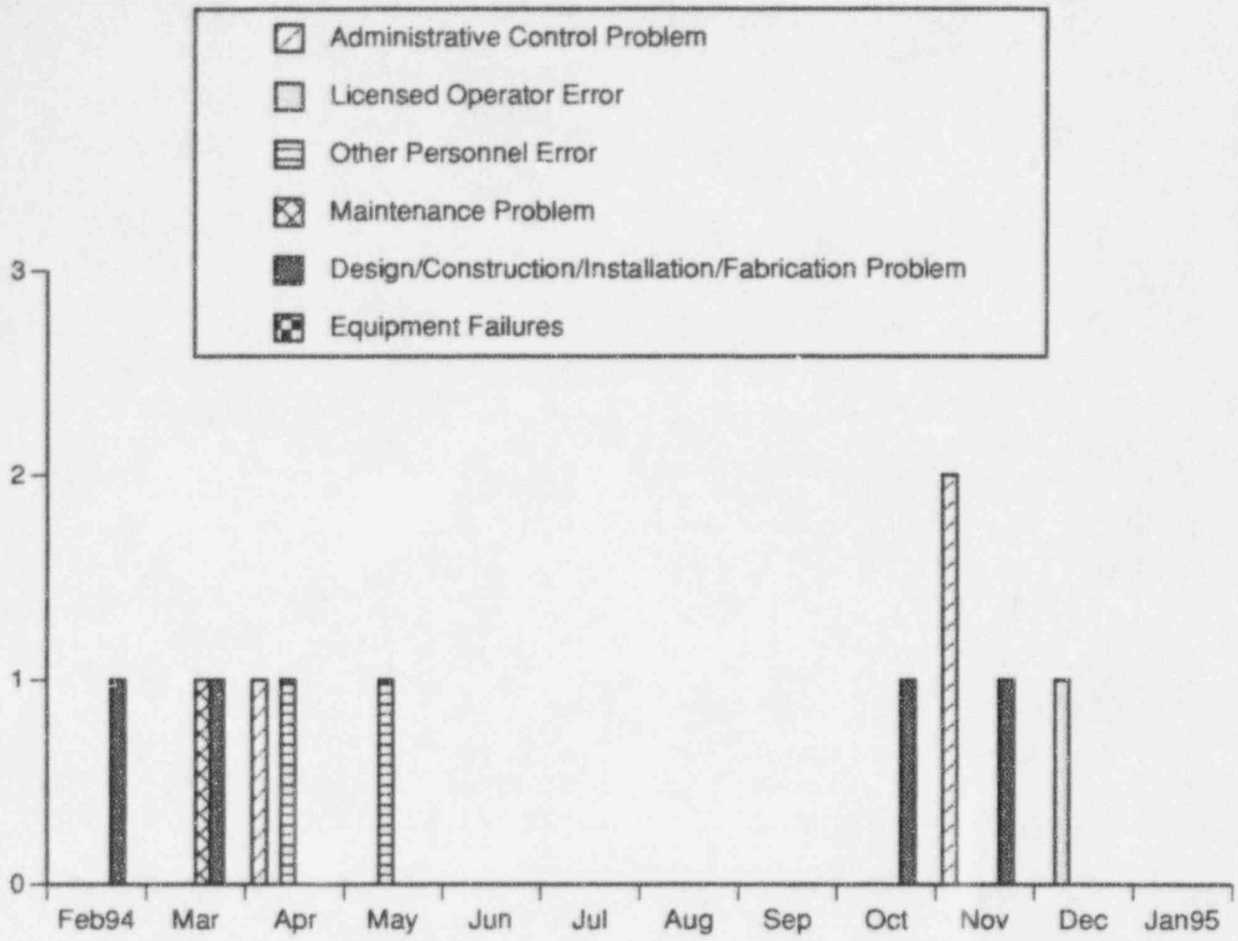






ENGINEERING CHANGE NOTICES OPEN

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



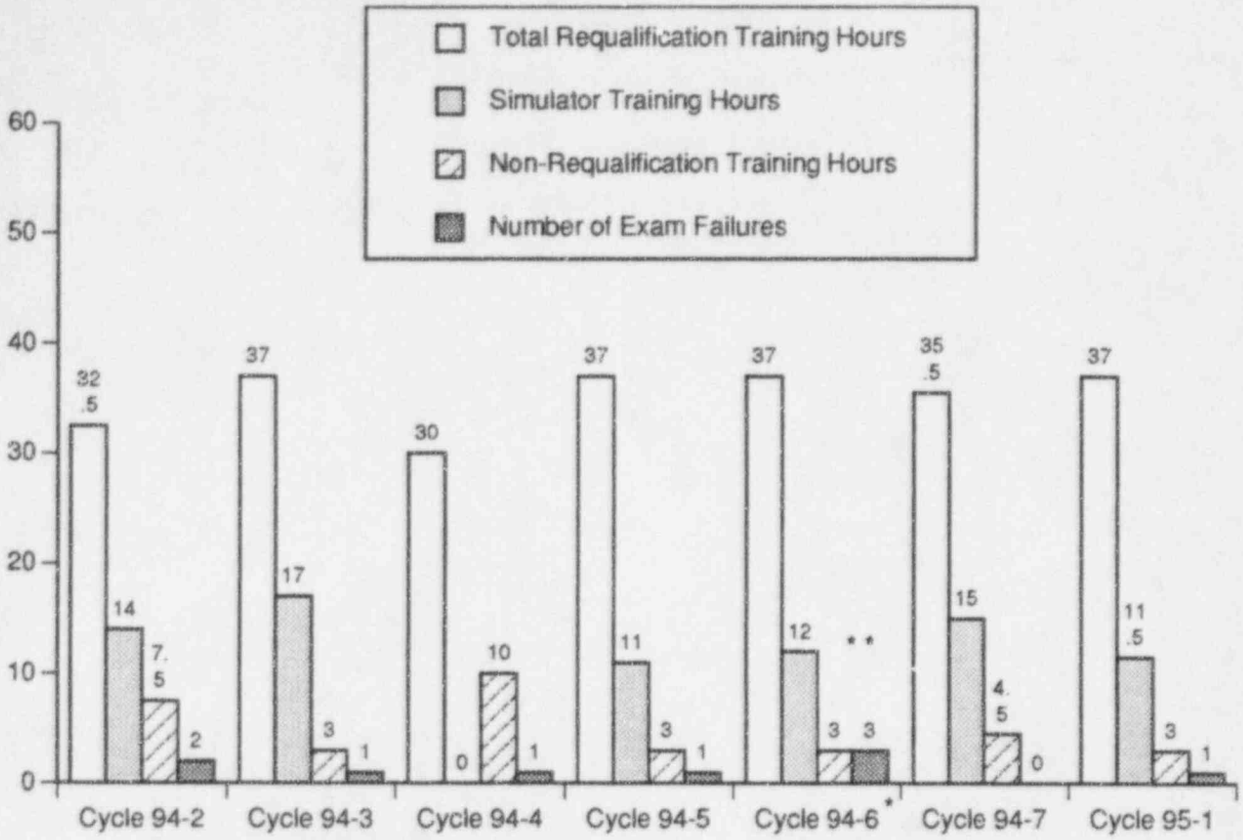
LICENSEE EVENT REPORT (LER) ROOT CAUSE BREAKDOWN

This indicator shows the LERs by event date broken down by Root Cause Code for each of the past twelve months from February 1, 1994, through January 31, 1995. To be consistent with the Preventable/Personnel Error LERs indicator, this indicator is reported by the LER event date, as opposed to the LER report date.

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 were no events in January 1995 that resulted in an LER.

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



*Note 1: The Simulator was out-of-service during Cycle 94-4.
* * Note 2: Includes 8 hours of General Employee Training.

