CATEGORY 2

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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AUTH.NAME AUTHOR AFFILIATION
MERSCHOFF,E.W. Region 4 (Post 820201)
RECIP.NAME RECIPIENT AFFILIATION
PARRISH,J.V. Washington Public Power Supply System.

See Mtg Summary

SUBJECT: Discusses 980430 meeting w/Util in Arlington,TX re licensee results of performance self-assessment,completed on Oct 1997 & proposed corrective actions.List of attendees & presentation slides encl.

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TITLE: Summary of Significant Meeting with Licensee (Part 50)

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

JUN - 8 1998

Mr. J. V. Parrish (Mail Drop 1023)
Chief Executive Officer
Washington Public Power Supply System
P.O. Box 968
Richland, Washington 99352-0968

SUBJECT: PUBLIC MEETING WITH WASHINGTON PUBLIC POWER SUPPLY SYSTEM ON APRIL 30, 1998

Dear Mr. Parrish:

This refers to the meeting open to public observation conducted on April 30, 1998, at the NRC Region IV office in Arlington, Texas. This meeting was to discuss the performance self-assessment of WNP-2 conducted by Washington Public Power Supply System (Supply System). Attendees at the meeting are listed in Enclosure 1 to this letter.

In the meeting, the Supply System discussed the results of its performance self-assessment, which was completed in October 1997, and the proposed corrective actions. The licensee discussed the overall findings, including the need to maintain management attention to the performance improvement activities. The NRC considered the self-assessment to be a critical evaluation which highlighted areas needing continued management attention. Some areas were repeated from the previous self-assessment. The NRC stated that the keys to further progress and improvement will be tracking and assuring that corrective actions are effectively implemented and maintaining a stable management structure. Included in the meeting was a discussion of the main steam isolation valve closure and reactor scram event of March 11, 1998. The NRC noted that the March 11, 1998, event pointed out the need for improvement in the ability for control room personnel to understand events and transients and to effectively communicate relevant, significant event information to the NRC.

The NRC indicated its intention to transition from the current Oversight Panel process, which has been unique to WNP-2, to an oversight approach consistent with that in place at other Region IV sites warranting increased attention. Specifically, we will continue to hold management meetings at least twice a year, alternating between Arlington and WNP-2, with selected topics that will allow us, over time, to explore a number of topics in some depth. This process is chaired by the Region IV Reactor Projects Branch Chief and involves the Headquarters and Regional Managers with responsibility for oversight of WNP-2. To provide a more meaningful dialogue during these meetings, the NRC plans to conduct a review inspection in the specific area of emphasis prior to the meeting.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter will be placed in the NRC's Public Document Room.

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

Ellis W. Merschoff
Regional Administrator

Docket No.: 50-397
License No.: NPF-21

Enclosures:
1. Attendance List
2. Presentation Slides

cc w/enclosures:
Chairman
Energy Facility Site Evaluation Council
P.O. Box 43172
Olympia, Washington 98504-3172

Mr. Rodney L. Webring (Mail Drop PE08)
Vice President, Operations Support/PIO
Washington Public Power Supply System
P.O. Box 968
Richland, Washington 99352-0968

Mr. Greg O. Smith (Mail Drop 927M)
WNP-2 Plant General Manager
Washington Public Power Supply System
P.O. Box 968
Richland, Washington 99352-0968

Mr. Douglas Coleman (Mail Drop PE20)
Acting Manager, Regulatory Affairs
Washington Public Power Supply System
P.O. Box 968
Richland, Washington 99352-0968

Mr. Albert E. Mouncer (Mail Drop 396)
Chief Counsel
Washington Public Power Supply System
P.O. Box 968
Richland, Washington 99352-0968

Mr. Paul Inserra (Mail Drop PE20)
Manager, Licensing
Washington Public Power Supply System
P.O. Box 968
Richland, Washington 99352-0968

Perry D. Robinson, Esq.
Winston & Strawn
1400 L Street, N.W.
Washington, D.C. 20005-3502

bcc to DCD (IE45)

bcc distrib. by RIV w/o presentation slides:
Regional Administrator
Resident Inspector
Branch Chief (DRP/E, WCFO)
MIS System
Branch Chief (DRP/TSS)
W. Bateman, NRR (MS: 13E16)
C. Poslusny, NRR (MS: 13E16)
D. Chamberlain, DRS
S. Boynton, SRI:WNP-2
W. Jones, DRS

bcc w/presentation slides:
DRS-PSB
DRP Director
WCFO File
RIV File
B. Henderson, PAO

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5/18/98	5/15/98	6/4/98	6/3/98 * email	6/4/98
RA				
EWMerschoff				
6/8/98				

*previously concurred

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RA
EWMerschoff
6/8/98

*previously concurred

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Enclosure 1

NRC/WASHINGTON PUBLIC POWER SUPPLY SYSTEM
OVERSIGHT PANEL MEETING ATTENDEES
APRIL 30, 1998

NRC

E. Merschoff, Regional Administrator
K. Perkins, Director, Walnut Creek Field Office
D. Chamberlain, Deputy Director, Division of Reactor Safety
W. Bateman, Project Director, PD IV-2, NRR
H. Wong, Chief, Reactor Projects Branch E
C. Poslusny, Project Manager
S. Boynton, Senior Resident Inspector
J. Pellet, Chief, Operations Branch, Division of Reactor Safety
W. Jones, Senior Reactor Analyst
T. McKernon, Reactor Engineer, Operations Branch

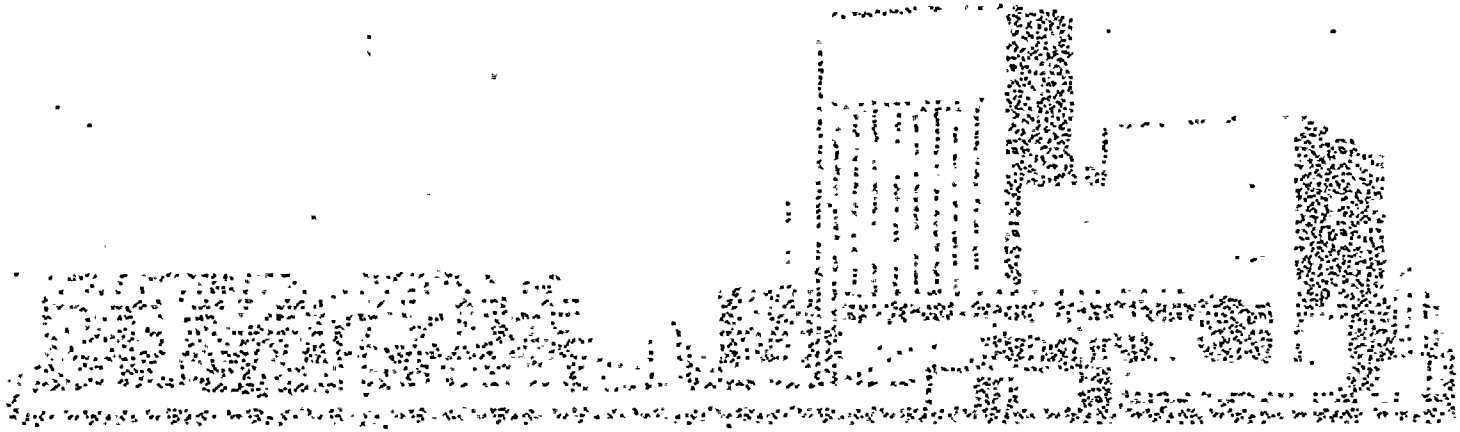
Washington Public Power Supply System

R. Webring, Vice President Nuclear Operations Support/Public Information Officer
P. Bemis, Vice President Nuclear Operations
A. Mouncer, Chief Counsel
G. Smith, Plant General Manager
J. Kane, Acting Engineering General Manager
D. Atkinson, Quality Manager
D. Hillyer, Radiation Protection Manager
W. Oxenford, Operations Manager
J. McDonald, Planning, Scheduling, and Outage Manager
D. Coleman, Regulatory Affairs Manager
J. Holder, Program Manager, Special Projects
J. Engbarth, Self Assessment Program Manager
D. Strote, Control Room Supervisor
B. Gardes, Shift Technical Advisor

Others
D. Williams, Nuclear Engineer, Bonneville Power Administration

ENCL[illegible]E 2

WNP-2 PERFORMANCE SELF ASSESSMENT



1997

9806150081

WNP-2

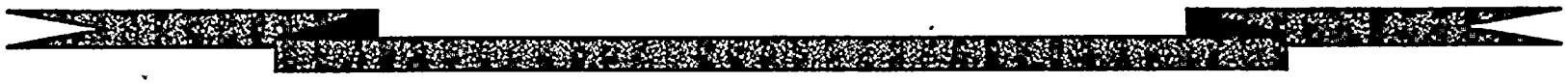
PERFORMANCE SELF ASSESSMENT - 1997

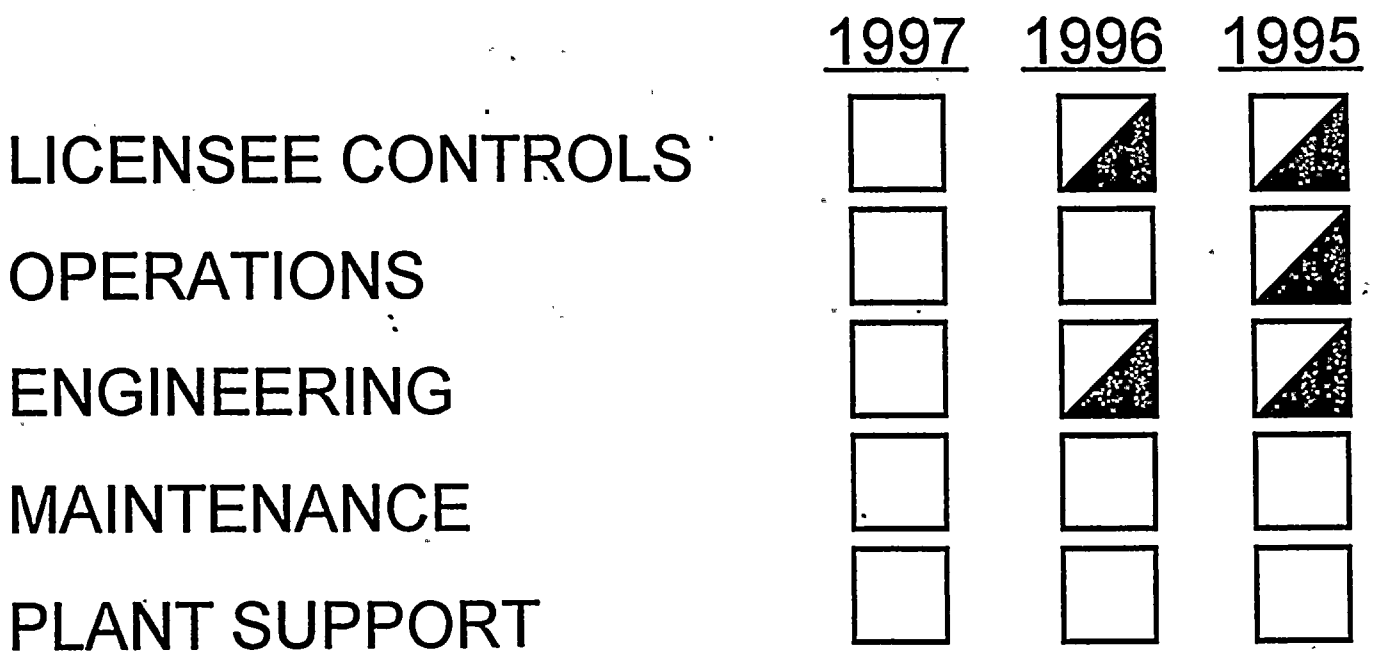
AGENDA

❖Opening Remarks	NRC/Rod Webring	0800
❖Licensee Controls/Quality	Dale Atkinson	0810
❖Planning/Scheduling/Outage	John McDonald	0830
❖Engineering	Jerry Kane	0850
❖Radiation Protection	Dave Hillyer	0910
❖Operations/Mgmt. Meeting	Scott Oxenford	0940
❖Closing Remarks	Paul Bemis	1100
❖Adjourn	NRC	1110

WNP-2

PERFORMANCE SELF ASSESSMENT - 1997





What WNP-2 Faced In 1993

- Management Team Lacked Clear Direction
- Personnel Living with Mediocre Performance
  - Lack of Ownership & Accountability
  - Accepted Low Performance Standards
- Corrective Action Program Not Fully Effective
- Many Processes Were Cumbersome
- Engineering Quality Mixed
- Operations Leadership Lacking
- Material Condition of Plant Needed Improvement

Our Approach To Achieve Success

- Employed a "Turn-Around" Philosophy
  - Established Higher Standards & Expectations
  - Held People Accountable
  - Emphasized Training
  - Sought to Make Self-Critical Behavior a Permanent Part of Our Culture

- The PSA Became a Key Tool

New Management Team Focused On Five "Ps"

- Plant -- Material Condition (*e.g.*, CEP/CSP valves, Inlet/Outlet Condenser Valves, Painting and Shielding Program)
- Process, Procedures & Programs
  - Administrative Procedures
    - Improved Technical Specifications
    - FSAR Upgrade
  - Corrective Action Process
  - Work Management Control Process
  - Self-Assessment Program
- People (*i.e.*, human performance)
  - Management/Supervisor Skills
  - Personal Accountability

Where Are We Today?

