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July 29, 2005
LR-N05-0379

Mr. Samuel Collins
Regional Administrator
United States Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

PSEG METRICS FOR IMPROVING THE WORK ENVIRONMENT
SALEM AND HOPE CREEK GENERATING STATIONS
QUARTERLY REPORT
DOCKET NOS. 50-272, 50-311 AND 50-354

Dear Mr. Collins:

This letter provides a copy of the PSEG Nuclear (PSEG) Safety Conscious Work Environment (SCWE) metrics for the second quarter 2005. PSEG put these metrics in place to objectively measure the effectiveness of the SCWE improvements at Salem and Hope Creek Generating Stations. PSEG has conducted an analysis of each metric and decided whether and to what extent the results warrant additional actions. The current PSEG SCWE action plan remains in effect.

PSEG has also considered these metrics in an overall assessment of its progress toward sustained performance against the following factors:

1. Employees are free to raise concerns;
2. Management is effective in addressing concerns;
3. The Employee Concerns Program (ECP) provides an effective outlet mechanism for raising concerns; and
4. Management is effective in responding to retaliation concerns.

Employees Continue to Raise Concerns:

In general, employees feel free to raise concerns. The indicator for total notifications shows that site personnel continue to identify problems and write notifications at a high rate. There is an apparent improvement in anonymous concerns (i.e., decrease in the number of anonymous concerns) and a slight increase in confidential concerns from the first quarter to the second quarter.

The SCWE Group performed an analysis of the 2005 Synergy survey results against the 2003 results. The results showed that a number of station departments had noteworthy improvements over the 2003 survey results while a few departments did not score as well. Those departments that did not score as well are developing and implementing actions plans to improve performance in this area.

Management is Increasingly Effective at Addressing Concerns:

The SCWE indicators showed positive trends in Online Corrective Maintenance Backlog, Corrective Action Problem Resolution (closure acceptance rate), timely closure of condition reports, and Repeat Maintenance Issues indicators. Most safety systems performance indicators are currently at top quartile performance levels on an annual basis; however, performance in prior years is causing the three-year rolling average goal not to be met. For those systems where goals are not being met, actions have been identified to improve their performance and achieve the goal.

In addition to the enclosed metrics, PSEG has taken a number of visible steps to emphasize management's willingness and ability to address issues. For example, management oversaw the successful, timely completion of the Salem Unit 2 refueling outage by addressing both planned work as well as emergent issues during the outage. Management also took additional actions to enhance the security program and facilities.

In the area of the Corrective Action Program (CAP), the majority of the CAP Recovery Plan actions were completed, establishing the foundation of a strong process for the CAP. A CAP Excellence Plan focusing on behaviors has also been developed, with input from industry peers, to continue improvements. Performance indicators reflect the positive results of these efforts.

Employee Concerns Program is an Effective Outlet for Employees to Raise Concerns:

The ECP received an increased number of contacts in the second quarter. PSEG employees and contractors continue to use the program to raise issues.

A self-assessment of the ECP was performed in the second quarter of 2005. The self-assessment team included industry experts from other utilities. No significant issues were identified, but opportunities for improvement were indicated in some areas, such as improving communication of the ECP program requirements and recognition of ECP personnel. These issues have been entered in the CAP.

The attached ECP metric includes a corrected copy of our statistics; one additional contact was identified in May 2005 that should have been classified as confidential and included in the performance indicator.

Management is Effective in Responding to Retaliation Claims:

The indicator for Executive Review Board (ERB) action approvals meets the applicable goal. SCWE training has been completed. The Executive Protocol Group (EPG) has supplanted the People Team, which was established to provide an effective mechanism for timely and comprehensive response to events that could involve elements of

retaliation or chilling effect. The EPG, similarly to the People Team, is chartered to review employee and contractor issues from various sources and proactively identify and analyze trends.

A SCWE self-assessment is currently in progress utilizing an industry peer. The self-assessment will be completed in August 2005 and any issues identified will be entered in the CAP.

In summary, PSEG continues to focus on areas that have the largest impact on SCWE, such as fixing known problems, implementing the correct operating standards, actively and openly communicating with employees, and strengthening the Work Management and CAP programs.

PSEG will continue to monitor its progress and report quarterly to the NRC. If you have any questions, please contact Darin Benyak, Director, Regulatory Assurance at 856-339-1740.

Very truly yours,

William Levis
Senior Vice President &
Chief Nuclear Officer

Attachments

C Mr. S. Collins, Administrator - Region I
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

U. S. Nuclear Regulatory Commission
Attn: Mr. S. Bailey
Licensing Project Manager – Salem
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USNRC Senior Resident Inspector - Salem (X24)

USNRC Senior Resident Inspector - HC (X24)

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P.O. Box 415
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Safety Conscious Work Environment

June 2005

EXECUTIVE REVIEW BOARD (ERB) ACTION APPROVALS

Updated: Monthly

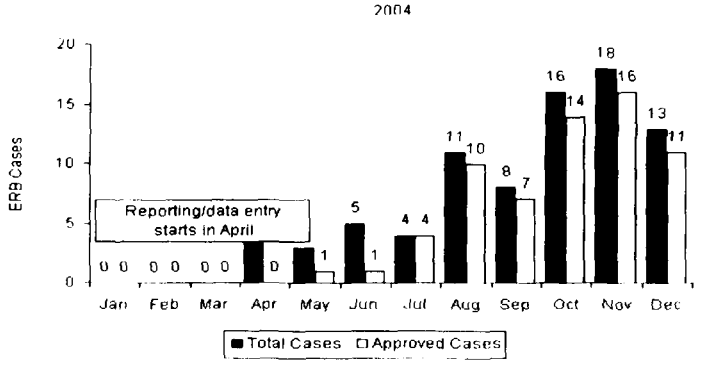
1Q 2005	2Q 2005
G	G

Executive Review Board (ERB) reviews proposed personnel actions to ensure no retaliation or chilling effect implications

Chart Owner

Safety Conscious Work Environment Manager

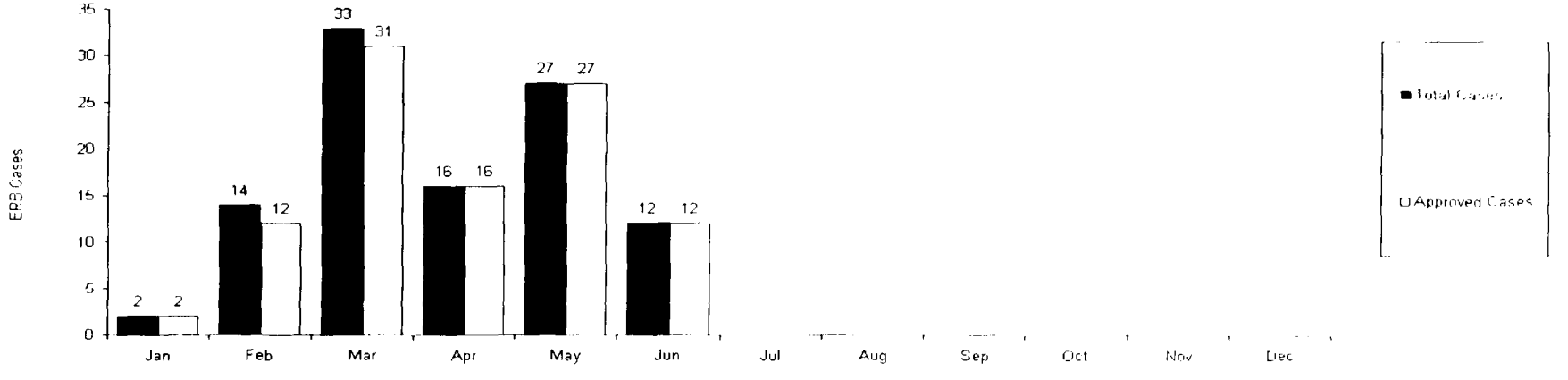
Goal: **No Adverse Trend**



The Executive Review Board (ERB) was established to ensure that no adverse action is taken or perceived to be taken against site personnel for raising nuclear safety issues. This Board reviews significant proposed discipline, promotions, transfers and terminations for PSEG employees and supplemental (contract) personnel.

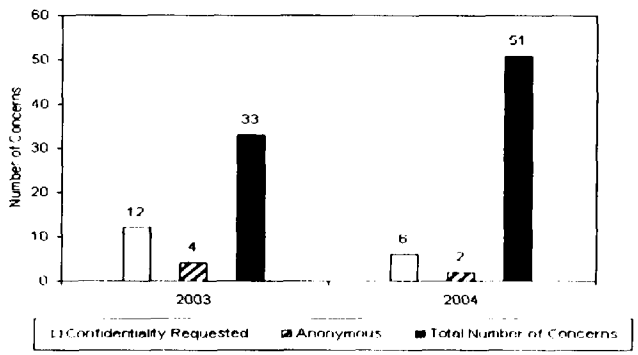
Analysis: The Executive Review Board (ERB) completed reviews for 55 proposed actions during the 2nd Quarter. None were "objected to." There is no adverse trend and the goal is being met.

Actions: The SCWE Leader has completed rollouts on the mechanics and applicability of ERB (Notification 20233448). This included meeting with a representative of the supplemental organization involved in the missed ERB in April. Additionally, the SCWE group is working with Human Resources to further enhance the process used to select individuals for promotional opportunities and other assignment changes.



Salem • Hope Creek
GENERATING STATIONS

EMPLOYEEE CONCERNS PROGRAM - CONCERNS CONFIDENTIALITY/ANONYMITY REQUEST	Updated Monthly	R 1Q 2005	R 2Q 2005	The number of Employee Concerns Program concerns filed anonymously/confidentially versus total number of concerns per month. Chart does not include NRC 30-day requests
Chart Owner				
Employee Concerns Program Manager		**Goal:**		**No Adverse Trend**

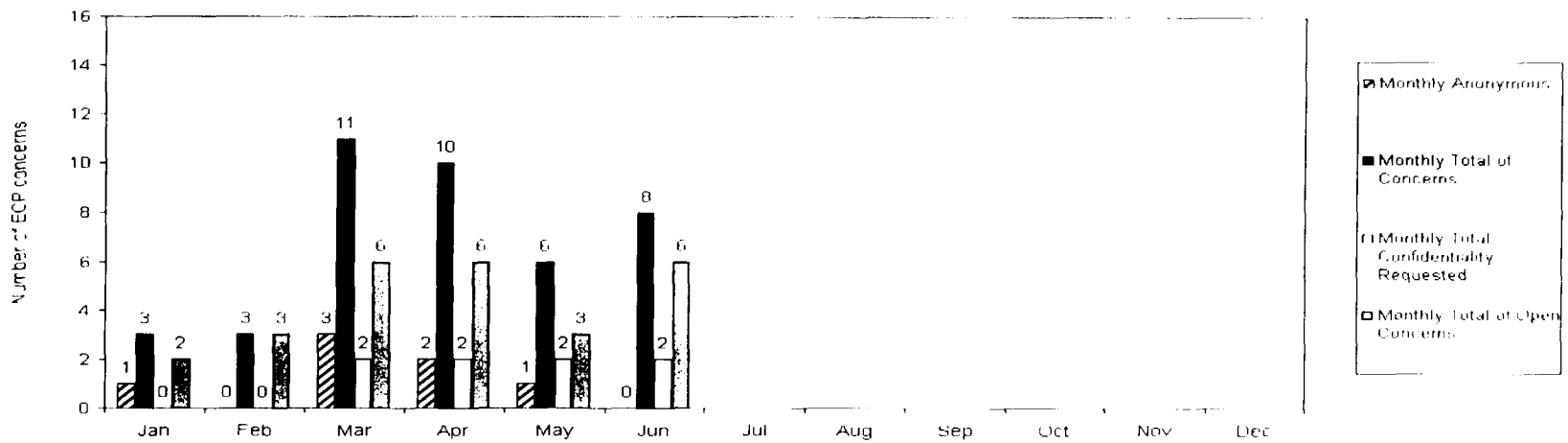


This metric shows the total number of concerns brought to the Employee Concerns Manager. This is an alternate means to have issues addressed outside of line management.

Analysis: An adverse trend continues with Anonymous and Confidential contacts. During the 1st quarter there were six Anonymous/Confidential concerns, during the 2nd quarter there were nine. A predominant department was identified in the 1st quarter as having an adverse trend, action was taken, and no issues were identified related to this same department in the 2nd quarter. Regarding the 2nd quarter, all three Anonymous concerns are related to industrial safety, and were from separate departments. Three of the six Confidential concerns are retaliation allegations, which were unsubstantiated, and were from separate departments.

During the monthly ECP review for May 2005, it was identified that one additional case should have been classified as a confidential contact on the performance indicator. That resulted in a change from one to two confidential cases in the month of March. This issue was documented in a notification in the Corrective Action Program.

Actions: ECP is meeting with first-line supervisors and above, discussing actions supervisors need to take when issues are raised by their direct reports, reviewing employee concerns trends with senior management, and meeting with employees throughout the site, pulsing various groups in order to give employees an opportunity to raise concerns.



TOTAL NOTIFICATIONS GENERATED

Updated Monthly

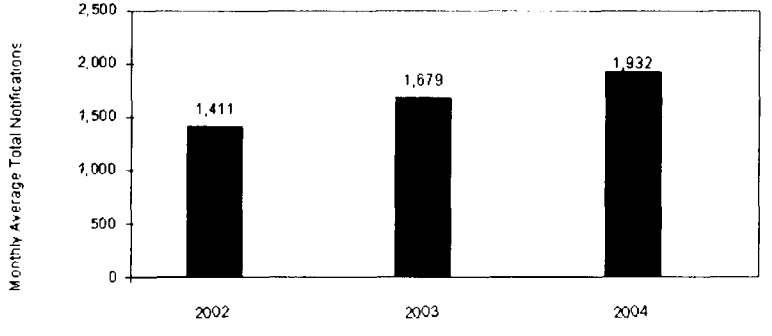
1Q 2005	2Q 2005
G	G

Total notifications generated on a monthly basis

Chart Owner

Corrective Action Program Manager

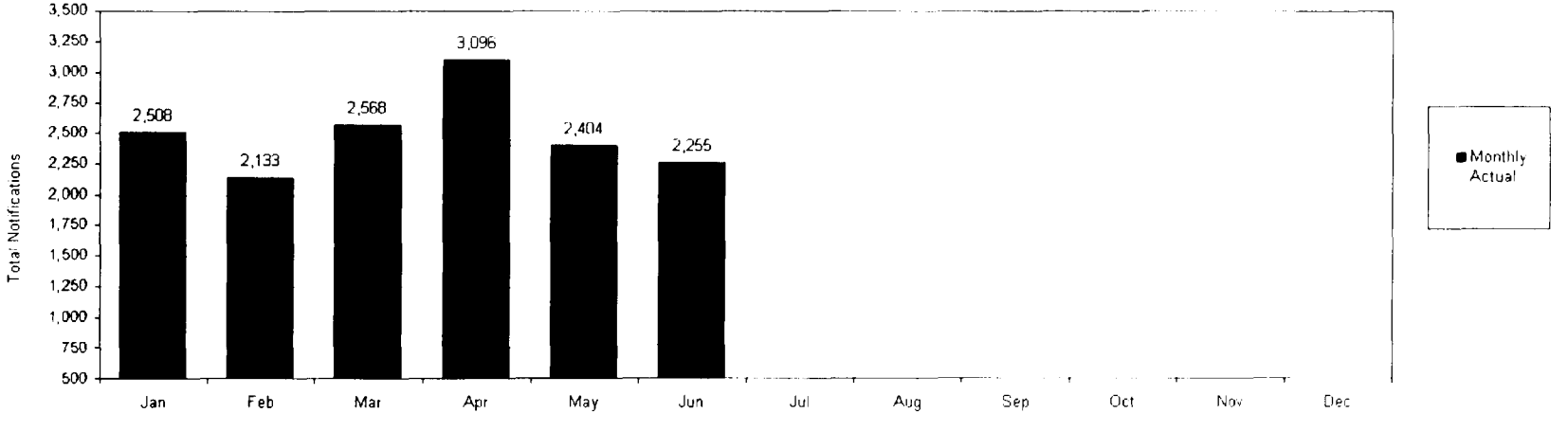
Goal: **No Adverse Trend**



Site personnel write a notification in the Corrective Action Program (CAP) to identify an issue that needs attention. This metric illustrates the total number of notifications written each month by site personnel. Monitoring ensures that the volume of issues is consistent with expected trends, based on past performance as well as industry perspective.