LICENSED OPERATOR REQUALIFICATION TRAINING

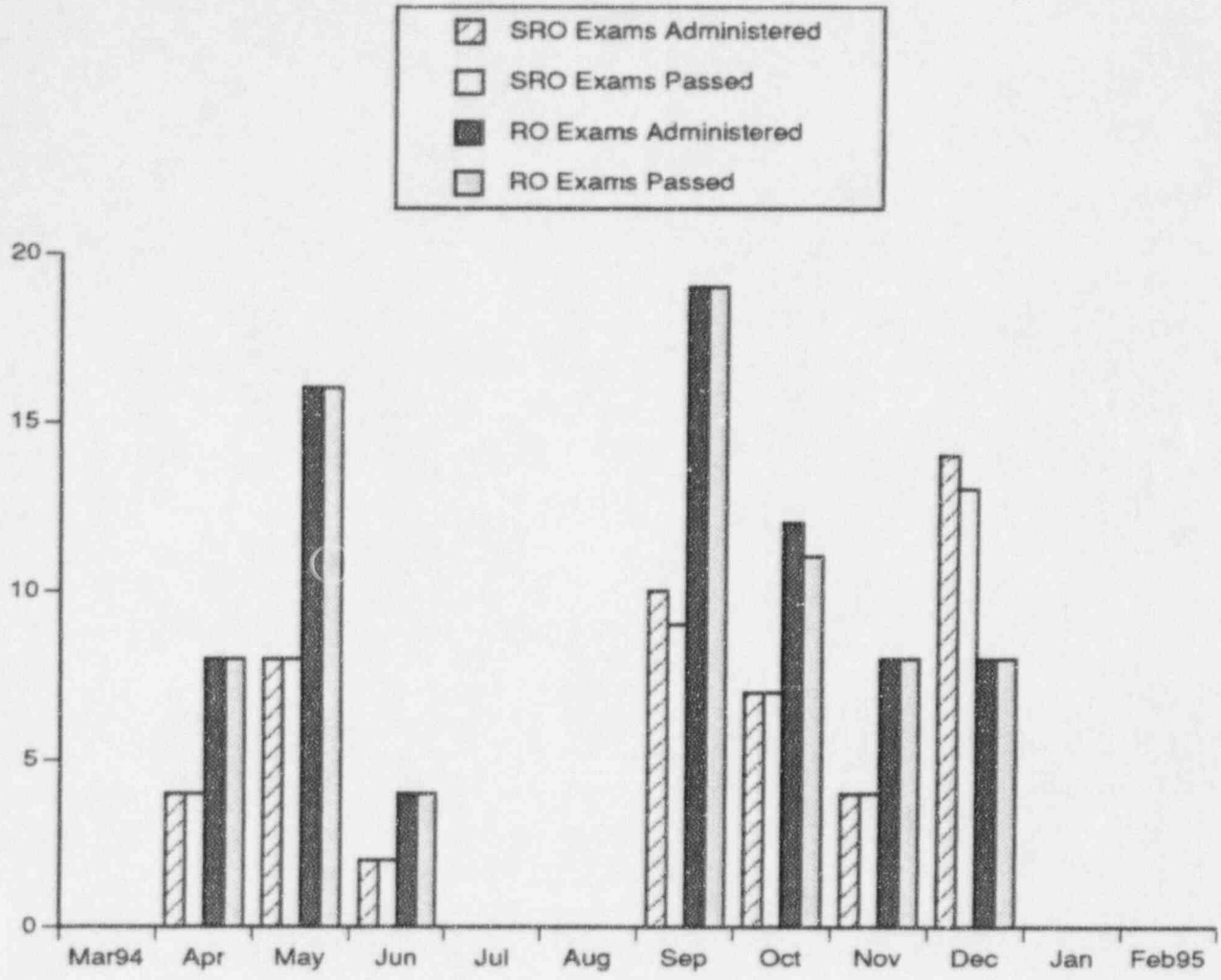
This indicator provides information on the total number of hours of training given to each crew during each cycle. The Simulator training hours shown on the graph are a subset of the total training hours. Non-Requalification Training Hours are used for AOP/EOP verification & validation, INPO commitments, 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 was 1 simulator exam failure. The individual was removed from licensed operator duties for remediation. Remediation was completed and the individual was returned to licensed operator duties. There was no impact on shift operations.

