

**Enclosure 1**

**Quality Assurance Program Description Changes**

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## OTHER AUXILIARY SYSTEMS

program. This individual meets the qualifications for member grade of the Society of Fire Protection Engineers.

9.5.1.5.4.2 Fire Department Personnel Qualifications. PVNGS maintains a full-time industrial fire department. Each fire department shift is comprised of a minimum of five professional firefighters at all times.

9| All fire team personnel are a minimum of 21 years of age and have a high school diploma or equivalent. All fire team members meet the medical and physical fitness requirements established by the PVNGS site physician and the director, Emergency Services.

All personnel assigned to full-time firefighting activities have a minimum of 3 years of full-time firefighting, inspection, fire prevention, or nuclear plant experience. Volunteer firefighting experience is counted at a ratio of 2 to 1.

Each shift has an individual designated as the shift fire captain who is responsible for assessing the severity of a fire, for fire department response, and for directing the firefighting activities and strategies. The fire team has a minimum composition as determined to be necessary by Technical Specifications 6.2.2e. described in section 13.1.2.3

A licensed nuclear operator, designated as fire team advisor, who is trained and qualified in assessing the potential safety consequences of fire and fire suppressants on safe shutdown capabilities, is assigned to the fire team during fire emergencies in the power block.

## 9.5.2 COMMUNICATION SYSTEMS

The communication systems include internal (intraplant) and external (plant-to-offsite) communications designed to provide convenient and effective operational communications among

no

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## CHAPTER 13

CONDUCT OF OPERATIONS

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OF APPLICANT

13.1.2.2.1.6.2 Department Leader, Chemistry Support. The department leader, chemistry support, is responsible to the director, chemistry, for technical support; analytical support, oversight of the implementation of the chemistry control program, and for ensuring that the chemistry control programs and procedures are consistent with industry practices and are uniformly implemented in each unit, and for proper evaluation and reporting of radioactive effluent, and for conducting the radiological environmental program.

13.1.2.2.1.7 Director, Water Reclamation Facility. The director, WRF is responsible to the vice president, nuclear production, for the maintenance and operation of the WRF, as well as the incoming pipeline. This position coordinates these activities with the unit operations department leaders.

## 13.1.2.3 Operating Shift Crews

An operating crew for each unit will normally consist of a shift supervisor and control room supervisor (who will possess senior reactor operator licenses), two reactor operators (who will possess reactor operator licenses), and four nuclear operator I and/or IIs. The minimum shift <sup>operating</sup> crew composition for various modes of operation is as ~~shown~~ in the PVNGS Technical Specifications

described

and uFSAR section 18.I.A.1.3.



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~~A site fire team of at least five members shall be maintained onsite at all times. (a) The fire team shall not include three members of the minimum shift crew necessary for safe shutdown.~~

## 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 are keyed to ANSI/ANS 3.1-1978 as follows:

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<u>Position</u>	<u>ANSI/ANS 3.1-1978 Position</u> <u>(Paragraph No.)</u>
Asst to Vice President Nuclear Production	Plant Manager (4.2.1)
Operations Director	Plant Manager (4.2.1)
Operations department leader	Operations Manager (4.2.2)
Operations supervisor (if appointed)	Supervisor Requiring NRC License (4.3.1)
	Plant Operations Manager Principle Alternate (4.2.2)
Shift supervisor	Supervisor Requiring NRC License (4.3.1)

- a. Fire team composition may be less than the minimum requirements for a period of time not to exceed two 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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- A site Fire Team of at least five members shall be maintained onsite at all times<sup>(a)</sup>. The Fire Team shall not include the Shift Supervisor, the STA, nor the 3 other members of the minimum shift crew necessary for safe shutdown of the unit and any personnel required for other essential functions during a fire emergency.

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Each member of the unit staff shall meet or exceed the minimum qualifications of Regulatory Guide 1.8, September 1975 and ANSI/ANS 3.1 - 1978, except the Director, Site Radiation Protection shall meet or exceed the qualifications of Regulatory Guide 1.8 - 1975. The Shift Technical Advisor shall have a bachelor's degree or equivalent in a scientific or engineering discipline with specific training in plant design and plant operating characteristics, including transients and accidents.

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training and 10 years of experience in general quality assurance or engineering of equivalent manufacturing, construction, and installation activities is acceptable. At least 2 years of this experience shall be associated with nuclear facilities.

- 7 | The director, nuclear assurance, shall have broad experience and formal training in the performance of QA and quality control activities, including inspection and testing. He shall be capable of planning and providing supervision to nuclear assurance personnel who may be engaged in inspecting, testing, reviewing, evaluating, and auditing the adequacy of activities to accomplish nuclear assurance objectives.

7 | The nuclear assurance department leaders shall meet the minimum qualification requirements of Paragraph 4.4.5 of ANSI/ANS 3.1-1978, with the exception that they are not required to have one year of experience within the QA/nuclear assurance organization.

#### 13.1.3.2 Qualification of Plant Personnel

Resumes of the appointees to key plant managerial positions and shift supervisor level are on file for review and are not included here.

#### ~~13.1.4 REVIEW AND AUDIT~~

~~Operating phase activities that affect nuclear safety are reviewed and audited. The review and audit program is implemented prior to initial fuel loading and ensures review and evaluation of proposed changes, tests, experiments, and unplanned events. The program complies with the requirements of subpart 59 of 10CFR50 relating to proposed changes, tests, and experiments and is conducted following the recommendations of Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation), as discussed in section 1.8.~~



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In addition, a formal review and audit program is carried out for changes to systems, procedures, tests, and experiments for the after-the-fact review and evaluation of unplanned events that affect nuclear safety. This program is implemented through staff review, the Plant Review Board, the Independent Safety Engineering Group, and an Offsite Safety Review Committee (OSRC).

#### 13.1.4.1 Onsite Review

Onsite review is performed by the Plant Review Board (PRB) which has the responsibility to advise the vice president, nuclear production, on matters relating to nuclear safety. A detailed description of the PRB is provided in the PVNGS Technical Specifications as part of the description of administrative controls.

The PRB is composed of those individuals specified in the PVNGS Technical Specifications. Collectively, they possess the type and degree of expertise required to properly review proposed changes to systems, procedures, tests, experiments, and unplanned events that effect nuclear safety. The PRB meets at least once per calendar month and maintains written minutes of each meeting, which are reviewed by the Offsite Safety Review Committee.

#### 13.1.4.2 Independent Review

##### 13.1.4.2.1 Offsite Safety Review Committee (OSRC)

The Offsite Safety Review Committee is an independent, offsite committee to provide the Senior vice president, nuclear generation with an independent senior management assessment of PVNGS activities, placing particular emphasis on those activities which may affect the long-term safe and reliable operation of the facility. The OSRC is composed of the OSRC Chairman and a minimum of four OSRC members. The members of the committee meet the qualification requirements of ANS 3.1 (1978) and ANSI



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~~N18.7-1976. Consultants are utilized as determined by the OSRC Chairman to provide expert advice. The details of the function, composition, review and audit requirements, authority, records, meeting frequency, and quorum requirements of the OSRC are described in the PVNGS Technical Specifications, Section 6.5.3.~~

~~13.1.4.2.2 Independent Safety Engineering (ISE)~~

~~The ISE function is described in subsection 13.4.2.2.~~

~~13.1.4.2.3 Audit Program~~

~~The audit program is as described in subsection 13.4.3.~~



13.4 REVIEW AND AUDIT

Operating phase activities that affect nuclear safety are reviewed and audited. The review and audit program is implemented prior to initial fuel loading and ensures proper review and evaluation of proposed changes, tests, experiments, and unplanned events. The program complies with the requirements of Paragraph 50.59 of 10CFR50 relating to proposed changes, tests, and experiments and is conducted following the recommendations of Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation), as discussed in section 1.8. The vice president, nuclear production, has overall responsibility for safe operation of PVNGS.

The vice president, nuclear production, has onsite responsibility for safe operation of PVNGS. He is kept abreast of each unit's operating conditions by the onsite directors and department leaders who are knowledgeable and experienced in their areas of job responsibility. The department leaders perform timely and continuing monitoring of operating and maintenance activities as part of their normal job duties.

In addition, a formal review and audit program is carried out for changes to systems, procedures, tests, and experiments, and for the after-the-fact review and evaluation of unplanned events that affect nuclear safety. This program is implemented through staff <sup>(technical)</sup> review<sup>3</sup>, the Plant Review Board (PRB), Independent Safety Engineering (ISE), and an Offsite Safety Review Committee (OSRC).

