A subsidiary of Pinnacle West Capital Corporation

Palo Verde Nuclear Generating Station

Randall K. Edington
Executive Vice President
Chief Nuclear Officer

Tel (623) 393-5148
Fax (623) 393-6077

Mail Station 7602
PO Box 52034
Phoenix, Arizona 85072-2034

102-05789-RKE/CJS
December 31, 2007

Mr. E. E. Collins Jr.
Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-4005

References: 1) Confirmatory Action Letter CAL-4-07-004 dated June 21, 2007, from Bruce Mallet, Region IV NRC, to Randall K. Edington (ADAMS ML071720526)

2) Arizona Public Service Company (APS) letter number 102-05770, dated November 28, 2007, Confirmatory Action Letter (CAL) Action 5 Extension Request

Dear Mr. Collins:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Response to NRC Confirmatory Action Letter (CAL)-4-07-004,
Action 5: Submittal of Portions of the Modified Improvement Plan

This letter transmits the Palo Verde Nuclear Generating Station (PVNGS) Site Integrated Improvement Plan (SIIP) in response to Action 5 of the referenced Confirmatory Action Letter (CAL). The SIIP contains key improvement actions that APS is taking to address the causes of the decline in performance at PVNGS, including actions to address the issues that led to PVNGS being placed in the Multiple / Repetitive Degraded Cornerstone Column (Column IV) of the NRC Action Matrix and issues identified during independent assessments of the PVNGS safety culture.

The SIIP actions are a subset of the overall Site Integrated Business Plan (SIBP) that has been developed to support the PVNGS mission to safely and efficiently generate electricity for the long term. The improvement actions contained within the SIIP have been entered into and will be tracked and closed through the PVNGS Corrective Action Program (CAP).

Structure of the Site Integrated Improvement Plan

The SIIP consists of fifteen (15) Action Plans to achieve substantial and sustainable performance improvement grouped into five (5) Improvement Areas.

IMPROVEMENT AREAS	ACTION PLANS
Operations	• Operational Focus (including Operations Fundamentals and Operability Determinations) • Equipment Reliability
Engineering	• Engineering Technical Rigor • Design Control/Configuration Management • Engineering Programs (including Maintenance Rule, Equipment Qualification, and Fire Protection)
Site Programs and Processes	• Performance Improvement (including Corrective Action Program, Operating Experience, and Self Assessment / Benchmarking) • Managing Plant Workloads • Emergency Preparedness • Programs, Procedures and Work Instructions
Organization and Human Performance	• Organizational Effectiveness • Human Performance/Industrial Safety • Safety Culture • Training and Qualification
EDG K-1 Relay and RAS	• Emergency Diesel Generator K-1 Relay Event (IP 95001) • Recirculation Actuation Signal (RAS) Event (IP 95002)

The Action Plans contained within the SIIP were developed based upon the results of assessments, reviews, and causal analyses performed to ensure that the causes of the decline in performance at PVNGS are understood. The SIIP is included as an attachment to this letter. Each SIIP Action Plan includes the Action Plan Strategy describing the actions to be completed, along with the core metrics and the effectiveness reviews that will be used to assess progress. Development of the set of metrics for each SIIP Action Plan is continuing in order to ensure that the appropriate set of metrics has been selected and that appropriate definitions, goals and thresholds for each metric have been identified.

APS will implement the Action Plans within each Improvement Area to achieve substantial and sustainable performance improvement. Nearly all of the actions in these plans will be completed within the next 18 months, with most scheduled during 2008. Substantial and sustainable performance improvement in an Improvement Area will be indicated by (1) progress in implementing the Action Plans for that Improvement Area, and (2) positive performance results in the Improvement Area as indicated by the collective trend of metrics and other effectiveness reviews.

Measures to Ensure Rigorous Implementation and Effectiveness of the SIIP

APS is keenly aware that the SIIP must be rigorously and effectively implemented in order to achieve substantial and sustainable performance improvement. A PVNGS Implementation and Monitoring Team has been established that will oversee the implementation, tracking, and closure of SIIP actions. The Implementation and Monitoring Team Leader reports directly to the APS Executive Vice President and Chief Nuclear Officer (CNO). As noted in the attachment, APS has established a formal procedure for tracking and closing of SIIP actions to ensure that they are rigorously implemented.

In addition, APS is establishing measures to evaluate effectiveness of the SIIP. These measures include:

- Performance metrics for each SIIP Improvement Area and Action Plan
- Planned internal effectiveness reviews or self-assessments
- Periodic review of progress and effectiveness by the Implementation and Monitoring Team
- Periodic review of progress and effectiveness by PVNGS senior management
- Independent surveys or assessments (for example, an independent safety culture survey and performance evaluation are planned)

The PVNGS CNO and other senior management will closely monitor these measures to ensure that SIIP actions are effective and to provide accountability for achieving results. The measures that have been selected to date to evaluate effectiveness in each SIIP area are identified in the attachment.

Adjustment of Specific SIIP Actions as Implementation Proceeds

APS is committed to implementing actions to address each of the SIIP Improvement Areas, with the objective of achieving substantial and sustainable performance improvement in each area. As implementation proceeds, APS will adjust specific actions and timetables as warranted by circumstances or effectiveness reviews. To ensure the SIIP actions are rigorously implemented, changes to SIIP actions will be controlled using the same formal procedure as mentioned above with respect to closure of SIIP actions.

APS intends to update and supplement the SIIP based upon additional insights gained from the NRC's recently conducted IP 95003 inspection at PVNGS and other reviews being performed to confirm the adequacy of SIIP actions. For example, APS is currently developing actions to further address maintenance rule issues, workoff plans for site backlogs and to reconfirm the actions to further address issues associated with the Unit 3 Recirculation Actuation Signal (RAS) Event (voided piping). This will ensure that the actions contained in the SIIP comprehensively address the causes of the decline in PVNGS performance.

APS makes the following commitment in this letter:

> APS will submit the updated SIIP, including the identification of additional or revised metrics, within 45 days of receipt of the NRC IP 95003 inspection report for PVNGS.

In sum, the SIIP is based upon thorough analyses of the problems and causes of the decline in PVNGS performance. We will rigorously implement the actions contained in the SIIP to address those issues, and carefully monitor effectiveness. Our goal is to achieve substantial near-term improvement, and to institutionalize the changes we make so that this performance improvement is sustained. Through the SIIP and SIBP, we will return PVNGS to excellent performance in support of our mission to safely and efficiently generate electricity for the long term.

If you have any questions, please contact me or Dwight Mims, Vice President Regulatory Affairs and Plant Improvement, at (623) 393-5403.

Sincerely,

Randall K. Edington

Attachment: Palo Verde Nuclear Generating Station Site Integrated Improvement Plan, Revision 0

RKE/DCM/REB/CJS/gat

cc: E. E. Collins Jr. NRC Region IV Regional Administrator
M. T. Markley NRC NRR Project Manager - (send electronic and paper)
G. G. Warnick NRC Senior Resident Inspector for PVNGS

ATTACHMENT

Palo Verde Site Integrated Improvement Plan
Revision 0

PALO VERDE NUCLEAR GENERATING STATION
SITE INTEGRATED IMPROVEMENT PLAN
REVISION 0

1.0 PURPOSE

The Site Integrated Improvement Plan (SIIP) contains actions to address the causes of the decline in Palo Verde Nuclear Generating Station (PVNGS) performance that impact the Reactor Safety Strategic Performance Area, including the issues that led to PVNGS being placed in the Multiple / Repetitive Degraded Cornerstone Column (Column IV) of the NRC Action Matrix (NRC Inspection Manual Chapter 0305, *Operating Reactor Assessment Program*, Exhibit 4). The SIIP also addresses the drivers of safety culture issues identified during independent safety culture assessments at PVNGS. The objective of the SIIP is to achieve substantial and sustainable improvement in performance.

The actions contained in the SIIP are a subset of the PVNGS Site Integrated Business Plan (SIBP).

2.0 DEVELOPMENT, SCOPE, AND STRUCTURE

The SIIP has been developed based upon a series of evaluations that APS performed to identify the fundamental problems that led to the decline in PVNGS performance and the causes of those fundamental problems. The SIIP also contains actions to address causes of the violations that led to the NRC Inspection Procedure (IP) 95001 and 95002 inspections, causes of the Human Performance (HU) and Problem Identification & Resolution (PI&R) cross-cutting issues, and the drivers of the safety culture issues that were identified in the 2007 independent safety culture assessments conducted by Synergy, Inc. and an Independent Safety Culture Performance Evaluation Team composed of outside industry experts.