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

SEP 68



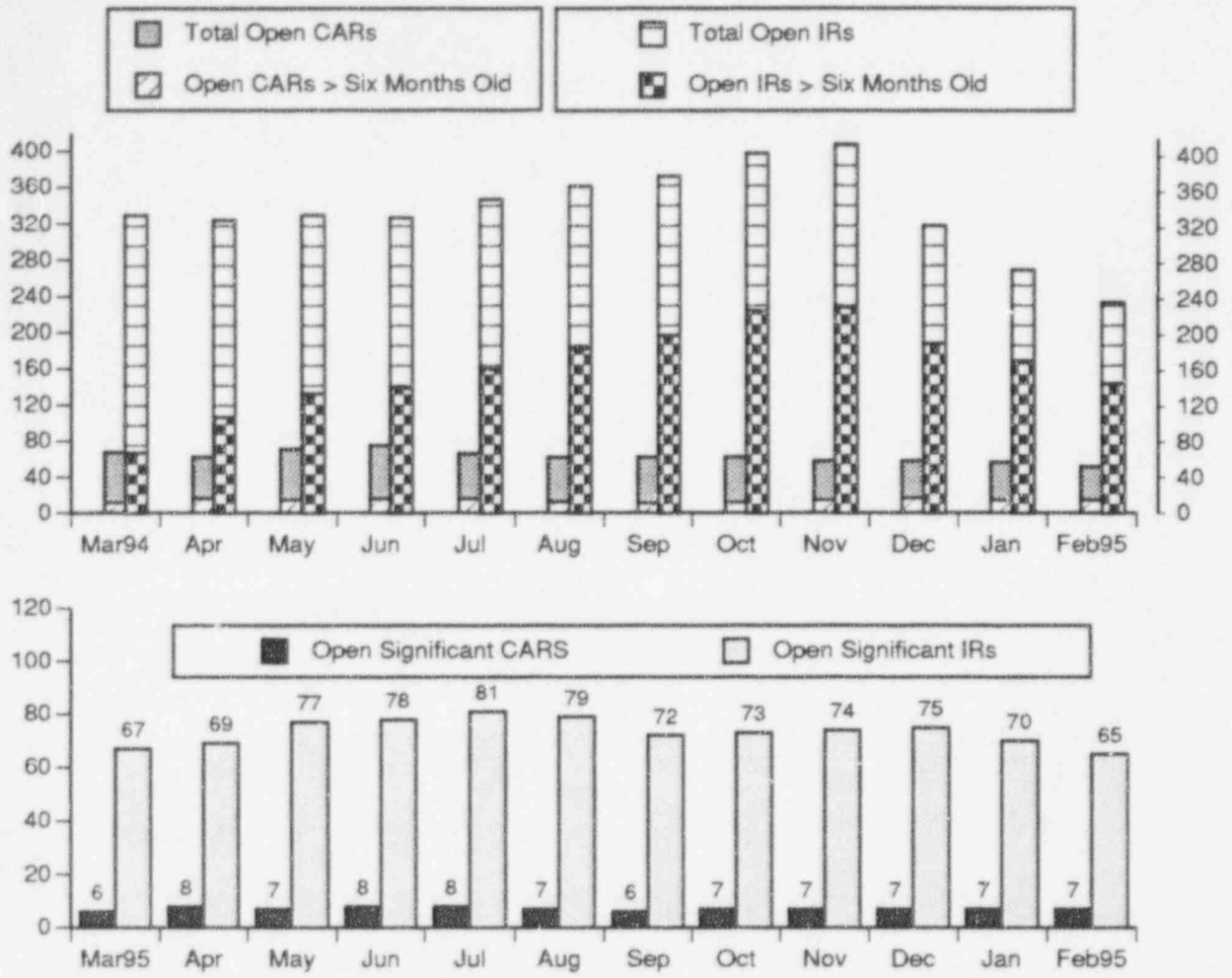
LICENSE CANDIDATE EXAMS

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.

There were no OPPD Reactor Operator or Senior Reactor Operator exams administered during February 1995.