~~13.4.1 ONSITE REVIEW~~

~~Onsite review is performed by the PRB, which has the responsibility to advise the vice president, nuclear production, on matters relating to nuclear safety. A~~

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13.4.1 STAFF TECHNICAL REVIEWS

13.4.1.1 Proposed modifications to unit nuclear safety-related structures, systems and components shall be designed by a qualified individual/organization. Each such modification shall be reviewed by an individual/group other than the individual/group which designed the modification, but who may be from the same organization as the individual/group which designed the modification. Proposed modifications to nuclear safety-related structures, systems and components shall be approved prior to implementation by the Department Leader, Operations; or by the Director, Operations as previously designated by the Vice President Nuclear Production.

13.4.1.1.1 Modifications to the CPC Addressable Constants based on information obtained through the Plant Computer - CPC data link shall not be made without prior approval of the PRB.

13.4.1.2 Individuals responsible for reviews performed in accordance with 13.4.1.1 shall be identified in station procedures. Each such review shall include a determination of whether or not additional, cross-disciplinary, review is necessary. If deemed necessary, such review shall be performed by the appropriate designated review personnel.

13.4.1.3 The Director, Site Radiation Protection shall assure the performance of a review by a qualified individual/organization of every unplanned onsite release of radioactive material to the environs including the preparation and forwarding of reports covering the evaluation, recommendations and disposition of the corrective action to prevent recurrence.

13.4.2 ONSITE REVIEW

13.4.2.1 Onsite review is performed by the PRB, which has the responsibility to advise the vice president, nuclear production, on all matters relating to nuclear safety. The PRB members collectively possess the type and degree of expertise required to properly review proposed changes to systems, procedures, tests, experiments, and unplanned events that affect nuclear safety. The PRB maintains written minutes of each meeting, which are reviewed by the Offsite Safety Review Committee.

13.4.2.2 The PRB shall be composed of at least seven members from the Palo Verde management staff. These positions will be designated by the Vice President Nuclear Production or his designee in Administrative Procedures.

The Vice President Nuclear Production or his designee shall designate the Chairman and designated alternate in writing. The chairman and designated alternate may be from outside the members provided that they meet ANSI/ANS 3.1, 1978.



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- 13.4.2.3 All alternate members shall be appointed in writing by the PRB Chairman to serve on a temporary basis; however, no more than two alternates shall participate as voting members in PRB activities at any one time.
- 13.4.2.4 The PRB shall meet at least once per calendar month and as convened by the PRB Chairman or designated alternate.
- 13.4.2.5 The quorum of the PRB, necessary for the performance of the PRB responsibility and authority provisions contained herein, shall consist of the Chairman or a designated alternate and a majority of the members including alternates.
- 13.4.2.6 The PRB shall be responsible for:
- a. Review of all proposed changes to the Unit Technical Specifications.
  - b. Investigation of all violations of the Unit Technical Specifications including the preparation and forwarding of reports covering evaluation and recommendations to prevent recurrence to the Offsite Safety Review Committee (OSRC).
  - c. Review of REPORTABLE EVENTS.
  - d. Review of unit operations to detect potential nuclear safety hazards.
  - e. Performance of special reviews, investigations or analyses and reports thereon as requested by the Vice President-Nuclear Production or PRB Chairman.
  - f. Review and documentation of judgment concerning prolonged operation in bypass, channel trip, and/or repair of defective protection channels of process variables placed in bypass since the last PRB meeting.
  - g. Review and acceptance of changes to the Offsite Dose Calculation Manual (ODCM).
  - h. Review and acceptance of the following changes as required by other plant documents or previous commitments:
    - Changes to the Process Control Program.
    - Major changes to radioactive liquid, gaseous, and solid waste treatment systems.
    - Changes to the Core Protection Calculator (CPC) addressable constants as described at 13.4.1.1.1.
    - Changes to the snubber accessibility / inaccessibility designation.



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13.4.2.7 The PRB shall:

- a. Render determinations in writing with regard to whether or not each item considered under Section 13.4.2.6.b constitutes an unreviewed safety question.
- b. Provide written notification within 24 hours to the Senior Vice President Nuclear Generation, Vice President Nuclear Production, and OSRC of disagreement between the PRB and the Vice President Nuclear Production; however, the Vice President Nuclear Production shall have responsibility for resolution of such disagreements

13.4.2.8 The PRB shall maintain written minutes of each PRB meeting that, at a minimum, document the results of all PRB activities performed as required by the provisions of section 13.4.2. Copies shall be provided to the Senior Vice President Nuclear Generation, Vice President Nuclear Production, and the OSRC.

13.4.3 INDEPENDENT REVIEW

13.4.3.1 Independent Review is performed by the Offsite Safety Review Committee (OSRC). The Offsite Safety Review Committee is an independent, offsite committee to provide the senior vice president, nuclear generation, with an independent senior management assessment of the PVNGS activities, placing particular emphasis on those activities which may affect the long term safe and reliable operation of the facility. The OSRC shall function to provide independent review and shall be responsible for the audit of designated activities in the areas of:

- a. nuclear power plant operations
- b. nuclear engineering
- c. chemistry and radiochemistry
- d. metallurgy
- e. instrumentation and control
- f. radiological safety
- g. mechanical and electrical engineering
- h. quality assurance practices

13.4.3.2 The OSRC shall consist of the OSRC Chairman and a minimum of four OSRC members. The Chairman and members are designated by the Senior Vice President, Nuclear Generation and shall have the qualifications that meet the requirements of Section 4.7 of ANSI/ANS 3.1; 1978.

13.4.3.3 Consultants shall be utilized as determined by the OSRC Chairman to provide expert advice to the OSRC.



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13.4.3.4 The OSRC shall review:

- a. The safety evaluations program and its implementation for (1) changes to procedures, equipment, systems or facilities within the power block, and (2) tests or experiments completed under the provision of 10 CFR 50.59, to verify that such actions did not constitute an unreviewed safety question;
- b. Proposed changes to procedures, equipment, systems or facilities within the power block which involve an unreviewed safety question as defined in 10 CFR 50.59;
- c. Proposed tests or experiments which involve an unreviewed safety question as defined in 10 CFR 50.59;
- d. Proposed changes to Technical Specifications or the Operating License;
- e. Violations of codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance; the OSRC Chairman shall be notified within 24 hours of a Technical Specification Safety Limit Violation.
- f. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety;
- g. All REPORTABLE EVENTS requiring 24 hours written notification;
- h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety; and
- i. Reports and meeting minutes of the PRB.

13.4.3.5 Audits of unit activities shall be performed under the cognizance of the OSRC. The audit program scope is described in section 13.4.5.

13.4.3.6 The OSRC shall report to and advise the Senior Vice President Nuclear Generation on those areas of responsibility specified in 13.4.3.4. and 13.4.3.5.

13.4.3.7 Records of OSRC activities shall be prepared and maintained. Report of reviews and audits shall be forwarded to the Senior Vice President Nuclear Generation with distribution to the management positions responsible for the areas audited.





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13.4.3.8 All alternate members shall be appointed in writing by the OSRC Chairman to serve on a temporary basis; however, no more than two alternates shall participate as voting members in OSRC activities at any one time.

13.4.3.9 The OSRC shall meet at least once per six months.

13.4.3.10 The quorum of the OSRC necessary for the performance of the OSRC review and audit functions of 13.4.3 shall consist of the Chairman or his designated alternate and at least four OSRC members including alternates. No more than a minority of the quorum shall have line responsibility for operation of the unit.

13.4.4 Independent Safety Engineering (ISE)

13.4.4.1 ISE shall function to selectively examine plant operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources of plant design and operating experience information, including plants of similar design, which may indicate areas for improving plant safety.

13.4.4.2 ISE is staffed by full-time engineers assigned to Nuclear Assurance functional areas and located onsite. ISE is composed of at least five, dedicated, full-time engineers. Each shall have a Bachelor's Degree in engineering or in a related science with at least 2 years of professional level experience in his field.

13.4.4.3 ISE shall be responsible for maintaining surveillance of selected plant activities to detect potential nuclear safety hazards, to provide independent verification that these activities are performed correctly to reduce human errors as much as practical, and to detect potential nuclear safety hazards. ISE shall have access to the unit and unit records as necessary to perform evaluations and assessments. ISE independent verification activities shall not include sign-off responsibility such that Independent Safety Engineers become involved in the operating organization.