- We Have Shown Steady Progress
- Our Performance Trend Is In the Right Direction
- We Are More Self-Critical

Overall Summary

- We Stayed the Course and Are Making Progress
- Senior Management Team Is Dedicated to the Long-Term Succcess of WNP-2
- We Know What It Takes To Be An Excellent Performer
- We Know We Have Further To Go

Licensee Controls/Quality

Improvement Strategy

Dale Atkinson
Quality Manager

Licensee Controls Ratings

Licensee Controls	1997	1996	1995
Problem Identification			
Root Cause Analysis			
Trending & Evaluation			
Corrective Action Sys.			

Quality Ratings

Quality	1997	1996	1995
Safety Focus	☐	☐	NA
Management Involvement	☐	◪	NA
Problem Identification	☐	☐	NA
Problem Resolution	☐	☐	NA
Quality of Work	☐	◪	NA
Programs & Procedures	◪	☐	NA

Areas Identified in PSA

- Corrective Action Program
- Self-Assessment Program
- Audit Schedule

Corrective Action Program

- Issues
  - Hesitance to initiate PERs
  - Inconsistent root cause analysis
  - Ineffective corrective actions
  - Backlog of corrective actions
  - Number of C/As for each PER too high

Corrective Action Program (cont)

Actions

- Conducted meeting with Plant management facilitated by consultant (PII)
- Developed vision of future program
- Established sub-committee to develop a plan for improvement which implements management team's vision

Corrective Action Program (cont)

- Vision
  - Select group of experts for RCA
  - Simplified initiation process
  - Simplified disposition of non-significant PERs
  - Fewer Significant PERs
  - Improved coding options for better trending
  - Focused monitoring and trending

Corrective Action Program (cont)

- Vision (cont)
  - Fewer corrective actions for each PER - 1.5 on average
  - Timely C/A implementation - site-wide prioritization and fewer corrective actions
  - Increase Quality evaluation of corrective action effectiveness and trending
  - Reduction in errors and repeats

Self-Assessment Program

Issues

- Inconsistent management commitment and support
- Lack of formal approach to conduct and documentation of assessments (specifically 1996 PSA)
- Lack of traceability of follow through on items
- Limited oversight by Quality

Self-Assessment Program (cont)

Actions

- Established sub-committee to track corrective actions associated with 1997 Performance Self Assessment
- Placed all corrective actions from 1997 Performance Self Assessment on PTL in self-assessment field and evaluate as part of quarterly assessment of program

Self-Assessment Program (cont)

- Actions (cont)
  - Conducted Self-Assessment Training for department managers in Nuclear, Support and Finance organizations
  - Established Program Manager position as full time

Self-Assessment Program (cont)

Actions (cont)

- Drafted and distributed letter from VPs detailing expectations for self-assessment activities

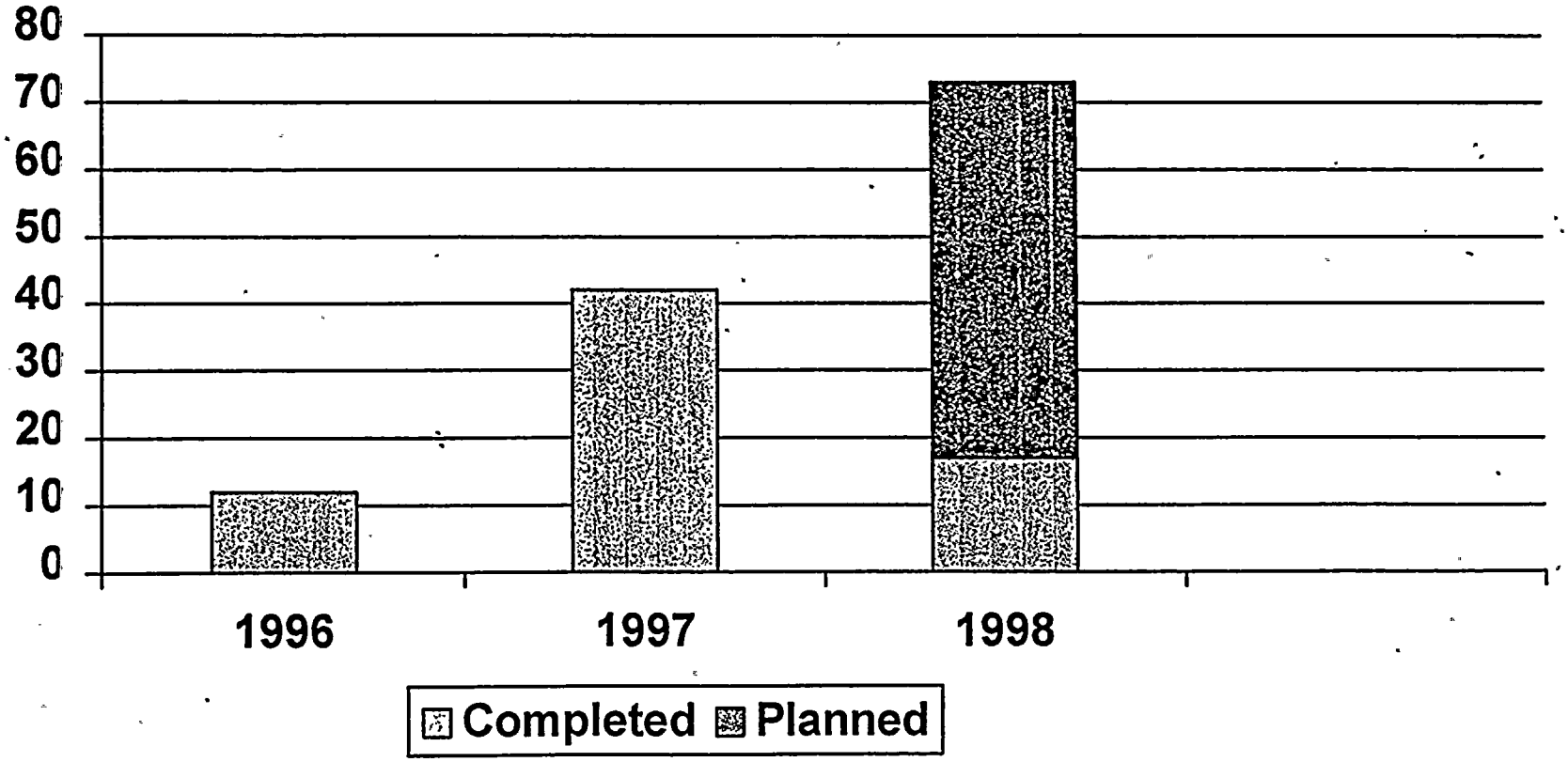
- Developed tracking mechanism to ensure assessment corrective actions are traceable

Self-Assessment Program (cont)

Actions Completed Prior to PSA

- Established centralized tracking system for scheduling, tracking, reviewing and filing of self assessments
- Developed a detailed instruction which provides guidance for both small- and large-scale assessments

Self Assessments



Audit Schedule

Issue

Performance of wrap-up surveillance to ensure 10CFR50, Appendix B and ANSI N18.7 criteria were met

Action

Assess the Quality Function

- Six additional audits added to the bi-annual schedule
- Revised procedure to ensure linkage between critical elements and findings

Work Management

Improvement Strategy

John McDonald

Planning/Scheduling/Outage Mgr.

Work Management Ratings

Work Management	1997	1996	1995
Safety Focus	☐	☐	NA
Management Involvement	◪	◪	NA
Problem Identification	◪	☐	NA
Problem Resolution	■	◪	NA
Quality of Work	◪	◪	NA
Programs & Procedures	◪	◪	NA

Areas Identified in PSA

- Issues
  - Schedule accountability
  - Problem resolution
  - Passport

Schedule Accountability

- Issues
  - High work order backlog and extended out-of-service time
  - Accountability not established or enforced
  - Management by committee resulting in complex process

Schedule Accountability (Cont)

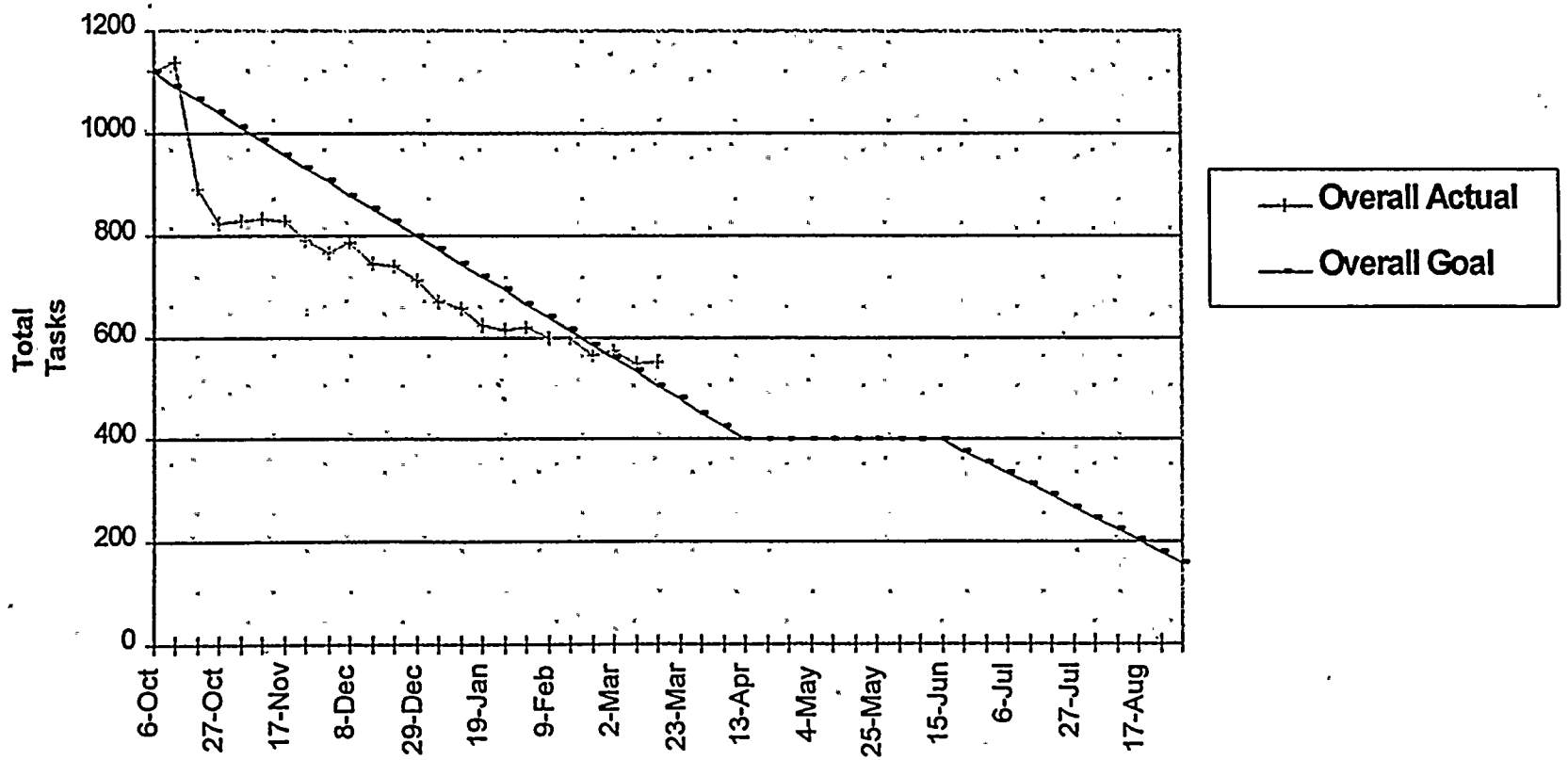
- Actions
  - Establish expectations
  - Establish performance indicators

Schedule Accountability(Cont)

Actions (Cont)