Analysis: Total notifications generated by site personnel continue to be higher than the 2004 average of 1,932 per month. In April, total notifications generated increased significantly as compared to the previous months in association with the Salem refuel outage. The 2nd quarter average rate for notifications generated was 2,585 compared to the 1st quarter total of 2,403, which indicates that site personnel are continuing to identify problems and write notifications at a high rate. No adverse trends noted.

Actions: No actions required



Salem Hope Creek GENERATING STATIONS

ONLINE CORRECTIVE MAINTENANCE BACKLOG

Updated Monthly

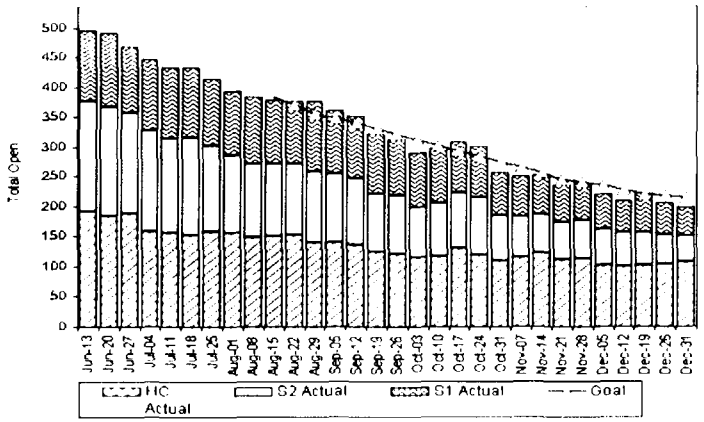
1Q 2005	2Q 2005
R	G

The number of open online corrective maintenance work items

Chart Owner

Salem Maintenance Manager and Hope Creek Maintenance Manager

Goal: **45 by year end**



This metric measures the total backlog of on-line corrective maintenance. These are items that have an impact on plant operations and can be fixed while the unit is in service. Benchmarking indicates the industry median at 90, with top performance at 45 for the site. The goal is to achieve top performance by the end of 2005.

Analysis:

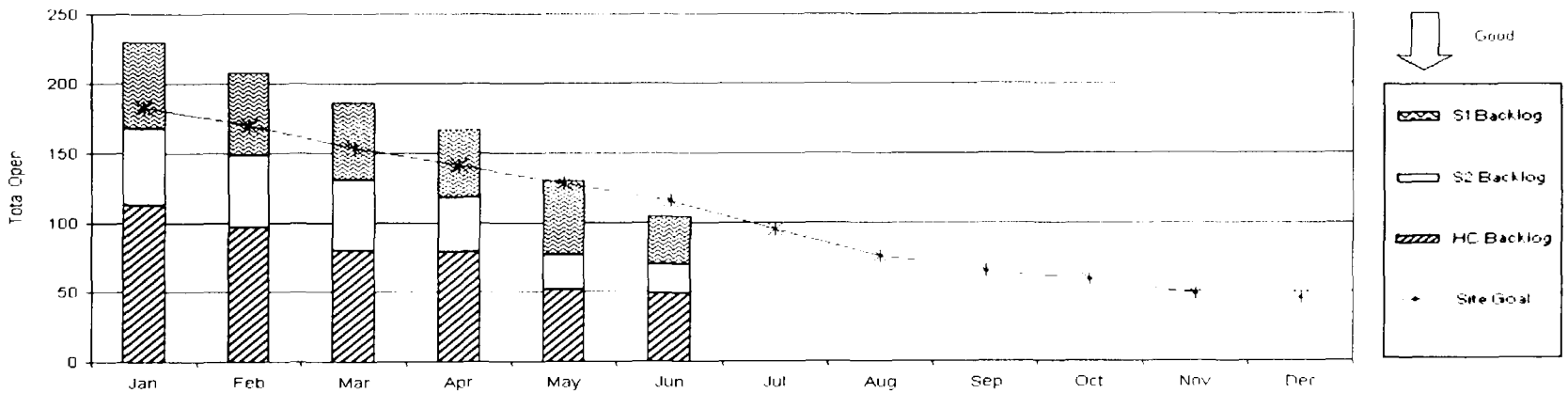
Salem: During the outage, Salem station witnessed an increase in identified CM orders. As of May, the station is back on goal, the overall site goal is on track as of June.

Hope Creek: The Corrective Maintenance backlog decreased by 32 items this quarter. This improvement has put Hope Creek on track to meet the year-end goal of 15. This improvement was achieved from a team effort in improving Equipment Reliability.

Actions:

Salem: Continue with the CM Reduction Team to resolve restraints on preparation of work activities and weekly review meetings to ensure WIN Team job prioritization is correct.

Hope Creek: The Work Management process improvements will improve development and implementation of the work week schedules.



ONLINE ELECTIVE MAINTENANCE BACKLOG

Updated Monthly

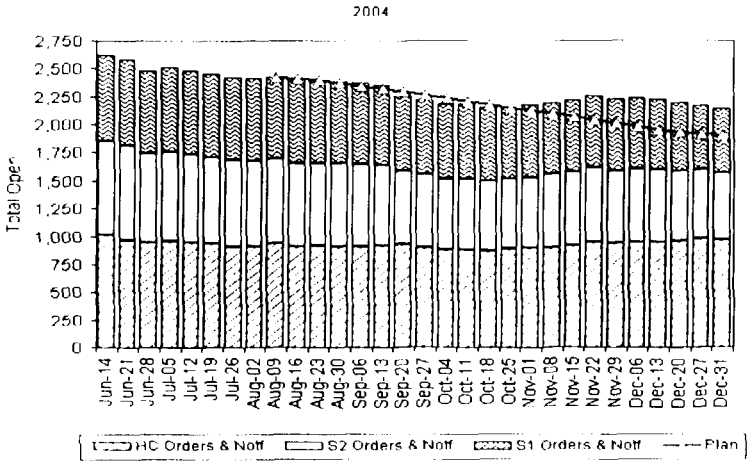
Chart Owner

Salem Maintenance Manager and Hope Creek Maintenance Manager

1Q 2005	2Q 2005
R	R

The number of open online elective maintenance work items

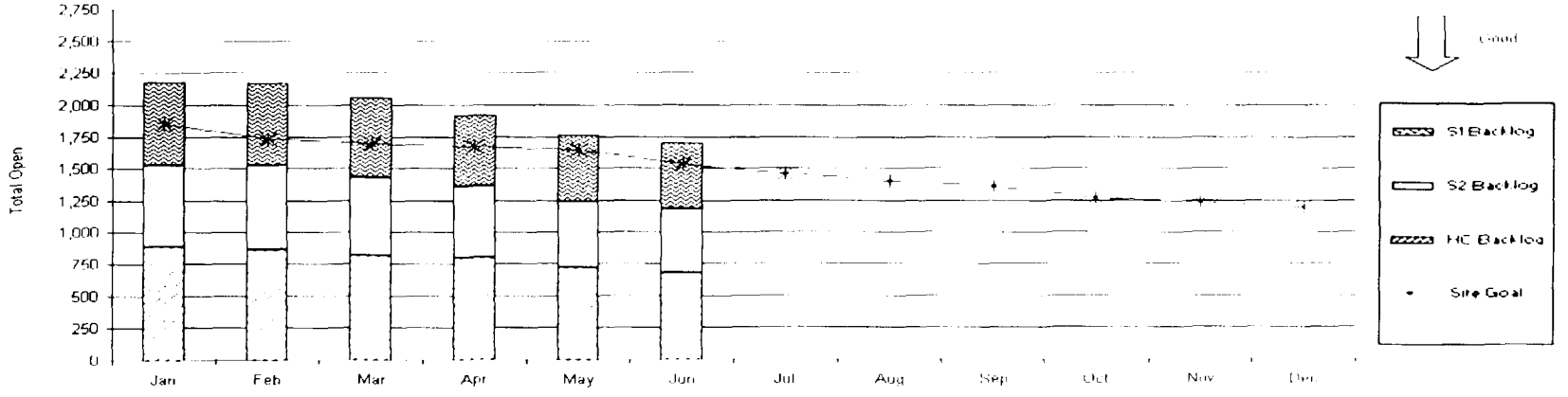
Goal: **1,200 by year end**



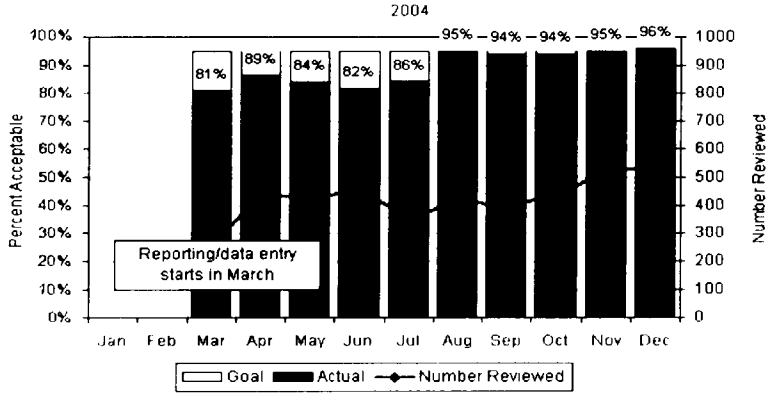
This metric measures the total backlog of on-line elective maintenance. These are items that do NOT have an impact on plant operations and can be fixed while the unit is in service. Benchmarking indicates the industry median at 1450, with top performance at 1200 for the site. The goal is to achieve top performance by the end of 2005.

Analysis: The overall site is behind on the EL backlog target by approximately 180 items.
Salem: As of end of June, Salem was at 1,021 items, which is slightly above goal of 1,000. Unit 1 backlog has been reduced to 515. Unit 2 backlog has been reduced to 506.
Hope Creek: The Elective Maintenance Backlog decreased by 180 items during this quarter. This is an improvement from last quarter, but this improvement does not meet the work off rate to meet the year end goal to improve Equipment Reliability.

Actions
Salem: Additional focus and resources by the WIN Team are producing acceptable results. It is projected that Salem EL Backlog will meet the workdown curve by the end of July 2005.
Hope Creek: The Work Management process improvements will improve development and implementation of the work week schedules.



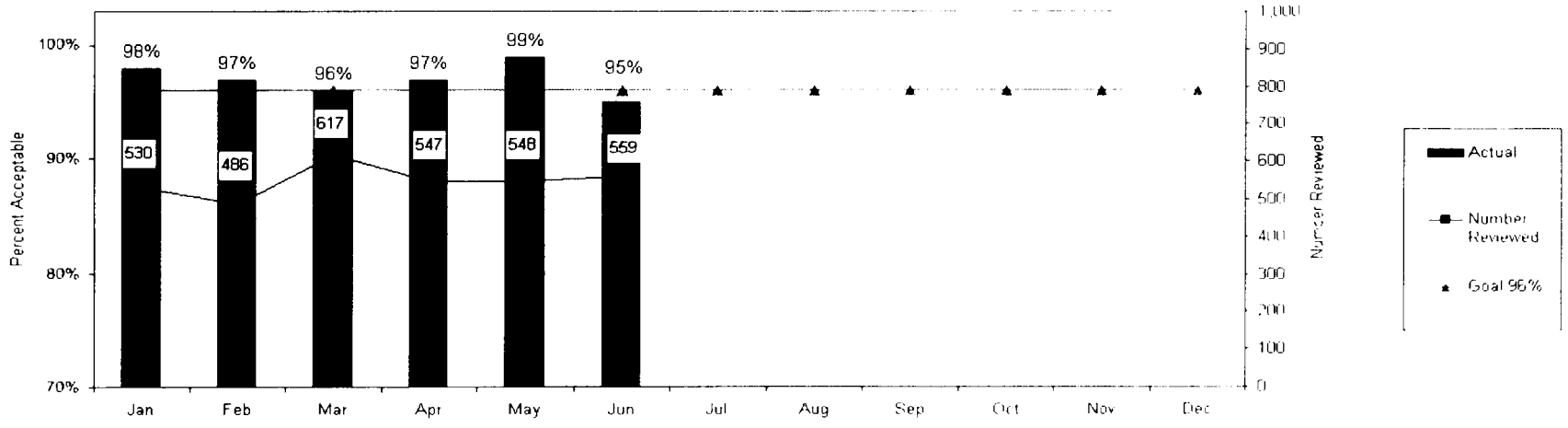
CORRECTIVE ACTION PROBLEM RESOLUTION	Updated: Monthly	1Q 2005: G	2Q 2005: G	The percent of corrective action closures determined to be acceptable by Corrective Action Closure Board review, based on the problem resolution criteria. The performance indicator is a monthly value
Chart Owner				
Corrective Action Program Manager		**Goal:**		**96%**



Site personnel write a notification in the Corrective Action Program (CAP) to identify an issue that needs attention. This metric tracks the quality of the corrective actions that resulted with a goal of greater than or equal to 96% Closure Board acceptance rate, meaning the correct actions resulted from the notification. Items that are not accepted by the Board are not closed until the issue is reworked and the Board approves.

Analysis: The average acceptance rate for the 2nd quarter met goal at 97%. The acceptance rate decreased below goal for June 2005. Individual notifications were written by the departments that failed to meet closure requirements and the corrective actions were reopened to correct the deficiencies noted. A separate notification was written to document the failure to meet the goal in June.

Actions: Senior management has reinforced closure quality expectations and addressing lessons learned from closure quality failures. The Corrective Action Closure Board is also engaging the department CAPCOs, managers, and individuals in understanding the closure failures and ways to improve performance.