13.4.4.4 Records of ISE evaluations and assessments shall be prepared and forwarded each calendar month to the Director, Nuclear Assurance and the management positions responsible for the areas reviewed.

13.4.4.5 ISE shall make detailed recommendations for revised procedures, equipment modifications, maintenance activities, operations activities, or other means of improving plant safety. ISE recommendations shall be forwarded to the Director, Operations, and the Chairman, Offsite Safety Review Committee (OSRC).



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13.4.5 AUDIT PROGRAM

A comprehensive program of planned and documented audits is carried out to verify compliance with, and effectiveness of, implementation of the administrative controls and QA program and to assist the Offsite Review Committee (OSRC) in the execution of its responsibility for independent review of operating activities that affect nuclear safety.

The audit scope shall include, as a minimum, the required programs described in the Unit Technical Specifications, those programs areas which implement the requirements of 10CFR50, Appendix B, and other audits required by regulation or regulatory commitment. Audits of the program areas described in this section shall be performed at a frequency not to exceed 24 months, or as noted to meet specific regulations or commitments.

- a. The performance of activities required by the operational quality assurance program to meet the requirements of 10CFR50, Appendix B.
- b. Programs for spray pond monitoring, primary coolant sources outside of containment, and the backup method for determining subcooling margin as described in UFSAR 13.5.
- c. Post Accident Sampling Program described in the unit technical specifications.
- d. The Process Control Program and implementing procedures for processing and packaging of radioactive wastes.
- e. Secondary Chemistry Water Program described in the unit technical specifications.
- f. The Radiation Protection Program and the In-Plant Radiation Monitoring Program described in UFSAR 13.5.
- g. Access authorization as required by 10 CFR 73.46(g)(1).

The following topical areas will also be included in the audit program scope and will be audited at the frequencies specified:

- h. The conformance of unit operations to the provisions contained in the unit technical specifications and applicable license conditions at least once per 12 months.



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- i. The performance, training, and qualifications of the unit staff at least once per 12 months.
- j. Results of actions taken to correct deficiencies occurring in unit equipment, structures, systems, or methods of operation that affect nuclear safety at least once per 6 months.
- k. Radioactive Effluent Controls, Radiological Environmental Monitoring, and the Offsite Dose Calculation Manual, as follows:
  - Offsite Dose Calculation Manual and implementing procedures, at least once per 24 months.
  - Radioactive Effluent Controls Program as described in the unit technical specifications, at least once per 24 months.
  - Radiological Environmental Monitoring Program and results thereof, including the quality assurance program to meet the provisions of NRC Regulatory Guide 1.21, Revision 1, June 1974 and NRC Regulatory Guide 4.1, Revision 1, April 1975, at least once per 12 months.
- l. Security program as required by 10 CFR 73.46.g(6). and 10 CFR 50.54(p)(3) at least once per 12 months.
- m. Fitness-for-duty program as required 10 CFR 26.80(a) at least once per 12 months.
- n. Emergency Planning as required by 10 CFR 50, Appendix E and 10 CFR 50.54(t) at least once per 12 months.
- o. The Fire Protection Program, as follows:
  - Fire protection equipment and program implementation utilizing a qualified offsite licensee fire protection engineer or an outside independent fire protection consultant at least once per 12 months.
  - Fire protection programmatic controls including implementing procedures by qualified Nuclear Assurance personnel at least once per 24 months.
  - Fire protection equipment and program implementation utilizing an outside independent fire protection consultant at least every third year.
- p. Any area of unit operation considered appropriate by the OSRC or the Senior Vice President, Nuclear Generation, as specified.

Audits are performed in accordance with approved procedures. Audit assignments are such that the audit team members will not perform audits of activities for which they have immediate responsibility.



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Written reports of audits are reviewed by the OSRC and by appropriate members of management, including those having responsibility in the area audited. Appropriate and timely follow-up action, including reaudit of deficient areas as appropriate, is taken to ensure overall effectiveness of the review and audit program. Specific requirements for implementation of the audit program for the operations phase are discussed in the Operations QA Program (UFSAR section 17.2)..

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detailed description of the PRB is provided in the PVNGS Technical Specifications as part of the description of administrative controls.

The PRB is composed of those individuals specified in the PVNGS Technical Specifications. Collectively, they possess the type and degree of expertise required to properly review proposed changes to systems, procedures, tests, experiments, and unplanned events that affect nuclear safety. The PRB meets at least once per calendar month and maintains written minutes of each meeting, which are reviewed by the Offsite Safety Review Committee.

#### 13.4.2 INDEPENDENT REVIEW

##### 13.4.2.1 Offsite Safety Review Committee

The Offsite Safety Review Committee is an independent, offsite committee to provide the executive vice president, nuclear, with an independent senior management assessment of PVNGS activities, placing particular emphasis on those activities which may affect the long-term safe and reliable operation of the facility. The OSRC is composed of the OSRC Chairman and minimum of four OSRC members. The members of the committee meet the qualification requirements of ANS 3.1 (1978) and ANSI N18.7-1976. Consultants are utilized as determined by the OSRC Chairman to provide expert advice. The details of the function, composition, review and audit requirements, authority, records, meeting frequency, and quorum requirements of the OSRC are described in the PVNGS Technical Specifications Section 6.5.3.

##### 13.4.2.2 Independent Safety Engineering

13.4.2.2.1 Independent Safety Engineers shall function to selectively examine plant operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources of plant design and operating experience information, including plants of similar design, which may indicate areas for improving plant safety.



13.4.2.2.2 Independent Safety Engineering is staffed by full-time engineers assigned to Nuclear Assurance functional areas and located onsite. ISE is composed of at least five engineers dedicated full-time. Each shall have a Bachelor's Degree in engineering or in a related science with at least 2 years of professional level experience in his field.

13.4.2.2.3 Independent Safety Engineers shall be responsible for maintaining surveillance of selected plant activities to provide independent verification that these activities are performed correctly to reduce human errors as much as practical, and to detect potential nuclear safety hazards. Independent Safety Engineers shall have access to the units and unit records as necessary to perform evaluations and assessments.

13.4.2.2.4 Reports of ISE evaluations and assessments shall be prepared, maintained and transmitted to the Director, Nuclear Assurance and the management positions responsible for the areas reviewed.

13.4.2.2.5 ISE recommendations shall be forwarded to the Director, Site Operations, and the Chairman, Offsite Safety Review Committee (OSRC).



### 13.4.3 AUDIT PROGRAM

A comprehensive program of planned and documented audits is carried out to verify compliance with, and effectiveness of, implementation of the administrative controls and QA program and to assist the Offsite Safety Review Committee (OSRC) in the execution of its responsibility for independent review of operating activities that affect nuclear safety.

Audits are performed in accordance with approved procedures. The frequency and scope of the audits is discussed in Section 6.5.3 of the Technical Specifications.

Audit assignments are such that the audit team members will not perform audits of activities for which they have immediate responsibility.

Written reports of audits are reviewed by the OSRC and by appropriate members of management, including those having responsibility in the area audited. Appropriate and timely followup action, including reaudit of deficient areas as appropriate, is taken to ensure overall effectiveness of the review and audit program.

The QA audit program for operations is discussed in the Operations QA Plan (section 17.2).



PROGRAMS and

13.5 PLANT PROCEDURES

This section describes administrative and operating procedures that will be used by the operating organization to ensure that routine operating, off-normal, and emergency activities affecting nuclear safety are conducted in a safe manner.

~~13.5.1 ADMINISTRATIVE PROCEDURES~~~~13.5.1.1 Conformance With Regulatory Guide 1.33~~

The administrative procedures for Palo Verde Nuclear Generating Station (PVNGS) will be consistent with recommendations contained in Regulatory Guide 1.33, Appendix A, as discussed in section 1.8 *and the unit technical specifications.*

~~Administrative controls governing crane operation will be established prior to fuel loading and will include a requirement that crane operators who operate cranes over fuel pools will be qualified and conduct themselves in accordance with the guidelines of ANSI B30.2 1976 (Chapter 2-3).~~

~~Temporary changes to station procedures will be governed by administrative controls in an administrative control procedure.~~

13.5.1 *2* Preparation of Procedures

Cognizant station supervisors are responsible for initiating, preparing, and controlling station procedures consistent with their responsibilities and for ensuring that work is performed in accordance with the latest applicable approved documents. Review of these procedures is accomplished by station staff personnel; review for nuclear safety aspects will be as described in section 13.4.