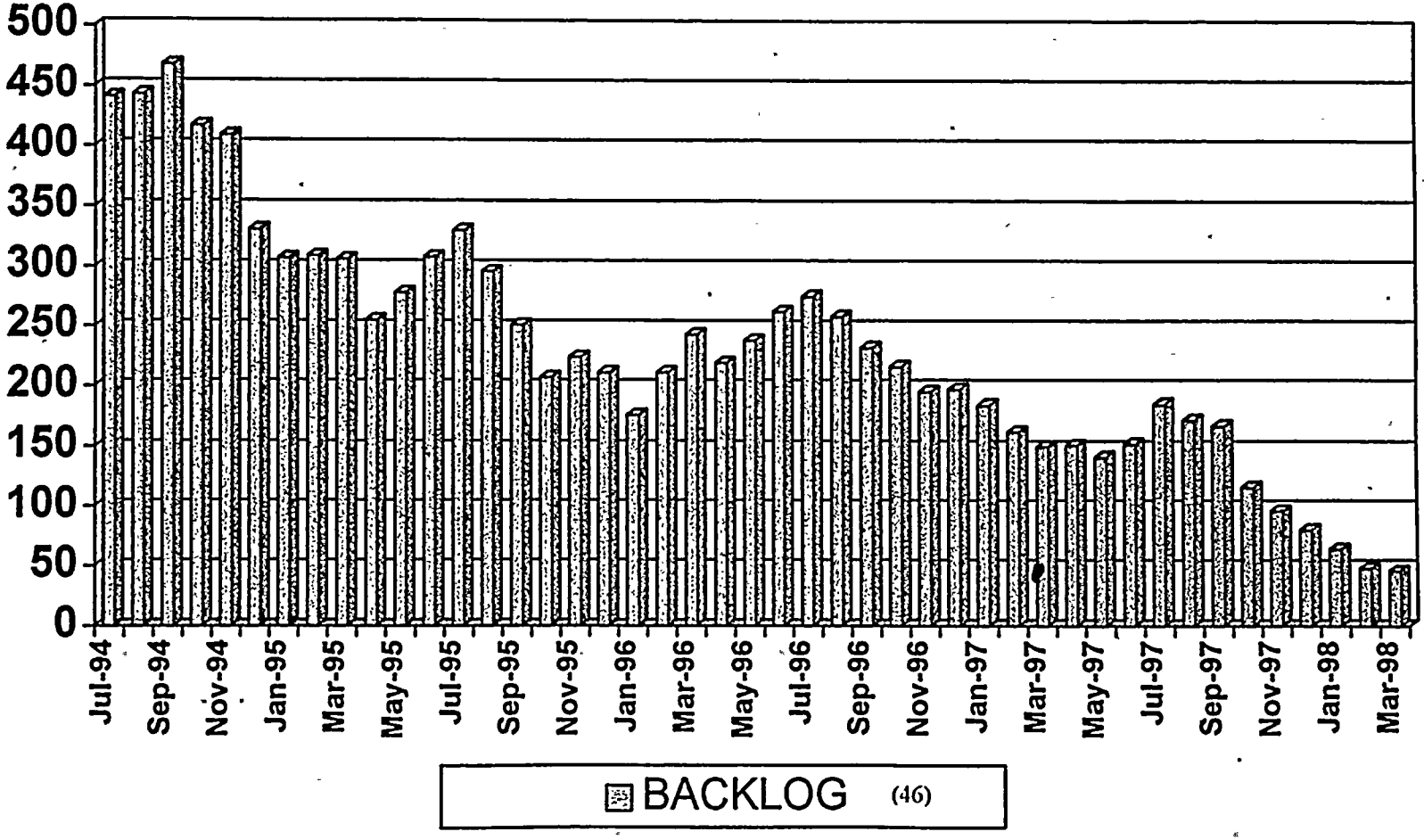
- Reorganize work management organization into teams
  - Implements 1995 recommendation
  - Builds on success of WIN/FIN
  - Establish clear accountability for teams
  - Coordinate work implementation resources through one person
  - Align teams with maintenance crews

CYCLE 13
MAINTENANCE BACKLOG REDUCTION
Electrical/I&C/Mechanical



OPEN WORK ORDERS

AFFECTING COMPONENT PERFORMANCE (NON-OUTAGE)



Schedule Accountability Action Matrix

Issues	Action: Establish Expectations	Action: Establish PIs	Action: Reorganize to Teams
High Backlog OOS Time	X	X	X
Accountability	X	X	X
Mgmt by Committee	X		X

Problem Resolution

- Issues
  - Failure to identify work process problems
  - Management involvement not evident
  - Passport speed and workarounds

Problem Resolution(Cont)

Actions

- Initiate PERs for significant (> 4 hour) schedule delays and established process indicators
  - Improved problem identification
  - Increased management involvement
  - Increased emphasis on schedule accountability
  - Increased supervisory involvement
  - Increased communication between groups
  - Better trending capability

Passport

- Issues
  - Inadequate Change Management
  - Inadequate Training
  - System Speed
  - Management Involvement

Passport (cont)

Actions

- Created Passport Plant leadership position
- Developed Baseline 6.1 implementation schedule
- Developed communication plan
- Created Passport training position
- Developed prioritized work list
- Conducted formal self assessments (4)

Work Management Vision

- An efficient process results in a safe, reliable Plant
- Upper quartile corrective maintenance backlog
- > 90% Schedule Adherence
- Multi-discipline/functional work teams
- Reduced planning
- Shorter cycle time (12 to 8 weeks)
- Outage milestones met
- Schedule high station priority
- Thirty (30) day outage

Work Management
Issue/Action Matrix

Issue	Issue PERs	Team Reorg	Establish Perf Indicators	Passport Actions	Succession Plan Developed	Self Assessments	Complete Staffing
Management Involvement	X		X			X	
Performance Indicators		X					
Work Process Problems	X	X	X	X		X	
Passport	X		X	X		X	
Planning Issues		X	X	X	X		X
Succession Plan						X	
Integration with Maintenance	X						
Outage Staffing							X
CORC			X	X		X	X

OUTAGE PERFORMANCE

OBJECTIVE: To measure overall station performance in preparation and execution of the annual refueling outages.

DEFINITION: Outage Performance is a measure of key outage preparation milestone completion and actual outage performance versus the schedule. Key Outage Performance milestones are the approval and completion of modifications, planning, clearance orders and walkdowns.

Month	Modifications (Approved)	Planning (Status 25)	Clearance Orders (Status 30)	Walkdowns Completed	Outage Performance	
JANUARY	> 90%	> 90%	> 90%	> 60%	Not Applicable	Green
				> 50%		White
				> 40%		Yellow
	< 90%	< 90%	< 90%	< 40%		Red
FEBRUARY	> 90%	> 90%	> 90%	> 90%	Not Applicable	Green
				> 80%		White
				> 70%		Yellow
	< 90%	< 90%	< 90%	< 70%		Red
MARCH	> 90%	> 90%	> 90%	> 90%	Not Applicable	Green
						White
						Yellow
	< 90%	< 90%	< 90%	< 70%		Red

Modifications (Approved)	Planning (Status 25)	Clearance Orders (Status 30)	Walkdowns Completed	Outage Performance
85%	95%	78%	51%	N/A

WNP-2 DAILY SCHEDULING PROCESS INDICATORS

Report Date_____

INDICATOR	X-6	X-5	X-4	X-3	X-2	X-1	X-0
Work Week Teams	Team 1	Team 2	Team 3	Team 4	Team 1	Team 2	Team 3
Week Beginning	02-02-98	01-26-98	01-19-98	01-12-98	01-05-98	12-29-97	12-22-97
(1) Planning Complete							
(2) Engineering Hold							
(3) Clearance Reviewed							
(4) Tech Staff PMT Review							
(5) RWP Prepared							
(6) Walkdowns Complete							
(7) Parts Hold							
(8) Ready Status (45)							
(9) Implm Sched Effectiveness							

LEGEND

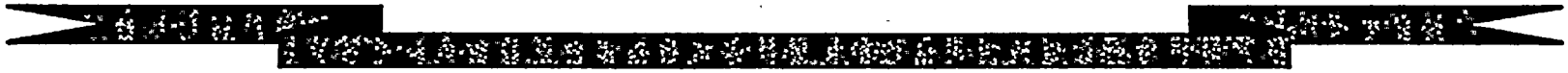
	GREEN	WHITE	YELLOW		DATA UNAVAILABLE
(1) Planning Complete	≥ 99%	95% - 99%	90% - 94%		
(2) Engineering Hold	≥ 99%	95% - 99%	90% - 94%		
(3) Clearance Reviewed	≥ 99%	95% - 99%	90% - 94%		
(4) Tech Staff PMT Review	≥ 99%	95% - 99%	90% - 94%		
(5) RWP Prepared	≥ 99%	95% - 99%	90% - 94%		
(6) Walkdowns Complete	≥ 99%	95% - 99%	90% - 94%		
(7) Parts Hold	≥ 99%	95% - 99%	90% - 94%		
(8) Ready Status (45)	≥ 95%	95% - 90%	89% - 85%		
(9) Implm Sched Effectiveness	≥ 95%	95% - 90%	89% - 85%		

Engineering

Improvement Strategy

Jerry Kane
Engineering General Mgr.

Engineering Ratings



Engineering	1997	1996	1995
Safety Focus			
Management Involvement			
Problem Identification			
Problem Resolution			
Understanding Design			
Quality of Engineering			
Programs and Procedures			

Areas Identified in PSA

- Engineering Backlog
- Work Product Consistency
- Design Basis Knowledge

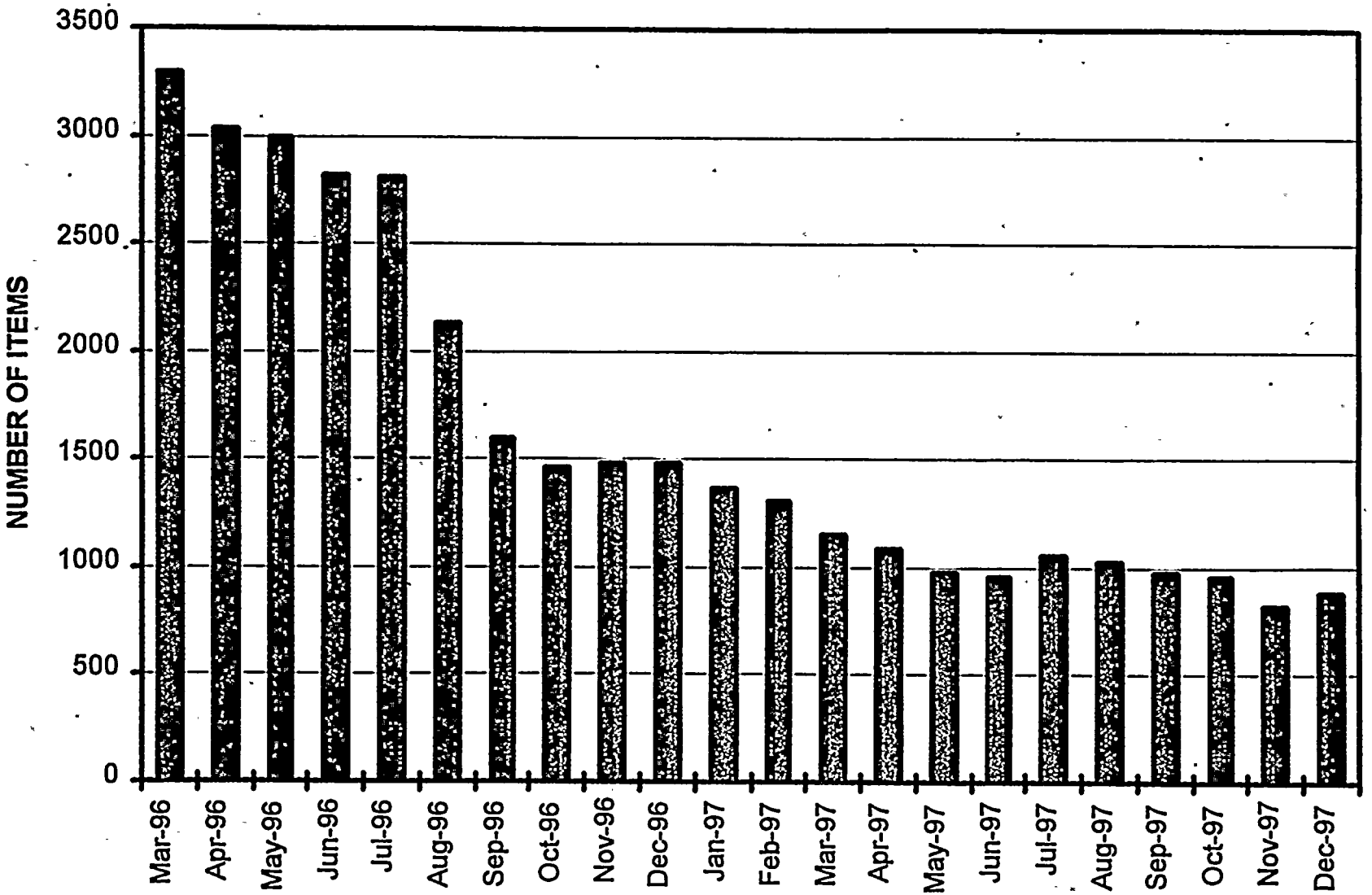
Engineering Backlog

- Issues
  - Engineering backlog higher than station goals
  - Number of outstanding drawing changes
  - Number of calculations with more than five CMRs
  - Emergent work