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GENERATING STATIONS

CONDITION REPORT ACTIVITIES OVERDUE

Updated Monthly

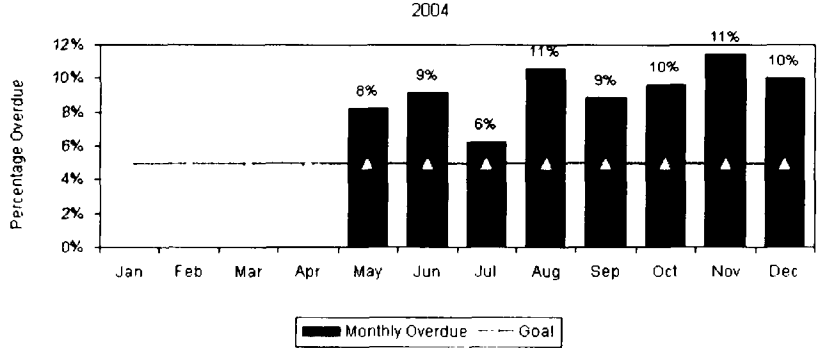
1Q 2005	2Q 2005
G	G

Percentage of Nuclear Condition Report activities overdue on a monthly basis, measured as activities with an actual finish date occurring after the due date

Chart Owner

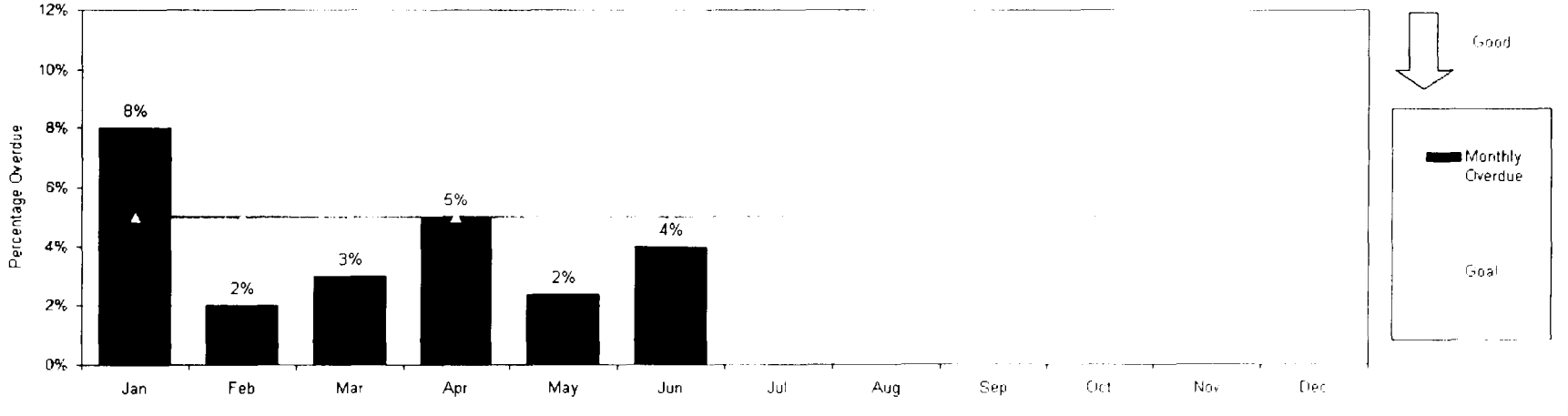
Corrective Action Program Manager

Goal: 5%



Site personnel write a notification in our Corrective Action Program (CAP) to identify an issue that needs attention. This metric tracks the timeliness of our review and corrective actions by measuring the percentage overdue, with a goal of less than or equal to 5%.

Analysis: The average percent per month for the quarter was 3.7% versus a goal of 5%. The monthly goal was met for each month in the period. In June, 1,518 Condition Report activities were completed, of which 61 items were completed after the due date. The senior management teams at each station review overdue items on a daily basis and address any performance deficiencies. Monitoring will continue to be performed to address this performance improvement area. No adverse trends were noted.



OPEN CONDITION REPORT
EVALUATIONS WITH DUE DATE EXTENSIONS

Updated Monthly

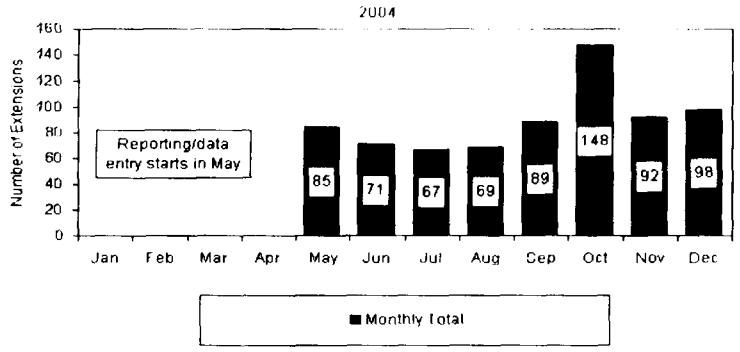
1Q 2005	2Q 2005
G	G

The number of due date extensions approved for open Nuclear Condition Report evaluations

Chart Owner

Corrective Action Program Manager

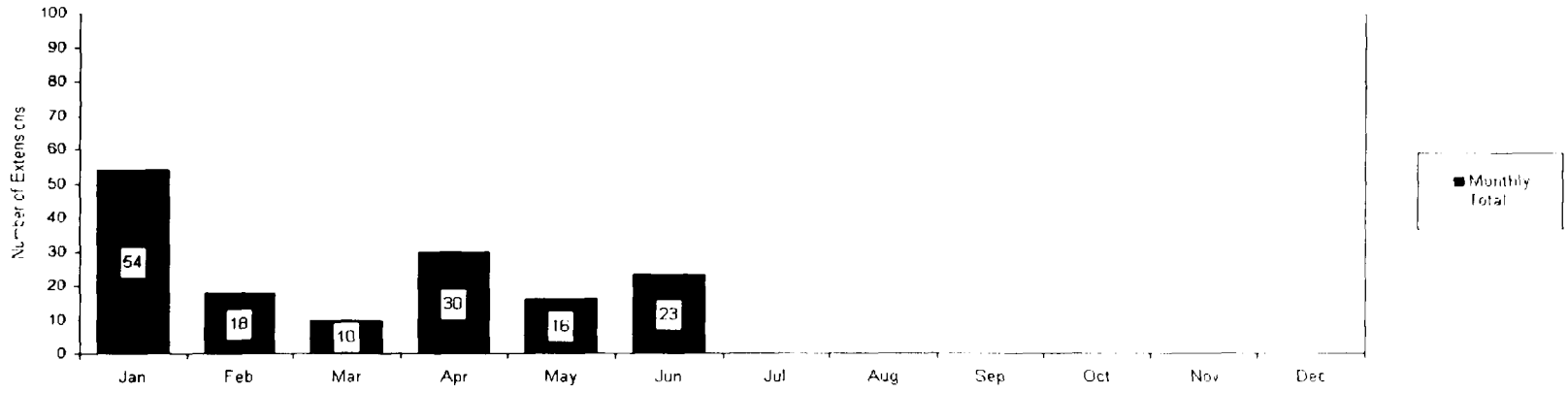
Goal: **No Adverse Trend**



Site personnel write a notification in the Corrective Action Program (CAP) to identify an issue that needs attention. This metric looks at the timeliness of review and corrective actions by tracking the number that have a due date extension, which is allowed by the process. By tracking those that are extended, an improvement trend in overall timeliness is expected.

Analysis: The number of NUCR Evaluations with due date extensions continues to be low for the 2nd quarter, with an average of 23 as compared to 27 for the 1st quarter. Each station's senior management team has recognized the importance of completing evaluations in a timely manner and has focused priorities to improve in this area. Of the 23 evaluations extended, 22 were for Significance Level 3 and one was for a Significance Level 1. Results were: HC System Engineering (4), Security (2), Salem System Engineering (2), Engineering Programs (2), Projects (2), Regulatory Assurance (2), Salem Maintenance (2), Outage (1), Facilities (1) Design Engineering (1), HC Operations (1), Nuclear Fuels (1) Salem Safety (1) and Training (1). Of the 23 evaluations with extensions, 10 were extended beyond the expected completion age of 30 days.

Actions: No actions required.

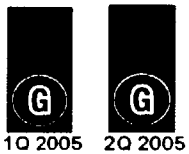


SALEM UNIT 1 REPEAT MAINTENANCE ISSUES

Updated Monthly

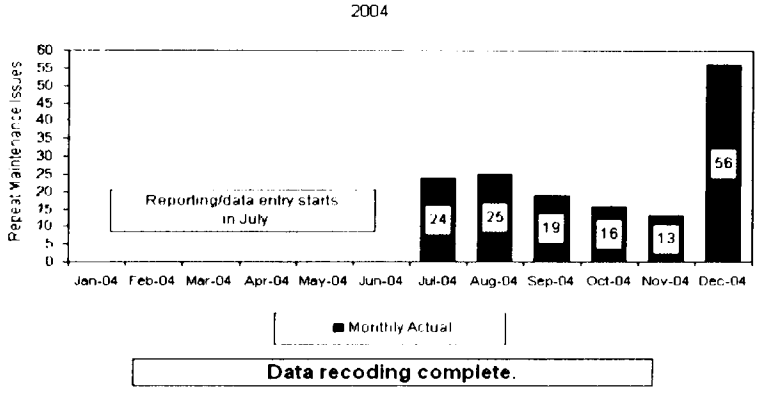
Chart Owner

Salem Maintenance Manager



The number of repeat maintenance issues identified on safety-related equipment

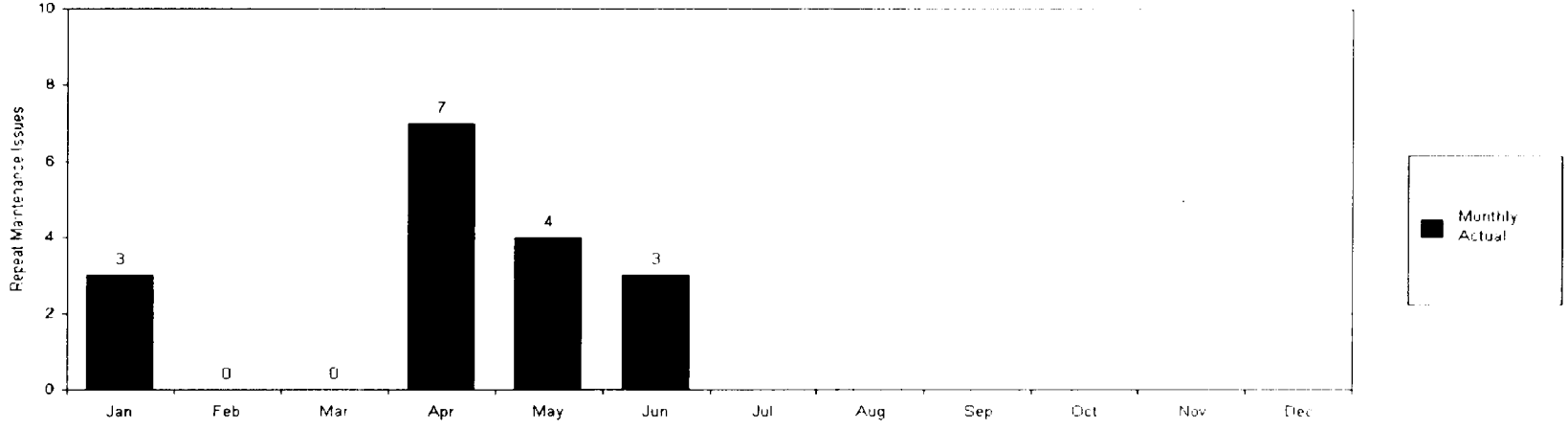
Goal: **No Adverse Trend**



This metric monitors the number of issues that were not fixed correctly the first time on safety-related equipment. Items that have been fixed and need to be reworked within twelve months are tracked. This metric is to ensure a reduction as the corrective action program improves

Analysis: There were 14 issues identified as repeat maintenance related to: Waste Gas Analyzer O2 and H2 sensors failures (four issues), Radiation Monitoring System (RMS) (one issue), Chart Recorders (one issue), and eight issues unrelated to any one component

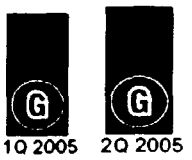
Actions: A common cause on repeat maintenance completed in mid May addressed reliability associated with chillers, chart recorders, and RMS channels. Chiller rebuild training request was approved by the Training Review Group in May, with training to take place in 3rd quarter 2005. RMS and Chart Recorders were placed on the Engineering Top 10 Reliability List which will increase focus with assigned owners and action plan dates. A notification was initiated to Engineering to evaluate failures and provide a recovery plan to improve reliability



Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 2 REPEAT MAINTENANCE ISSUES

Updated Monthly

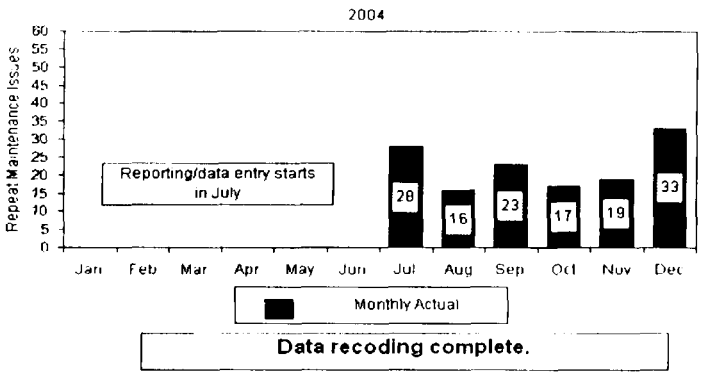


The number of repeat maintenance issues identified on safety-related equipment

Chart Owner

Salem Maintenance Manager

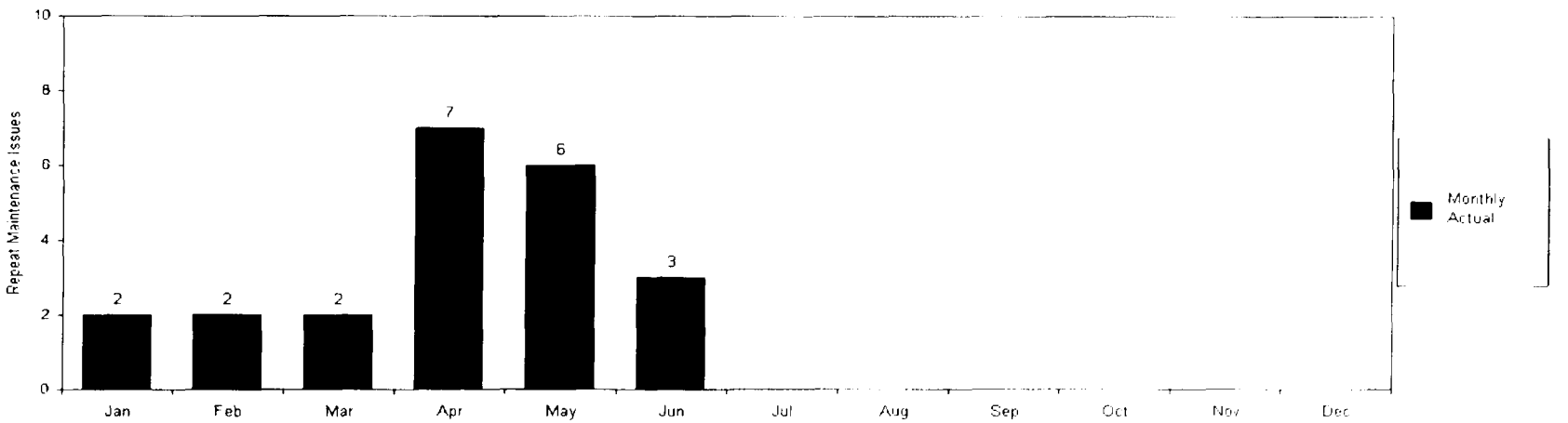
Goal: **No Adverse Trend**



This metric monitors the number of issues that were not fixed correctly the first time on safety-related equipment. Items that have been fixed and need to be reworked within twelve months are tracked. This metric is to ensure a reduction as the corrective action program improves.

Analysis: There were 16 issues identified as repeat maintenance related to: Chillers (two issues), Radiation Monitoring System (RMS) channel failures (three issues), chart failures (two issues), and one issue that was not identified as a degrading trend.

Actions: A common cause on repeat maintenance completed in mid May addressed decreasing trends on reliability associated with chillers, chart recorders, and RMS channels. Chiller rebuild training request was approved by the Training Review Group in May, with training to take place in the 3rd quarter 2005. RMS and Chart Recorders were placed on the Engineering Top 10 Reliability List which will increase focus with assigned owners and action plan dates.