*Add INSERT A, page 13.5-1*





INSERT A, PAGES 13.5-1

- 13.5.1.1 The Vice President Nuclear Production or his designee shall assure that each procedure and program required by Technical Specifications and other procedures which affect nuclear safety, and changes thereto, is prepared by a qualified individual / organization. Each such procedure, and changes thereto, shall be reviewed by an individual/group other than the individual/group which prepared the procedure, or changes thereto, but who may be from the same organization as the individual/group which prepared the procedure, or changes thereto.
- 13.5.1.2 Each program or procedure, and changes thereto, shall be reviewed as specified in 13.5.1 and approved prior to implementation. Program, administrative, and implementing procedures shall be approved by the Vice President-Nuclear Production, or designated alternate who is at supervisory level or above.
- 13.5.1.3. Individuals responsible for reviews performed in accordance with 13.5.1. shall be identified in station procedures. Each such review shall include a determination of whether or not additional, cross-disciplinary, review is necessary. If deemed necessary, such review shall be performed by the appropriate designated review personnel.
- 13.5.1.4 Proposed tests and experiments which affect station nuclear safety and are not addressed in the UFSAR or Technical Specifications shall be reviewed by the Vice President Nuclear Production or his designee.
- 13.5.1.5 Programs and procedures shall be reviewed periodically in accordance with the provisions of the operations quality assurance program (UFSAR 17.2) as set forth in administrative procedures.
- 13.5.1.6 Temporary changes to procedures above may be made provided:
- a. The intent of the original procedure is not altered.
  - b. The change is approved by two members of the plant supervisory staff, at least one of whom is a Shift Supervisor or Control Room Supervisor with an SRO on the affected unit.
  - c. The change is documented, reviewed, and approved in accordance with 13.5.1.2 within 14 days of implementation.

Temporary changes to station procedures will be governed by administrative controls in an administrative control procedure.

- 13.5.1.7 Phase I - IV tests described in the UFSAR that are performed by the plant operations staff shall be approved by the Department Leader, System Engineering or his designee as previously designated by the Vice President Nuclear Production. Test results shall be approved by the Department Leader, System Engineering or his designee.

INSERT A, PAGES 13.5-1



## PLANT PROCEDURES

13.5.1.1.8

Administrative  
Procedures

The following are descriptions of administrative procedures that will be prepared for PVNGS:

A. Procedures for Shift Supervisors and Operators

1. Senior reactor operator's authority and responsibilities
  - a. Describes senior reactor operator's duties, responsibilities, and authority.
2. Reactor operator's authority and responsibilities
  - a. Describes the reactor operator's duties, responsibilities, and authority.
3. Conduct of operations .
  - a. Procedures are written to implement the pro-  
visions of Section 6.2 of the Technical Specifications concerning licensed personnel on shift. These procedures will include provisions of 10CFR50.54 (i) through (m). administrative requirements
  - b. The "at the controls" area of the control room is shown in figure 7.5-1.

B. Special Orders of a Transient or Self-Canceling Nature

Special orders will be written to issue instructions which have short-term applicability and which require dissemination. These orders will be reviewed on at least an annual basis for the purpose of purging and updating.

C. Equipment Control Procedures

Equipment control procedures are written to provide control over the status of station equipment,



## PLANT PROCEDURES

purchased material, and nonconforming material. Such procedures will include:

1. Work authorization
2. Control of purchased material, equipment, and services
3. Handling, storage, and shipment of materials
4. Nonconforming materials, parts, components, or operations.

D. Control of Maintenance and Modifications

Maintenance of equipment important to safety is accomplished in accordance with written procedures. Certain minor maintenance actions of a routine nature, the performance of which is covered in the normal job qualification of the performing personnel, may be accomplished without written procedures. Such procedures are described in paragraph 13.5.2.2. Modification of equipment important to safety is accomplished in accordance with written procedures.

E. Surveillance Test Schedule

The surveillance test schedule is based on the surveillance requirements established in the Technical Specifications and provides means for tracking the performance of the surveillance tests.

F. Log Book Usage and Control

Log book usage and control is incorporated in instructions to operators covered under listing A above.

G. Temporary Procedures

Temporary procedures are issued as required to provide instructions for certain jobs that are of a limited duration and of a one-time-only nature. These procedures are reviewed in accordance with section 13.4.1.



## PLANT PROCEDURES

## H. Fire Protection Procedures

Fire protection procedures are written delineating the fire protection organization and programs for fire prevention and fire fighting.

Add INSERT A  
Pg. 13.5-4

## 13.5.2 OPERATING AND MAINTENANCE PROCEDURES

13.5.2.1 Control Room Operating Procedures

Procedure content and format for operating and emergency procedures are in accordance with Regulatory Guide 1.33, Appendix A, as discussed in section 1.8. Classification of procedures that are performed by operators in the control room are as follows:

A. General Operating Procedures - Procedures that provide instructions for the following integrated operations of the plant:

1. Cold Shutdown to Hot Standby
2. Reactor Startup
3. Turbine Startup and Generator Synchronization
4. Power Operations
5. Plant Shutdown to Hot Standby
6. Operation at Hot Standby
7. Hot Shutdown to Cold Shutdown
8. Refueling and Core Alterations

B. System Procedures - Procedures that provide instructions for energizing, startup, shutdown, and changing modes of operation of the following systems important to safety:

1. Reactor Coolant System
2. Control Rod Drive System
3. Shutdown Cooling System
4. Safety Injection System
5. Essential Cooling Water System
6. Essential Spray Pond System





I. Crane Operating Procedures

Administrative controls governing crane operation will be established prior to fuel loading and will include a requirement that crane operators who operate cranes over fuel pools will be qualified and conduct themselves in accordance with the guidelines of ANSI B30.2-1976 (Chapter 2-3).



## PLANT PROCEDURES

to section 13.3). They provide for assignment of responsibilities, instructions to employees, procedures for coping with emergencies, and mobilization of offsite assistance where necessary. Procedures in this area are detailed in the emergency plan.

C. Instrument Calibration and Test Procedures

Instrument calibration and test procedures are provided to detail step-by-step methods for calibration and test, acceptance criteria, and testing intervals performed by instrument personnel.

D. Chemical-Radiochemical Control Procedures

Chemical-radiochemical control procedures provide for instructions to accomplish various chemical and radiochemical analyses, sampling techniques, and to maintain coolant chemistry within Technical Specifications. These procedures apply to work performed by chemistry personnel.

E. Radioactive Waste Management Procedures

Radioactive waste management procedures provide instructions for the handling and processing of radioactive waste. These procedures apply to station operators and others who are involved in handling radioactive waste. Procedures in this area include:

1. Gaseous radwaste processing
2. Liquid radwaste processing
3. Radwaste solidification
4. Solid radwaste handling
5. Radwaste shipment

the procedures that  
implement the process  
control program and  
those procedures for:



Section 3/4.7 - Plant Systems

Specification 3.7.11.1 - Fire Suppression Water System  
(limiting conditions of operation, surveillance requirements)

An exception to this is an extended inspection frequency for the hydrant street isolation (CURB) valves. | 8

Specification 3.7.11.2 - Spray and/or Sprinkler System  
(limiting conditions of operation, surveillance requirements)

An exception to this is an extended frequency of air flow tests. | 8

Specification 3.7.11.3 - CO<sub>2</sub> Systems  
(limiting conditions of operation, surveillance requirements)

Specification 3.7.11.4 - Fire Hose Station  
(limiting conditions of operation, surveillance requirements)

Specification 3.7.11.5 - Yard Fire Hydrant and Hydrant Hose Houses  
(limiting conditions of operation, surveillance requirements)

An exception to this is that PVNGS utilizes emergency response vehicle(s) which carry an assortment of hose, nozzles and equipment as opposed to hose houses. Equipment inspections and tests, similar to those required for hose houses, are performed on the emergency response vehicle(s) to ensure that equipment is in place and operable.

Specification 3.7.11.6 - Halon Systems  
(limiting conditions of operation, surveillance requirements)

An exception to this is that the quantity of Halon in each cylinder is surveilled by weighing or by verifying the liquid level. | 8



PLANT PROCEDURES

Specification 3.7.12 - Fire Rated Assemblies

(limiting conditions of operation, surveillance requirements)

An exception to this is the use of closed circuit TV in radiation areas that would pose an unnecessary risk to personnel in lieu of a fire watch.

*Add INSERT A, page 13.5-11.a (Pages 1 and 2)*





INSERT A, PAGE 13.5 - 11.a

K. Settlement Monitoring Program Procedures

A settlement monitoring program shall be maintained throughout the life of the plant in accordance with the program described in UFSAR Table 2.5-18.

