William Levis
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LR-N06-0179

APR 2 8 2006

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 first quarter 2006. PSEG put these metrics in place to objectively measure the effectiveness of the SCWE improvements at Salem and Hope Creek Generating Stations. PSEG conducted an analysis of each metric and decided whether and to what extent the results warrant additional actions.

In-depth assessments of the work environment were conducted in the first half of 2004. Business Plan initiatives were established and implemented to address the findings of those assessments. Self-assessments and NRC inspections were also conducted throughout 2005 to examine progress in improving the work environment, including the Corrective Action Program, Employee Concerns Program, and the overall Safety Conscious Work Environment. Opportunities for continued improvement were identified and entered into the Corrective Action Program.

Synergy Consulting Services Corporation completed a survey of the workforce during the first quarter 2006. The survey results showed improvement in essentially all cultural metrics since the last Synergy survey conducted in 2005. Furthermore, the rate of improvement was characterized as strong, providing a solid foundation for sustainable improvement. Consistent with reporting previous Synergy survey results, an additional metric has been added to the attached report that documents these results.

Collectively, the actions taken have resulted in substantial and visible improvement at Salem and Hope Creek Generating Stations. Significant reductions in maintenance backlogs and significant improvements in implementation of the Corrective Action Program were achieved in 2005 and this progress has been sustained in 2006. Operational challenges have been reduced as a result of improved equipment reliability due to more effectively managing our problem resolution processes. Most safety system performance indicators remain at the annual top quartile performance levels achieved in 2005. Visible facility improvements have also been made. These provide renovated workspaces for our staff and have improved our internal communications by bringing the workforce together.

An overall evaluation of our progress toward sustained performance against the "pillars" of a healthy SCWE yielded the following results:

Pillar 1: Willingness to Raise Concerns

The metrics monitoring this pillar are Synergy Survey Results Comparisons and Total Notifications Generated.

The initiation rate for Notifications continues to demonstrate that site personnel have a low threshold for problem reporting. Survey results reflect that a healthy environment exists for employees to raise concerns and the workforce is confident that these concerns will be resolved. Improved engagement of personnel, effective communication between personnel and their supervisor, and an increased confidence in station leadership provide a solid foundation to sustain a culture that values problem reporting and learns from its issues.

Pillar 2: Effective Problem Resolution

The metrics monitoring this pillar are Synergy Survey Results Comparisons, Online Corrective and Elective Maintenance Backlogs, Corrective Action Problem Resolution, Condition Report Activities Overdue, Open Condition Report Evaluations with Due Date Extensions, Repeat Maintenance Issues, Operational Challenges, Unplanned Shutdown Limiting Condition of Operation (LCO) Entries, Unplanned Non-Shutdown Limiting Condition of Operation (LCO) Entries, and Safety System Unavailability (i.e., Emergency Diesel Generators, Auxiliary Feedwater System, Chemical Volume Control and Safety Injection System, High Pressure Injection and Reactor Core Isolation Cooling Systems, and Residual Heat Removal System).

Metrics and plant performance show that problem resolution has substantially improved.

During 2005, substantial progress was made to resolve long-standing equipment deficiencies and significantly reduce online corrective and elective maintenance backlogs. Effective work management processes, including the Plant Health Committee and the Material Condition Improvement Plan, have sustained these reduced backlogs, minimized operational challenges at the stations, and established a long-term strategy for continued equipment and system health.

Efforts to improve equipment reliability have resulted in improved safety system performance as reflected by metrics that remain at annual top quartile performance levels. Performance in prior years is causing the three-year rolling average goal not to be met in some instances. PSEG will remain focused on sustaining annual top quartile performance levels to continue the improvement in the three-year rolling average metrics as historical performance data is replaced. The results of these efforts are also expected to reduce unplanned entries into Technical Specification shutdown Limiting Conditions of Operation, which have not met goal.

PSEG improved its implementation of the Corrective Action Program (CAP) in 2005 through engagement of station leadership and alignment of the organization with expectations for the program's use. As a result, the number of open evaluations and corrective actions was substantially reduced and overall problem resolution improved. The ability of the station to resolve problems was examined during a self-assessment as well as an NRC Problem Identification and Resolution (PI&R) inspection in late 2005. These assessments confirmed the CAP improvements and identified further opportunities that warrant additional focus, such as the need for continued attention to the quality of low level CAP evaluations. Furthermore, the Synergy survey results point to increased confidence in station leadership, which has clearly communicated and reinforced its expectations for use of the CAP.

Based on the progress in 2005 and ongoing improvement actions, the substantive NRC cross-cutting issue in area of PI&R was closed for Salem and Hope Creek Generating Stations in their respective 2005 annual assessment letters dated March 2, 2006. PSEG's improvement actions continue and strong performance in the CAP was demonstrated during the first quarter of 2006 through timely evaluations and effective corrective actions. A sustained focus on the behaviors that foster effective problem resolution has resulted in metrics that show the positive outcomes of these efforts, including improved plant performance and generally low safety system unavailability.

Pillar 3: Alternate Mechanisms to Raise Concerns

The metrics monitoring this pillar are Synergy Survey Results Comparisons and Employee Concerns Program – Concerns Confidentiality/Anonymity Request.

The Employee Concerns Program (ECP) continues to provide an effective, alternate means for identifying issues. During the first quarter, station and contractor personnel actively used the program with no adverse trends discovered in the anonymous or confidential concerns being entered into ECP. The Synergy survey also showed the positive results of outreach efforts by the ECP staff to communicate the important elements of the ECP program to the workforce.

Pillar 4: Detection/Prevention of Retaliation & Chilling Effect

The metrics monitoring this pillar are Synergy Survey Results Comparisons and Executive Review Board (ERB) Action Approvals.

In the first quarter, Executive Review Board (ERB) reviews found that none of the proposed personnel actions (e.g., personnel movements, discipline) had retaliation or chilling effect implications, which demonstrates continued strong performance in this pillar. ECP data showed no substantiated retaliation/discrimination issues in the first quarter. Management actions continue to reflect a sound understanding of and respect for the work environment. This is further supported by Synergy survey results that reflect positive improvements in employees' perception of management and supervision.

As ERB data was being gathered for the ERB Action Approval metric, it was identified that the historical data for cases approved by ERB in 2004 should have been 69 cases rather than 64 cases. There were no instances of retaliation or chilling effect implications in these cases. The error had no effect on the conclusions reached in previous quarterly reports and was entered into the Corrective Action Program.

In summary, performance in each pillar has shown substantial and sustained improvement. Completion of the 2004/2005 Business Plan work environment actions, the use of self-assessments to continue to identify opportunities for improvement, and PSEG's demonstrated ability to resolve problems has resulted in improved plant performance and fostered a healthy work environment that promotes problem identification and resolution. These improvement efforts included establishing an operationally focused organization with well-defined roles and responsibilities, clear accountability, and consistent direction. The ability to sustain these substantial work

environment improvements has been demonstrated through metrics, Synergy survey results, and strong performance in the Work Management and Corrective Action Programs.

Upon concluding that substantial and sustainable progress was made, PSEG commissioned an independent assessment of the work environment. A group of industry experts completed this assessment in April 2006. The team's preliminary conclusion was that there has been substantial improvement with a solid foundation for continued improvement in the safety conscious work environment at Salem and Hope Creek Generating Stations. The final independent assessment report is expected in May 2006 and will be provided to the NRC.

PSEG will continue to monitor its performance and report quarterly to the NRC. If you have any questions, please contact me at (856) 339-1100.

Sincerely,

Thomas P. Joyce for
William Levis
Senior Vice President and CNO

Attachment

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USNRC Senior Resident Inspector - HC (X24)

USNRC Senior Resident Inspector - Salem (X24)

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PO Box 415
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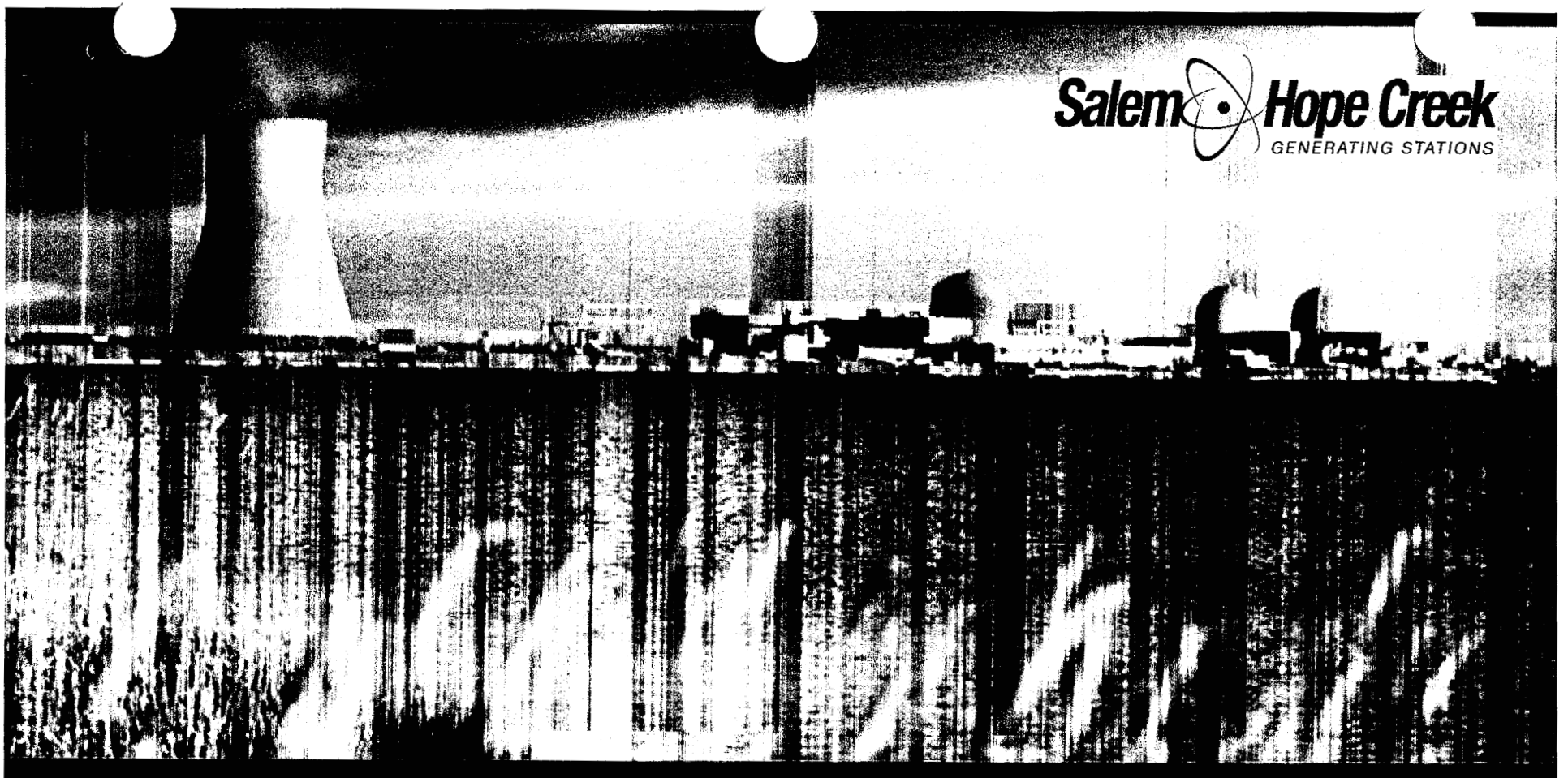
ATTACHMENT



Safety Conscious Work Environment

March 2006

SYNERGY SURVEY RESULTS COMPARISONS

Updated: Periodically

1Q 2005	1Q 2006
G	G

Employees believe that management is committed to safety, the development of SCWE, and acts in accordance with that commitment.

Chart Owner

Safety Conscious Work Environment Manager

Goal: **Improvement**

Track progress improvements in the work environment

Metric based on employee survey data. See below for details.

Analysis and Actions

Analysis: The results of an employee survey were received at the end of March. Results for each of the four metrics have improved since the initial 2003 survey. These metrics reflect a continued improvement in the site's overall safety conscious work environment.

Actions: Action plans are being created based on a review of the survey results.

