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ACCESSION NBR:8410160038 DOC.DATE: 84/09/24 NOTARIZED: YES DOCKET #
 FACIL:STN-50-528 Palo Verde Nuclear Station, Unit 1, Arizona Publi 05000528
 STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529
 STN-50-530 Palo Verde Nuclear Station, Unit 3, Arizona Publi 05000530
 AUTH.NAME AUTHOR AFFILIATION
 VAN BRUNT,E.E. Arizona Public Service Co.
 RECIP.NAME RECIPIENT AFFILIATION
 KNIGHTON,G. Operating Reactors Branch 3

SUBJECT: Corrected ltr forwarding revised changes to FSAR Chapter 13.

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Arizona Public Service Company

~~CORRECTED COPY~~

ANPP-30525-EEVBJr/TFQ

September 24, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. George Knighton, Chief
Licensing Branch No. 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Revised Changes to Chapter 13 of the FSAR
Docket Nos STN 50-528/529/530
File: 84-056-026; G.1.01.10

Reference: Letter from E. E. Van Brunt, Jr., APS, to NRC, ANPP-29978,
dated August 1, 1984.

Dear Mr. Knighton:

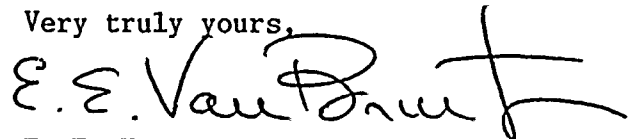
Attached are revised changes to Chapter 13 of the FSAR. Revised Figures 13.1-1, 13.1-2, 13.1-3, and changes to pages in the text are to replace the respective pages currently in the FSAR.

These changes are reflected in the attached "List of Effective Pages" for Amendment 13. The "Change Page" reflects above changes that were not already made in Amendment 13, also attached.

In addition, Figures 13.1-2A, 13.1-3A, 13.1-3B, 13.1-3C, and 13A-1 should be deleted.

If you have any questions concerning this matter, please contact me.

Very truly yours,



E. E. Van Brunt, Jr.
APS Vice President
Nuclear Production
ANPP Project Director

EEVBJr/JYM/mb
Attachment

cc: E. A. Licitra (w/o attachment)
A. C. Gehr (w/o attachment)
G. C. Zwetzig (w/o attachment)

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PDR ADDCK 05000528
A PDR

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N. E. Meador
LCTS Coordinator

(ALL without Attachments)

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, Edwin E. Van Brunt, Jr., represent that I am Vice President, Nuclear Production of Arizona Public Service Company, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority to do so, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true.

Edwin E. Van Brunt, Jr.
Edwin E. Van Brunt, Jr.

Sworn to before me this 24th day of September 1984.

Dora E. Meador
Notary Public

My Commission Expires:

My Commission Expires April 6, 1987



CHANGE PAGE LIST FOR AMENDMENT 13 (Cont)

Remove

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 Fig. 13.1-1
 Fig. 13.1-2
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 Fig. 13.1-3
 Fig. 13.1-3A through
 Fig. 13.1-3C
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 Fig. 13.1-6
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 13.4-1/-2
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 13A-i/-ii
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 Fig. 13A-1
 14-i/-ii
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Fig. 14.2-2 (LATER) page
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13.2-6B	Amend 13	13A-1	Amend 5
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13.2-24	Amend 8	13A-21	Amend 13
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13.5-6	Amend 12	14.1-1	Original
13.5-6A	Amend 12	14.2 Tab	Original
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	13.1-2	APS Nuclear Organization
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	13.1-3I	APS Nuclear Emergency Planning
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12	13.1-4	Deleted
	13.1-5	APS Engineering and Construction Organization
	13.1-6	Nuclear Operation Organization
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13	13.1-6B	APS Nuclear Operations
	13.1-6C	APS Nuclear Maintenance
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	13.1-7	Manning Schedule
12	13.2-1	Deleted
8	13.2-2	Deleted

responsible for development of plant maintenance programs have been filled.