L. CEA Reactivity Integrity Program Procedures

Procedures will be provided for the performance of either a CEA symmetry test or worth measurements of all full-length CEA groups after initial fuel load or after each reload, to address Section 4.2.2 of the PVNGS SER dated November 11, 1981.

M. Fuel Assembly Surveillance Program Procedures

Procedures will be provided for implementation of a fuel assembly surveillance program which conforms with the program discussed in section 4.2.4 of the PVNGS SER dated November 11, 1981.

N. In-plant Radiation Monitoring Program Procedures

Procedures will be provided for implementation for the in-plant radiation monitoring program. This program will ensure the capability to determine the airborne iodine concentration in vital areas under accident conditions. This program shall include training of personnel, procedures for monitoring, and provisions for maintenance of sampling and analysis equipment.

O. Procedures for the Backup Method for Determining Subcooling Margin

Procedures shall be provided and maintained for the program which ensures the capability to accurately monitor reactor coolant system subcooling margin. This program shall include the procedures for monitoring and the training of personnel.



P. Spray Pond Monitoring Procedures

Procedures shall be provided for the program which identifies and describes the parameters used to control and monitor the essential spray pond and piping. the program shall be conducted in accordance with station procedures.

Q. Radioactive Effluent Monitoring Procedures

Procedures shall be provided for the program for monitoring radiation and radionuclides in the environs of the plant. The program shall provide representative measurements of radioactivity in the highest potential exposure pathways and verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways.

The program is described in the ODCM and conforms to the requirements of Appendix I to 10CFR 50, and includes the following:

- (1) Monitoring, sampling , analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,
- (2) A Land Use Census to ensure that changes in use of areas at and beyond the site boundary are identified and that modifications to the monitoring program are made if required by the results of the census, and,
- (3) Participation in a interlaboratory comparison program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in the environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.



QUALITY ASSURANCE DURING  
THE OPERATIONS PHASE

9 | identify areas involving nuclear safety where current and long  
term improvement can be realized. Additionally, the committee  
9 | provides Senior Management with an overview and assessment of the  
adequacy of activities associated with meeting nuclear safety  
goals and objectives. This committee is comprised of ~~the Vice  
President, Nuclear Production; Vice President, Nuclear  
Engineering; Director Emergency Services; and the Director,  
Nuclear Assurance as well as members selected from outside APS  
with overall nuclear expertise.~~

*REPLACE WITH INSERT A, Page 17.2-28*

17.2.2.10 Conditions Adverse to Quality and Corrective  
Actions

A program for identifying activity and hardware conditions adverse to quality within the QA scope shall be established. Conditions adverse to quality include, but are not limited to, failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances.

Conditions adverse to quality shall be identified, documented, and controlled in accordance with administrative control procedures to ensure that they are promptly corrected.

Significant conditions adverse to quality shall be promptly identified, evaluated for reportability, and corrected. The cause of significant conditions adverse to quality shall be determined and appropriate action taken to prevent recurrence. The identification, cause, and actions taken to correct significant conditions adverse to quality shall be documented and reported to the appropriate levels of management.

17.2.2.11 External Organizations

Suppliers who provide items, parts, materials, consumables, and/or services that are within the scope of this Plan shall have an appropriate QA program and implementing procedures. The supplier's QA program shall be subject to review and concurrence by the Director, Nuclear Assurance or his designee.



INSERT A, PAGE 17.2-28

a chairman, PVNGS senior managers, and members from outside APS with overall nuclear expertise. The chairman and members are designated by the senior vice president, nuclear.

INSERT A, PAGE 17.2-28





QUALITY ASSURANCE DURING  
THE OPERATIONS PHASE

Audits shall include an objective evaluation of quality related practices, procedures, and instructions, including an objective review of activities, items, and records which demonstrate effective and proper implementation.

Audits shall be performed in accordance with pre-established written procedures and checklists, and shall be conducted by trained and qualified personnel having no direct responsibilities in the areas being audited. The audit program shall include:

- A. Audit schedules.
- B. Procedures for preparation, performance, and reporting of audits.
- C. Analysis of audit data and reporting these results to appropriate levels of management.
- D. Provisions for follow-up action.
- E. Qualification of auditors.
- F. Delineation of the authority, responsibility, and organizational independence of those responsible for the audit program.

Audits shall be initiated in a timely manner to assure the effectiveness of the QA Program. Implementation of corrective action shall be verified in a timely manner.

Audited organizations shall provide sufficient support to assure the accuracy of the audit results, respond to audit nonconformances, and resolve deficiencies. The corrective actions required to resolve audit findings and observations shall be addressed in a timely manner.

Audits shall be regularly scheduled, and their frequency shall be based upon <sup>the</sup> requirements of ~~the Technical Specifications~~, <sup>section 13.4.5</sup> the status and safety importance of activities, degree of previous experience, thoroughness of overall coverage, unique



QUALITY ASSURANCE DURING  
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- A. Establish and implement the Quality Assurance audit and assessment program.
- B. Provide an auditing organization which meets the requirements of this Plan.
- C. Evaluate the effectiveness of the audit program.
- D. Ensure the development and implementation of the audit schedule.
- E. Analyze audit data and the results, including the need for re-audits, and reporting these results to appropriate levels of management.

17.2.4.4.2.2 Vice Presidents, Directors and Department Leaders of Audited Organizations. The Vice Presidents, Directors and Department Leaders of audited organizations are responsible to ensure:

- A. Sufficient support is given to the audit process to optimize the accuracy of the audit results.
- B. Sufficient review of audit results is provided to assure that effective preventive measures for audit nonconformances are defined and implemented.
- C. Responses to audit findings are reviewed and approved by their organizations prior to submittal to the auditing organization.
- D. Responses to audit findings are submitted to the auditing organization in a timely manner as defined in implementing policies, plans, procedures and/or instructions.
- E. Corrective actions to resolve audit findings are taken in a timely manner.

9 | 17.2.4.4.2.3 Vice President, Nuclear Engineering. The Vice President, Nuclear Engineering, is responsible for establishing and

REPLACE WITH  
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Pg. 17.2-84



- 17.2.4.4.2.3 Chairman Offsite Safety Review Committee. The chairman, Offsite Safety Review Committee (OSRC), is responsible for establishing and



QUALITY ASSURANCE DURING  
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NO CHANGE TO THIS PAGE

17.2.6.3.2.3 Vice Presidents, Directors and Department Leaders. Vice Presidents, Directors and Department Leaders performing activities within the scope of this Plan are responsible for:

7

- A. Incorporating into applicable policies, procedures, and instructions those requirements contained in this Plan, the Technical Specifications, and the Regulatory Guides and standards committed to in Appendix 17.2B of this Plan.
- B. Ensuring that documents are available when required.
- C. Properly reviewing and approving documents such as procedures, instructions, specifications, drawings, etc. to ensure that changes to documents are reviewed and approved by the same organization that performed the original review and approval of the document.
- D. Ensuring that approved changes are promptly transmitted for incorporation into documents and ensuring that obsolete or superseded documents are eliminated from use.

17.2.6.4 Quality Assurance Records

## 17.2.6.4.1 Requirements

Procedures shall be established for the generation, collection, storage, maintenance, and retrieval of Quality Assurance records and shall meet the following minimum requirements:

- A. Design specifications, procurement documents, and procedures shall specify the records to be generated, supplied, and maintained by or for PVNGS, including retention requirements. Typical records to be specified include operating logs; maintenance and modification procedures and related inspection results; reportable occurrences; inspection and





QUALITY ASSURANCE DURING  
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verification procedures (excluding completed checklists when results are documented in a separate report); results or reviews, inspections, tests, audits, and material analysis; qualification of personnel, procedures, and equipment; other documentation such as calculations, design verifications, drawings, specifications, procurement documents, calibration procedures and reports; nonconformance documents; corrective action reports; vendor evaluations; and other records required by regulations and Technical Specifications.