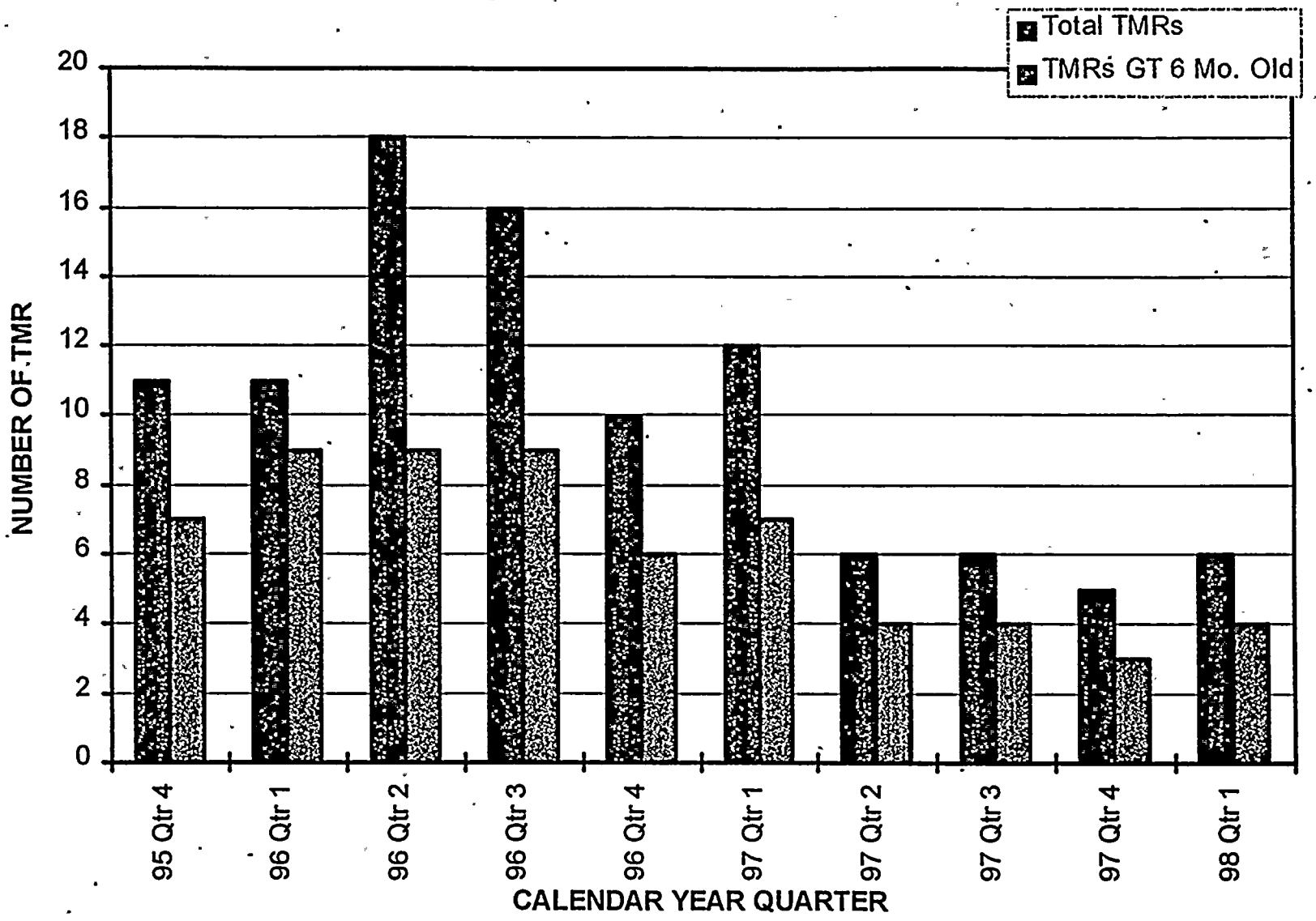
Engineering Backlog (cont)

- Actions
  - Continue management focus
  - Augment staff to reduce outstanding drawing and calculation change backlog
  - Implement work management system
  - Extend system improvement plan to five years and beyond

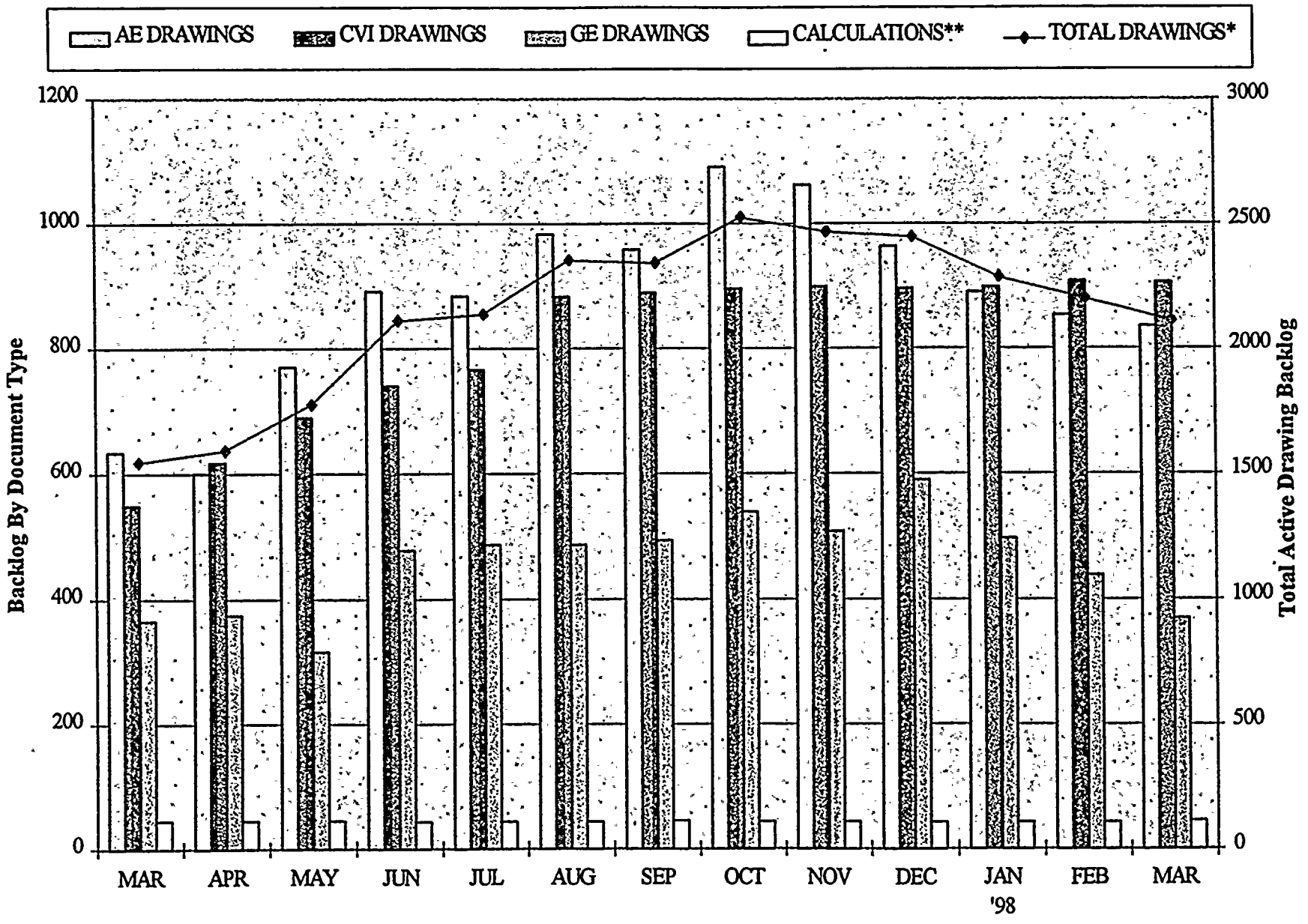
Engineering Backlog



Number of Installed TMRs



Drawing/Calculation Backlog



Work Product Consistency

- Issues
  - Operability determinations
  - Safety evaluations
  - Design changes
  - License submittals

Work Product Consistency (cont)

- Actions
  - Establish higher quality measurement criteria
  - Trend and track performance
  - Formalize feedback process

Design Basis Knowledge

- Issues
  - Attrition of key personnel
  - Design basis retrieval
  - Design basis training and mentoring

Design Basis Knowledge (cont)

Actions

- Prepare DRDs on topical issues
- Prepare design and license basis user's guide
- Hire and train new engineers
- Adjust engineering personnel salaries to compete with market
- Implement FSAR upgrade project

Engineering Vision

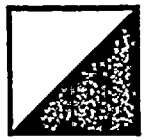
- Be a safety conscience for the Plant
- Maintain alignment with the Plant
- Be responsive to Plant issues
- Develop high-quality engineering products
- Improve application of design basis knowledge
- Reduce engineering backlog
- Implement effective long-range planning

Radiation Protection

Improvement Strategy

Dave Hillyer
Radiation Protection Mgr.

Radiation Protection Ratings



Radiation Protection	1997	1996	1995
Safety Focus			NA
Management Involvement			NA
Problem Identification			NA
Problem Resolution			NA
Quality of Work			NA
Programs & Procedures			NA

Areas Identified in PSA

- Ineffective Radiological Program Implementation
- Ineffective Use of Corrective Action Program
- Lack of Effective Performance Monitoring

Ineffective Radiological Program Implementation

- Issues
  - RP personnel awareness of Plant conditions
  - Supervisory personnel oversight work in the field
  - Incidents of radiation area signs down, high-rad doors unlocked and inadequate posting of areas

Ineffective Radiological Program Implementation (cont)

- Issues (cont)
  - Container labeling
  - Lack of awareness of radiation exposure goals

Ineffective Radiological Program Implementation (cont)

- Actions
  - Improve rad worker awareness of radiological conditions
  - Facilitate increased supervisory oversight of radiological work
  - Increase focus on collective and departmental radiation exposure goals

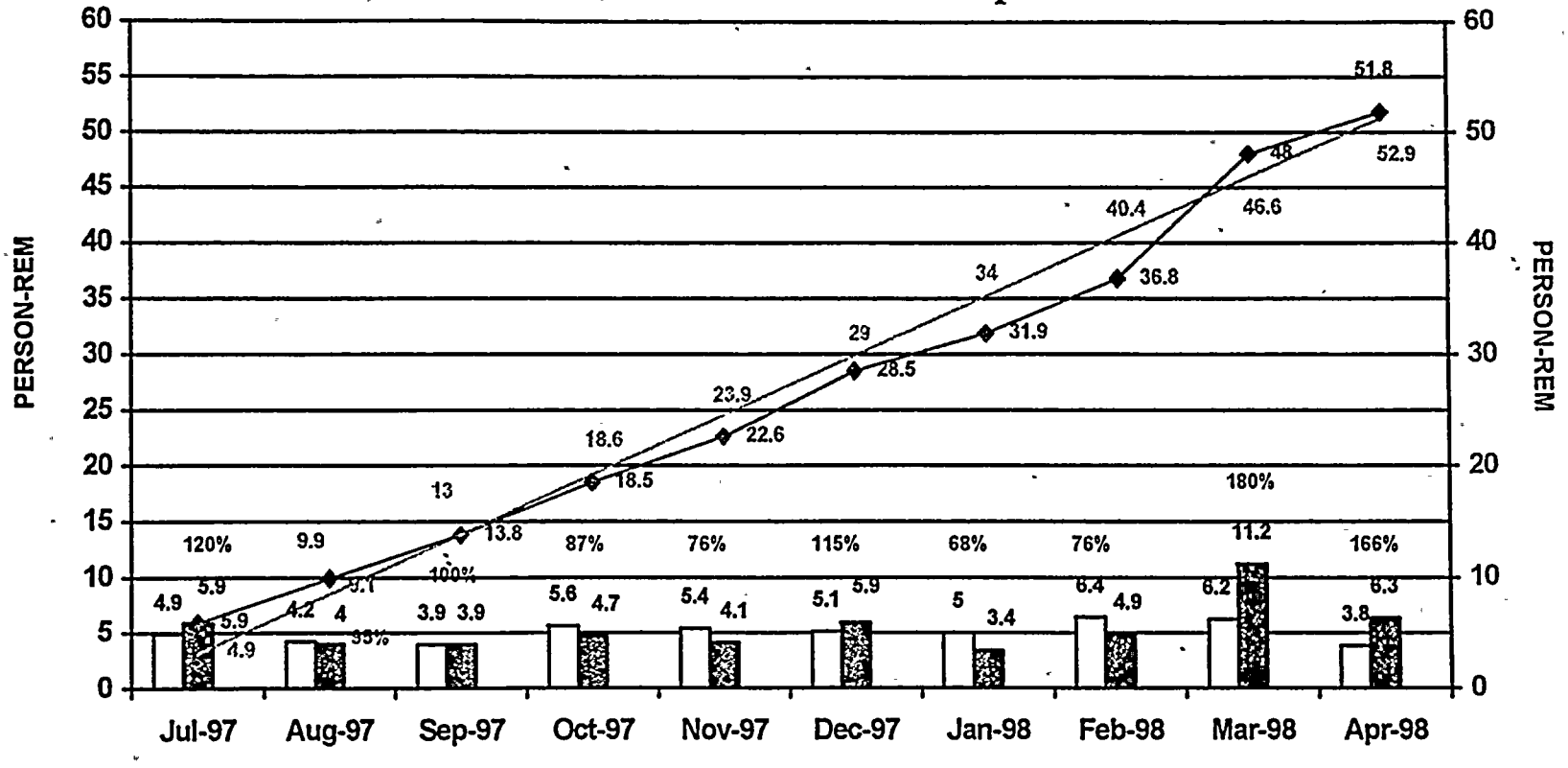
Ineffective Radiological Program Implementation (cont)

