



# THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

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MURRAY R. EDELMAN  
VICE PRESIDENT  
NUCLEAR

May 14, 1985  
PY-CEI/NRR-0248 L

Mr. B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Perry Nuclear Power Plant  
Docket Nos. 50-440; 50-441  
Regulatory Guide  
Conformance Clarification

Dear Mr. Youngblood:

We have completed our review of the regulatory guides in FSAR Section 1.8 as agreed to in our letters dated February 6, 1985 (PY-CEI/NRR-0177L) and April 2, 1985 (PY-CEI/NRR-0222L). Conformance statements associated with regulatory guides 1.12, 1.21, 1.29, 1.32, 1.33, 1.44, 1.48, 1.71, 1.84, 1.85, 1.89, 1.100, 1.138 and 1.150 were affected by this review and our proposed wording is attached. Our response to NRC staff concerns regarding regulatory guides 1.39 and 1.54 is also included within the attachment. Finally, we have strengthened the FSAR reference columns in Tables 1.8-1 and 1.8-2 and this accounts for the bulk of the submittal. Revised FSAR pages reflecting the above changes are attached for your review.

We will continue to notify the Staff and update our conformance to the regulatory guides in the FSAR as changes, exceptions and alternate methods are determined to be necessary. Please feel free to contact me if you have any questions concerning this matter.

Very truly yours,

Murray R. Edelman  
Vice President  
Nuclear Group

MRE:njc

Attachments

cc: Jay Silberg, Esq.  
John Stefano (2)  
J. Grobe

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PDR ADOCK 05000440  
A PDR

Boo!  
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## 1.8 NRC REGULATORY GUIDE ASSESSMENT

In 1970, the NRC (AEC) began to issue Regulatory Guides (Safety Guides) which describe in detail the methods acceptable to the NRC Staff for implementing specific parts of the Commission's regulations and in some cases to delineate techniques used by the Staff in evaluating specific problems or postulated accidents and to provide guidance to applicants concerning certain of the information needed by the Staff in its review of applications for permits and licenses.

Tables 1.8-1 and 1.8-2 list each Division 1 and Division 8 Regulatory Guide addressed on the Perry Project. The appropriate revision for the Perry Project has been determined by referencing the NRC's Regulatory Requirements Review Committee (RRRC) categorization nomenclature for each of the Regulatory Guides. The RRRC Categories referenced in Tables 1.8-1 and 1.8-2 are defined as follows:

- a. Category 1 - Clearly forward fit only.
- b. Category 2 - Further Staff consideration of the need for backfitting appears to be required for certain identified items of the regulatory position. These individual issues are such that existing plants need to be evaluated to determine (a) their status with regard to these safety issues and (b) the need for backfitting.
- c. Category 3 - Clearly backfit.
- d. Category 4 - Regulatory Guides not categorized by the RRRC.

Table 1.8-1 provides a listing of our conformance to the recommendations of each of the non-QA related regulatory guides for design, testing, maintenance and operation of the Perry Nuclear Power Plant. Conform as used in Table 1.8-1 means that PNPP has implemented the regulatory guides, to the extent described in the table and in the referenced FSAR sections. Our level of commitment to each regulatory guide has been established jointly with NRC during the acceptance review and safety review of the FSAR sections describing PNPP's implementation of the regulatory guides. Therefore, in order to obtain the specific degree of conformance to each regulatory guide, it is necessary to review Table 1.8-1 along with the referenced sections of the FSAR. The specific acceptance of this implementation by NRC is reflected in the appropriate sections of the Safety Evaluation Report (SER). (NUREG-0887)

Table 1.8-2 provides a listing of our commitments to the QA-related regulatory guides. We have specifically committed to the regulatory guides in this Table with all exceptions/clarifications noted in the Table.

TABLE 1.8-1

CONFORMANCE TO NRC REGULATORY GUIDES

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.1 - (Revision 0 - 11/70;RRRC Cat. 1)</u>		
Net positive suction head for emergency core cooling and containment heat removal system pumps	PNPP conforms to this guide.	5.4.7, 6.3.2
<u>1.2 - (Revision 0 - 11/70;RRRC Cat. 1)</u>		
Thermal shock to reactor pressure vessels	PNPP conforms to this guide.	5.3.3
<u>1.3 - (Revision 2 - 6/74;RRRC Cat. 1)</u>		
Assumptions used for evaluating the potential radiological consequences of a loss of coolant accident for boiling water reactors.	PNPP conforms to this guide with the following exceptions:  1) Annulus mixing assumptions is in accordance with standard review plan (SRP) 6.5.3, page 4.  2) Dose conversion factors and average gamma energies taken from NRC TACT III computer code.	15.6.5 15.0.3 6.5.1 12.6.1 9.4.2  FSAR Ref. Only
<u>1.4 - (Revision 2 - 6/74)</u>		
Assumptions used for evaluating the potential radiological consequences of a loss of coolant accident for pressurized water reactors.	Not applicable to the PNPP design.	-
<u>1.5 - (Revision 0 - 3/71;RRRC Cat. 1)</u>		
Assumptions used for evaluating the potential radiological consequences of a steam line break accident for boiling water reactors.	PNPP conforms to this guide with the exception that dose conversion factors and average gamma energies were taken from NRC TACT III code.	15.6.4

TABLE 1.8-1

<u>Regulatory Guide (Rev. ; RRRR Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>	
<u>1.6 - (Revision 0 - 3/71; RRRR Cat. 1)</u>			
Independence between redundant standby (onsite) power sources and between their distribution systems.	The independence among standby power sources and among their distribution systems is in accordance with this guide. The HPCS system conformance is discussed in Section 8.3.1.	7.1.2, 8.1 8.3.1	
<u>1.7 - Revision 2 - 11/78; RRRR Cat. 1)</u>			
Control of combustible gas concentrations in containment following a loss of coolant accident.	PNPP conforms to this guide.	6.1.1 6.2.5 7.3.2 15.0.3 Tech. Specs.	FSAR Ref. Only
<u>1.8 - (Revision 1-R - 5/77; RRRR Cat. 1)</u>			
Personnel Selection and Training.	PNPP Project conforms to this guide, with the clarification that the qualifications of operations personnel meet the requirements of ANSI N18.1-1971 and this guide, as detailed in the resumes provided in Table 13.1-3. Additionally, the following exception is taken: Regulatory Guide 1.8, states "The RPH should have a bachelor's degree or the equivalent in a science or engineering subject including some formal training in radiation protection" and at least 5 years of professional experience in applied radiation protection. It is our position that equivalent as used in Reg. Guide 1.8 for the bachelor's degree means (a) four years of formal schooling in science or engineering (b) four years of applied radiation protection experience at a nuclear facility, (c) four years of operational or technical experience or training in nuclear power, or (d) any combinations of the above totaling four years.	12.5, 13.1.1 13.1.3 Tech. Specs.	FSAR Ref. Only



TABLE 1.8-1

CONFORMANCE TO NRC REGULATORY GUIDES

<u>Regulatory Guide (Rev.; RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.9 - (Revision 0 - 3/71; RRRC Cat. 1)</u>		
Selection, design, and qualification of diesel-generator units used as onsite electric power systems at nuclear power plants.	The standby diesel generators conform to this guide. The HPCS diesel-generator will conform to Regulatory Guide 1.9 except that the starting transient for the single large motor load may cause the voltage or the frequency variations to exceed the maximum suggested but without impairment of the system function. Also recent test results, reported in Amendment 3 to NEDO 10905 (August 1979) showed that the voltage and frequency recovery requirements of Reg. Guide 1.9 were fully met.	8.1   8.3.1   FSAR 3.11.2   Ref. Tech.   Only Specs.
<u>1.10 - (Revision 1 - 1/73; RRRC Cat. 1)</u>		
Mechanical (cadweld) splices in reinforcing bars of Seismic Category I concrete structures.	PNPP design conforms to this guide with the exception that mechanical testing is based on ASME Section III, Division 2, paragraph CB/CC 4333	3.8.1
<u>1.11 - (Revision 0 - 2/72; RRRC Cat. 1)</u>		
Instrument lines penetrating primary reactor containment.	PNPP design conforms to this guide.	7.1.2, 6.2.4
<u>1.12 - (Revision 1 - 4/74; RRRC Cat. 4)</u>		
Instrumentation for earthquakes.	PNPP design conforms to this guide with the exception of paragraph C.4.b, Response Spectrum Recorder Frequency Range. The Perry Nuclear Power Plant Response Spectrum Recorders have a frequency range of "2HZ to 24.4HZ," rather than the recommended 1HZ to 30 HZ.	3.7.4 Tech Specs.
<u>1.13 - (Revision 1 - 12/75; RRRC Cat 4)</u>		
Spent fuel storage facility design basis	PNPP design conforms to this guide.	9.1 6.5.1   FSAR 9.4.2   Ref. Only
<u>1.14 - (Revision 1 - 8/75)</u>		
Reactor coolant pump flywheel integrity	Not applicable to PNPP design	-