Add INSERT A  
Pg. 17.2-96

- B. Sufficient records and documentation shall be maintained to provide objective quality evidence of the items or activities within the QA scope. Inspection and test records shall contain the following, where applicable:
1. Identification of the type of observation.
  2. The date and results of the inspection or test.
  3. Identification of any conditions adverse to quality.
  4. Inspector or data recorder identification.
  5. Evidence as to the acceptability of the results.
  6. Action taken to resolve any discrepancies noted.
- C. Documented and approved measures shall be established for complying with the requirements of codes, standards, and procurement documents regarding record transmittal, retention, and maintenance subsequent to completion of work.
- D. Record storage facilities shall be established and utilized to prevent destruction of quality records by fire, flooding, theft, and deterioration by environmental conditions such as temperature or



INSERT A, PAGE 17.2 - 96

Retention periods of records for operations phase activities shall meet, as a minimum, the requirements described in ANSI N45.2.9- 1974, Appendix A.6. In addition to these record retention requirements, the following records shall be collected, stored, and maintained for the periods indicated:

1. Records of reports of all reportable events submitted to the NRC - at least 5 years.
2. Records of sealed source and fission detector leaks tests and results - at least 5 years.
3. Records of annual physical inventory of all sealed source material of record - at least 5 years.
4. Records of reactor tests and experiments - the duration of the operating license.
5. Records of inservice inspection performed pursuant to the technical specifications - the duration of the operating license.
6. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59 - the duration of the operating license.
7. Records of the service lives of all hydraulic and mechanical snubbers within the scope of snubber test and inspection program required by unit technical specifications, including the date at which life commences and associated installation and maintenance records - the duration of the operating license.
8. Records of audits required by UFSAR 13.4.5 - the duration of the operating license.
9. Records of analyses required by the radiological environmental monitoring program that would permit evaluation of the accuracy of the analysis at a later date. These records should include procedures effective at specified times and QA records showing that these procedures were followed - the duration of the operating license.
10. Meteorological data, summarized and reported in a format consistent with the recommendations of Regulatory Guides 1.21 and 1.23 - the duration of the operating license.
11. Records of secondary water sampling and water quality - the duration of the operating license.
12. Record of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM - the duration of the operating license.



APPENDIX 17.2B  
COMPLIANCE MATRIX (Sheet 1 of 2)

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*Add INSERT A, pg. 17.2B-1*

REG.Guid	Revision	Title	Standard	Year	Degree of Conformance
1.8	Rev. 1-R May 1977	Personnel Selection and Training	N18.1	1971	Modified
1.26	Rev. 1 Sept. 1974	Quality Group Classifications and Standards for Water-, Steam- and Radioactive-Waste-Containing Components of Nuclear Power Plants			Modified
1.28	Rev. 0 June 7, 1972	Quality Assurance Program Requirements (Design and Construction)	N45.2	1971	Modified Note 1
1.29	Rev. 3 Sept. 1978	Seismic Design Classification			Modified Operations Phase
1.30	Rev. 0 Aug 11, 1972	Quality Assurance Requirements for the Installation, Inspection and Testing of Instrumentation and Electrical Equipment	N45.2.4	1972	Modified
1.33	Revision 2 February 1978	Quality Assurance Program Requirements (Operation)	N18.7	1976	Modified
1.37	Revision 0 March 16, 1973	Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants	N45.2.1	1973	Modified
1.38	Revision 2 May 1977	Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items for Water-Cooled Nuclear Power Plants	N45.2.2	1972	Modified Operations Phase
1.39	Revision 2 Sept. 1977	Housekeeping Requirements for Water-Cooled Nuclear Power Plants	N45.2.3	1973	Modified
1.54	Revision 0 June 1973	Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants	101.4	1972	Modified
1.58	Revision 1 Sept. 1980	Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel	N45.2.6	1978	Modified
1.64	Revision 2 June 1976	Quality Assurance Requirements for the Design of Nuclear Power Plants	N45.2.11	1974	Modified Operations Phase
1.74	Revision 0 Feb. 1974	Quality Assurance Terms and Definitions	N45.2.10	1973	Conform

REFER TO UFSAR SECTION 1.8 FOR CONFORMANCE STATEMENTS

Note 1. For Operational Phase see Reg. Guide 1.33.



INSERT A, PAGE 17.2B-1

REG. Guide	Revision	Title	Standard	Year	Degree of Conformance
1.21	Revision 1, June, 1974	Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants	N/A	N/A	Conform

INSERT A, PAGE 17.2B-1





APPENDIX 17.2B  
COMPLIANCE MATRIX (Sheet 2 of 2)

REG. Guide	Revision	Title	Standard	Year	Degree of Conformance
1.88	Revision 2 October 1976	Collection, Storage and Maintenance of Nuclear Power Plant Quality Assurance Records	N45.2.9	1974	Modified
1.94	Revision 1 April 1976	Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel during the Construction Phase of Nuclear Power Plants	N45.2.5	1974	Modified
1.116	Revision 0-R May 1977	Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems	N45.2.8	1975	Modified
1.123	Revision 1 July 1977	Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants	N45.2.13	1976	Modified
1.143	Revision 0 July 1978	Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants	N199	1976	Modified
1.144	Revision 1 Sept. 1980	Auditing of Quality Assurance Programs for Nuclear Power Plants	N45.2.12	1977	Modified
1.146	Revision 0 August 1980	Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants	N45.2.23	1978	Modified
	Appendix A to (BTP) APCSB 9.5-1 (2/24/77)	Guidelines for Fire Protection for Nuclear Power Plants  The Operations Quality Assurance Program complies with the Quality Assurance Program Guidelines of Appendix A to (BTP)APCSB 9.5-1			

*Add INSERT A, page 17.2B-2*

REFER TO UFSAR SECTION 1.8 FOR CONFORMANCE STATEMENTS



INSERT A, PAGE 17.2B-2

REG. Guide	Revision	Title	Standard	Year	Degree of Conformance
4.1	Revision 1, April 1975	Programs for Monitoring Radioactivity in the Environs of Nuclear Power Plants (1/73)	N/A	N/A	Modified Audits of the QA program for monitoring radioactivity in the environs

INSERT A, PAGE 17.2B-2



18.I OPERATIONAL SAFETY18.I.A OPERATING PERSONNEL

## 18.I.A.1.1 SHIFT TECHNICAL ADVISOR

NRC Position

Each licensee shall provide an on-shift technical advisor to the shift supervisor. The shift technical advisor (STA) may serve more than one unit at a multiunit site if qualified to perform the advisor function for the various units.

The STA shall have a bachelor's degree or equivalent in a scientific or engineering discipline and shall have received specific training in the response and analysis of the plant for transients and accidents. The STA shall also receive training in plant design and layout, including the capabilities of instrumentation and controls in the control room. The licensee shall assign normal duties to the STAs that pertain to the engineering aspects of assuring safe operations of the plant, including the review and evaluation of operating experience.

PVNGS Evaluation

One STA per unit will be provided onsite in accordance with the requirements of Technical Specifications ~~table 6.2.1~~ and ~~section 6.2.4~~ as advisory technical support to the shift supervisors in the areas of thermal hydraulics, reactor engineering, and plant analysis with regards to operational safety.

Normal duties of the STA shall include:

- The diagnosis of accidents and plant transients to determine how they may affect the engineered aspects of plant design and safety features
- The review and evaluation of applicable operating experience

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## OPERATIONAL SAFETY

- Other functions as assigned, or requested by the shift supervisor, which pertain to control room activities and engineering aspects that ensure safe operation of the plant.

Organizationally, the STA will report through the STA section leader for STA functions to the department leader, operations support.

The STAs shall have, as a minimum, a Bachelor's Degree in an engineering or science discipline.

The STA training program is discussed in subsection 13.2.5.

#### 18.I.A.1.2 SHIFT SUPERVISOR ADMINISTRATIVE DUTIES

##### NRC Position (NUREG-0694)

Review the administrative duties of the shift supervisor and delegate functions that detract from or are subordinate to the management responsibility for assuring safe operation of the plant to other personnel not on duty in the control room.

##### PVNGS Evaluation

9| The responsibility and authority of the unit shift supervisor is delineated in paragraph 13.1.2.2.1.2.2.1 and 13.1.2.2.1.2.2.2. The administrative duties of the unit shift supervisor are defined in the PVNGS Station Manual and are in accordance with the guidance of the November 9, 1979, NRC letter from D. B. Vassallo to all pending construction permit applicants. Administrative functions which detract from or are subordinate to plant operational safety are assigned to other personnel who do not direct operational functions.

Additionally, the PVNGS operations organization includes a senior licensed unit control room supervisor for each unit, in addition to the assigned unit shift supervisor. The unit





## OPERATIONAL SAFETY

operators required so that their total number is at least one more than the number of control rooms from which a reactor is being operated.