- Actions (cont)
  - Improve focus on contamination events
  - Establish a comprehensive container labeling program

Site Radiation Exposure
2 Pritchard

Radiation Protection Annunciator #4
April 1998

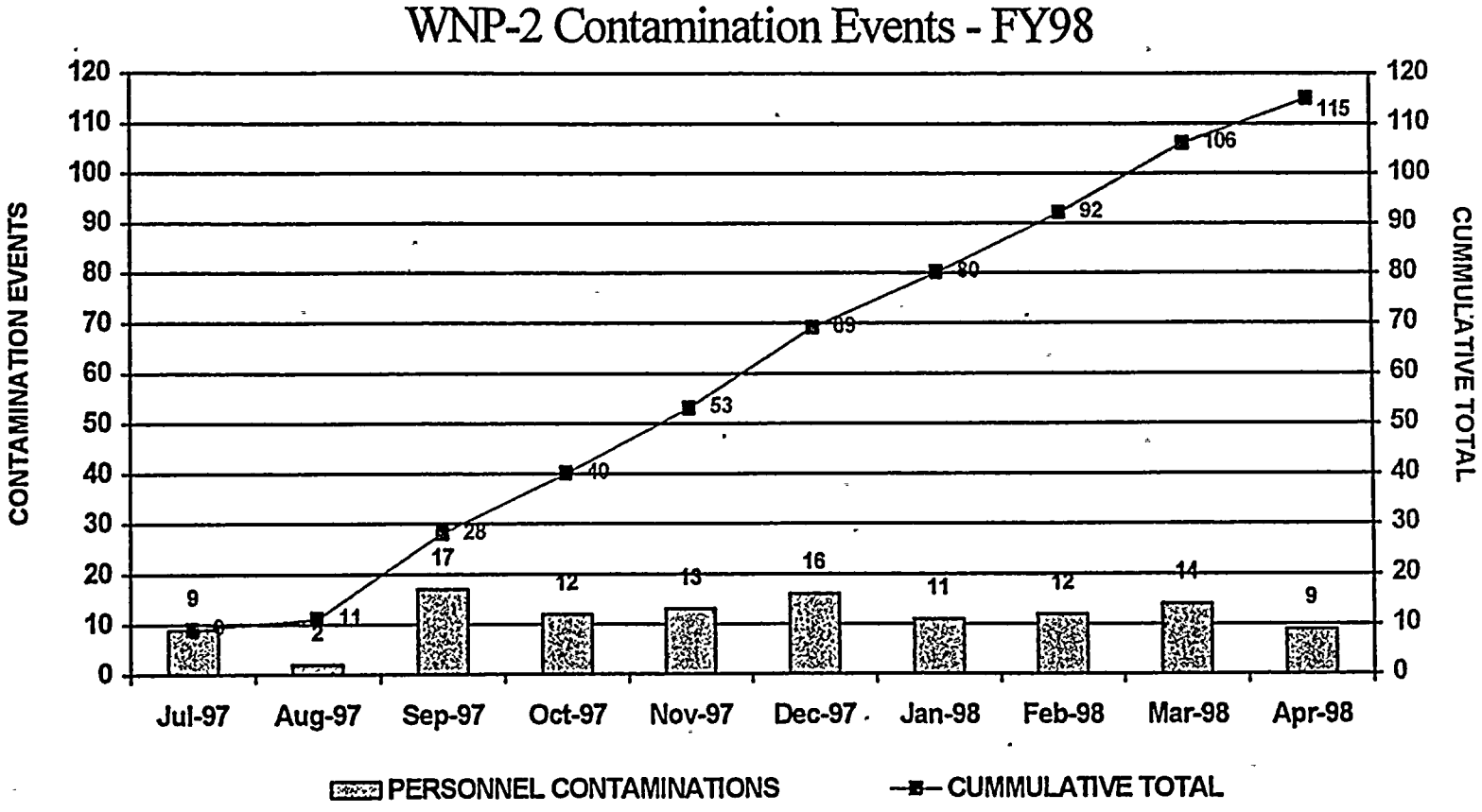
WNP-2 Collective Site Radiation Exposure - FY98



POSITIVE	SATISFACTORY	NEEDS IMPROVEMENT	ADVERSE
GREEN < 100 %	WHITE < 102 %	YELLOW < 104 %	RED ≥ 104 %

Contamination Events
2 Harris

Radiation Protection Annunciator #2
April 1998



Station Goals: 100 per Non-Outage months (10 per Non-Outage month average) -and- 125 per Outage

POSITIVE	SATISFACTORY	NEEDS IMPROVEMENT	ADVERSE
GREEN ≤ 100	WHITE ≥ 100	YELLOW ≤ 105	RED > 105

Ineffective Use of Corrective Action Program

- Issues
  - Hesitance to initiate PERs
  - Propensity to take actions outside the PER program without writing a PER
  - Persistent feeling that there is too much time required to develop and/or resolve a PER

Ineffective Use of Corrective Action Program (cont)

- Issues (cont)
  - Lack of timeliness in implementation of corrective actions
  - Inconsistent root cause analysis
  - Number of corrective actions per PER too high

Ineffective Use of Corrective Action Program (cont)

- Actions
  - Establish a corrective action program improvement initiative under PGM oversight
  - Establish internal departmental review board to review PERs

Ineffective Use of Corrective Action Program (cont)

- Actions
  - Conduct weekly review of PTL status and closure items by department manager
  - Develop additional performance indicators to evaluate corrective action effectiveness

Lack of Effective Performance Monitoring

- Issues
  - Inadequate personnel staffing and training to identify key measures of performance
  - Visible measures of those items important to staff
  - Knowledge of overall organization's critical success measures

Lack of Effective Performance Monitoring (cont)

- Personnel Actions
  - Send supervisors to supervisory development training
  - Retain two experienced consultants to act as "mentors"
  - Assign experienced managers from maintenance and quality

Lack of Effective Performance Monitoring (cont)

- Personnel Actions (cont)
  - Rotate technician assignments
  - Change front-line supervisor work location
  - Retain two contract supervisors to increase field presence

Lack of Effective Performance Monitoring (cont)

- Personnel Actions (cont)
  - Place supervisor on back shift
  - Fill open front-line supervisor position
  - Dedicate two supervisors as "duty" supervisors

Lack of Effective Performance Monitoring (cont)

- Monitoring Actions
  - Benchmark INPO and industry data
  - Develop performance goals and standards with entire staff
  - Align performance measures with company strategic objectives

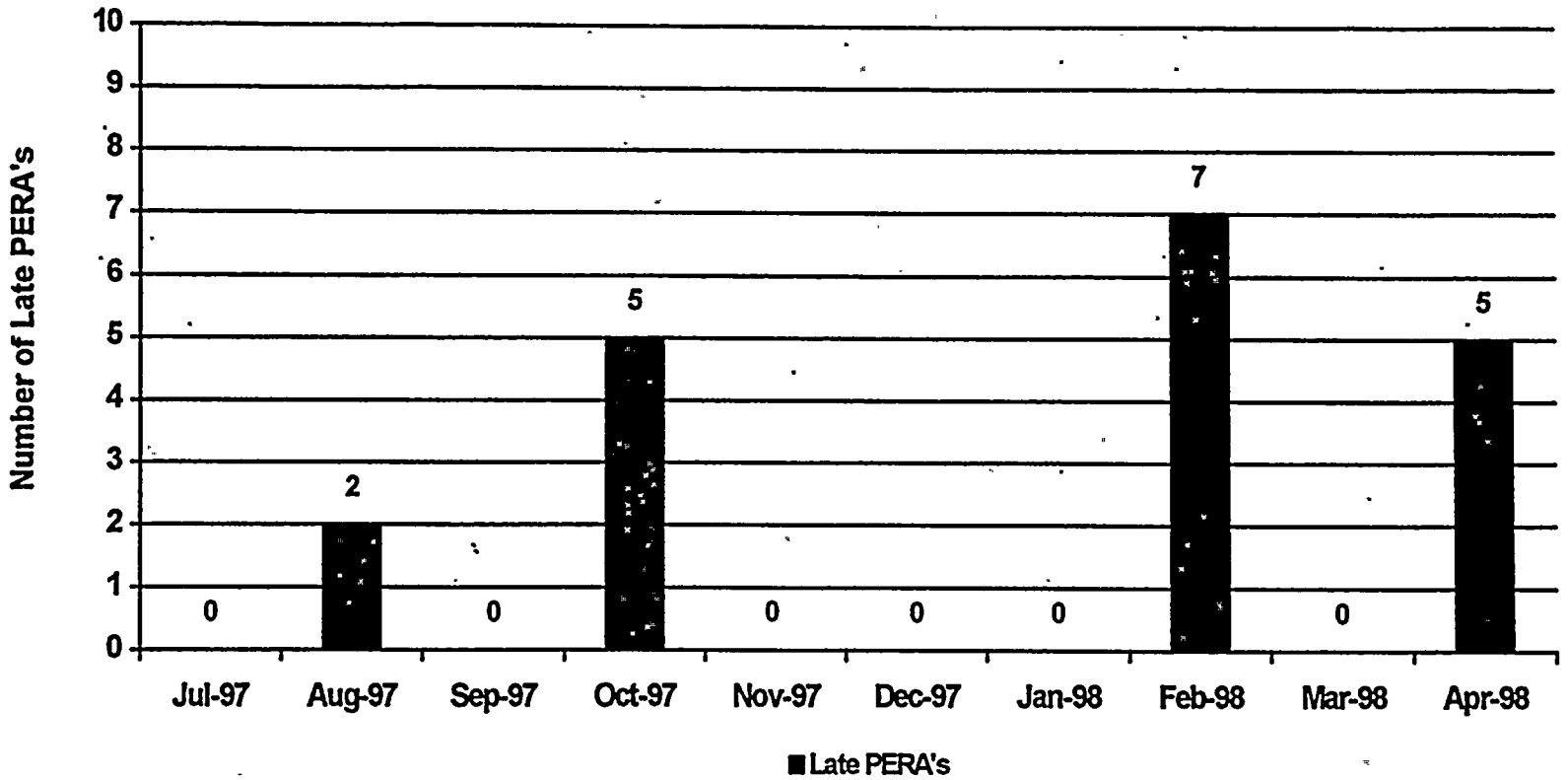
Lack of Effective Performance Monitoring (cont)

- Monitoring Actions (cont)
  - Communicate progress frequently during development
  - Assign "sponsors"
  - Develop corrective actions when performance does not meet objectives

Corrective Action Program Timeliness
6a Peters

Radiation Protection Annunciator #6
April 1998

RP Organization Corrective Action Program Timeliness - FY98



Definition: This performance measure monitors the number of Corrective Action Program Actions (PERA) that were shown as late at the end of each month.