METRIC	2003*	RATING	2005*	RATING	2006*	RATING	ANALYSIS
Knowledge of Alternative Avenues	3.48	Adequate to Good	3.65	Good	3.74	Good to Very Good	**Significant Improvement.** *2003 to 2006 improvement: 7.5%.*
Employee Perception of Management Commitment	3.88	Good to Very Good	3.93	Very Good	3.98	Very Good	**Notable Improvement.** *2003 to 2006 improvement: 2.6%.*
Supervisor Communication Effectiveness	3.76	Good to Very Good	3.74	Good to Very Good	3.85	Good to Very Good	**Nominal Improvement.** *2003 to 2006 improvement: 2.4%.*
Trust and Respect Between Management & Employees	3.50	Adequate to Good	3.52	Good	3.66	Good	**Notable Improvement.** *2003 to 2006 improvement: 4.6%.*

***Scale 1 to 5:** **1** - Strongly Disagree, **2** - Disagree, **3** - Generally Agree, **4** - Strongly Agree, **5** - Fully Agree

EXECUTIVE REVIEW BOARD (ERB) ACTION APPROVALS

Updated: Monthly

4Q 2005	1Q 2006
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**

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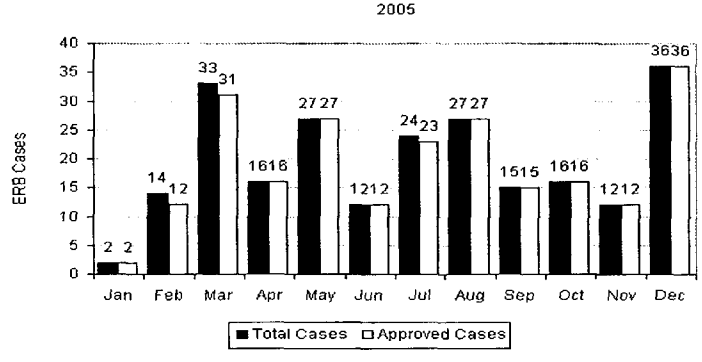
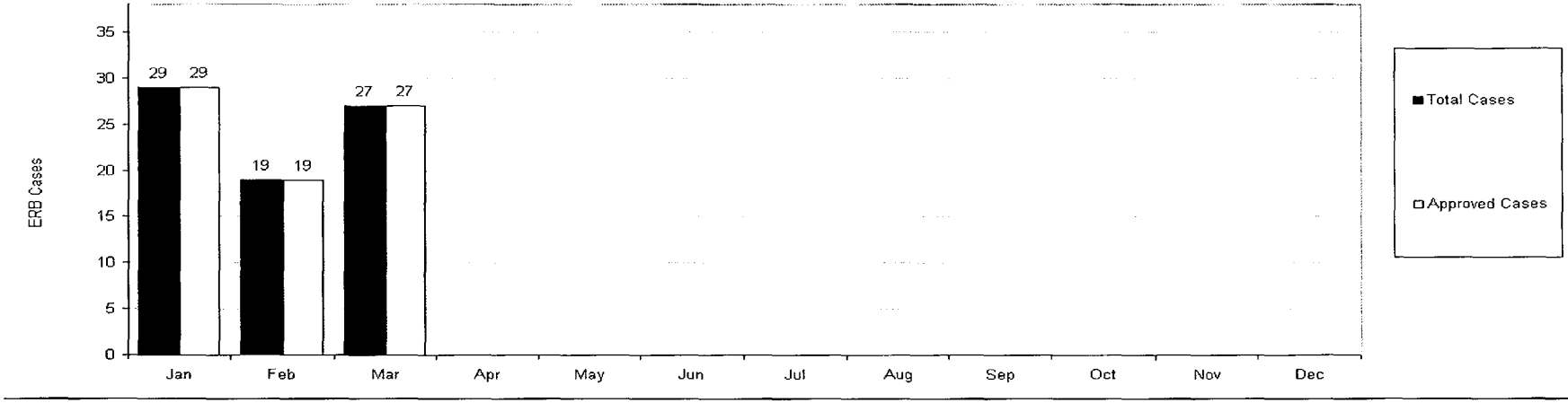


The Executive Review Board (ERB) was established to ensure that no adverse action is taken or perceived to be taken against site personnel for raising nuclear safety issues. This Board reviews significant proposed discipline, promotions, transfers and terminations for PSEG employees and *supplemental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

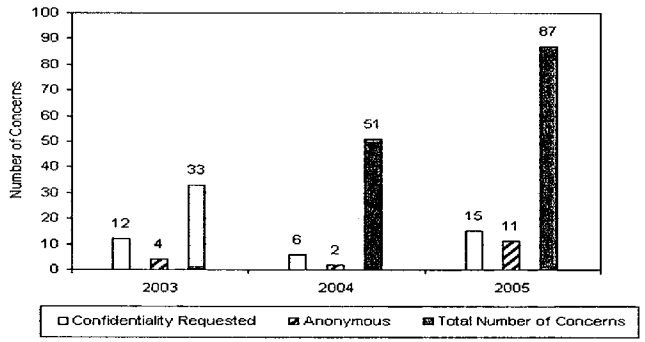
Analysis: The Executive Review Board (ERB) reviewed 75 proposed actions during the 1st Quarter of 2006. The ERB did not object to any of the proposed actions. The success rate of cases for the Quarter was 100% and is 100% year to date. There continues to be no indication of retaliation or chilling of the work environment.

Actions: Continue to monitor for trends.



Salem • Hope Creek
GENERATING STATIONS

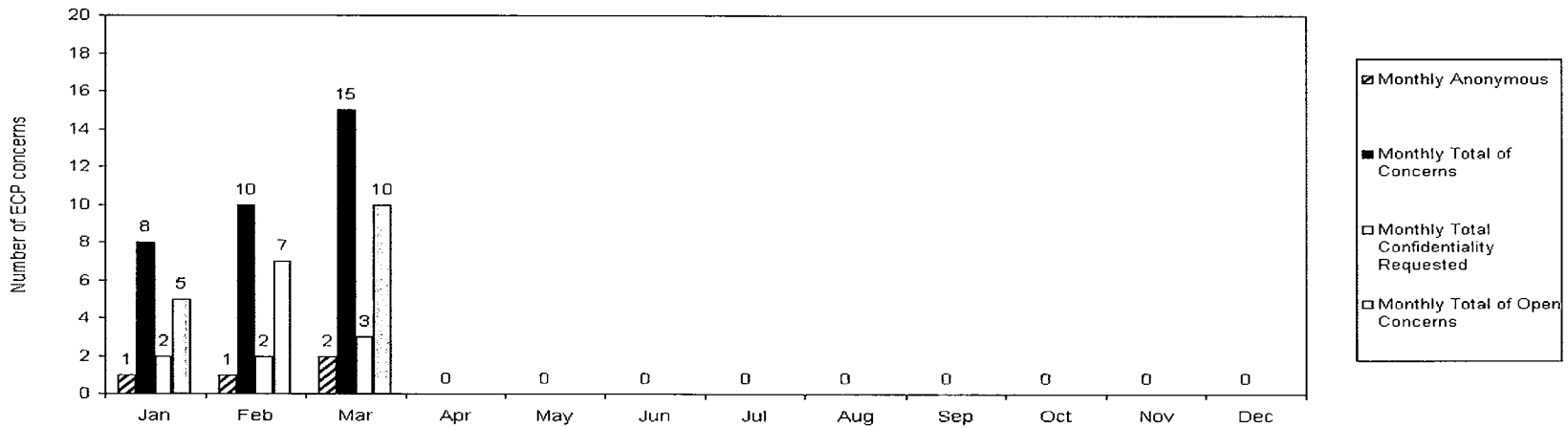
EMPLOYEE CONCERNS PROGRAM - CONCERNS CONFIDENTIALITY/ANONYMITY REQUEST	Updated: Monthly	4Q 2005	1Q 2006	The number of Employee Concerns Program concerns filed anonymously/confidentially versus total number of concerns per month. Chart does not include NRC 30-day requests.
Chart Owner				
Employee Concerns 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: There has been an upward trend in the overall number of Confidential and Anonymous concerns received for the 1st Quarter of 2006. An analysis of the issues has identified there is no common theme or organization regarding the types of concerns brought forward. None were determined to be a harassment, intimidation, retaliation or discrimination issue related to engaging in protected activities.

Actions: Continue to monitor the numbers and types of confidential and anonymous concerns.



Salem • Hope Creek
GENERATING STATIONS

TOTAL NOTIFICATIONS GENERATED

Updated: Monthly

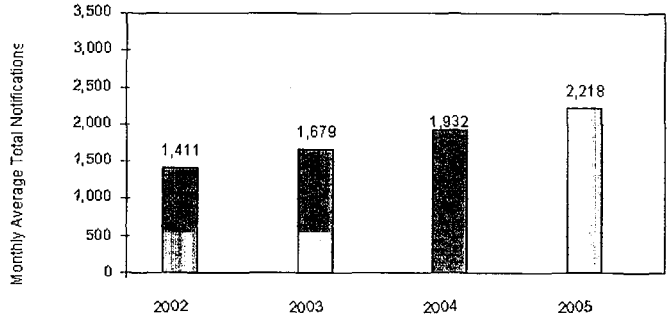
Total notifications generated on a monthly basis.

4Q 2005	1Q 2006
G	G

Chart Owner

Corrective Action Program Manager

Goal: **No Adverse Trend**

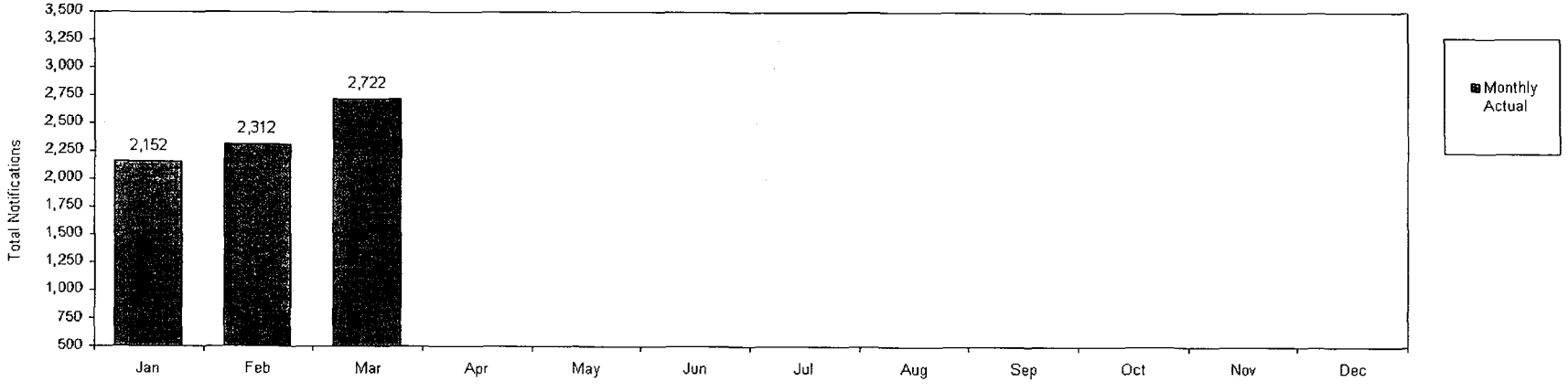


Site personnel write a notification in the Corrective Action Program (CAP) to identify an issue that needs attention. This metric illustrates the total number of notifications written each month by site personnel. Monitoring ensures that the volume of issues is consistent with expected trends, based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

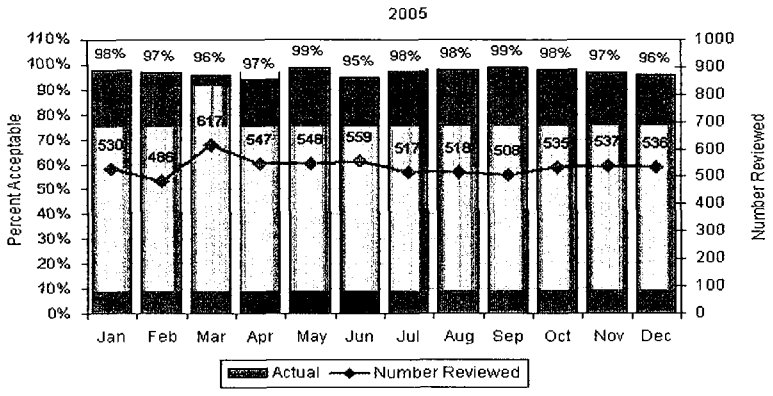
Analysis and Actions

Analysis: The notifications generated by the site for the 1st Quarter of 2006 demonstrated an increase compared to the previous average for 2005. The 1st Quarter 2006 monthly average number of Notificatons generated is 2395. The site's personnel continue to document problems in notifications when issues are identified. The overall yearly trend is positive.

Actions: No actions are required.



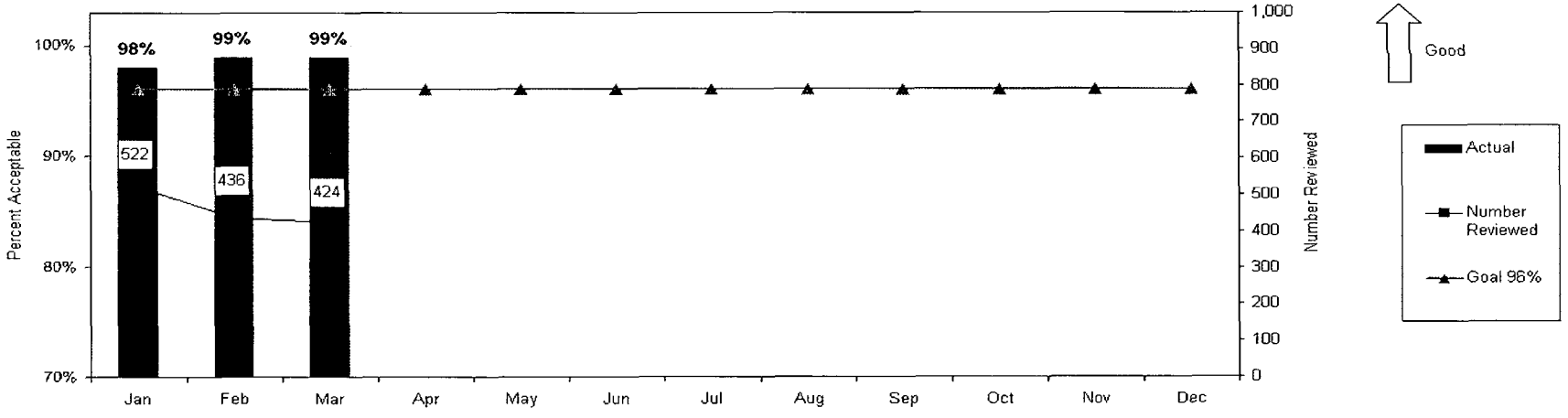
CORRECTIVE ACTION PROBLEM RESOLUTION	Updated: Monthly	4Q 2005: G / 1Q 2006: G	The percent of corrective action closures determined to be acceptable by Corrective Action Closure Board review, based on the problem resolution criteria. The performance indicator is a monthly value.
Chart Owner			
Corrective 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 Corrective Action Closure Board acceptance rate results were within goal for the 1st Quarter of 2006. Specific closure failures continue to be addressed by their department management and personnel. No trends are evident.

