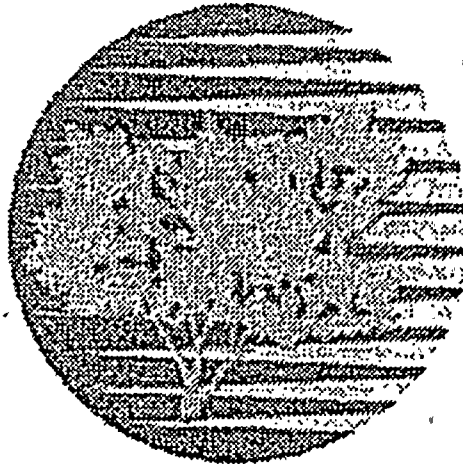


**PVNGS**  
**FIVE-YEAR BUSINESS PLAN**  
**1991 - 1995**



**JULY 1990**

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*To all PVNGS employees:*

*My signature below signifies approval of the PVNGS Five-Year Business Plan 1991-1995.*

*William F. Conway*

*William F. Conway, Executive Vice President-Nuclear*

*7/3/90*

*DATE*



# **SECTION I**

## **Introduction**

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## INTRODUCTION

This initial version of the Five-Year Business Plan presents five-year goals, strategies, and objectives for the operation of Palo Verde Nuclear Generating Station (PVNGS) during the period 1991 through 1995. Although various documents currently reflect this material, it has been reshaped to better reflect PVNGS priorities and integrated into a single business plan to facilitate every employee's understanding of the PVNGS mission and goals and how their individual efforts contribute toward achieving those goals.

The mission of PVNGS is to generate electricity in a safe, reliable, economic, and environmentally sound manner for the benefit of our customers, owners, and employees. Palo Verde is a business enterprise that must operate in a manner that serves the interest of our shareholders and customers.

The Five-Year Business Plan consists of the following major elements:

- Mission and goals to achieve the mission;
- Strategies to accomplish the goals;
- Objectives that measure the success of the strategies;
- Five-Year Equivalent Availability Plan;
- Five-Year Operations and Maintenance (O&M) Budget and;
- Five-Year Capital Expenditure Budget.

The Five-Year Business Plan is supported by a one-year business plan which presents that year's strategies, objectives, and resources and a task plan which identifies activities and accountabilities to achieve yearly objectives. The Five-Year Business Plan, the one-year plan, and the task plan are updated annually to incorporate changes and reflect achievements. Together, these plans comprise the PVNGS Business Plan. All levels of PVNGS management participated in developing appropriate elements of the plan.





The following goals support the PVNGS mission:

1. Safety - Protect the environment and the health and safety of the public and the employees.
2. Professionalism - Maximize individual performance.
3. Production - Maximize electric generation and improve organizational effectiveness.
4. Cost - Reduce overall cost.

The following management priorities support these goals:

1. Emphasize the utmost importance of safety and strict adherence to applicable regulatory requirements.
2. Maintain radiation exposures as low as reasonably achievable through improved compliance with radiation protection requirements and standards and minimization of radiological waste and contamination.
3. Improve the reliability, operability, and maintainability of plant systems.
4. Improve processes for planning, prioritizing, estimating, scheduling, and controlling maintenance activities, outages, and modifications, as well as necessary engineering and technical support.
5. Emphasize timely response to issues identified internally and as appropriate externally.
6. Attract, train, develop, and retain a competent staff with a strong sense of pride and professionalism.
7. Foster attitudes that emphasize quality, attention to detail, and personal accountability in every aspect of our work.
8. Strengthen public understanding of PVNGS in the media, among opinion leaders, and in political forums -- in terms of safety and as a contributor to the conservation of resources, the environment, and the economy.
9. Promote teamwork throughout PVNGS, including a strong sense of cooperation and common mission, with special emphasis on effective internal communication and information management.
10. Strengthen the ability of the PVNGS organization to assess its progress and problems, including improvement of root cause analysis capability.