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.; RRRC Category)	Degree of Conformance	Reference	
1.15 - (Revision 1 - 12/72; RRRC Cat. 1)	PNPP design conforms to this guide.	3.8.1 3.8.3 3.8.4 3.8.5	FSAR Ref. Only
Testing of reinforcing bars for Seismic Category 1 concrete structures.			
1.16 - (Revision 4 - 9/75; RRRC Cat. 1)	PNPP conforms with this guide with the following clarification: Those sections of regulatory guide 1.16 that are still applicable to reports required by the PNPP Technical Specifications will be used as guidance in preparing the respective Technical Specification reports.	Tech. Specs.	FSAR Ref. Only
Reporting of operating information - Appendix A Technical Specifications.			
1.17 - (Revision 1 - 6/73; RRRC Cat. 1)	PNPP conforms to this guide.	13.6 Security Plan	
Protection of nuclear power plants against industrial sabotage.			
1.18 - (Revision 1 - 12/72; RRRC Cat. 1)	Not applicable to the PNPP design.		
Structural acceptance test for concrete primary reactor containments.			
1.19 - (Revision 1 - 8/72; RRRC Cat. 1)	PNPP conforms to this guide.		
Nondestructive examinations of primary containment liner welds.			
1.20 - (Revision 2 - 5/76; RRRC Cat. 1)	PNPP conforms to this guide.	3.9.2	
Comprehensive vibration assessment program for reactor internals during preoperational and initial start-up testing.			

TABLE 1.8-1 (CONTINUED)

Regulatory Guide (Rev.; RRRC Category)Degree of ConformanceReference1.21 - (Revision 1 - 6/74; RRRC Cat. 1)

Measuring, evaluating and reporting radioactivity in solid wastes and release of radioactivity in liquid and gaseous effluents from light-water cooled nuclear power plants.

PNPP conforms with this guide with the following exceptions:

1. Meteorological data will be provided to the NRC in the formats outlined in PNPP Technical Specifications.
2. Liquid effluent sampling and analysis will be performed in accordance with PNPP Technical Specifications. All radioactive releases from liquid radwaste will be monitored by the Radwaste Discharge Radiation Monitor-ESW Discharge (D17K606). The monitor alarm setpoint will eliminate the need to periodically sample the effluent during discharge.  
  
Prior to release, LRW tanks to be discharged will be mixed and samples drawn and analyzed. Based on these analyses, the D17K606 radiation monitor alarm will be set to detect fluctuations in radwaste activity during release. This radiation monitor provides a control function, (i.e., if the alarm setpoint is exceeded the release will be terminated). Therefore, periodic sampling will not be necessary.
3. Gaseous effluent sampling and analysis will be performed in accordance with PNPP Technical Specs.
4. Average energy ( $\bar{E}$ ) requirements will not be adhered to for gaseous effluent reporting since  $\bar{E}$  is not used by PNPP to calculate gaseous release (rate) and dose (rate).

7.2.2  
11.5  
12.3.4  
Tech  
Specs.

FSAR  
Ref.  
Only

TABLE 1.8-1 (CONTINUED)

<u>Regulatory Guide (Rev.; RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
1.21 (continued)	<p>5. Periodic checks of composite samples to determine loss of radioactive material due to deposition or volatilization will not be performed since the addition of <math>\text{HNO}_3</math> to each sample upon collection eliminates the deposition/volatilization problem.</p> <p>6. Periodic inservice calibrations of radiological effluent monitoring systems need not be performed since "real time" efficiencies are determined by direct correlation of measured total activity with the net monitor response. Effluent monitor set points and release rates are calculated using the efficiencies determined by the radiological monitoring systems' response to the radionuclide mix present. Effluent monitoring system calibration and testing will be performed in accordance with the Technical Specifications.</p> <p>7. Total radionuclide release rate data will be reported in the Semi-annual Radioactive Effluent Release Report in the format of Tables 1A-1C of the reg. guide. This data will not be broken down by release point (Table 1B &amp; 1C) because all release points are ground level, all releases continuous and Technical Specifications do not contain release rate (mCi/cc) limits.</p>	
1.22 - (Revision 0 - 2/72; RRRC Cat. 1)		
Periodic testing of protection system actuation functions.	The protective systems and components important to safety are designed to allow periodic testing in accordance with this guide.	<div>7.6.2</div> <div>7.4.2</div> <div>7.3.2</div> <div>7.2.2</div> <div>8.1</div> <div>8.3.1</div> <div>FSAR Ref. Only</div>
1.23 - Revision 0 - 2/72; RRRC Cat. 1)		
Onsite meteorological programs	PNPP conforms to this guide.	<div>2.3.3</div> <div>2.3.4</div>



TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.; RRRC Category)	Degree of Conformance	Reference
<u>1.24 - (Revision 0 - 3/72; RRRC Cat. 1)</u>	Not applicable to PNPP design.	-
Assumptions used for evaluating the potential radiological consequences of a pressurized water reactor gas storage tank failure.	PNPP design conforms to this guide with the following exceptions: a. (Regulatory position C.1.j) filter efficiencies of 95% are used in accordance with Regulatory Guide 1.52; b. (Regulatory position C.3.a/c) dose conversion factors and average gamma energies are taken from NRC TACT III computer code in lieu of Table 1 and Reference 12.	6.5.1 9.1.2 9.4.2 15.7.4 FSAR Ref. Only
<u>1.25 - (Revision 0 - 3/72; RRRC Cat. 1)</u>	PNPP design conforms to this guide.	3.2.1 10.3.3 6.2.4 9.4 9.5 6.5 6.7 Table 3.2-1 FSAR Ref. Only
<u>1.26 - (Revision 3 - 3/76; RRRC Cat. 1)</u> Quality group classifications and standards for water-, steam-, and radioactive-waste-containing components of nuclear power plants.	PNPP conforms with this guide with the following clarification:  Technical Specifications do not address the loss of capability of the ultimate heat sink since there is no single active or passive failure which would preclude the ultimate heat sink from meeting its design criteria.	9.2.5, 2.4
<u>1.27 - (Revision 2 - 1/76; RRRC Cat. 2)</u> Ultimate Heat Sink for Nuclear Power Plants.		