Actions: Continue implementation of the CAP Excellence Plan to sustain performance at or above goal.



Salem Hope Creek
GENERATING STATIONS

CONDITION REPORT ACTIVITIES OVERDUE

Updated: Monthly

4Q 2005	1Q 2006
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.

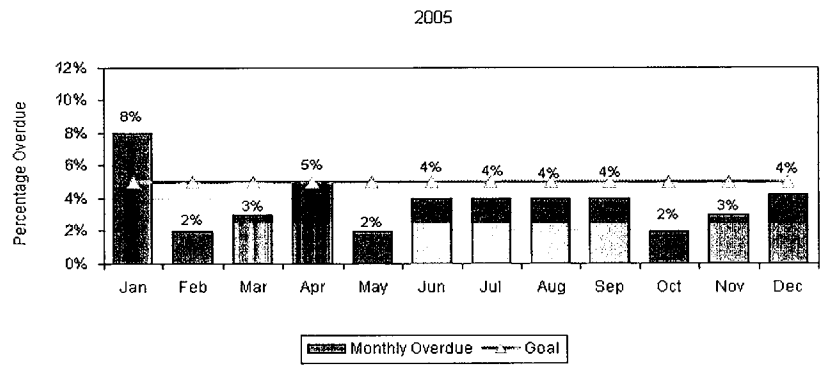
Chart Owner

Corrective Action Program Manager

Goal: 5%

Intent of Metric

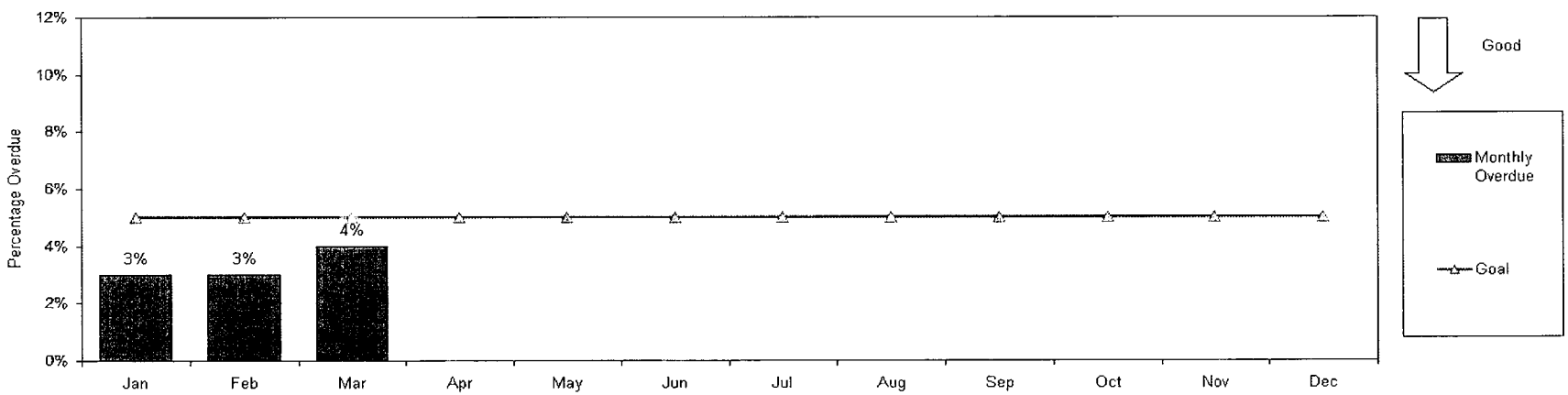
Site personnel write a notification in our Corrective Action Program (CAP) to identify an issue that needs attention. This metric tracks the timeliness of our review and corrective actions by measuring the percentage overdue, with a goal of less than or equal to 5%.



Analysis and Actions

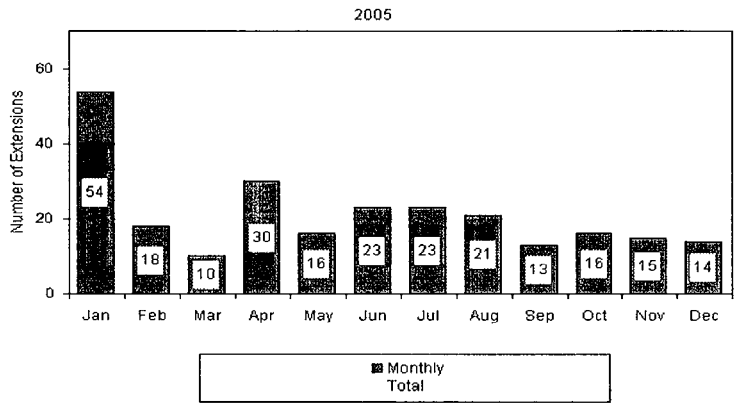
Analysis: Overdue condition report activities remained below goal for the 1st Quarter 2006, and have consistently remained below goal for the past four quarters.

Actions: No action required.



Salem Hope Creek GENERATING STATIONS

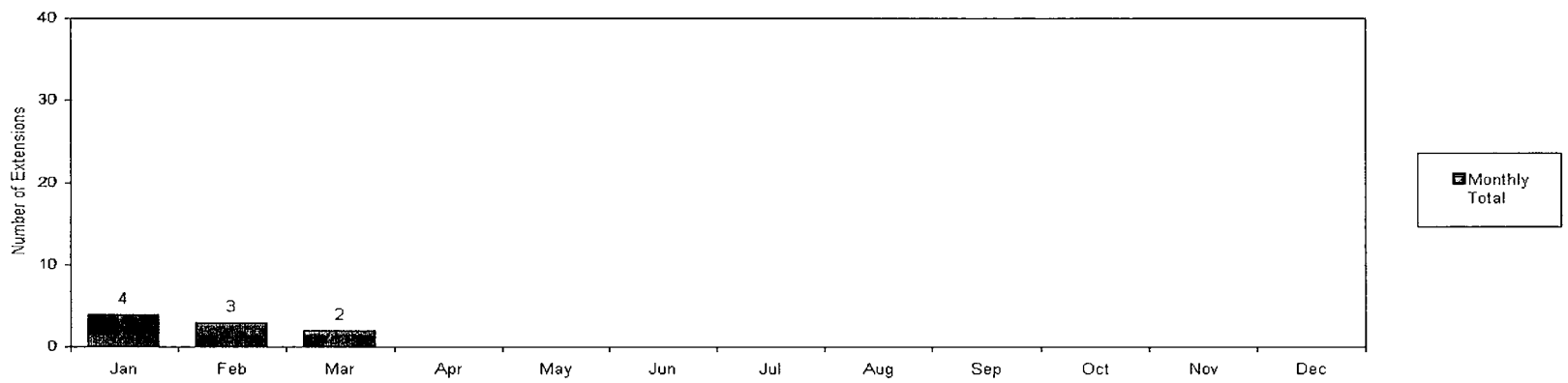
OPEN CONDITION REPORT EVALUATIONS WITH DUE DATE EXTENSIONS	Updated: Monthly	4Q 2005	1Q 2006	The number of due date extensions approved for open Nuclear Condition Report evaluations.
Chart Owner				
Corrective Action Program Manager		**Goal:**		**No Adverse Trend**



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.

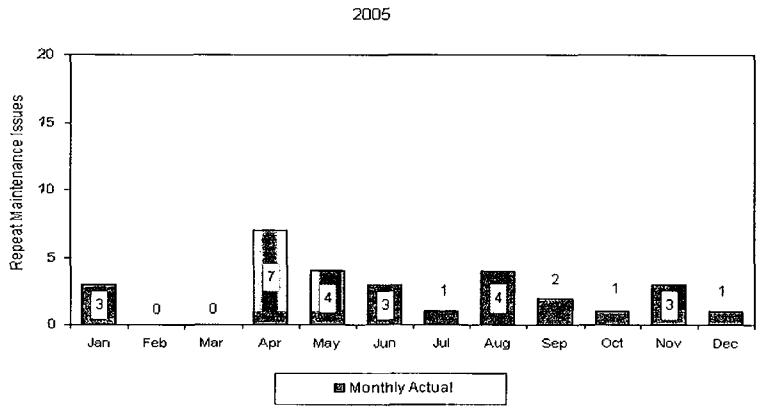
Analysis: Evaluations with due date extensions continue to be low. There is no adverse trend.

Actions: No action required.



SALEM UNIT 1 REPEAT MAINTENANCE ISSUES	Updated: Monthly	4Q 2005 G / 1Q 2006 G	The number of repeat maintenance issues identified on safety-related equipment.
Chart Owner			
Salem Maintenance Manager		**Goal:**	**No Adverse Trend**

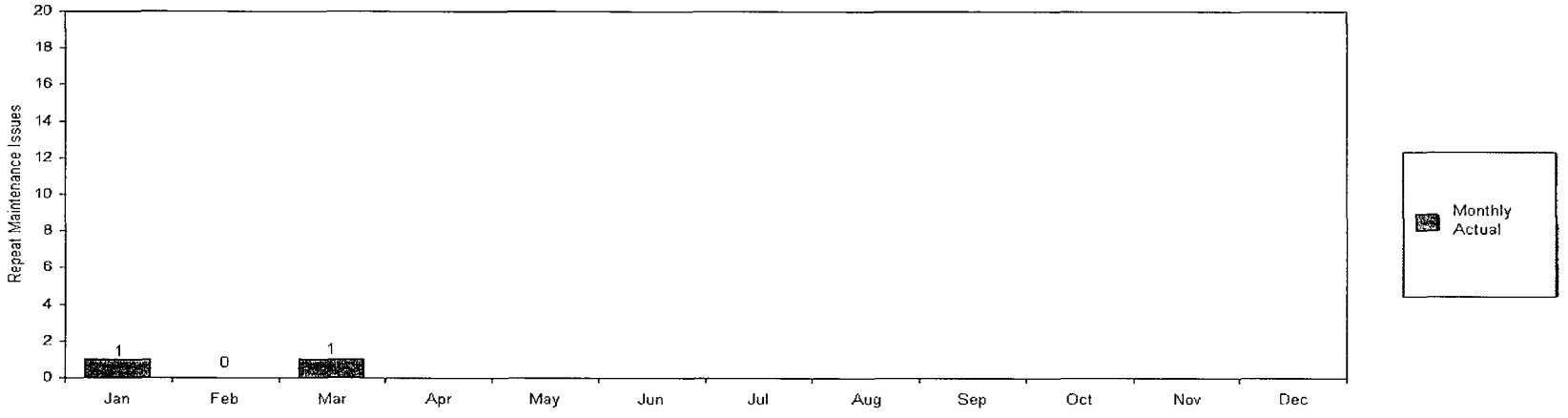
History



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.

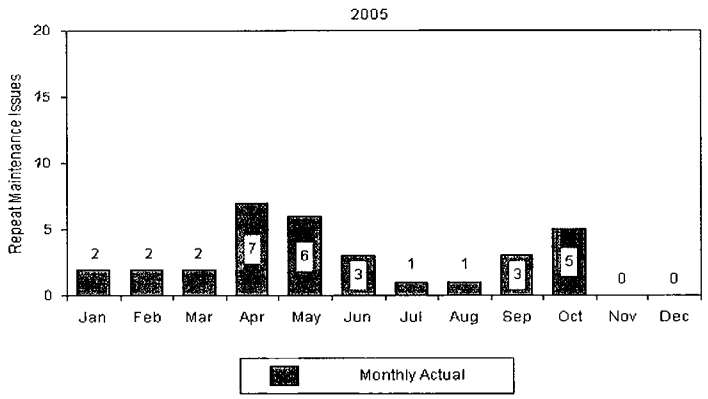
Analysis: There was no adverse trend. There was a total of two Repeat Issues in the 1st Quarter.

Actions: The items identified in the 1st Quarter are being addressed in the Corrective Action and Corrective Maintenance Programs and actions are being implemented. Equipment reliability will be further enhanced through the Plant Health Committee and Material Condition Improvement Process.



SALEM UNIT 2 REPEAT MAINTENANCE ISSUES	Updated: Monthly	4Q 2005: G	1Q 2006: G	The number of repeat maintenance issues identified on safety-related equipment.
Chart Owner				
Salem Maintenance Manager		**Goal:**		**No Adverse Trend**

History

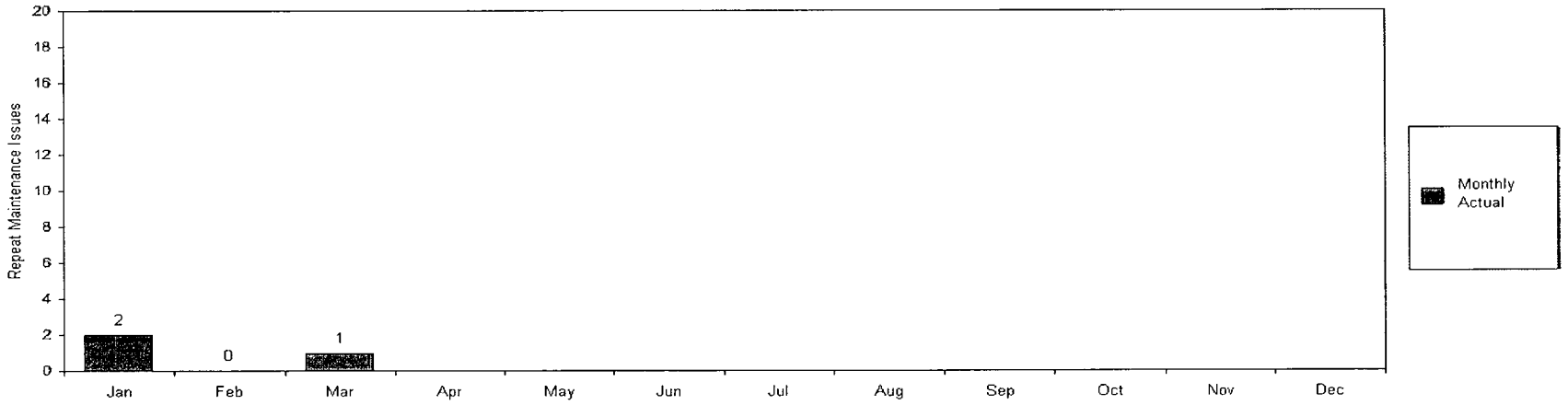


This metric monitors the number of issues that were not fixed correctly the first time on safety-related equipment. Items that have been fixed and need to be reworked within twelve months are tracked. This metric is to ensure a reduction as the corrective action program improves.