Data Source: Gasper/Guliani (Manager/Source)
Accountability: Gasper/Guliani
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.

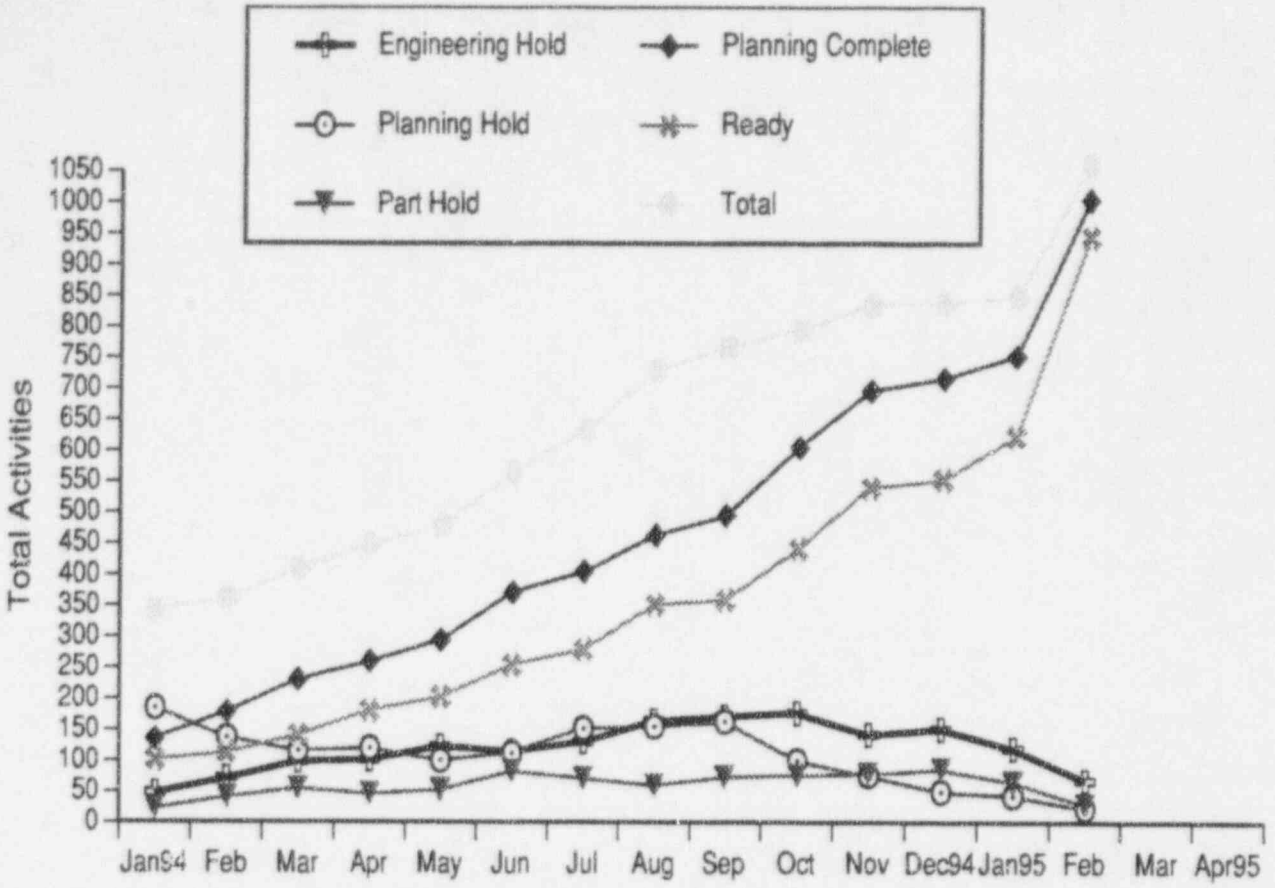
At the end of February 1995 there were 52 open CARs. 15 of these CARs were greater than 6 months old. There were 7 Open Significant CARs at the end of the month.