The assessments, reviews and causal analyses upon which the SIIP actions are based were performed under the auspices of the PVNGS Improved Performance and Cultural Transformation (ImPACT) Team and the PVNGS Corrective Action Program (CAP). They included:

- A systematic review of site performance issues (dating back a minimum of 6 years in most areas).
- A collective evaluation of those site performance issues, resulting in the identification of twelve fundamental overall problems that had contributed to the decline in performance.
- Causal analyses and/or reviews to identify the reasons for those fundamental overall problems.
- Performance of independent assessments that examined the PVNGS safety culture. These assessments included a survey and follow-up interviews of site personnel, as well as an evaluation of safety culture performance by a

team of outside industry experts. Stream analyses were performed to identify the drivers of safety culture issues identified by these assessments.
- Reviews and causal analyses of the Emergency Diesel Generator K-1 relay and Recirculation Actuation Signal (RAS) events, including reviews of the effectiveness of actions taken in response to those events.
- Reviews and causal analyses of the issues associated with the HU and PI&R cross-cutting areas.

In a few cases where other assessments, reviews, and causal analyses had been recently performed and were determined to be acceptable, the ImPACT Team relied upon those results to understand the nature and causes of problems and to serve as bases for development of corrective actions.

These reviews and analyses resulted in the development of fifteen (15) Action Plans grouped into five (5) Improvement Areas. These Action Plans are designed to address the results of the causal analyses and assessments. The 15 Action Plans and their associated Improvement Areas are:

IMPROVEMENT AREAS	ACTION PLANS
Operations	• Operational Focus (including Operations Fundamentals and Operability Determinations) • Equipment Reliability
Engineering	• Engineering Technical Rigor • Design Control/Configuration Management • Engineering Programs (including Maintenance Rule, Equipment Qualification, and Fire Protection)
Site Programs and Processes	• Performance Improvement (including Corrective Action Program, Operating Experience, and Self Assessment / Benchmarking) • Managing Plant Workloads • Emergency Preparedness • Programs, Procedures and Work Instructions
Organization and Human Performance	• Organizational Effectiveness • Human Performance/Industrial Safety • Safety Culture • Training and Qualification
EDG K-1 Relay and RAS	• Emergency Diesel Generator K-1 Relay Event (IP 95001) • Recirculation Actuation Signal Event (IP 95002)

The 15 Action Plans are presented in Section 6.0.

3.0 SELECTION OF ACTIONS TO BE INCLUDED IN THE SIIP

The actions to address the causes and drivers of the problems in the areas identified above have been included in the PVNGS SIBP along with many other actions to improve PVNGS performance and support the mission to safely and efficiently generate electricity for the long term. APS has established an Implementation and Monitoring Team to oversee the SIBP and SIIP. To select items for inclusion in the SIIP, line management and Implementation and Monitoring Team members (including ImPACT Team members familiar with the causal analysis and other reviews performed by ImPACT) performed reviews to ensure that the SIIP contained actions to address the causes and/or drivers of the identified problems and to confirm that those actions are likely to successfully address those causes and drivers. In particular, within each SIIP Action Plan, the following types of actions have been included:

- Actions designed to prevent recurrence of root causes of issues for which a root cause analysis was performed
- Actions designed to address drivers of issues for which stream analyses were performed

These types of actions form the backbone of the SIIP. Because these actions include the actions to prevent recurrence of root causes and actions to address drivers, there is confidence they will result in substantial and sustainable performance improvement.

In addition, during reviews of the SIIP by PVNGS management, there were instances in which management chose to modify or supplement these actions with additional actions designed to address the identified problems and their causes. The selection of these additional actions was based upon consideration of the following factors:

- Is the action likely to result in significant improvement in performance in the area being addressed?
- Is the action needed to promptly address an area in which no corrective action to prevent recurrence (CAPR) is scheduled to be completed in the near term?
- Is the action needed to address issues identified during the NRC IP 95003 inspection?
- Is the action necessary to address important operability, reliability, or safety issues?
- Given available resources and time, is the action achievable?
- Is the action defined with sufficient clarity such that implementation can be verified, measured and monitored?
- Will the action result in improvement within a reasonable time (1-2 years or sooner) commensurate with the level of need for immediate improvement?
- Collectively, do the selected actions address the causes of problems in the area and appear likely, if implemented, to result in substantial and sustainable performance in that area?
- Collectively, can all of the selected actions be accomplished in a quality manner as described and scheduled?

In cases where an action to prevent recurrence resulting from a root cause analysis was modified, the change was reviewed by the PVNGS Corrective Action Review Board (CARB) pursuant to CAP requirements to ensure the revised actions appropriately addressed the identified causes.

4.0 IMPLEMENTATION, TRACKING, AND CLOSURE OF SIIP ACTIONS

Closure of SIIP actions is subject to the requirements of a formal procedure, 01DP-0AC06, *Site Integrated Business Plan (SIBP) / Site Integrated Improvement Plan (SIIP) Process*. Pursuant to this procedure:

- Closure of actions requires the sign off of the responsible leader.
- Closure is supported by a formal closure package providing evidence of the completion of the action.
- Closure packages are reviewed and maintained by the Implementation and Monitoring Team.
- Each action has been entered into the PVNGS CAP, and must meet the closure requirements of that program.
- Action closures are reviewed by a Closure Review Board that includes members of PVNGS management independent of the management responsible for implementation of the action.

These controls provide confidence that SIIP actions will be rigorously implemented.

Completion status of SIIP actions will be tracked and reported to PVNGS senior management on a periodic basis (approximately monthly).

5.0 EFFECTIVENESS REVIEW AND CLOSURE OF SIIP AREAS

Effectiveness of the SIIP will be monitored by several means, including:

- Effectiveness measures and performance metrics for each SIIP Improvement Area
- Planned internal effectiveness reviews or self-assessments for each SIIP Improvement Area
- Periodic review of progress and effectiveness by the Implementation and Monitoring Team
- Periodic review of progress and effectiveness by PVNGS senior management
- Independent surveys or assessments (including an independent safety culture survey and performance evaluation)

The specific methods to be used for monitoring the effectiveness in achieving improvement in each SIIP area are presented in Section 6.0. Development of the set of metrics for each SIIP Action Plan is continuing in order to ensure that the appropriate set of metrics has been selected and that appropriate definitions, goals and thresholds for each metric

have been identified. As indicated in the commitment stated in the cover letter, the identification of additional or revised metrics will be submitted within 45 days of receipt of the NRC IP 95003 inspection report for PVNGS.

Each SIIP Improvement Area will remain open until both PVNGS senior management and the results of associated reviews have determined that substantial and sustainable improvement has been made in the area. Substantial and sustainable performance improvement in an Improvement Area will be indicated by (1) progress in implementing the Action Plans for that area, and (2) positive performance results in the Improvement Area as indicated by the collective trend of metrics and other effectiveness reviews. At that time, actions to address any remaining issues warranting further improvement will continue to be implemented through the SIBP and the PVNGS CAP.

6.0 ACTION PLANS

For each Action Plan presented below, the following information is provided: (1) a problem statement describing the overall problem being addressed and its primary causes and/or drivers; (2) an Action Plan Strategy describing the actions being taken to address the problem and those causes and/or drivers; (3) the core metrics that have been established for each plan; and (4) other measures of effectiveness for each plan. Detailed implementing steps for actions contained in these Action Plans have been developed and are included in the SIBP, and cross-references to the appropriate SIBP/SIIP sections are provided.

ATTACHMENT

SIIP ACTION PLAN - 1
Operational Focus
Executive Sponsor: Bob Bement

Problem Statement

Palo Verde lacked an operationally focused organization. As a result, long standing issues had been tolerated while reliable plant operation, the operability of systems important to safety, and nuclear safety had been challenged.

Additionally, control room personnel have not consistently demonstrated the level of formality and rigor associated with the levels of professionalism expected of personnel in command and control of a nuclear power plant.

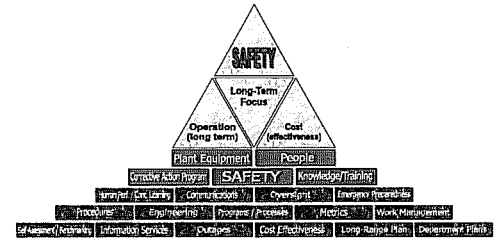
Furthermore, the operability assessment process has not been consistently applied to ensure timely, complete and properly prioritized evaluation of potentially degraded or non-conforming conditions.

Primary Causes

Senior management failed to establish and enforce appropriate expectations for maintaining an operationally focused organization led by operations.