11. Maintain current and readily accessible plant design information, technical data, equipment status, and related records to support station operations.
12. Improve organizational accountabilities for PVNGS as a business enterprise for which actions must be correct, cost-effective, and timely.

Strategies and objectives presented in this document incorporate these priorities.

NOTE: The absence of a date indicates an ongoing activity or that the due date of an objective is the last day of the year of the plan. Due dates shown are the last day of the period indicated.

## **SECTION II**

### **Mission, Goals, and Strategies**

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# **MISSION GOALS STRATEGIES**

# **PVNGS FIVE-YEAR BUSINESS PLAN**

**MISSION:** The mission of the Palo Verde Nuclear Generating Station is to generate electricity in a safe, reliable, economic, and environmentally sound manner for the benefit of our customers, owners, and employees.

**Goal 1: Safety - Protect the environment and the health and safety of the public and employees.**

- Strategies:**
- A. Provide a safe work environment for all employees.
  - B. Minimize personnel radiation exposure and the generation of radioactive materials and waste.
  - C. Meet or exceed regulatory requirements.
  - D. Maintain safety equipment in a state of readiness to support plant operations and minimize challenges.
  - E. Minimize use of hazardous materials and production of hazardous waste.

**Goal 2: Professionalism - Maximize individual performance.**

- Strategies:**
- A. Attract, train, develop, and retain a professional, competent staff.
  - B. Improve individual performance and accountability.
  - C. Improve communication and teamwork.

**Goal 3: Production - Maximize electric generation and improve organizational effectiveness.**

- Strategies:**
- A. Maximize production efficiency.
  - B. Improve effectiveness of all organizations.
  - C. Improve maintenance support for operations.
  - D. Improve engineering support for operations and maintenance.
  - E. Improve chemistry support for operations.
  - F. Improve outage planning, scheduling, and management.
  - G. Improve work control processes.
  - H. Improve plant configuration management.

**Goal 4: Cost - Reduce overall cost.**

- Strategies:**
- A. Manage resources in a cost-effective manner.
  - B. Improve management cost control practices.

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## **SECTION III**

### **Objectives**

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## **GOAL 1: SAFETY**

## **PVNGS FIVE-YEAR BUSINESS PLAN**

**Goal 1: *Safety - Protect the environment and the health and safety of the public and employees.***

### **FIVE-YEAR PERFORMANCE OBJECTIVES**

**Strategy A.** Provide a safe work environment for all employees.

**Objectives:**

1. Maintain an All Injury Incident Rate of 0.50 or less.
2. Maintain a Lost Work Incident Rate of 0.15 or less.
3. Maintain a Severity Incident Rate of 1.50 or less.

**Strategy B.** Minimize personnel radiation exposure and the generation of radioactive materials and waste.

**Objectives:**

1. Do not exceed personnel radiation exposure of: outage = 180 manrem per year and non-outage = 25 manrem per year.
2. Do not exceed contaminated surface area of: outage = 7.5% and non-outage = 1.5%.
3. Do not exceed personnel contamination events of: outage = 110 per year and non-outage = 50 per year.
4. Do not exceed a three-year average low-level waste volume of 160 cubic meters per unit.

**Strategy C.** Meet or exceed regulatory requirements.

**Objectives:**

1. Make responsible, coordinated regulatory commitments and meet due dates.
2. Make responsible, coordinated industry (e.g., ANI, NUMARC) commitments and meet due dates.
3. Prioritize, track, and respond in a timely manner to approved recommendations from internal and external assessments.



1. A

2. B

3. C

4. D

5. E

6. F

7. G

8. H

9. I

10. J

11. K

12. L

13. M

14. N

## **GOAL 1: SAFETY**

## **PVNGS FIVE-YEAR BUSINESS PLAN**

**Goal 1: *Safety - Protect the environment and the health and safety of the public and employees.***

### **FIVE-YEAR PERFORMANCE OBJECTIVES**

**Strategy D.** Maintain safety equipment in a state of readiness to support plant operations and minimize challenges.

**Objectives:**

1. Achieve safety system performance availability of at least: 99.0% - high pressure safety injection, 98.5% - auxiliary feedwater, 98.5% - emergency A/C power.
2. Do not exceed one unplanned automatic reactor scram while critical per unit each year.
3. Do not exceed one unplanned safety system actuation per unit each year.