Also, at the end of February there were 237 open IRs. 146 of these IRs were greater than 6 months old. There were 65 Open Significant IRs at the end of the month.

The 1995 monthly goal for the number of CARs greater than 6 months old is less than 30.

Data Source: Orr/Gurtis (Manager/Source) & CHAMPS
Accountability: Andrews/Phelps/Patterson

Adverse Trend: None



MWO PLANNING STATUS (CYCLE 16 REFUELING OUTAGE)

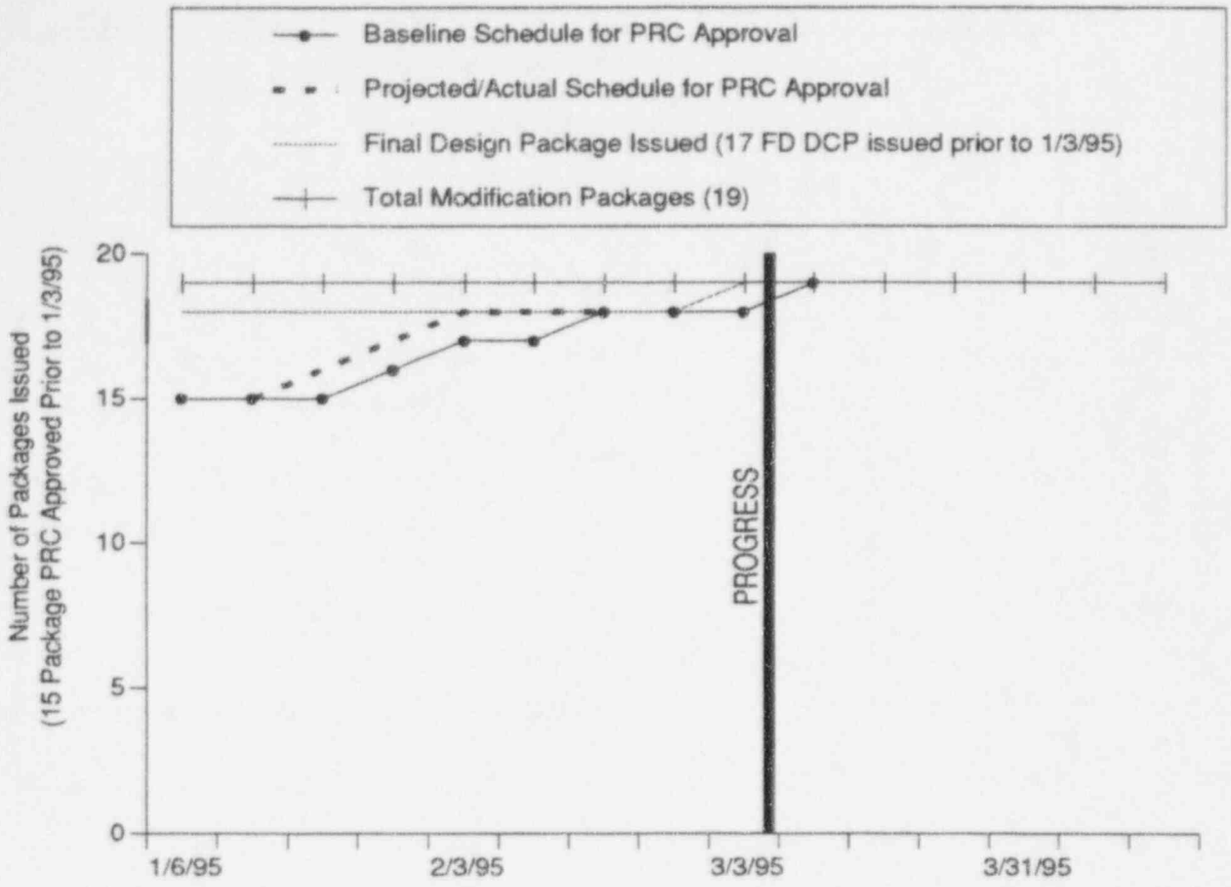
This indicator shows the total number of Maintenance Work Requests (MWRs) and Maintenance Work Orders (MWOs) that have been approved for inclusion in the Cycle 16 Refueling Outage. This graph indicates:

