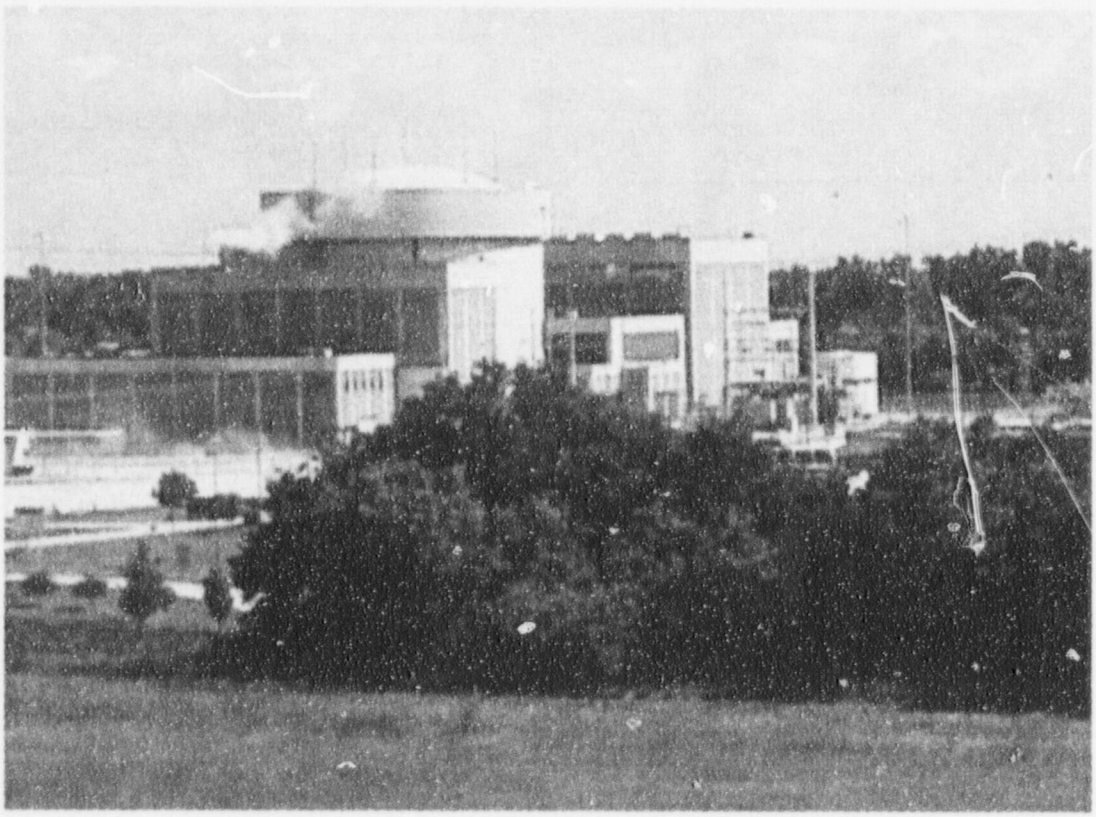
OMAHA PUBLIC POWER DISTRICT

FORT CALHOUN STATION



PERFORMANCE INDICATORS

AUGUST 1998

SAFE OPERATIONS
PERFORMANCE EXCELLENCE
COST EFFECTIVENESS

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FORT CALHOUN STATION
Monthly Summary

OPERATIONS

During the month of August 1998, the Fort Calhoun Station (FCS) operated at a nominal 100% power. Normal plant maintenance, surveillance, and equipment rotation activities were performed during the month. The tree (3) year rolling average for the "Unplanned Automatic Reactor Scrams/7000 hours critical "indicator is now zero" FCS has achieved 3 years of operation without an Automatic Scram.

WANO PERFORMANCE INDICATORS

The overall WANO Performance Index was 84% during the 2nd Quarter of 1998. Significant percentage point losses are attributed to the following WANO Performance Indicators listed below:

1. The ***Unit Capability Factor Indicator***, calculated over the previous 24 months, contributed to a 5.4 point loss as a result of unplanned energy losses defined on page 10.

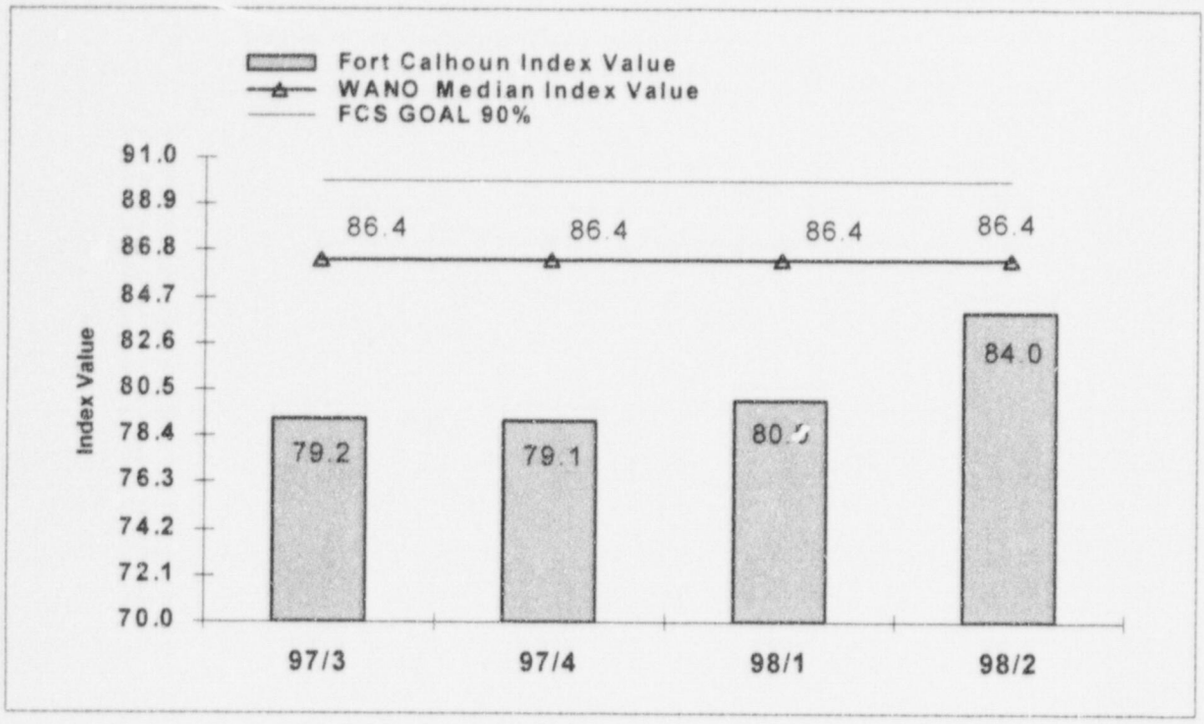
2. The ***Unplanned Capability Loss Factor Indicator*** calculated over the previous 24 months, contributed to a 6.5 point loss as a result of unplanned energy losses defined on pages 10 and 11.

3. The ***Thermal Performance Indicator***, calculated over the previous 12 months, contributed to a 0.3 point loss due to thermal energy losses experience during reactor power changes and forced outages defined on pages 10 and 16.

4. The ***Collective Radiation Exposure Indicator***, calculated over the previous 24 months, contributed to a 2.4 point loss, which was attributed to fuel failures and recent high exposure jobs during the refueling outage on page 19.

5. The ***Emergency AC Power Indicator***, calculated over the previous 24 months, contributed to a 0.6 point loss, which was a result of on-line maintenance, and replacement of relays under ECN95-347, "Replace Relays for Seismic Adequacy" on page 15.

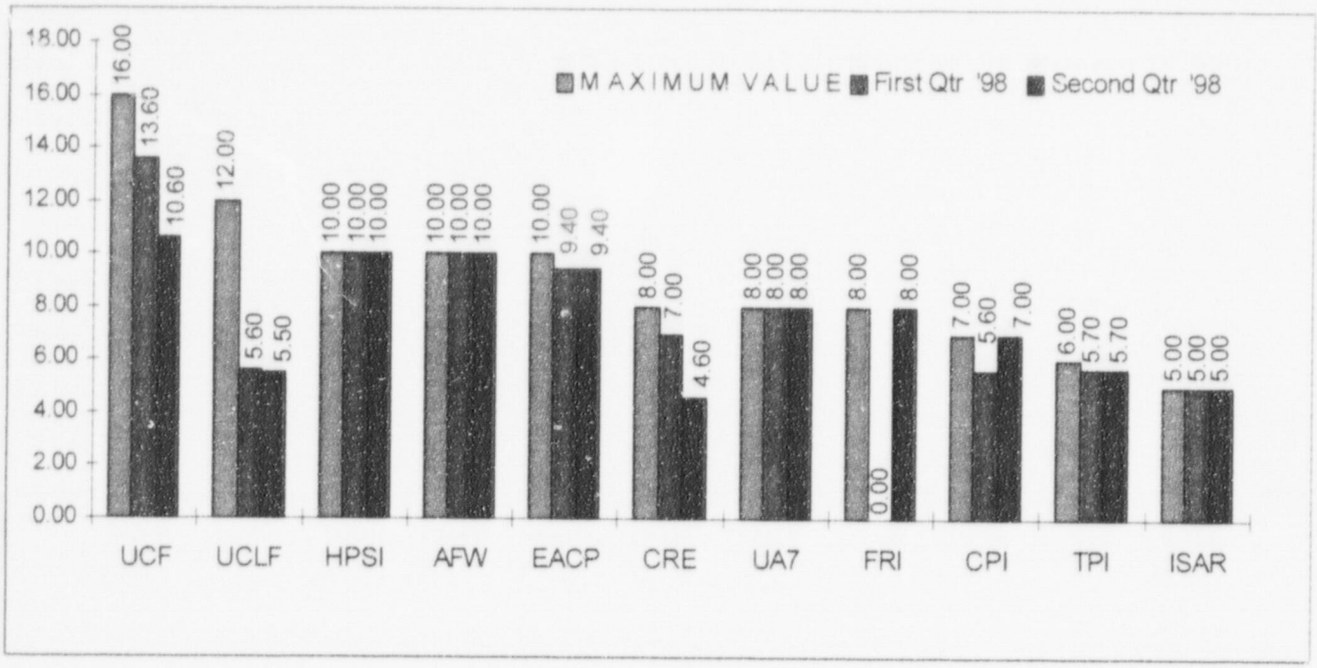
6. The ***Chemistry Performance Index Indicator***, calculated over the previous 12 months, contributed to a 1.0 point loss, which is due to copper tubes in heat exchangers and mechanical shock to systems in the past year from forced outages defined on page 18.



WANO PERFORMANCE INDEX TREND

The Wano Performance Index Trend calculation is made up of eleven variables, each value is weighted to arrive at an overall index value. WANO calculates the performance Index value based on the industry reporting the information each quarter. The variables are calculated over a defined period of time as listed below.

PERFORMANCE INDICATOR	WEIGHTED FACTOR	TIME
Unit Capability Factor	16	24 Months
Unplanned Capability Loss Factor	12	24 Months
High Pressure Safety Injection	10	24 Months
Auxiliary Feedwater	10	24 Months
Emergency AC Power	10	24 Months
Unplanned Auto Scrams/7000 Hours	8	24 Months
Collective Radiation Exposure	8	24 Months
Thermal Performance Indicator	6	12 Months
Secondary Chemistry Indicator	7	12 Months
Industrial Safety Accident Rate	5	12 Months
Fuel Reliability Indicator	8	Quarterly



WANO PERFORMANCE INDEX INDICATORS

This graph shows the dfference between **First Qtr '98** and **Second Qtr '98** actual values achieved by Fort Calhoun.

CALCULATED OVER A 24 MONTH PERIOD		MAXIMUM VALUE	TREND
UCF	Unit Capability Factor	16	Decrease
UCLF	Unplanned Capability Loss Factor	12	Decrease
HPSI	High Pressure Safety Injection	10	No Change
AFW	Auxiliary Feedwater	10	No Change
EACP	Emergency AC Power	10	No Change
UA7	Unplanned Auto Scrams/ 7000 Hours	8	No Change
CRE	Collective Radiation Exposure	8	Decrease
CALCULATED OVER A 12 MONTH PERIOD			
TPI	Thermal Performance Indicator	6	No Change
CPI	Secondary Chemistry Indicator	7	Increase
ISAR	Industrial Safety Accident Rate	5	No Change
CALCULATED OVER A QUARTERLY PERIOD			
FRI	Fuel Reliability Indicator	8	Increase

PERFORMANCE INDICATORS SUMMARY REPORT

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.

Unplanned Automatic Reactor Scrams (Page 12)

High Pressure Safety Injection System Safety System Performance (Page 13)

Aux. Feed Water System Safety System Performance (Page 14)

Thermal Performance (Page 16)

Volume of Low-Level Radioactive Waste (Page 21)

Contaminated Radiation Controlled Area (Page 35)

ADVERSE TREND REPORT

A performance indicator with data representing three consecutive months of declining performance or three consecutive months of performance that is trending toward declining as determined by the Manager - Nuclear Licensing, constitutes an adverse trend per Nuclear Operations Division Quality Procedure 37 (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 indicators exhibited adverse trends for the reporting month.

None

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).

Emergency AC Power (Page 15)

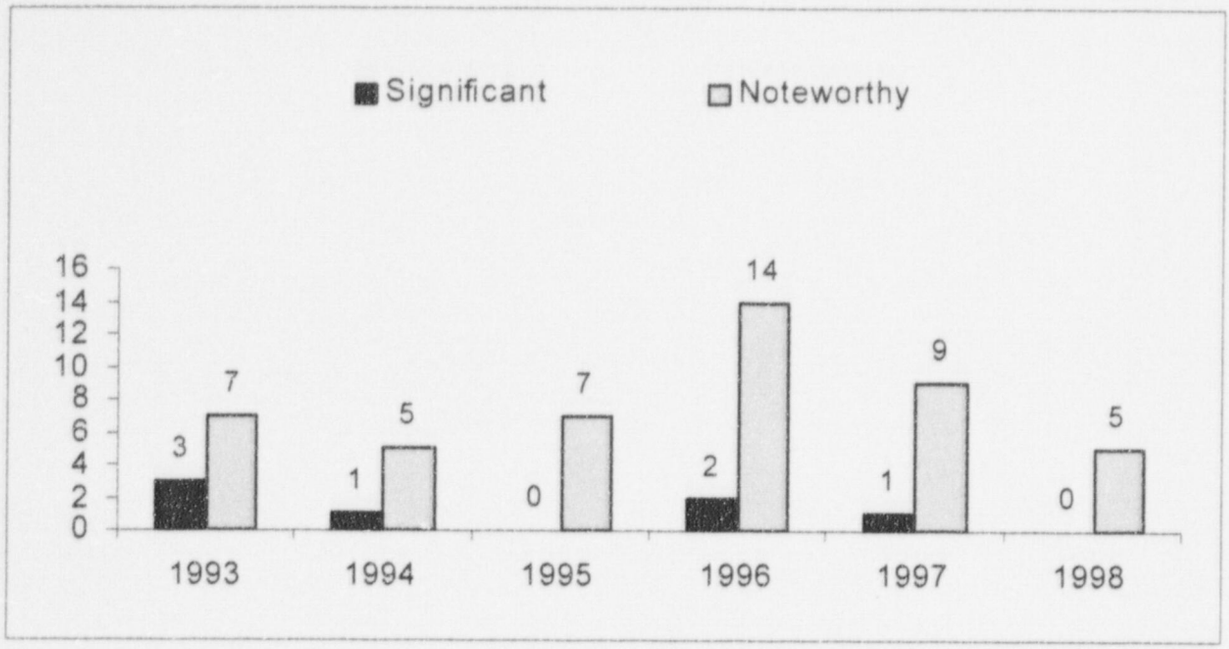
Secondary Ststem Chemistry (Page 18)

Clean Controlled Area Contaminations (Page 25)

Cents Per Kilowatt Hour (Page 30)

Radiological Work Practices Program (Page 36)

Temporary Modifications (Page 39)



INPO NOTEWORTHY / SIGNIFICANT EVENTS

Noteworthy/Significant events at FCS are classified by INPO to identify precursors to events. There was **0** Noteworthy and **0** Significant Events during the month of **August** 1998.

Significant Events for August 1998:

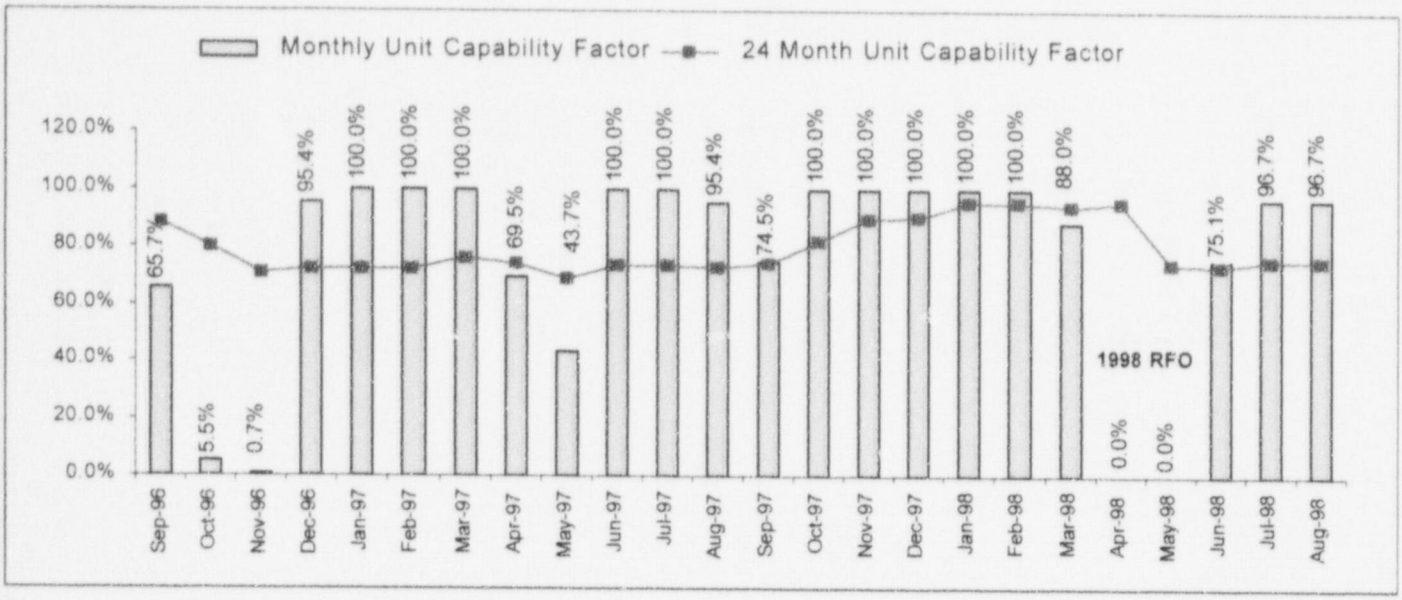
- None

Noteworthy Events since start of INPO Cycle:

- Auxiliary Feedwater Pump Overspeed and Overpressurization of System Piping
- Containment Hydrogen Panel Components Exceed Qualified Life Due to Incorrect Calculation Assumptions
- Transformer Fault and Loss of Off-Site Power While Shutdown Due to Inadvertent Actuation of Transformer Deluge System
- Degraded Steam Generator Tube Left in Service Due to Personnel Error
- Reactor Coolant Pump Cavitation During Planned Pressure Reduction

Data Source: Frans/Guinn (Manager/Source)
Accountability: Frans/Guinn
Trend: None

WANO PERFORMANCE INDICATORS



UNIT CAPABILITY FACTOR

UCF is defined as the ratio of the available energy generation over a given period of time to the reference energy generation over the same time period, expressed as a percentage. The FCS Goal for the indicator is (87.5%) and the WANO Median is (81.9%).

UNIT CAPABILITY FACTOR AVERAGES			
Year to Date	**12 Month**	**24 Month**	**36 Month**
69.8%	**77.6%**	**75.0%**	**80.1%**

Energy Losses:

Forced Outage-Condenser circulating valve repairs and leakage on Condenser "B"
Event Period: September 10, thru13, 1997.