POSITIVE	SATISFACTORY	NEEDS IMPROVEMENT	ADVERSE
GREEN 0 late 2 consecutive months	WHITE 0 late this month	YELLOW 1	RED -> 1

Radiation Protection Performance Annunciator Panel
April 1998

NUCLEAR SAFETY

UPDATED FOR 4/98 (thru 4/17- Non-Outage)
RP Radiation Exposure
1 Hunter

UPDATED FOR 4/98 (thru 4/17- Non-Outage)
Contamination Events
2 Harris

TLD/DRD Ratio
3 Borland

UPDATED FOR 4/98 (thru 4/17- Non-Outage)
Site Radiation Exposure
4 Hunter

No. of RWP's that miss Exposure Goal
5 Pritchard

Corrective Action Program Timeliness
6 Peters

UPDATED FOR 4/98 (thru 4/27- Non-Outage)

HUMAN PERFORMANCE

Personnel Error Rate
7 Peters

Industrial Safety Performance
8 Shepherd

UPDATED FOR 4/98 (thru 4/27)
Field Observations
9 Peters

Training Qualifications
10 Peters

UPDATED FOR 4/98 (thru 4/27)
Gold Cards
12 Roberts

UPDATED FOR 4/98 (thru 4/27)
Supervisory Time In-Field
11 Tuel

MATERIAL CONDITION

Contaminated Area Floor Space
13 Repko

Number of Contaminated Zones
14 Harris

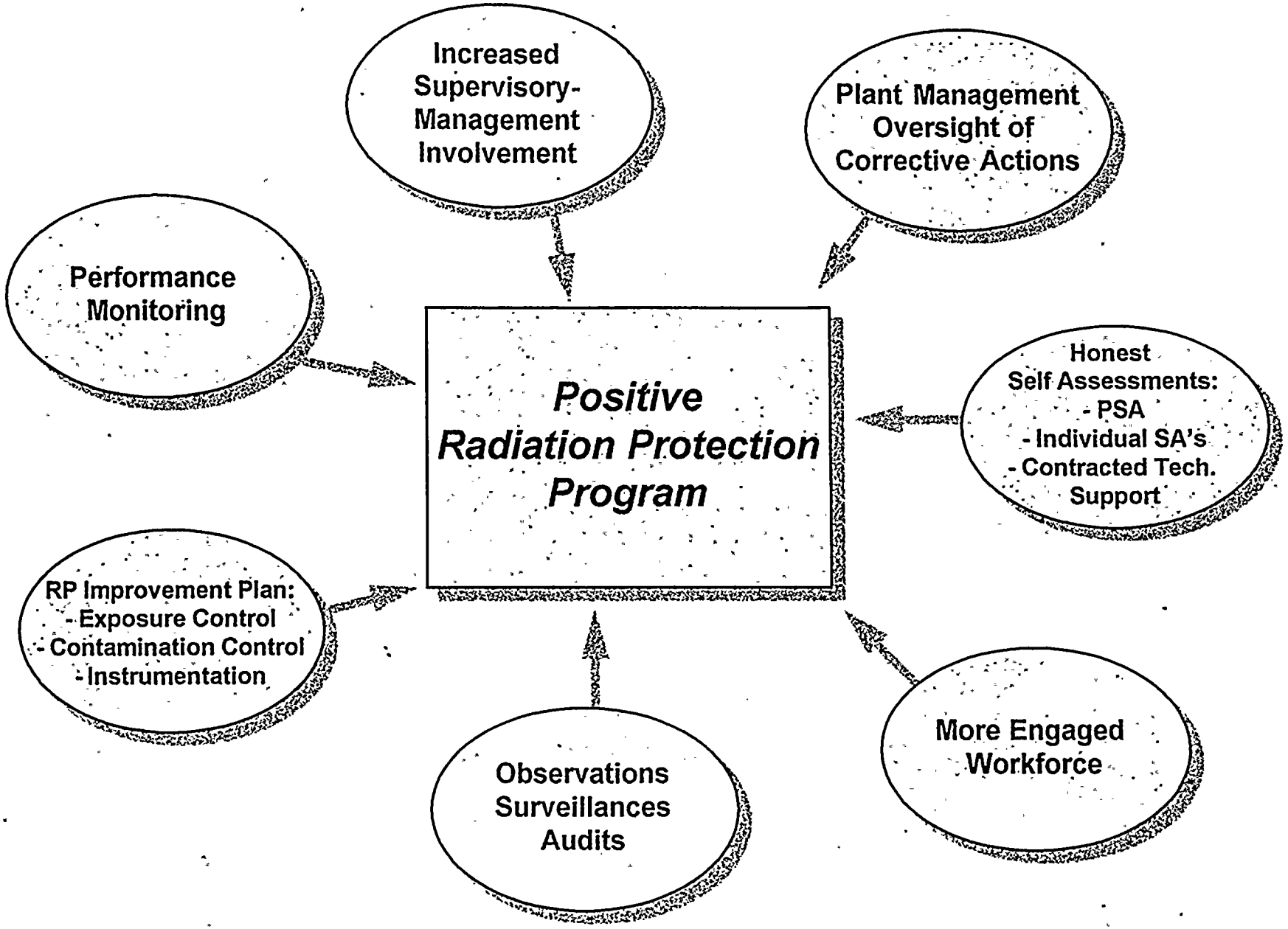
COST COMPETITIVENESS

Budget Adherence
15 Peters

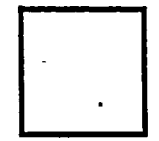
Monthly Performance Rating April 1998 = X.X

1	2	3	4
Positive Performance - Exceeds Monthly Expectation = 1 Pt		Improvement Needed Less than Monthly Expectation =3 pts	
Satisfactory Performance Meets Monthly Expectation = 2 pts		Adverse Performance Negative Monthly Swing= 4 pts	

Data Not Available


Increased Supervisory-Management Involvement
Plant Management Oversight of Corrective Actions
Performance Monitoring
Positive Radiation Protection Program
Honest Self Assessments:
- PSA
- Individual SA's
- Contracted Tech. Support
RP Improvement Plan:
- Exposure Control
- Contamination Control
- Instrumentation
Observations Surveillances Audits
More Engaged Workforce

Operations



Improvement Strategy

W. Scott Oxenford
Operations Manager

Operations Ratings

Operations	1997	1996	1995
Safety Focus			
Management Involvement			
Problem Identification			
Problem Resolution			
Quality of Operations			
Programs and Procedures			

Areas Identified in PSA

- Human Performance
- Ownership of the Work Process
- Operations Leadership of WNP-2

Human Performance

- Issues
  - Tagging Errors
  - Command and Control
  - Operations Management Presence in the Control Room

Ownership of the Work Process

- Issues
  - Schedule Conflicts/Adherence
  - Complex Clearance Order Process

Operations Leadership of WNP-2

- Issues
  - Questioning Attitude
  - Ownership of Problems
  - Operations inconsistently a Demanding Customer

Human Performance

- Actions
  - Enhance Operations Observation Program
    - Route through Shift Manager
    - Create behavior-based observations
    - Target observations on problem areas
  - Improve personnel performance tracking

Human Performance (cont)

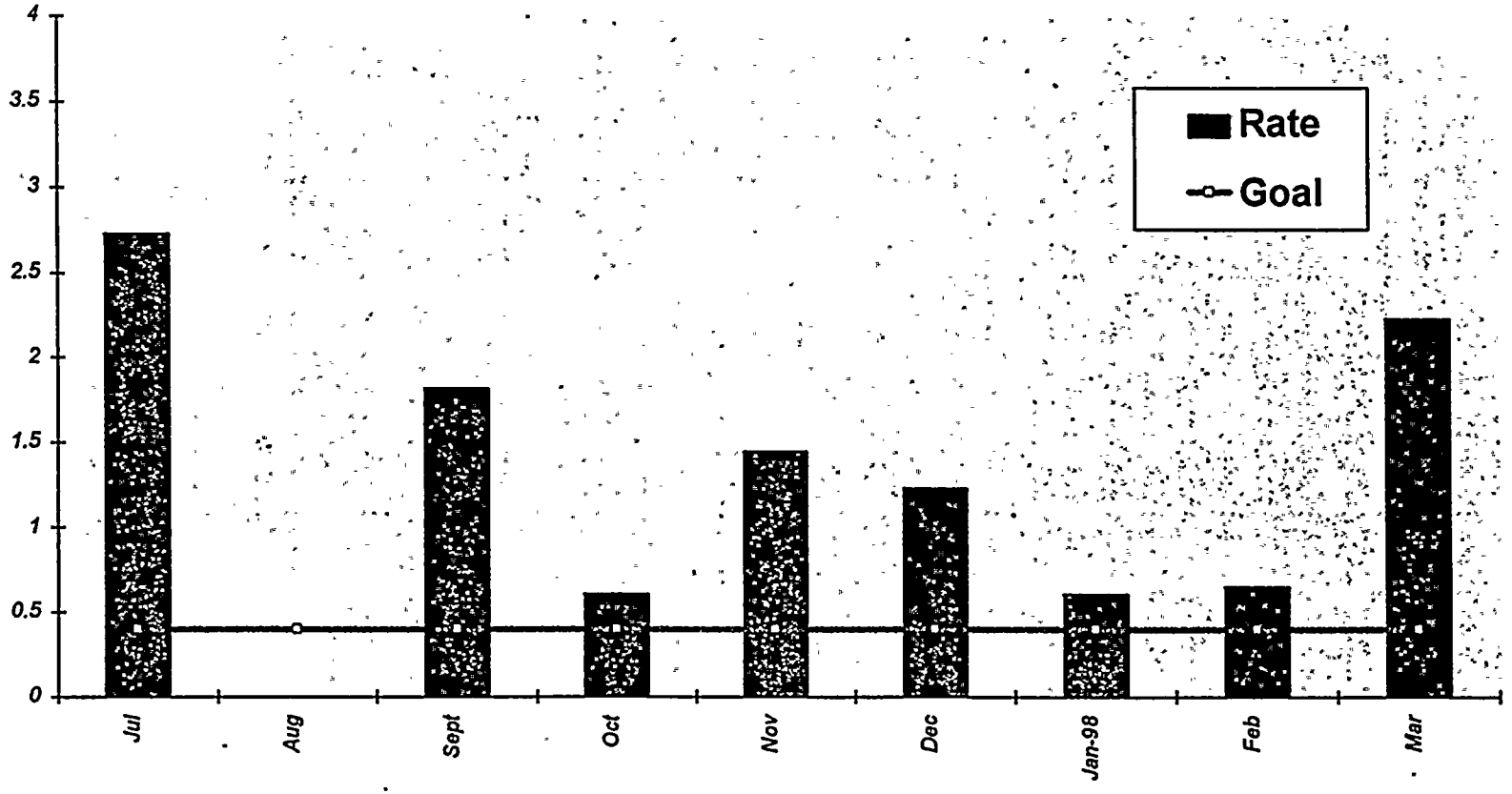
- Actions (cont)
  - Measure human performance indicators at crew level
  - Define and reinforce peer check expectations

Human Performance (cont)

- Actions (cont)
  - Develop Performance Enhancement Plan
  - Continue self-assessment program focusing on problem areas
    - Baseline Passport Tagging Module
    - Clearance Order/Mispositioning Errors
    - Ops Involvement in Work Order Process
  - Simplify processes