13.1.1.1.3 Technical Support for Operations

The Vice President-Nuclear Production, through the Executive Vice President of Arizona Nuclear Power Project (ANPP), has been designated by the President and Chief Executive Officer of APS as the Corporate Officer responsible for providing management and technical support services for PVNGS (refer to figure 13.1-1). The Vice President-Nuclear Production has established under him departments and staff sections as discussed in section 13.1.1.2.2 and as shown on figure 13.1-2.

Technical support for operations beyond the capabilities of the PVNGS operating staff is provided as discussed in the following section.

13.1.1.1.3.1 Offsite Technical Support. Offsite technical support will be provided and coordinated by the Technical Services Group as described in 13.1.1.2.2.1.

Other APS organizations/departments may be utilized. These include but are not limited to:

- APS Engineering and Construction Organization
- APS Fuel Supply Department
- APS Risk Management Services Department
- APS Electric Operations Organization

The expertise encompassed in these areas includes mechanical, structural, electrical, and instrumentation and controls engineering, uranium supply, chemistry, and fire protection.

Outside consultants will be utilized for work beyond the scope of expertise within APS.

11 13.1.1.1.3.2 Deleted

13.1.1.1.3.3 Deleted

13.1.1.1.3.4 Deleted

13.1.1.2 APS Organizational Arrangement

Figure 13.1-1 reflects the current APS Corporate Structure. The organizational arrangement for providing onsite and offsite technical support for operations is described in the following sections.

12 13.1.1.2.1 APS Nuclear Organization

The Executive Vice President, Arizona Nuclear Power Project (ANPP) has the overall responsibility and authority for the operation and technical support of PVNGS. This position is charged with the overall responsibility and authority to ensure that all activities associated with APS' Nuclear facilities are carried out with the highest standards of safety. Figure 13.1-2 reflects the organization of the Executive Vice President ANPP. These organizations are discussed in the following sections.

13 13.1.1.2.1.1 Project Services Group. The Director, Project Services has responsibility for providing adequate and timely support to both the Nuclear Production Group and the Quality Assurance Group in the procurement, contracting, industrial safety, materials and inventory control, office services, budget and cost control, planning and scheduling, corporate procedural development, computer services, labor relations, employee relations, participant services and budget systems development areas, and transportation.

The Director, Project Services reports to the Executive Vice President, ANPP.

reports, and is the PVNGS representative in NRC communications. He is also responsible for managing the Environmental Monitoring Program. (Refer to figure 13.1.3J.)

13.1.1.2.8 Transition Department

The onsite transition department reports to the Assistant Vice President-Nuclear Production. The Transition Manager directs the transition section's activities. The Transition Manager is responsible for the startup program, for setting construction priorities to meet startup schedule, for completing systems prior to transfer to operations, and for supporting operations to full power. Refer to section 14.2 for the Transition organization.

13.1.1.2.9 Nuclear Safety Department

The Manager, Nuclear Safety reports directly to the Vice President, Nuclear Production.

The Manager, Nuclear Safety is responsible for directing the activities of the Nuclear Safety Group (NSG) and the Independent Safety Engineering Group (ISEG), and for making recommendations which would improve the margin of safety.

The following individuals report directly to the Manager, Nuclear Safety (figure 13.1-3K.)

A. Supervisor, Nuclear Safety Group

Responsible for identifying, reporting and recommending corrective actions for programmatic matters that may improve the safe operation of PVNGS. Refer to section 13.4.2.

B. Supervisor, Independent Safety Engineering Group

Responsible for identifying, reporting and recommending corrective action for day-to-day activities that may improve the safe operation of PVNGS.

13| 13.1.1.2.10 Other APS Departments

13| The organization of other APS departments utilized by the
13| Nuclear Organization is described in the following sections.