Action Plan Strategy

1. Develop and implement the Leadership/Management Model from the Organizational Effectiveness Root Cause. (SIBP/SIIP 2.1.D.5)
2. Create a site-wide awareness/focus on the plant and corresponding safety aspects by setting the expectation to open initial daily meetings with discussions on plant status and correlating safety aspects. (SIBP/SIIP 4.4.11)
3. Complete an aggregate review of installed temporary mods, degraded-nonconforming work orders, control room deficiencies, installed jumpers, operability determinations, number of work orders on safety systems, longstanding permits, and operator-work-arounds that have been proceduralized to determine overall impact to operational nuclear safety of the plant. (SIBP/SIIP 4.1.G.1 thru 4.1.G.3)
4. Identify and review for aggregate impact, imbedded operator-work-arounds and burdens that challenge nuclear safety and institutionalize the process. (SIBP/SIIP 4.1.G.10)
5. Establish a site-wide emphasis and alignment on core mission and on core fundamental focus areas including: Safely and efficiently generate electricity for the long term, and core fundamental focus areas of Plant Equipment, People, Corrective Action Program, Safety, and Knowledge/Training. (SIBP/SIIP 7.1.B.10)
6. Develop and implement leadership training to address key nuclear fundamentals and improve overall leadership. (SIBP/SIIP 2.4.A.8)
7. Develop and implement a site-wide communication and meeting strategy to address site alignment, operational focus, and site-wide penetration of messages (SIBP/SIIP 7.1.B.1 and 7.1.B.5).
8. Identify key Operations department attributes and behaviors of an operationally focused organization from INPO 01-002, Conduct of Operations and incorporate them into procedures and training. (SIBP/SIIP 4.1.G.4, 4.1.G.5, and 4.1.G.6)
9. Develop and implement a Palo Verde specific power plant fundamentals course for site staff. (SIBP/SIIP 5.1.A.1 thru 5.1.A.3)
10. Develop and implement a strategy to expand operational knowledge and experience across the organization. (SIBP/SIIP 2.4.C.6)
11. Develop and implement plans and training to ensure that Operations management defines, communicates, and reinforces Operations Fundamentals such as high professional standards, control board monitoring, communications, and ownership of equipment problems . (SIBP/SIIP 6.11.1 and 6.11.2)
12. Ensure potentially degraded or non-conforming conditions receive a timely, thorough and appropriately prioritized Operability Determination and provide training for key operations and engineering personnel. (SIBP/SIIP 4.1.F.9 thru 4.1.F.27)



How We Measure Success

Core Metrics

Under Development

- Unplanned LCO Entries
- Control Room Deficiencies
- Operator Work Arounds
- Operator Burdens
- Red/Yellow System Health Action Schedule Adherence
- Operability Determination Quality

Effectiveness Reviews

- Quarterly Reviews by a Management Review Challenge Team (SIBP/SIIP 4.1.H.1 thru 4.1.H.8 and 4.1.F.28)
- 2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)

ATTACHMENT

SIIP ACTION PLAN - 2
Equipment Reliability
Executive Sponsor: Bob Bement

Problem Statement

Critical equipment has not operated properly on demand and has not performed reliably through the operating cycle.

Primary Causes

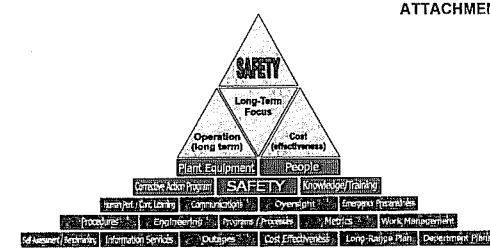
Lack of ownership, accountability, and visibility resulted in the station being ineffective at implementing the Reliability Centered Maintenance (RCM) project within established targets.

The station does not have a site wide long range process to prioritize, budget, and integrate individual system long-term reliability plans for system and component health.

The equipment root cause process does not consistently require consideration of actions to minimize recurrence for ERCFA I equipment failure evaluations

Action Plan Strategy

1. Revise and implement the plan to complete the Reliability Centered Maintenance (RCM) project. (SIBP/SIIP 1.2.C.11 and 1.2.C.12)
2. Develop and implement a Long Range Planning process which includes major repetitive activities, major modifications, major maintenance activities, appropriate approval processes, and process metrics to measure its health. (SIBP/SIIP 19.1.1.c, 19.1.1.f, 19.1.1.h, and 19.1.14)
3. Revise the Equipment Root Cause of Failure Analysis (ERCFA) program to require that ERCFA level 1 evaluations include consideration and documentation of corrective actions to minimize the likelihood of recurrence including revisions to the PM Program. (SIBP/SIIP 1.2.D.2, 1.2.D.3, and 1.2.D.4)
4. Transition the System Team Steering Committee to a Plant Health Committee and revise the charter to be consistent with industry guidance and to reinforce rigor and ownership in eliminating equipment reliability challenges . (SIBP/SIIP 1.2.F.10, 1.3.A.2, and 1.3.A.3)
5. Develop and implement the Leadership/Management Model and the Accountability Model from the Organizational Effectiveness Root Cause. (SIBP/SIIP 2.1.D.5 and 2.1.D.6)
6. Implement a minor modifications process to better address small equipment challenges. (SIBP/SIIP 1.4.2 and 1.4.6)



How We Measure Success

Core Metrics

Under Development

- RCM Project Implementation
- Unplanned LCO Entries
- Site Top Ten Issues Progress
- Red/Yellow Systems Health Action Schedule Adherence

Effectiveness Reviews

- Quarterly reviews by a Management Review Challenge Team. (SIBP/SIIP 1.5.1 thru 1.5.8)
- 2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)

SIIP ACTION PLAN - 3
Engineering Technical Rigor
Executive Sponsor: John Hesser

Problem Statement

Inconsistencies in some design output documentation, important operability determinations input, and engineering assumptions made during critical evaluations and resolution of key issues created challenges to reliable plant operations and meeting regulatory requirements.

Primary Causes

Engineering leadership has not maintained accountability for enforcement of engineering fundamentals and human performance standards.

Training has not been used effectively to improve engineering performance.

Lack of engineering work management (prioritization/due dates) and resource allocation (concurrent duties, responsibilities and loss of expertise) has affected quality of products.

Action Plan Strategy

1. Develop and implement the Leadership/Management Model and the Accountability Model from the Organizational Effectiveness Root Cause. (SIBP/SIIP 2.1.D.5 and 2.1.D.6)
2. Develop and train on a Conduct of Engineering procedure. The procedure should include engineering principles and standards. Incorporate a requirement into the engineering Training Program Description (TPD) to train on the Conduct of Engineering procedure in initial training and continuing training. (SIBP/SIIP 11.1.6 and 11.8.30)
3. Implement an Engineering Operations Support team with a charter for Operations interface and support on the Operability Determination process. (SIBP/SIIP 4.1.G.16)
4. Develop and incorporate Operability Determination training into initial and continuing engineering training. (SIBP/SIIP 5.1.E.3 and 5.1.E.4)
5. Establish a process to formally transmit technical information when the information is used for key activities such as Operability Determinations. (SIBP/SIIP 11.4.15)
6. Develop and provide training for problem solving and decision making techniques. (SIBP/SIIP 11.8.20 and 11.8.21)
7. Establish an Engineering Leader Observation Program that is incorporated within the site observation program as a tool for monitoring and adjusting engineering products, practices and human performance standards and tools. (SIBP/SIIP 11.4.1)
8. Provide training for use of Engineering Department Guide EDG-01 Engineering Human Performance Tools and EDG-02 Engineering Human Performance Tools for Technical Task Risk/Rigor. (SIBP/SIIP 11.4.9)
9. Establish metrics for Engineering Human Performance. (SIBP/SIIP 11.4.10)
10. Implement an Engineering work management and scheduling department and issue for use initial base load work schedules for Design, System, & Maintenance Engineering Department. (SIBP/SIIP 11.9.A.1 and 11.9.A.8)
11. Develop a procedure that describes the purpose, conduct, membership, criteria and requirements for using an Engineering Quality Product Review Board. (SIBP/SIIP 11.4.17)
12. Establish an Engineering Training group and align it within the Engineering Performance Improvement Department to provide focus on the engineering training program. (SIBP/SIIP 11.10.3)

How We Measure Success

Core Metrics

Under Development

- **Engineering Work Product Quality**
- **Operability Determination Quality**

Effectiveness Reviews

- **Quarterly Reviews by a Management Review Challenge Team (SIBP/SIIP 11.11.1 thru 11.11.8)**
- **2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)**

ATTACHMENT

SIIP ACTION PLAN - 4
Design Control / Configuration Management
Executive Sponsor: John Hesser

Problem Statement

Weaknesses in the Design Control & Configuration Management processes and their implementation have resulted in some errors in design output documents, plant procedures and inappropriate operating conditions. This is demonstrated by latent design issues that challenge operability, plant configuration change weaknesses, long standing temporary mods, and inadequate design products.