TABLE 1.8-1 (CONTINUED)

<u>Regulatory Guide (Rev.; RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.28 - (Revision 2 - 2/79)</u>		
Quality assurance requirements (design and construction).	See Table 1.8-2.	17.2
<u>1.29 - Revision 3 - 9/78; RRRC Cat. 1)</u>		
Seismic design classification.	<p>PNPP design conforms to this guide, with exceptions as stated in Notes 19 and 24 of Table 3.2-1 and with the following clarifications:</p> <p><u>Position C.1.e</u> - The design of the main steam system incorporates a third isolation valve between the outermost MSIV and the turbine stop valve in each main steam line. The piping downstream of this MOV is non-safety class.</p> <p><u>Positions C.3 and C.4</u> - Seismic Category I design requirements are required to be extended "to the first seismic restraint beyond the defined boundaries."</p> <p>Seismic analysis of a piping system requires division of the system into discrete segments terminated by fixed points. Thus the seismic design is not terminated at a seismic restraint, but is extended to the first point in the system that can be treated as an anchor to the plant structure or to a distance sufficient such that the effects of the piping beyond the safety class boundary are insignificant. Paragraph C.4 also requires that "the pertinent quality assurance requirements of Appendix B to 10 CFR Part 50 be applied to the safety requirements" of such items. Both these requirements are considered to be adequately met by the following practice:</p> <p>a. Design and design control for these items are carried out in the same manner as that for items directly important to safety. This includes the performance of appropriate design reviews.</p> <p><u>Position C.4</u> - Design for items that would otherwise be classified as nonseismic but whose failure could reduce the functioning of items important to safety to an unacceptable safety level is performed in accordance with Seismic Category I requirements. Design control is carried out in the same manner as that for items directly important to safety.</p>	<p>3.2.1, 3.7.3, 10.3.1, 6.2.4, 8.3.1 9.1 9.3.5 9.4 9.5 6.5 6.7 Table 3.2.1</p>

TABLE 1.8-1 (CONTINUED)

Regulatory Guide (Rev.; RRRC Category)Degree of ConformanceReference

1.29 - continued

For piping and support of piping beyond the class break the following applies:

- a. Procurement of piping, in-line components and their supports is performed in accordance with the item's safety classification, i.e., non-safety.
- b. Installation of piping and in-line components is also performed as with other non-safety items.
- c. Final installation of component supports is inspected as a formal part of the Corporate Nuclear Quality Assurance Program.

1.30 - (Revision 0 - 8/72; RRRC Cat. 1)

Quality assurance requirements for the installation, inspection, and testing of instrumentation and electrical equipment.

See Table 1.8-2.

17.2 FSAR  
7.1.2 Ref.  
3.8.2 Only

1.31 - (Revision 3 - 4/78; RRRC Cat. 1)

Control of ferrite content in stainless steel weld metal.

Conformance evaluation was based on an extensive test program which demonstrates that controlling weld filler metal ferrite at 5% minimum produces production welds which meet the regulatory requirements. All austenitic stainless steel weld filler material for PNPP is supplied with a minimum of 5% ferrite material.

3.8 FSAR  
4.5.1 Ref.  
6.1.1 Only

1.32 - (Revision 2 - 2/77; RRRC Cat. 1)

Criteria for safety-related electric power systems for nuclear power plants.

The design of the PNPP Class 1E power system conforms to IEEE Standard 308-1974 as modified by the positions of Regulatory Guide 1.32, with the exception that the battery performance test may be performed in lieu of the battery service test at the once per 60 month interval.

7.1.2  
8.1  
8.3

1.33 - (Revision 2 - 2/78; RRRC Cat. 1)

Quality assurance program requirements (operations).

See Table 1.8-2

17.2 FSAR  
12.5.3 Ref.  
13.4, 13.5 Only

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.)/RRRC Category)

1.34 - (Revision 0 - 12/72;RRRC Cat. 1)

Control of electroslag weld properties

Electroslag welding was not used during fabrication of ASME Boiler and Pressure Vessel Code Section III, Components.

1.35 - (Revision 3 - 4/79;RRRC Cat. 1)

Inservice inspection of ungrouted tendons in prestressed concrete containment structures

Not applicable to the PPHP design.

1.36 - (Revision 0 - 2/73;RRRC Cat. 1)

Nonmetallic thermal insulation for austenitic stainless steel

PPHP conforms to this guide.

1.37 - (Revision 0 - 3/73;RRRC Cat. 1)

Quality assurance requirements for cleaning of fluid systems and associated components of water cooled nuclear plants

See Table 1.8-2

1.38 - (Revision 2 - 5/77;RRRC Cat. 1)

Quality assurance requirements for packaging, shipping, receiving, storage, and handling of items for water cooled nuclear power plants

See Table 1.8-2

Reference

4.5.2

FSAR

5.2.3

Ref.

5.3.1

Only

6.1.1

FSAR

4.5.2

Ref.

Only

17.2

4.5.1

FSAR

4.5.2

Ref.

6.1.1

Only

10.3.6

17.2



TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.39 - (Revision 2 - 9/77; RRRC Cat. 1)</u>		
Housekeeping requirements for water cooled nuclear power plants.	See Table 1.8-2	17.2   FSAR 12.5.3   Ref. Only

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.40 - (Revision 0 - 3/73;RRRC Cat. 1)</u>		
Qualification tests of continuous-duty motors installed inside containment of water-cooled nuclear power plants	Inside containment Class 1E Motors are type tested in accordance with IEEE Standard 334-1971 as modified by the regulatory positions of Regulatory Guide 1.40.	3.11   FSAR 7.1.2,   Ref. 8.1   Only
<u>1.41 - (Revision 0 - 3/73;RRRC Cat. 1)</u>		
Preoperational testing of redundant onsite electric power systems to verify proper load group assignments	PNPP conforms to this guide with the following clarification: Suitable preoperational tests to detect lack of independence will be performed. These tests will assure that each redundant on-site power source and its load group can function without any dependence upon any other redundant load group or portion thereof. In relation to position C1, PNPP will isolate at interbus transformer source breaker L1010 and L2006.	14.2.12   FSAR 8.1   Ref. Only
<u>1.42 - (Revision -)</u>		
	Regulatory Guide 1.42 was withdrawn on 3/22/76 (Federal Register Notice 41FR11891)	-
<u>1.43 - (Revision 0 - 5/73)</u>		
Control stainless steel weld cladding of low-alloy steam components	Safety class component specifications require that all low alloy steel be produced to fine grain practice. The requirements of this Regulatory Guide are not applicable to the NSSS components at PNPP.	5.3.1

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.; RRRC Category)	Degree of Conformance	Reference
<u>1.44 - Revision 0 - 5/73;RRRC Cat. 1</u> Control of the use of sensitized stainless steel	PNPP conforms to this guide with the following exceptions: <u>Position C.3</u> The stainless steel components in the NSSS scope of supply of this regulatory guide definition were either solution heat treated or the weld joint inside surface was protected with corrosion resistant cladding or other means to minimize material susceptibility to IGSCC. Therefore, corrosion testing, as required by this position, was not performed.	4.5.1 4.5.2 5.2.3 6.1.1
<u>1.45 - (Revision 0 - 5/73;RRRC Cat. 1</u> Reactor coolant pressure boundary leakage detection systems.	PNPP conforms to this guide	8.3.1 7.6.2 5.2.5 12.3.4 Tech. Specs.
<u>1.46 - (Revision 0 - 5/73;RRRC Cat. 1</u> Protection against pipe whip inside containment.	PNPP design conforms to this guide.	FSAR Ref. Only
<u>1.47 - (Revision 0 - 5/73;RRRC Cat. 1</u> Bypassed and inoperable status indication for nuclear power plant systems.	Bypass and inoperable status indication is provided in the plant control room in accordance with Regulatory Guide 1.47.	8.3.2 7.4.2 7.1.2 8.1 9.4 6.5 7.3.2
<u>1.48 - (Revision 0 - 5/73;RRRC Cat. 1</u> Design limits and load combinations for Seismic Category 1 system components	PNPP conforms to this guide, with the exception that the NRC positions are more conservative for stress allowables used for ASME Class 2 vessels and piping in faulted	3.9.3 3.9.1 6.2.4

TABLE 1.8-1 (Continued)

conditions. Refer to Table 3.9-16 for details concerning	9.2.1
NSSS systems. Non-NSSS systems are covered in Section 3.9.	9.4.6

1.49 - (Revision 1 - 12/73;RRRC Cat. 1

Power levels of nuclear power plants

PNPP design conforms to this guide.

1.1



TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.; RRRC Category)

1.50 - (Revision 0 - 5/73; RRRC Cat. 1)

Control of preheat temperature for welding of low-alloy steel.

1.51 - (Revision -)

1.52 - (Revision 2 - 3/78; RRRC Cat. 2)

Design, testing and maintenance criteria post-accident engineered safety feature atmosphere cleanup system air filtration and absorption units of light-water cooled nuclear power plants.