13| 13.1.1.2.10.1 Engineering and Construction Organization. The
8| Vice President of Engineering and Construction for fossil
11| fired plants reports to the President and Chief Operating
Executive Officer who reports to the Chairman of the Board and Chief
8| Executive Officer. The Vice President of Engineering and
Construction has established under him an organization as
shown on figure 13.1-5. Engineering support, as required,
is provided by the Engineering Departments of the Engineering
and Construction Organization in the areas of mechanical,
structural, electrical, and instrumentation and controls
engineering.

13| 13.1.1.2.10.2 Fuel Supply Department. The Manager of Fuel
8| Supply reports to the Vice President of Resources and Planning
as shown in figure 13.1-1. The fuel supply manager has
established under him a department with expertise in the
area of uranium procurement.

13| 13.1.1.2.10.3 Risk Management Services Department. The Mana-
11| ger of Risk Management Services reports to the Treasurer of
Finance and Tax Services who reports to the Executive Vice
9| President and Chief Financial Officer as shown in figure
13.1-1. The Manager of Risk Management Services has estab-
lished under him an organization with expertise in fire pro-
tection, including at least one full-time fire protection
engineer.

individual designated in writing by the Director of Nuclear Operations. In the event of unexpected contingencies of a temporary nature, when neither the Director of Nuclear Operations nor the designated individual is available at the station, the designated Operations Duty Manager will assume this responsibility. The Operations Duty Manager is a member of the station staff designated in writing by the Director of Nuclear Operations.

13.1.2.2.2 Technical Support Manager

The Technical Support Manager is responsible to the Director of Nuclear Operations for the technical support required to ensure proper functioning of the nuclear plant. He directs the Manager of Engineering, Manager of Radiation Protection and Chemistry, Supervisor of Compliance, Superintendent of Computer Systems, Operations Schedule and the Shift Technical Advisor Supervisor in the performance of their duties (Refer to Figure 13.1-6A).

13.1.2.2.2.1 Engineering Manager. The Engineering Manager is the department head responsible to the Technical Support Manager for Onsite Engineering and technical work required for proper operation of the nuclear plant. He directs the supervisors of the onsite nuclear and operations engineering in the performance of their duties.

13.1.2.2.2.1.1 Reactor Engineering Supervisor. The Reactor Engineering Supervisor is responsible for core monitoring and in-core fuel management programs. He coordinates with onsite operating personnel and with offsite support organizations as necessary in performing these functions.

13.1.2.2.2.1.2 Operations Engineering Supervisors. The Operations Engineering Supervisors are responsible to the Engineering

ORGANIZATIONAL STRUCTURE
OF APPLICANT

- 13| Manager for onsite mechanical, electrical, I&C, reactor
9| engineering support, including monitoring station performance
and the inservice inspection program.
- 13| 13.1.2.2.2.1.3 Computer Superintendent. The Computer Super-
9| intendent is responsible to the Technical Support Manager
for coordinating onsite station computer activities, including
hardware and software.
- 13| 13.1.2.2.2.1.4 Deleted
- 9| 13.1.2.2.2.2 Radiation Protection and Chemistry Manager. The
12| Radiation Protection and Chemistry Manager is responsible to the
Technical Support Manager for the onsite preparation, coordina-
9| tion, and conduct of station radiological protection, chemistry,
and radiochemistry programs, including operating philosophy and
procedures for maintaining occupational radiation exposures as
low as is reasonably achievable. His position corresponds to
"Radiation Protection Manager" as discussed in Regulatory
Guide 1.8. He directs the Radiological Services Superinten-
13| dent, the Chemistry Services Superintendent, the Radioactive
Materials Control Superintendent and the ALARA Supervisor
in the performance of their duties. The Radiological Services
Superintendent is designated as backup to provide coverage in
9| event of absence of the Radiation Protection and Chemistry
Manager.
- 13| 13.1.2.2.2.2.1 Radiological Services Superintendent. The
Radiological Services Superintendent is responsible to the
Radiation Protection and Chemistry Manager for the prepara-
tion, coordination, and conduct of the station radiological
programs.
- Reporting to the Radiological Services Superintendant are the
Radiation Protection Supervisors for each unit and the Radia-
tion Protection Support Supervisor. The Radiological Services

ORGANIZATIONAL STRUCTURE
OF APPLICANT

Superintendent is responsible for control of radiation exposures to personnel, maintenance of related records, and conduct of surveillance.