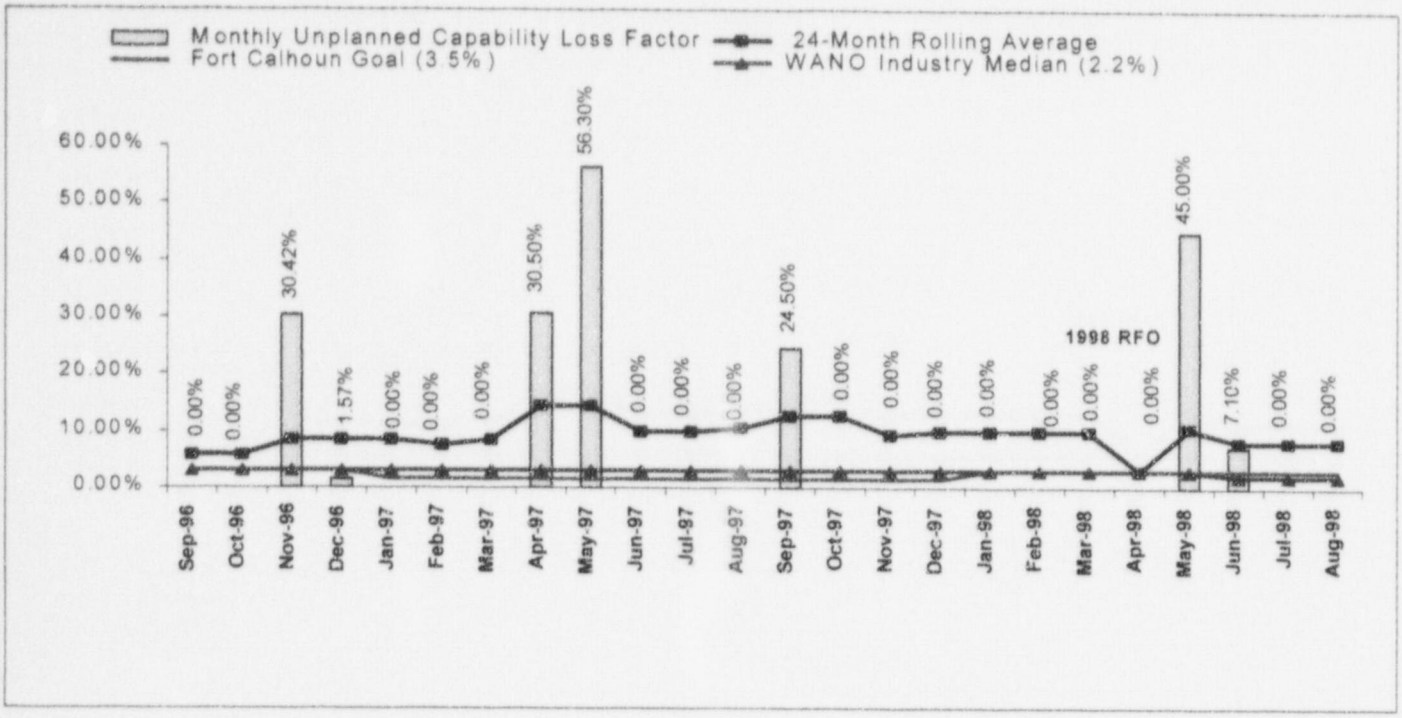
Power Reduction- Faculty Manual Transfer switch on instrument inverter "A"
Event Period: August 26, 28, 1997.

Forced Outage- Circumferential cracking of a weld down stream of a moisture separator due to high system stresses
Event Period: May 28, thru May 29, 1997.

Forced Outage- Steam leak in the fourth stage extraction steam system
Event Period: April through mid May 1997.

A 24 month calculation of the WANO UCF indicator was **10.6** points out of 16 points. At the end of the **Second Quarter 1998** the FCS Value was **10.6** which compares to the **First Quarter 1998** value of **13.6**.

Data Source: Generation Totals Report & Monthly Operating Report
Accountability: Solymossy
Trend: None



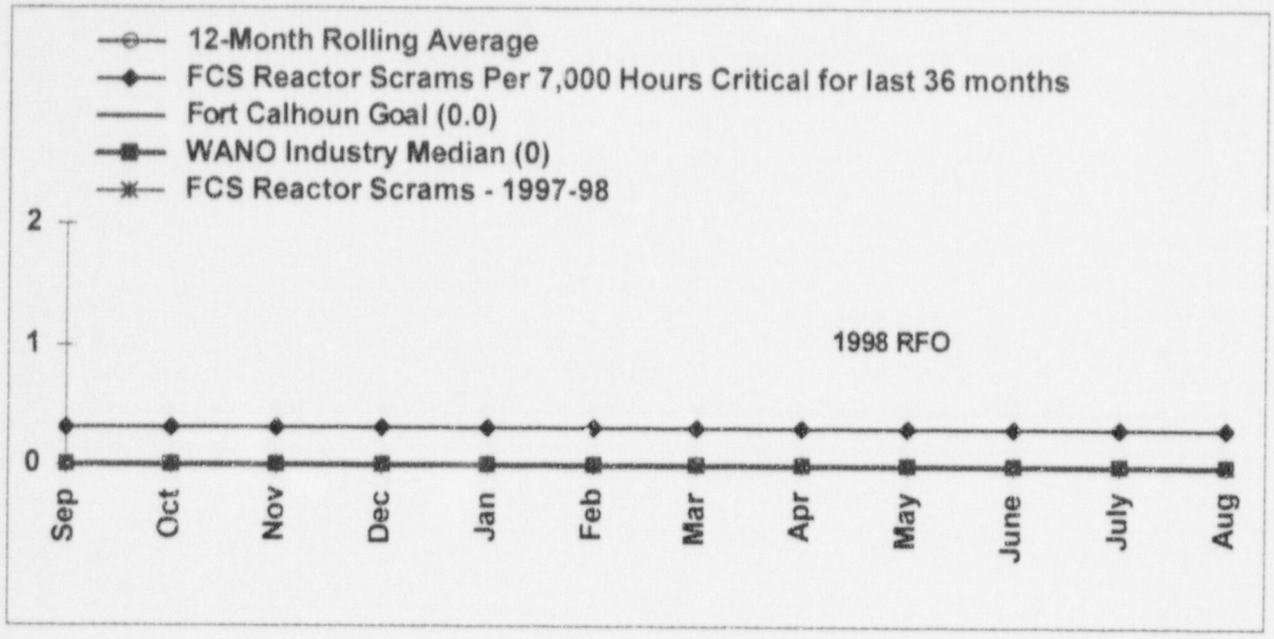
UNPLANNED CAPABILITY LOSS FACTOR

This indicator shows the plant monthly Unplanned Capability Loss Factor (UCLF), a rolling 12-month average, the OPPD goal, and the WANO Industry Median. UCLF is defined as the ratio of the unplanned energy losses during a given period of time, to the reference energy generation expressed as a percentage. Unplanned energy loss is defined as energy not produced as a result of unscheduled shutdowns, outage extensions, or load reductions due to causes under plant management control. Energy losses are considered to be unplanned if they are not scheduled at least four weeks in advance.

UNPLANNED CAPABILITY LOSS FACTOR AVERAGES			
Year to Date	**12 Month**	**24 Month**	**36 Month**
5.76%	**4.06%**	**8.2%**	**7.4%**

A 24 month calculation of the WANO UCLF indicator was **5.50** points out of 16 points. At the end of the **Second Quarter 1998** the FCS Value was **5.50** which compares to the **First Quarter 1998** value of **5.60**.

Data Source: Generation Totals Report & Monthly Operating Report
Accountability: Solymossy
Trend: None

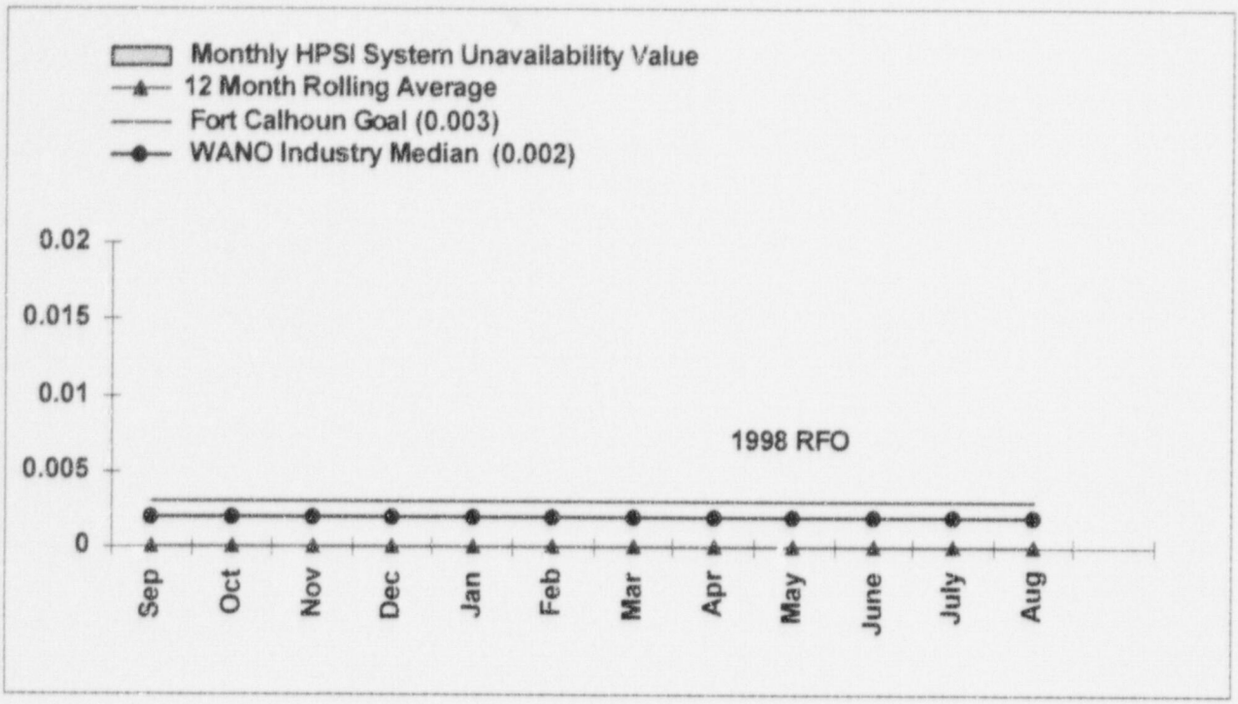


UNPLANNED AUTOMATIC REACTOR SCRAMS PER 7000 HOURS CRITICAL

Tne graph shows the 12-month rolling average, the 36-month average, the OPPD goal for 1998 and the WANO Industry Median. Also the graph shows the number of Unplanned Automatic Reactor Scrams that occurred during the last 12 months. There were **no** Unplanned Automatic Reactors during the month of **August 1998.** The 12-month rolling average **(September 1997 through August 1998)** was **0. (September 1995 through August 1998)** was **0.**

A 24 month calculation of the WANO UA7 indicator was **8.0** points out of 8 points. At the end of the **Second Quarter 1998** the FCS Value was **8.0** which compares to the **First Quarter 1998** value of **8.0**.

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



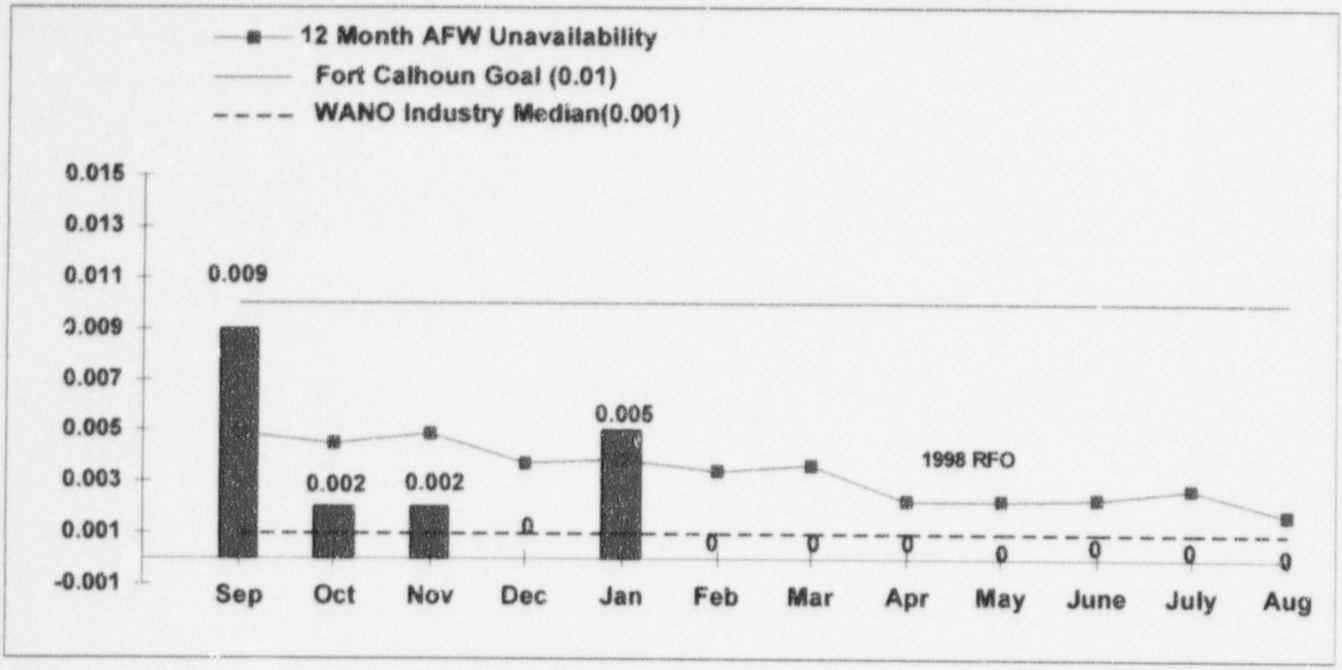
HIGH PRESSURE SAFETY INJECTION SYSTEM
SAFETY SYSTEM PERFORMANCE

This indicator shows the High Pressure Safety Injection (HPSI) System unavailability value, asdefined by WANO in the Safety System Performance Indicator Definitions, for **August 1998.**

The HPSI System unavailability value for the month of **August 1998** was **0.0**. There were **0.0** hours of planned unavailability, and **0.0** hours of unplanned unavailability. The 12 month rolling average was **(September 1997 through August 1998)** was **0.00,** and the year-to-date HPSI unavailability value was **0.00** at the end of the month. For the previous year there was a total of **9.8** hours of planned unavailability and **0.0** hours of unplanned unavailability for the HPSI system.

A 24 month calculation of the WANO HPSI indicator was **10.0** points out of 10 points. At the end of the **Second Quarter 1998** the FCS Value was **10.0** which compares to the **First Quarter 1998** value of **10.0**

Data Source: Skiles/Schaffer (Manager/Source)
Accountability: Skiles/Schaffer
Trend: Positive



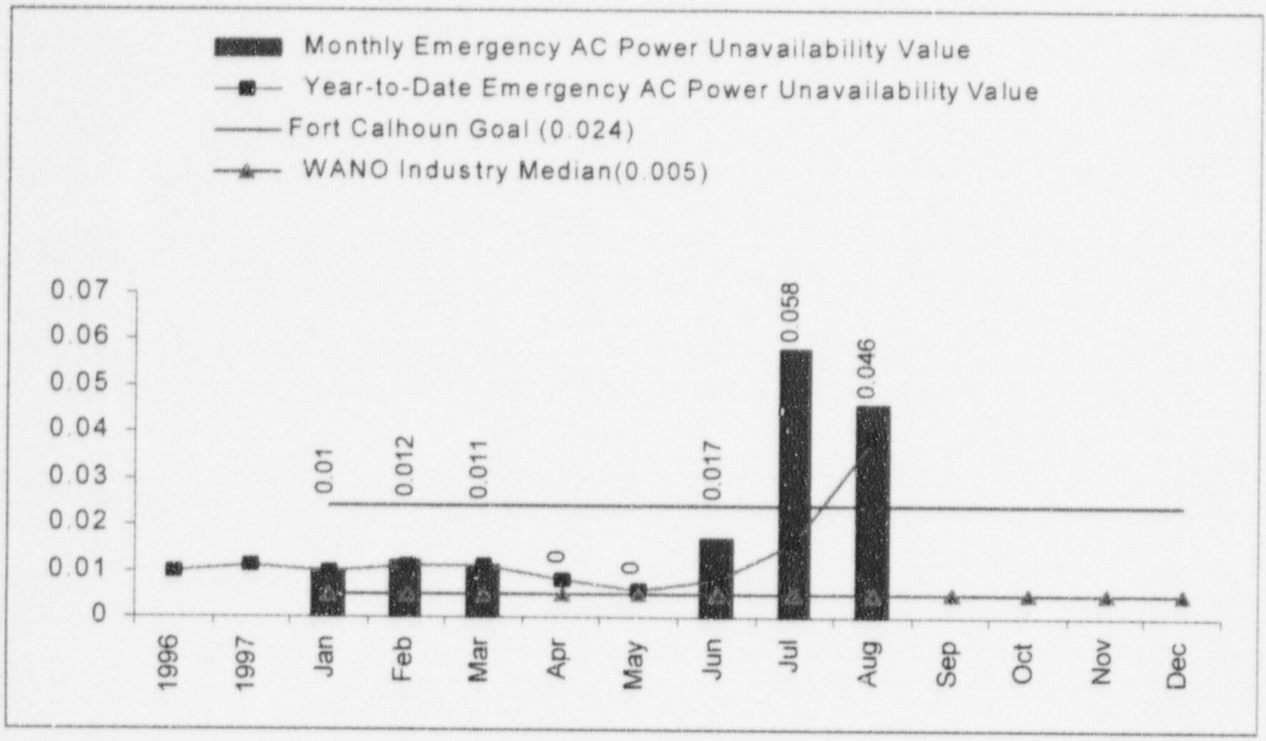
AUXILIARY FEEDWATER SYSTEM SAFETY SYSTEM PERFORMANCE

This indicator shows the Auxiliary Feedwater (AFW) System Unavailability value, as defined by WANO in the Safety System Performance Indicator Definitions, for the month of **August 1998.**

The AFW System Unavailability Value for **August 1998** was **0.0 hours**. There were **0.0** hours of planned and **0.0** hours of Unplanned Train Unavailability hours during the month. The 12 month rolling average **(September 1997 through August 1998)** was **0.0017** and the year-to-date unavailability value was **0.0008** for **August 1998.**

A 24 month calculation of the WANO AFW indicator was **10.0** points out of 10 points. At the end of the **Second Quarter 1998** the FCS Value was **10.0** which compares to the **First Quarter 1998** value of **10.0**.

Data Source: Skiles/Fritts (Manager/Source)
Accountability: Skiles/Fritts
Trend: Positive



EMERGENCY AC POWER SYSTEM
SAFETY SYSTEM PERFORMANCE

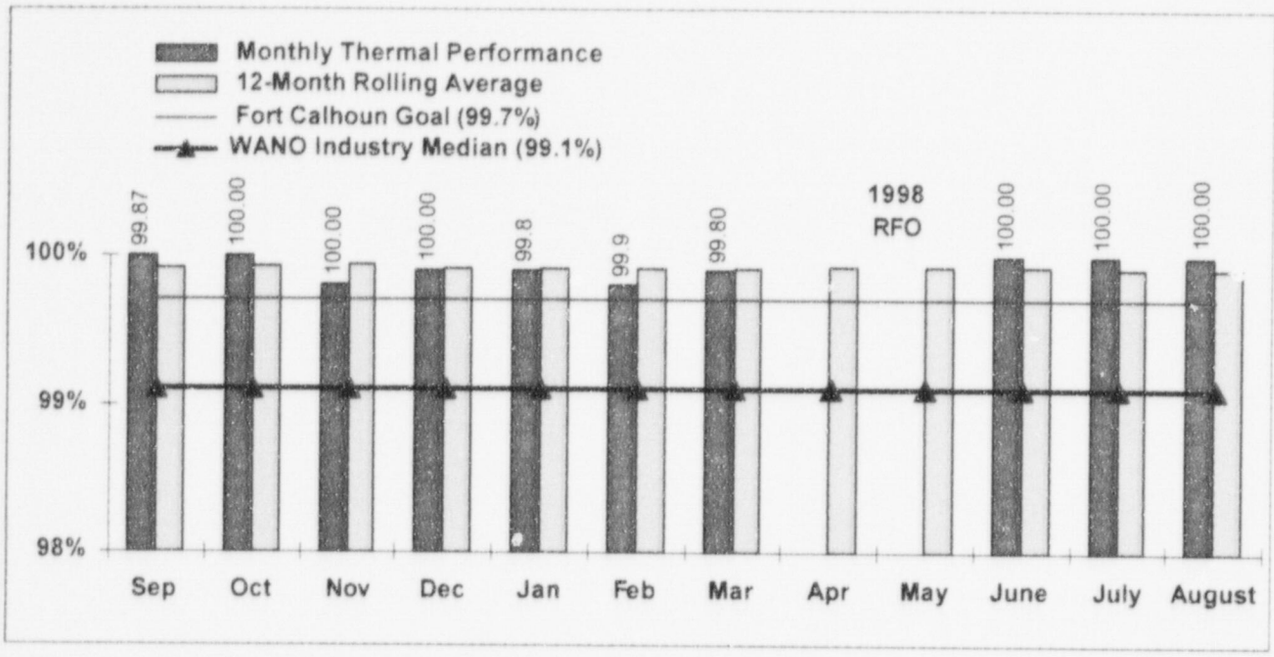
This indicator shows the Emergency AC Power System unavailability value, as defined by WANO in the Safety System Performance Indicator Definitions, for the month of **August 1998**.The Emergency AC Power System unavailability value for **August 1998** was **0.046.** The Emergency AC Power System unavailability value year-to-date was **0.039** and the value for the last 12 months **(September 1997 through August 1998)** was **0.019**.