Actions

Analysis: There was no adverse trend. There was a total of three Repeat Issues in the 1st Quarter.

Actions: The items identified in the 1st Quarter are being addressed in the Corrective Action and Corrective Maintenance Programs and actions are being implemented. Equipment reliability will be further enhanced through the Plant Health Committee and Material Condition Improvement Process.



HOPE CREEK REPEAT MAINTENANCE ISSUES

Updated: Monthly

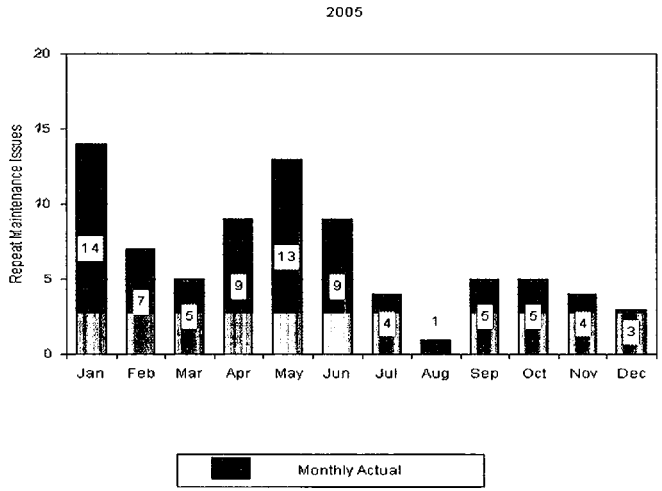
4Q 2005	1Q 2006
G	G

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

Chart Owner

Hope Creek Maintenance Manager

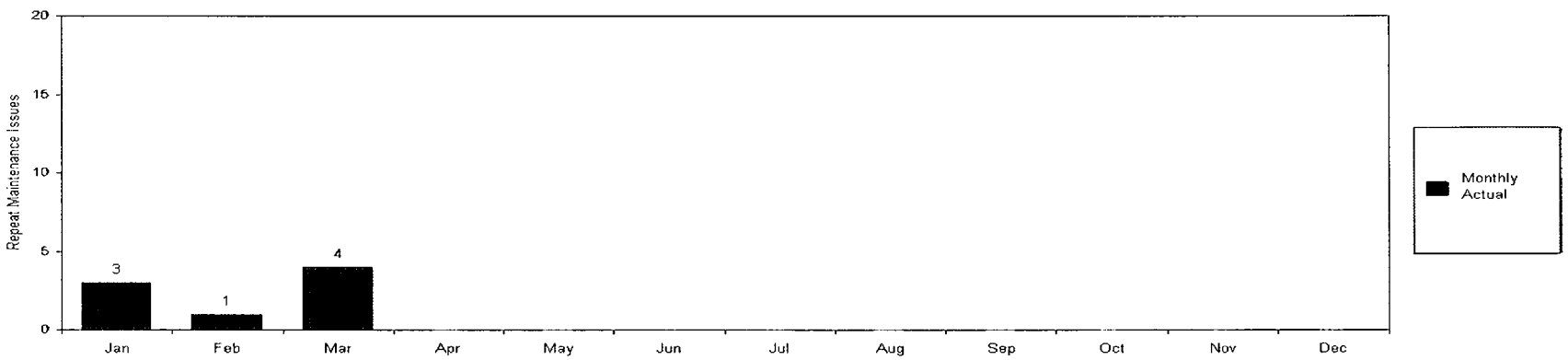
Goal: **No Adverse Trend**



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 was no adverse trend. There was a total of eight Repeat issues in the 1st Quarter.

Actions: The items identified in the 1st Quarter are being addressed in the Corrective Action and Corrective Maintenance Programs and actions are being implemented. Equipment reliability will be further enhanced through the Plant Health Committee and Material Condition Improvement Process.



SALEM UNIT 1 OPERATIONAL CHALLENGES

Updated: Monthly

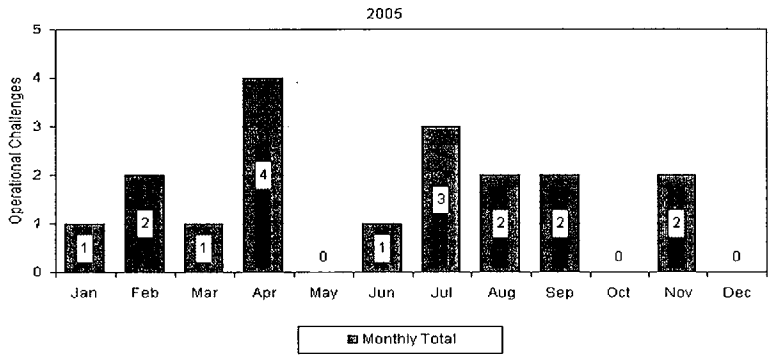
The number of plant operational issues that warrant implementation of the Event Response Team.

	4Q 2005	1Q 2006
	G	G

Chart Owner

Salem Plant Manager

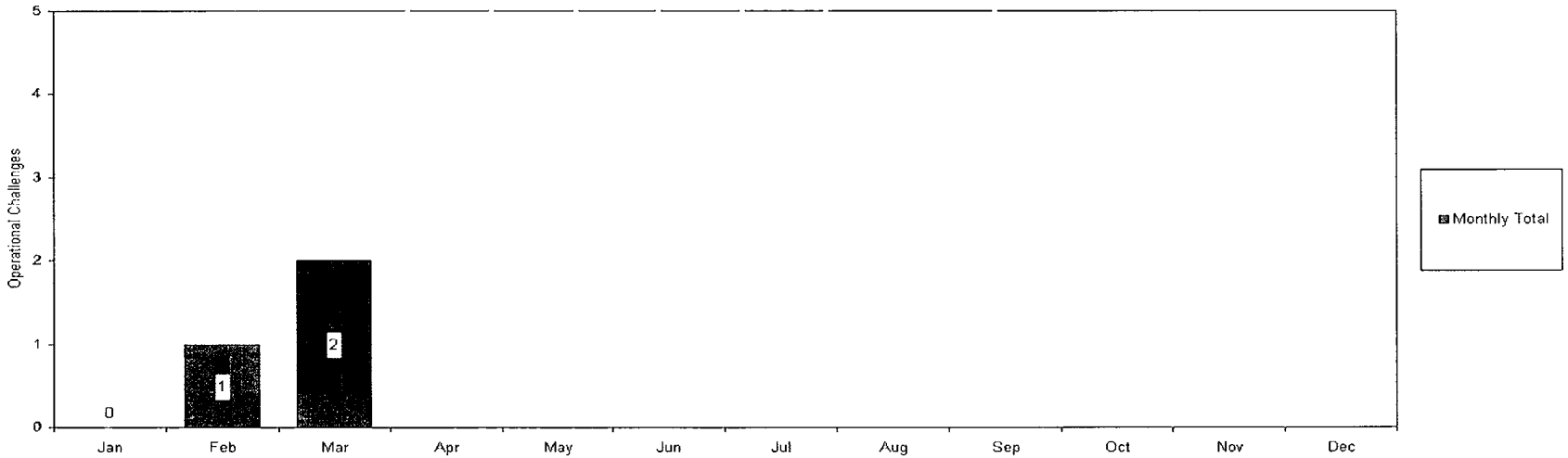
Goal: **No Adverse Trend**



A procedure was established to allow operating crews to request additional assistance to address emergent issues. This metric measures the number of times each month operators engage this assistance. The goal is to minimize the events which require responses to the operating crews. By tracking and reviewing the event responses, common causes and potential trends can be investigated.

Analysis: No adverse trend has been identified. There were three Event Responses initiated in the 1st Quarter. This is an average of one per month; previous trends were two per month in 2004 and 1.5 per month in 2005.

Actions: Maintain focus on equipment reliability improvements to minimize Event Response Team requests.



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

Updated: Monthly

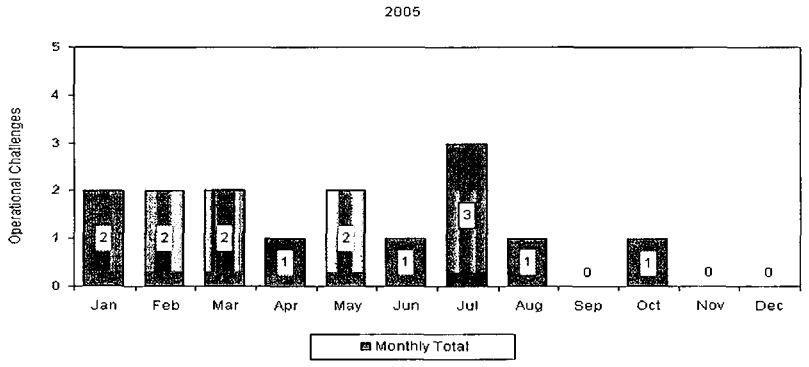
4Q 2005	1Q 2006
G	G

The number of plant operational issues that warrant implementation of the Event Response Team.

Chart Owner

Salem Plant Manager

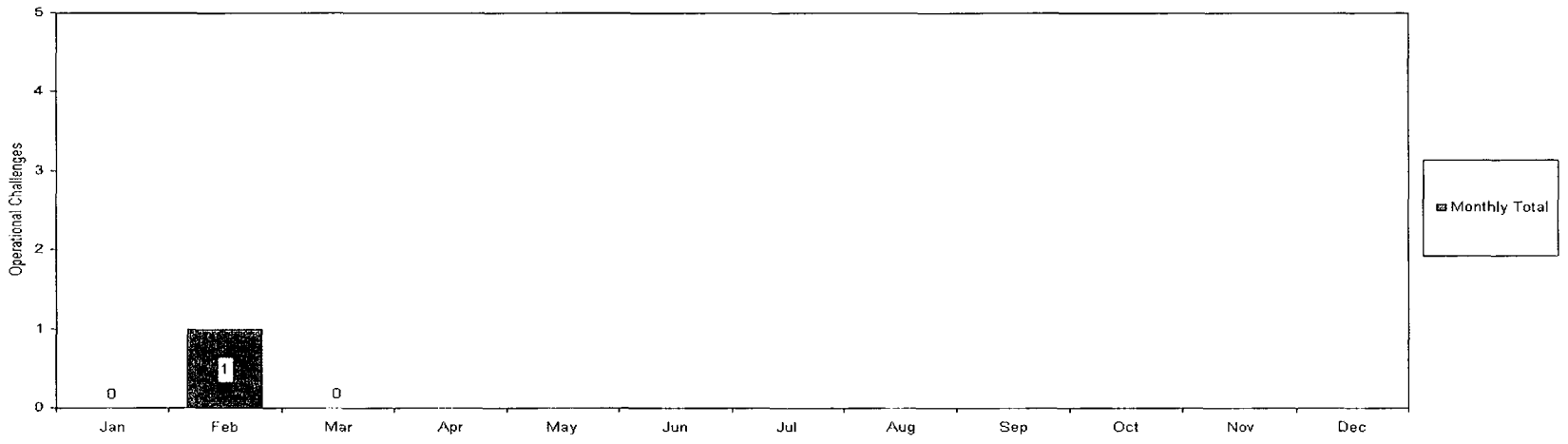
Goal: **No Adverse Trend**



A procedure was established to allow operating crews to request additional assistance to address emergent issues. This metric measures the number of times each month operators engage this assistance. The goal is to minimize the events which require responses to the operating crews. By tracking and reviewing the event responses, common causes and potential trends can be investigated.

Analysis: No adverse trend has been identified. There was one Event Response initiated in the 1st Quarter. This is an average of 0.3 per month; previous trends were 1.9 per month in 2004 and 1.25 per month in 2005.

Actions: Maintain focus on equipment reliability improvements to minimize Event Response Team requests.



HOPE CREEK OPERATIONAL CHALLENGES

Updated: Monthly

Chart Owner

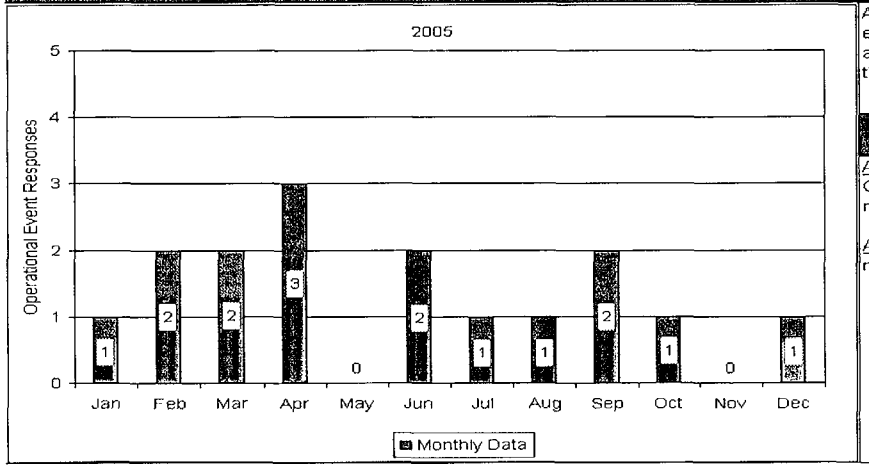
Hope Creek Plant Manager

4Q 2005	1Q 2006
G	G

Definition

The number of plant operational issues that warrant implementation of the Event Response Team.