13.1.2.2.2.2.2 Chemistry Services Superintendent. The Chemistry Services Superintendent is responsible to the Radiation Protection and Chemistry Manager for the conduct of the water chemistry program and coordinates with the Radiological Services Superintendent on radiation exposures and contamination problems associated with the chemistry program.

13.1.2.2.2.2.3 Radioactive Materials Control Superintendent. The Radioactive Materials Control Superintendent is responsible to the Radiation Protection and Chemistry Manager for the preparation, coordination, and conduct of the station radioactive waste management programs including approval of radioactive waste disposal activities.

Reporting to the Radioactive Materials Control Superintendent are the Radwaste Supervisors for each unit and the Radwaste Support Supervisor.

13.1.2.2.2.2.4 ALARA Supervisor. The ALARA Supervisor is responsible to the Radiation Protection and Chemistry Manager for the preparation, coordination, and conduit of the station ALARA Program.

13.1.2.2.2.3 Compliance Supervisor. The Compliance Supervisor is responsible to the Technical Support Manager for providing support in the licensing, regulatory compliance, and periodic and event-related reporting of PVNGS activities.

13.1.2.2.2.4 Shift Technical Advisor (STA) Supervisor. The STA Supervisor is responsible to the Technical Support Manager for providing Shift Technical Advisors.

13.1.2.2.3 Operations Manager

The Operations Manager is responsible to the Director of Nuclear Operations for the safe, reliable, and efficient operation of power block and Water Reclamation Facility (WRF) equipment and systems. He directs the Unit Operating Superintendents, the WRF Superintendent and the Operations Support Supervisor. (Refer to figure 13.1-6B.)

13.1.2.2.3.1 Unit Operations Superintendents. The Unit Operations Superintendents are responsible to the Operations Manager for the conduct of the unit operations in a safe and efficient manner in accordance with technical specifications and station instructions. They supervise the activities of the unit's operating personnel. The Unit Operating Superintendents will possess a Senior Reactor Operator license.

13.1.2.2.3.1.1 Day Shift Supervisor. The Dayshift Supervisor is responsible to the Operations Superintendent and assists him in supervising the conduct of Operations in the nuclear unit including performance of operating personnel, shift manning, scheduling, and various administrative duties, i.e., auditing of logs, records, etc. The Dayshift Supervisor will possess a Senior Reactor Operator license.

13.1.2.2.3.1.2 Unit Shift Supervisors. The Unit Shift Supervisors are responsible to the Unit Day Shift Supervisors for the safe, reliable, and efficient operation of the unit during the assigned shift. The unit shift supervisor directs the activities of the operators on each shift, coordinates maintenance activities performed while on each shift and ensures compliance with required radiological control procedures. Should the Shift Supervisor be absent or incapacitated, the Assistant Shift Supervisor will assume the shift supervisor's

establishing and supervising the Fire Protection program at the station. The Fire Protection Program is discussed in section 9.5.1.5.1.

13.1.2.2.4.2 Security Manager. The Security Manager is responsible to the Plant Services Manager to plan, develop, implement and manage the PVNGS Security Program. The Operations Security Supervisor and the Security Training Supervisor report to the Security Manager.

13.1.2.2.4.3 Training Manager. The Training Manager is responsible to the Plant Services Manager for the preparation, coordination, and conduct of PVNGS training. The Licensed Operator Training, General Training, and Training Support Supervisors report to the Training Manager.