**Strategy E.** Minimize use of hazardous materials and production of hazardous waste.

**Objectives:**

1. Limit the production of hazardous waste.
2. Evaluate use of non-hazardous materials versus hazardous materials annually and substitute as practical.



## **GOAL 2: PROFESSIONALISM**

## **PVNGS FIVE-YEAR BUSINESS PLAN**

**Goal 2: Professionalism - Maximize individual performance.**

### **FIVE-YEAR PERFORMANCE OBJECTIVES**

**Strategy A.** Attract, train, develop, and retain a professional, competent staff.

**Objectives:**

1. Select qualified individuals to perform job functions.
2. Develop technical and inter-personal skills through formal and informal training.
3. Improve managerial and supervisory skills.

**Strategy B.** Improve individual performance and accountability.

**Objectives:**

1. Integrate the PVNGS Business Plan into daily work activities to assure continuity and consistency of managerial direction.
2. Communicate standards and expectations clearly and consistently.
3. Develop and implement results-oriented performance plans and appraisals consistently by 1991.
4. Emphasize quality, attention to detail, and timely actions.
5. Require adherence to procedures in accordance with PVNGS policies.
6. Provide regular performance feedback throughout the organization.

**Strategy C.** Improve communication and teamwork.

**Objectives:**

1. Use daily activities to improve teamwork and morale throughout the organization.
2. Ensure managers and supervisors seek feedback from personnel.
3. Promote effective, ongoing communication with co-workers and peers.
4. Improve effectiveness of external communications, particularly with PVNGS regulators.

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## **GOAL 3: PRODUCTION**

## **PVNGS FIVE-YEAR BUSINESS PLAN**

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**Goal 3: *Production - Maximize electric generation and improve organizational effectiveness.***

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<b>FIVE-YEAR PERFORMANCE OBJECTIVES</b>
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**Strategy A.** Maximize production efficiency.

**Objectives:**

1. Achieve a three-year average site equivalent availability (capability) factor of 75%.
2. Do not exceed a forced outage rate (unplanned capability loss factor) of 5% per unit.
3. Maintain thermal performance of at least 99.5% per unit.

**Strategy B.** Improve effectiveness of all organizations.

**Objectives:**

1. Improve ability to conduct critical self-assessments.
2. Improve proactive problem identification and resolution.
3. Evaluate and implement lessons learned from PVNGS and industry experience.
4. Improve root cause and human performance evaluations.
5. Minimize repeat internal, NRC, or INPO findings.
6. Improve management of station backlogs.
7. Achieve SALP ratings of 2 or better in each category by 1992.
8. Achieve INPO rating of 2 or better by 1992.
9. Integrate management information systems by 1994.

**Strategy C.** Improve maintenance support for operations.

**Objectives:**

1. Promote personal ownership by initiating problem-solving at the lowest practical level.
2. Complete and implement preventive maintenance program improvements by 1991.
3. Develop and implement standard equipment specifications for corrective maintenance.
4. Improve predictive maintenance program.
5. Improve capability for calibration and control of measuring and test equipment.
6. Improve control of special and previously used tools.
7. Improve electronic work order program.

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## **GOAL 3: PRODUCTION**

## **PVNGS FIVE-YEAR BUSINESS PLAN**

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**Goal 3: *Production - Maximize electric generation and improve organizational effectiveness.***

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### **FIVE-YEAR PERFORMANCE OBJECTIVES**

**Strategy D.** Improve engineering support for operations and maintenance.

**Objectives:**

1. Develop a proactive engineering posture in daily activities to foster ownership of plant systems.
2. Disposition engineering requests for support based on operational priorities and within established time frames by 1992.
3. Meet established schedules and turnaround times for engineering products and commitments.
4. Continue to streamline the design change process.
5. Continue to improve quality of engineering products.
6. Develop a common engineering work management system by 1992.
7. Perform 50% of PVNGS engineering work in-house by 1992.
8. Establish a plant, system, and component performance monitoring program by March 1992.