1.53 - (Revision 0 - 6/73; RRRC Cat. 1)

Application of single failure criterion to nuclear power plant protection systems.

1.54 - (Revision 0 - 6/73; RRRC Cat. 1)

Quality Assurance requirements for protective coating applied to water-cooled nuclear power plants.

1.55 - (Revision 0 - 6/73; RRRC Cat. 1)

Concrete placement in Category 1 structures.

Degree of Conformance

PNPP conforms to this guide.

Regulatory Guide 1.51 was withdrawn on 7/21/75.  
(Federal Register Notice 40FR30510)

PNPP's design and testing conforms to this guide as presented in Tables 6.5-1 through 6.5-3.

Single failure criteria is applied to protection systems in accordance with Regulatory Guide 1.53.

See Table 1.8-2.

See Table 1.8-2

Reference

5.2.3

5.3.1

10.3.6

6.1.1

6.4

6.5.1

9.1

9.4

12.3

15.7

Tech.

Specs.~~6.5.3~~

7.3.2,

7.2.2

8.1.

7.4.2

7.6.2

~~9.4~~

17.2

6.1.1

6.1.2

FSAR  
Ref.  
OnlyFSAR  
Ref.  
OnlyFSAR  
Ref.  
Only

17.2

3.8

FSAR  
Ref.  
Only

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.) RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.56 - (Revision 1 - 8/78; RRRC Cat. 3)</u>		
Maintenance of water purity in boiling water reactors	PHPP conforms to the guide with exception to the resin sampling frequency of position c.4d. PHPP will sample condensate demineralizer resin prior to its addition to the demineralizer.	5.2.3, 10.4.6
<u>1.57 - (Revision 0 - 6/73; RRRC Cat. 1)</u>		
Design limits and loading combinations for metal primary reactor containment system components	PHPP design conforms to this guide as described in Section 3.8.2.5.	3.8.2 FSAR 3.8.3 Ref. Only
<u>1.58 - (Revision 1 - 9/80; RRRC Cat. 1)</u>		
Qualification of nuclear power plant inspection, examination, and testing personnel	See Table 1.8-2	17.2
<u>1.59 - (Revision 2 - 8/77; RRRC Cat. 2)</u>		
Design basis floods for nuclear power plants	PHPP design conforms to this guide.	2.4.2 2.4.5 FSAR 2.4.3 Ref. Only

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.60 - (Revision 1 - 12/73;RRRC Cat. 1)</u>		
Design response spectra for seismic design of nuclear power plants	PNPP design conforms to this guide.	2.5.2   FSAR 3.7.1   Ref. Only
<u>1.61 - (Revision 0 - 10/73;RRRC Cat. 1)</u>		
Damping valves for seismic design of nuclear power plants	PNPP design conforms to this guide.	3.7.1   FSAR 3.10.1   Ref. Only

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.;RRRC Category)

1.62 - (Revision 0 - 10/73;RRRC Cat. 1)

Manual initiation of protective actions

Degree of Conformance

PNPP conforms to this guide.

Reference

7.2.2,  
7.3.2  
7.4.2  
7.6.2  
8.3.1 | FSAR  
Ref.  
Only

1.63 - (Revision 2 - 7/78;RRRC Cat. 2)

Electric penetration assemblies in  
containment structures for light-  
water-cooled nuclear power plants

PNPP design conforms to IEEE Standard 317-1976,  
as modified by Regulatory Guide 1.63.

8.1 | FSAR  
3.11.2 | Ref.  
8.3.1 | Only

17.2

1.64 - (Revision 2 - 6/76;RRRC Cat. 1)

Quality assurance requirements for the  
design of nuclear power plants

See Table 1.8-2



TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.;RRRC Category)

1.64 - (Revision 2) (Continued)

See Table 1.8-2

1.65 - (Revision 0 - 10/73;RRRC Cat. 1)

Materials and inspection for reactor vessel closure studs

The PHPP reactor vessel order date preceded implementation of Regulatory Guide 1.65. The reactor vessel closure study bolting meets the intent of Regulatory Guide 1.65 except that the maximum tensile strength of the stud material is 174 ksi instead of 170 ksi as recommended by Position C1b(1) of the guide. Refer to Section 5.3.1.7 for details.

5.3.1

1.66 - (Revision -)

Nondestructive examination of tubular products

This Regulatory Guide was withdrawn September 1977.

5.2.3

FSAR  
Ref.  
Only

1.67 - (Revision 0 - 10/73;RRRC Cat. 1)

Installation of overpressure protective devices

PHPP design conforms to this guide.

3.9.3

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev. ; RRRC Category)

1.68 - (Revision 2 - 8/78; RRRC Cat. 1)

Initial test programs for water-cooled nuclear power plants.

Degree of ConformanceReference

The initial test program consists of three phases including initial checkout and run-in, preoperational testing and startup testing. PNPP conforms to this guide with the following clarifications and exceptions:

8.1  
8.3.1  
9.5  
10.4.7  
14.2

FSAR  
Ref.  
Only

## 1) Section C.9, Items a and b:

PNPP takes exception to items a and b as being included in the report. PNPP will list the tests performed and refer to FSAR Chapter 14 for a description of test methods and objectives. For those tests which do not meet acceptance criteria, the report will include a justification for acceptance as required by C.9c, Items d and e.

## 2) Appendix A.1, Paragraph 2 (Page 1.68-6)

PNPP takes exception to performing system expansion, vibration and restraint tests on all structures, systems and components. PNPP will test those structures, systems and components identified in Section 3.9.2.

## 3) Appendix A, Section 1.c

PNPP takes exception to time response testing requirements. PNPP will time response test the reactor protection system channels including sensors as defined in the Technical Specifications and in Chapter 14 of the FSAR.

## 4) Appendix 9, Section 1.g (1) and (2).

PNPP takes exception to the requirement to demonstrate the load-carrying capability of system cables in accordance with design criteria. PNPP will

TABLE 1.8-1 Continued

Regulatory Guide (Rev. ; RRRRC Category)

1.6B (Continued)

Degree of Conformance	<u>Reference</u>
demonstrate that system components and cables adequately supply system load, <u>not</u> demonstrate the cable design load carrying capability.	
PNPP also takes exception to the requirement to demonstrate that emergency loads can start with the maximum and minimum design voltage available. PNPP will verify that proper voltages are available in order to establish transformer tap settings and to verify computer modeling of the electrical system.	
5) Appendix A, Section 1.h, Paragraph 2.	
PNPP takes exception to the requirement to verify functioning of protective devices such as leak tight covers or housings. Leak tight requirements for covers and housings are part of the equipment specifications.	
6) Appendix A, Section 1.j (15)	
N/A - PNPP does not use an automatic dispatcher control system.	

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.; RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
1.68 (Continued)		
1.68.1 - (Revision 1 - 1/77; RRRC Cat. 1)		
1 Preoperational and initial startup testing of feedwater and condensate systems for boiling water reactor power plants.	PNPP conforms to this guide with the exception to commitments of Position C.1 - "Preoperational Testing", since both the condensate and feedwater systems are classified as nonsafety for testability purposes.	14.0
1.68.2 - (Revision 1 - 7/78; RRRC Cat. 1)		
1 Initial startup test program to demonstrate remote shutdown capability for water-cooled nuclear power plants.	PNPP conforms to this guide with the following clarification to position C.3: this test will be initiated with steam being bypassed to the main condenser. Having the turbine-generator in operation would produce an unnecessary perturbation on the distribution system.	14.0
1.69 - (Revision 0 - 12/73; RRRC Cat. 1)		
Concrete radiation shields for nuclear power plants.	PNPP conforms to this guide.	3.8   FSAR 12.3.2   Ref. Only



TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.; RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.70 - (Revision 3 - 11/78; RRRC Cat. 1)</u>		
Standard format and content of safety analysis reports for nuclear power plants.	R.G. 1.70 was utilized in the preparation of the PNPP FSAR which was docketed by NRC on January 30, 1981. The FSAR has subsequently been reviewed and accepted by NRC through the Safety Evaluation Report (SER) and its supplements.	FSAR

TABLE 1.8-1 (CONTINUED)