13.1.2.2.5 Deleted

13.1.2.2.6 Outage Maintenance Manager

The Outage Maintenance Manager is responsible for an integrated outage schedule for both planned and unplanned outages and for an integrated schedule for modifications to ensure proper work controls. (Refer to figure 13.1-2.)

13.1.2.3 Operating Shift Crews

An operating crew for each unit will normally consist of a Shift Supervisor and Assistant Shift Supervisor (both of whom will possess Senior Reactor Operator licenses), two Nuclear Operator III's who will possess Reactor Operator licenses), and four Operator I and/or II's. The minimum shift crew composition for various modes of operation is as shown in the PVNGS Technical Specifications.

A site Fire Team of at least 5 members shall be maintained onsite at all times.^(a) The Fire Team shall not include

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3 members of the minimum shift crew necessary for safe shut-down of the unit and any personnel required for other essential function during a fire emergency.

13.1.3 QUALIFICATIONS OF NUCLEAR PLANT PERSONNEL

13.1.3.1 Qualification Requirements

The recommendations of Regulatory Guide 1.8, Personnel Selection and Training, are used as the basis for establishing minimum qualifications for nuclear power plant personnel.

The minimum requirements for station personnel described in section 13.1.2 are keyed to ANSI/ANS 3.1-1978 as follows:

<u>Position</u>	<u>ANSI/ANS 3.1-1978 Position</u> <u>(Paragraph No.)</u>
Director of Nuclear Operations	Plant Managers (4.2.1)
Operations Manager	Operations Manager - No license (4.2.2) (Note d) Plant Manager Principal alternate (4.2.1)
Technical Support Manager	Plant Managers (principal alternate)
Plant Services Manager	Supervisor not requiring NRC license (4.3.2)
Engineering Manager	Technical Manager (4.2.4)
Maintenance Manager	Supervisor not requiring NRC license (4.2.3)
Reactor Engineering Supervisor	Reactor Engineering (4.4.1)
Compliance Supervisor	Supervisor not requiring NRC License (4.3.2)

a. Fire Team composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence of Fire Team members provided immediate action is taken to restore the Fire Team within the minimum requirements.

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ANSI/ANS 3.1-1978 Position

<u>Position</u>	<u>(Paragraph No.)</u>	
Operations Engineering Manager	Supervisor not requiring NRC License (4.3.2)	8
STA Supervisor	Supervisor not requiring NRC License (4.3.2)	13
Radiation Protection and Chemistry Manager	Radiation Protection (4.4.4)	11
Chemistry Services Superintendent	Chemistry and Radiochemistry (4.4.3)	9
Radiological Services Superintendent	Radiological Services Superintendent (Note a)	
Radiation Protection Supervisor	Radiation Protection Supervisor (Note a)	
Radiation Protection Support Supervisor	Radiation Protection Support Supervisor (Note a)	
Radioactive Materials Control Superintendent	Supervisor not requiring NRC License (4.3.2)	13
ALARA Supervisor	Supervisor not requiring NRC License (4.3.2)	
Computer Superintendent	Superintendent not requiring NRC License (4.3.2)	
Maintenance Control Center Superintendent	Superintendent not requiring NRC License (4.3.2)	
Instrumentation and Control Superintendent	Instrumentation and Control (4.4.2)	
Plant Instrumentation and Control Technician	Technicians (4.5.2)	8
Station Services Supervisor	Supervisor not requiring NRC License (4.3.2)	5
Mechanical Superintendent	Superintendent not requiring NRC License (4.3.2)	8
Plant Mechanic	Maintenance Personnel (4.5.3)	13
Electrical Superintendent	Superintendent not requiring NRC License (4.3.2)	8
Plant Electrician	Maintenance Personnel (4.5.3)	13
Administrative Services Manager	Supervisor not requiring NRC License (4.3.2)	8
		5