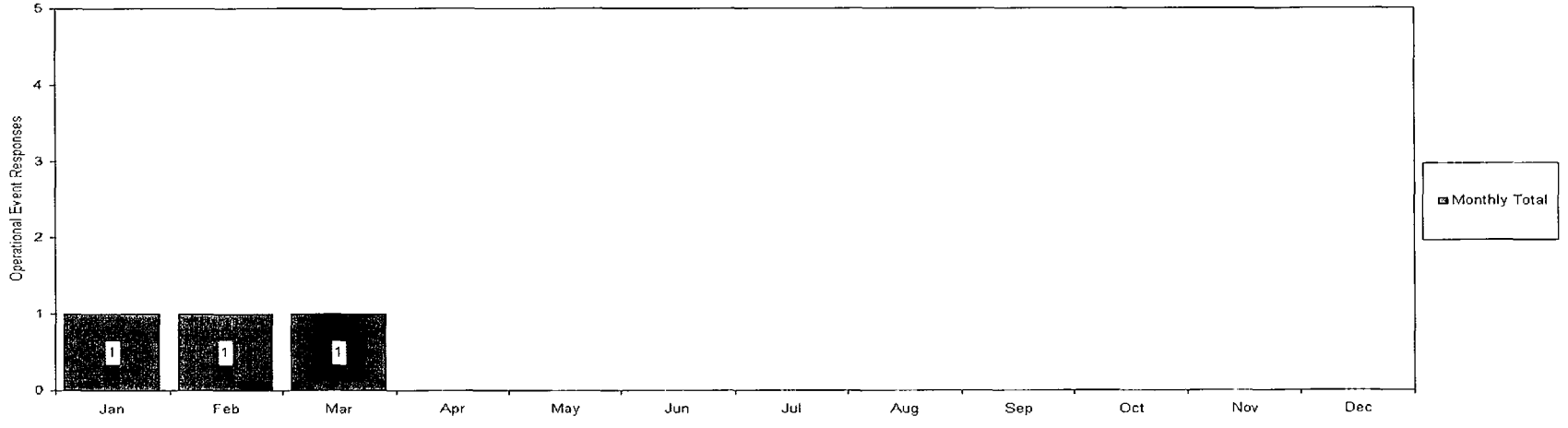
Goal: **No Adverse Trend**



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

Analysis: No adverse trend has been identified. There were three Event Response initiated in the 1st Quarter. This is an average of 1.0 per month; previous trends were 1.1 per month in 2004 and 1.3 per month in 2005.

Actions: Maintain focus on equipment reliability improvements to minimize Event Response Team requests.



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

Updated: Monthly

4Q 2005	1Q 2006
R	R

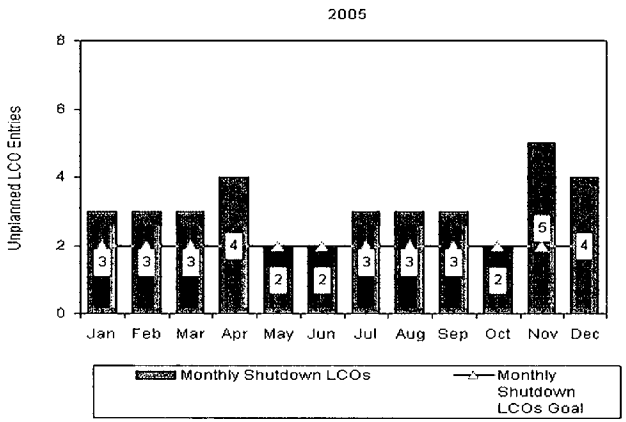
The number of Unplanned Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.

Chart Owner

Salem System Engineering Manager

Goal: **2 per Month**

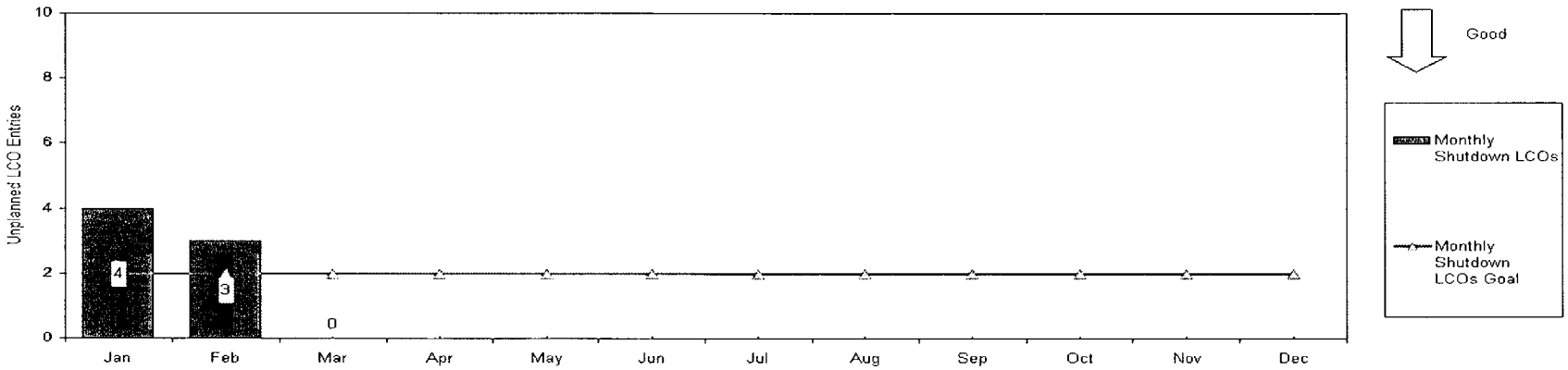
History



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: For the 1st Quarter 2006, there were seven Unplanned Shutdown LCOs on Unit 1. The goal of two LCOs per month was not met.

Actions: These issues are being addressed in the Corrective Action and Equipment Reliability Programs.



Salem Hope Creek
GENERATING STATIONS

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

Updated: Monthly

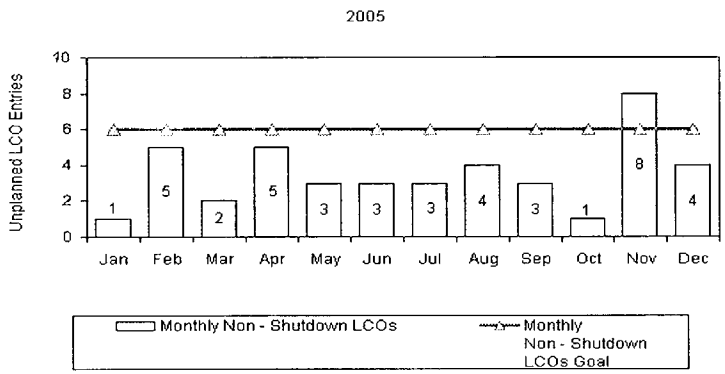
4Q 2005	1Q 2006
G	G

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**

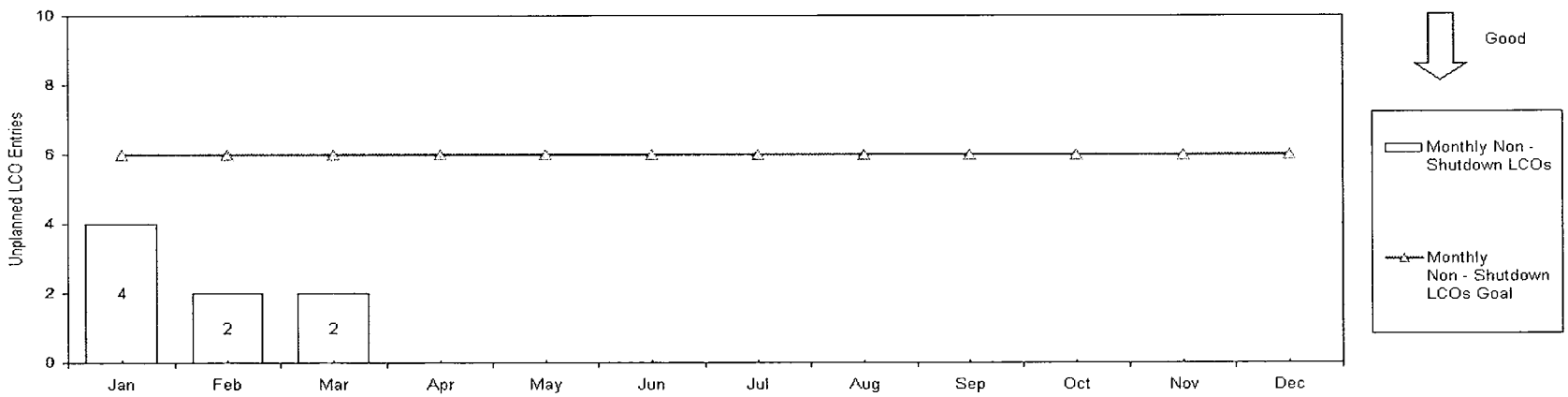


Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a non-shutdown LCO, meaning the equipment must be fixed in a defined period of time, or you are required to take compensatory 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).

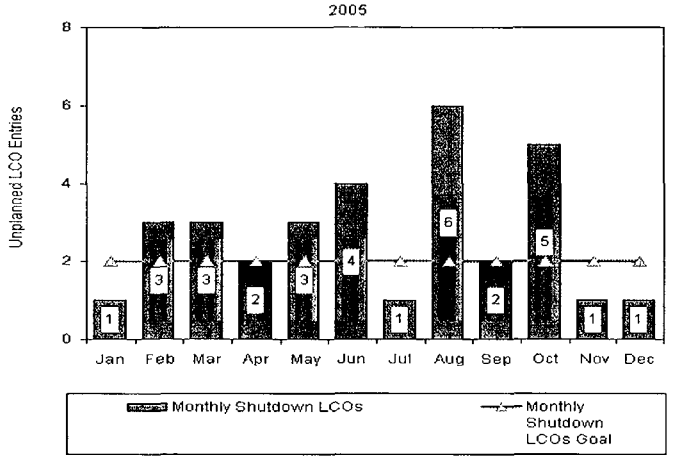
Analysis and Actions

Analysis: For the 1st Quarter, there were a total of eight Unplanned Non-Shutdown LCOs. The monthly goal for this Quarter was met.

Actions: Sustain performance at or below goal.



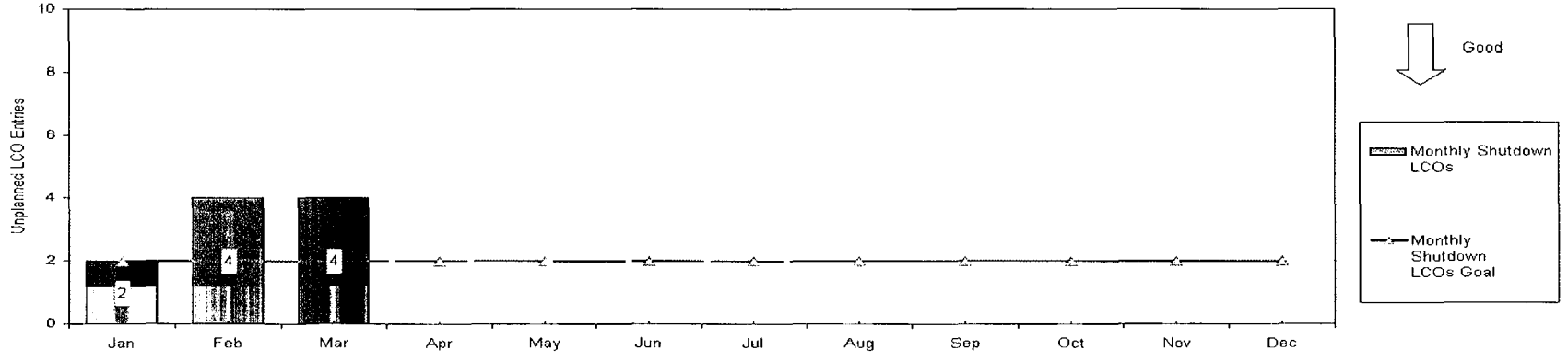
SALEM UNIT 2 UNPLANNED SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES	Updated: Monthly	4Q 2005 (R) 1Q 2006 (R)	The number of Unplanned Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.
Chart Owner			
Salem System Engineering Manager		**Goal:**	**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).

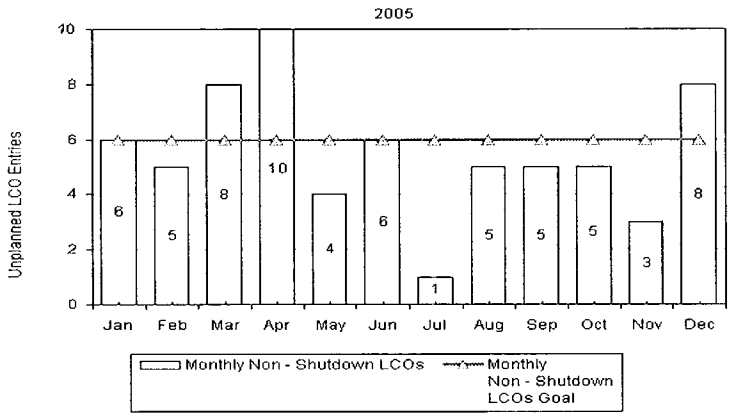
Analysis: For the 1st Quarter 2006, there were ten Unplanned Shutdown LCOs on Unit 2. The goal of two LCOs per month was not met.

Actions: These issues are being addressed in the Corrective Action and Equipment Reliability Programs.