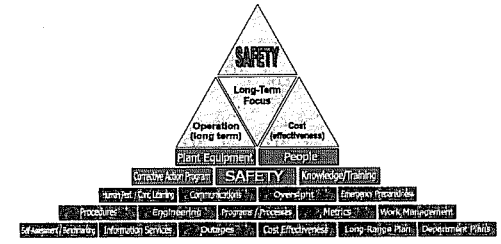
Primary Causes

Engineering has not taken full ownership and accountability as the design authority.

Action Plan Strategy

1. Develop and implement the Leadership/Management Model and the Accountability Model from the Organizational Effectiveness Root Cause. (SIBP/SIIP 2.1.D.5 and 2.1.D.6)
2. Improve configuration change processes, including control of temporary changes and train personnel on the improved processes. (SIBP/SIIP 11.7.1, and 11.7.4 thru 11.7.6)
3. Inventory engineering backlogs, complete significance reviews, and develop work-off plans. (SIBP/SIIP 11.9.A.4 thru 11.9.A.6)
4. Communicate and train the concept that Engineering is the "Design Authority" for the site. (SIBP/SIIP 7.1.C.6, 11.7.18, and 11.7.19)
5. Implement the CDBR for high risk/low margin components in accordance with the project schedule. (SIBP/SIIP 11.6.1.a, 11.6.1.b, 11.6.1.c, 11.6.7, and 11.6.13)
6. Inventory, plan, and work off backlogs of temporary changes and degraded conditions. (SIBP/SIIP 4.1.G.1 – 4.1.G.3, 11.3.11, and 11.3.14)

NOTE: For additional actions to address Engineering product quality see SIIP ACTION PLAN 3 – Engineering Technical Rigor



How We Measure Success

Core Metrics

Under Development

- Resolution of CDBR Related Actions
- CDBR Project Schedule Adherence
- Engineering Backlog Reduction

Effectiveness Reviews

- Quarterly reviews by a Management Review Challenge Team. (SIBP/SIIP 11.13.1 thru 11.13.8)
- 2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)

ATTACHMENT

SIIP ACTION PLAN - 5
Engineering Programs
Executive Sponsor: John Hesser

Problem Statement

Engineering Programs are not consistently aligned with industry standards and practices or other work processes. Resources are not adequate to meet both emerging daily priorities and address long-term programmatic issues. Learning opportunities have been missed as self assessment, benchmarking, corrective action and operating experience has not been fully utilized to improve Engineering Programs.

Primary Causes

Engineering leadership was not focused on Engineering fundamentals and did not place adequate oversight and ownership on Engineering Programs.

Organizational structure and resource allocation were not adequate to ensure long-term success of Engineering Programs.

Action Plan Strategy

1. As an interim measure to determine full extent of condition, Engineering is to evaluate what existing programs need to be immediately assessed or assessed near term and complete the assessments. (SIBP/SIIP 1.2.E.21, 1.2.E.22, and 1.2.E.35)
2. Establish owners for each one of the Engineering Programs, issue roles and responsibilities, and ensure they are trained on expectations and standards. (SIBP/SIIP 1.2.E.1, 1.2.E.14, and 11.10.4)
3. Develop and implement the Leadership/Management Model and Leadership Training from the Organizational Effectiveness Root Cause. (SIBP/SIIP 2.1.D.5 and 2.4.A.8)
4. Create and implement an Engineering work management and scheduling department and issue initial base-load schedule to ensure appropriate allocation of resources. (SIBP/SIIP 11.9.A.1 and 11.9.A.14)
5. Engineering Management will ensure a "rollup" of the Engineering Program Performance Indicators is presented for the first three quarters of 2008 at the quarterly Management Review Meeting. (SIBP/SIIP 1.2.E.7)
6. Revise the engineering program health reporting procedure (73DP-0AP05) to address self-assessment expectations, revise metrics using industry input, establish MRM program health indicator rollup presentations, require that program documents are maintained current, and to use change management when modifying engineering programs. (SIBP/SIIP 1.2.E.8, 1.2.E.13, and 1.2.E.16)
7. Realign engineering to consolidate system engineer responsibilities for the Maintenance Rule Program and establish a section leader responsible for management oversight of the program. Complete a self-assessment of the Maintenance Rule Program using external expertise. (SIBP/SIIP 1.2.E.24 and 1.2.E.27)
8. Complete corrective actions from the evaluation of the U3R13 transient combustible material procedure violations (CRDR 3077502). Complete benchmarking of transient combustible material processes and organizational structures for Fire Protection program implementation. (SIBP/SIIP 1.2.E.29, 1.2.E.30, and 1.2.E.32)
9. Enter actions from the 2007 Equipment Qualification Program Self-Assessment Into the corrective action program and benchmark the Equipment Qualification Program using the INPO Engineering Program Guide (EPG-02). (SIBP/SIIP 1.2.E.28, 1.2.E.31)
10. Based on industry best practices, identify if there are other engineering processes that should be managed as an Engineering Program. (SIBP/SIIP 1.2.E.15)

How We Measure Success

Core Metrics

Under Development

- **Engineering Program Assessment Schedule Adherence**
- **Red/Yellow Engineering Program Health Action Schedule Adherence**

Effectiveness Reviews

- **Quarterly reviews by a Management Review Challenge Team. (SIBP/SIIP 11.12.1 thru 11.12.8)**
- **2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)**

ATTACHMENT

SIIP ACTION PLAN - 6
Performance Improvement Part 1 - CAP
Executive Sponsor: Dwight Mims

Problem Statement

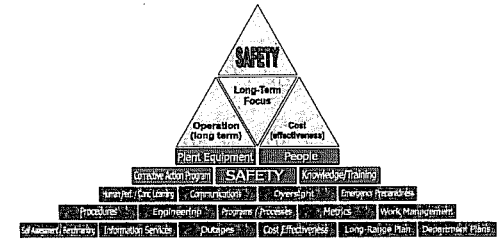
PVNGS continues to demonstrate weaknesses in the effective implementation of the station Corrective Action Program (CAP). CRDR quality is at an unacceptably low level.

Primary Causes

The primary cause is inadequate personnel and organizational accountability. In addition contributing causes included: insufficient change management, weak CAP procedures, ineffective CAP program oversight, ineffective communication of standards and expectations, ineffective performance indicators, and inadequate training and qualifications.

Action Plan Strategy

1. Develop and communicate Corrective Action Program (CAP) fundamentals for station personnel and for managers and supervisors. (SIBP/SIIP 3.3.3.j)
2. Increase visibility of CAP indicators and reinforce CAP behaviors through management alignment and review meetings. (SIBP/SIIP 3.2.7.i thru 3.2.7.p)
3. Develop a process to conduct crosscutting reviews during Management Review Meetings (MRM). (SIBP/SIIP 8.4.4)
4. Incorporate performance objectives for CAP timeliness and quality into the Performance Management Plans (PMPs) for each position. (SIBP/SIIP 3.5.3.f)
5. Develop and implement the Leadership/Management Model and the Accountability Model from the Organizational Effectiveness Root Cause. (SIBP/SIIP 2.1.D.5 and 2.1.D.6)
6. Improve quality and consistency of root and apparent cause evaluations. (SIBP/SIIP 3.2.5.c, 3.3.2.c, and 3.3.3.b)
7. Establish a process to provide training to Performance Advocates on their responsibility for quality program implementation. (SIBP/SIIP 3.3.3.d)
8. Develop and implement qualification requirements for ARRC and CARB members. (SIBP/SIIP 3.3.3.b and 3.3.3.c)
9. Complete a job qualification and training for root cause investigators and investigation directors. (SIBP/SIIP 3.3.1.b, 3.3.1.c, and 3.3.2.c)
10. Implement process changes to include reinstitution of the adverse evaluation , improvement of CAP governing procedures , and improvement of trending processes. (SIBP/SIIP 3.4.7.a thru 3.4.7.k, 3.4.2.b, 3.4.9.d, and 3.4.10.a thru 3.4.10.j)
11. Institutionalize the use of a formal Change Management Process. (SIBP/SIIP 6.10.1)



How We Measure Success

Core Metrics

Under Development

- **Condition Report/Disposition Request (CRDR) Quality**
- **CRDR Evaluation Age**
- **CRDR Inventory**
- **CRDR Age**
- **Average age of open CAPRs**
- **Historical Significance Review Work-off**

Effectiveness Reviews

- **Quarterly reviews by a Management Review Challenge Team. (SIBP/SIIP 3.5.5 thru 3.5.12)**
- **2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)**

ATTACHMENT

SIIP ACTION PLAN - 6
Performance Improvement Part 2 – OE & SA/BM
Executive Sponsor: Dwight Mims

Problem Statement

Operating Experience (OE) - Lessons learned from important industry and internal operating experience have not been put into practice.