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ANSI/ANS 3.1-1978 Position

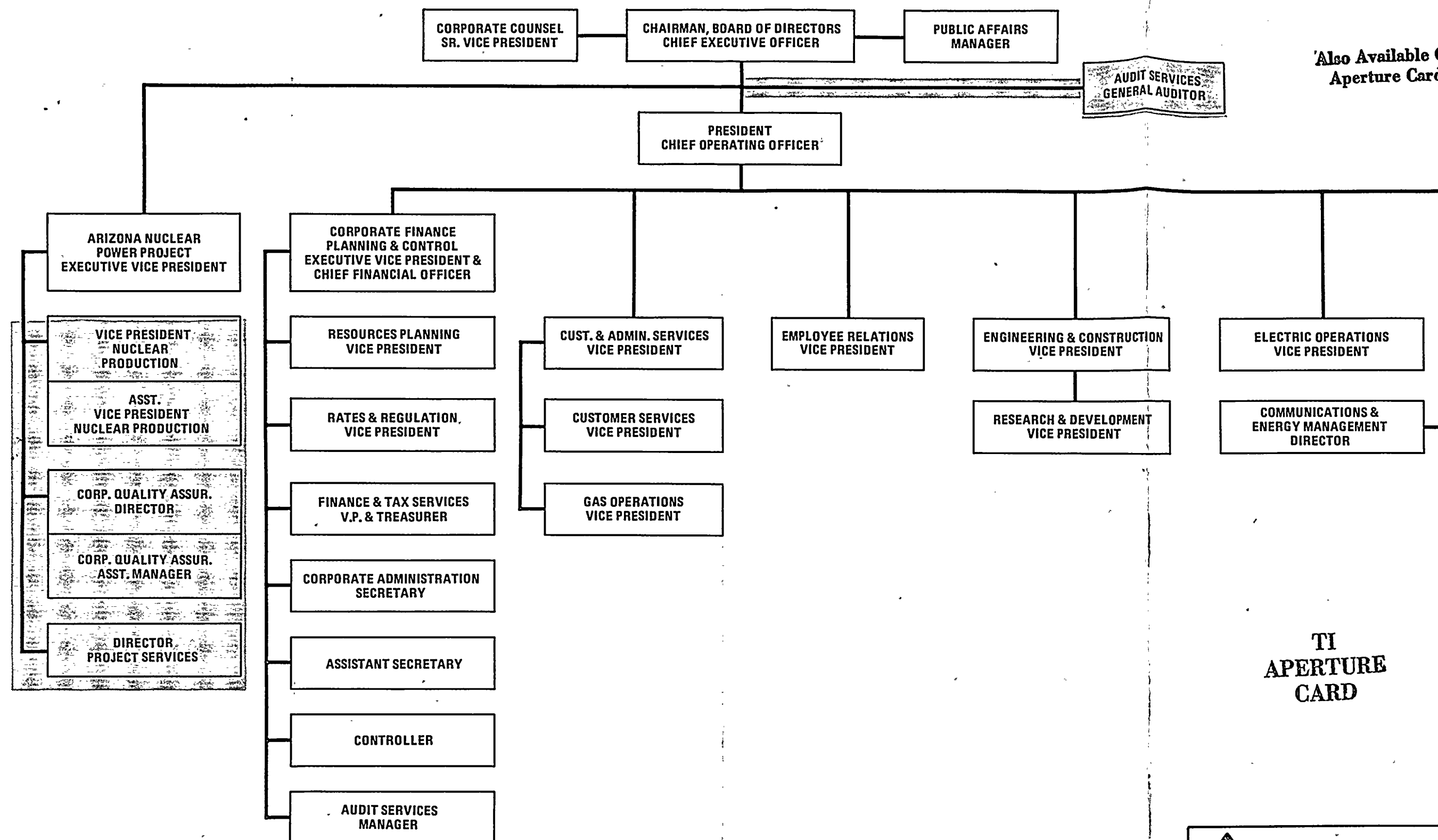
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(Paragraph No.)