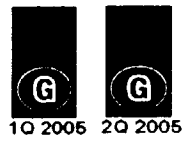


HOPE CREEK REPEAT MAINTENANCE ISSUES

Updated: Monthly

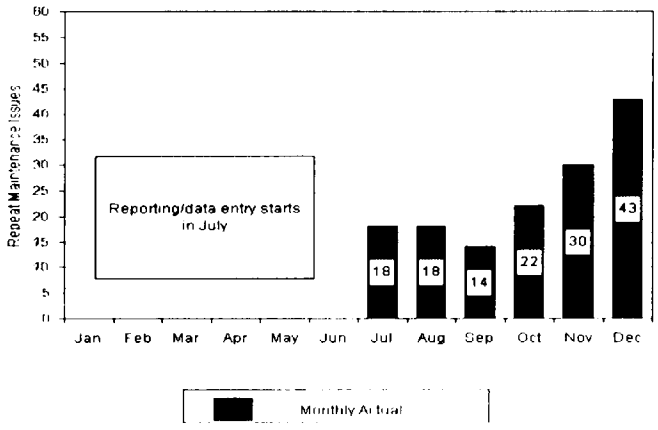
Chart Owner

Hope Creek Maintenance Manager



The number of repeat maintenance issues identified on safety-related equipment

Goal: **No Adverse Trend**



Data recoding complete.

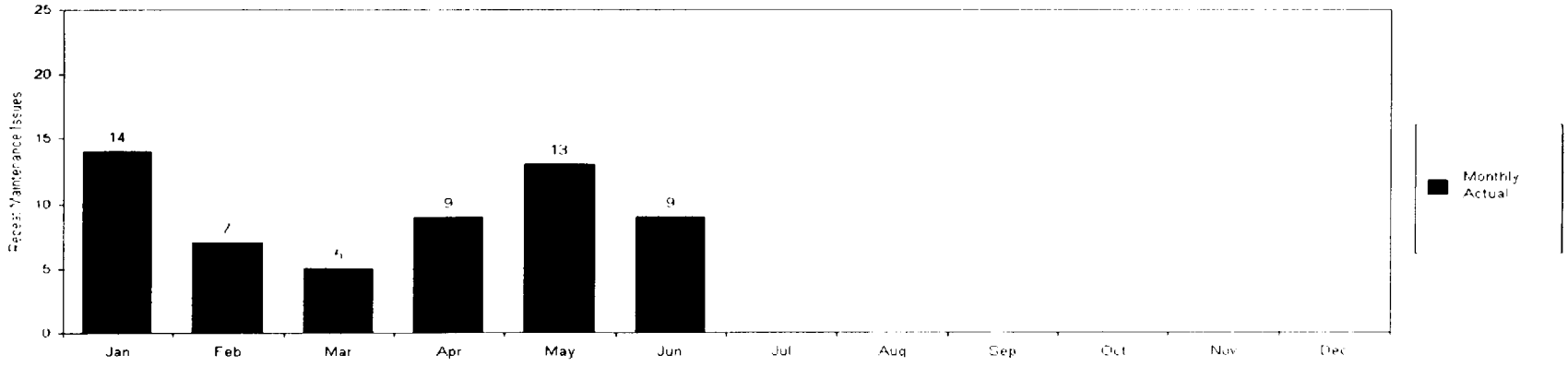
This metric monitors the number of issues that were not fixed correctly the first time on safety-related equipment. Items that have been fixed and need to be reworked within twelve months are tracked. This metric is to ensure a reduction as the corrective action program improves.

Analysis

Work Management coded notifications for 2004 and 2005 as either repeat or rework maintenance. An in depth review of repeat maintenance issues began in the 1st quarter 2005 and will continue going forward to ensure coding accuracy. The Troubleshooting Dynamic Learning Activity (DLA) completed this quarter has improved performance and problem identification is more timely and accurate. There were additional failures of Honeywell paper recorders in Radiation Montitoring System equipment during the quarter.

Actions

The items identified this quarter are being tracked in the Corrective Action and Corrective Maintenance Programs and actions are being implemented as per the schedule. Reliability of this equipment will be enhanced through the Plant Health Committee System and will be evaluated in the Hope Creek training process.



SALEM UNIT 1 OPERATIONAL CHALLENGES

Updated: Monthly

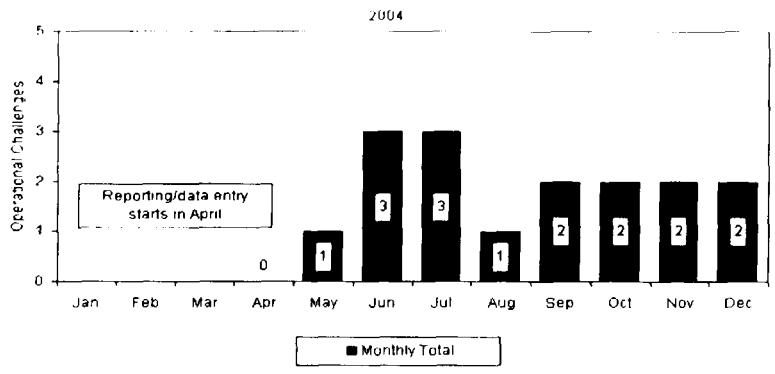
Chart Owner

Salem Plant Manager

1Q 2005	2Q 2005
G	G

The number of plant operational issues that warrant implementation of the Operational Challenges Response Team

Goal: **No Adverse Trend**

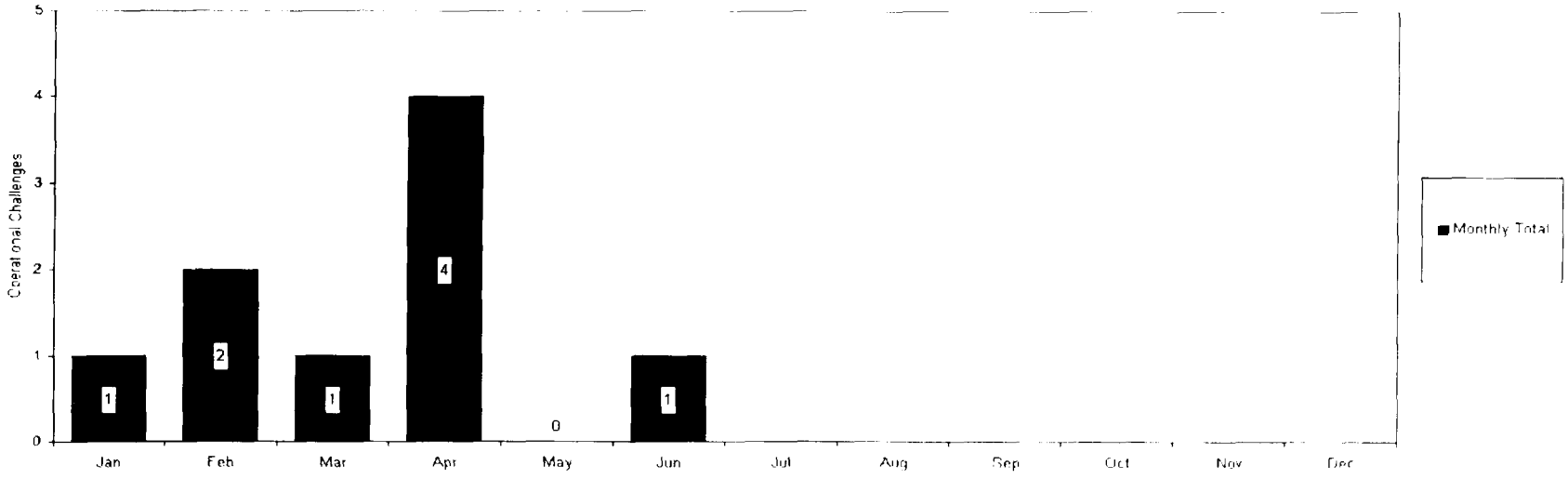


A procedure was established to allow operating crews to request additional assistance to address emergent issues. These are called "Operational Challenges." This metric measures the number of times each month operators engage this assistance. The goal is to minimize the challenges to the operating crews. By tracking and reviewing the challenges, common causes and potential trends can be investigated.

Analysis: Five Operational Challenges were initiated in the 2nd quarter. Overall trend for the quarter is positive.

April - Three operational challenges were for river grassing conditions. A leak was identified on weld of elbow near the boron injection tank.
June - Silt buildup in the 11 SW Accumulator Supply line causing it and two CFCUs to be inoperable.

Actions: River grassing for Unit 1 is a seasonal issue and was adequately addressed. The boron injection tank elbow weld leak was repaired on Unit 1 and permanently addressed on Unit 2. The silt in the 11 SW Accumulator line was evaluated and operability was restored. In July the silt in the 11 Service Water accumulator line was removed. Monitoring is in progress.



SALEM UNIT 2 OPERATIONAL CHALLENGES (Includes Unit 2, Unit 3, and Common)

Updated Monthly

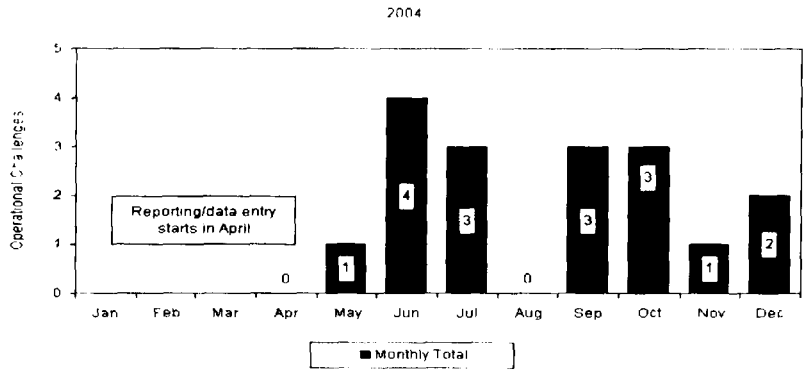
Chart Owner

Salem Plant Manager

1Q 2005	2Q 2005
G	G

The number of plant operational issues that warrant implementation of the Operational Challenges Response Team

Goal: No Adverse Trend

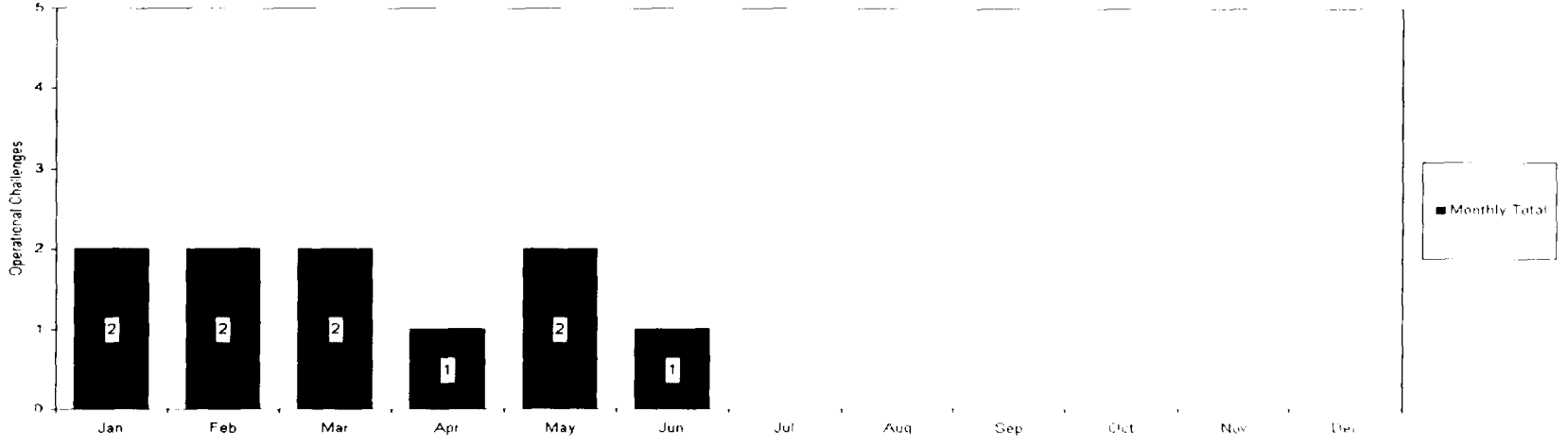


A procedure was established to allow operating crews to request additional assistance to address emergent issues. These are called "Operational Challenges." This metric measures the number of times each month operators engage this assistance. The goal is to minimize the challenges to the operating crews. By tracking and reviewing the challenges, common causes and potential trends can be investigated.

Analysis: There were four operational challenges initiated in the 2nd quarter. Overall trend for the quarter is steady.

April - Leak identified on weld of pipe elbow near boron injection tank.
May - 2B diesel generator 4Kv breaker gap issue. Failed surveillance due to 2A RHR pump discharge check valve back leakage indication.
June - Silt buildup in the 21 Service Water Accumulator Supply line causing it and two CF CUs to be inoperable.

Actions: The boron injection tank elbow weld leak was repaired on Unit 1 and permanently addressed on Unit 2. Subsequent 2B diesel run was performed and breaker gap issue was resolved, with appropriate tolerances included in the surveillance. Alternate test methods to determine check valve operability validated that the RHR pump discharge check valve was in its expected position. The silt in the 21 Service Water Accumulator line was removed and operability was restored. Monitoring is in progress and no further actions are required.



HOPE CREEK OPERATIONAL CHALLENGES

Updated Monthly

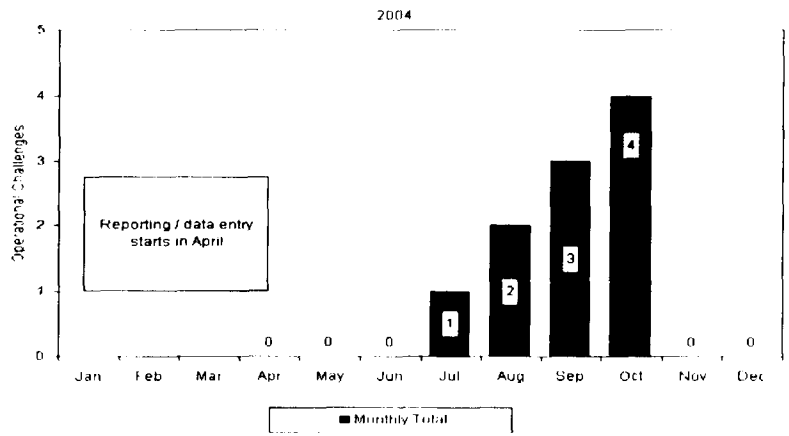
Chart Owner

Hope Creek Plant Manager

1Q 2005	2Q 2005
G	G

The number of plant operational issues that warrant implementation of the Operational Challenges Response Team

Goal: **No Adverse Trend**



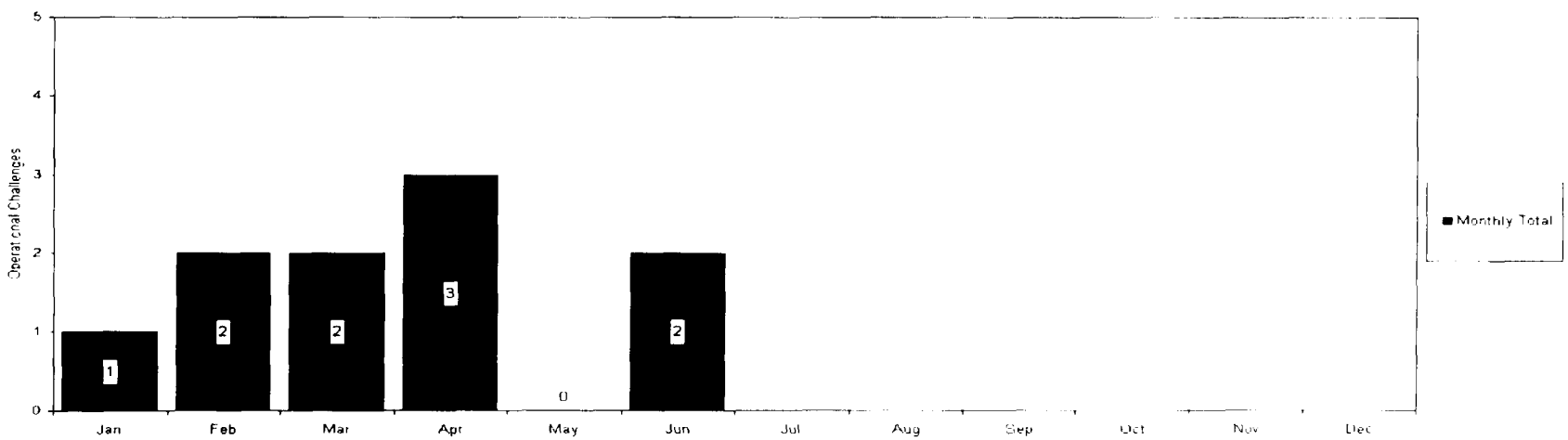
A procedure was established to allow operating crews to request additional assistance to address emergent issues. These are called "Operational Challenges." This metric measures the number of times each month operators engage this assistance. The goal is to minimize the challenges to the operating crews. By tracking and reviewing the challenges, common causes and potential trends can be investigated.