Monthly Statistics

Planned Unavailability:	**DG-1: 3.4**	**DG-2: 65.75**	**Total: 69.15**	**YTD: 181.15 Hours**
Unplanned Unavailability:	**DG-1: 0.0**	**DG-2: 0.0**	**Total: 0.0**	**YTD: 00.0 Hours**

A 24 month calculation of the WANO EACP indicator was **9.4** points out of 10 points. At the end of the **Second Quarter 1998** the FCS Value was **9.4** which compares to the **First Quarter 1998** value of **9.4**.

Data Source: Skiles/Ronning (Manager/Source)
Accountability: Skiles/Ronning
Trend: Needing Increased Management Attention



THERMAL PERFORMANCE

This indicator shows the monthly Thermal Performance Value, the rolling 12-month average, the OPPD goal, and the WANO Industry Median.

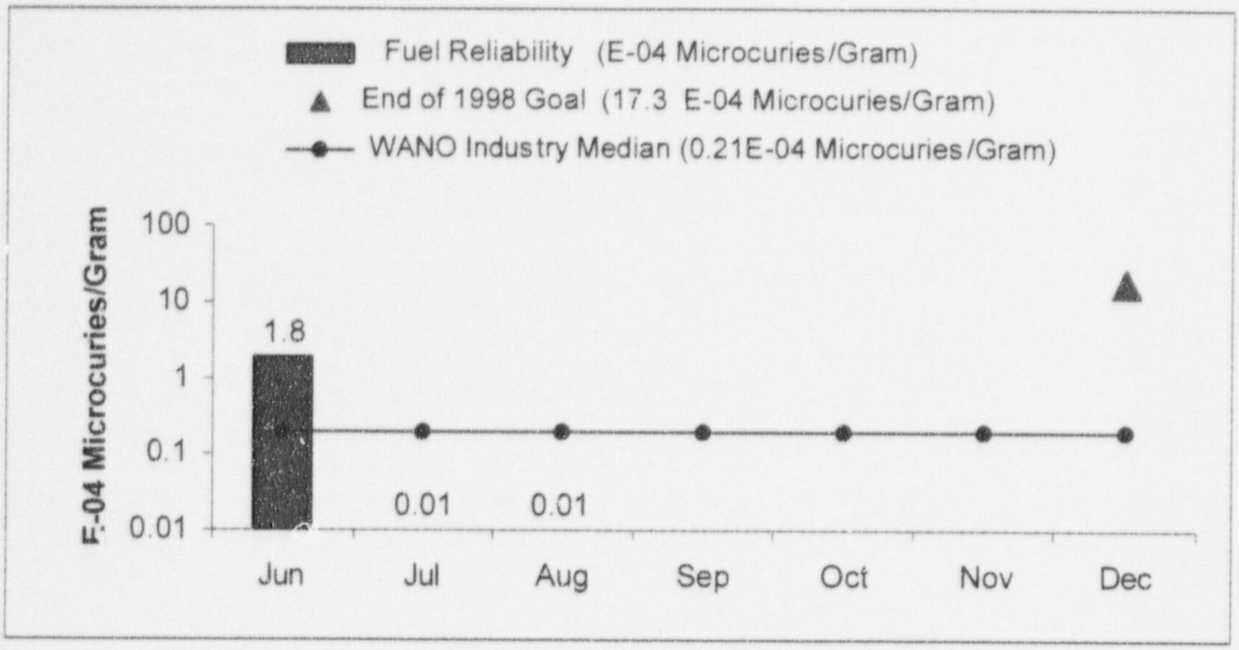
The thermal performance value for the month of **August** was **100.0%.** The year to date value was reported as **99.9%**. The 12 month rolling average **(September 1997 through August 1998)** was reported as **99.9%**.

Note: Our Best Achievable Gross Heat Rate improved by 4% this month (it is now 63 BTU/kwh better than design.), Primarily this is attributable to the new High Pressure Turbine diaphragms that were installed during the 1998 refueling outage.

The 1998 Fort Calhoun year-end goal for this indicator is an index value which is > 99.7%. The 12 month calculation of the WANO TPI indicator 99.1%.

The 12 month calculation of the WANO TPI indicator was **5.7** points out of 6 points. At the end of the **Second Quarter 1998** the FCS Value was **5.7** which compares to the **First Quarter 1998** value of **5.7**.

Data Source: Skiles/Naser(Manager/Source)
Accountability: Skiles/Naser
Trend: Positive



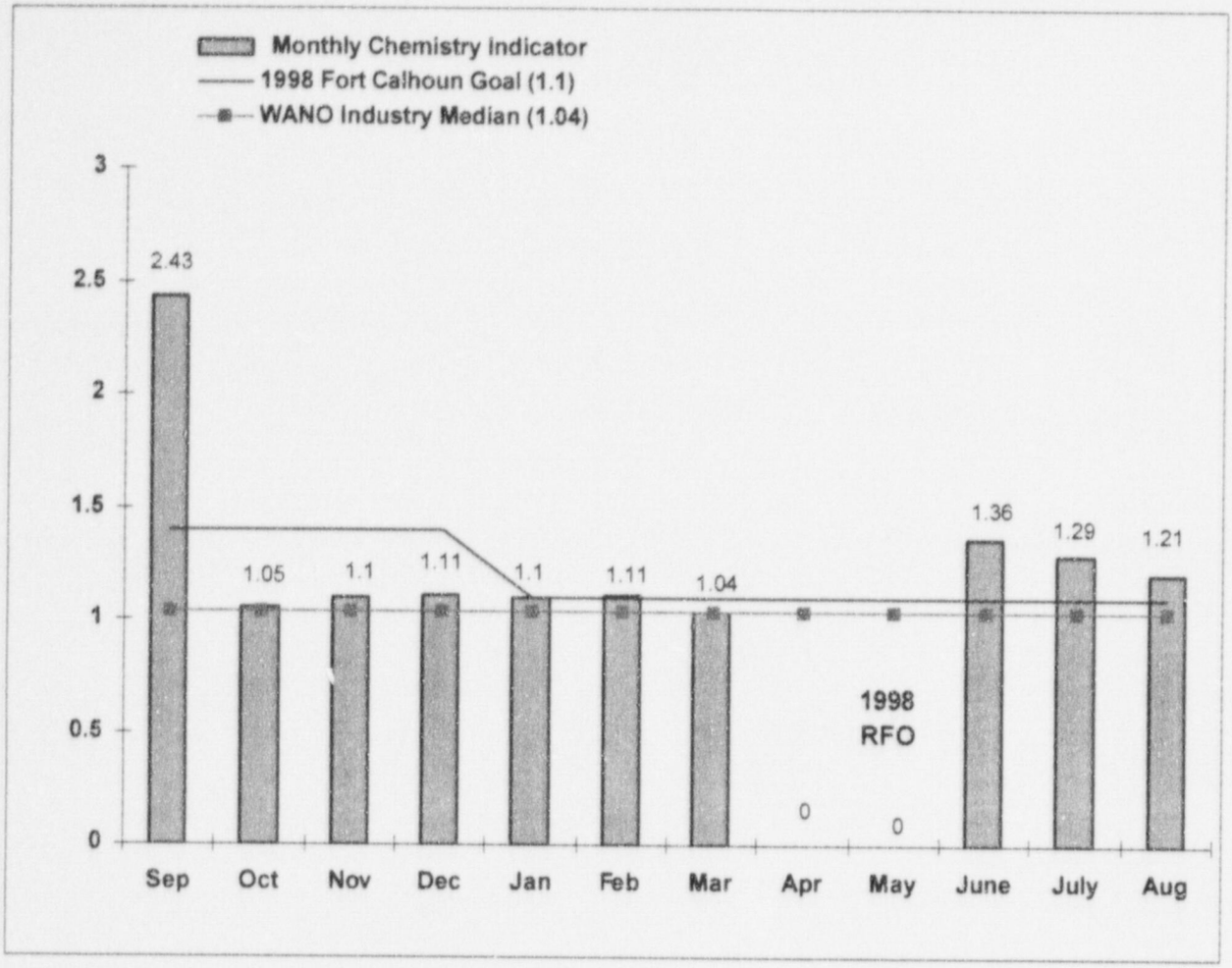
FUEL RELIABILITY INDICATOR

The monthly Fuel Reliability Indicator (FRI) for **August 1998** of **0.01 E-04** microcuries/gram was based on steady state data at 100% power. The purpose of the FRI is to monitor industry progress in achieving and maintaining a high level of fuel integrity. An effective fuel integrity and performance monitoring program provides a means to detect fuel failures and assess the fuel failure number, physical condition, exposure, mechanism, and location.

Coolant activity data through August 31, 1998 does not show the presence of any defective fuel rods. Iodine activity levels are higher than expected for a clean core. This is due to operating with fuel failures for the past 2.5 cycles which contributed to the large amount of tramp (Iodine-134) and Iodine-131 currently present in Cycle 18. The current Iodine-134 activity indicates that 70 percent of the tramp material in the active core region was removed during the spring 1998 refueling outage. Xenon-133 is about 1.5 decades lower than in Cycle 17, another indication of a defect-free core.

The Quarterly calculation of the WANO FRI indicator was **8.0** points out of 8 points. At the end of the **Second Quarter 1998** the FCS Value was **8.0** which compares to the **First Quarter 1998** value of **0.0**.

Data Source: Guinn/Roenigk (Manager/Source)
Accountability: Solymossy/Stafford
Trend: None



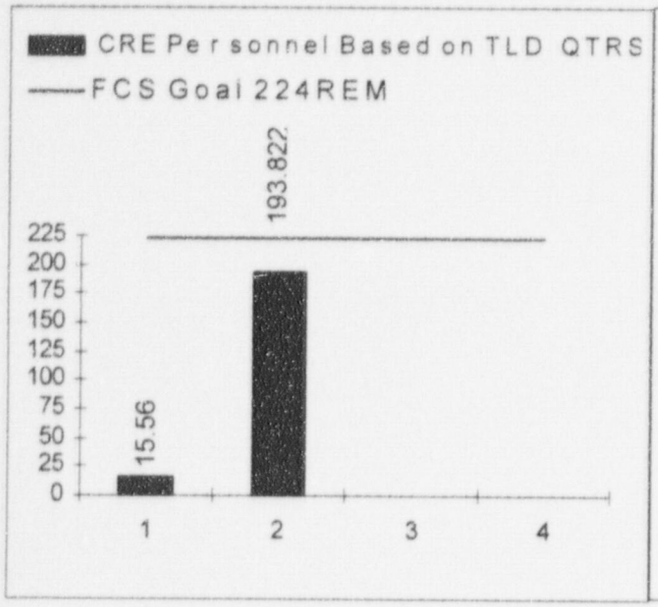
SECONDARY SYSTEM CHEMISTRY

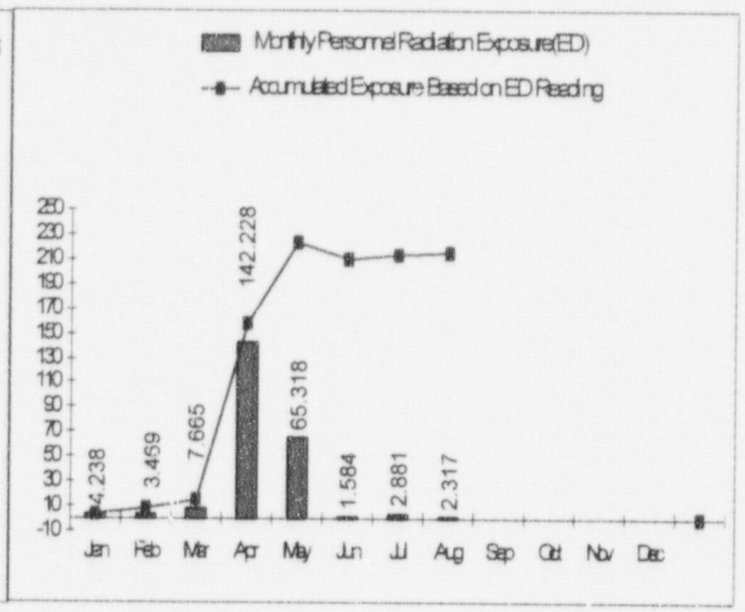
Steady state plant conditions required for calculating the Secondary System Chemistry Performance Index (CPI) for plant performance following Refueling Outage that ended on June 3.

The CPI for **August 1998** is **1.21**, this is still higher than values from before the outage. Continuing to investigate. Reference memo FC-C-091-98, see action plan. The CPI value for the past 12 months **(September 1997 through August 1998)** was **1.175.** The CPI value in the industry's upper quartile is 1.17. Six parameters are used in the CPI calculation. Four of the parameters were below the WANO mean value which are as follows: 1) steam generator chloride, 2) sulfate, 3) feedwater iron, and condensate pump discharge dissolved oxygen. Increase in CPI observed this month due to power ascention from refueling outage. This is an expected condition.

The 12 month calculation of the WANO CPI Indicator was **7.0** points out of 7 points. At the end of the **Second Quarter 1998** the FCS Value was **7.0** which compares to the **First Quarter 1998** value of **5.60**

Data Source: Hamilton/Ostien (Manager/Source)
Accountability: Hamilton
Trend: Needing Increased Management Attention





COLLECTIVE RADIATION EXPOSURE

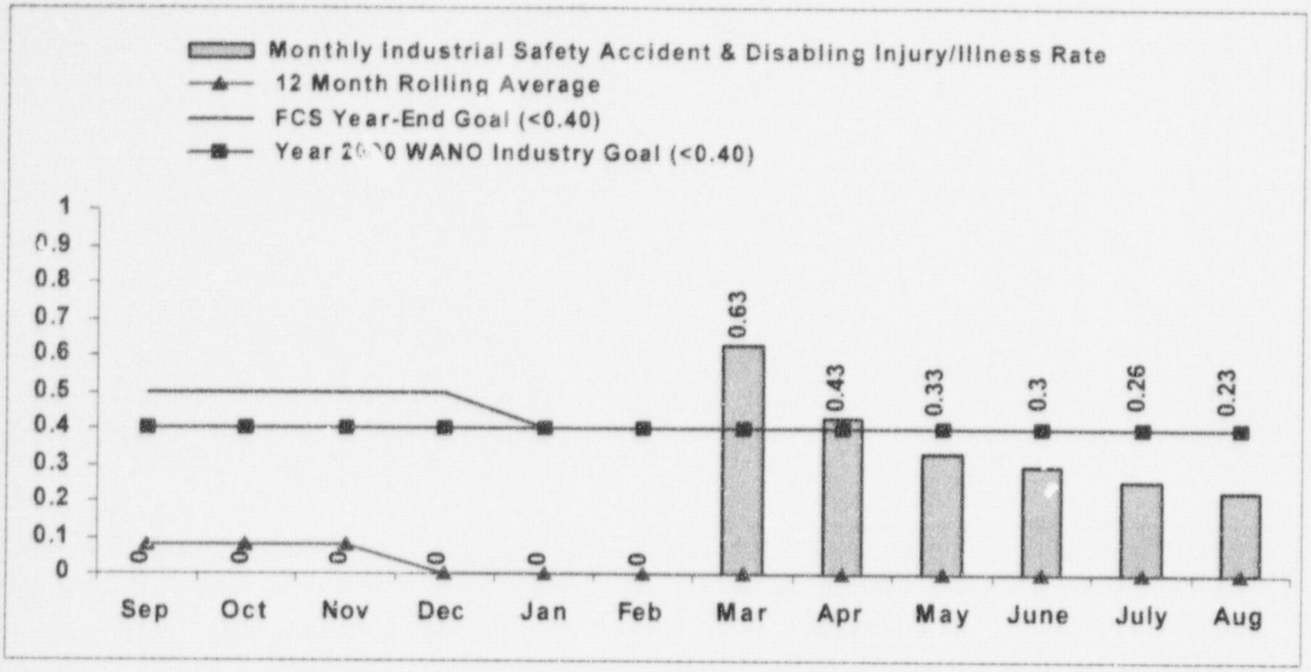
The 1998 goal for Collective Radiation Exposure (CRE) at Fort Calhoun Station was established for a Total Dose of 224.0 person-rem, based on TLD readings. Dose is tracked monthly by obtaining Electronic Dosimeter (ED) readings, until the Quarterly TLD readings are obtained. The exposure for **August 1998** was **2.317** Person-rem (ED). The WANO Industry Median is 127 man-REM per year based on a three year average compared to 139 man-REM per year at FCS.

Dose	FCS Goal Person-Rem	First Qtr.	Second Qtr.	Third Qtr.	Fourth Qtr.
Total Person-Rem	224.0	15.560	193.822		

The 24 month calculation of the WANO CRE Indicator was **4.6** points out of 8 points. At the end of the **Second Quarter 1998** the FCS Value was **4.6** which compares to the **First Quarter 1998** value of **7.0**

Data Source: Solymossy/Williams (Manager/Source)
Accountability: Solymossy/Puckett
Trend: None

SEP 54



INDUSTRIAL SAFETY ACCIDENT AND DISABLING INJURY/ILLNESS (LOST-TIME ACCIDENT RATE)

The purpose of this indicator is to monitor progress in improving industrial safety performance for utility personnel permanently assigned to the station. Contractor work-hours are not included in the indicator. This indicator is defined asthe number of accidents per 200,000 work-hours worked for all utility personnel permanently assigned to the station that result in any of following:

- one or more days of restricted work (excluding the day of the accident.)
- one or more days away from work (excluding the day of the accident.)
- fatalities.

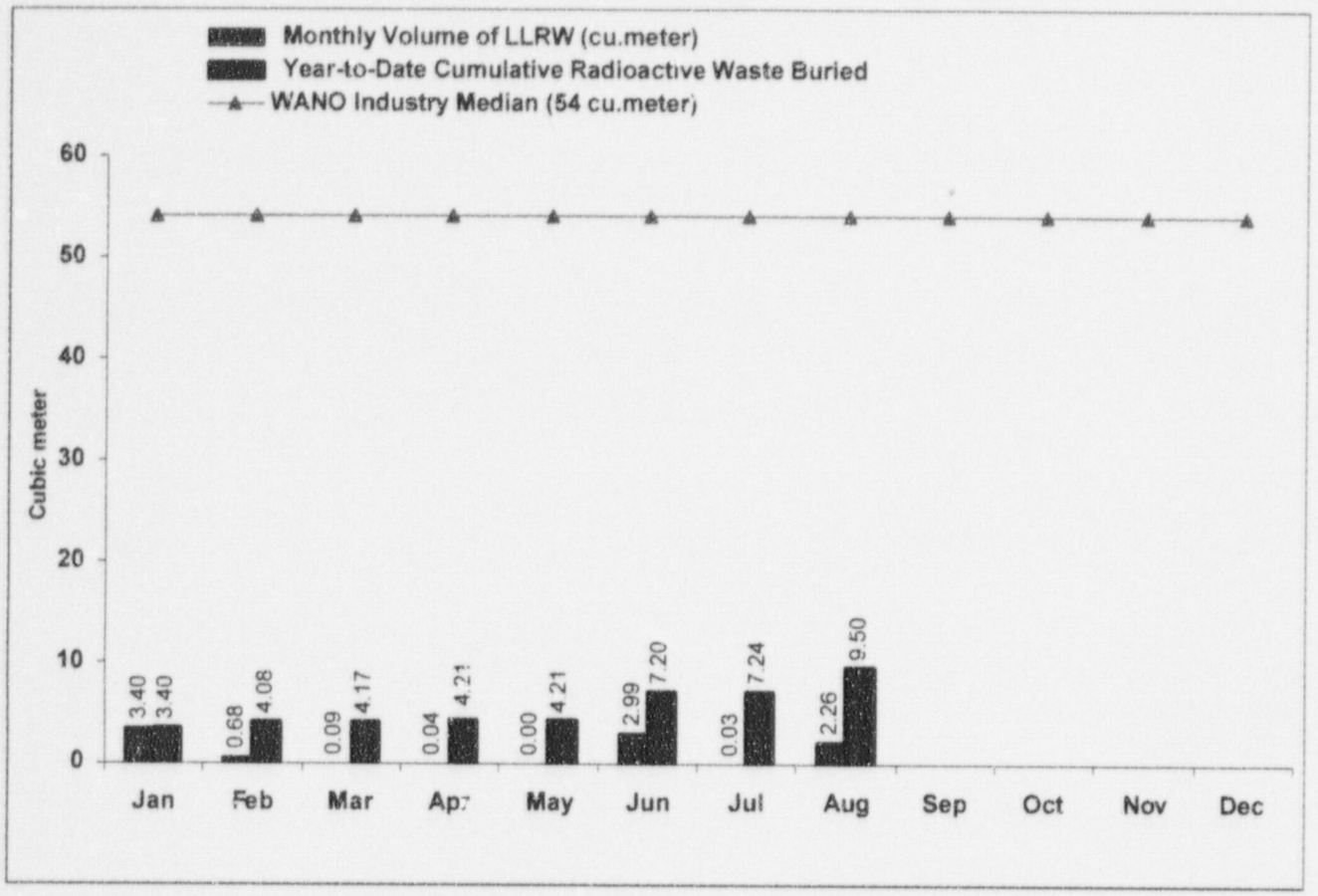
$$\text{ISAR} = \frac{(\text{number of restricted-time accidents} + \text{lost-time accidents} + \text{fatalities}) \times 200{,}000}{(\text{number of station person-hours worked})}$$

The Fort Calhoun Station Industrial Safety Accident Rate and Disabling Injury/Illness Frequency Rate was **0.23** for the month of **August 1998.** The 12 month rolling average **(September 1997 through August 1998)** was **0**. The year to date value was **3** at the end of **August 1998**. There was **no** restricted-time and **no** lost-time accident in **August 1998.**

The 12 month calculation of the WANO ISAR Indicator is **5.0** points out of 5 points. At the end of the **Second Quarter 1998** the FCS Value was **5.0** which compares to the **First Quarter 1998** value of **5.0**.