In addition, the Self Assessment and Benchmarking Program (SA/BM) is ineffective in identifying and resolving performance gaps

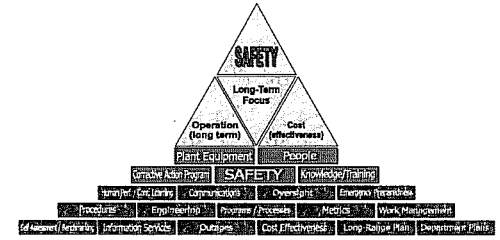
Primary Causes

The station has not embraced Operating Experience as a learning tool and lessons learned. The degree of management oversight and engagement was not adequate. Periodic verification and validation of operating experience evaluation results has not been performed. The process for periodic effectiveness reviews has not been adequate. Key attributes and behaviors, integral to a successful operating experience program, were not evident in the current program or implementation.

The value of the Self Assessment process has not been firmly anchored and management has not provided adequate program oversight and ownership. Self-assessments were not consistently intrusive. Benchmarking was infrequent, lacked a disciplined approach to planning, and was not constructively used for station-wide improvement. Station management has not demonstrated adequate leadership to ensure the PVNGS program aligns with station standards, industry standards, and was effectively supported and implemented. Program oversight and ownership was not well established.

Action Plan Strategy

1. Revise 65DP-0QQ01, Industry Operating Experience Review, to include conduct of operating experience elements from INPO 05-05 and 97-011, including in the procedure, roles, responsibilities, and ownership expectations. (SIBP/SIIP 6.7.1)
2. Develop and implement an operating experience screening committee, include criteria, charter, roles/responsibilities for cross-disciplinary review of in-coming (external) operating experience. (SIBP/SIIP 6.7.16)
3. Evaluate the SOER select listing from INPO and re-evaluate the analysis and corrective actions taken by the station. (SIBP/SIIP 6.7.17)
4. Develop a process to add OE to work packages. (SIBP/SIIP 6.7.11)
5. Implement more usable OE search engine(s). (SIBP/SIIP 6.7.12)
6. Develop and implement controls to ensure corrective actions implemented into procedures, processes, and training to address high-tier OE are not inadvertently deleted. (SIBP/SIIP 6.7.6)
7. Evaluate and implement a robust self assessment and benchmarking process program aligned with industrial best practices. (SIBP/SIIP 15.1.7, 15.1.10, and 15.2.1)
8. Conduct station quality review boards for reviewing and approving self assessment and benchmarking reports. (SIBP/SIIP 15.1.9)
9. Implement self assessment team leader and sponsor training prior to conduct of cross-functional, mid-cycle, or comprehensive assessments. (SIBP/SIIP 15.1.6)
10. Implement a process to schedule overall station self assessments by department. (SIBP/SIIP 15.1.16)



How We Measure Success

Core Metrics

Under Development

- Timeliness of OE Screening
- Site Self Assessment Schedule Adherence
- Self Assessment Quality

Effectiveness Reviews

- Quarterly reviews of OE by a Management Review Challenge Team. (SIBP/SIIP 6.7.20 thru 6.7.27)
- Quarterly reviews of SA/BM by a Management Review Challenge Team. (SIBP/SIIP 15.1.17 thru 15.1.24)
- 2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)

SIIP ACTION PLAN - 7
Managing Plant Workload
Executive Sponsor: Bob Bement

Problem Statement

Effective work management is an organizational process whereby individuals clearly understand and follow roles in order to ensure work is planned and scheduled in accordance with established plans, schedules and procedures to ensure the right work is performed on the right equipment at the right time in order to improve plant safety, reliability and performance. Contrary to this, the processes and procedures for Work Management and Outage Management have not been effectively implemented at PVNGS in order to improve and maintain station equipment reliability.

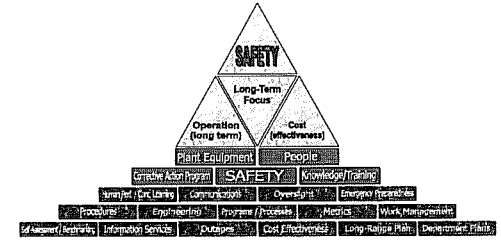
Primary Causes

Site organizations have isolated themselves from the industry and themselves, resulting in a lack of alignment on the Work Management process. Department Managers have different perspectives on how Work Management should be supported or improved.

Site personnel across the organization and up the management chain do not value the work management process due to little understanding about how the Work Management process is supposed to work.

Action Plan Strategy

1. Revise procedure 51DP-9OM03, Site Scheduling, to incorporate industry best practices based upon industry benchmarking and INPO AP-928 including roles and responsibilities and conduct of meeting expectations. (SIBP/SIIP 14.4.16)
2. Revise procedure 51DP-9OM09, Outage Planning and Execution, to incorporate industry best practices based upon industry benchmarking and INPO 06-008 including roles and responsibilities and conduct of meeting expectations. (SIBP/SIIP 17.3.17)
3. Develop a plan to implement INPO style High Performance Team Building Training in the Work Management Area. (SIBP/SIIP 14.4.10)
4. Develop a charter and standard agenda for each T- minus scheduling meeting. (SIBP/SIIP 14.4.13)
5. Conduct Engineering work management and periodic alignment meetings with Operations, Maintenance, Work Management & Engineering. (SIBP/SIIP 11.9.A.9 and 11.9.A.10)
6. Improve Maintenance and Operations support of schedule development including appropriate metrics to monitor performance. (SIBP/SIIP 14.1.8, 14.5.2, and 14.5.3)
7. Complete an assessment of the current tools and processes for online and outage risk management against industry best practices to identify improvement opportunities. (SIBP/SIIP 14.1.15)



How We Measure Success

Core Metrics

Under Development

- Online Schedule Adherence
- Online Scope Stability T-12 thru T-5
- Online Scope Stability T-5 thru T-1
- CM Backlog
- EM Backlog

Effectiveness Reviews

- Quarterly reviews by a Management Review Challenge Team. (SIBP/SIIP 14.2.11 thru 14.2.18)
- Assess Readiness for 2R14 and 1R14. (SIBP/SIIP 17.3.18)
- 2008 Mid-cycle Assessment. (SIBP/SIIP 2.6.9)

ATTACHMENT

SIIP ACTION PLAN - 8
Emergency Preparedness
Executive Sponsor: Dwight Mims

Problem Statement

Weaknesses in the Emergency Preparedness (EP) Program ownership and program implementation exist. Numerous deficiencies have been identified showing an adverse trend in the timely and accurate emergency plan notifications, classifications, and Protective Action Recommendations

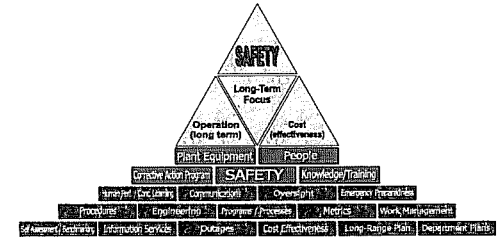
Primary Causes

With respect to Emergency Preparedness, leaders have not established, communicated, and reinforced high expectations for performance and held individuals accountable to those standards. Shortfalls in meeting expectations are sometimes not evaluated, understood and promptly addressed.

Emergency Preparedness Drill/Exercise Performance is in the 4th Quartile due to training designed to meet requirements vice operational excellence.

Action Plan Strategy

1. Revise policy guidance on Emergency Planning to incorporate revised roles and responsibilities. (SIBP/SIIP 9.1.A.1 and 9.1.A.5)
2. Develop and implement the Leadership/Management Model and the Accountability Model from the Organizational Effectiveness Root Cause. (SIBP/SIIP 2.1.D.5 and 2.1.D.6)
3. Emergency Planning to institute alignment meetings between Emergency Response Organization's Emergency Coordinators (EC) and Emergency Operations Directors (EOD). (SIBP/SIIP 9.1.A.22)
4. Enhance the training program and conduct training for EC's and EOD's on EAL's. (SIBP/SIIP 9.2.A.15, 9.2.A.16, and 9.2.A.22)
5. Create an EP Training Review Group as well as the appropriate number of Training Advisory Committees and control EP training similar to accredited training programs. (SIBP/SIIP 9.2.A.23 and 9.1.A.33)
6. Develop and implement a strategy (posters, lanyard cards, etc) to communicate Emergency Planning Program elements to the line organization. (SIBP/SIIP 9.1.A.6 and 9.1.A.21)
7. Revise EOD Performance Management Plans to include an expectation that they are responsible for their team's performance commencing 2008. (SIBP/SIIP 9.1.A.4)
8. Develop and implement a multi-discipline E-Plan Steering Committee that will provide oversight of the Emergency Preparedness program. (SIBP/SIIP 9.1.A.24)
9. Revise EPIP-09 to address implementation of EALs 7-1, 7-2, and 7-3 and provide applicable training. (SIBP/SIIP 9.5.5 and 9.5.6)
10. Implement Emergency Response Organization weekly turnover meetings. (SIBP/SIIP 9.1.A.11 and 9.1.B.9)
11. Develop a plan for implementation of NEI 99-01 Rev.5 for EAL upgrade and present to Senior Management. (SIBP/SIIP 9.5.1 and 9.5.2)