Analysis: There were five operational challenges initiated in the 2nd quarter. Operational Challenge Response Teams were initiated for each issue. The goal was met.

4/7/05 - Overflow of Condensate Drain Tank
4/14/05 - Both SSW Loops Experienced High Levels of Grass, Resulting in Emergency Power Reduction to 80%
4/18/05 - Reactor Protection System Electrical Protection Assembly Breaker Trip
6/5/05 - Two gpm increase in unidentified leakage
6/7/05 - Hope Creek Scram due to unidentified leakage

Four of the five OCRs were associated with equipment reliability issues. The last was associated with heavy river grassing during the period which was mitigated through station procedures.

Actions: Equipment reliability initiatives are underway to improve station performance.



Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 1 UNPLANNED SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES

Updated Monthly

Chart Owner

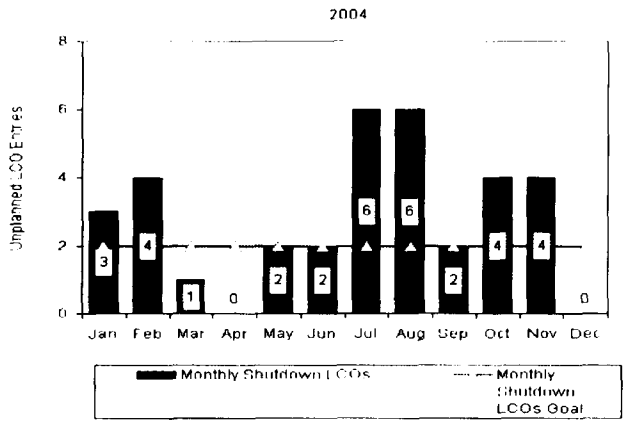
Salem System Engineering Manager

R R

1Q 2005 2Q 2005

The number of Unplanned Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month

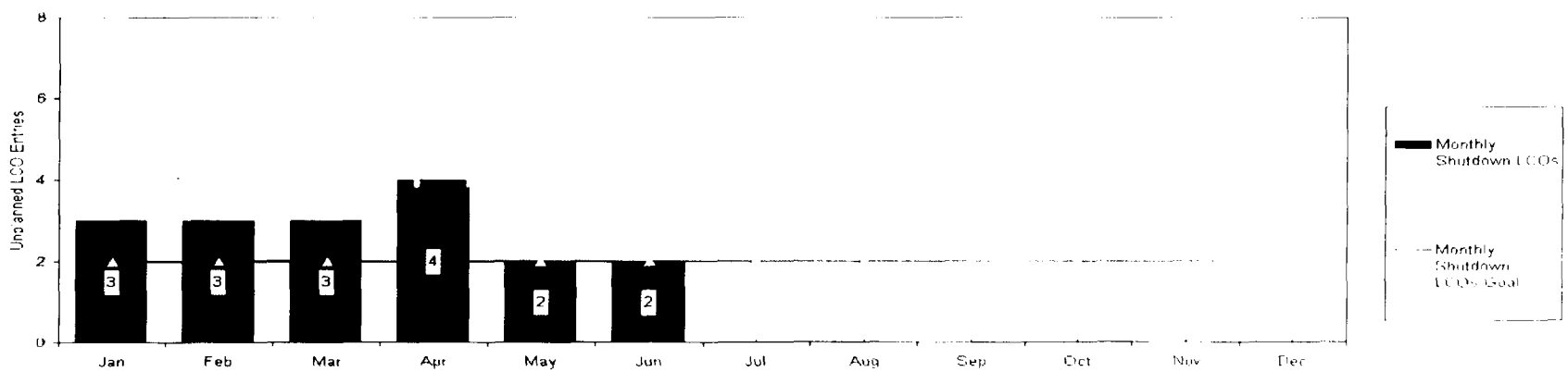
Goal: **2 per Month**



Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a shutdown LCO, meaning the equipment must be fixed in a defined period of time, or unit shutdown is required. This metric measures the unplanned entries made at Salem Unit 1, compared to the expected number at top performing nuclear units (less than or equal to 2/month).

Analysis: There were a total of eight Unplanned Shutdown LCOs versus a goal of two per month (six total). The goal was not met. The eight Unplanned Shutdown LCOs were a result of: 13 CFCU flow control valve (12SW57) cycling (2 times), 1R11A radiation monitor (2 times - paper jam and fluctuating reading), ASME leak on 1SJ6 requiring plant shutdown, 1R12A radiation monitor inoperability, subcooling margin monitor recorder not advancing, and 13 CFCU outlet valve (13SW223) failing open due to a leak in control air tubing.

Action: All issues detailed above were corrected and the applicable Technical Specification LCOs were exited. Salem's Top 10 Equipment Issues list was revised this quarter to add radiation monitors (RMS), CFCUs, and control room chart recorders, all of which have negatively affected this metric in the current as well as previous quarters. Action plans are being developed to correct these issues. To improve RMS performance, a Common Cause Analysis was conducted, with resulting corrective action being to implement Design Change Packages and improve PM and PM frequencies.



Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 1 UNPLANNED NON-SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES

Updated Monthly

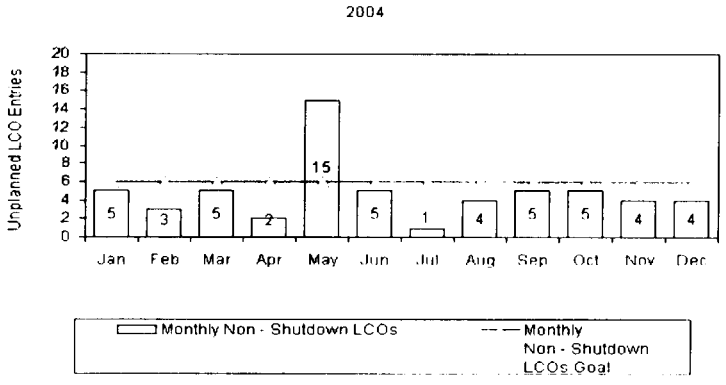
1Q 2005	2Q 2005
G	G

The number of Unplanned Non-Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month

Chart Owner

Salem System Engineering Manager

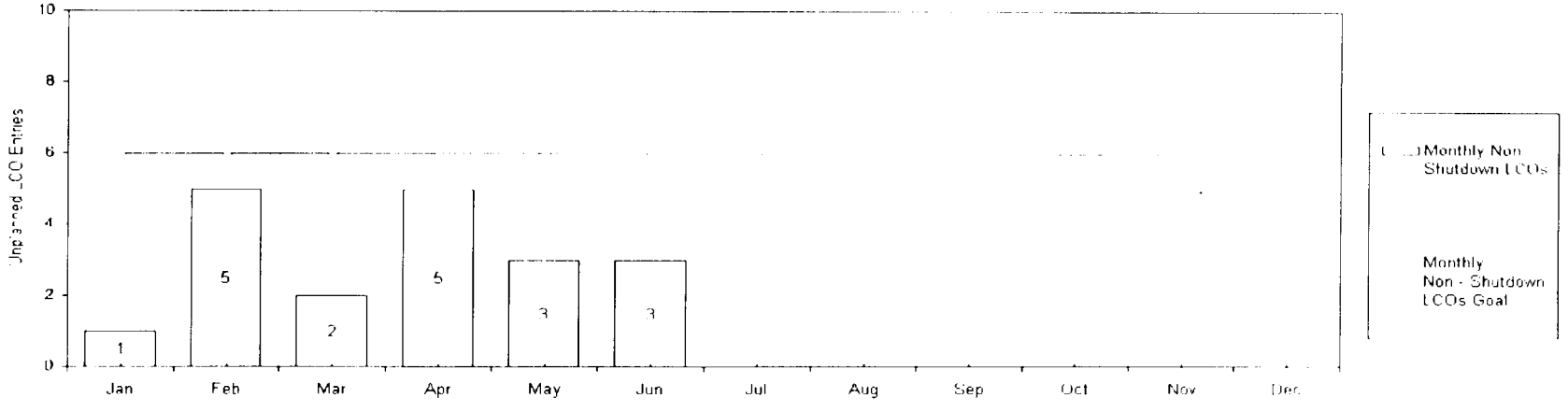
Goal: **6 per Month**



Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a non-shutdown LCO, meaning the equipment must be fixed in a defined period of time, or you are required to take compensatory measures. This metric measures the unplanned entries made at Salem Unit 1, compared to the expected number at top performing nuclear units (less than or equal to 6/month)

Analysis: There were 11 Unplanned Non-Shutdown LCOs versus a goal of six per month (18 total). The goal was met.

Actions: No actions required.



Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 2 UNPLANNED SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES

Updated Monthly

R R

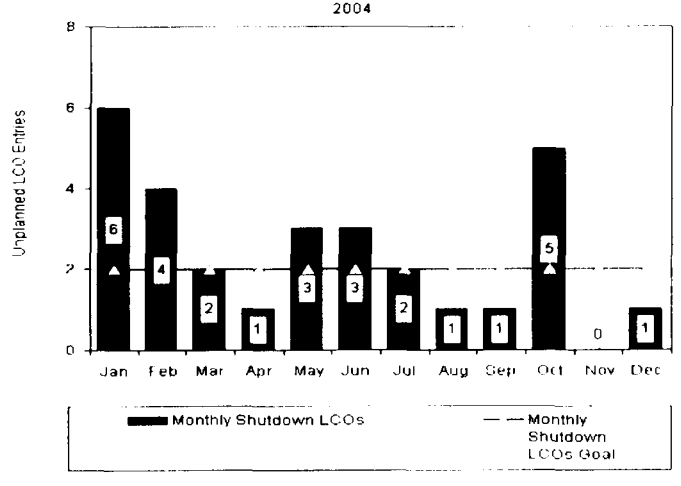
1Q 2005 2Q 2005

The number of Unplanned Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month

Chart Owner

Salem System Engineering Manager

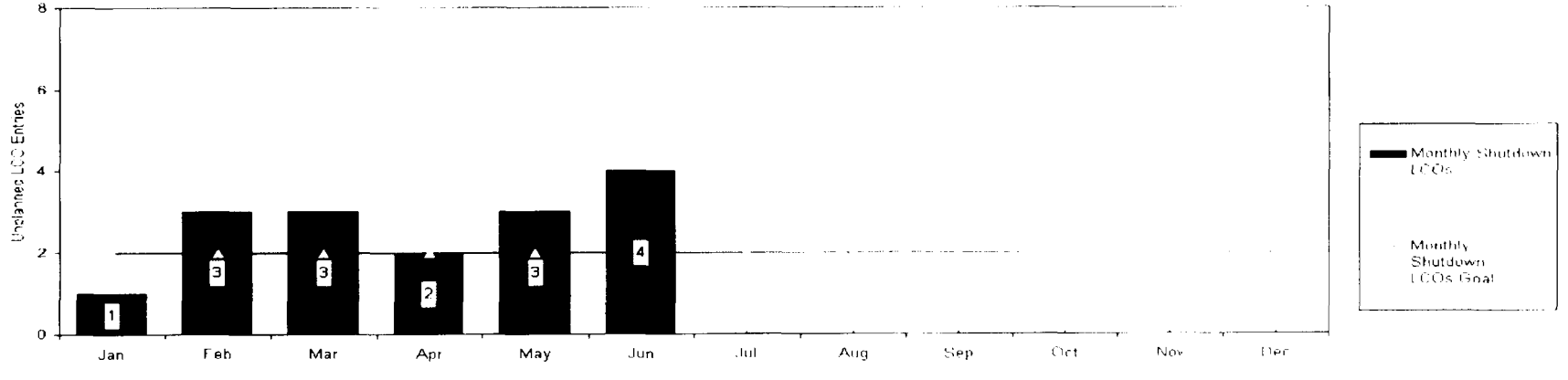
Goal: **2 per Month**



Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a shutdown LCO, meaning the equipment must be fixed in a defined period of time, or unit shutdown is required. This metric measures the unplanned entries made at Salem Unit 2, compared to the expected number at top performing nuclear units (less than or equal to 2/month).

Analysis: There were nine Unplanned Shutdown LCOs versus a goal of two per month (six total). The goal was not met. Issues this quarter include: 1) Train 'A' SSPS inoperable--a faulty relay required replacement, 2) 24 CFCU flow oscillations in low speed--24SW223 required adjustment, 3) 22 Chiller tripped on freeze protection-repaired leak at pilot solenoid valve, 4) 2R11A recorder paper not advancing due to tear, 5) 23 chiller started early due to temperature transmitter out of calibration, 6) Containment isolation valve (CIV), 22SW642 found in wrong position (open)--valve was closed, 7) CIV 22SW508 failed ST--valve to be replaced 7/29/05, 8) 22 AFW pump inoperable (22AF40 stroke time unsat)--valve air regulator diaphragm replaced due to leak, 9) 21 SW Accumulator and 21/22 CF CUs inoperable due to excessive silt levels in piping--silt removed from pipe, a PM to flush the silt from the line was created.

Actions: All equipment issues were corrected and Technical Specification Action Statements exited. Equipment reliability initiatives underway are targeted at reducing vulnerabilities that result in unplanned LCOs.



Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 2 UNPLANNED NON-SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES

Updated Monthly

R R

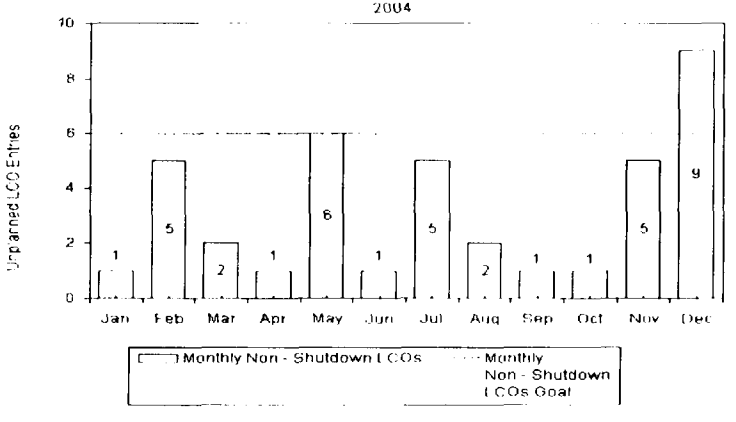
1Q 2005 2Q 2005

The number of Unplanned Non Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month

Chart Owner

Salem System Engineering Manager

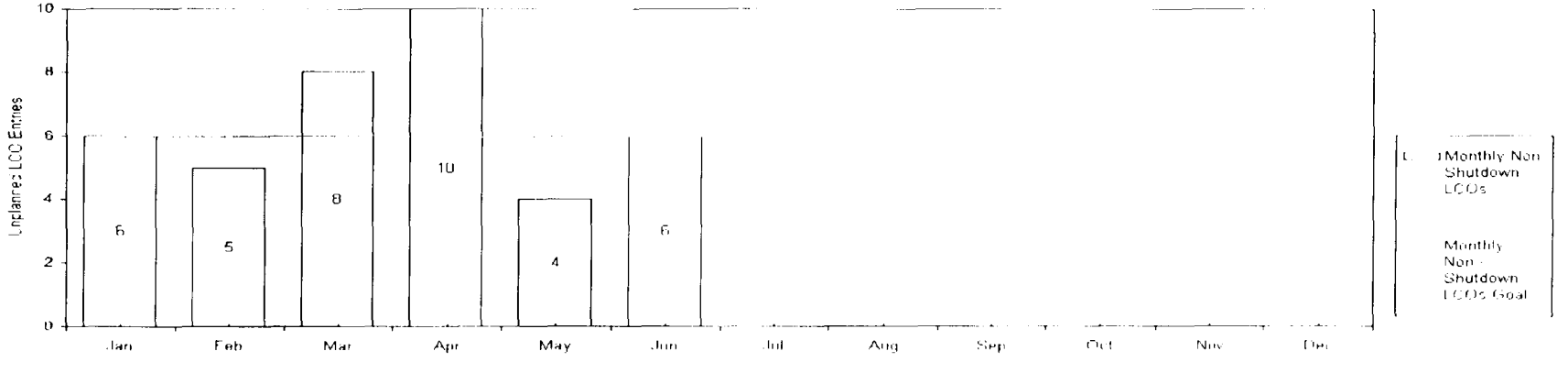
Goal: **6 per Month**



Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a non shutdown LCO, meaning the equipment must be fixed in a defined period of time, or you are required to take compensatory measures. This metric measures the unplanned entries made at Salem Unit 2, compared to the expected number at top performing nuclear units (less than or equal to 6/month).

Analysis: There were 20 Unplanned Non-Shutdown LCOs versus a goal of six per month (18 total). The goal was not met. Issues included: 15 radiation monitor failures, refueling crane auxiliary hoist inoperable-required suspension of core alterations, 21 Loop OTDT channel inoperable-required new calorimetric, 21 RC wide range pressure recorder required drive motor replacement, core power distribution monitoring system computer required reboot, and 21 CFCU valve (21SW243) body-to-bonnet leak: valve replaced.

Actions: Salem's Top 10 Equipment Issues list was revised this quarter to add radiation monitors (RMS), CFCUs, and control room chart recorders, all of which have negatively affected this metric in the current and previous quarters. Action plans are being developed to correct these issues. To improve RMS performance, a Common Cause Analysis was conducted, with resulting corrective action being to implement Design Change Packages and improve PM and PM frequencies.



Salem Hope Creek
GENERATING STATIONS

HOPE CREEK UNPLANNED SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES

Updated: Monthly

G R

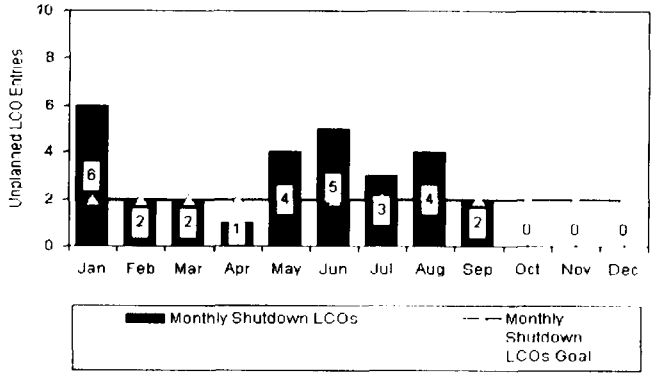
1Q 2005 2Q 2005

The number of Unplanned Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month

Chart Owner

Hope Creek System Engineering Manager

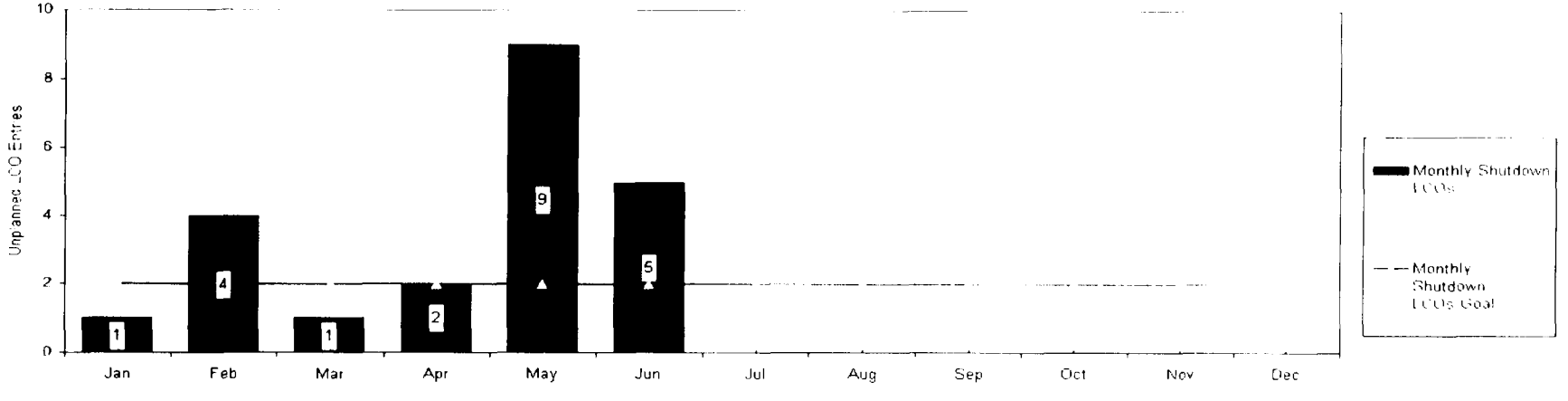
Goal: **2 per Month**



Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a shutdown LCO, meaning the equipment must be fixed in a defined period of time, or unit shutdown is required. This metric measures the unplanned entries made at Hope Creek, compared to the expected number at top performing nuclear units (less than or equal to 2/month).

Analysis: There were 16 Unplanned S/D LCOs versus a goal of two per month (six total). The goal was not met. Six LCOs were from severe weather coincident with a building flood door not OPERABLE, two were related to exceeding unidentified leakage rates inside primary containment, six were due to unrelated electronic equipment failures, one due a control room chiller mechanical issue, one due to a failed emergency diesel fuel oil pump, and one due to a personnel error causing a momentary loss of an electrical bus.

Actions: The significant flood door rework is due to complete by September, the inside containment leak has been resolved, the remaining nine issues have been addressed and do not represent repetitive equipment failures.



Salem Hope Creek GENERATING STATIONS

HOPE CREEK UNPLANNED NON-SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES

Updated Monthly

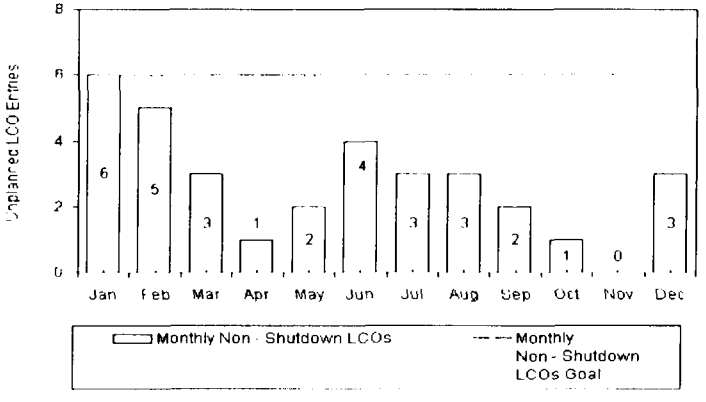
Chart Owner

Hope Creek System Engineering Manager

1Q 2005	2Q 2005
G	G

The number of Unplanned Non-Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month

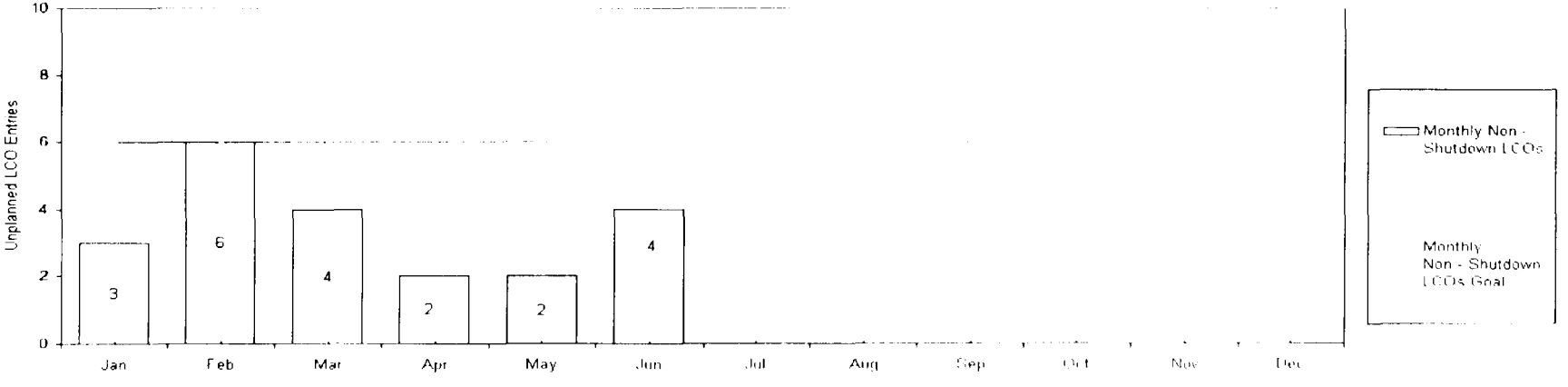
Goal: **6 per Month**



Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a non-shutdown LCO, meaning the equipment must be fixed in a defined period of time, or you are required to take compensatory measures. This metric measures the unplanned entries made at Hope Creek, compared to the expected number at top performing nuclear units (less than or equal to 6/month)

Analysis: There were eight Unplanned Non-Shutdown LCOs versus a goal of six per month (18 total). The goal was met

Actions: No actions required

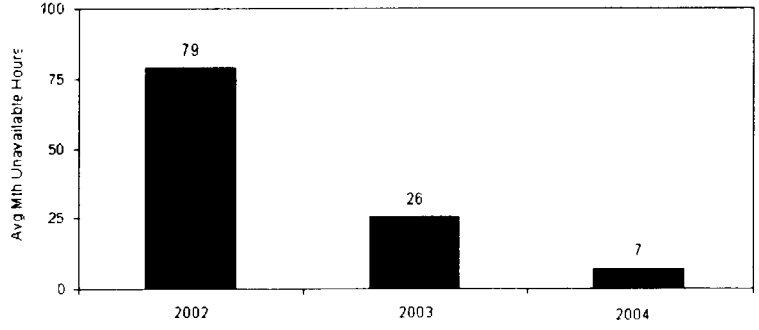


Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 1 EMERGENCY DIESEL GENERATOR UNAVAILABILITY

Updated Monthly

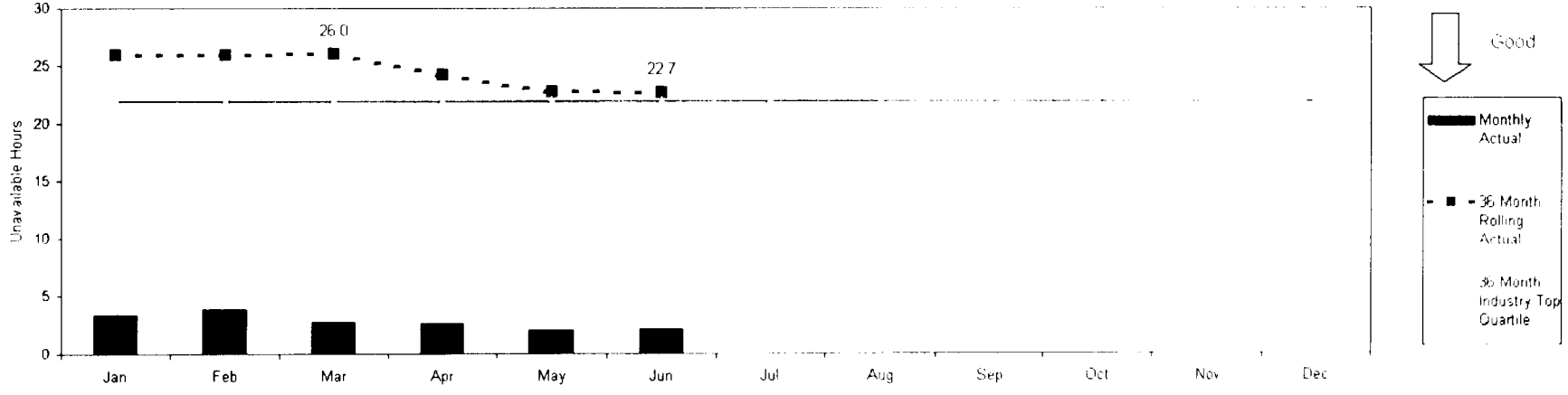
Chart Owner	1Q 2005: R 2Q 2005: R	The sum of the planned and unplanned hours that the Emergency Diesel Generators were not available
Salem System Engineering Manager	**Goal:**	**21.9 hours per month** (36-month rolling average)



Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the Emergency Diesels are out of service, compared against industry top quartile. The total represents the sum of the unavailable hours of the three Emergency Diesel Generators at Salem Unit 1. This is a long-term trend of our performance.

Analysis: Salem Unit 1 Emergency Diesel Generator unavailability was 22.7 hours versus a goal of 21.9 hours on a 36-month rolling average. The goal was not met.

Actions: Continuing at the current level of performance, this will be at goal by August 2005.