<u>Regulatory Guide (Rev.; RRRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
1.71 - (Revision 0 - 12/73; Cat. 1)		
Welder qualification for areas of limited accessibility	<p>During construction PNPP conforms to this guide with the exception of Position C.1: The Project has developed guidelines to aid in identifying limited access conditions. Where a potential condition is identified, a Project Organization welding engineer evaluates the actual field condition and determines what steps will be taken to assure quality.</p> <p>For shielded metal arc welding, the limiting conditions are as follows: Where there is an obstruction on one side only, the necessary clearance will be 8 inches; where the obstruction is on two sides, the necessary clearance will be 10 inches; where the obstruction is on three sides, the necessary clearance will be 12 inches.</p> <p>For gas tungsten arc welding, the limiting conditions are as follows: Where there is an obstruction on one side only, the necessary clearance will be 4 inches; where the obstruction is on two sides, the necessary clearance will be 5 inches; where the obstruction is on three sides, the necessary clearance will be 6 inches.</p> <p>During operations PNPP conforms to this guide with the exception of Position C.1: Performance qualifications for personnel who weld under conditions of limited access, as defined in Regulatory Position C.1, are maintained in accordance with the applicable requirements of ASME Sections III and IX. However, specific qualification for limited access welds will not be required. To assure that the required integrity level for a specific limited access weld is achieved, welding conducted in areas of limited access must pass the required non-destructive examination. No waiver or relaxation of examination methods or acceptance criteria because of the limited access will be permitted.</p>	<p>3.8.3 5.2.3 4.5.2 10.3.6</p>

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.;RRRC Category)	Degree of Conformance	Reference
1.72 - (Revision 2 - 11/78;RRRC Cat. 1)	Not applicable to the PHPP design.	-
Spray pond piping made from fiberglass-reinforced thermosetting resin		
1.73 - (Revision 0 - 1/74;RRRC Cat. 1)	Qualification of electric valve operators at PHPP in accordance with IEEE Standard 382-1972, as modified by the positions of Regulatory Guide 1.73.	8.1 3.11.2
Qualification tests of electric valve operators installed inside containment of nuclear power plants		
1.74 - (Revision 0 - 2/74;RRRC Cat. 1)	See Table 1.8-2	17.2
Quality assurance terms and definitions		
1.75 - (Revision 2 - 9/78;RRRC Cat. 4)	PHPP design is in accordance with IEEE Standard 384-1974, as modified by the positions of Regulatory Guide 1.75, with the alternative positions as discussed in Table 8.1-2.	8.1 7.1.2 7.6.1 8.3.1 FSAR Ref. Only
Physical independence of electrical systems		
1.76 - (Revision 0 - 4/74;RRRC Cat. 4)	PHPP design conforms to this guide.	3.3.2 2.3.1 Table 2.3-5 FSAR Ref. Only
Design basis tornado for nuclear power plants		
1.77 - (Revision 0 - 5/74;RRRC Cat. 1)	Not applicable to the PHPP design.	-
Assumptions used for evaluating a control rod ejection accident for pressurized water reactors		

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.78 - (Revision 0 - 6/74;RRRC Cat. 1)</u>		
Assumptions for evaluating the habitability of a nuclear power plant control room during a postulated hazardous chemical release	PNPP design conforms to this guide.	2.2.3 FSAR 6.4 Ref. Only
<u>1.79 - (Revision 1 - 9/75;RRRC Cat. 1)</u>		
Preoperational testing of emergency core cooling systems for pressurized water reactors	Not applicable to the PNPP design.	-
<u>1.80 - (Revision 0 - 6/74;RRRC Cat. 4)</u>		
Preoperational testing of instrument air systems	PNPP conforms to this guide for the preoperational testing of the P57 safety related instrument air system with the following clarification:  Item C7 test and check requirements will be accomplished during the served equipment's system preoperational phase testing.  PNPP conforms to this guide for the acceptance testing of the P52 non-safety related instrument air system with the following clarifications:  1) Item C7 test and check requirements will be accomplished during the served equipment's system preoperational phase testing.	14.0



TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.80 - (Revision 0) (Continued)</u>	2) Items C8, C9 and C10 will be accomplished by placing the valves to be tested in their normal operating position for simulation of the instrument air pipe break on selected system branches. Similarly, valves to be tested will be placed in their normal operating position for simulation of instrument air pipe freezing/plugging on the selected system branches. The response of valves to a loss of air pressure when placed in a position other than failed as described in Item C8a will be verified, where required, on an individual component basis.	
<u>1.81 - (Revision 1 - 1/75;RRRC Cat. 1)</u>	PNPP design conforms to this guide for Class 1E power systems. Each unit has separate, independent electric systems capable of supplying ESF and safe shutdown loads, assuming a single failure and loss of offsite power.	8.1
<u>1.82 - (Revision 0 - 6/74;RRRC Cat. 4)</u>	Not applicable to the PNPP design.	-
<u>1.83 - (Revision 1 - 7/75;RRRC Cat. 4)</u>	Not applicable to the PNPP design.	-
Inservice inspection of pressurized water reactor steam generator tubes		

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.;RRRC Category)

1.84 - (Revisions 4 through 19 - 11/78;  
RRRC Cat. 1)

Design and fabrication code case  
acceptability - ASME Section III  
Division 1

1.85 - (Revisions 4 through 19 - 11/78;  
RRRC Cat. 1)

Materials code case acceptability -  
ASME Section III Division 1

Degree of Conformance

PNPP conforms to the guide revisions which  
correspond to the applicable ASME code of  
record. Additional code cases may be endorsed  
by NRC and used by PNPP prior to revision of  
this regulatory guide.

PNPP conforms to the guide revisions which  
correspond to the applicable ASME code of  
record. Additional code cases may be endorsed  
by NRC and used by PNPP prior to revision of  
this regulatory guide.

Reference

5.2.1

5.2.1

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.86 - (Revision 0 - 6/74;RRRC Cat. 1)</u>		
Termination of operating licenses for nuclear reactors.	CEI will comply with this guide.	
<u>1.87 - (Revision 1 - 6/75;RRRC Cat. 1)</u>		
Guidance for construction of Class I components in elevated-temperature reactors (supplement to ASME Section III Code Classes 1592, 1593, 1594, 1595 and 1596)	Not applicable to PNPP design.	
<u>1.88 - (Revision 2 - 10/76;RRRC Cat. 1)</u>		
Collection, storage, and maintenance of nuclear power quality assurance records.	See Table 1.8-2	17.2

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.;RRRC Category)1.89 - (Revision 0 - 11/74;RRRC Cat. 4)Qualification of Class 1E equipment  
for nuclear power plantsDegree of Conformance

All Class 1E equipment is environmentally qualified to IEEE 323-74 as endorsed by R.G. 1.89 and NUREG-0588, with the exception that NSSS equipment in mild environment is qualified to IEEE 323-71 supplemented by a well-supported maintenance/surveillance program.

Reference8.3.1,  
3.11

Table 8.1-2

TABLE 1.8-1, (Continued)

Regulatory Guide (Rev.;RRRC Category)

1.90 - (Revision 1 - 8/77;RRRC Cat. 1)

Inservice inspection of prestressed concrete containment structures with grouted tendons

1.91 - (Revision 1 - 2/78;RRRC Cat. 2)

Evaluations of explosions postulated to occur on transportation routes near nuclear power plants

1.92 - (Revision 1 - 2/76;RRRC Cat. 1)

Combining modal responses and spatial components in seismic response analysis

1.93 - (Revision 0 - 12/74;RRRC Cat. 4)

Availability of electric power sources

1.94 - (Revision 1 - 4/76;RRRC Cat. 1)

Quality assurance requirements for installation, inspection, and testing of structural concrete and structural steel during the construction phase of nuclear power plants

Degree of Conformance

Not applicable to PHPP design.

PHPP conforms to this guide.

PHPP design conforms to this guide.

The requirements of Regulatory Guide 1.93 for Limiting Conditions for Operations are addressed in Technical Specifications.