WNP-2 Operations

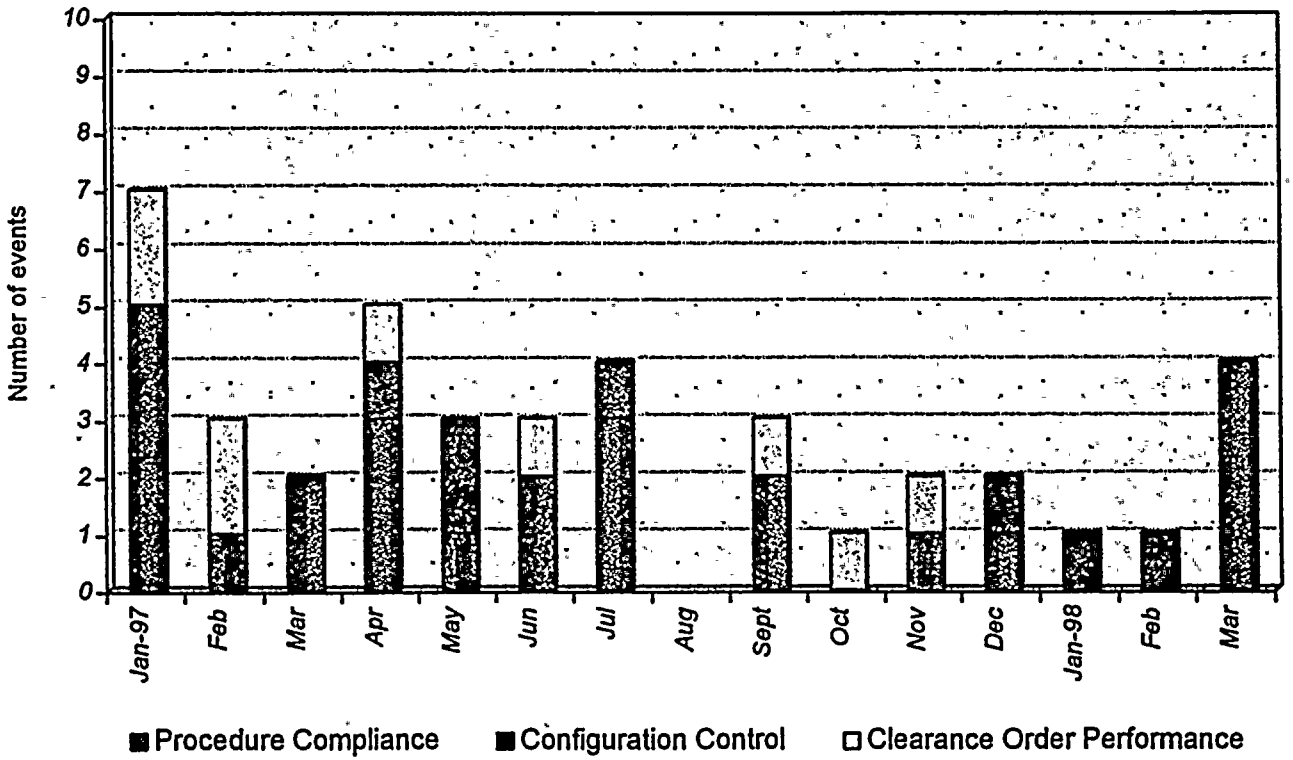
Human Performance Error Rate



RATE = # of events per 10,000 hrs worked

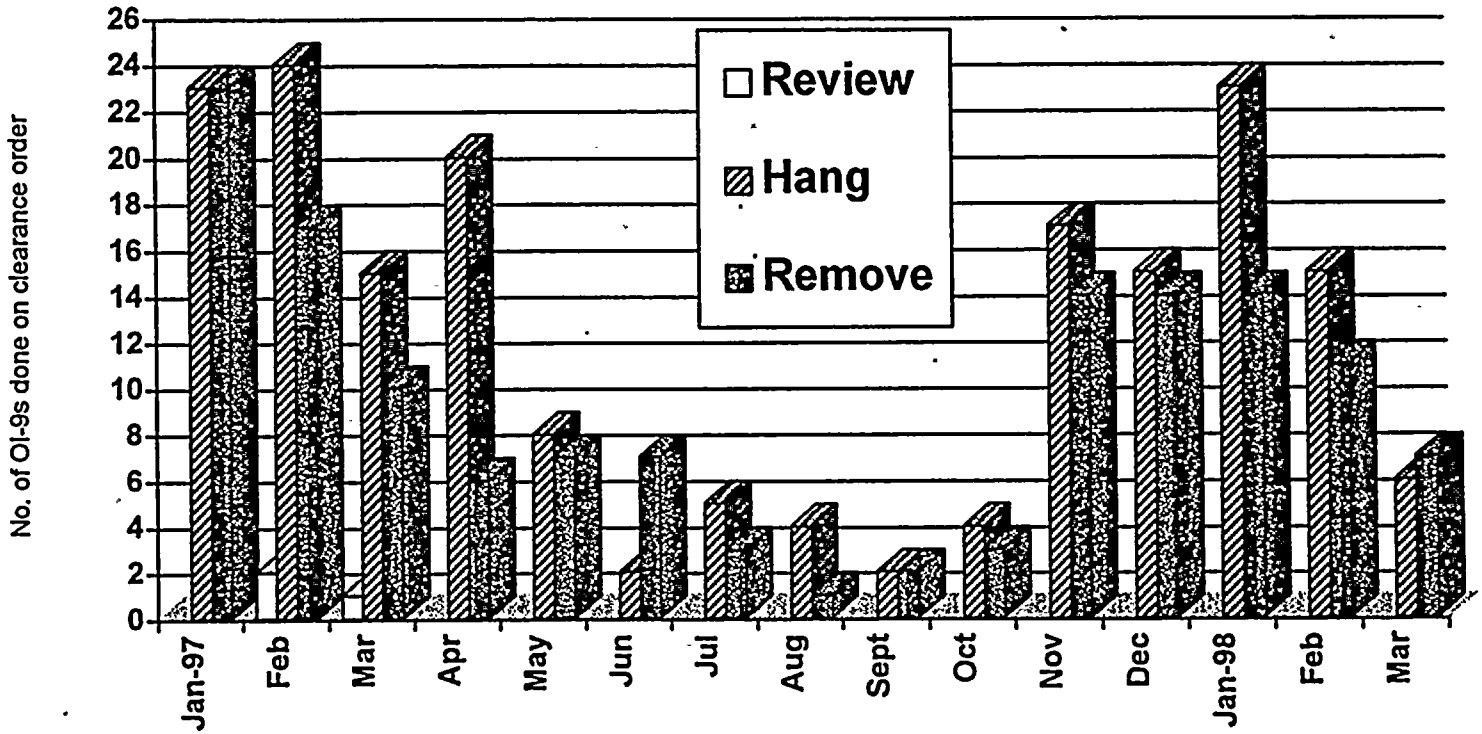
WNP-2 Operations

Human Performance - # of Events



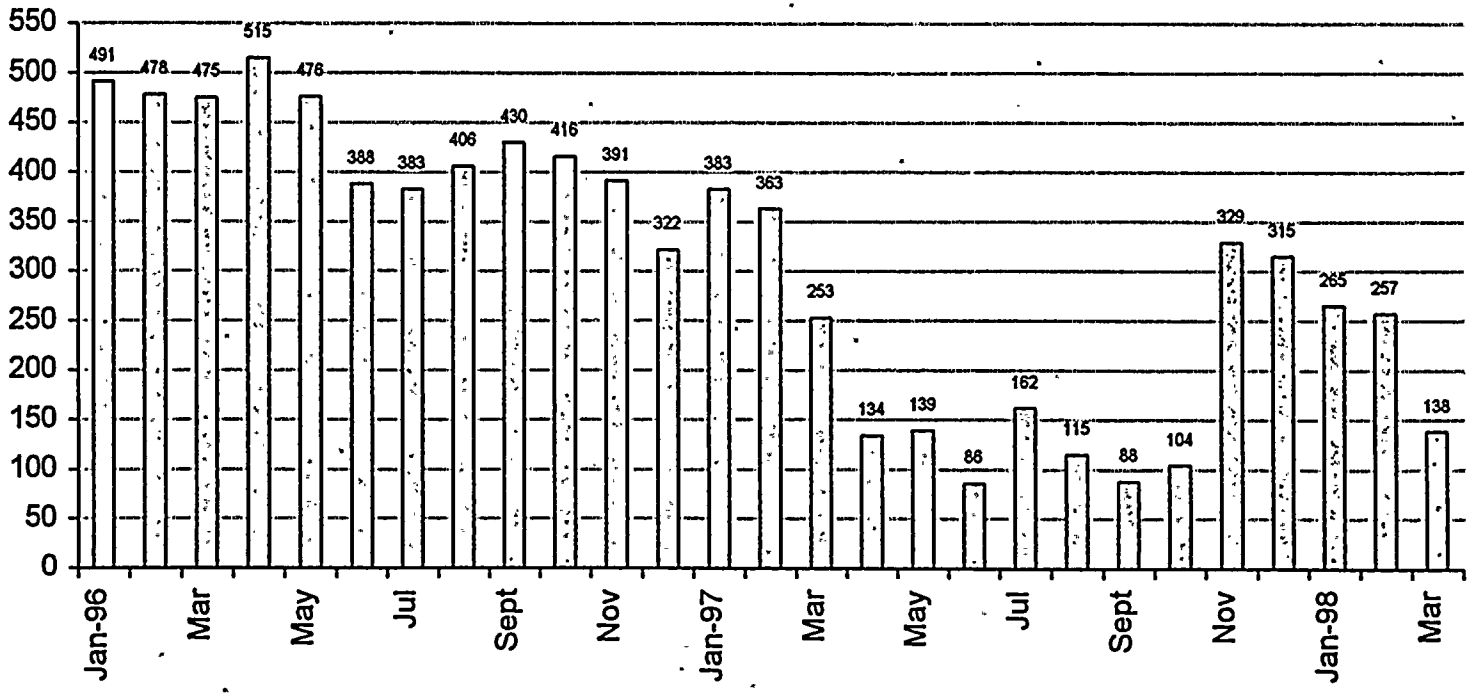
WNP-2 Operations

Clearance Order OI-9s conducted per month



WNP-2 Operations

Supv/Peer Observations (OI-9)



Staffing

- Actions
  - Fill Equipment Operator openings
  - Formalize and promote Operations Rotational Program
  - Enhance operator qualification process

Staffing

- Actions
  - Develop organizational vision
    - Improved Operations management field time
    - Licenses for Shift Support Supervisors
    - Maximize licensed Shift Technical Advisors
    - Improved work management and clearance order focus
    - Attrition contingency

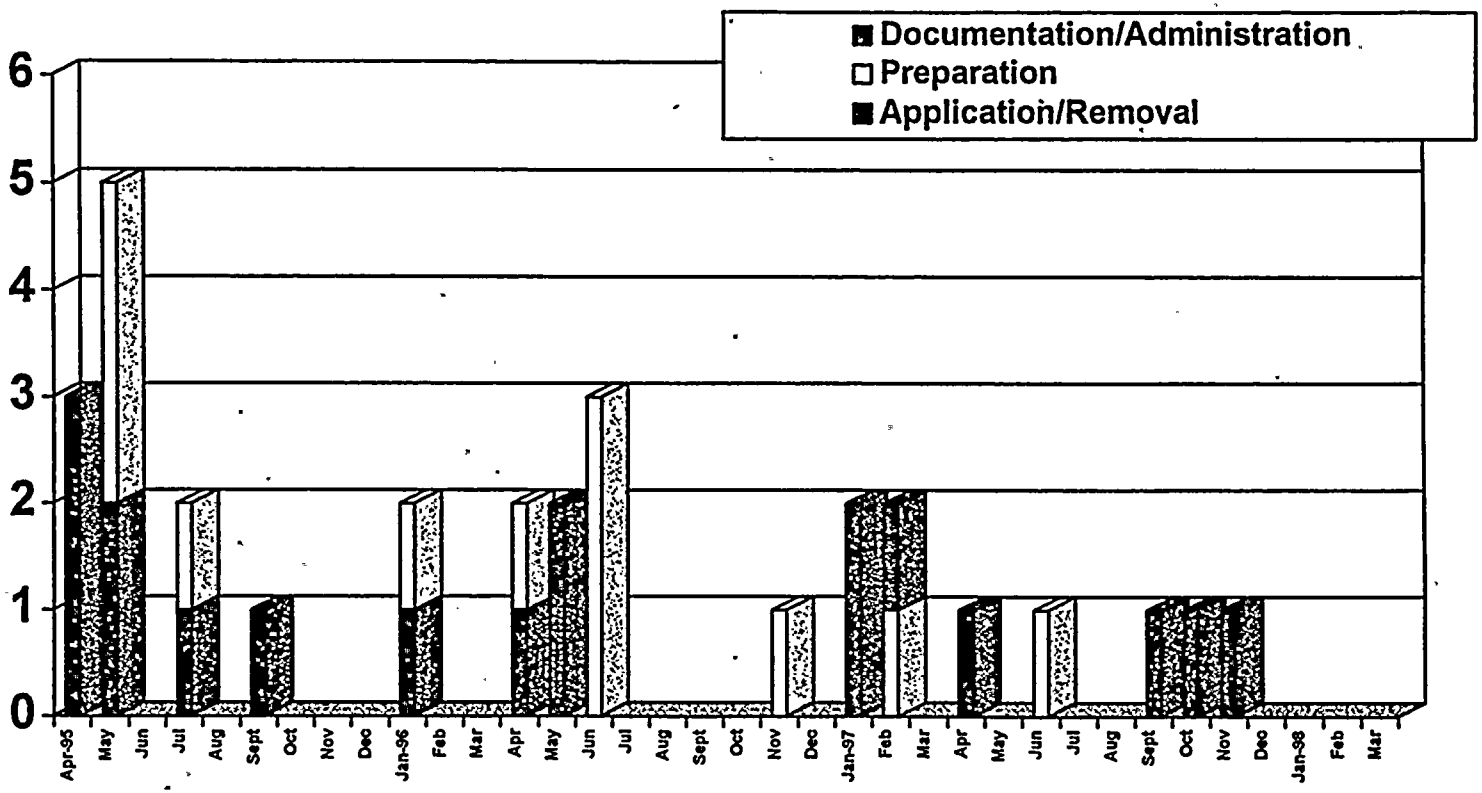
Ownership of the Work Process

- Actions
  - Assign individual responsible for Clearance Order Process simplification
  - Conduct self assessment on Clearance Order Process
  - Revise Clearance Order Error performance indicator

Ownership of the Work Process (cont)

- Actions (cont)
  - Increase observations in the Clearance Order area
  - Re-organize to better support work management
  - Clarify and issue expectations for work order process involvement

Clearance Order Errors



Operations Leadership of WNP-2

- Actions
  - Direct daily decisions to Shift Manager
  - Improve Operations involvement in planning meetings
  - Develop broader departmental performance indicator