Salem • Hope Creek
GENERATING STATIONS

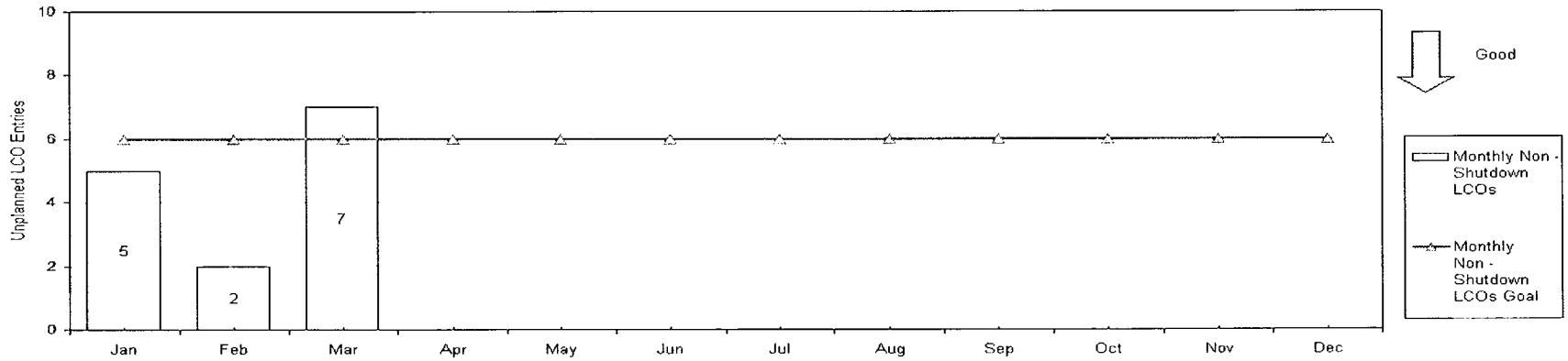
SALEM UNIT 2 UNPLANNED NON-SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES	Updated: Monthly	4Q 2005: G	1Q 2006: G	The number of Unplanned Non-Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.
Chart Owner				
Salem System Engineering Manager		**Goal:**		**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 2, compared to the expected number at top performing nuclear units (less than or equal to 6/month).

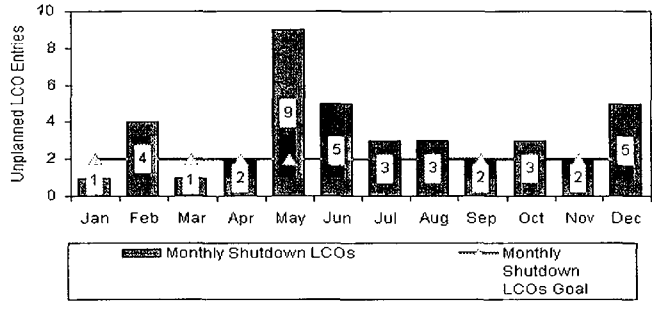
Analysis: For the 1st Quarter, there were a total of 14 Unplanned Non-Shutdown LCOs. While the goal of six per month was not met in March, the overall monthly goal for this Quarter was met.

Actions: Sustain performance at or below goal.



HOPE CREEK UNPLANNED SHUTDOWN LIMITING CONDITION OF OPERATION (LCO) ENTRIES	Updated: Monthly	4Q 2005 / 1Q 2006	The number of Unplanned Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.
Chart Owner			
Hope Creek Site Engineering Director		**Goal:**	**2 per Month**

2005

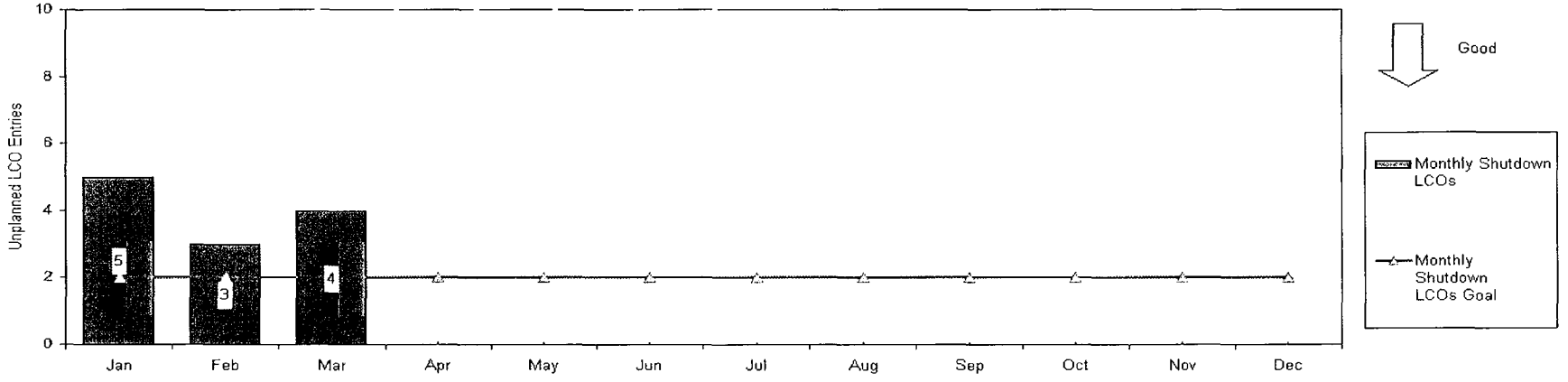


Nuclear plants are operated under a fundamental set of rules from the Nuclear Regulatory Commission (NRC) called Technical Specifications. Certain rules require operators to enter a shutdown LCO, meaning the equipment must be fixed in a defined period of time, or unit shutdown is required. This metric 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

Analysis: For the 1st Quarter of 2006, there were 12 Unplanned Shutdown LCOs. The goal of two LCOs per month was not met.

Actions: These issues are being addressed in the Corrective Action and Equipment Reliability Programs.



Salem Hope Creek
GENERATING STATIONS

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

Updated: Monthly

4Q 2005 | 1Q 2006

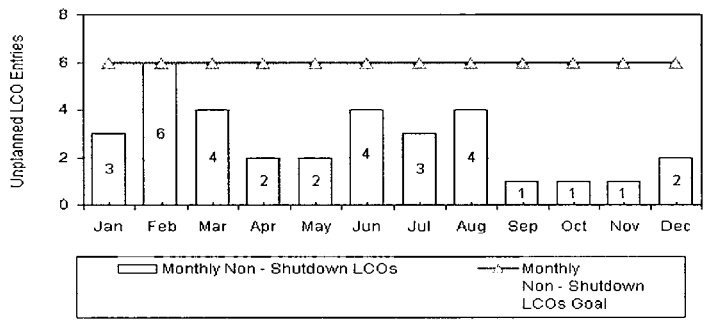
The number of Unplanned Non-Shutdown Technical Specification Limiting Conditions of Operation (LCOs) entered during the month.

Chart Owner

Hope Creek Site Engineering Director

Goal: **6 per Month**

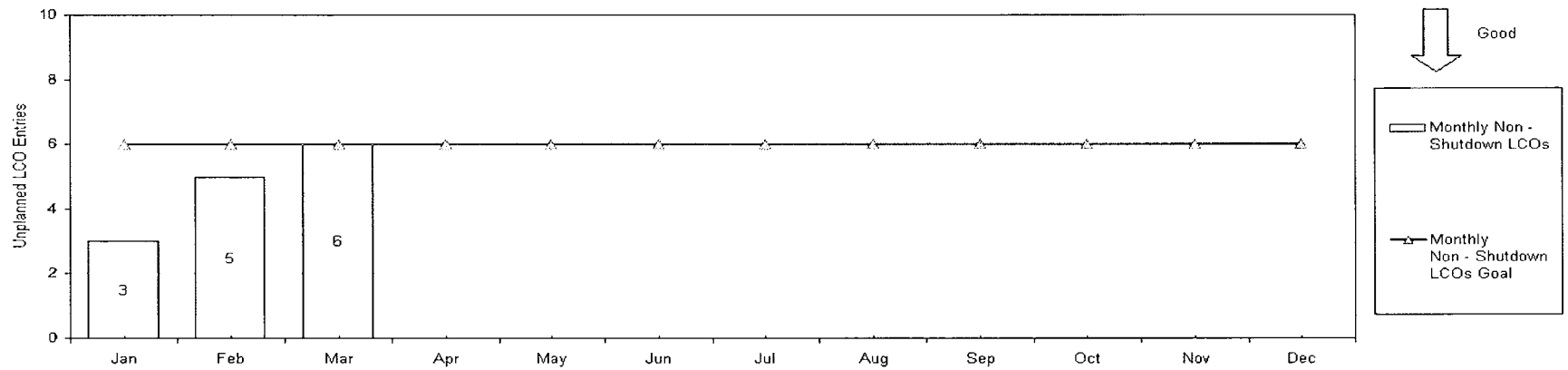
2005



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: For the 1st Quarter there were a total of 14 Unplanned Non-Shutdown LCOs. The goal of six per month was met.

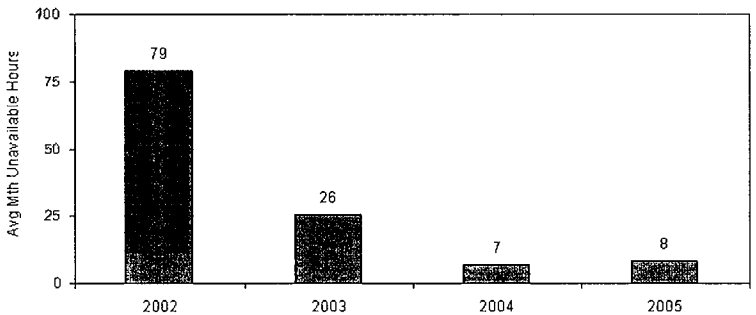
Actions: Sustain performance at or below goal.



Salem Hope Creek GENERATING STATIONS

SALEM UNIT 1 EMERGENCY DIESEL GENERATOR UNAVAILABILITY	Updated: Monthly	4Q 2005: G 1Q 2006: G	The sum of the planned and unplanned hours that the Emergency Diesel Generators were not available.
Chart Owner			
Salem System Engineering Manager		**Goal:**	**21.9 hours per month** (36-month rolling average)

History

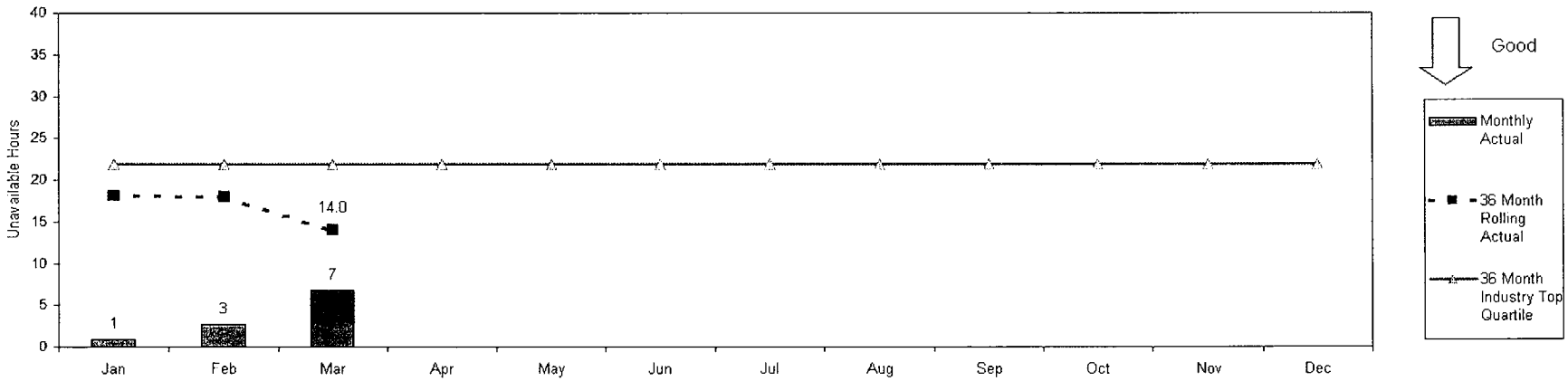


Intent of Metric

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 14.0 hours versus a goal of 21.9 hours on a 36-month rolling average. The Quarterly goal was met as projected.

Actions: Sustain performance at or below goal.



Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 2 EMERGENCY DIESEL GENERATOR UNAVAILABILITY

Updated: Monthly

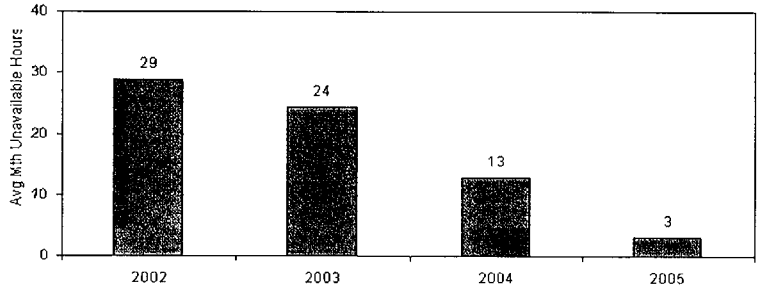
4Q 2005	1Q 2006
G	G

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

Chart Owner

Salem System Engineering Manager

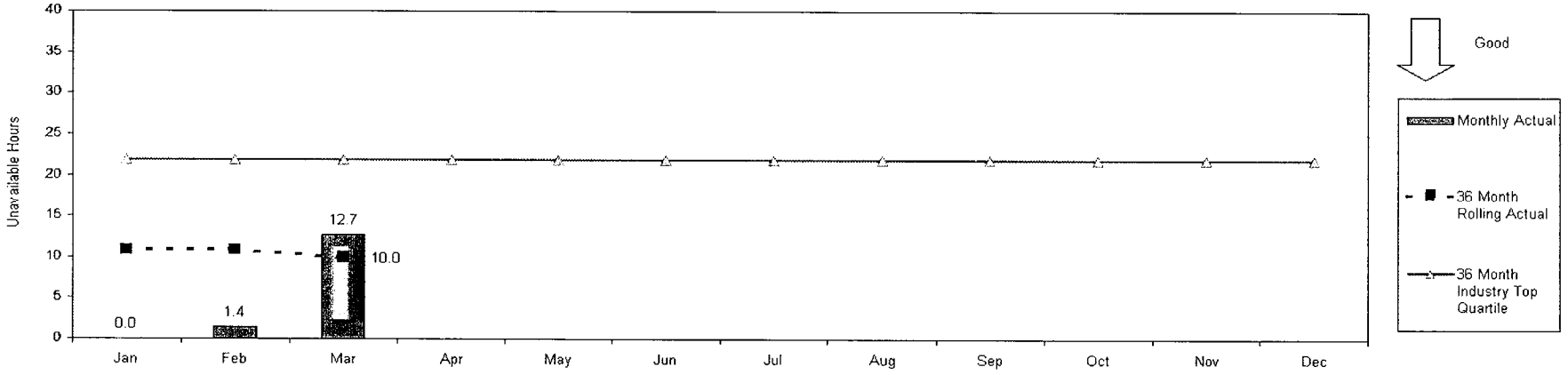
Goal: **21.9 hours per month** (36-month rolling average)



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 2. This is a long-term trend of our performance.