Data Source: Sorensen/Schneider(Manager/Source)
Solymossy/Booth (Manager/Source)
Accountability: Solymossy/Puckett
Trend: None

SEP 25, 26 & 27



VOLUME OF LOW-LEVEL RADIOACTIVE WASTE

This indicator shows the volume of the monthly Radioactive Waste buried and the cumulative year-to-date radioactive waste buried. The Fort Calhoun goal is 800 cu.ft.

	Ft	m^3
Amount of solid radwaste shipped off-site for processing during current month :	000.0	0.00
Volume of solid radwaste buried during **August 1998** :	79.9	2.26
Cumulative volume of solid radioactive waste buried in 1998 :	335.7	9.50
Amount of solid radwaste in temporary storage :	000.0	00.00

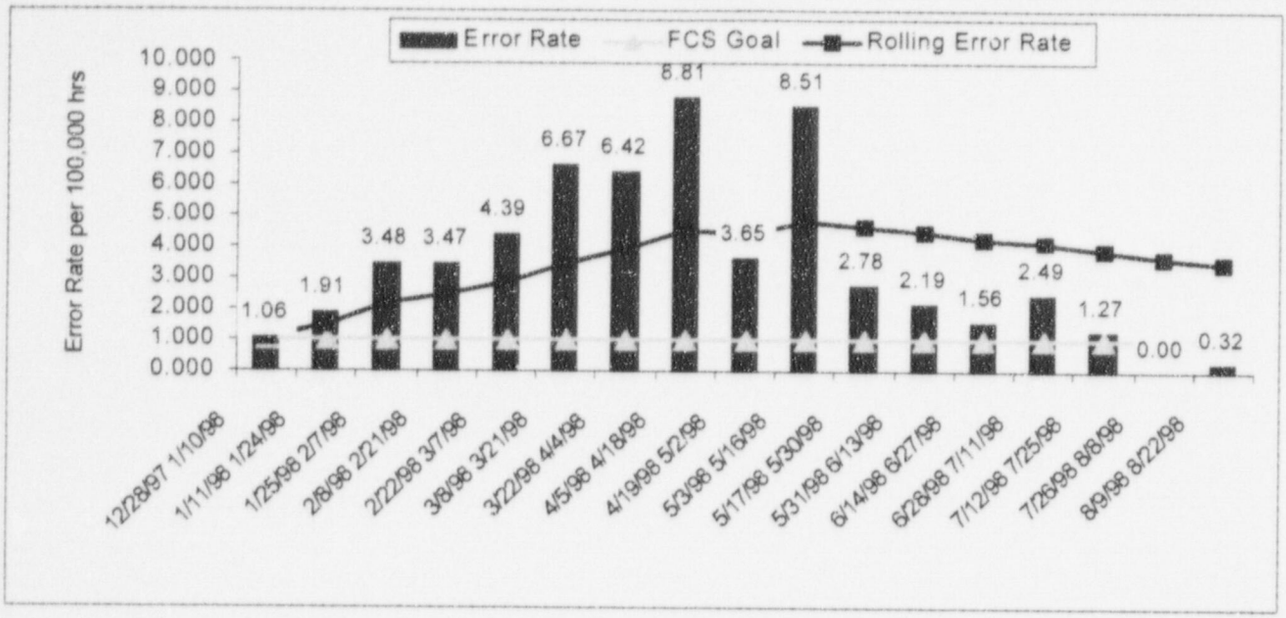
The WANO industry Median is 54 cubic meters per year. The industry Best Quartile value is approximately 26 cubic meters per year.

Data Source: Solymossy/Breuer (Manager/Source)
Accountability: Solymossy/Puckett
Trend: Positive

SEP 54

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.



Personnel Error Rate

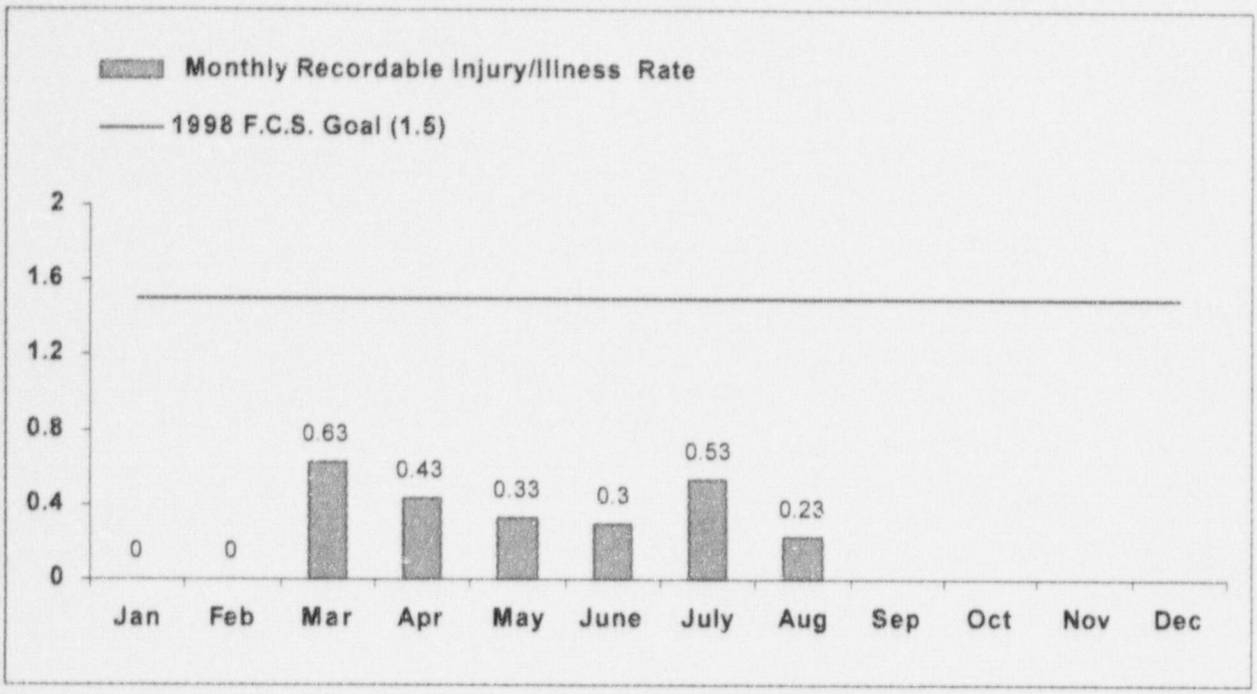
The purpose of this indicator is to monitor human error events at FCS which are classified as a "Noteworthy Event," under the criteria specified in the Condition Report Program. Noteworthy events may be classified as level one, two, or three on a Condition Report or as defined but not limited to the examples listed below:

Error Rate = number of human errors x hours every two weeks
100,000 hrs

1. A recordable injury in industrial safety.
2. Valve Mispositioning event caused by plant personnel.
3. Equipment tagging error that significantly impacts safe operation of the plant, readiness or personal safety.
4. Improper use of or failure to use safety equipment or performing a task in an unsafe manner.
5. Any event involving loss of radioactive material control that may cause or potentially result in an individual receiving an unauthorized exposure.
6. Any spill or spread of radioactive material, which results in an impact on the plant or the general safety of plant personnel or the general public.
7. Failure to utilize, or adhere to sound radiation principles, or accepted administrative controls to keep occupational radiation exposure, or exposure to members of public ALARA.
8. Chemistry parameter(s) out of specification, involving insufficient chemistry corrective action or oversight.
9. Violation of procedure or human performance error.
10. Less than 3 deep (qualified members) in minimum staffing position for the Control Room, TSC, OSC, and EOF.
11. Any unplanned impact to offsite evacuation routes or relocation capability.
12. Any failure or theft of emergency response equipment or supplies necessary to complete classification, notification, protective action recommendation or ERO command & control functions.
13. Inadequate training or qualification.
14. Failure to adequately staff the ERO in actual responses or drill notification.

The Rolling Error Rate is calculated over the past 12 month period. Until 12 months of data are available, this line is considered information only.

Data Source: Tesar/Burggraf (Manager/Source)
Accountability: Solymossy/Tesar
Trend: None



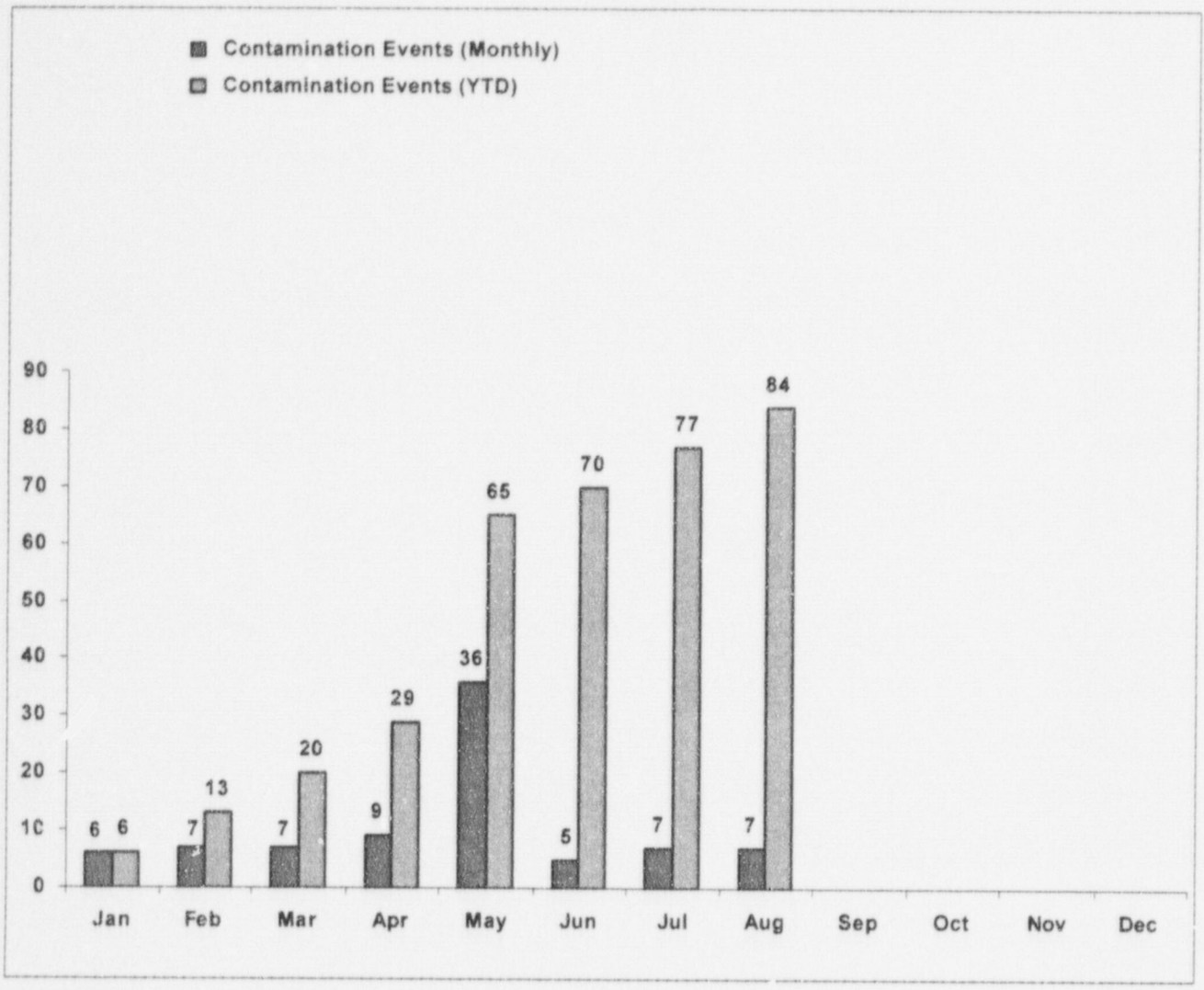
RECORDABLE INJURY/ILLNESS FREQUENCY RATE

This indicator shows the monthly Recordable Injury/Illness Frequency Rate. A recordable injury/illness case is reported if personnel from any of the Nuclear Divisions are injured on the job and require corrective medical treatment beyond first aid.

The recordable injury/illness for the month of **August 1998** was **one**. The recordable injury occurred during Fire Brigade Training at the Omaha Fire Tower, where a trainee received minor thermal burns as a result of heat build-up/transfer inside of protective bunker gear. The 1998 Fort Calhoun Station year-to-date goal for this indicator is a maximum value of 1.5.

Data Source: Sorensen/Schneider(Manager/Source)
Accountability: Puckett
Trend: None

SEP 15, 25, 26 & 27

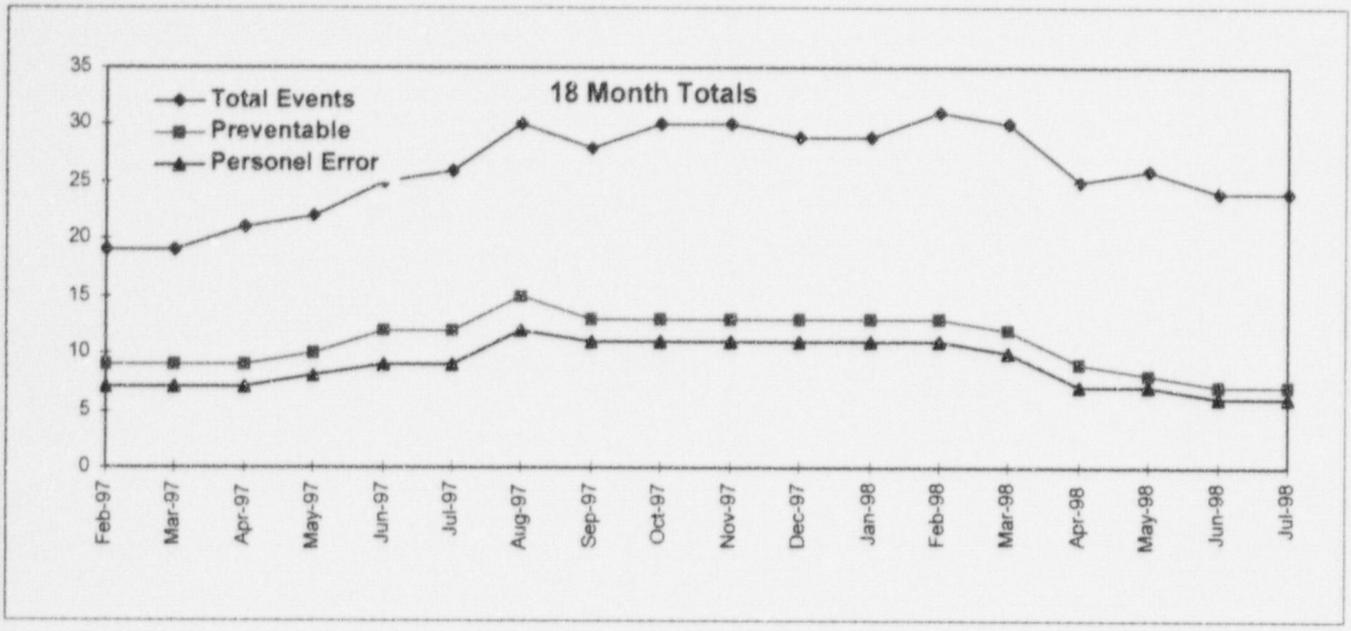


CLEAN CONTROLLED AREA CONTAMINATIONS≥1,000 DISINTEGRATIONS/MINUTE PER PROBE AREA

This indicator shows the Personnel Contamination Events in the Clean Controlled Area for contaminations ≥1,000 disintegrations/minute per probe area for **August 1998**.

There were **7** personnel contamination events in **August 1998**. The total year-to-date of Personnel events is **84** at the end of **August 1998**. This indicator has been classified as "Needing Increased Management Attention," due to an upward trend of Year to date contamination events over the past three months.

Data Source: Solymossy/Williams (Manager/Source)
Accountability : Solymossy/Puckett
Trend: Needing Increased Management Attention 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.

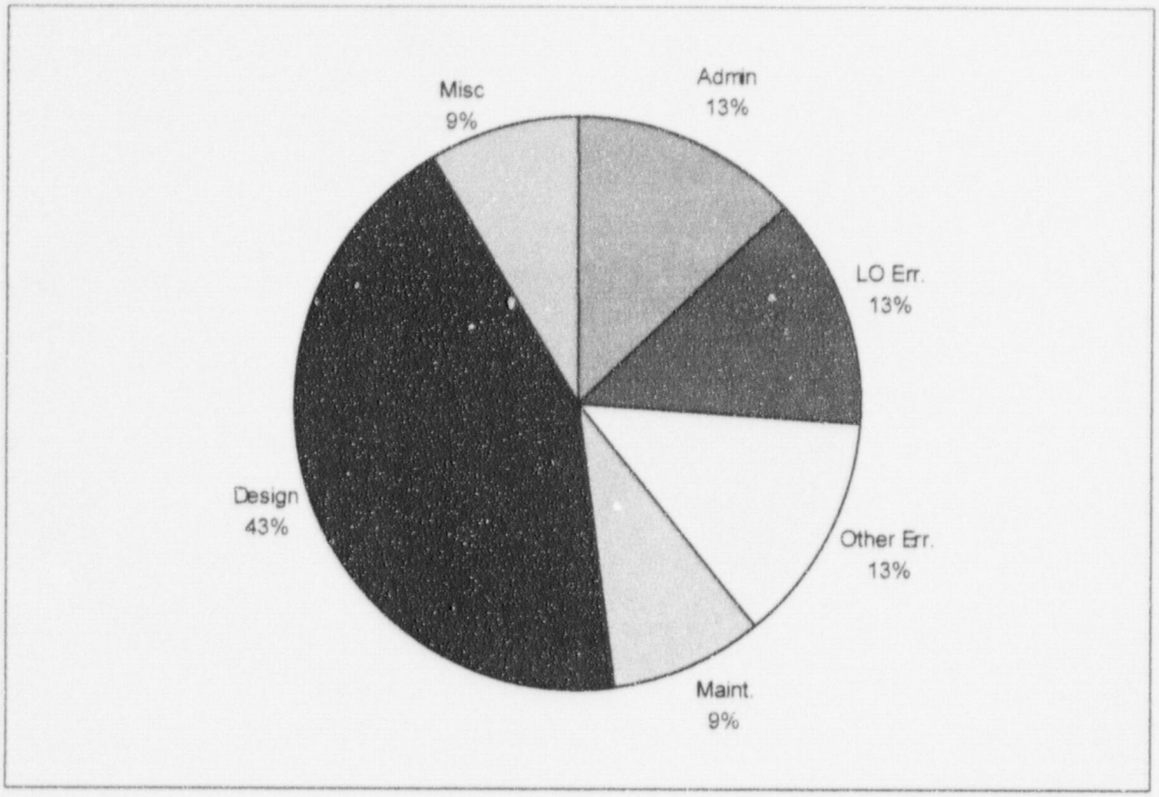
In **July 1998**, there was **one (1)** event which were subsequently reported as an LER. **No** LER was categorized as "Preventable" and **No** LER was categorized as "Personnel Error" during the month of **July.** The total LERs for the year 1998 are **nine.** The total Personnel Error LERs for the **year 1998** are **two**.