**Strategy E.** Improve chemistry support for operations.

**Objectives:**

1. Do not exceed a chemistry performance index of 0.15.
2. Improve chemistry controls for incoming demineralized water.
3. Improve chemistry controls for closed cooling systems.

**Strategy F.** Improve outage planning, scheduling, and management.

**Objectives:**

1. Plan and control outages to meet schedules.
2. Conduct annual analyses of past outages and industry outage experience to identify and correct major contributors to lost time.
3. Reduce in-processing time for outage contractors.
4. Implement plan to ensure adequate summer capacity.

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## **GOAL 3: PRODUCTION**

## **PVNGS FIVE-YEAR BUSINESS PLAN**

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**Goal 3: *Production - Maximize electric generation and improve organizational effectiveness.***

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<b>FIVE-YEAR PERFORMANCE OBJECTIVES</b>
-----------------------------------------

**Strategy G.** Improve work control processes.

**Objectives:**

1. Reduce work order rejection rate by 10% each year.
2. Complete development of model work orders by 1992.
3. Complete the training and qualification of work planners and schedulers by 1992.
4. Complete simplification of work control processes by 1992.

**Strategy H.** Improve plant configuration management.

**Objectives:**

1. Improve the configuration management program by 1992.
2. Complete critical, safety-related plant design basis documentation.
3. Complete development of operational basis information.
4. Limit design changes.
5. Achieve simulator certification by May 1991.
6. Achieve necessary and desirable unit consistency.



## **GOAL 4: COST**

## **PVNGS FIVE-YEAR BUSINESS PLAN**

**Goal 4: Cost - Reduce overall cost.**

### **FIVE-YEAR PERFORMANCE OBJECTIVES**

**Strategy A.** Manage resources in a cost-effective manner.

**Objectives:**

1. Achieve an average operations and maintenance cost per kilowatt hour, including fuel expense, within the top twenty domestic nuclear plants.
2. Meet and maintain five-year operations and maintenance budgets at the 1991 level.
3. Reduce APS fuel expense to \$7 per megawatt hour by 1993.
4. Maintain average capital improvement costs below \$100 million per year.
5. Maintain average warehouse inventory value below \$140 million.

**Strategy B.** Improve management cost control practices.

**Objectives:**

1. Justify and control expenditure of funds.
2. Minimize overtime within budget.
3. Maintain staff, including long-term contractors, no greater than 3211.
4. Improve cost and budget reporting.