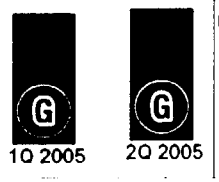
Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 2 EMERGENCY DIESEL GENERATOR UNAVAILABILITY

Updated Monthly

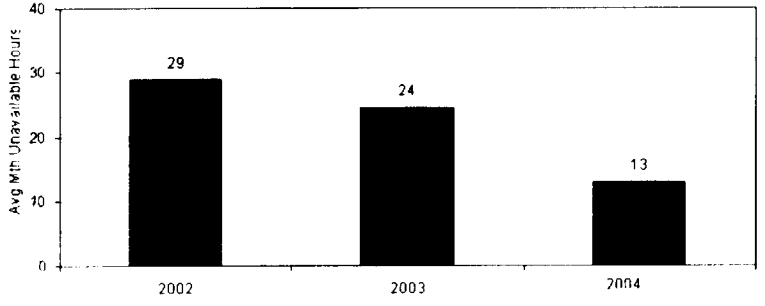
Chart Owner

Salem System Engineering Manager



The sum of the planned and unplanned hours that the Emergency Diesel Generators were not available

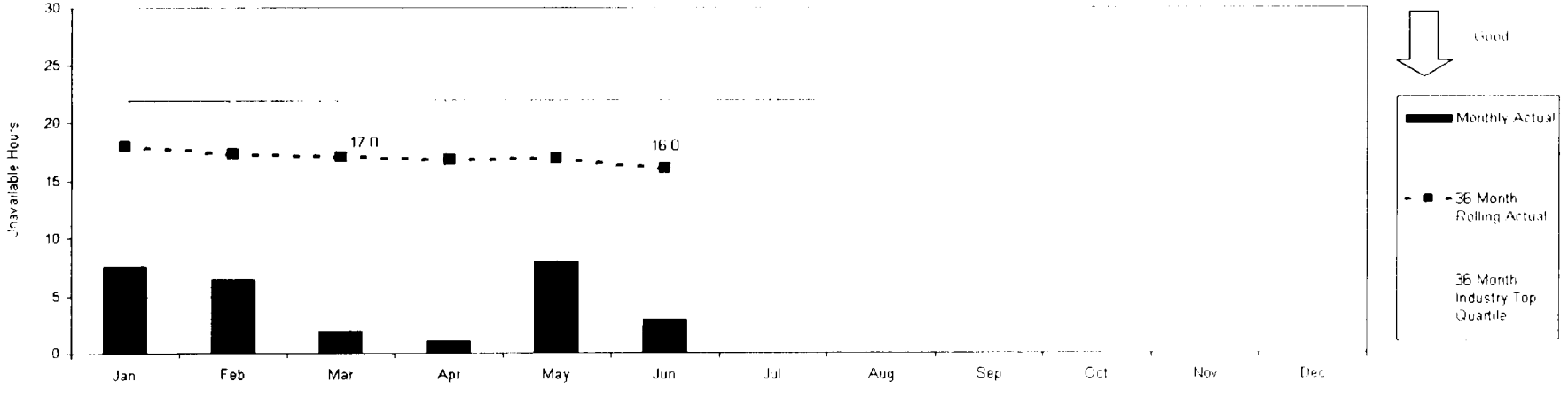
Goal: **21.9 hours per month** (36-month rolling average)



Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the Emergency Diesels are out of service, compared against industry top quartile. The total represents the sum of the unavailable hours of the three Emergency Diesel Generators at Salem Unit 2. This is a long-term trend of our performance.

Analysis: Salem Unit 2 Emergency Diesel Generator unavailability was 16.0 hours versus a goal of 21.9 hours on a 36-month rolling average. The goal was met.

Actions: No actions required.



Salem • Hope Creek
GENERATING STATIONS

HOPE CREEK EMERGENCY DIESEL GENERATOR UNAVAILABILITY

Updated Monthly

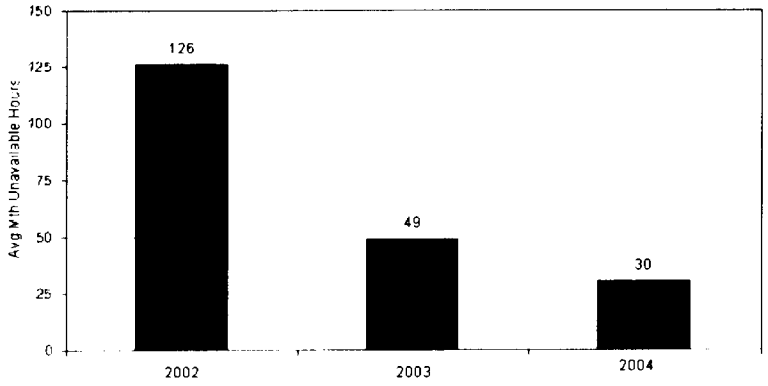
1Q 2005	2Q 2005
R	R

The sum of the planned and unplanned hours that the Emergency Diesel Generators were not available

Chart Owner

Hope Creek System Engineering Manager

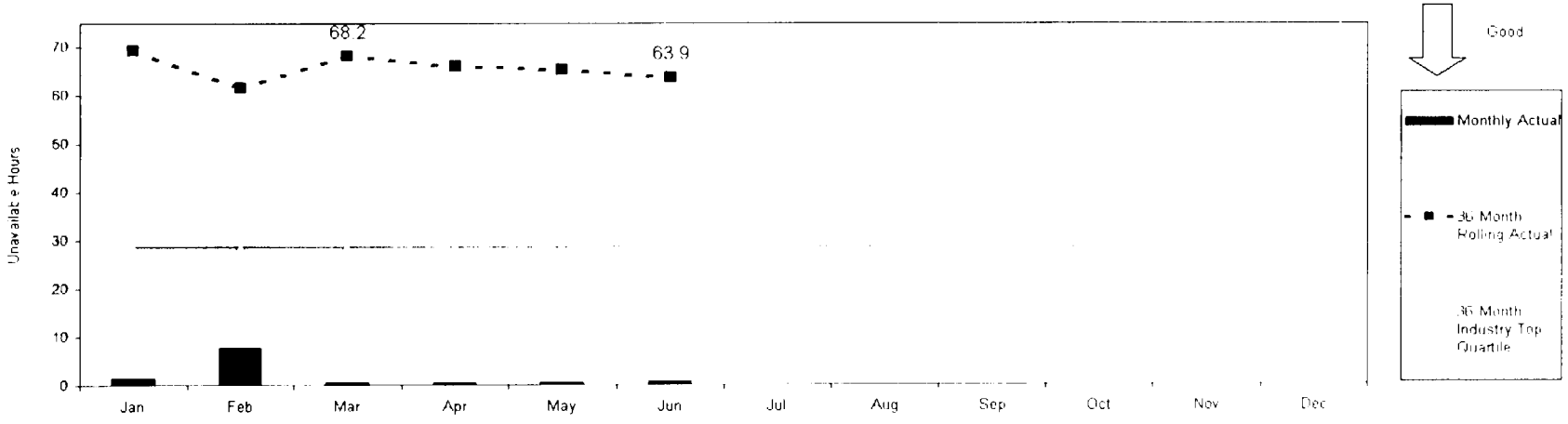
Goal: **29.2 hours per month** (36-month rolling average)



Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the Emergency Diesels are out of service, compared against industry top quartile. The total represents the sum of the unavailable hours of the four Emergency Diesel Generators at Hope Creek. This is a long term trend of our performance.

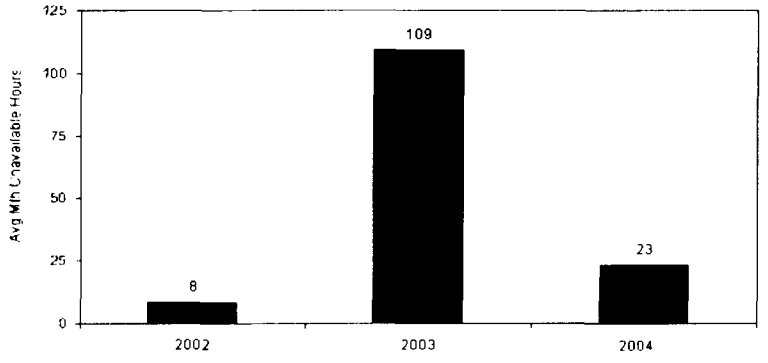
Analysis: Hope Creek Emergency Diesel Generator unavailability was 63.9 hours versus a goal of 29.2 hours on a 36-month rolling average. The goal was not met for the 36-month rolling average due to the impact of the previous performance in 2002 & 2003. In the 4th Quarter 2004, extensive actions were completed to improve diesel generator reliability. Based on current level of performance and good reliability, the goal will be met by June 2006. Additional preventive maintenance work is planned for the 1st quarter 2006, which moved the goal to June 2006.

Actions: No actions required.



Salem • Hope Creek
GENERATING STATIONS

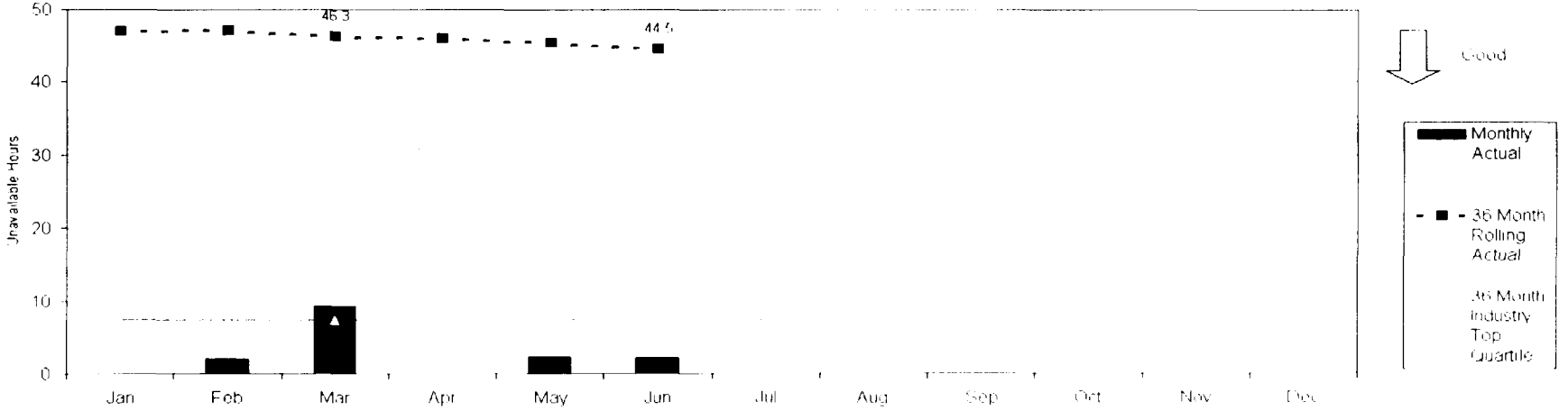
SALEM UNIT 1 AUXILIARY FEEDWATER SYSTEM UNAVAILABILITY	Updated Monthly	R 1Q 2005	R 2Q 2005	The sum of the planned and unplanned hours that the Auxiliary Feedwater Systems were not available
Chart Owner				
Salem System Engineering Manager		**Goal:**		**7.4 hours per month** (36 month rolling average)



Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the Salem Unit 1 Auxiliary Feedwater System is out of service compared against industry top quartile. The total represents the sum of the three Auxiliary Feedwater Systems on Salem Unit 1. This is a long-term trend of our performance.

Analysis: Salem Unit 1 Auxiliary Feedwater unavailability was 44.5 hours versus a goal of 7.4 hours on a 36-month rolling average. The goal was not met due to the impact of previous performance.

Actions: Corrective actions implemented relative to scheduling maintenance during outages will increase system availability. Continuing at the current level of performance, Salem Unit 1 Auxiliary Feedwater unavailability will be at goal by October 2007.



Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 2 AUXILIARY FEEDWATER SYSTEM UNAVAILABILITY

Updated Monthly

R R

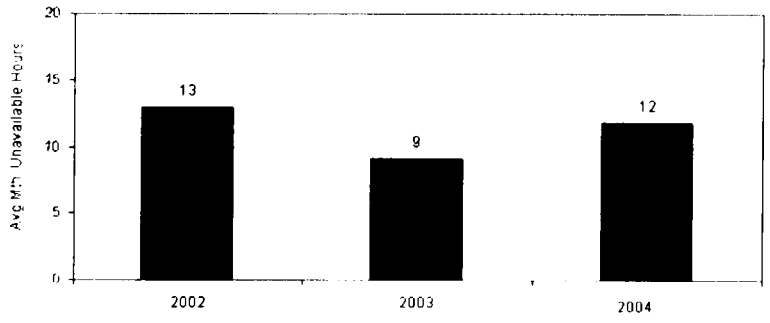
1Q 2005 2Q 2005

The sum of the planned and unplanned hours that the Auxiliary Feedwater Systems were not available

Chart Owner

Salem System Engineering Manager

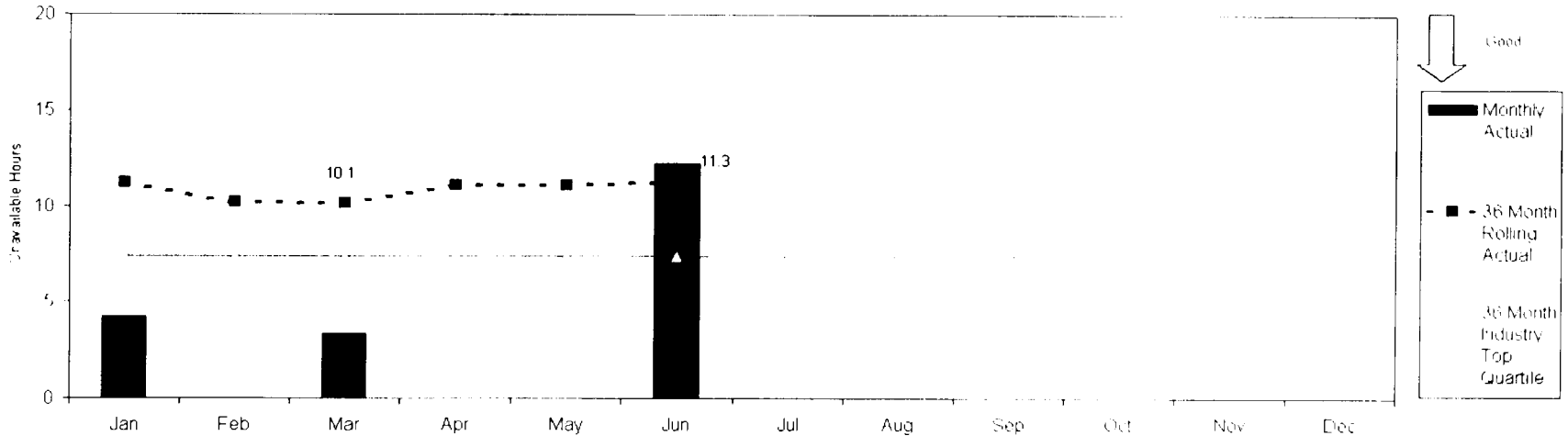
Goal: **7.4 hours per month** (36-month rolling average)



Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the Salem Unit 2 Auxiliary Feedwater System is out of service compared against industry top quartile. The total represents the sum of the three Auxiliary Feedwater Systems on Salem Unit 2. This is a long term trend of our performance.

Analysis: Salem Unit 2 Auxiliary Feedwater unavailability was 11.3 hours versus a goal of 7.4 hours on a 36-month rolling average. The goal was not met due to the impact of previous performance and June performance.

Actions: Corrective actions implemented relative to scheduling maintenance during outages will increase system availability. In addition to normal schedule testing, replacement of a degraded air regulator for the 22AF40 valve resulted in unplanned unavailability in June. The regulator was replaced. Continuing at the current level of performance, Auxiliary Feedwater unavailability will be at goal by February 2006.