The year-to-date goal for this indicator is that the year-end values for the 18-month totals not to exceed 5 Preventable and 2 Personnel Error LERs.

NOTE: Due to the way LERs are tracked & reported, this indicator lags by one-month.

Data Source: Frans/Matzke (Manager/Source)
Accountability: Solymossy
Trend: None

SEP 15



LICENSEE EVENT REPORT (LER) ROOT CAUSE BREAKDOWN

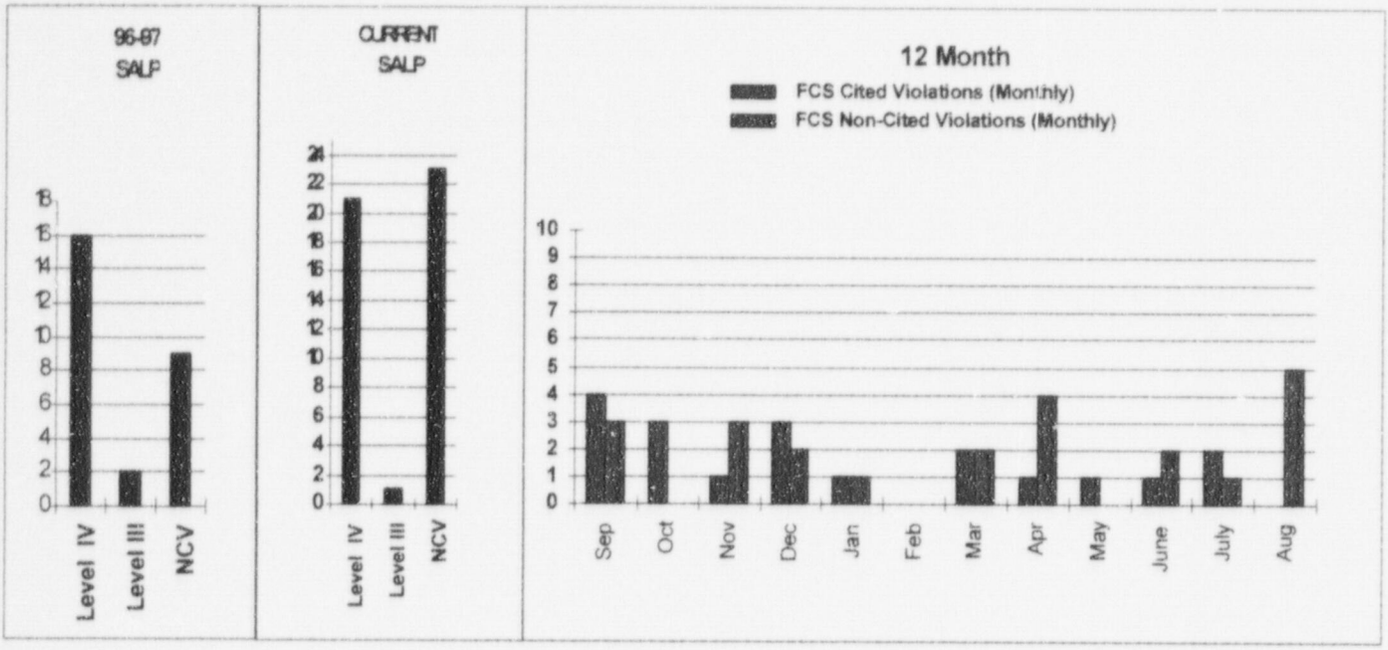
This indicator shows the LERs by event date broken down by Root Cause Code for each of the past eighteen months from **February 1997**, through **July 31, 1998**. To be consistent with the Preventable/Personnel Error LERs indicator, this indicator is reported by the LER event date, as opposed to the 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.

NOTE: Due to the way LERs are tracked & reported, this indicator is one-month behind. There was **one** event in **July 1998** that resulted in an LER. There were **no** missed surveillance tests resulting in LERs during **July** 1998. The 1998 Fort Calhoun monthly goal for this indicator is 0.

Data Source: Frans/Matzke (Manager/Source)
Accountability: Solymossy
Trend: None

SEP 60 & 61



VIOLATION TREND

This indicator depicts twelve months of violation data for Fort Calhoun Station. Illustrated monthly are Cited Violations and Non-Cited Violations. The current SALP cycle began on August 3, 1997 and ends on January 30, 1999.

The following inspection reports noting violations were issued during **August 1998**:

Violation Level	IER No.	Title
NCV (1)	98-12	Special Inspection - AFW Pump overspeed
NCV (4)	98-14	Resident Monthly

To date, OPPD has received **forty five** violations for inspection reports issued in the current SALP cycle. Two (2) Level IV violations received in August 1997 and three (3) Level IV violations received in October 1997, were carried over from the previous SALP cycle due to a lag in the reporting process.

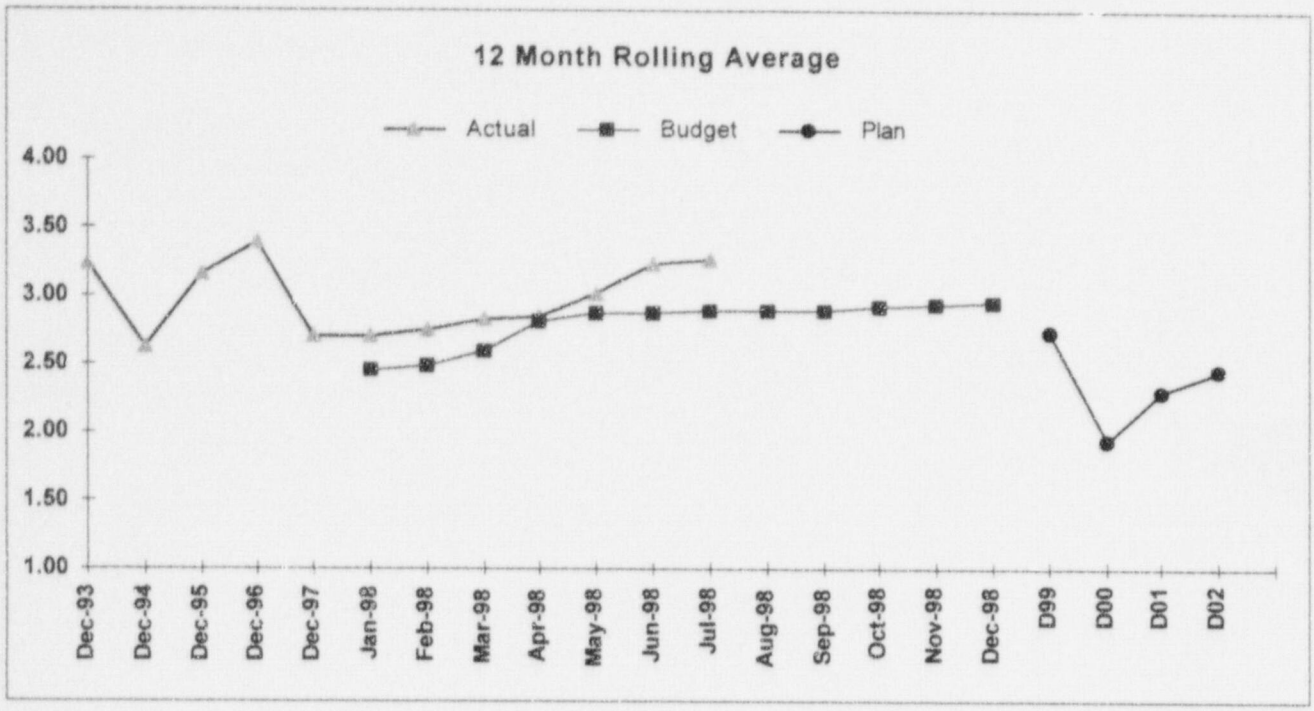
Level III Violations	1
Level IV Violations	21
Non-Cited Violations	23
Total	**45**

The 1998 Fort Calhoun Station Goal for this performance indicator is to be at or below the cited violation trend for the top quartile plants in Region IV.

Data Source: Frans/Cavanaugh (Manager/Source)
Accountability: Frans
Trend: None

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
July 1998

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 1998 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 1993 through 1997. In addition, the report shows the plan amounts for the years 1999 through 2002 for reference. The basis for the dollars are the Nuclear Long Range Financial Plan and the 1998 Corporate Planning and Budget Review. The basis for the generation is provided by Nuclear Fuels.

The **12-month rolling average unit price** period of **(August1997 through July 1998**) averaged above budget due to the extended refueling outage and less generation during the period. The 12 month rolling average is **3.27** cents per kilowatt hour.

The **year-to-date average** is trending in a positive direction.

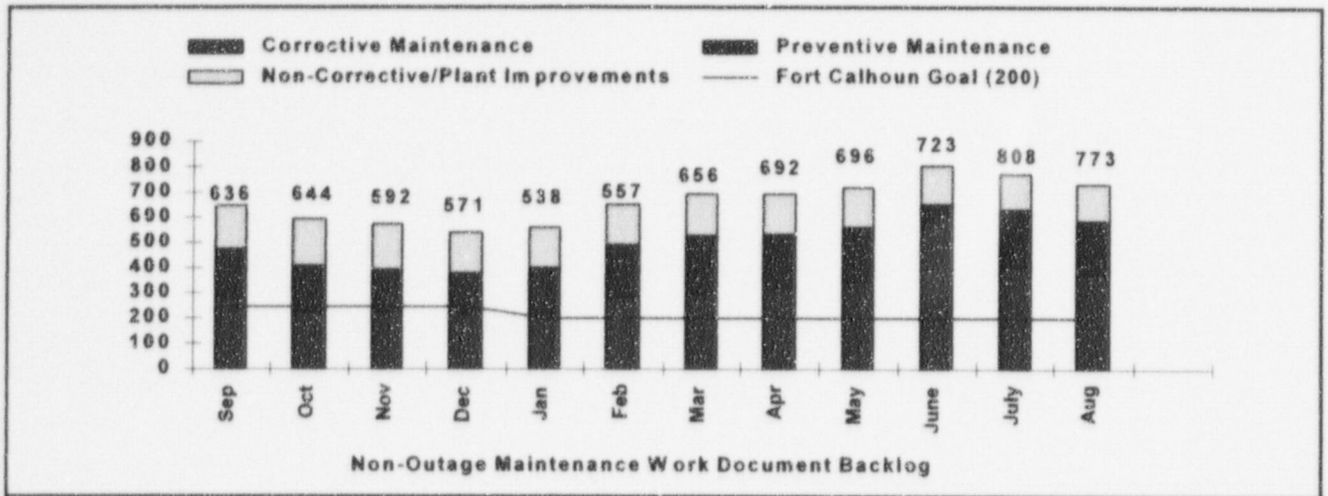
Cents per KWH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Budget Y-T-D	3.02	2.85	3.27	4.13	3.81	3.53	3.37	3.21	3.13	3.08	3.01	2.96
Actual Y-T-D	2.96	2.85	3.00	3.26	4.16	4.39	4.03					

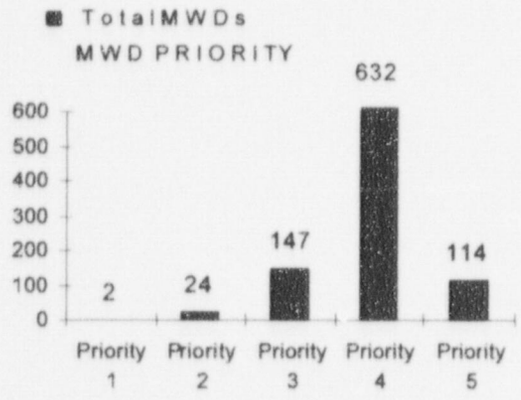
NOTE: This information normally lags by a month due to the short turn around required for processing.

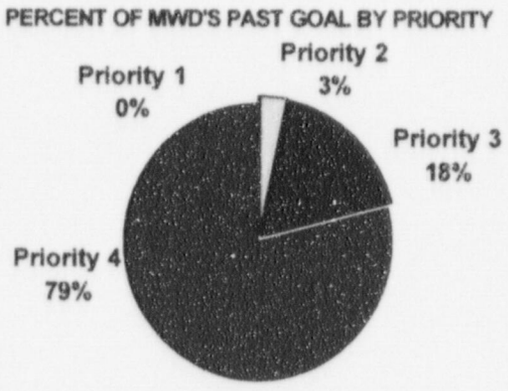
Data Source: Gayoso/Huang (Manager/Source)
Accountability: Belek/Huang
Trend: Needing Incresed Management Attention

DIVISION AND DEPARTMENT PERFORMANCE INDICATORS

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







MAINTENANCE WORKLOAD BACKLOG

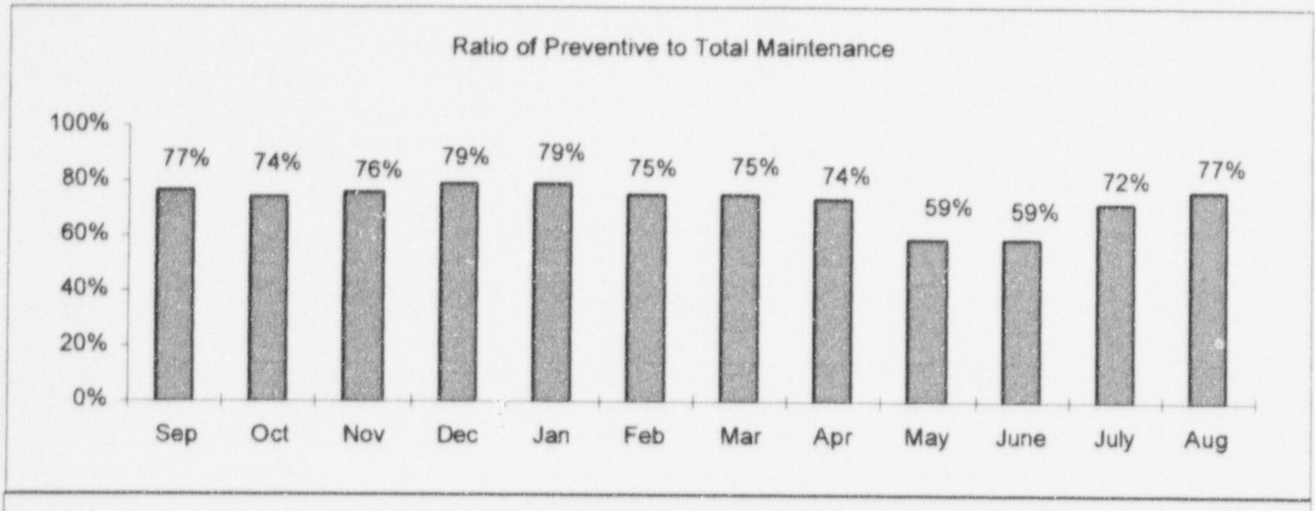
This indicator shows the backlog of non-outage Maintenance Work Documents remaining open at the end of the reporting month,a breakdown by maintenance classification and priority. The 1998 goal for this indicator is 200 non-outage corrective maintenance MWDs. The current backlog of corrective MWDs is **149** to ensure that the MWD backlog is worked in a timely manner, non-outage maintenance completion goals have been established as follows:

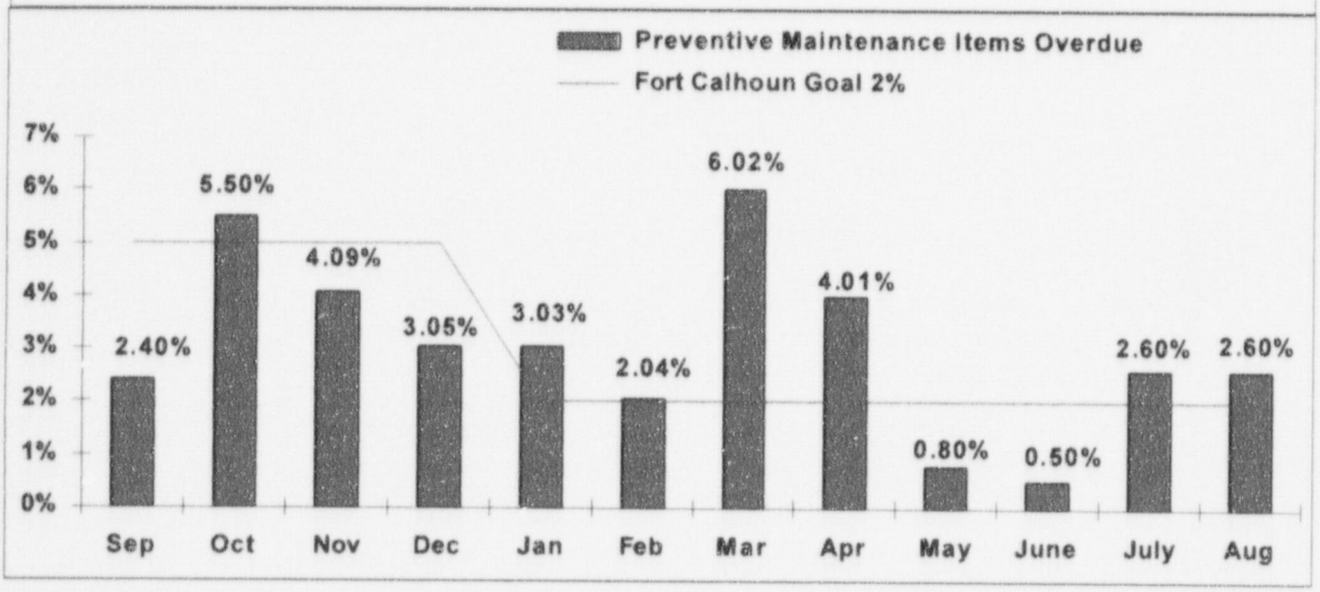
Goal	
Priority 1	24 hours
Priority 2	7 days
Priority 3	30 days
Priority 4	90 days
Priority 5	As resources permit

Note: This is the most current information available due to Rams conversion.

Data Source: Solymossy/Johnson (Manager/Source)
Accountability: Solymossy/Clemens
Trend: None

SEP 36





RATIO OF PREVENTIVE TO TOTAL MAINTENANCE
PREVENTIVE MAINTENANCE ITEMS OVERDUE

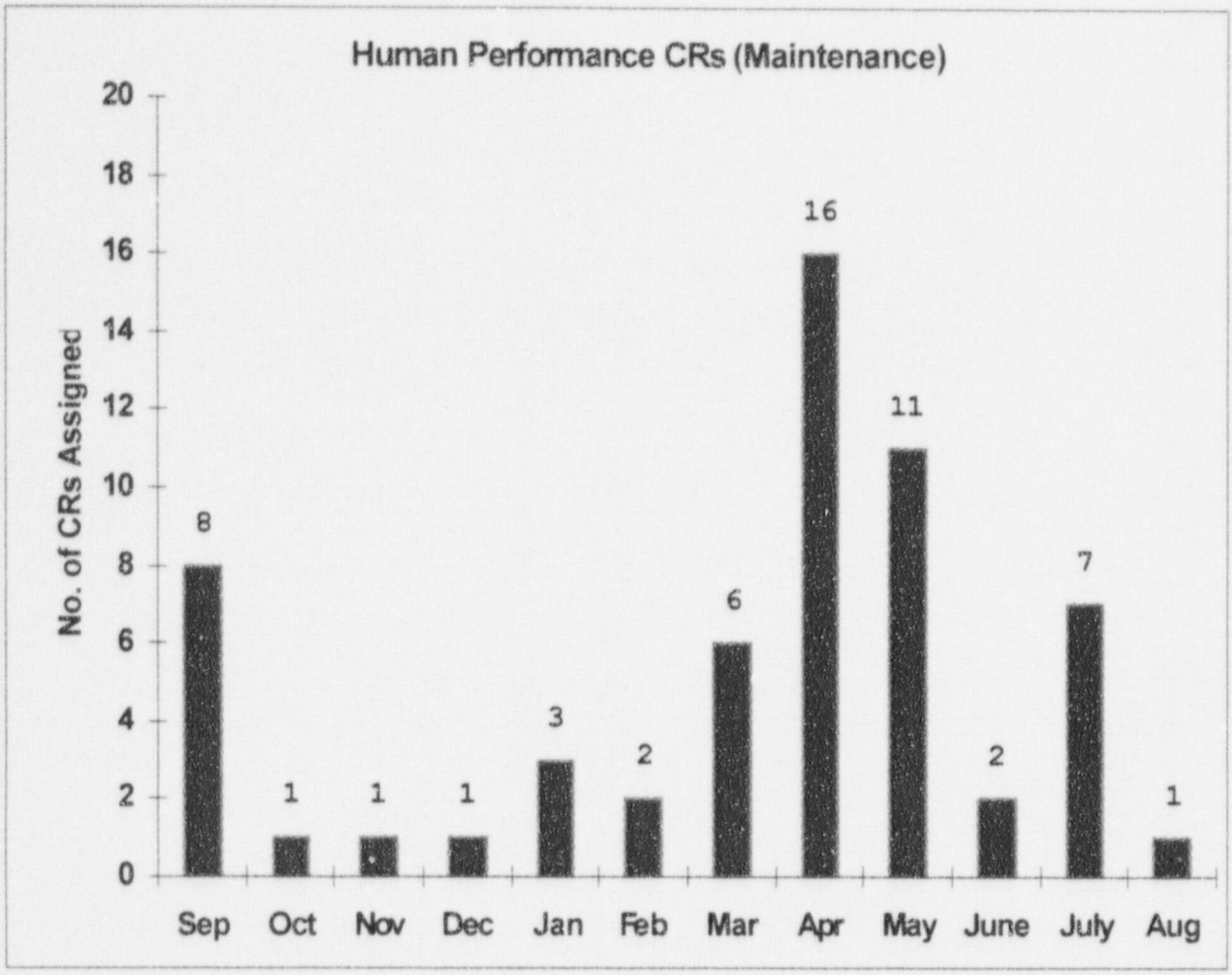
The top graph shows the ratio of completed non-outage preventive maintenance to total completed non-outage maintenance. The ratio of preventive to total maintenance was **77%** for the month of **August 1998.**

The lower graph shows the percentage of scheduled preventive maintenance items that were not completed by the late finish date. From the period of **(July 15th thru August 15th)** there were **14PM's** that were completed late or not completed out of **531** scheduled. The 1998 Fort Calhoun monthly goal for the percentage of preventive maintenance items overdue is a maximum of 2%.