Analysis: Salem Unit 2 Emergency Diesel Generator unavailability was 10.0 hours versus a goal of 21.9 hours on a 36-month rolling average. The Quarterly goal was met as projected.

Actions: Sustain performance at or below goal.



Salem • Hope Creek
GENERATING STATIONS

HOPE CREEK EMERGENCY DIESEL GENERATOR UNAVAILABILITY

Updated: Monthly

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

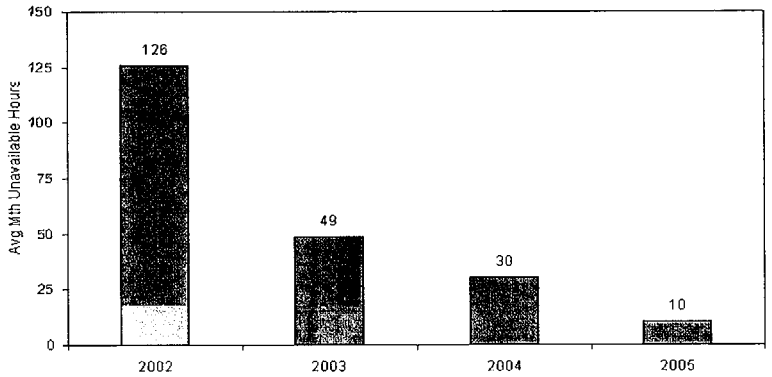
4Q 2005	1Q 2006
R	G

Chart Owner

Hope Creek System Engineering Manager

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

History



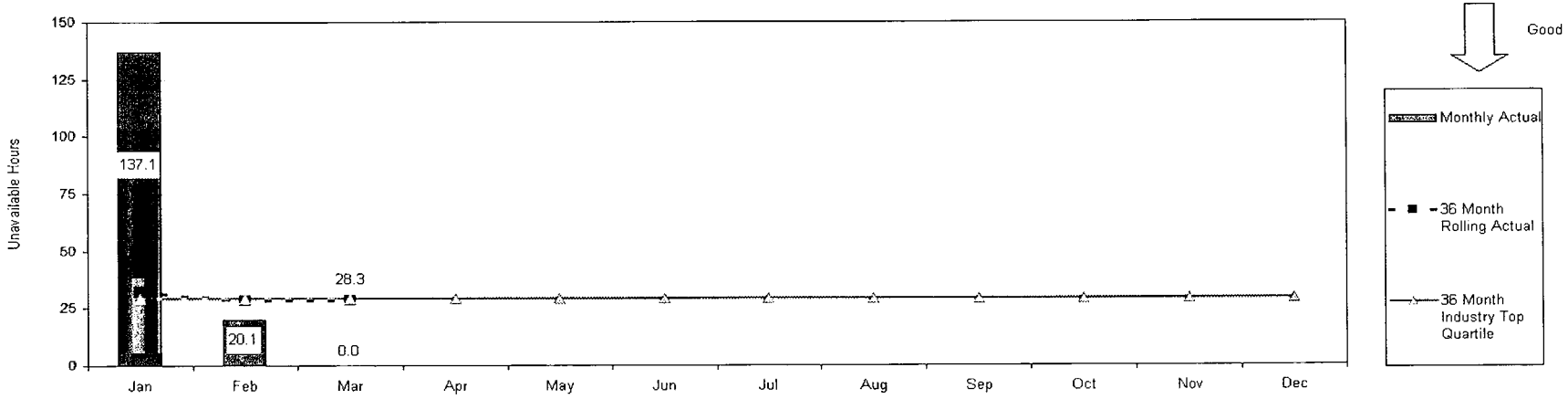
Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the Emergency Diesels are out of service, compared against industry top quartile. The total represents the sum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

Analysis and Actions

Analysis: Hope Creek Emergency Diesel Generator unavailability was 28.3 hours versus a goal of 29.2 hours on a 36-month rolling average. The revised goal was met as projected.

There were no unavailability hours for the month of March. All 1st Quarter unavailability hours occurred in January and February and were the result of planned maintenace windows.

Actions: Continue to maintain a high level of availability.



Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 1 AUXILIARY FEEDWATER SYSTEM UNAVAILABILITY

Updated: Monthly

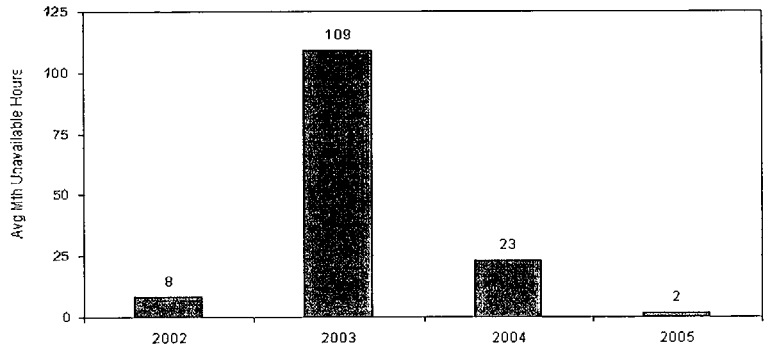
4Q 2005	1Q 2006
R	R

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

Chart Owner

Salem System Engineering Manager

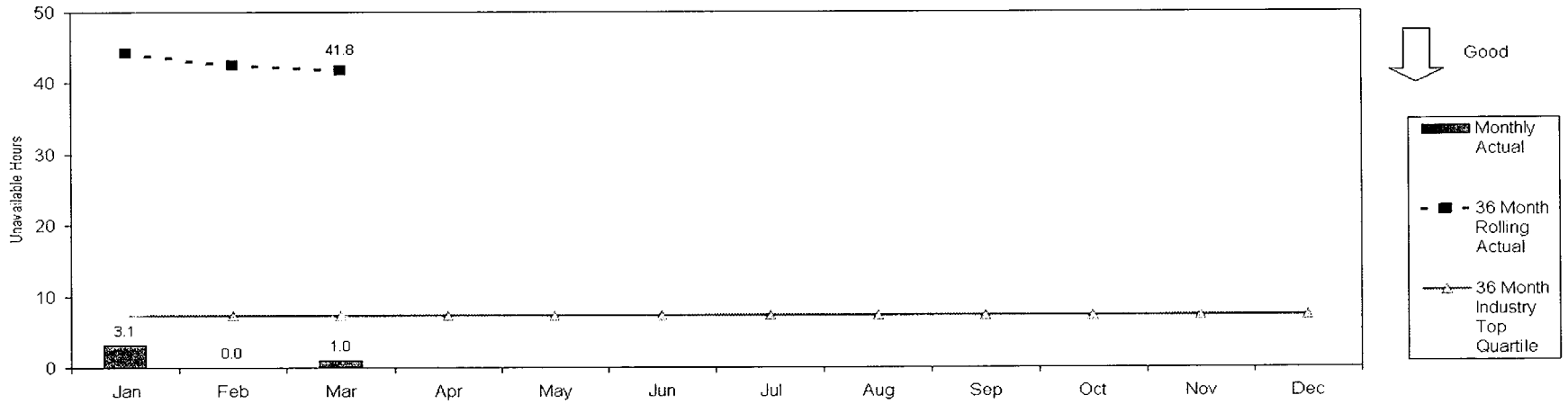
Goal: **7.4 hours per month** (36-month rolling average)



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 41.8 hours versus a goal of 7.4 hours on a 36-month rolling average. The goal was not met this Quarter due to the impact of previous system performance (2003-2004). Top quartile performance will be achieved in March 2007.

Actions: Corrective actions implemented relative to scheduling maintenance during refueling outages will continue to improve system availability.



Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 2 AUXILIARY FEEDWATER SYSTEM UNAVAILABILITY

Updated: Monthly

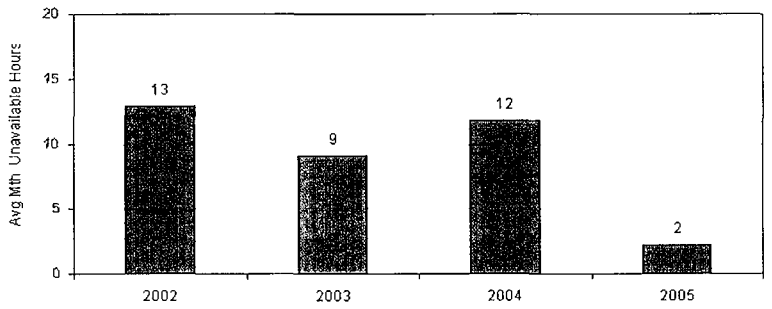
Chart Owner

Salem System Engineering Manager

4Q 2005 | 1Q 2006

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

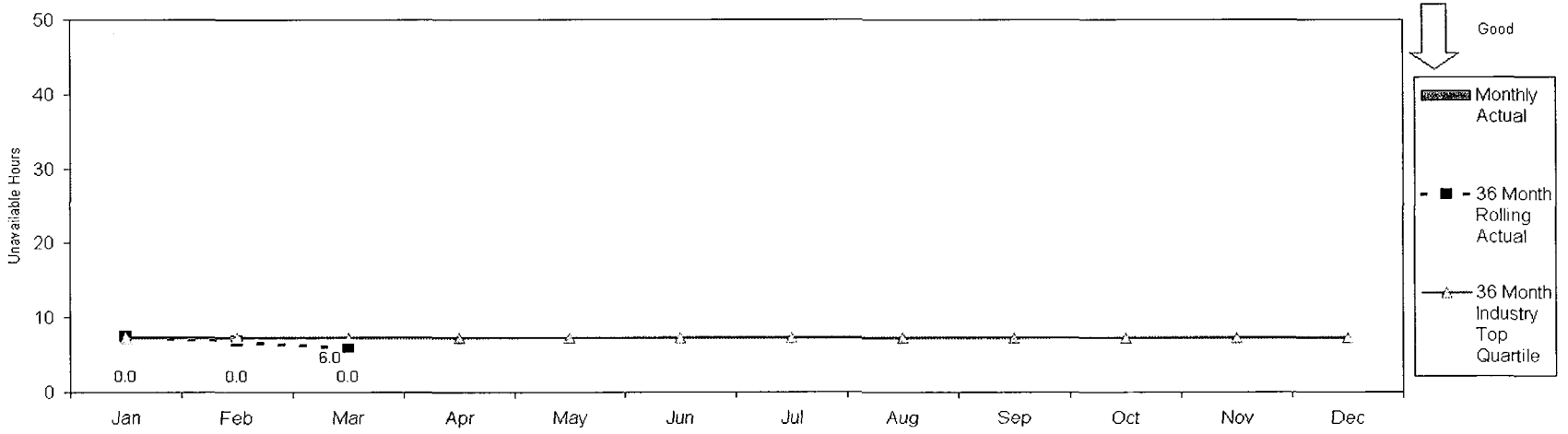
Goal: **7.4 hours per month** (36-month rolling average)



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 6.0 hours versus a goal of 7.4 hours on a 36-month rolling average. The Quarterly goal was met.

Actions: Corrective actions which entail performing scheduled maintenance during refueling outages has improved and continued to maintain system unavailability at optimum hours.



HOPE CREEK RESIDUAL HEAT REMOVAL SYSTEM UNAVAILABILITY

Updated: Monthly

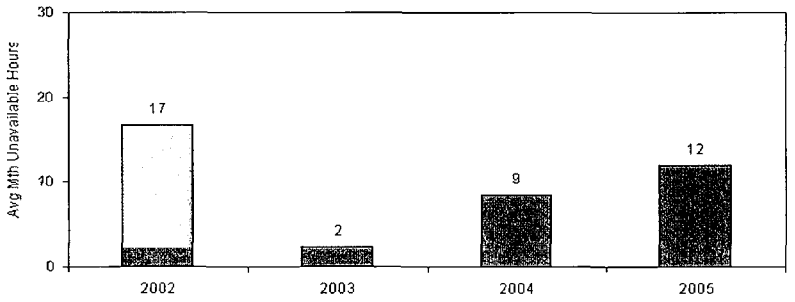
The sum of the planned and unplanned hours that the Residual Heat Removal Systems were not available.