How We Measure Success

Core Metrics

Under Development

- Emergency Response Organization
- ERO Classification
- ERO Notification
- ERO PAR Accuracy

Effectiveness Reviews

- Quarterly Reviews by Management Challenge Review Team (SIBP/SIIP 9.6.1 thru 9.6.8)

ATTACHMENT

SIIP ACTION PLAN - 9
Programs / Procedures / Work Instructions
Executive Sponsor: Dwight Mims

Problem Statement

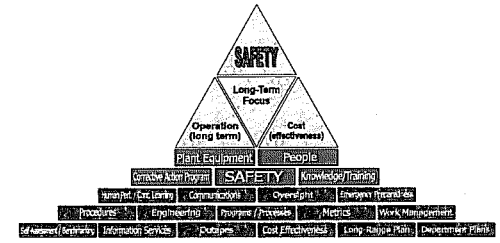
Palo Verde Nuclear Station, procedure, and policy guidance deficiencies have continued to result in ineffective program implementation and have contributed to procedure adherence problems. Previous attempts to resolve issues associated with programs, procedures and processes have not been successful in elimination of the overall issue.

Primary Causes

Inadequate procedure program / process controls have contributed to procedure quality issues.

Action Plan Strategy

1. Develop and implement the Leadership/Management Model and the Accountability Model from the Organizational Effectiveness Root Cause. (SIBP/SIIP 2.1.D.5 and 2.1.D.6)
2. Establish an administrative review committee for management of program, procedure and process priorities. (SIBP/SIIP 12.2.2)
3. Establish a Site Work Management System (SWMS) users board for review and prioritization of software change requests. (SIBP/SIIP 16.2.A.1)
4. Re-establish a procedures administrative control program and develop upper tier documents for implementation of vital processes and controls for procedural hierarchy. (SIBP/SIIP 12.2.8)
5. Identify major programs and processes vital to ensuring performance at PVNGS is maintained. (SIBP/SIIP 12.2.7)
6. Revise procedure 01DP-0AP01, Procedure Process, to improve usability. (SIBP/SIIP 10.2.7)
7. Complete Process mapping for development of a PV process inventory infrastructure. (SIBP/SIIP 12.3.2 and 12.3.3)
8. Develop CAP and Work Management process simplification improvement plans. (SIBP/SIIP 12.4.4, 12.4.5 and 12.4.6)
9. Reduce the number of procedure writer's guides to enhance procedure consistency. (SIBP/SIIP 10.2.8)
10. Identify and develop SWMS usability improvements. (SIBP/SIIP 16.2.A.4.b and 16.2.A.4.c)
11. Establish an organizational structure to focus on control and improvement of site processes with particular focus on CAP and Work Management. (SIBP/SIIP 4.4.20)



How We Measure Success

Core Metrics

Under Development

- Site Technical Non-Adverse Procedure Changes
- Site Technical Adverse Procedure Changes
- Total Inventory of Procedure Changes
- Reliability Centered Maintenance Project Implementation

Effectiveness Reviews

- Quarterly Reviews by Management Challenge Review Team (SIBP/SIIP 12.3.10 thru 12.3.17)
- Conduct an effectiveness review of the Administrative Review Committee (SIBP/SIIP 12.2.3)
- 2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)

ATTACHMENT

SIIP ACTION PLAN - 10
Organizational Effectiveness
Executive Sponsor: Bob Bement

Current State

Site efforts to internalize nuclear fundamentals have not been effective and have not improved station performance. Shortcomings in nuclear fundamentals continue to exist, are tolerated by the Palo Verde organization, and sometimes challenge long term safe and reliable operation.

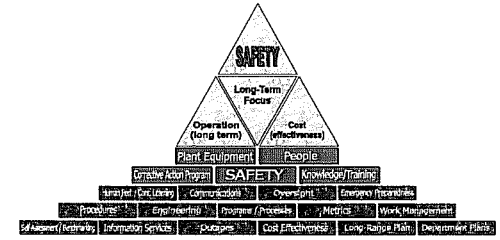
Primary Causes

Leaders have not established, communicated, and reinforced high standards and expectations for performance and held individuals accountable to those standards. Shortfalls in meeting expectations are sometimes not evaluated, understood and promptly addressed.

Responsibility, accountability, and authority for nuclear safety are not well defined, clearly understood, and effectively implemented. Some leaders are not leading advocates of nuclear safety and do not demonstrate their commitment both in word and deed. Individual behaviors that demonstrate nuclear safety principles are not consistently applied to daily activities.

Action Plan Strategy

1. Develop and implement a Management Review Meeting (MRM) process for Performance Indicators (PI) to include cross cutting reviews, deep dives, and an accountability process for improving performance. (SIBP/SIIP 8.4.1, 8.4.4, 8.4.5, 8.4.6, and 8.4.15)
2. Create a site-wide awareness/focus on the plant and corresponding safety aspects by setting the expectation to open initial daily meetings with discussions on plant status and correlating safety aspects. (SIBP/SIIP 4.4.11)
3. Develop and implement a site-wide leadership/management model to establish standards of performance to be used as a basis for improving individual behaviors and station performance. (SIBP/SIIP 2.1.D.5)
4. Develop and implement a site-wide accountability model. (SIBP/SIIP 2.1.D.6)
5. Develop and implement a site-wide communication and meeting strategy to address site alignment, operational focus, and site-wide penetration of messages. (SIBP/SIIP 7.1.B.1 and 7.1.B.5)
6. Develop and implement leadership training to address key nuclear fundamentals and improve overall leadership training. (SIBP/SIIP 2.2.E.1.b and 2.4.A.8)
7. Develop and implement leader evaluations and a management succession plan to assure qualified and competent leadership for the long term. (SIBP/SIIP 2.3.C.1.a and 2.4.B.4)
8. Improve the quality and assure the effectiveness of the employee Performance Management Process. (SIBP/SIIP 2.3.A.3, 2.3.A.4, 2.3.A.8 and 2.3.A.9)
9. Implement a Safety Culture Team and a Recovery Team (Implementation and Monitoring Team) to assure continued focus on improving PVNGS performance. (SIBP/SIIP 4.4.10 and 8.10.1)
10. Institutionalize the use of a formal Change Management Process. (SIBP/SIIP 6.10.1)



How We Measure Success

Core Metrics

Under Development

- INPO Plant Performance Index – annualized
- Site Top 10 Issue Progress
- Safety Culture Corrective Action Implementation
- SIIP Action Schedule Adherence

Effectiveness Reviews

- Quarterly reviews by a Management Review Challenge Team. (SIBP/SIIP 2.6.1 thru 2.6.8)
- 2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)
- 2008 Safety Culture Assessment (SIBP/SIIP 4.4.8.b)

ATTACHMENT

SIIP ACTION PLAN - 11
Human Performance / Industrial Safety – Part 1 HU
Executive Sponsor: Dwight Mims / Bob Bement

Problem Statement

Human Performance (HU) - Palo Verde has experienced an increase in human performance errors over the last four years. Corrective actions have not addressed effectively the cross-cutting issues involving failing to implement standards and fundamentals, reinforcing behaviors, use of error-prevention tools, and changing behaviors. These problems were identified across several cornerstones and involved multiple groups within the PV organization.

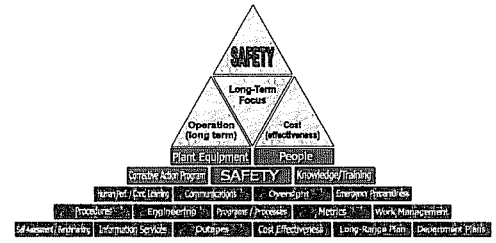
Primary Causes

Human Performance - The Palo Verde organization does not demonstrate ownership and leadership of the human performance culture.

In addition, a common cause analysis concluded that the leading causes of the department clock reset issues were worker behaviors, organizational factors, and job site conditions.