- 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/Faulhaber
Adverse Trend: None

SEP 31

1995 OUTAGE MODIFICATIONS



PROGRESS OF CYCLE 16 OUTAGE MODIFICATION PLANNING (FROZEN SCOPE OF 19 MODIFICATIONS)

This indicator shows the status of 4 emergent modifications approved for installation during the Cycle 16 Refueling Outage. These 4 modifications are not part of the performance indicator to have outage modifications approved 6 months prior to the outage. The data is represented with respect to the baseline schedule (established 1/13/95) and the current schedule. This information is taken from the Modification Variation Report provided by the Design Engineering group.

February 1995 Modifications Added = 4 Deleted = 0

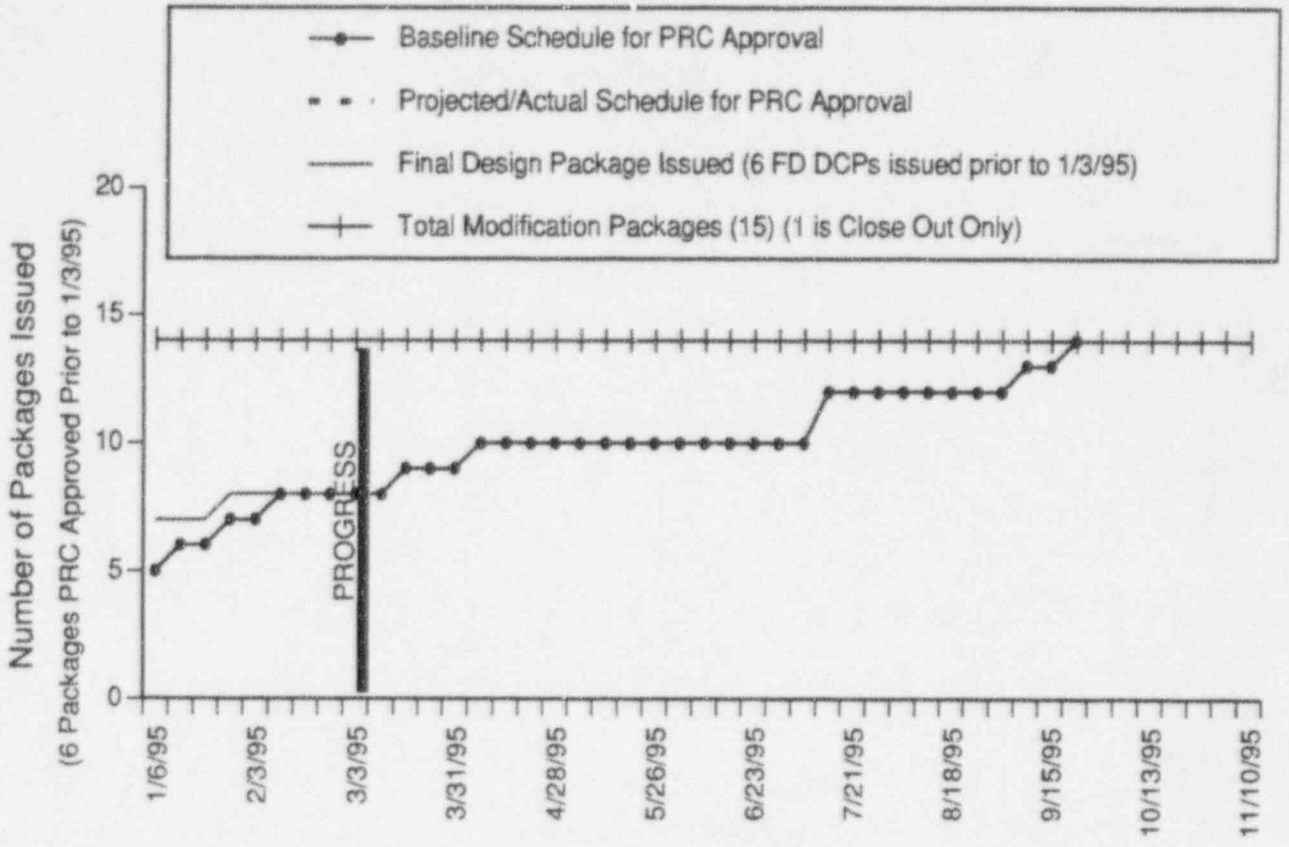
The 4 modifications added in February have been PRC approved and are not included in this performance indicator.