4Q 2005	1Q 2006
G	G

Chart Owner

Hope Creek Site Engineering Director

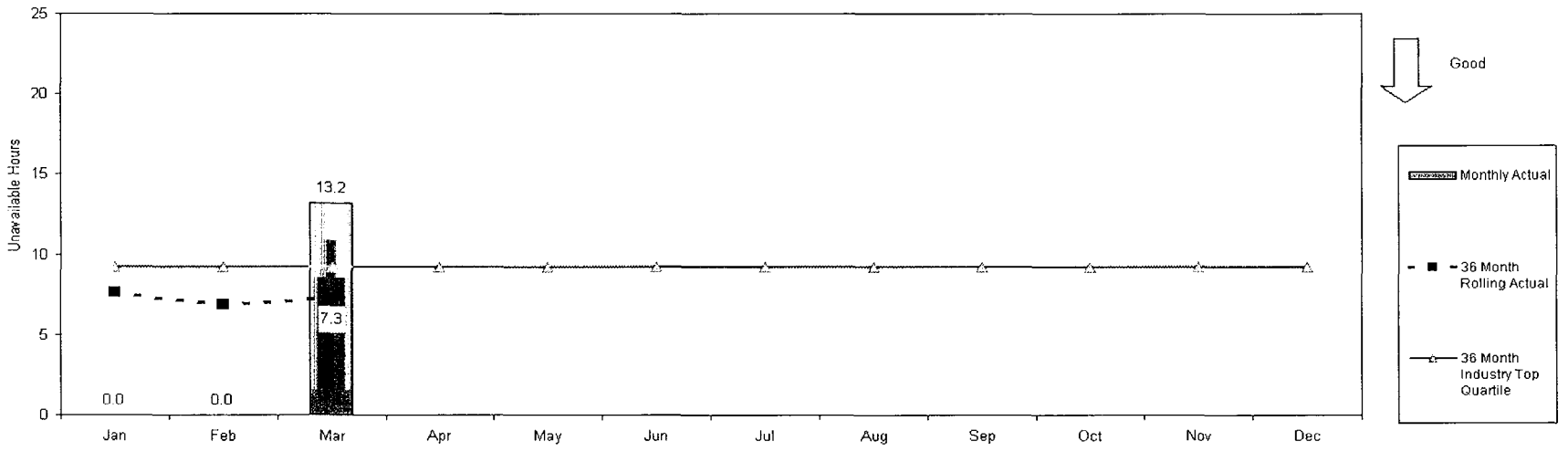
Goal: **9.2 hours per month** (36-month rolling average)



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: RHR System unavailability is meeting its goal. There were zero hours of unavailability during January and February. In March the "A" RHR System incurred 12.5 unavailability hours as a result of a planned pre-outage maintenance window. Unplanned unavailability of 0.7 hours was incurred due to a failure of the BC-F006A valve to close due to failed contacts on the operator pushbutton.

Actions: Continue to maintain a high level of availability.



SALEM UNIT 1 CHEMICAL VOLUME CONTROL AND SAFETY INJECTION SYSTEM UNAVAILABILITY

Updated: Monthly

	4Q 2005	1Q 2006
	R	R

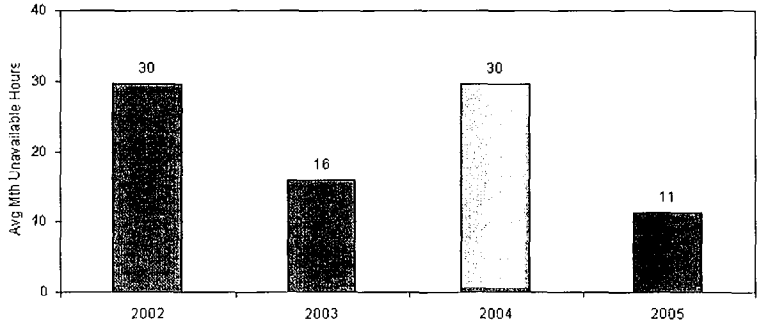
The sum of the planned and unplanned hours that the Chemical Volume Control and Safety Injection Systems were not available.

Chart Owner

Salem System Engineering Manager

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

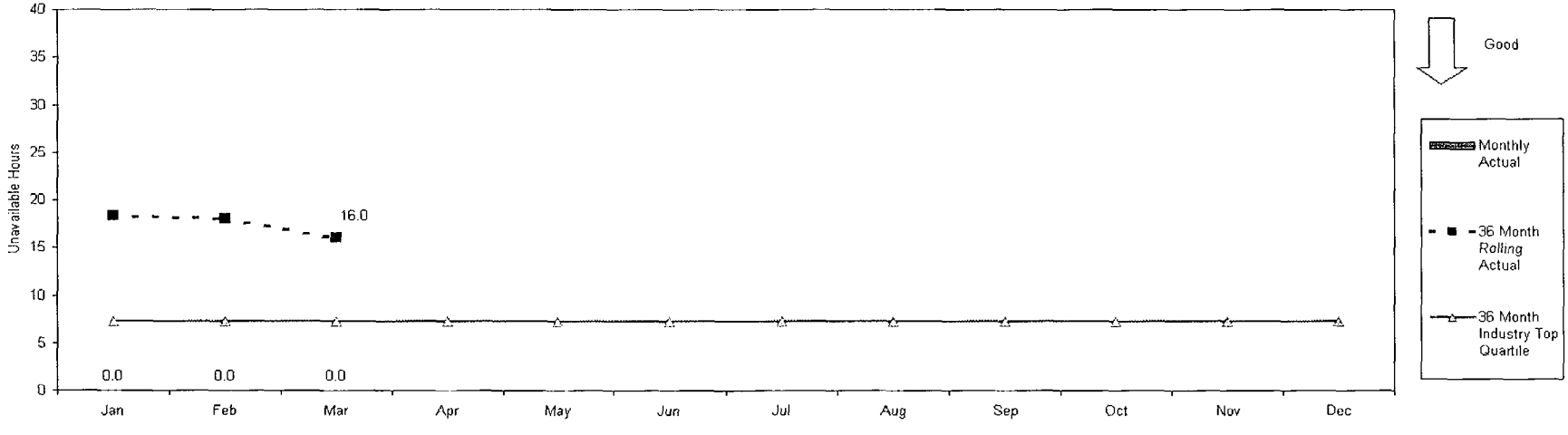
Metric



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 HPSI unavailability was 16.0 hours versus a goal of 7.3 hours on a 36-month rolling average. The goal was not met this Quarter due to the impact of previous system performance. Continuing at the current level of performance, the goal will be met by September 2007.

Actions: Limiting planned maintenance activities to refueling outage windows has resulted in improved CVC/SI system unavailability in 2005 and 2006.



Salem • Hope Creek
GENERATING STATIONS

SALEM UNIT 2 CHEMICAL VOLUME CONTROL AND SAFETY INJECTION SYSTEM UNAVAILABILITY

Updated: Monthly

4Q 2005	1Q 2006
R	R

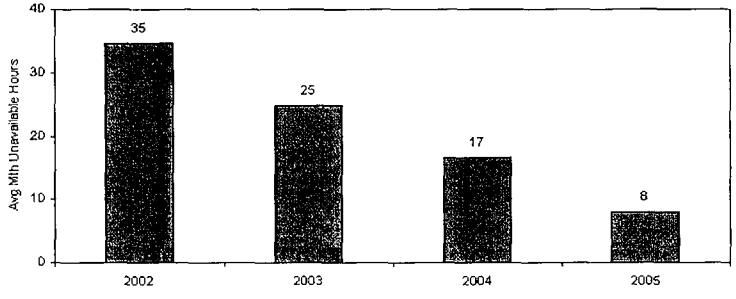
The sum of the planned and unplanned hours that the Chemical Volume Control and Safety Injection Systems were not available.

Chart Owner

Salem System Engineering Manager

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

Intent of Metric

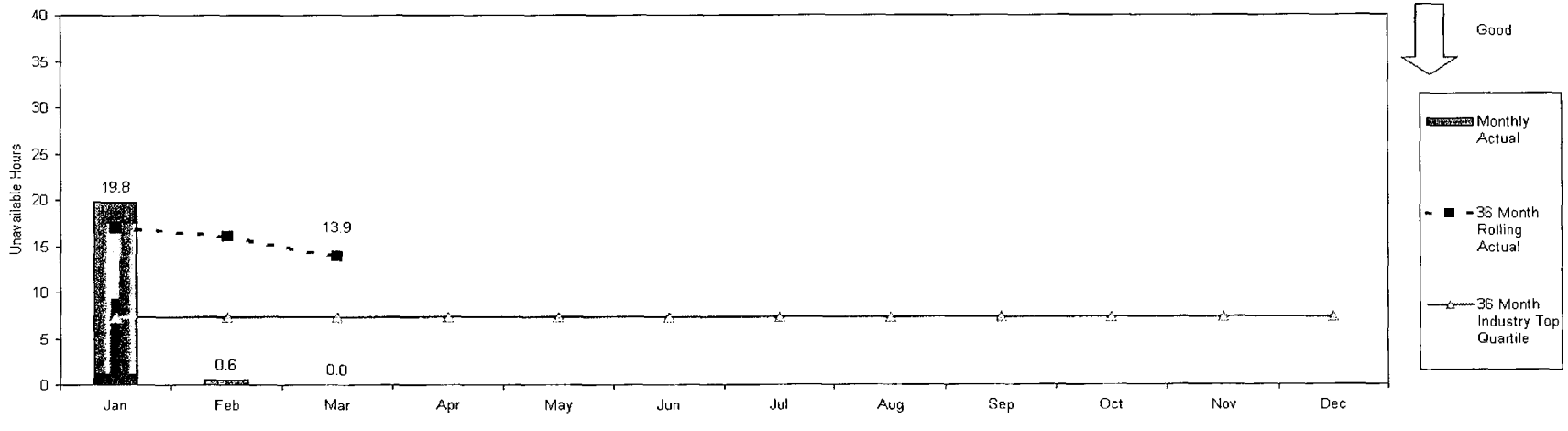


Nuclear plants are designed with a series of redundant safety systems and equipment. This allows equipment to be removed from service for maintenance. This metric monitors the amount of time the Chemical Volume Control and Safety Injection Systems are out of service compared against industry top quartile.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

Analysis / Actions

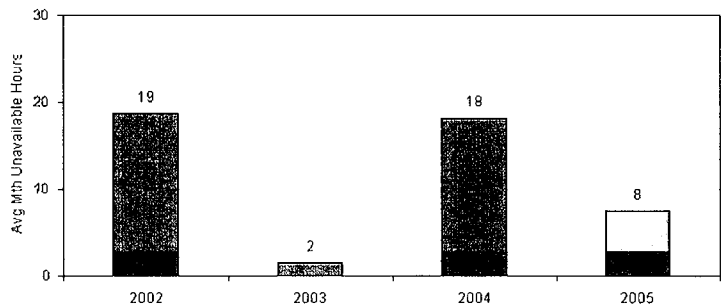
Analysis: The Salem Unit 2 Chemical Volume Control and Safety Injection System unavailability was 13.9 hours versus a goal of 7.3 hours on a 36-month rolling average. The Quarterly goal was not met. Continuing at the current level of performance, the goal will be met by July 2007.

Actions: Minimizing unavailability by limiting on-line maintenance work resulted in improved system availability in 2005. This strategy will continue in 2006.



Salem • Hope Creek GENERATING STATIONS

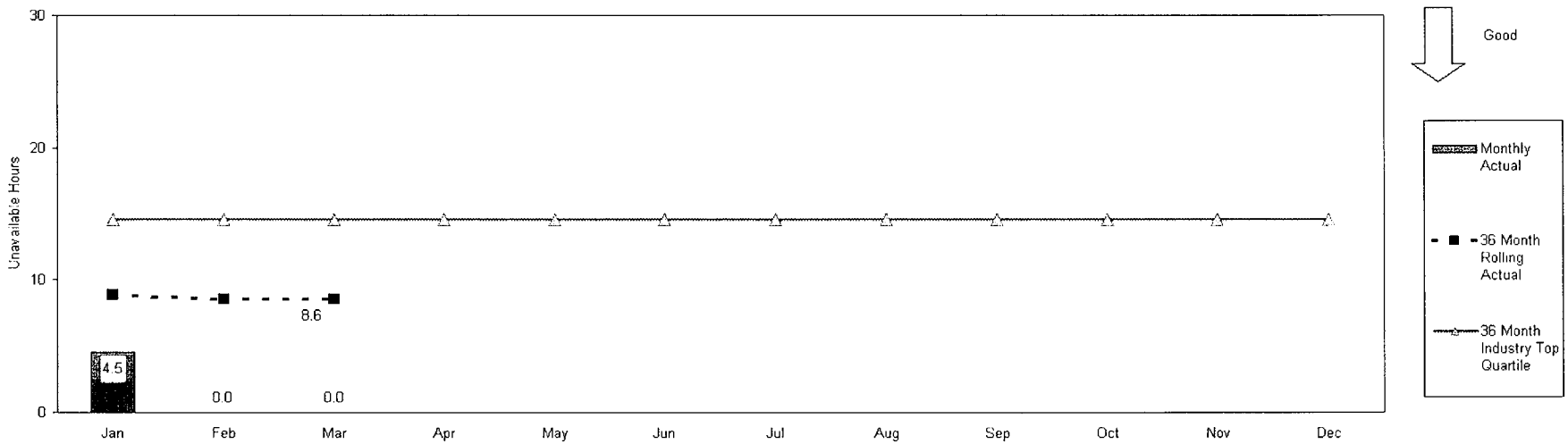
HOPE CREEK HIGH PRESSURE INJECTION AND REACTOR CORE ISOLATION COOLING SYSTEM UNAVAILABILITY	Updated: Monthly	4Q 2005: G 1Q 2006: G	The sum of the planned and unplanned hours that the High Pressure Injection and Reactor Core Isolation Cooling Systems were not available.
Chart Owner			
Hope Creek Site Engineering Director		**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 8.6 hours versus a goal of 14.6 hours on a 36-month rolling average. The goal was met.

Actions: Continue to maintain a high level of availability.



Salem Hope Creek GENERATING STATIONS