Note: This is the most current information available due to Rams conversion.

Data Source: Solymossy/Johnson (Manager/Source)
Accountability: Solymossy/Clemens
Trend: None

SEP 41 & 44

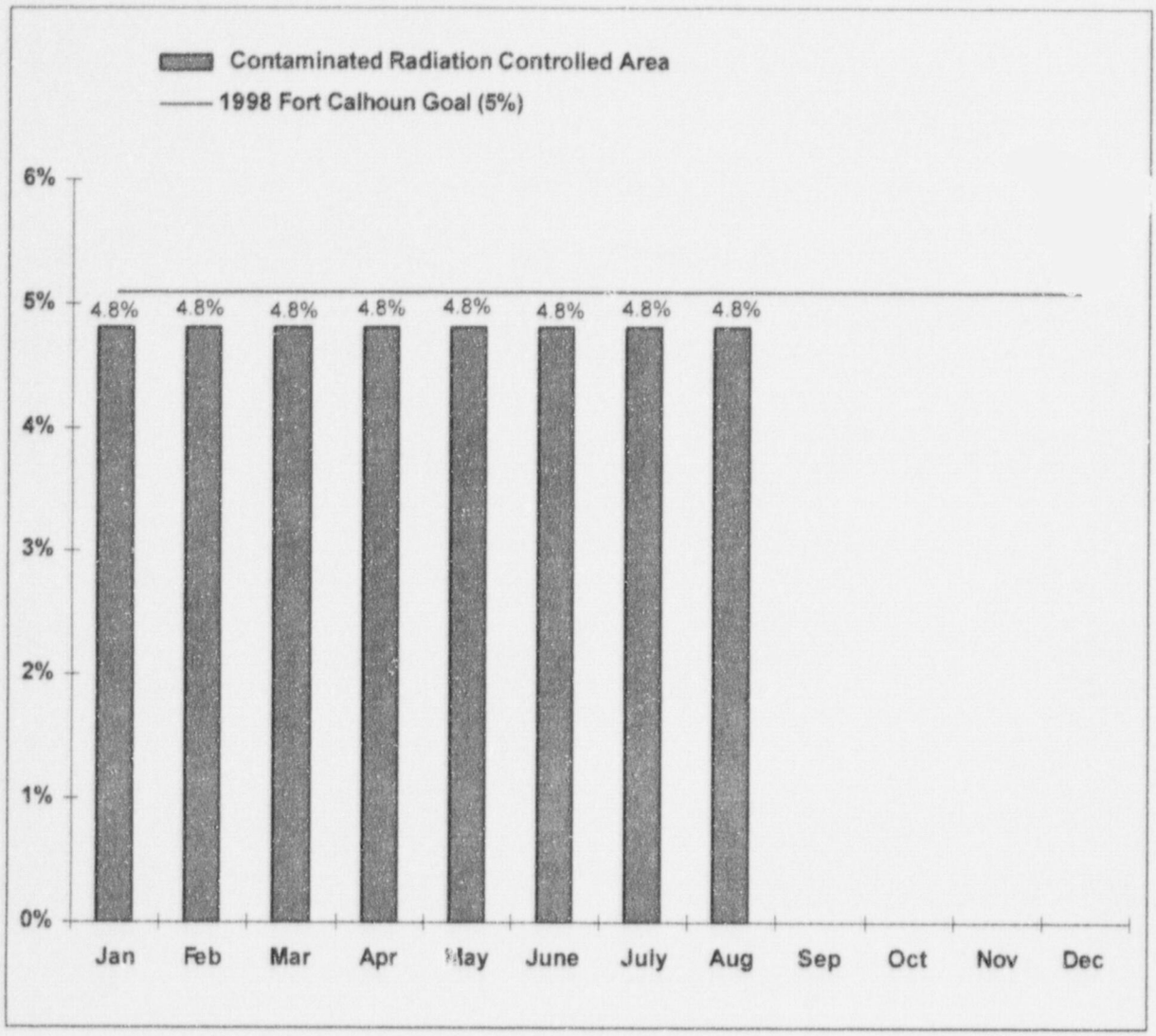


PROCEDURAL NONCOMPLIANCE INCIDENTS (MAINTENANCE)

This indicator shows the number of Condition Reports related to procedural noncompliance incidents assigned to the Maintenance Department.

Data Source: Clemens/Burggraf (Manager/Source)
Accountability: Solymossy/Clemens
Trend: None

SEP 15, 41 & 44

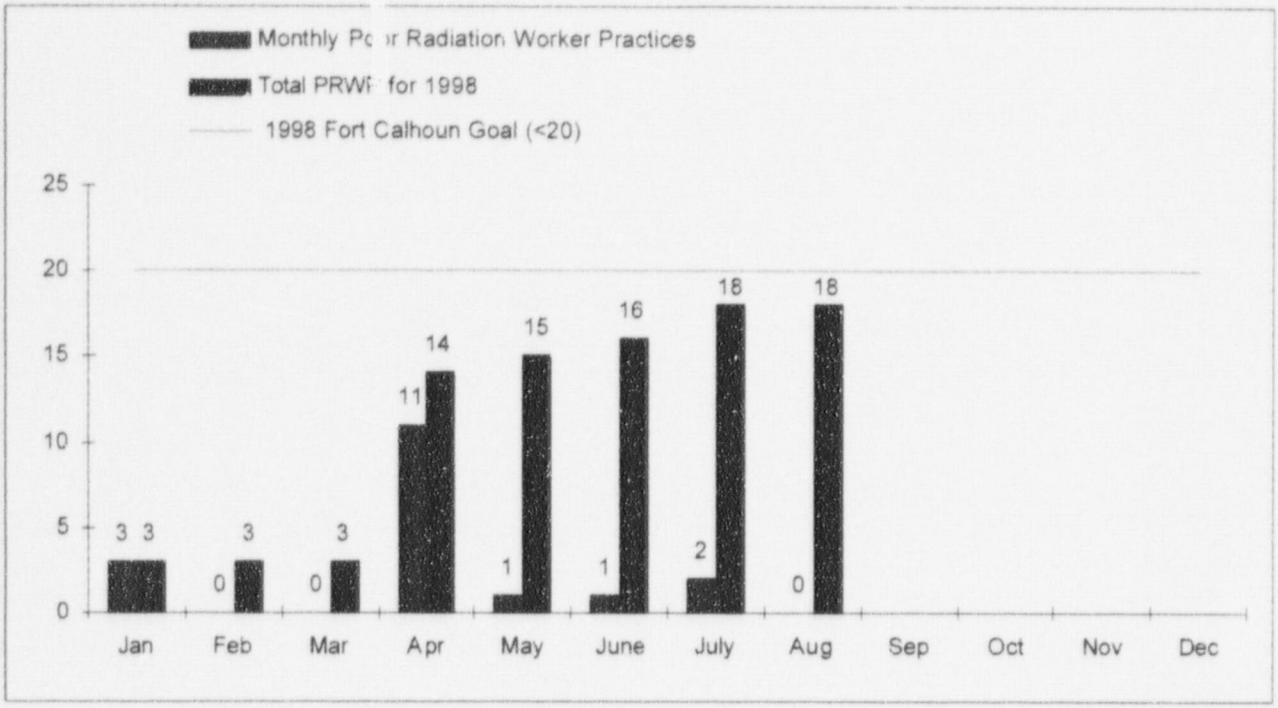


CONTAMINATED RADIATION CONTROLLED AREA

This indicator shows the percentage of the Radiologically Controlled Area (RCA) that is contaminated based on the total square footage of 70475. At the end of **August 1998**, the total contaminated area was **3383** square feet which is **4.8** percent of the RCA . The monthly FCS goal for 1998 is a Maximum of 5% Contaminated Area.

Data Source: Solymossy/Williams (Manager/Source)
Accountability: Solymossy/Puckett
Trend: Positive

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.

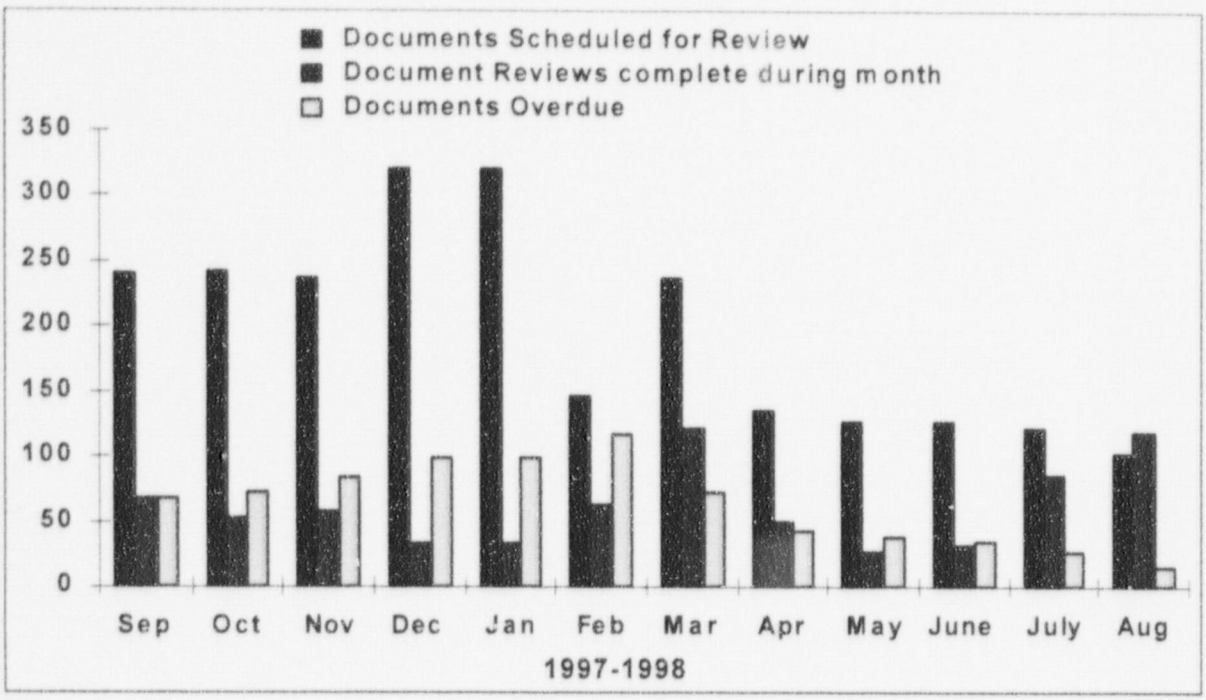
The number of PRWPs which are identified each month should indirectly provide a means to qualitatively assess supervisor accountability for their workers' radiological performance. This indicator needs increased management attention due to a 3 month increasing trend of poor radiation worker practices based on YTD.

During the month of **August** there was **0** PRWP identified.

There have been a total of **18** Poor Radiation Worker Practices in 1998.

The 1998 FCS goal is <20 PRWPs, the 1997 goal was <15 PRWPs.

Data Source: Solymossy/Williams (Manager/Source)
Accountability: Solymossy/Puckett
Trend: Needing Increased Management Attention SEP 52



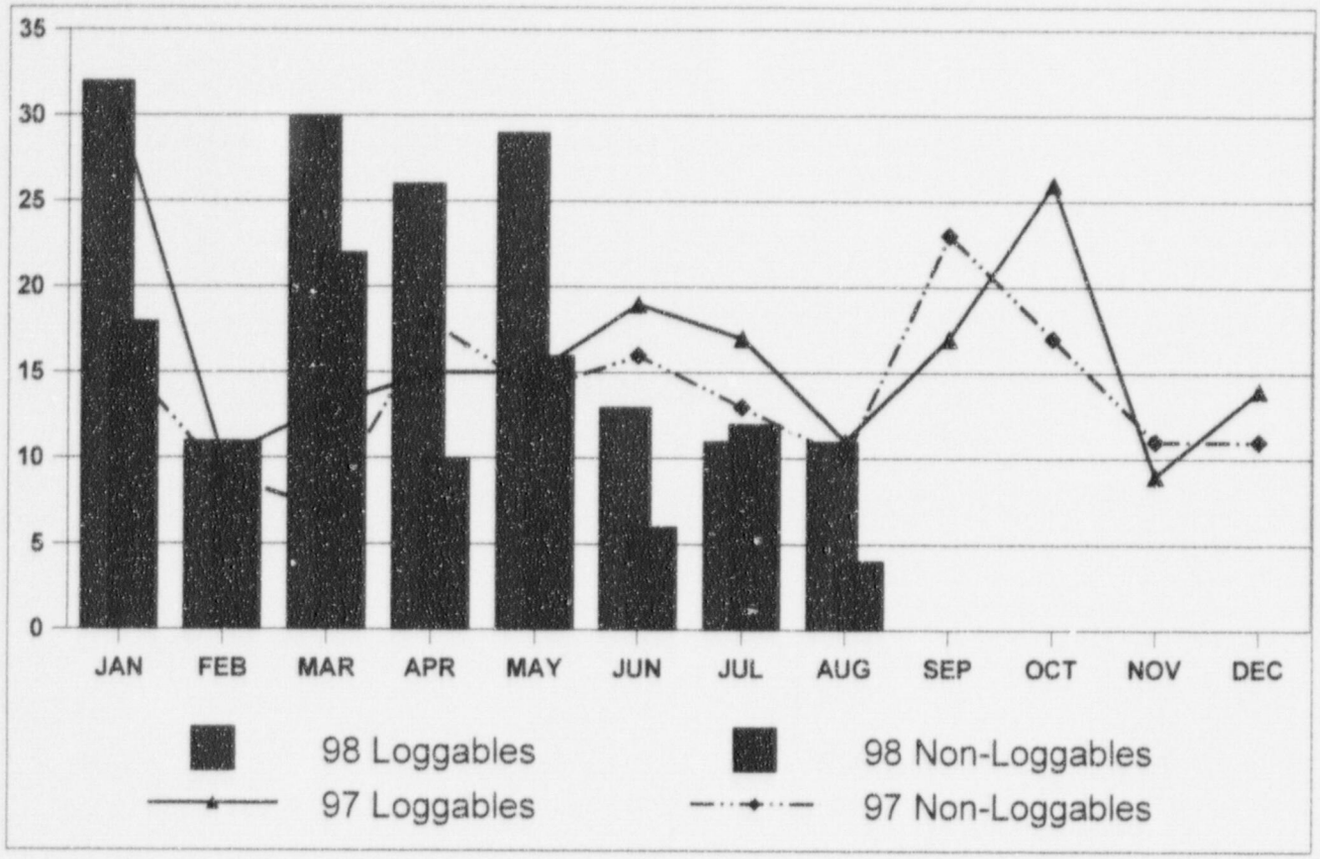
DOCUMENT REVIEW

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

During **August 1998**, there were **102** document reviews scheduled, while **118** reviews were completed. At the end of the month, there were **15** document reviews more than 6 months overdue. There were **0** new documents initiated during **August 1998.**

Data Source: Ponec/Plath (Manager/Source)
Accountability: Ponec
Trend: None

SEP 46



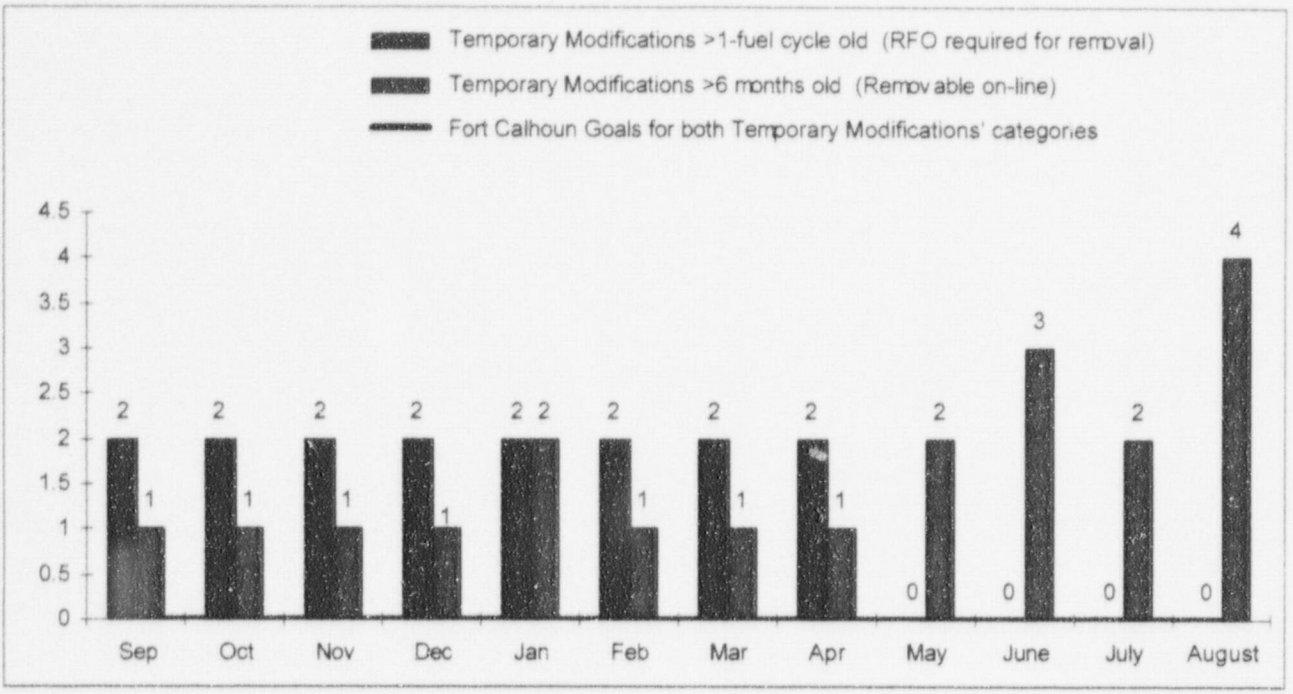
SECURITY INCIDENTS

The Loggable and Non-Loggable Incident (Security) Indicators are depicted in the chart above. The chart depicts the total number of loggable and non-loggable human error events and system failures which occurred during the reporting month.

During the month of August 1998, there were **11** loggable incidents and **4** non-loggable incidents identified (excluding access denials). Of all incidents identified this month seven (7) were human error events. Of loggable events, four (4) were human performance errors and seven (7) were system failures. There were five (5) internal human performance errors in August. There was one (1) non-loggable access denial during the reporting period. The increase in internal human performance errors for the month is a concern that is being addressed during security force shift briefings.