Action Plan Strategy

1. Revise and implement standards and expectations, including HU fundamentals. (SIBP/SIIP 6.1.1 thru 6.1.3, 6.1.6, and 6.1.11)
2. Implement Observation Program, analyze data quarterly to determine areas for improvement, and identify corrective actions. (SIBP/SIIP 6.2.1.a, 6.5.2.a thru 6.5.2.k)
3. Establish the advocate's role in trending process and provide them training on how to analyze potential adverse trends. (SIBP/SIIP 6.3.2)
4. Develop/implement graded approach for HU tools for leaders and include in the Standards and Expectations Preventing Events Handbook. (SIBP/SIIP 6.1.4.a)
5. Complete human performance tools training utilizing HU simulators and dynamic learning tools. (SIBP/SIIP 6.4.1)
6. Develop and implement training for coach-the-coach, including situations awareness, observations, and how to provide feedback skills. (SIBP/SIIP 6.2.4.b and 6.4.4.b)
7. Develop and implement the Accountability Model from the Organizational Effectiveness Root Cause. (SIBP/SIIP 2.1.D.6)
8. Develop Integrated Issues Identification Team (IIIT) to be used in conjunction with coach-the-coach program. IIIT should include cross-functional members, a charter, observation training, field time (physical walk downs), identification of issues. (SIBP/SIIP 6.2.10)
9. Inventory existing mock-up's and develop a strategy to use mock-ups for human performance training focused on behaviors in the field. (SIBP/SIIP 6.2.11)



How We Measure Success

Core Metrics

Under Development

- Site Clock Resets
- Consequential Human Error Rate
- Human Error Rate (Procedure use and adherence)

Effectiveness Reviews

- Quarterly reviews by Management Challenge Review Team (SIBP/SIIP 6.9.5 thru 6.9.12)
- 2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)
- Integrated Human Performance Self Assessment (SIBP/SIIP 6.9.1)

ATTACHMENT

SIIP ACTION PLAN - 11
Human Performance / Industrial Safety – Part 2 IS
Executive Sponsor: Dwight Mims / Bob Bement

Problem Statement

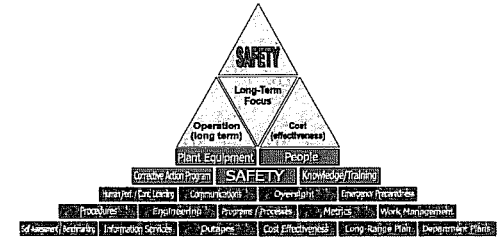
Industrial Safety (IS) - The station has exhibited poor implementation practices and weakness in correcting deficient conditions in the area of Industrial Safety that resulted in unacceptable Industrial Safety performance

Primary Causes

Industrial Safety has not been a high priority for all Station personnel due to lack of organizational alignment and accountability.

Action Plan Strategy

1. Evaluate and determine the staffing, structure, roles, responsibilities and qualifications of the Palo Verde Safety Department, including establishment of rotational safety department personnel positions. (SIBP/SIIP 4.2.3)
2. Develop and implement an Industrial Safety observation program consisting of a core group of individuals for the purpose of providing a catalyst for Industrial Safety culture change. (SIBP/SIIP 4.2.20)
3. Develop and provide formal behavioral based safety observation techniques training for the PV Leadership Team (SIBP/SIIP 4.2.21)
4. Develop and put into practice a reporting mechanism that is capable of capturing the various industrial safety-related items in SWMS and establish performance indicator(s). (SIBP/SIIP 4.2.22)
5. Develop and implement a Palo Verde accountability and leadership/management model from the Organizational Effectiveness Root Cause. (SIBP/SIIP 2.1.D.5 and 2.1.D.6)



How We Measure Success

Core Metrics

Under Development

- Industrial Safety WO Backlog
- APS/PVNGS ISAR
- Non-Utility ISAR
- Industrial Safety Work Order Average Age

Effectiveness Reviews

- Quarterly reviews by Management Challenge Review Team (SIBP/SIIP 4.5.1 thru 4.5.8)
- 2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)

ATTACHMENT

SIIP ACTION PLAN - 12
Safety Culture
Executive Sponsor: Dwight Mims

Problem Statement

NRC Inspection Procedure 95003 requires the licensee to complete an independent third-party assessment of safety culture. Palo Verde complied with this requirement via safety culture survey and interviews conducted by SYNERGY and an independent group of senior nuclear leaders chartered as the Independent Safety Culture Performance Evaluation Team (ISCPET)

Primary Causes

Individual Accountability and Ownership

Clarity and Communication of Overall Priorities and Strategy

Quality of Leadership and Management

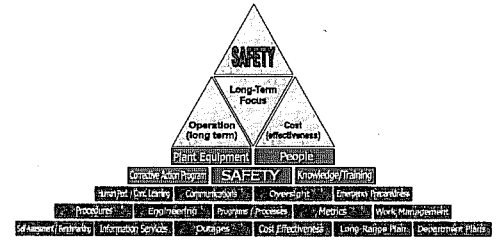
Receptivity to Employee Input

Change Management

Site Programs and Processes

Action Plan Strategy

1. Develop and implement the Leadership/Management Model and the Accountability Model to reinforce site standards and expectations. (SIBP/SIIP 2.1.D.5, 2.1.D.6, and 4.4.14)
2. Develop and implement a Management Review Meeting (MRM) process for Performance Indicators (PI) to include cross cutting reviews, deep dives, and an accountability process for improving performance. (SIBP/SIIP 8.4.1 and 8.4.4)
3. Create a site-wide awareness of safety culture by setting the expectation to open initial daily meetings with discussions on plant status and corresponding nuclear, radiological, industrial, and cultural safety aspects. (SIBP/SIIP 4.4.11)
4. Establish a Safety Culture Team to better focus the site on safety culture and implement a more formal process for periodic evaluation of PVNGS Safety Culture and SCWE. (SIIP 4.4.16 and 4.4.10)
5. Develop and implement a site-wide communication and meeting strategy to address site alignment, operational focus, site-wide penetration of messages and to communicate Corrective Action Program (CAP) and Work Management (WM) improvements. (SIBP/SIIP 7.1.B.1, 7.1.B.5, and 7.1.C.7)
6. Educate employees on behaviors which support a strong Safety Culture via small group meetings. (SIBP/SIIP 4.4.4)
7. Develop and implement leadership training on nuclear fundamentals, including: Nuclear Safety, Safety Culture, SCWE, Operations Focus, and CAP. Establish and implement competencies (including Nuclear Safety, Safety Culture, and SCWE behaviors) for key positions and implement a formal Management Succession Plan. (SIBP/SIIP 2.3.C.1.a, 2.4.A.8, 2.4.B.4, and 4.4.17)
8. Implement specific action plans, including targeted staffing strategies, for each Safety Culture priority group and follow up with other site groups to assure they address safety culture weaknesses in their areas. (SIBP/SIIP 2.2.B.1 thru 2.2.B.5, 2.2.B.7, 2.2.B.8, 4.4.35, 4.4.36, and 20.2 thru 20.14)
9. Establish a formal process for use of a change management tool and communicate to site personnel the requirements for use of the tool. (SIBP/SIIP 4.4.18, 6.10.1, and 6.10.5)
10. Perform evaluation of weaknesses and complexity in site processes, procedures, programs, and work instructions, and establish an organizational structure to focus on control and improvement of site processes with particular focus on CAP and Work Management. (SIBP/SIIP 4.4.19, 4.4.20, and 4.4.32)



How We Measure Success

Core Metrics

Under Development

- SIIP Action Schedule Adherence
- CRDR Quality
- Online Schedule Adherence
- Safety Culture Assessment Actions – Scheduled vs. Completed
- Priority Group Action – Scheduled vs. Completed

Effectiveness Reviews

- Interim effectiveness reviews of Priority Groups (SIBP/SIIP 20.2.1 thru 20.14.1)
- 2008 Safety Culture Assessment (SIBP/SIIP 4.4.8.b)

ATTACHMENT

SIIP ACTION PLAN - 13
Training and Qualification
Executive Sponsor: Bob Bement

Problem Statement

The line and training organizations have not sufficiently engaged each other to improve the station's performance and fundamental knowledge deficiencies. Additionally, a learning organizational culture has not been embraced.

Primary Causes

Training was not recognized or valued as a key strategic tool for performance improvement.

Training management did not have the organizational presence to effectively reinforce station training culture.

The tools and guidance for gathering and analyzing plant performance data were insufficient to determine performance gaps and identify appropriate training solutions.

Station management did not value self assessments as a tool to improve performance.

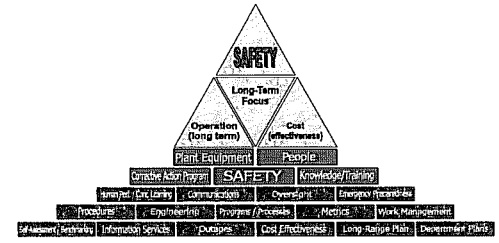
Nuclear Training staff lacked knowledge and/or skill to develop specific training intervention problem statements and metrics.

The site wide policy for performing self assessment is not an effective tool for identifying the site strategy or requirement for self assessments including comprehensive self assessments.