See Table 1.8-2

Reference

2.2.3

3.7.2	FSAR Ref. Only
3.7.3	
3.10.1	
3.8.2	

Tech. Specs. 8.2.1	FSAR Ref. Only
--------------------------	----------------------

17.2



TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.; RRRC Category)

1.95 - (Revision 1 - 2/77; RRRC Cat.1)

Protection of nuclear power plant control room operators against an accidental chlorine release.

Degree of Conformance

PNPP conforms to this guide with the following exception:

Control room leakage will be determined by using the tracer gas method per ASTM E 741-83.

Reference

2.2.3 14.	FSAR Ref. Only
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TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.96 - (Revision 1 - 6/76;RRRC Cat. 1)</u>		
Design of main steam isolation valve leakage control systems for boiling water reactor nuclear power plants	PNPP design conforms to this guide.	6.7.1, 7.3.2
<u>1.97 - (Revision 1 - 8/77;RRRC Cat. 3)</u>		
Instrumentation for light-water-cooled nuclear power plants to access plant conditions during and following an accident	PNPP design conforms to this guide as stated in Table 7.1-4.	7.1.2 Table 3.2-1 12.3.4 Tech. Specs.
<u>1.98 - (Revision 0 - 3/76;RRRC Cat. 1)</u>		
Assumptions used for evaluating the potential radiological consequences of a radioactive offgas system failure in a boiling water reactor	PNPP conforms to this guide with the following exceptions:  1) Position C.2.a:  The SJAE is conservatively assumed to pump for 30 minutes.  2) Position C.2.e:  Condenser air in leakage is assumed to be 2 scfm.  3) Source term differences as noted in the reference section.	15.7.1
<u>1.99 - (Revision 1 - 4/77;RRRC Cat. 3)</u>		
Effects of residual elements of predicted radiation damage to reactor vessel materials	PNPP design conforms to this guide.	5.3.1, 5.3.2 Tech. Specs.

FSAR  
Ref.  
Only

FSAR  
Ref.  
Only

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.100 - (Revision 1 - 8/77;RRRC Cat. 1)</u>  Seismic qualification of electric equipment for nuclear power plants	All Class 1E equipment is seismically qualified in accordance with IEEE 344-75, as modified by Reg. Guide 1.100.	3.10, 8.1,
<u>1.101 - (Revision 1 - 3/77;RRRC Cat. 3)</u>  Emergency planning for nuclear power plants	PNPP conforms to this guide.	PNPP Emergency Plan   FSAR Ref. Only
<u>1.102 - (Revision 1 - 9/76;RRRC Cat. 2)</u>  Flood protection for nuclear power plants	PNPP conforms to this guide.	2.4 9.1.2 9.5.8   FSAR Ref. Only
<u>1.103 - (Revision 1 - 10/76;RRRC Cat. 1)</u>  Post-tensioned prestressing systems for concrete reactor vessels and containments	Not applicable to the PNPP design.	-
<u>1.104</u>  Overhead crane handling systems for nuclear power plants	Regulatory Guide 1.104 was withdrawn on August 16, 1979.	-

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.105 - (Revision 1 - 11/76;RRRC Cat. 2)</u>		
Instrument setpoints	PNPP conforms to this guide. The trip setpoint (instrument setpoint) allowance value (technical specification limit) and the analytical or design basis limit are all contained in Technical Specifications. These parameters are all appropriately separated from each other based on instrument accuracy, calibration capability and design drift (estimated) allowance data. The setpoints are within the instrument accuracy range. The established setpoints provide margin to satisfy both safety requirements and plant availability objectives.	7.1.2 8.1   FSAR Ref. Only
<u>1.106 - (Revision 1 - 3/77;RRRC Cat. 1)</u>		
Thermal overload protection for electric motors on motor operated valves	Thermal overload relays to protect motor operated valves are not included in the design of the Class 1E power system; therefore, the positions of this guide are not applicable to the PNPP design.	8.1
<u>1.107 - (Revision 1 - 2/77;RRRC Cat. 1)</u>		
Qualifications for cement grouting for prestressing tendons in containment structures	Not applicable to the PNPP design.	-
<u>1.108 - (Revision 1 - 8/77;RRRC Cat. 2)</u>		
Periodic testing of diesel generator units as onsite electric power systems at nuclear power plants	The guidelines presented in Regulatory Guide 1.108 are used in establishing preoperational and periodic test procedures for the standby and HPCS diesel generators, with the exception	8.1 1.8 8.3.1   FSAR Tech. Ref. Specs. Only

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.;RRRC Category)Degree of ConformanceReference1.108 - (continued)

that "first-out" annunciation was not used. The basis for this is the use of individual trip alarms, which give the operator adequate information for correct actions. Additionally, Technical Specifications shall provide for testing in accordance with the applicable sections of this regulatory guide except for position c2a3. The diesel generator units shall demonstrate full-load carrying capability for an interval of not less than 24 hours at a load equivalent to the continuous rating of the diesel generator. The continuous rating of the diesel generator exceeds the maximum accident load and therefore is an adequate demonstration of diesel generator capability. Maximum loads for each of the diesel generators are identified in Table 8.3-1.



TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.109 - (Revision 1 - 10/77;RRRC Cat. 1)</u>		
Calculation of annual doses to man from routine releases of reactor effluents for the purpose of evaluating compliance with 10 CFR Part 50 Appendix I.	PNPP conforms to this guide.	12.4.4, Environmental Report - Chapter 5 Tech.   FSAR Specs.   Ref. Only
<u>1.110 - (Revision 0 - 3/76;RRRC Cat. 1)</u>		
Cost benefit analysis for radwaste systems for light-water-cooled nuclear power reactors	The positions of this guide are not applicable since the construction permit for PNPP was docketed on, or after, January 2, 1971, and prior to June 4, 1976, and the radwaste systems and equipment described in the FSAR satisfy the Guides on Design Objectives for Light-Water-Cooled Nuclear Power Reactors proposed in the Concluding Statement of Position of the Regulatory Staff in Docket RM-50-2.	11.2
<u>1.111 - (Revision 1 - 7/77;RRRC Cat. 1)</u>		
Methods of estimating atmospheric transport and dispersion of gaseous effluents in routine releases from light-water-cooled reactors	PNPP conforms to this guide.	2.3.4 2.3.5 Tech.   FSAR Specs.   Ref. Only
<u>1.112 - (Revision 0-R - 5/77;RRRC Cat. 1)</u>		
Calculation of releases of radioactive materials in gaseous and liquid effluents from light-water-cooled power reactors	PNPP conforms to this guide.	11.2.3, 11.3.3

TABLE 1.0-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
1.113 - (Revision 1 - 4/77;RRRC Cat. 1) Estimating aquatic dispersion of effluents from accidental and routine reactor releases for the purpose of implementing Appendix 1	PHPP conforms to this guide.	2.4.12
1.114 - (Revision 1 - 11/76;RRRC Cat. 3) Guidance on being operator at the controls of a nuclear power plant	PHPP conforms to this guide.	13.5.1
1.115 - (Revision 1 - 8/77;RRRC Cat. 2) Protection against low trajectory turbine missiles	PHPP conforms to this guide.	3.5.1
1.116 - (Revision 0 - 5/77;RRRC Cat. 1) Quality assurance requirements for installation, inspection and testing of mechanical equipment and systems	See Table 1.0-2, ...	17.2

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.117 - (Revision 1 - 4/78;RRRC Cat. 2)</u>		
Tornado design classification	PNPP does not have a tornado design classification, however, all safety class and Seismic Category I equipment and systems are protected from tornado effects, including missiles as described in Sections 3.5 and 3.8.	3.5, 3.8.1, 3.8.4 9.1.2   FSAR 9.5.8   Ref. Only

TABLE 1.B-1 (Continued)