Salem • Hope Creek
GENERATING STATIONS

HOPE CREEK RESIDUAL HEAT REMOVAL SYSTEM UNAVAILABILITY

Updated Monthly

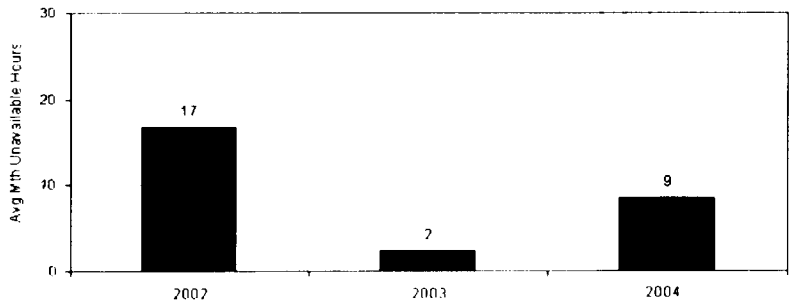
Chart Owner

Hope Creek System Engineering Manager

1Q 2005	2Q 2005
G	G

The sum of the planned and unplanned hours that the Residual Heat Removal Systems were not available

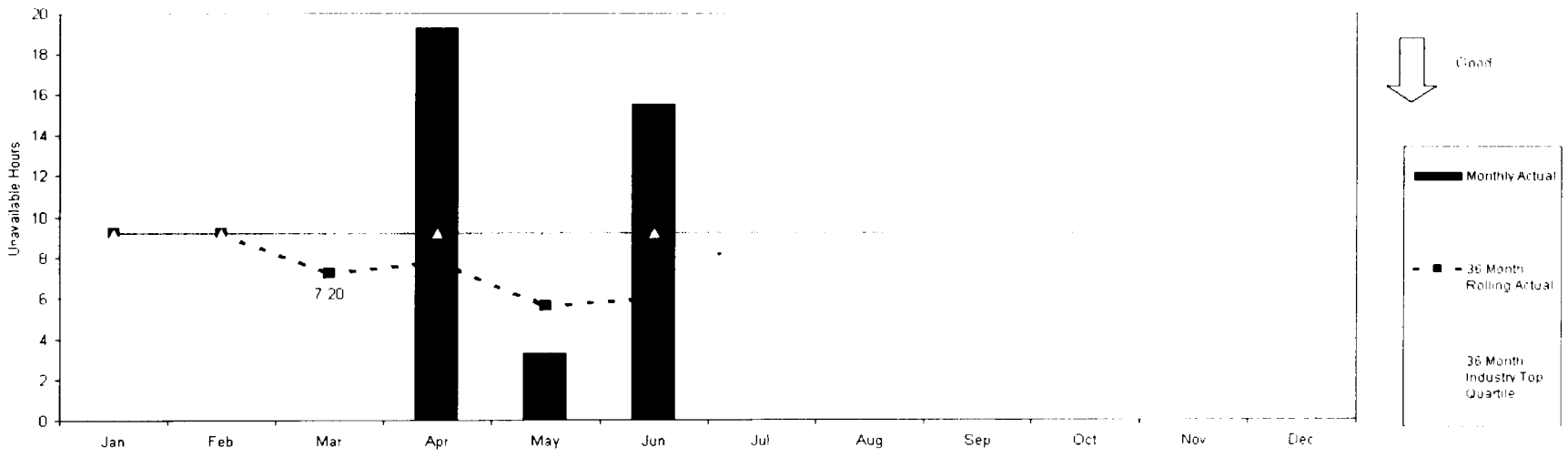
Goal: **9.2 hours per month** (36 month rolling average)



Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the Hope Creek Residual Heat Removal Systems are out of service compared against industry top quartile. The total represents the sum of both Residual Heat Removal trains at Hope Creek. This is a long-term trend of our performance.

Analysis: Hope Creek Residual Heat Removal System unavailability was 6.0 hours versus a goal of 9.2 hours on a 36-month rolling average. The goal was met.

Actions: No actions required.



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SALEM UNIT 1 CHEMICAL VOLUME CONTROL AND SAFETY INJECTION SYSTEM UNAVAILABILITY

Updated Monthly

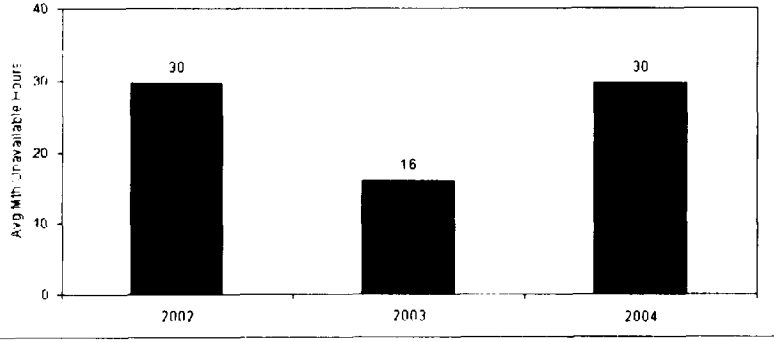
Chart Owner

Salem System Engineering Manager

1Q 2005	2Q 2005
R	R

The sum of the planned and unplanned hours that the Chemical Volume Control and Safety Injection Systems were not available

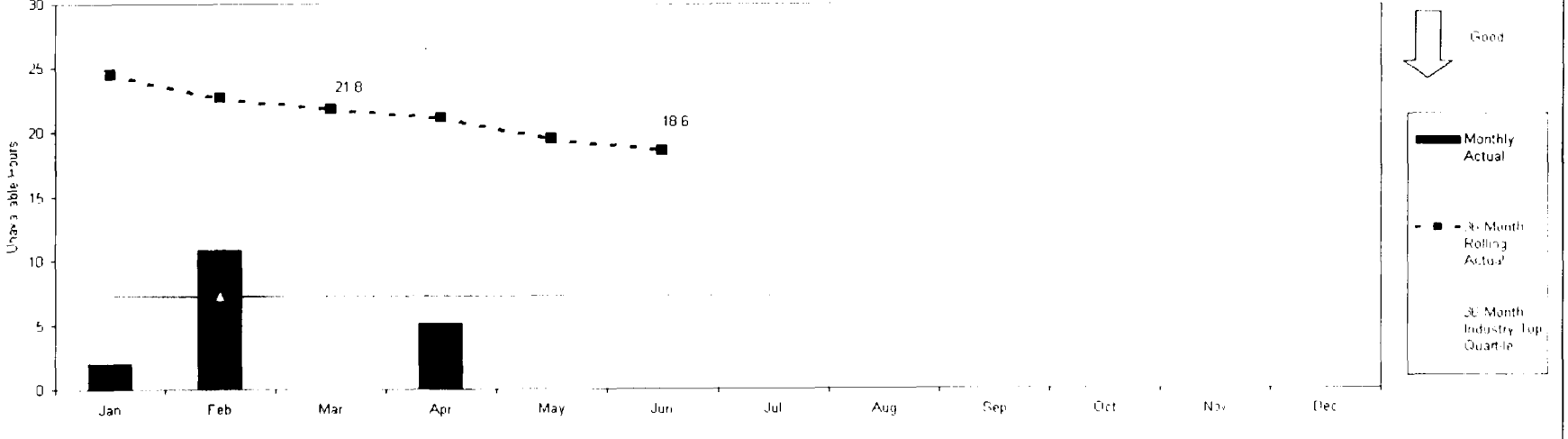
Goal: 7.3 hours per month (36 month rolling average)



Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the Salem Unit 1 Chemical Volume Control and Safety Injection Systems are out of service compared against industry top quartile. The total represents the sum of the four trains on Salem Unit 1. This is a long term trend of our performance.

Analysis: Salem Unit 1 Chemical Volume Control and Safety Injection System unavailability was 18.6 versus a goal of 7.3 hours on a 36-month rolling average. The goal was not met due to planned maintenance in January, February, and April, and the impact of previous performance.

Actions: Improvements in system components' health have steadily improved system 36-month rolling unavailability. The non ECCS 13 charging pump has been returned to service, decreasing the reliance on the 11 and 12 ECCS pumps. Continuing at the current level of performance, this will be at goal by September 2007.



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GENERATING STATIONS

SALEM UNIT 2 CHEMICAL VOLUME CONTROL AND SAFETY INJECTION SYSTEM UNAVAILABILITY

Updated Monthly

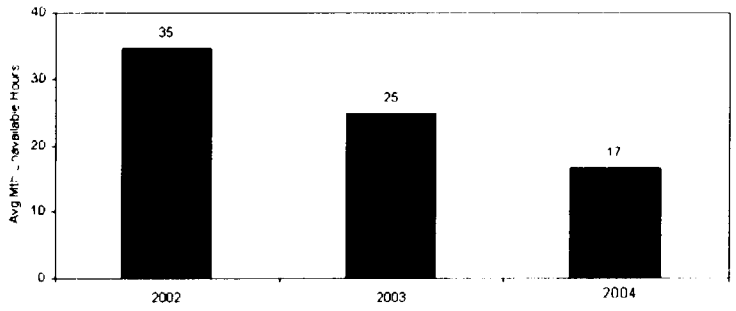
Chart Owner

Salem System Engineering Manager

1Q 2005	2Q 2005
R	R

The sum of the planned and unplanned hours that the Chemical Volume Control and Safety Injection Systems were not available

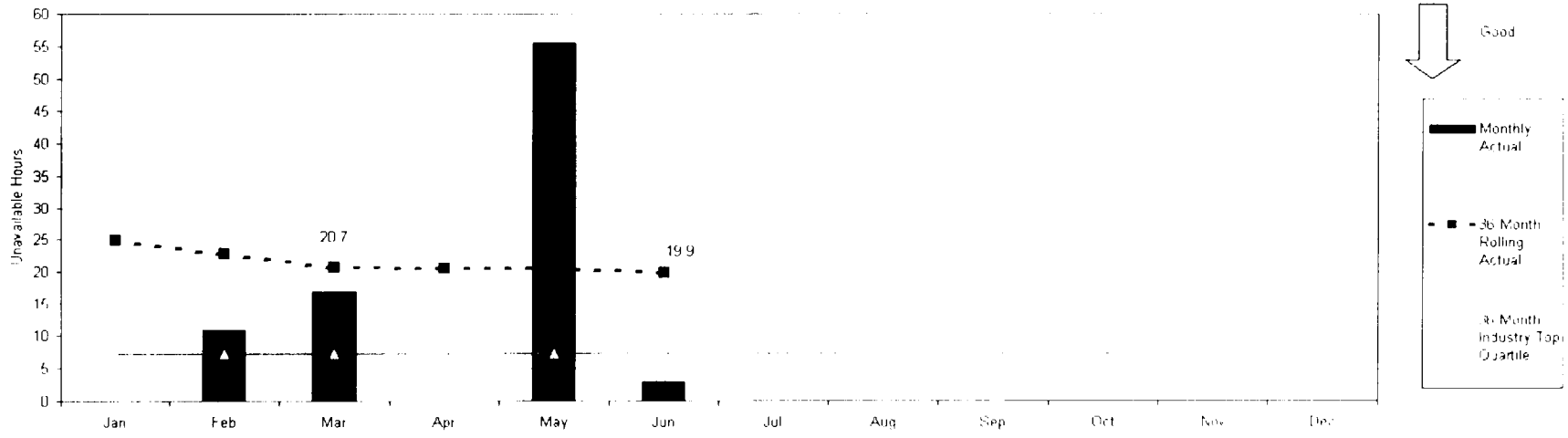
Goal: **7.3 hours per month** **(36-month rolling average)**



Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the Chemical Volume Control and Safety Injection Systems are out of service compared against industry top quartile. The total represents the sum of the four trains on Salem Unit 2. This is a long-term trend of our performance.

Analysis: Salem Unit 2 Chemical Volume Control and Safety Injection System unavailability was 19.9 hours versus a goal of 7.3 hours on a 36-month rolling average. In May, unavailability was incurred due to required maintenance to correct check-valve back-leakage, and oil cooler fouling due to river grass.

Actions: Recent improvements are expected to continue to lower system unavailability. The non-ECCS 23 charging pump has been returned to normal charging service, which will limit reliance on the ECCS 21 and 22 charging pumps. Continuing at the current level of performance, this will be at goal by September 2007.



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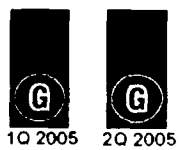
HOPE CREEK HIGH PRESSURE INJECTION AND REACTOR CORE ISOLATION COOLING SYSTEM UNAVAILABILITY

Updated Monthly

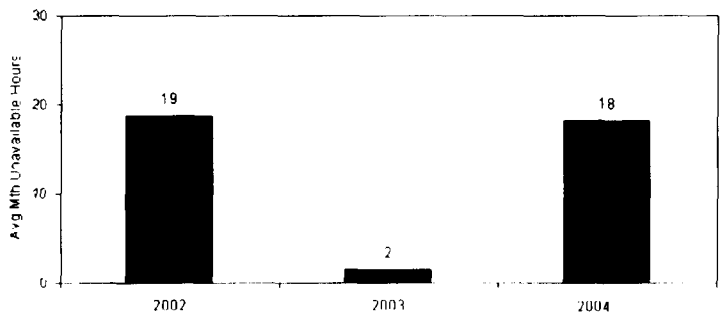
Chart Owner

Hope Creek System Engineering Manager



The sum of the planned and unplanned hours that the *High Pressure Injection and Reactor Core Isolation Cooling Systems* were not available

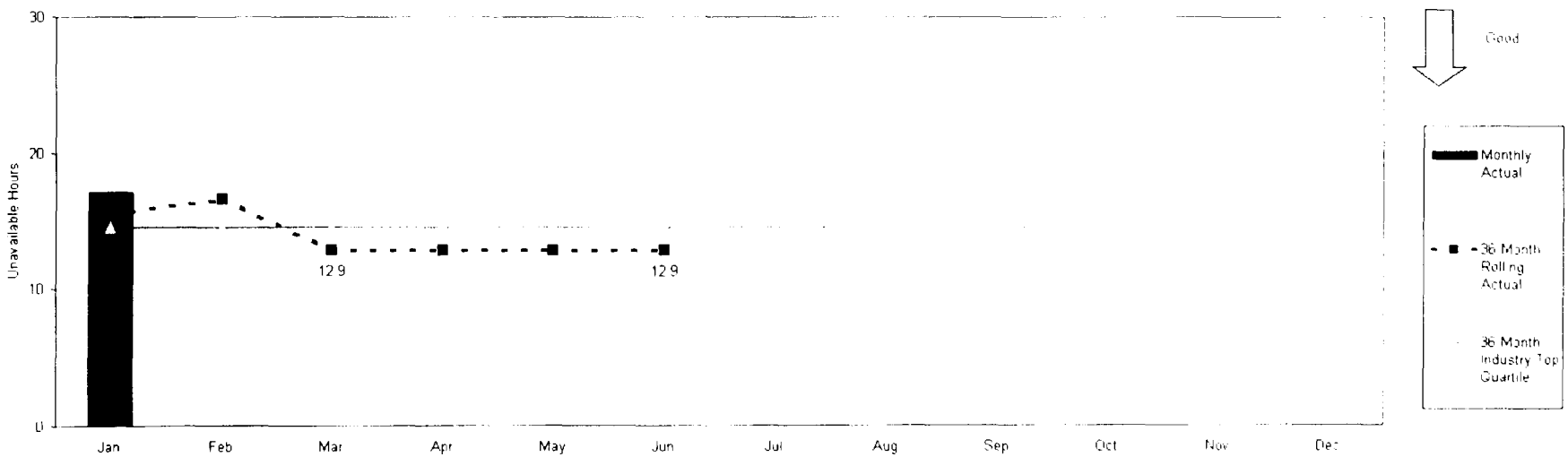
Goal: **14.6 hours per month** (36-month rolling average)



Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the High Pressure Injection and *Reactor Core Isolation Cooling Systems* are out of service compared against industry top quartile. The total represents the sum of both systems at Hope Creek. This is a long term trend of our performance.

Analysis: Hope Creek High Pressure Injection and Reactor Core Isolation Cooling System unavailability was 12.9 hours versus a goal of 14.6 hours on a 36 month rolling average. The goal was met.

Actions: No actions required.



Salem Hope Creek GENERATING STATIONS