Action Plan Strategy

NOTE: These actions are to address the training program issues. Specific knowledge deficiencies are addressed in their respective SIIP Action Plans.

1. Train line managers associated with accredited programs on the importance and value of using training as a strategic tool for improving performance. (SIBP/SIIP 5.3.A.6)
2. Senior management established knowledge and training as one of five permanent building blocks within the site integrated improvement plan. (SIBP/SIIP 7.1.B.10)
3. Establish guidance for and training on analysis of performance data such as field observations, corrective actions, human performance clock resets and line performance indicators for possible training solutions. (SIBP/SIIP 5.3.A.7 and 5.3.A.8)
4. Provide Nuclear Training Department instructors and leaders continuing training on methods to determine and develop specific metrics and problem statements. (SIBP/SIIP 5.3.C.7)
5. Enhance the existing guidelines on self assessment to establish a more comprehensive template for conducting accredited training program self assessments. (SIBP/SIIP 5.3.D.2 and 5.3.D.6)
6. Operations to establish individual Shift Manager biennial professional development plans for each shift manager using the ACAD 97-004 as a guide. (SIBP/SIIP 5.3.A.14)
7. Implement orientation to key training oversight committee members on their roles and responsibilities. (SIBP/SIIP 5.3.C.10)



How We Measure Success

Core Metrics

Under Development

- Training Observations of Programs

Effectiveness Reviews

- Quarterly Reviews by a Management Review Challenge Team (SIBP/SIIP 5.3.D.7 thru 5.3.D.14)
- 2008 Mid-cycle Assessment (SIBP/SIIP 2.6.9)

ATTACHMENT

SIIP ACTION PLAN - 14
EDG K-1 RELAY EVENT
Executive Sponsor: John Hesser

Problem Statement

Unit 3 emergency diesel generator (DG) "A" K1 contactor latched closed during the September 4, 2006 shutdown, however, the normally open direct current (DC) coil switch contact did not close as expected. This caused DG A to be incapable of performing its design function. The condition was not identified until September 22, 2006; therefore, DG 3A had been out of service for 18 days. This contactor had only been in service since July 26, 2006, having replaced a contactor that had failed with the same symptoms.

- 05000530/2006-12-01: 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to establish appropriate instructions for performing corrective maintenance activities on an emergency diesel generator K-1 relay.
- 05000530/2006-12-02: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure to identify and correct the cause of erratic emergency diesel generator K-1 relay operation prior to installation of the relay on July 26, 2006

Primary Causes

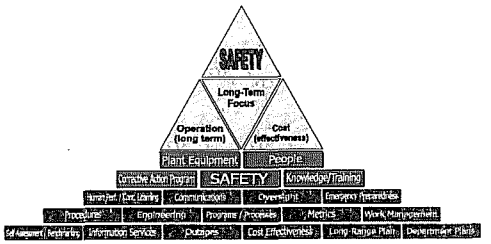
(Failure Mechanism): Insufficient contact compression introduced by stack-up of tolerances and a bent metal actuator arm permitted inconsistent electrical operation of the DC coil switch, normally open contact of the K1 contactor.

The K1 contactor was treated as a single reliable replaceable component; therefore, subcomponents of the K1 contactor mechanics were not fully understood. This lack of understanding, produced ineffective preventive maintenance (PM) tasks for the emergency diesel generator field flash and de-excitation circuit.

Inadequate management expectation for use of a systematic problem solving methodology: (1) no clear site-wide expectation of a common process to be used when equipment fails; (2) the requirement to consider all possible failure modes and document refuting evidence is not sufficiently clear in ERCFA procedure 70DP-0EE01; (3) troubleshooting game plans do not require multiple failure mode strategy and they tend to direct the action toward pre-determined probable causes; and (4) the correct failure modes were not identified in recent equipment problem solving efforts, such as the K1 relay.

Action Plan Strategy

1. Straightened metal actuator arm in the Unit 3 DG(A) K1 relay to restore sufficient contact compression. Inspected and straightened 5 other DG's K-1 relay actuator arms as necessary. (SIBP/SIIP 3.6.49)
2. Updated vendor tech manual and Model Work Scope Library (WSL) revised to ensure proper contactor set-up and DC coil switch cleaning instructions are provided. (SIBP/SIIP 3.6.5, 3.6.47 and 3.6.48)
3. Reviewed PM templates for the DG System to ensure that identified single point vulnerabilities are effectively managed. (SIBP/SIIP 3.6.57)
4. Reviewed similar relays in other safety related systems for extent of cause. (SIBP/SIIP 3.6.59 thru 3.6.65)
5. Implement 01DP-9ZZ01, Systematic Troubleshooting, as the Palo Verde troubleshooting and problem solving process and provide training to selected Operations, Maintenance, and Engineering personnel. (SIBP/SIIP 3.6.55 and 3.6.72)
6. Develop and provide training to ERCFA qualified personnel on failure modes considerations, use of OE, and accountability to assure quality investigations. (SIBP/SIIP 3.6.7)
7. Replace the 90VR back panels (includes all new K1 contactors and their auxiliary contacts) in generator control cabinets XJDGA(B)B02 for all six onsite Class 1E EDGs. Implement modification in all three units. This is the longer-term equipment corrective action to address long-term reliability and obsolescence. (SIBP/SIIP 3.6.11)



How We Measure Success

Core Metrics

Under Development

- EDG K-1 Relay Action Completion
- ERCFA Training Completion

Effectiveness Reviews

- Effectiveness Review of CAPRs. (SIBP/SIIP 3.6.79)

ATTACHMENT

SIIP ACTION PLAN - 15
RAS EVENT
Executive Sponsor: John Hesser

Problem Statement

A lack of some specific provisions in the design and licensing bases, ineffective questioning attitude and technical rigor in reviewing design documents and inadequate communications of design and licensing information to the appropriate groups resulted in a failure to fill and maintain full ECCS suction lines from the Recirculation Actuation Sump.

Primary Causes

Lack of Specific Provisions in the Design and Licensing Basis. The design and licensing basis documents did not contain explicit statements requiring the ECCS suction lines to be filled. The reasons for not explicitly stating these requirements was not positively ascertained.

Ineffective Questioning Attitude and Technical Rigor of Individuals. Some PVNGS personnel had a narrow focus and an incorrect mindset (i.e., incorrect belief in self-venting theory) in reviewing information provided in various design documents that indicated the need to keep the ECCS suction lines filled. There was a general ineffective use of a QV&V process.

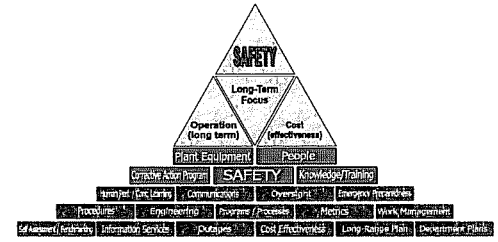
Inadequate Communication of Design Information. The need to keep the ECCS suction lines filled was identified but not appropriately communicated. Follow-through for ensuring start-up procedures contained provisions for filling and venting the system was inadequate.

Action Plan Strategy

NOTE: The implementing actions for each of the below Focus Areas have been developed and in many cases completed . However, these actions are being reviewed and adjusted to account for additional learnings identified during the ImPACT process. As a result of this review this action plan may be further adjusted.

Implement action plans to resolve the following problems:

F/A 1 - Voiding in the RAS piping.
F/A 2 - In-house licensing / design basis information may be incomplete.
F/A 3 - Errors related to technical rigor, questioning attitude, procedure use and adherence, and decision making tools.
F/A 4 - Technical Communications of Design Information.
F/A 5 - Inadequate implementation of the Corrective Action Program resulted in inconsistent problem identification, narrowly focused evaluations, and ineffective and untimely resolution.
F/A 6 - Operating Experience (OE) Program did not require review of some type of operating experience reports related to the ECCS suction lines.
F/A 7 - Gaps in technical knowledge assessment, design bases, and SSC knowledge contributed to incorrect technical decisions and errors in design information.
F/A 8 - High workloads and conflicting priorities contributed to engineers not assessing or identifying issues beyond what they were specifically assigned.
F/A 9 - NAD oversight activities were not effective in helping the station identify and respond to problems.
F/A 10 - Design Basis Manual procedure writer's guide did not contain necessary requirements/guidance on application of source document content.



How We Measure Success

Core Metrics

Under Development

- CDBR Project Schedule Adherence
- Engineering Work Product Quality
- RAS Action Completion
- Operability Determination Quality
- Timeliness of OE Screening

NOTE: Previous RAS related metrics will be re-evaluated and adjusted as necessary.

Effectiveness Reviews

- Monthly reviews by a Management Review Challenge Team. (SIBP/SIIP 3.7.13 thru 3.7.23)