Data Source: Sefick/Clark (Manager/Source)
Accountability: Sefick
Trend: None

SEP 58



TEMPORARY MODIFICATIONS

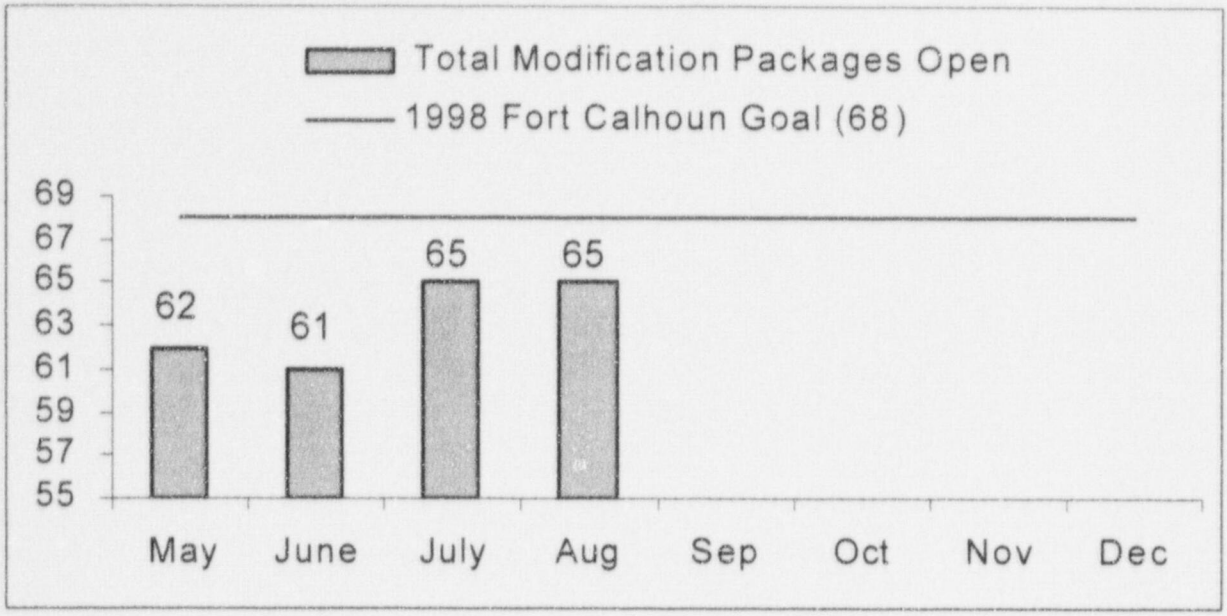
This indicator provides information on the number of Temporary Modifications (TMs) greater than one fuel cycle old requiring a refueling outage (RFO) for removal and the number of TMs removable on-line that are greater than six months old. The 1998 Fort Calhoun monthly goals for both of the TM categories are zero.

At the end of **August 1998,** there were **no** TMs that were greater than one-fuel cycle old requiring an outage for removal.

At the end of **August 1998**, there were **four (4)** TMs installed that were greater than six months old that could be removed on-line. TM 96-039, Railroad Siding/Corridor 26 Door, was installed November 1, 1996. EAR 97-219 will close this TM; it requiresComponent Testing review approval, and is expectedto be completed by January 1, 1999. TM 97-021, CCW corrosion monitor, was installed February 18, 1998. TM 97-021 was expected to be removed, August 18, 1998; however the TM is still in place. TM 97-022, LPSI Header Pressure Gauge at PT-325, was installed December 12, 1997. ECN 98-161 will be used to remove this TM by January 1, 1999. TM 98-005, YIT 6286 A&B YIT 6288 A&B was installed February 27, 1998. MR-FC-98-003 is expected to remove this TM by October 26, 1998.

At the end of **August 1998**, there was a total of **twelve (12)** TMs installed in the Fort Calhoun Station. **Three (3)** of the **twelve (12)** installed TMs require an RFO for removal and **nine (9)** are removable on-line. In 1998, a total of **nineteen (19)** TMs have been installed. At the end of **August 1998**, there were **three (3)** procedural or maintenance configuration alterations (PMCAs) (a special classification of TM) instaled in the Fort Calhoun Station using PRC approved procedures which are controlled by Standing Order O-25.

Data Source: Skiles/Plott (Manager/Source)
Accountability: Skiles/Core
Trend: Needing Increased Management Attention SEP 62&71



OUTSTANDING MODIFICATIONS

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

Category	'90 - '94	'95	'96	'97	'98	'99	Reporting Month
Form FC-1133 Backlog/In Progress	0	0	0	0	0	2	2
Mod. Requests Being Reviewed	0	0	0	0	0	2	2
Design Engr. Backlog/In Progress	0	0	0	0	3	2	23
Construction Backlog/In Progress	1	0	3	4	17	1	26
Design Engr. Update Backlog/In Progress	5	4	2	1	0	0	12
Totals	6	4	5	5	20	25	65
(Outage + OnLine)	**(2+4)**	**(2+2)**	**(5+0)**	**(1+4)**	**(16+4)**	**(18+7)**	

The 1998 year-end Fort Calhoun goal for this indicator is a maximum of 68 outstanding modifications.

Data Source: Jaworski/Walling (Manager/Source)
Accountability: Jaworski
Trend: None

NO DATA AVAILABLE

ENGINEERING ASSISTANCE REQUEST BREAKDOWN

This indicator shows a breakdown of the number of EARs assigned to Design Engineering and System Engineering. The 1998 year-end goal for this indicator is a maximum of 120 outstanding EARs.

NOTE: Data unavailable due to RAMS conversion.

Data Source: Jaworski/Livingston (Manager/Source)
Accountability: Skile/Jaworski
Trend: None

SEP 62

NO DATA AVAILABLE

ENGINEERING CHANGE NOTICE STATUS

NOTE: Data unavailable due to RAMS conversion.

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

SEP 62

NO DATA AVAILABLE

ENGINEERING CHANGE NOTICE OPEN

NOTE: Data unavailable due to RAMS conversion.

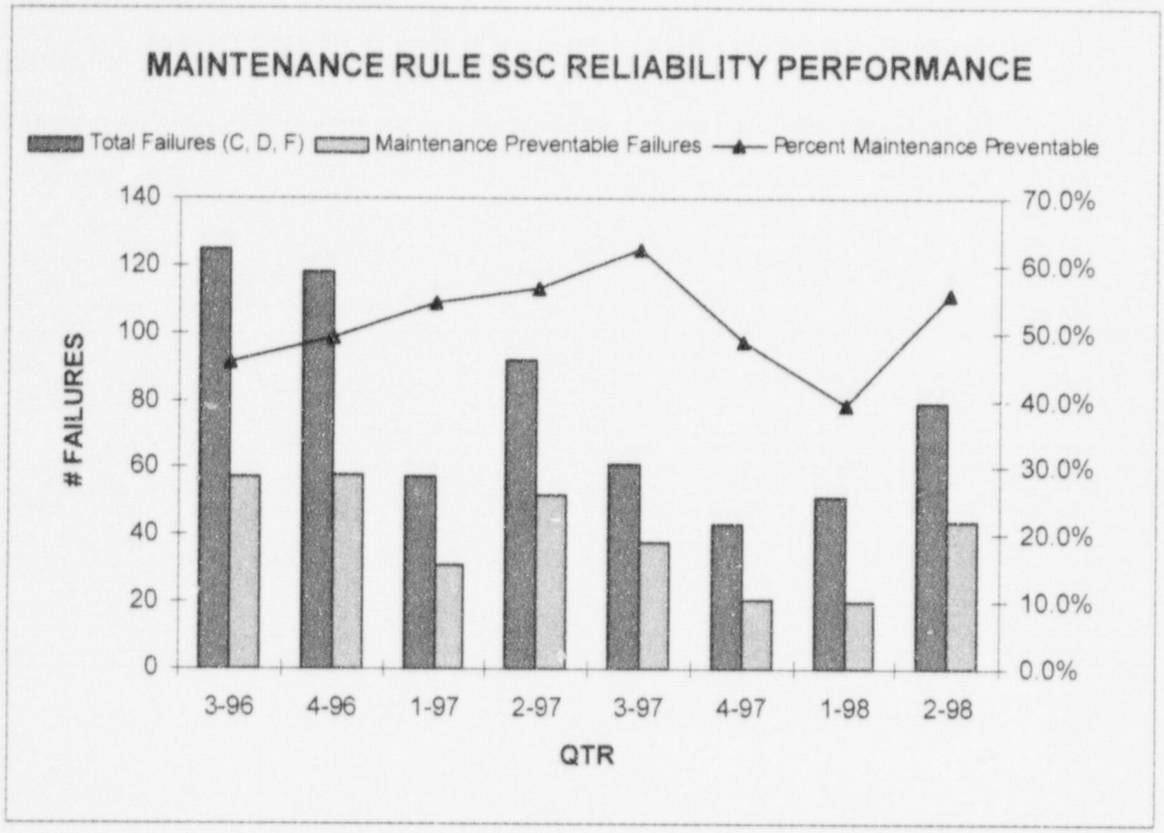
Data Source: Jaworski/Livingston (Manager/Source)
Accountability: Jaworski/Skiles
Trend: None

SEP 62

Maintenance Rule SSC Unavailability

This indicator shows the quarterly Maintenance Rule Unavailability Performance value which is based on the performance of SSC's which have specific Availability Performance Criteria. A single SSC, Inverter Bypass Transformer #1, EE-4S, continues to exceed its Unavailability Performance Criteria. The performance trend for this SSC is improving.

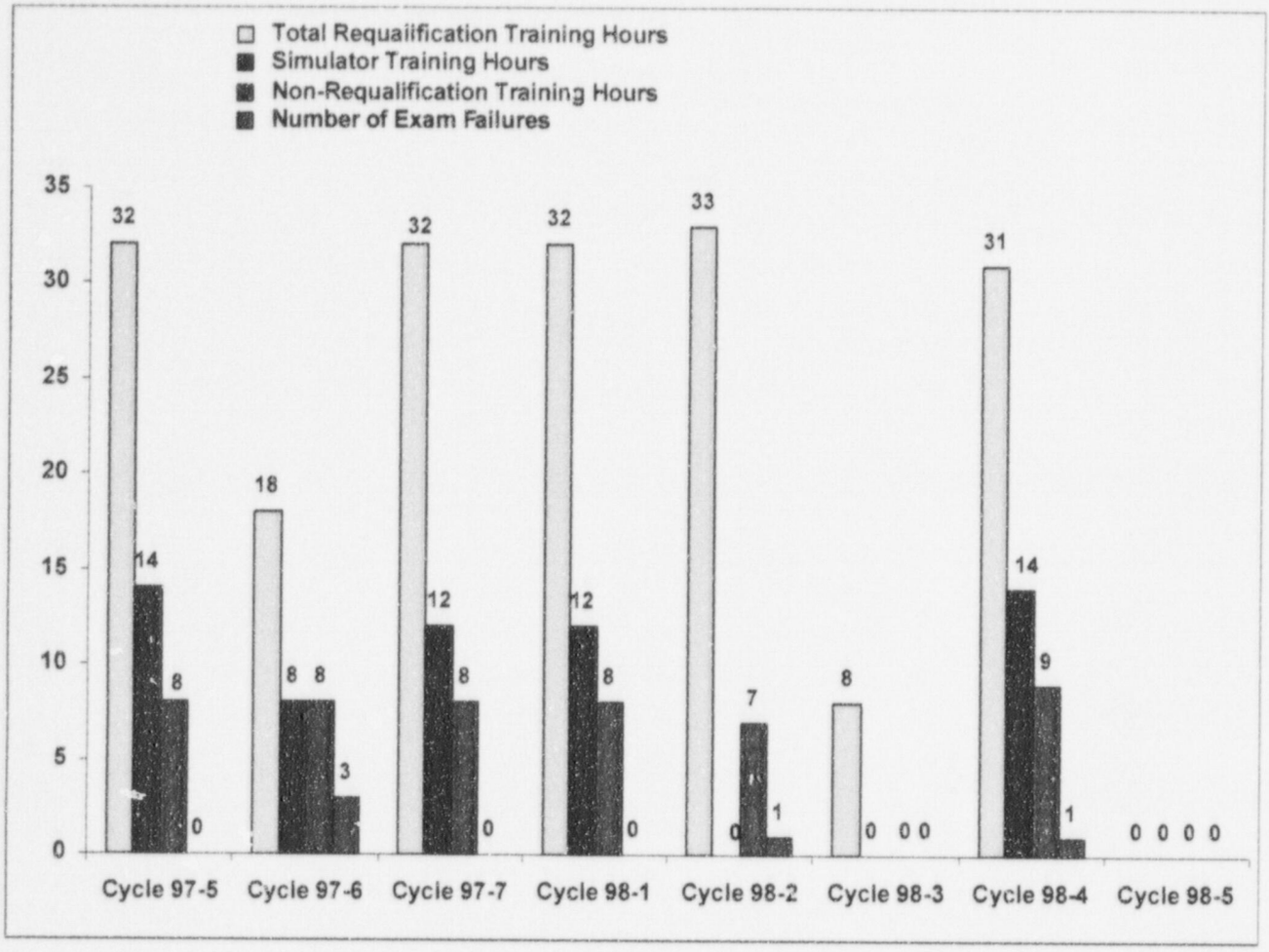
Data Source Skiles/Swearngin/Johnson (Manager/Source)
Accountability: Skiles
Trend: None



Maintenance Rule SSC Reliability

This indicator shows the quarterly Maintenance Rule Reliabilty Performance value which is based on tracking being compiled based on component failures since 10CFR50.65 was implemented in July of 1996. The percent of "Maintenance Preventable" failures is 57% at the end of the second quarter of 1998. The Reliability Indicator for the second quarter of 1998 shows that the percentage of failures identified as "Maintenance Preventable" and the total number of equipment failures is trending upward. The increase in total identified failures is an expected trend attributable to increased Maintenance activities during the refueling outage.

Data Source Skiles/Swearngin/Dowdy (Manager/Source)
Accountability: Skiles
Trend: None



LICENSED OPERATOR REQUALIFICATION TRAINING

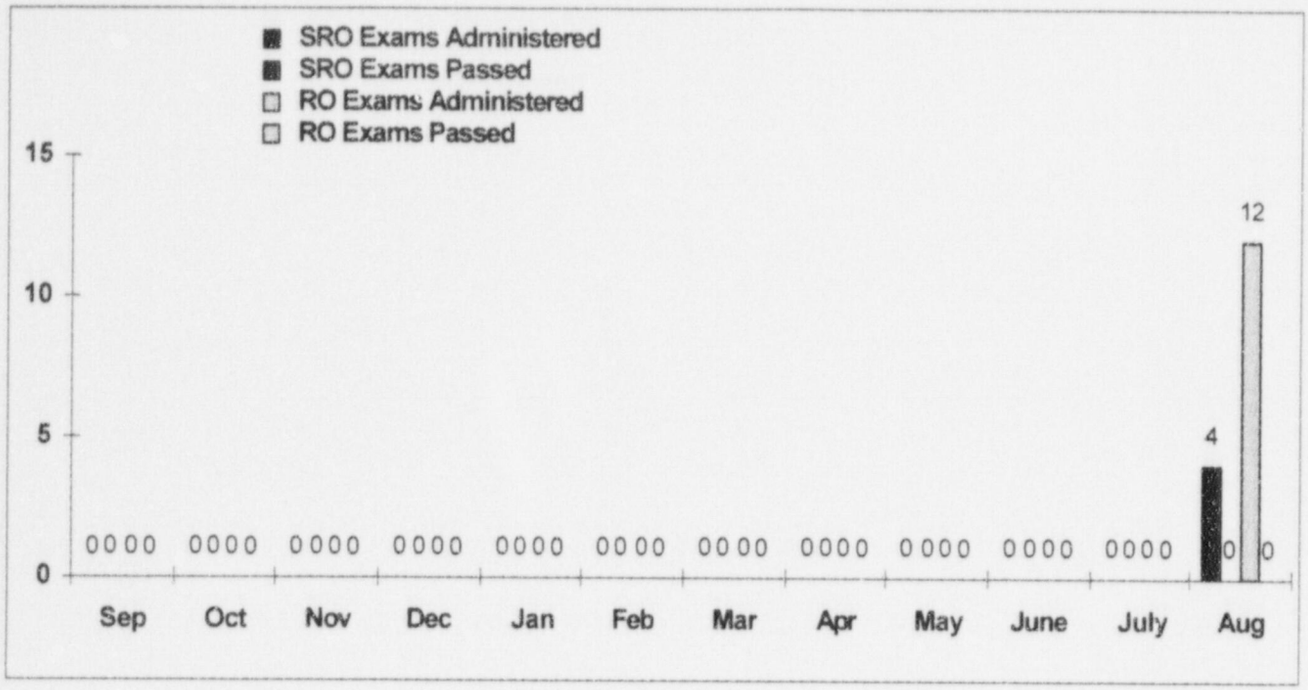
This indicator provides information on the total number of hours of training given to each crew during each cycle. The simulator training hours shown on the graph are a subset of the total training hours. Non-Requalification Training Hours are used for AOP/EOP verification & validation, INPO commitments, 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.

Note: Due to the fact that Rotation 98-5, Requalification Training was not completed during August, no new statistics are being provided.

Data Source: Westcott/Guliani (Manager/Source)
Accountability: Westcott/Guliani
Trend: None

SEP 68



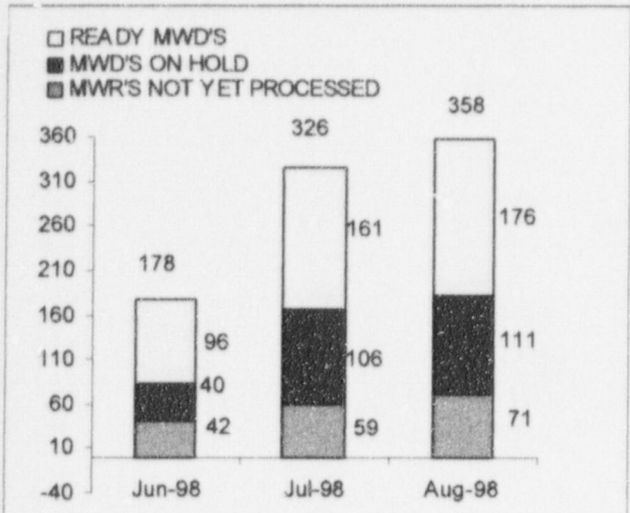
LICENSE CANDIDATE EXAMS - 1998

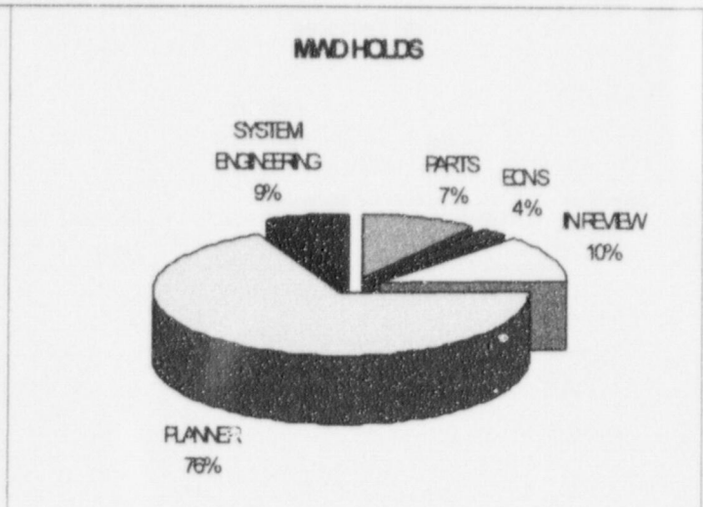
This indicator shows the number of Senior Reactor Operator (SRO) and Reactor Operator (R0) quizzes and exams taken and passed each month. These internally administered quizzes and exams are used to plot the SRO and RO candidates' monthly progress.

During the month of **August** 1998, there were **4** (SRO) exams administered and **12** (RO) exams administered with no failures.