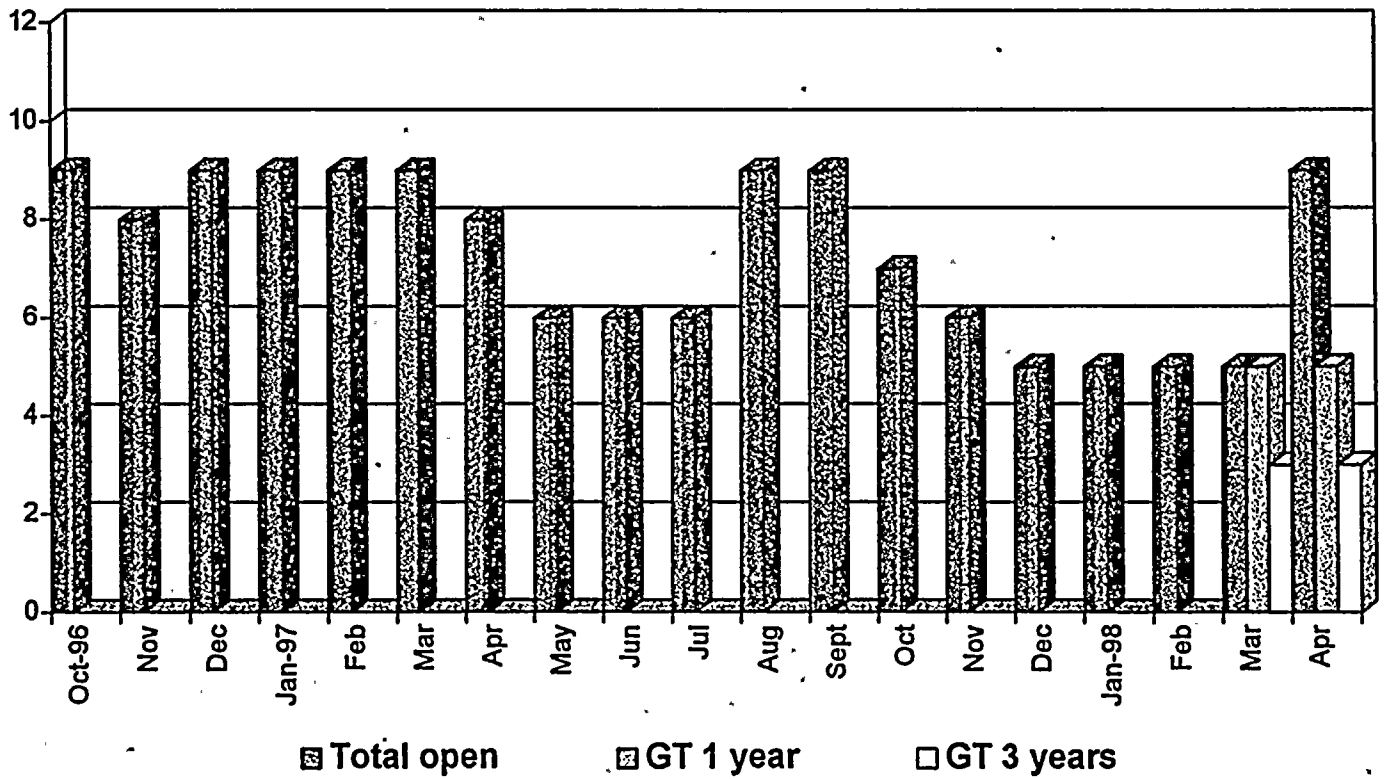
Operations Leadership of WNP-2

Actions

- Assign crew ownership to programs
- Develop operator workaround age performance indicator
- Re-evaluate current operator workaround list

WNP-2 Operations

Operator Work Arounds



Operations Improvement Strategy

- Trust & Communication within Department
  - Continue Shift Manager meetings
  - Implement Station "WIN Team" concept
  - Increase management field time

Keys To Success

- Simplify Key Processes (*e.g.*, work management)
- Institutionalize Self-Critical Behavior
- Continue Our Focus on Human Performance
- Maintain a High-Quality Staff
- Effectively Implement Our Corrective Action Program
- Improve Monitoring Tools
- Ensure Proper Regulatory Sensitivity
- Consistently Employ Conservative Decision-Making
- Sustain Material Condition of the Plant

Continuing The Journey To Excellence

- People Are the Backbone of Our Continued Progress
- Continued Management Involvement
- Focus on Safe, Reliable Operation

WNP-2 Forced Outage
March 11, 1998

Greg Smith- Plant General Manager

W. Scott Oxenford- Operations Manager

PRESENTATION

- Timeline of Event
- Performance Issues
  - » Human Performance-Standards and Expectations
  - » Procedures
- Station Lessons Learned
- Positive Reinforcement

Timeline of Event

- **0 Seconds**
  - » "D" Inboard Main Steam Isolation Valve closed due to loss of pneumatic supply
- **4 Seconds**
  - » Reactor SCRAM signal on high flux
- **5 Seconds**
  - » Remaining Main Steam Isolation Valves close on a main steam line high flow isolation signal

Timeline of Event

- **8-9 Seconds**
  - » Reactor level reaches minimum of -51 inches. Reactor pressure peaks at 1085 psig
  - » High Pressure Core Spray and its associated diesel generator initiate
  - » Reactor Core Isolation Cooling initiates
  - » Main Turbine trips due to Reactor Core Isolation Cooling system initiation

Timeline of Event

- **8-9 Seconds (Cont)**
  - » Reactor Recirculation Pumps trip
  - » Various Nuclear Steam Supply Shutoff isolations, including Reactor Closed Cooling Water to primary containment
  - » Gradual drywell pressure rise begins due to lack of cooling
- **33 seconds**
  - » Reactor level restored to normal by High Pressure Core Spray, Reactor Core Isolation Cooling and Reactor Feedwater systems

Timeline of Event

- **1 Minute, 11 Seconds**
  - » Reactor Core Isolation Cooling Turbine stops and High Pressure Core Spray Injection Valve closes based on reaching +54 inches reactor level
- **10-11 Minutes**
  - » Start venting drywell to reduce pressure (currently 1.52 psig)
  - » Manually start Reactor Core Isolation Cooling system for level control

Timeline of Event

- **11 Minutes, 15 Seconds**
  - » Diesel Generator 2 start on high drywell pressure
- **12 Minutes, 28 Seconds**
  - » Reactor Closed Cooling flow restored to primary containment
- **12 Minutes, 29 Seconds**
  - » Diesel Generator 1 start on high drywell pressure

Timeline of Event

- **51 minutes**
  - » Second reactor scram on low level during SRV operation

    (lowest level reached was 11.5 inches)
- **55 minutes**
  - » Initial notification made to NRC

Timeline of Event

- **1 hour 44 minutes**
  - » Stopped manual cycling of safety relief valves for pressure control, reopened MSIVs to restore condenser as heat sink, lowering pressure to within condensate booster pump capability
- **2 hours 28 minutes**
  - » Level control established on condensate booster pumps, stopped RCIC and returned to standby lineup

Timeline of Event

- **4 hours 12 minutes**
  - » Second call to NRC
- **5 hours**
  - » Commence lowering RPV pressure per shutdown procedure
  - » Restarted Reactor Water Cleanup system

Operations Performance Issues

Issue	Human Performance		Procedures
	Standards and Expectations*	Individual	
Observation and analysis of plant response HPCS injection reported late Untimely EOP verification	X	X	
Second SCRAM	X		
Failure to manually start ECCS Pumps		X	
Inaccurate and incomplete NRC Notifications/Communications	X	X	X
HPCS Diesel Generator restart	X		X
Incomplete post SCRAM statements	X	X	
Pressure/Temperature Curve violation		X	X
Inadvertent ECCS Injection Temporary change altered intent Temporary change poorly written Failure to pursue crew question	X	X	
Failure to train with less than normal crew compliment	X		
Failure to demand simulator/plant fidelity ex) Swell model and rod position updates	X		
Failure to identify and remove operator workarounds ex) RCIC Test Return Valves, Main Steam equalizing valve, and RWCU restoration guidance	X		

* Standards and Expectations covers Training, Operator Workarounds/Demanding Customer, and Philosophy/Command and Control

Human Performance-Standards and Expectations

Operating Philosophy/Command & Control

Conclusion:

- Development of new strategy was not always pursued to resolve operational difficulties
- Strong Command and Control is evident when training and Plant conditions are consistent
- Prioritization significantly affected Command and Control
- Philosophy for some key operational aspects not defined

Human Performance-
Standards and Expectations

Operating Philosophy/Command & Control

Develop:

- Alternate methodology to minimize stratification (complete)
- Operations Instruction for debrief process (6/98)
- Notification Operations Instruction (6/98)

Human Performance-
Standards and Expectations

Operating Philosophy/Command & Control

Revise:

- Post-SCRAM guidance (7/98)
- Post-SCRAM written statement forms (6/98)
- Reportability timing expectations (complete)
- Program ownership to crews (complete)
- Operator workaround threshold (on-going)
- Methodical approach to Command and Control (on-going)

Human Performance-
Standards and Expectations

Operating Philosophy/Command & Control

Reinforce:

- Desired behaviors
  - » Demanding customer
  - » Use of debriefs
  - » Problem ownership
  - » Methodical Command and Control

Human Performance-
Standards and Expectations

Training

Conclusion:

- WNP-2 has a strong training program
- Some key areas have not been emphasized
- Plant/simulator fidelity is a critical factor in Operator performance
- Training is critical to performance improvement
- Operations management needs to clearly establish expected training performance standards

Human Performance-
Standards and Expectations

Training

Develop:

- Training scenario for SRV/RCIC operation (10/98)
- Longer training scenarios to promote (6/98)
  - » Procedure follow through
  - » Communication practice
- Scenarios using varying staffing levels (on-going)

Human Performance-Standards and Expectations

Training

Revise:

- Increase simulator usage (on-going)
- Improve simulator fidelity: (8/98)
  - » Transient and SRV swell model
  - » Control rod position update
- Operations management involvement in "Train the Trainer" week (6/98)
- Transition to licensed STAs (start 12/98)

Human Performance-
Standards and Expectations

Training

Reinforce:

- Roles and responsibilities
- Prioritization

Human Performance

Individual

Develop:

- A Training Needs Analysis for the involved crew (complete)

Human Performance

Individual

Reinforce:

- Counseling has taken place for individual performance deficiencies (complete)
- Training was conducted for the involved crew based on the Training Needs Analysis. (Competency was demonstrated through an observed scenario)

Procedures

Conclusions:

- Some infrequently performed procedures can be enhanced
- The procedural-related problems could have been overcome with better human performance
- The procedure program is strong and quickly incorporates identified enhancements

Procedures

Develop:

- Longer training scenarios to promote procedure follow through (6/98)

Procedures

Revise:

- Identified procedural inadequacies
  - » HPCS D/G Shutdown (complete)
  - » Cooldown and Heat-up Surveillance (complete)
  - » RWCU Restoration (6/98)

Summary

Although the Operations department has demonstrated significant improvement, this event has reinforced that we are not at our desired performance level. We have dissected the event and internalized lessons learned. It provides a catalyst for our continued improvement.

STATION LESSONS LEARNED

- Station conducted a critique and Lessons Learned of March Forced Outage on 3/25/98
- Issues identified during Forced Outage and critique were documented via PER process

STATION LESSONS LEARNED

(CONT)

- Station Priorities
  - » Analysis of event and identification/resolution of all restart issues was not as timely as it should have been which factored into a sliding restart date

STATION LESSONS LEARNED

(CONT)

» Resolution

- Station war room with predetermined Forced Outage Team
- Team members represent all critical aspects of station activities Plant and Engineering
- Engineering response to event will be coordinated through the Forced Outage organization
- The detailed approach in the Plant Manager's restart process should be incorporated into the post-scram procedure for identification, evaluation and resolution of forced outage issues

STATION LESSONS LEARNED

(CONT)

- Communication/reporting of issues to the NRC did not meet our expectations
  - » Resolution
    - ‡ Operations/STA training enhancements (early stages of transient)
    - ‡ Better coordination and consolidation of restart issues via the Forced Outage Team

STATION LESSONS LEARNED

(CONT)

- Human Performance during and following this transient was not representative of overall station performance
  - » Resolution
    - ‡ Extrapolation of our human performance initiative to be more behavior based
    - ‡ Emphasis on this approach on our Operations training efforts and management observation progress
    - ‡ Shift Manager's role evolved to that of station leaders not just Operations leaders

POSITIVE REINFORCEMENTS

- Plant response to the event was as expected, bounded by design analyses
- Operations personnel overall control of a difficult transient was adequate and when faced with several crossroad decisions they did the right thing
  - » RWCU isolation
  - » Drywell venting prioritization

POSITIVE REINFORCEMENTS
(CONT)

- Analyses of ECCS initiation was conservative and thorough
- Response by personnel and work groups to support station needs was excellent
- Strong performance by Work Week teams both in early stages of event by providing focus and during days 3-7 in ensuring that a large backlog of regularly scheduled work did not develop
- Manner in which we have dealt with and are resolving these issues