<u>Regulatory Guide (Rev.; RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
1.118 - (Revision 2 - 6/78; RRRC Cat. 1) Periodic testing of electric power and production systems.	PNPP conforms to this guide with the following clarifications:  Under the direction of approved procedures jumpers can be temporarily connected at any appropriate terminals, provided procedures control the removal of the jumpers.  Under the direction of approved procedures, fuses and/or breakers can be removed or operated during the performance of tests to prevent operation of equipment.	8.1
1.119 1.120 - (Revision 1 - 11/77; RRRC Cat. 1) Fire protection guidelines for nuclear power plants	Regulatory Guide 1.119 was withdrawn on 6-20-77  The fire protection guidelines for PNPP are taken from BTP-APCSB 9.5-1 Appendix A, "Guidelines for Fire Protection for Nuclear Power Plants docketed prior to July 1, 1976". A detailed evaluation of this BTP is provided in Section 5 of the PNPP Fire Protection Evaluation Report.	PNPP Fire Protection Evaluation Report 17.2   FSAR Ref. Only
1.121 - (Revision 0 - 8/76) Basis for plugging degraded PWR steam generator tubes	Not applicable to the PNPP design	

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.;RRRC Category)

1.122 - (Revision 1 - 2/78;RRRC Cat. 1)

Development of floor design response spectra for seismic design for floor-supported equipment or components

1.123 - (Revision 1 - 7/77)

Quality assurance requirements for control of procurement of items and services for nuclear power plants

Degree of Conformance

PNPP design conforms to this guide with the exception that prior to the initial issue of the guide (September, 1976), the spectrum peak was broadened by  $\pm 10\%$ .

See Table 1.8-2

Reference

3.7.2

3.10.1 | FSAR  
App. 3A | Ref.  
Only

17.2

1.124 - (Revision 1 - 1/78;RRRC Cat. 2)

Service limits and loading combinations for Class 1 linear component supports

Regulatory Guide 1.124 is not addressed in the PNPP FSAR since the construction permit was docketed prior to January 10, 1978, as referenced in Section D of the Guide.



TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.;RRRC Category)

1.125 - (Revision 1 - 11/78;RRRC Cat. 1)

Physical models for design and operation of hydraulic structures and systems for nuclear power plants

Degree of Conformance

Regulatory Guide 1.125 is not addressed in the PNPP FSAR since the documentation of data and studies recommended by this guide are requested for review during the construction permit stage. Physical models used for design of the hydraulic structures are discussed in Section 3.8.

Reference

3.8 | FSAR  
Ref.  
Only

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
1.126 - (Revision 1 - 4/78;RRRC Cat. 1) An acceptable model and related statistical methods for the analysis	GE is currently working with the fuel fabrication facility to see that the fabrication conforms to this guide.	4.2
1.127 - (Revision 1 - 3/78;RRRC Cat. 3) Inspection of water control structures associated with nuclear power plants	PHPP conforms to this guide.	
1.128 - (Revision 1 - 10/78;RRRC Cat. 1) Installation design and installation of large lead storage batteries for nuclear power plants	Class 1E batteries are designed and installed in accordance with IEEE Standard 484-1975, as modified by Regulatory Guide 1.128, except that a hydrogen survey will not be performed. Calculations indicate that the maximum concentration in the battery area will be less than 0.001%.	8.1
1.129 - (Revision 1 - 2/78;RRRC Cat. 1) Maintenance, testing, and replacement of large lead storage batteries for nuclear power plants	PHPP conforms to IEEE Std. 450-1980 as modified by Reg. Guide 1.129 with respect to maintenance, testing and replacement of Class 1E storage batteries.	8.1 Tech.   FSAR Specs.   Ref. Only
1.130 - (Revision 1 - 10/78;RRRC Cat. 2) Service limits and loading combinations for Class 1 Plate-and-shell-type component supports	Regulatory Guide 1.130 is not addressed in the PHPP FSAR since the construction permit was issued prior to October 31, 1978 as referenced in Section D of the Guide.	

TABLE 1.8-1 (Continued)

Regulatory Guide (Rev.;RRRC Category)

1.131 - (Revision - - 8/77;RRRC Cat. 1)

Qualification test of electric cables, field splices, and connections for light-water-cooled nuclear power-plants

1.132 - (Revision 1 - 3/79;RRRC Cat. 1)

Site investigations for foundations of nuclear power plants

1.133 - (Revision 0 - 9/77;RRRC Cat. 1)

Loose part detection program for the primary system of light-water-cooled reactors

1.134 - (Revision 1 - 3/79;RRRC Cat. 1)

Medical evaluation of nuclear power plant personnel requiring operator licenses.

1.135 - (Revision 0 - 9/77;RRRC Cat. 1)

Normal water level and discharge at nuclear power plants

Degree of Conformance

Reference

Issued for comment.

Most of the geological site investigations for PNPP were complete prior to original issuance of the Guide in September 1977, however work was performed in conformance with the intent of the guide.

2.5.1,  
2.5.4,  
2.5.5

PNPP design conforms to this guide, with exception of qualification to IEEE Standard 323.

4.4.6  
Tech.  
Specs.

FSAR  
Ref.  
Only

PNPP conforms to ANSI N546-1976 as endorsed by Reg. Guide 1.134, Rev. 1, with the following clarification:

A biennial examination program to the requirements of ANSI N546-1976 will be implemented beginning at fuel load.

PNPP design conforms to this guide, however a conservative alternative approach to Position C-3 was used, in that the mean monthly water level of the past 100 year record was used to determine normal level.

2.4.8,  
2.4.11

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
1.136 - (Revision 1 - 11/78;RRRC Cat. 1)		
Material for concrete containments	Not applicable to the PNPP design.	-
1.137 - (Revision 1 - 10/79;RRRC Cat. 2)		
Fuel-oil systems for standby diesel generators	<p>Although not required by the Implementation section of the guide, the diesel generator fuel oil storage and transfer system conforms to Regulatory Guide 1.137 with the following exceptions:</p> <p>1a) No provision has been provided to reduce turbulence during filling of the storage tanks as recommended by C.2.g.</p> <p>1b) The cathodic protection system, referenced in C.1.g, has no special provisions to prevent the ignition of combustible vapors of diesel generator fuel oil. The No. 2 fuel oil being used has a flashpoint of 150°F. The fuel oil is not preheated for use and is not expected to see a temperature greater than 100°F.</p> <p>2a. (6.1 of ANSI N195-1976) The standby diesel generator fuel oil day tank capacity is not sufficient to maintain at least 60 minutes of diesel operation at the level where oil is automatically added to the day tank.</p> <p>2b. (7.5 of ANSI N195-1976) No fill line shutoff valve or strainer is provided.</p> <p>2c. (8.2.d. of ANSI N195-1976) No high level alarms are provided on the underground storage tanks.</p>	<p>9.5.4 Tech Specs.</p> <p>FSAR Ref. Only</p>

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.138 - (Revision - - 4/78)</u> Laboratory investigations of soils for engineering analysis and design of nuclear power plants	The PNPP Construction Permits were issued prior to December 1, 1978. Therefore, Regulatory Guide 1.138 does not apply.	-
<u>1.139 - (Revision - - 5/78)</u> Guidance for residual heat removal	Issued for comment.	-
<u>1.140 - (Revision 0 - 3/78;RRRC Cat. 1)</u> Design, testing, and maintenance criteria for normal ventilation exhaust system air filtration and absorption units of light-water-cooled nuclear power plants.	PNPP's design and testing conforms to this guide as presented in Table 12.3-3.	9.4 12.3.3 FSAR Ref. Only
<u>1.141 - (Revision 0 - 4/78)</u> Containment isolation provisions for fluid systems	Issued for comment.	-
<u>1.142 - (Revision 0 - 4/78)</u> Safety related concrete structures for nuclear power plants (other than reactor vessels and containments)	Issued for comment.	3.8.1 3.8.3 3.8.4 3.8.5 FSAR Ref. Only
<u>1.143 - (Revision 1 - 10/79;RRRC Cat. 1)</u> Design guidance for radioactive waste management systems, structures, and components installed in light-water-cooled nuclear power plants.	PNPP design is in conformance with this guide, with the following exceptions and clarifications: 1) Materials in the liquid radwaste system conform to ASTM Standards, and are constructed to high industry standards.	11.2, 11.3, 11.4 Table 3.2-1 FSAR Ref. Only



TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.) RRG Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>1.143 - (Revision 1 - 10/79) (Continued)</u>		
	2) Materials in the gaseous radwaste system are supplied to ASTM Standards.	
	3) The solid radwaste system is fabricated in accordance with BTP ETSB-11.3.	
<u>1.144 - (Revision 1 - 9/80)</u>		
Auditing of quality assurance programs for nuclear power plants	See Table 1.8-2	17.2   FSAR Ref. Only
<u>1.145 - (Revision 1 - 8/79)</u>		
Atmospheric dispersion models for potential accident consequence assessments at nuclear power plants	PNPP Project conforms to this guide.	2.3.4   FSAR 2.3.5   Ref. Only
<u>1.146 - (Revision 0 - 8/80)</u>		
Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants	See Table 1.8-2	17.2   FSAR Ref. Only
<u>1.150 - (Revision 1 - 2/83)</u>		
Ultrasonic testing of reactor vessel welds during preservice and inservice examinations.	PNPP conforms to the alternative method presented in Appendix A of the guide.	