8	Unit Operations Superintendents	Operations Manager requiring NRC (4.2.2) (Note b)
13	Dayshift Supervisors	Supervisor Requiring NRC License (4.3.1)
	Operations Support Supervisor	Supervisor Requiring NRC License (4.3.1)
8	Shift Supervisors	Supervisor Requiring NRC License (4.3.1)
9	Assistant Shift Supervisors	Supervisor Requiring NRC License (4.3.1)
5	Nuclear Operators III	Operators (Licensed) (4.5.1)
	Nuclear Operators I & II	Operator (Not Licensed) (4.5.1)
9	Training Manager	Supervisor not requiring NRC License (4.3.2)
8	Security Manager	Supervisor not requiring NRC License (4.3.2)
	ISEG Personnel	(Note c)

NOTES:


- a. The Radiological Services Superintendent, the Radiation Protection Supervisors, and the Radiation Protection Support Supervisor shall have a minimum of five years experience in radiation protection at a nuclear facility. A minimum of two years of this five years experience should be related technical training. A maximum of four years of this five years experience may be fulfilled by related technical or academic training. Two years of this five years experience shall be at a professional level.
- b. The Unit Operations Superintendent shall have a minimum of 6 years experience, of which a minimum of 2 years shall be nuclear power experience.
- c. ISEG personnel shall have at least a Bachelor's Degree in an engineering or science discipline. The group



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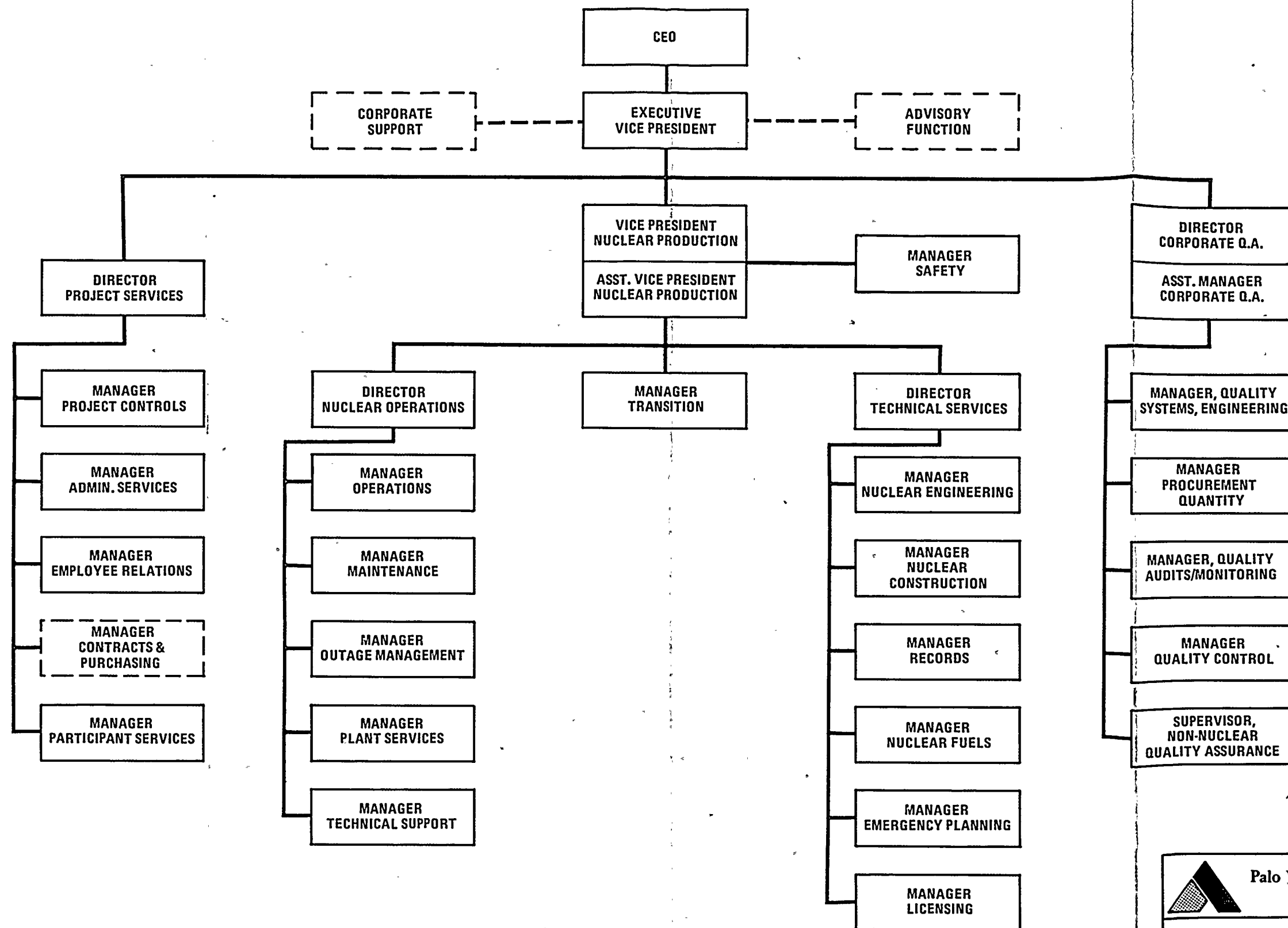
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APS MASTER ORGANIZATION
 Figure 13.1-1