PVNGS Evaluation

## (1) Limit Overtime

In accordance with NRC Generic Letter No. 82-02 PVNGS administrative procedures are in effect that limit the maximum hours to be worked by personnel performing safety-related functions. The personnel affected by this requirement include senior reactor operators, reactor operators, radiation protection technicians, auxiliary operators, and key maintenance personnel. The following guidelines have been adopted:

- a. An individual should not be permitted to work more than 16 hours straight (excluding shift turnover time).
- b. An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any 7-day period (all excluding shift turnover time).
- c. A break of at least 8 hours should be allowed between work periods (including shift turnover time).
- d. The use of overtime should be considered on an individual basis and not for the entire staff on a shift.

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WITH  
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Pg. 18.I.A-4

~~Recognizing that very unusual circumstances may arise requiring deviation from the above guidelines, such deviation shall be authorized by the PVNGS plant manager or his designee who is at the manager level or above. The paramount consideration in such authorization shall be that significant reductions in the effectiveness of operating personnel would be highly unlikely.~~



INSERT A, PAGE 18.I.A - 4

Recognizing that very unusual circumstances may arise requiring deviation from the above guidelines, such deviation shall be authorized in advance by personnel at the director level or designees in accordance with approved administrative procedures and with documentation of the basis for granting the deviation. The paramount consideration in such authorization shall be that significant reductions in the effectiveness of operating personnel would be highly unlikely.

Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the personnel assigned responsibility for authorizing deviations from the working hour guidelines. This review is to ensure that excessive hours have not been assigned and that routine deviation from the working hour guidelines do not occur.



## OPERATIONAL SAFETY

In addition, procedures encourage licensed operators at the controls to be periodically relieved, when conditions permit, and assigned other duties while away from the control board.

Staff working hours are <sup>also</sup> addressed in <sup>the administrative</sup> Technical Specification ~~6.2.2.1~~.

4

## (2) Minimum Shift Crew

The minimum requirements for shift crew per unit are identified in table 18.I.A-1.

Table 18.I.A-1  
MINIMUM SHIFT CREW COMPOSITION

Position	Number of Individuals Required to Fill Position	
	Mode 1, 2, 3, or 4	Mode 5 or 6
SS	1	1
SRO	1	None
RO	2	1
AO	2	1
STA	1	None

SS - shift supervisor with a senior reactor operator's license

SRO - Individual with a senior reactor operator's license

RO - Individual with a reactor operator's license

AO - Nuclear operator I or II

STA - Shift technical advisor

Except for the shift supervisor, the composition of the shift crew may be one less than the minimum of table 18.I.A-1 for a period not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members, provided



## OPERATIONAL SAFETY

immediate action will be taken to restore the shift crew composition to within the minimum requirements of table 18.I.A-1. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming shift crewman being late or absent.

During any absence of the shift supervisor from the control room while the unit is in Mode 1, 2, 3, or 4, an individual (other than the shift technical advisor) with a valid senior operator license shall be designated to assume the control room command function. During any absence of the shift supervisor from the control room while the unit is in Mode 5 or 6, an individual with a valid senior operator or operator license shall be designated to assume the control room command function.

*This control room command function is normally delegated to a designated control room Supervisor who holds a valid senior reactor operator license.*

*The preceding table is part of Technical Specification 6.2.2.1.*

Normal staffing as discussed in paragraph 13.1.2.3 and PVNGS administrative procedures meet or exceed NUREG-0737 minimum requirements.





NO CHANGE TO THIS PAGE

18.I.B OVERALL ORGANIZATION

## 18.I.B.1.2 INDEPENDENT SAFETY ENGINEERING GROUP

NRC Position

Each applicant for an operating license shall establish an onsite independent safety engineering group (ISEG) to perform independent reviews of plant operations.

The principal function of the ISEG is to examine plant operating characteristics, NRC issuances, licensing information service advisories, and other appropriate sources of plant design and operating experience information that may indicate areas for improving plant safety. The ISEG is to perform independent review and audits of plant activities, including maintenance, modifications, operational problems, and operational analysis, and aid in the establishment of programmatic requirements for plant activities. Where useful improvements can be achieved, it is expected that this group will develop and present detailed recommendations to corporate management for such things as revised procedures or equipment modifications.

Another function of the ISEG is to maintain surveillance of plant operations and maintenance activities to provide independent verification that these activities are performed correctly and that human errors are reduced as far as practicable. The ISEG will then be in a position to advise utility management on the overall quality and safety of operations. The ISEG need not perform detailed audits of plant operations and shall not be responsible for sign-off functions such that it becomes involved in the operating organization.



PVNGS Evaluation

9 | In response to the recommendations of NUREG-0737, Independent Safety Engineering (ISE) at PVNGS was established onsite to perform independent reviews of plant operations. The principal function of ISE is to examine plant operating characteristics, NRC issuances, industry advisories, licensee event reports, and other sources of plant design and operating experience information, including plants of similar design which may indicate areas for improving plant safety.

9 | Administratively, ISE reports to the director, Nuclear Assurance, through functional area department leaders, who are outside the line of responsibility for power production and are independent of day-to-day plant operating responsibilities.

9 | Detailed requirements for implementation of the ISE function are contained in section ~~13.4.2.2~~

13.4.4.



## OPERATIONAL SAFETY

authorized to relieve the shift supervisor shall be specified.

- (c) If the shift supervisor is temporarily absent from the control room during routine operations, a lead control room operator shall be designated to assume the control room command function. These temporary duties, responsibilities, and authority shall be clearly specified.
- (3) Training programs for shift supervisors shall emphasize and reinforce the responsibility for safe operation and the management function the shift supervisor is to provide for assuring safety.
- (4) The administrative duties of the shift supervisor shall be reviewed by the senior officer of each utility responsible for plant operations. Administrative functions that detract from or are subordinate to the management responsibility for assuring the safe operation of the plant shall be delegated to other operations personnel not on duty in the control room.

PVNGS Evaluation

The primary onshift responsibility for safe operation of the plant belongs to the unit shift supervisors, whose lines of authority and duties are described in section 13.1.2 and in the PVNGS (Station Manual). The unit shift supervisor shall maintain a broad perspective of all of the operational conditions affecting the safety of the plant. The unit shift supervisor should not become totally involved in any single operation in times of emergency when multiple operations are required in the control room. ~~Additionally, the unit shift supervisor shall remain in the control room until properly relieved during emergency conditions.~~

administrative  
and operating  
procedures

REPLACE WITH  
INSERT A  
Pg. 18.I.C-7

The administrative duties of the unit shift supervisors will be periodically reviewed by a senior officer of APS.



INSERT A, PAGE 18.I.C - 7

Additionally, the control room supervisor provides a backup to the shift supervisor and supervises shift personnel in conduct of unit operations, as assigned. The unit shift supervisor or control room supervisor shall remain in the control room until properly relieved during emergency conditions.

INSERTS A, PAGE 18.I.C - 7





## OPERATIONAL SAFETY

Administrative functions that detract from or are subordinate to the management responsibility for assuring the safe operation of the plant will be delegated to other operations personnel.

~~In accordance with the requirements of PVNGS Technical Specification Section 6.1.2, a management directive will be issued on an annual basis to all station personnel which emphasizes the primary management responsibility of the unit shift supervisor for safe operation of the plant and the responsibility for the control room command function.~~

## 18.I.C.4 CONTROL ROOM ACCESS

NRC Position (NRC Letter, D. B. Vassallo to All Pending Construction Permit Applicants, dated November 9, 1979)

The licensee shall make provisions for limiting access to the control room to those individuals responsible for the direct operation of the nuclear power plant (e.g., operations supervisor, shift supervisor, and control room operators), to technical advisors who may be requested or required to support the operation, and to predesignated NRC personnel. Provisions shall include the following:

- (1) Develop and implement administrative procedures that establishes the authority and responsibility of the person in charge of the control room to limit access, and
- (2) Develop and implement procedures that establish a clear line of authority and responsibility in the control room in the event of an emergency. The line of succession for the person in charge of the control room shall be established and limited to persons possessing a current senior reactor operator's license. The plan shall clearly define the lines of communication and authority for plant management personnel not in direct command of operations, including those who report to stations outside of the control room.



## **Enclosure 2**

**Matrix of Technical Specification Administrative Controls  
Relocated to the Quality Assurance Program Description**



SECTION UNDER REVIEW:

Change to Operation QA Program  
Description contained in UFSAR  
sections 13, 17.2, and 18.