Data Source: Westcott/Guliani (Manager/Source)
Accountability: Westcott/Guliani
Trend: None

SEP 68





MWD PLANNING STATUS (CYCLE 18 REFUELING OUTAGE)

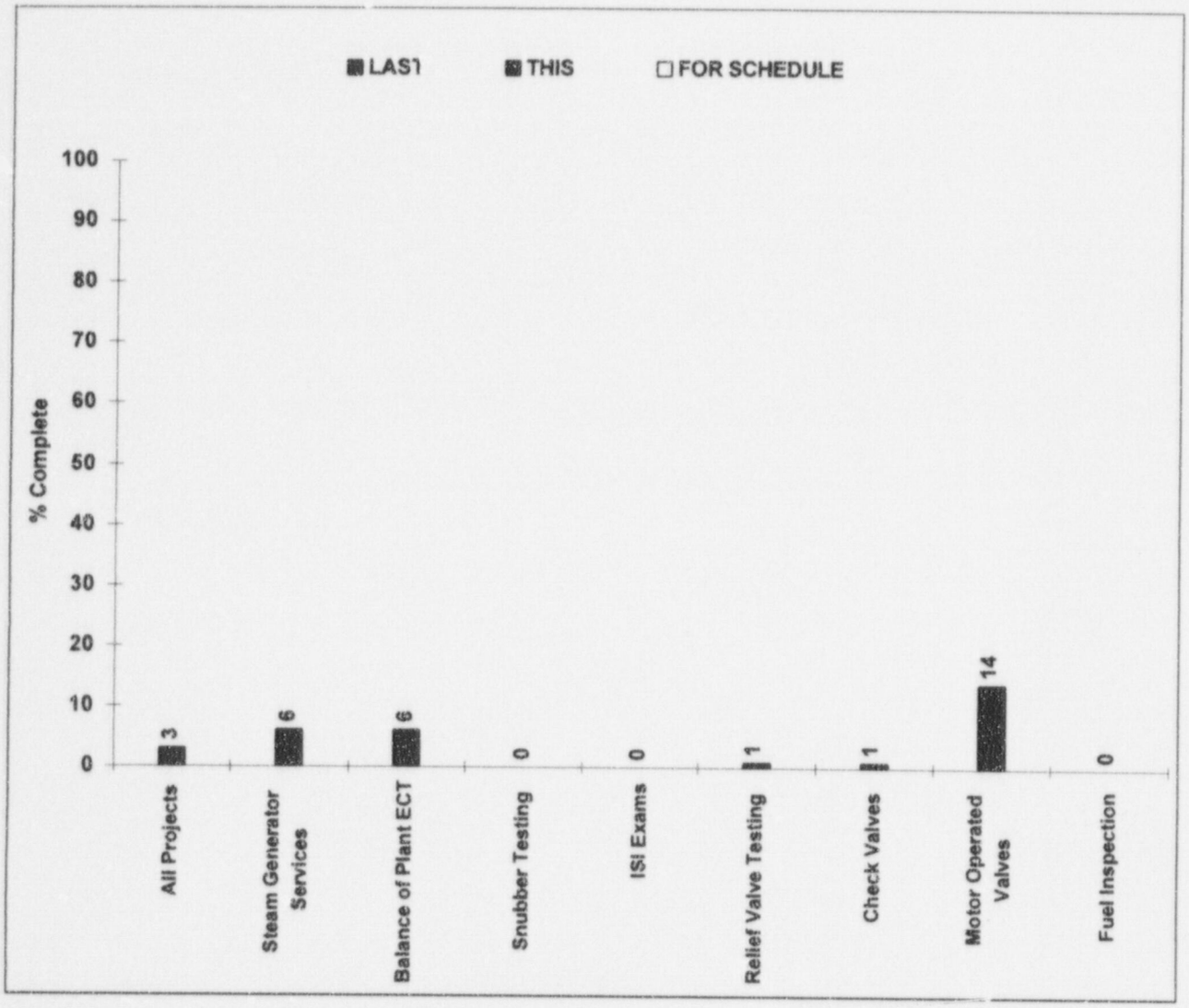
This indicator shows the total number of Maintenance Work Requests (MWRs) and Maintenance Work Documents (MWDs) that have been approved for inclusion in Cycle 18 RFO. This graph indicates:

- Parts Holds - Planning Complete, Awaiting Parts
- System Engineering Holds - Awaiting System Engineering Input to Planning
- Planner Holds - Maintenance Planner has not completed planning the work package.
- ECN Hold - Awaiting Substitute Replacement Items ECN from DEN.
- In Review - Planning Complete awating SE, ISI and QC review.

Note: This is the most current information available due to Rams conversion.

Data Source: Solymossy/Johnson (Manager/Source)
Accountability: Sollymossy/Herman
Trend: None

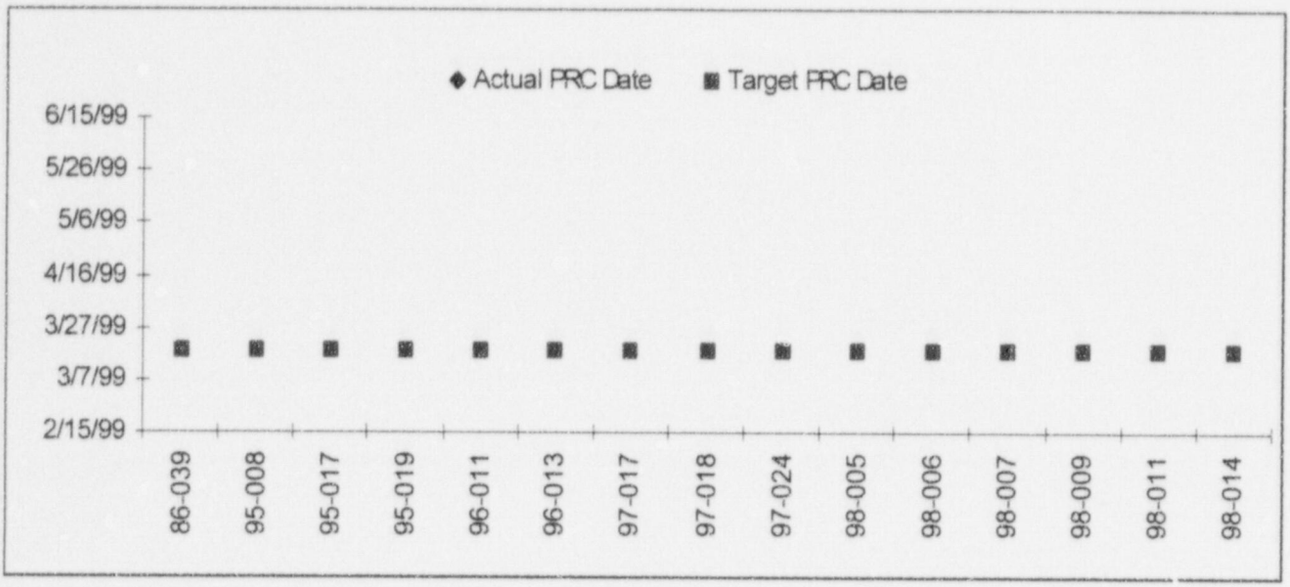
SEP 31



COMPONENT TESTING DEPARTMENT
AND SPECIAL SERVICES
ENGINEERING DEPARTMENT
1998 OUTAGE PROJECTS STATUS REPORT

Data Source Skiles/Bloyd/Boughter (Manager/Source)
Accountability: Skiles/Bloyd/Boughter
Trend: None

SEP 31



PROGRESS OF 1999 REFUELING OUTAGE MODIFICATIONS CYCLE 19

This indicator shows the status of Modificationsapproved for installation during the Cycle 19 Refueling Outage (September 1999).

The goal for this indicator is to have all modification packages which were approved for accomplishmen prior to September 25, 1998, PRC approved by March 18, 1999.

August 1998 Modifications added: **4** Deleted = **0**

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

SEP 31

NO DATA AVAILABLE

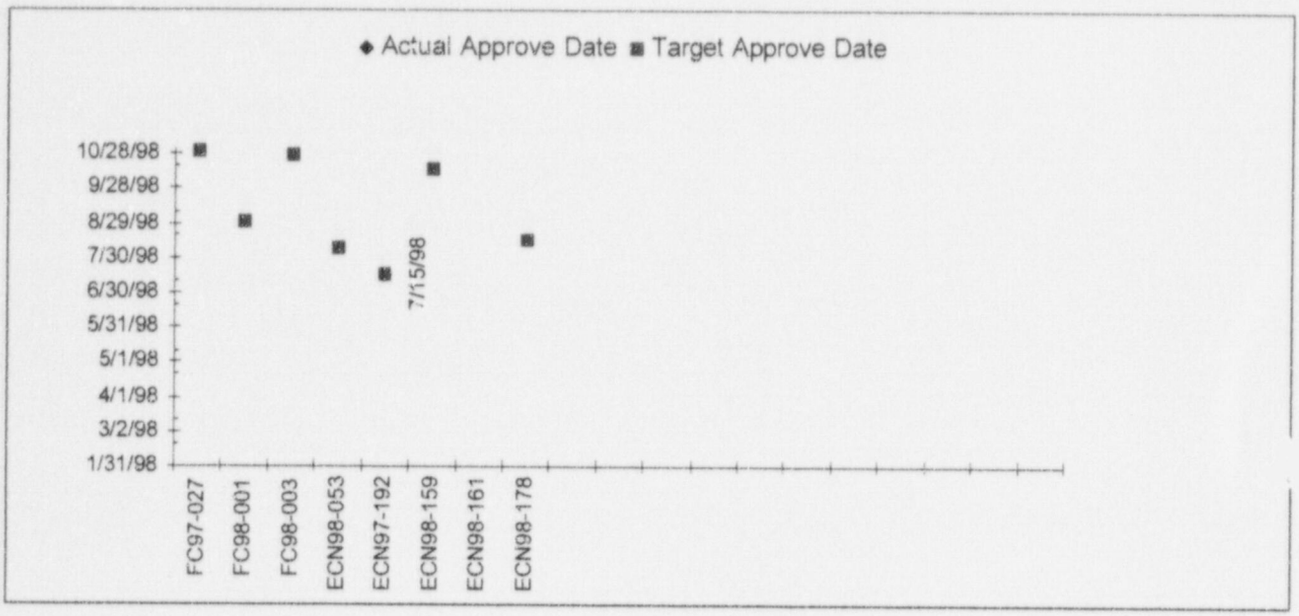
PROGRESS OF CYCLE 19 OUTAGE
MODS AND ECNS ADDED TO 1999 REFUELING OUTAGE AFTER FREEZE DATE

This indicator will show the status of Modifications and ECNs approved for installation during the Cycle 19 Refueling Outage. The goal for this indicator is to have all modification packages PRC approved by their target date.

August 1998

Modifications/ECNs Added **= 0** Deleted = **0**

Data Source: Jaworski/Walling (Manager/Source)
Accountability: Phelps/Jaworski
Trend: None SEP 33



PROGRESS OF 1998 ON-LINE MODIFICATION PLANNING

This indicator shows the status of modifications approved or in review for approval for on-line installation during 1998.

The goal for this indicator is to have all MOD/ECN packages approved by their scheduled date.

August 1998 MOD/ECN Added:**3** Deleted: **0**

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

SEP 31

ACTION PLANS
SEP INDEX

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 5 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":

- **Emergency AC Power** (page 15)

This indicator was high in July and August due to planned maintenance. For the first time, diesel refueling frequency tasks were performed on line. Approximately 60 hours was required on each diesel for on line maintenance. The decision to perform on-line maintenance was a management decision with full knowledge that unavailability would increase. It is expected that unavailability will go down to previous low levels for the next 12 months.

- **Secondary System Chemistry** (page 18)

Recent chemistry analysis results indicate increased impurity concentration in our Steam Generator blowdown chemistry. The Chemistry Department is investigating this trend and is considering an action plan that would include the manipulation of various systems that would require Operations Department support. Some of these would include:

  - Adjustments to Steam Generator blowdown
  - Adjustments to Chemical Feed
  - Securing RO unit make-up to the Condensate Storage Tank for extended periods as allowed by CST level.

- Clean **Controlled Area Contaminations** (page 25)

The Routine Decon Schedule was revised to improve the daily maintenance of clean areas in the RCA. A status sheet with a sign-off will provide administrative guidance and controls to ensure clean areas are being properly maintained by a designated responsible person. These improvements should result in less Clean Controlled Area Contaminations.

- **Cents Per Kilowatt Hour** (page 30)

The increased cost has been due to the unexpected refueling outage extension which also caused the higher expenditures and the less power generated. Nuclear Planning Department has initiated cost awareness efforts by distributing the monthly update on power generation, O/M cost and Capital cost to all nuclear departments and year-to-date cost data to all nuclear personnel. In addition, the Nuclear organization is developing the 1999 Business Plan based on the Six Factor Formula -CHOICE to address the issues and actions on safe operations, high performance and competitive cost. The effectiveness of the Business Plan will be evaluated routinely by the nuclear management team.

- **Radiological Work Practices Program** (page 36)

Changes in the Initial General Employee Training (GET) Program are being addressed by a Training Advisory Committee to make program improvements. The On-Line Poor Radiation Worker Practices were recently identifed by CR 199801434. Implementation of the Actions Items listed below are being addressed by the Condition Report, which should result in an increased awareness for improving Rad Worker Pracitices in the RCA.

  - *Define the role of the Shift RP Technician to reduce over relianace on the RP Staff and ensure Rad Workers have sufficient knowledge prior to accessing the RCA.*
  - *Perform a Human Performance evaluation of the Survey Maps used by the Rad Workers.*
  - *Evaluate the effectiveness of the postings used in the RCA.*
  - *Evaluate the adequacy and effectiveness of the information provided at eh RCA Access Control Point.*
  - *Ensure the RP Shift Tech has the appropiate information available.*
  - *Evaluate the content and methods of the GET Program.*
  - *Evaluate the effectiveness of the postings used in the RCA.*

- **Temporary Modifications** (page 39)

Based on the current trend of Temporary Modifications >6 months old (removable on-line) the Temporary Modifications Indicator is classified as "Needs Increased Management Attention". Presently, there are four (4) Temporary Modifications which have been installed greater than six months. An action plan has been developed to expedite removal of the TMs and increase managements awareness of the issue. System Engineering will be actively pursuing resolution on closure of these Temporary Modifications.

PERFORMANCE INDICATOR DEFINITIONS & SEP INDEX

PERFORMANCE INDICATOR INDEX

This indicator index is calculated from a weighted combination of eleven performance indicator values, which include the following: Unit Capability Factor, Unplanned Capability Loss Factor, HPSI, AFW, Emergency AC Power System, Unplanned Automatic Scrams, Collective Radiation Exposure, Fuel Reliability, Thermal Performance, Secondary System Chemistry, and Industrial Safety Accident Rate.
(Page 6)

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. **(Page 10)**

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. **(Page 11)**

UNPLANNED AUTOMATIC REACTOR SCRAMS PER 7,000 CRITICAL HOURS

This indicator is defined as the number of unplanned automatic scrams (RPS 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 signal may have resulted from exceeding a set point or spurious.
3) Automatic means that the initial signal that caused actuation of the reactor protection system logic was provided from one of the sensor's monitoring plant parameters and conditions, rather than the manual scram switches or, manual turbine trip switches (or push-buttons) provided in the main controlroom.
4) Critical means that during the steady-state condition of the reactor prior to the scram, the effective multiplication (k_{eff}) was essentially equal to one

(Page 12)

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. **(Page 13)**

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.**(Page 14)**

EMERGENCY AC POWER SYSTEM SAFETY SYSTEM PERFORMANCE

The sum of the known (planned and unplanned) unavailable and the estimated unavailable hoursfor 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.**(Page 15)**

THERMAL PERFORMANCE

The ratio of the design gross heat rate (corrected) to the adjusted actual gross heat rate, expressed as a percentage. **(Page 16)**

PERFORMANCE INDICATOR DEFINITIONS & SEP INDEX

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 = 0.0217) divided by the specific volume of coolant at normal letdown temperature (120° F at outlet of the letdown cooling heat exchanger, Vf = 0.0163), which results in a density correction factor for FCS equal to 1.33. **(Page 17)**

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/0.79) + (Chloride/1.52) +(Sulfate/1.44) + (Iron/3.30) + (Copper/0.30)+(Condensate O2/2.90))/6

Where: Sodium, sulfate, chloride and condensate dissolved oxygen are the monthly average blowdown concentrations in ppb, iron and copper are monthly time weighted average feedwater concentrations in ppb. The denominator for eaof the five 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. **(Page 18)**

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. **(Page 19)**

INDUSTRIAL SAFETY ACCIDENT AND DISABLING INJURY/ILLNESS RATE

The purpose of this indicator is to monitor progress in improving industrial safety performance for utility personnel permanently assigned to the station. Contractor work-hours are not included in this indicator. Also, 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.**(Page 20)**

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. **(Page 21)**

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 and 26. **(Page 24)**

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. **(Page 25)**

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, 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. **(Page 26)**

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.In addition this indicator reports SEP # 6 & 61. **(Page 27)**

VIOLATION TREND this indicator is defined as Fort Calhoun Station Cited Violations and Non-Cited Violations trended over 12 months. Additionally, CitedViolations for the top quartile Region IV plant istrended over 12 months (lagging the Fort CalhounStation trend by 2-3 months). It is the FortCalhoun Station goal to be at or below the cited violation trend for thetopquartileRegion IV plant.
(Page 28)

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 twelve-month average for the current year. The basis for the budget curve is the approved yearly budget. The basis for the actual curve is the Financial and Operating Report.
(Page 30)

MAINTENANCE WORKLOAD BACKLOG

This indicator shows the backlog of non-outage Maintenance Work Documents remaining open at the end of the reporting month. Maintenance classifications are defined as follows:

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. **(Page 32)**

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 percent 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. **(Page 33)**

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 and 44. **(Page 34)**

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. **(Page 35)**

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. **(Page 36)**

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 six months of the assigned due date. This indicator tracks performance for SEP #46. **(Page 37)**

SECURITY INCIDENTS

The total number of security incidents for the reporting month depicted in two graphs. This indicator tracks security performance for SEP #58. **(Page 38)**

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) Scaffold 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 SEP #62 and 71. **(Page 39)**

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. **(Page 41)**

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. **(Page 42)**

PERFORMANCE INDICATOR DEFINITIONS & SEP INDEX

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 Items open, and ECN Document Changes open. This indicator tracks performance for SEP #62.
(Page 43)

LICENSED OPERATOR REQUALIFICATION TRAINING

The total number of hours of training given to each crew during each cycle. Also provided are the simulator training hours (which are a subset of the total training hours), the number of non-REQUALIFICATION training hours and the number of exam failures. This indicator tracks training performance for SEP # 68. **(Page 46)**

LICENSE CANDIDATE EXAMS

This indicator shows the number of SRO and/or RO quizzes and exams that are administered and passed each month. This indicator tracks training performance for SEP #68.
(Page 47)

MWD PLANNING STATUS (CYCLE 19 REFUELING OUTAGE)

This indicator shows the total number of Maintenance Work Requests (MWRs) and Maintenance Work Documents (MWDs) that have been approved for inclusion in the Cycle 18 Refueling Outage. This indicator tracks performance #31
(Page 48)

COMPONENT TESTING DEPARTMENT AND SPECIAL SERVICES ENGINEERING 1998OUTAGE PROJECTS STATUS REPORT

This indicator tracks performance for SEP # 31.
(Page49)

PROGRESS OF 1999 REFUELING OUTAGE MODIFICATIONS CYCLE 19

This indicator shows the status of Modifications approved for installation during the Cycle 19 Refueling Outage. This indicator tracks performance for SEP # 31. **(Page50)**

PROGRESS OF CYCLE 19 OUTAGE MODS AND ECN'S ADDED TO '99 REFUELING OUTAGE AFTER FREEZE DATE

This indicator will show the status of Modifications and ECN's approved for installation during the Cycle 19 Refueling Outage. This indicator tracks performance for SEP #33. **(Page 51)**

Progress of 1998 On-Line modification Planning

This indicator shows the status of modifications approved or in review for approval for on-line installation during 1998. This indicator tracks performance for SEP # 31.
(Page 52)

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

Fort Calhoun Station Operating Cycles and Refueling Outage Dates

EVENT	DATE RANGE	PRODUCTION (MWH)	CUMULATIVE (MWH)
Cycle 6	06/11/80-09/18/81	3,899,714	20,768,168
Cycle 7	12/21/81-12/03/82	3,561,866	24,330,034
Cycle 8	04/06/83-03/03/84	3,406,371	27,736,405
Cycle 9	07/12/84-09/28/85	4,741,488	32,477,893
Cycle 10	01/16/86-03/07/87	4,356,753	36,834,646
Cycle 11	06/08/87-09/27/88	4,936,859	41,771,505
Cycle 12	01/31/89-02/17/90	3,817,954	45,589,459
Cycle 13	05/29/90-02/01/92	5,451,069	51,040,528
Cycle 14	05/03/92-09/25/93	4,981,485	56,022,013
Cycle 15	11/26/93-02/20/95	5,043,887	61,065,900
Cycle 16	04/14/95-10/05/96	5,566,108	66,632,007
Cycle 17	11/25/99-04/01/98	5,183,684	71,815,678

CURRENT PRODUCTION AND OPERATIONS "RECORDS"

First Sustained Reaction	August 5, 1973 (5:47p.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-September 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-February 1, 1992
Shortest Refueling Outage (52 days)	February 20, 1995-April 14, 1995