The goal for this indicator is to have all modification packages identified prior to 1/13/95 and PRC approved by March 9, 1995.

Data Source: Skiles/Ronne (Manager/Source)
Accountability: Phelps/Skiles
Adverse Trend: None

SEP 31

1995 ON-LINE MODIFICATIONS



PROGRESS OF CYCLE 16 OUTAGE MODIFICATION PLANNING (FROZEN SCOPE OF 14 MODIFICATIONS)

This indicator shows the status of modifications approved for on-line installation during 1995. The data is represented with respect to the baseline schedule (established 1/13/95) and the current schedule. This information is taken from the Modification Variation Report produced by the Design Engineering Nuclear group.

February 1995 Modifications Added = 0 Deleted = 0

The goal for this indicator was to have all modification packages identified prior to 1/13/95 and PRC approved by September 28, 1995.

Data Source: Skiles/Ronne (Manager/Source)
Accountability: Phelps/Skiles
Adverse Trend: None

SEP 31

ACTION PLANS

ACTION PLANS

This section lists action plans that have been developed for the performance indicators cited as Adverse Trends during the month preceding this report. Also included are Action Plans for indicators that have been cited in the preceding month's report as Needing Increased Management Attention for three (3) consecutive months.

In accordance with Revision 3 of NOD-QP-37, the following performance indicators would require action plans based on three (3) consecutive months of performance cited as "Needing Increased Management Attention":

- **Fuel Reliability**
- **Thermal Performance**

The Plant Manager and Station Engineering Manager have reviewed the daily and ongoing actions being taken to return these performance indicators to meeting the goals. This review indicates appropriate action is being taken and no explicit action plan is required.

The action plan for **Fuel Reliability Indicator** (page 14) follows:

1) Fission product activity data from January full power operation showed a Xenon-133 activity increase but no iodine spiking. The Westinghouse and ABB/CE technical experts on fuel reliability have concluded that there is potential for one or two defective fuel rod(s) in the Cycle 15 core. This prediction is based on a change in the Xe-133 to I-131 radio. This prediction has been supported by results from the CHIRON and CADE fuel reliability codes which also indicate one or two fuel pins to be failed.

2) The Cesium isotopes will be evaluated during the end of cycle shutdown in an attempt to calculate the burnup of the leaking assembly. A request for quotation has been issued to provide failed fuel inspection services should they be required to identify the leaking fuel assembly.

The action plan for **Thermal Performance** (page 32) follows:

Thermal performance will improve as a result of the following actions:

1) FW Flow Nozzle Fouling Study

Initial results from this study have confirmed losses in plant electrical output are occurring due to conservatively over calculating Reactor thermal power based on a secondary side heat balance. Nozzle fouling occurs after prolonged operation at steady power. Applying the results of this study (a final report will be presented following the current outage) will take place over the next year to improve plant output and heat rate.

2) ETA Addition

The investigation of the effects of adding ETA (ethanolamine) to secondary chemistry continues. Initial results dealing with ETA effects on FW Flow Nozzle deposits will be presented with the final report for the fouling study. ETA testing should be completed following the outage after inspection of secondary systems and equipment.

3) Outage Maintenance Activities

Condenser cleaning and backwash valve repairs will be performed during the current outage.

4) Improved Secondary System Monitoring

Electronic storage of ERF log data (hourly as well as daily plant data can now be reviewed) and additional pages incorporated into the logs in November of 1994 have increased the number of data points used for performance monitoring from 85 to 184 and the amount of plant data reviewed by a factor of fifty overall. The additional data points (condensate temperatures, extraction pressures, heater drain temperatures, turbine vibration, seal temperatures, etc.) will aid in the detection of equipment problems and improve plant performance as well as reliability.

5) Improved Calculation Methods

Changes by INPO in the methodology for calculating thermal performance will be incorporated into the Performance Indicator. Averaging of once a week values for the monthly indicator was started in January 1995. Use of the "best achievable heat rate" instead of "design heat rate" for calculating the indicator will begin upon completion of a review of past operating data.

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.

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.

CLEAN CONTROLLED AREA CONTAMINATIONS ≥1,000 DISINTEGRATIONS/MINUTE PER PROBE AREA
The personnel contamination events in the clean controlled area. This indicator tracks personnel performance for SEP #15 & 54.