REVISION:

0

Name/Title

PROCEDURE/PCP/TEMP MOD. NO:

N/A

Current T.S. 6.0 section	UFSAR section (relocated)	Comments
6.2.1	18.I.A.1.3, Table 18.I.A-1	Existing shift manning table
6.2.2.a/b	18.I.A.1.3, Table 18.I.A-1	Existing shift manning table
6.2.2.d	15.4.7.2	Existing requirements
6.2.2.c	13.1.2.3	Also corrected T.S. reference at 9.5.1.5.4.2
6.2.2.1.b/c	18.I.A.1.3	Overtime limitations - details relocated to UFSAR
Table 6.2-1	18.I.A.1.3, Table 18.I.A-1	Also addressed in ITS 5.1.2 & 5.2.2.a-g
6.2.3	13.4.4	
6.2.3.1	13.4.4.1	
6.2.3.2	13.4.4.2	
6.2.3.3	13.4.4.3	
6.2.3.4	13.4.4.5	
6.2.3.5	13.4.4.4	
6.4	1.8 - R.G. 1.8	Existing requirements
6.4.1	13.2.2	
	17.2 App. B	
6.5	13.4	
6.5.1	13.4.2	
6.5.1.1	13.4.2.1	
6.5.1.2	13.4.2.2	
6.5.1.3	13.4.2.3	
6.5.1.4	13.4.2.4	
6.5.1.5	13.4.2.5	
6.5.1.6	13.4.2.6	
6.5.1.7	13.4.2.7	
6.5.1.8	13.4.2.8	
6.5.2	13.4.1, 13.5.1	
6.5.2.1	13.5.1.1	
6.5.2.2	13.5.1.7	
6.5.2.3	13.4.1.1	
6.5.2.4	13.4.1.2, 13.5.1.3	
6.5.2.8	13.4.1.3	



ACTION UNDER REVIEW:

Change to Operations QA Program REVISION: 0  
Description contained in UFSAR  
sections 13, 17.2, and 18.

Name/Title

PROCEDURE/PCP/TEMP MOD. NO:

N/A

Current T.S. 6.0 section	UFSAR section (relocated)	Comments
6.5.3	13.4.3	
6.5.3.1	13.4.3.1	
6.5.3.2	13.4.3.2	
6.5.3.3	13.4.3.3	
6.5.3.4(a-i)	13.4.3.4(a-i)	
6.5.3.5	13.4.3.5	
	13.4.5	
6.5.3.5.a	13.4.5.h	
6.5.3.5.b	13.4.5.i	
6.5.3.5.c	13.4.5.j	
6.5.3.5.d	13.4.5.a	
6.5.3.5.e	13.4.5.p	
6.5.3.5.f	13.4.5.o	
6.5.3.5.g	13.4.5.o	
6.5.3.5.h	13.4.5.k	
6.5.3.5.i	13.4.5.k	
6.5.3.5.j	13.4.5.d	
6.5.3.5.k	13.4.5.d	
6.5.3.6	13.4.3.6	
6.5.3.7	13.4.3.7	
6.5.3.8	13.4.3.8	
6.5.3.9	13.4.3.9	
6.5.3.10	13.4.3.10	
6.6.		
6.6.1.a	TO UFSAR per NRC MATRIX	NRC REPORTING REQUIREMENTS are not addressed by this licensing document change request.
6.6.1.b	13.4.2.6.c 13.4.2.8	
6.7.1.a.	13.4.3.4.e	OSRC 24 hr. notification relocated to UFSAR.
6.7.1.b.	13.4.2.6.b/c	By investigation of the T.S. violation and review of the LER required by ITS 2.2.5.
6.7.1.c.	13.4.3.4.e/g	By review of T.S. violations and reportable events requiring 24 hr. written notification.





SECTION UNDER REVIEW:

Change to Operations QA Program  
Description contained in UFSAR  
sections 13, 17.2, and 18.

REVISION:

0

Name/Title

PROCEDURE/PCP/TEMP MOD. NO:

N/A

Current T.S. 6.0 section	UFSAR section (relocated)	Comments
6.8.1.g NOTE (1)	13.4.1.1.1, 13.4.2.6.h	PRB review of changes to CPC addressable constants.
6.8.1.j	13.4.5.k	ITS 5.5.1 and 5.5.4 require programs for Offsite Dose Calculation Manual (ODCM) and Radioactive Effluent Monitoring. ITS 5.4.1.c requires quality assurance procedures for environmental and effluent monitoring. UFSAR 13.4.5.k identifies R.G. 1.21 and 4.1 as the NRC regulatory guidance for the environmental and effluent monitoring quality assurance program.
6.8.1.n	2.5.4.13 Table 2.5-18, 13.2.2.K	Existing requirements are contained in UFSAR 2.5, procedural coverage requirement added at 13.5.2.2.K.
6.8.1.o and NOTE	13.5.2.2.L	
6.8.1.p and NOTE	13.5.2.2.M	
6.8.2	13.5.1.2 17.2.6.2.1.2	
6.8.3	13.5.1.6	
6.8.4	13.4.5	
6.8.4.a (audit)	13.4.5.b	
6.8.4.a(1)	13.4.5.b	
6.8.4.a(2)	13.4.5.b	
6.8.4.b (program)	13.5.2.2.N	
6.8.4.b (audit)	13.4.5.f	
6.8.4.c (audit)	13.4.5.e	
6.8.4.d (program)	13.5.2.2.O	
6.8.4.d (audit)	13.4.5.b	
6.8.4.e (audit)	13.4.5.c	
6.8.4.f (program)	13.5.2.2.P	
6.8.4.f (audit)	13.4.5.a	
6.8.4.g (audit)	13.4.5.k	
6.8.4.h (audit)	13.4.5.k	
6.9.1 - 6.9.3	DETAILS to UFSAR or TRM per NRC MATRIX	NRC REPORTING REQUIREMENTS not addressed by this licensing document change request.
6.10	1.8 - R.G.1.88, 17.2B, 17.2.6.4	UFSAR accepts R.G. 1.88/ANSI N45.2.9 - 1974 (existing requirements)
6.10.1	1.8 - R.G. 1.88, 17.2B, 17.2.6.4.A	UFSAR accepts R.G. 1.88/ANSI N45.2.9 - 1974 (existing requirements)
6.10.1.a.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.1.b.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.1.c.	17.2.6.4.A.1	
6.10.1.d.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.1.e.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.1.f.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.1.g.	17.2.6.4.A.2	
6.10.1.h.	17.2.6.4.A.3	



ACTION UNDER REVIEW:

Change to Operations QA Program REVISION: 0  
Description contained in UFSAR  
sections 13, 17.2, and 18.

Name/Title

PROCEDURE/PCP/TEMP MOD. NO:

N/A

Current T.S. 6.0 section	UFSAR section (relocated)	Comments
6.10.2	1.8 - R.G. 1.88, 17.2B, 17.2.6.4.A	UFSAR accepts R.G. 1.88/ANSI N45.2.9 - 1974 (existing requirements)
6.10.2.a.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.2.b.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.2.c.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.2.d.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.2.e.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.2.f.	17.2.6.4.A.4	
6.10.2.g.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.2.h.	17.2.6.4.A.5	
6.10.2.i.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.2.j.	17.2.6.4.A.6	
6.10.2.k.	17.2.6.4.A	By reference to ANSI N45.2.9 - 1974, A.6
6.10.2.l.	17.2.6.4.A.7	
6.10.2.m.	17.2.6.4.A.8	
6.10.2.n.	17.2.6.4.A.9	
6.10.2.o.	17.2.6.4.A.10	
6.10.2.p.	17.2.6.4.A.11	
6.10.2.q.	17.2.6.4.A.12	
6.11 / 6.11.1	12.5.1, 13.5.2.2.A	Existing requirements
6.13.b	13.4.2.6.h	PRB review and acceptance of Process Control Program changes (also to be included in TRM).
6.14.a	17.2.6.4.A.12	Record of reviews of ODCM changes
6.14.b	13.4.2.6.g	PRB review of ODCM changes
6.15.1	13.4.2.6.h	PRB review and acceptance of major changes to the liquid, gaseous, and solid radwaste treatment systems.

Additional T.S. sections addressed by this change	UFSAR section (relocated)	Comments
Table 3.3-1 Action 2	13.4.2.6.f	(Note: Editorial error in CTS corrected which referenced TS 6.5.1.6.g, vice TS 6.1.5.6.f.)
Table 3.3-3 Action 13	13.4.2.6.f	(Note: Editorial error in CTS corrected which referenced TS 6.5.1.6.g, vice TS 6.1.5.6.f.)
3/4.7.9 Bases	13.4.2.6.h	PRB review and acceptance of snubber accessibility / inaccessibility determinations.