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	Palo Verde Nuclear Generating Station FSAR
APS NUCLEAR ORGANIZATION	
Figure 13.1-2	

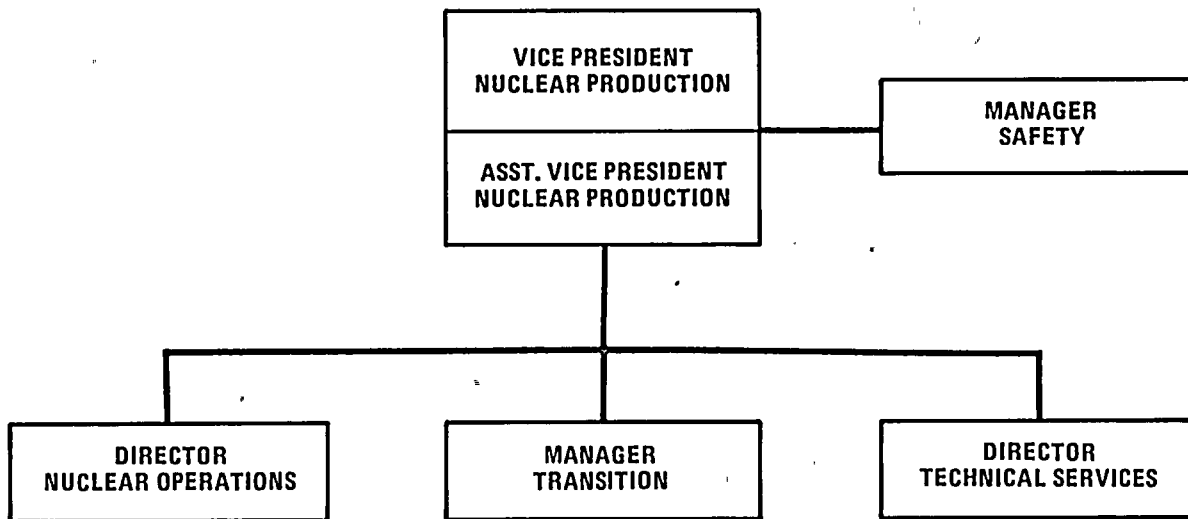
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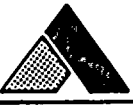
	Palo Verde Nuclear Generating Station FSAR
ANPP ORGANIZATION Figure 13.1-3	

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