CONTAMINATED 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 contaminated based on the total square footage. This indicator tracks performance for SEP # 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.

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 & 27.

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) 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.

ENGINEERING CHANGE NOTICES OPEN

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.

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 (1,000 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 shut down (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.

INDUSTRIAL SAFETY ACCIDENT RATE - INPO
This indicator is defined as the number of accidents per 200,000 man-hours worked for all utility personnel permanently assigned to the station that result in any of the following: 1) one or more days of restricted work (excluding the day of the accident); 2) one or more days away from work (excluding the day of the accident); and 3) fatalities. Contractor personnel are not included for this indicator.

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 #58.

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 #58.

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.

PERFORMANCE INDICATOR DEFINITIONS

MAINTENANCE WORKLOAD BACKLOGS
This indicator shows the backlog of non-outage Maintenance Work Orders remaining open at the end of the reporting month. Maintenance classifications are defined as:

Corrective - Repair and restoration of equipment or components that have failed or are malfunctioning and are not performing their intended function.

Preventive - Actions taken to maintain a piece of equipment within design operating conditions, prevent equipment failure, and extend its life and are performed prior to equipment failure.

Non-Corrective/Plant Improvements - Maintenance activities performed to implement station improvements or to repair non-plant equipment.

Maintenance Work Priorities are defined as:

Emergency - Conditions which significantly degrade station safety or availability.

Immediate Action - Equipment deficiencies which significantly degrade station reliability. Potential for unit shutdown or power reduction.

Operations Concern - Equipment deficiencies which hinder station operation.

Essential - Routine corrective maintenance on essential station systems and equipment.

Non-Essential - Routine corrective maintenance on non-essential station systems and equipment.

Plant Improvement - Non-corrective maintenance and plant improvements.

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.

MWO PLANNING STATUS (CYCLE 16 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 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.

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 maintenanc craft. Rework is: Any additional work required to correct deficiencies discovered during a failed Post Maintenance Test to ensure the component/system passes subsequent Post Maintenance Tests.

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.

PREVENTABLE/PERSONNEL ERROR LERs
This indicator is a breakdown of LERs. For purposes of LER event classification, a preventable LER is defined as: An event for which the root cause is personnel error (i.e., inappropriate action by one or more individuals), inadequate administrative controls, a design/construction/installation/fabrication problem (involving work completed by or supervised by OPPD personnel) or a maintenance problem (attributed to inadequate or improper upkeep/repair of plant equipment). Also, the cause of the event must have occurred within approximately two years of the "Event Date" specified in the LER (e.g., an event for which the cause is attributed to a problem with the original design of the plant would not be considered preventable).

For purposes of LER event classification, a "Personnel Error" LER is defined as follows: An event for which the root cause is inappropriate action on the part of one or more 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. Additionally, each event classified as a "Personnel Error" should also be classified as "Preventable." This indicator trends personnel performance for SEP Item #15.

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 CYCLE 16 OUTAGE MODIFICATION PLANNING (FROZEN SCOPE OF 15 MODIFICATIONS)
This indicator shows the status of modifications approved for completion during the Refueling Outage.

PROGRESS OF 1994 ON-LINE MODIFICATION PLANNING (FROZEN SCOPE OF 14 MODIFICATIONS)
This indicator shows the status of modifications approved for completion during 1994.

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 or administratively closed by the scheduled date plus a grace period equal to 25 % of the scheduled interval. This indicator tracks preventive maintenance activities for SEP #41.

PERFORMANCE INDICATOR DEFINITIONS

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 eighteen month CFAR period.

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. Criteria for calculating the CPI are: 1) The plant is at greater than 30 percent power; and 2) The power is changing less than 5% per day. The CPI is calculated using the following equation: CPI = (sodium/0.90) + (Chloride/1.70) + (Sulfate/1.90) + (Iron/4.40) + (Copper/0.30)/5. Where: Sodium, sulfate and chloride are the monthly average blowdown concentrations in ppb, iron and copper are monthly time weighted average feedwater concentrations in ppb. The denominator for each of the 5 factors is the INPO median value. If the monthly average for a specific parameter is less than the INPO median value, the median value is used in the calculation.

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.

PERFORMANCE INDICATOR DEFINITIONS

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.

UNIT CAPACITY FACTOR
The net electrical energy generated (MWH) divided by the product of maximum dependable capacity (net MWe) times the gross hours in the reporting period expressed as a percent. Net electrical energy generated is the gross electrical output of the unit measured at the output terminals of the turbine generator minus the normal station service loads during the gross hours of the reporting period, expressed in megawatt hours.

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 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, 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 - 02/20/95	5,043,886	61,065,899
15th Refueling	02/20/95 - 04/10/95	(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