## **SECTION IV**

### **Equivalent Availability (Capability) Targets**

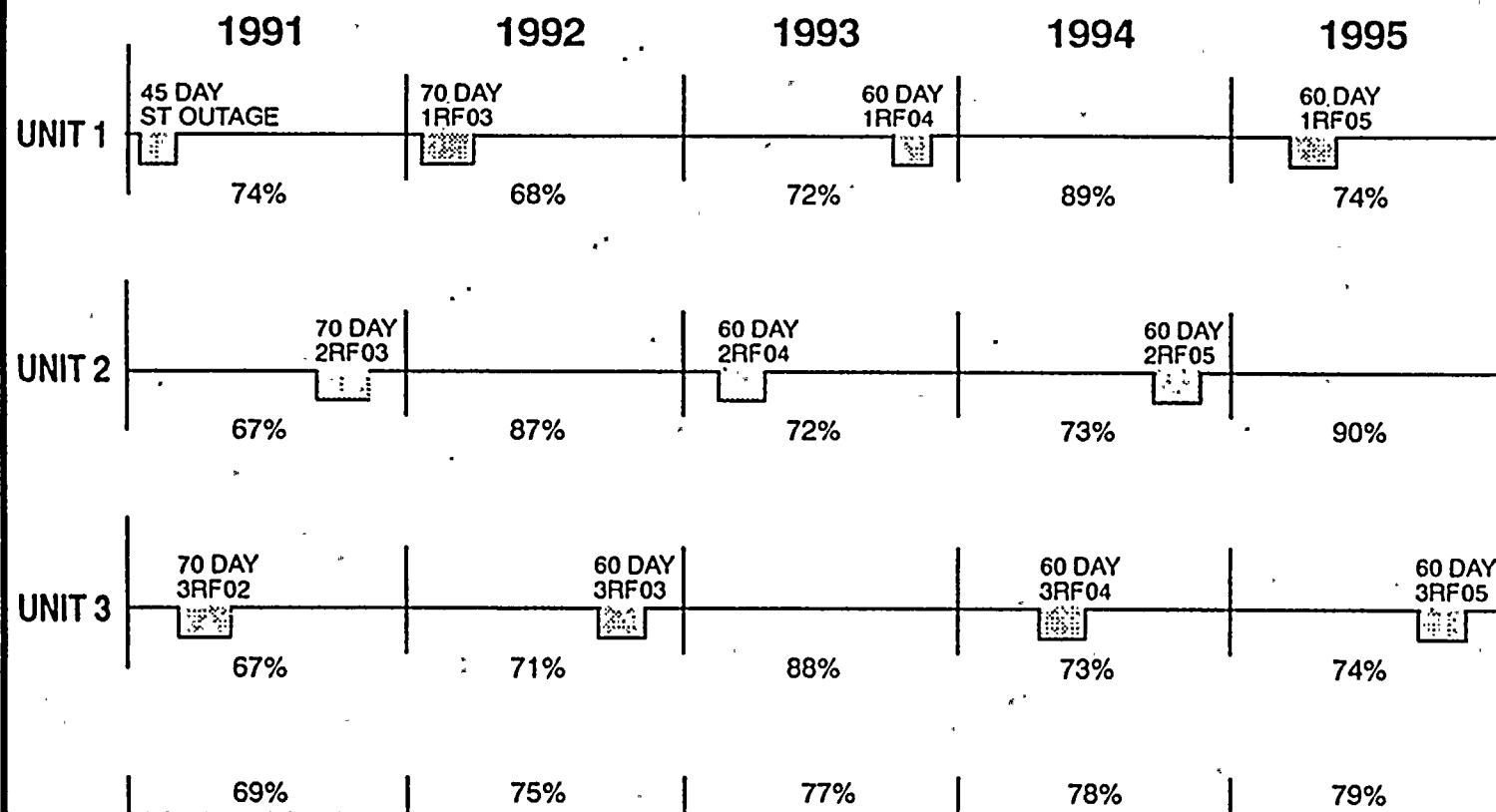
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# **PALO VERDE NUCLEAR GENERATING STATION FIVE-YEAR EQUIVALENT AVAILABILITY (CAPABILITY) TARGETS**



**YEARLY SITE AVERAGE  
(FIVE-YEAR AVERAGE = 75%)**

	<u>FORCED OUTAGE RATE</u>	<u>EFFECTIVE FORCED OUTAGE RATE</u>
1991	9%	14%
1992	8%	13%
1993	7%	12%
1994	6%	11%
1995	5%	10%

**TABLE 1**

## **SECTION V**

### **Operations and Maintenance Budget Forecast**

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TABLE 2

**PALO VERDE NUCLEAR GENERATING STATION**

**Operations & Maintenance Budget Forecast  
(\$ in Millions)**

	1991	1992	1993	1994	1995
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Total O&M      \$ \_\_\_\_\_ LATER \_\_\_\_\_



## SECTION VI

## Capital Expenditures Forecast





# PALO VERDE NUCLEAR GENERATING STATION

	1991	1992	1993	1994	1995
Capital Improvements	\$				
Nuclear Fuel		LATER			
Total Capital	\$				