TABLE 1.8.1 (Continued)

<u>Regulatory Guide (Rev.; RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>8.1 - (Revision 0 - 2/73)</u>		
Radiation Symbol	PNPP Project conforms to this guide.	
<u>8.2 - (Revision 0 - 2/73)</u>		
Guide for administrative practices in radiation monitoring	PNPP Project conforms to this guide.	12.3.4, 12.5

TABLE 1.8-1 (Continued)

<u>Regulatory Guide (Rev.; RRRG Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>8.3 - (Revision 0 - 2/73)</u> Film badge performance criteria	TLD's are the primary monitoring device at PNPP. In the event film badges are utilized for personnel monitoring, PNPP will conform to this guide.	12.5
<u>8.4 - (Revision 0 - 2/73)</u> Direct reading and indirect reading pocket dosimeters	PNPP Project conforms to this guide.	12.5
<u>8.5 - (Revision 0 - 2/73)</u> Immediate evacuation signal	PNPP Project conforms with this guide.	12.3.4, Emergency Plan   FSAR Ref. Only
<u>8.6 - (Revision 0 - 5/73)</u> Standard test procedure for geiger mueller counters	PNPP Project conforms with this guide.	12.5
<u>8.7 - (Revision 0 - 5/73)</u> Occupational radiation exposure records systems	PNPP Project conforms with this guide.	12.5
<u>8.8 - (Revision 3 - 6/78)</u> Information relevant to ensuring that occupational radiation exposures at nuclear power stations will be as low as reasonably achievable	PNPP Project conforms with this guide.	11.3.1 11.4.1 12.1, 12.3, 12.5 Tech. Specs.   FSAR Ref. Only

TABLE 1.0-1 (Continued)

<u>Regulatory Guide (Rev., IRRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>	
<u>8.9 - (Revision 0 - 9/73)</u> Acceptable concepts, models equations and assumptions for a bioassay program	PNPP Project conforms to this guide.	12.3, 12.5	
<u>8.10 - (Revision 1-R - 5/77)</u> Operating philosophy for maintaining occupational radiation exposures as low as is reasonably achievable.	PNPP Project conforms to this guide.	12.1 12.5 Tech Specs.	FSAR Ref. Only
<u>8.11 - (Revision 0 - 6/74)</u> Applications of bioassay for uranium	Not applicable at PNPP.		
<u>8.12 - (Revision 1 - 1/81)</u> Criticality accident alarm system	PNPP Project conforms to this guide. Exception is taken to 10 CFR 70.24 for implementing a criticality accident alarm system based on PNPP's fuel storage area design and this guide.	9.1.1, 12.3.4, 12.5	
<u>8.13 - (Revision 1 - 11/75)</u> Instruction concerning prenatal radiation exposure	PNPP Project conforms with this guide.	12.5	
<u>8.14 - (Revision 1 - 8/77)</u> Personnel neutron dosimeters	PNPP Project conforms with this guide.	12.5	
<u>8.15 - (Revision 0 - 10/76)</u> Acceptable programs for respiratory protection	PNPP Project conforms with this guide.	12.5	

TABLE 1.8-1 (Continued).

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>8.18 - (Revision 0 - FC - 12/77)</u>		
Information relevant to ensuring that occupational radiation exposures at medical institutions will be as Low as reasonably achievable	Not applicable to the PNPP Project.	-
<u>8.19 - (Revision 1 - 6/79)</u>		
Occupational radiation dose assessment in light-water reactor power plants design stage man-rem estimates	PNPP conforms to the administrative and procedural considerations as recommended by Section D of the guide.	12.5
<u>8.20 - (Revision 1 - 9/79)</u>		
Applications of bioassay for I-125 and I-131	PNPP conforms to this guide.	12.5
<u>8.21 - (Revision 1 - 10/79)</u>		
Health physics surveys for byproduct material at NRC-licensed processing and manufacturing plants	Not applicable to the PNPP Project.	-
<u>8.22 - (Revision 0 - FC - 7/78)</u>		
Bioassay at uranium mills	Not applicable to the PNPP Project.	-
<u>8.23 - (Revision 0 - FC - 2/79)</u>		
Radiation safety surveys at medical institutions	Not applicable to the PNPP Project.	-



TABLE 1.0-1 (Continued)

<u>Regulatory Guide (Rev.) RRG Category)</u>	<u>Degree of Conformance</u>	<u>Reference</u>
<u>B.24 - (Revision 1 - 10/79)</u> Health physics surveys during enriched uranium-235 processing and fuel fabrication	Not applicable to the PNPP Project.	-
<u>B.28 - (Revision 0 - 8/81)</u> Audible-alarm dosimeters	Not used at the PNPP Project	-

TABLE 1.8-2

Compliance with QA Related NRC Regulatory Guides \*

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Compliance</u>	<u>Reference</u>
<u>1.28 - (Revision 2 - 2/79)</u>	PNPP complies with this guide.	17.2
Quality assurance requirements (design and construction)		
<u>1.30 - (Revision 0 - 8/72;RRRC Cat. 1)</u>	PNPP complies with this guide with the following clarifications/exceptions:	17.2 7.1.2 8.1
Quality assurance requirements for the installation, inspection, and testing of instrumentation and electrical equipment.	For operations, ANSI N45.2.4-1972 will be applied to activities comparable in nature and extent to construction phase activities with the following clarification:  CEI may proceed with installation, inspection, and testing activities of items lacking required quality documentation provided that these items have been identified and released in accordance with PNPP nonconformance control procedures and that all required quality documentation has been received and accepted prior to the item being placed in service.  Section 6.2.1 of ANSI N45.2.4-1972: The last paragraph of this section deals with tagging and labeling. CEI will comply with an alternate last paragraph which reads: "Each safety-related item of process instrumentation is identified within our Repetitive Tank Program. This program maintains a record of calibration status including the date of calibration. This data and the identity of the person performing the calibration is readily available. In certain cases we may also use tags or labels attached to the installed instrumentation to provide this information.	FSAR Ref. Only

\*The statement "For operations, ANSI...will be applied to activities comparable in nature and extent to construction phase activities..." is taken from ANSI N18.7-1976 and applies to several regulatory guides in this Table. The PNPP Quality Assurance Program delineates responsibility for determining which operational phase activities are comparable in nature and extent to activities normally associated with design and construction.

TABLE 1.8-2 (Continued)

Regulatory Guide (Rev. 1 RRRG Category)  
 1.33 - (Revision 2 - 2/78; RRRG Cat. 1)  
 quality assurance program requirements  
 (operations).

Degree of Compliance	Reference	
The PHPP Project complies with this guide for operations with the following clarifications to ANSI N18.7-1976:	17.2 12.5.3	FSAR Ref. Only
Procurement documents for operations shall, to the extent necessary, require suppliers to have a quality assurance program which meets the pertinent requirements of ANSI H45.2-1977 in lieu of ANSI H45.2-1971.	13.4 13.5 Tech. Specs.	
Section 5.2.6 of ANSI N18.7-1976 requires that a log be maintained to identify the current status of temporary modifications such as temporary bypass lines, electrical jumpers, lifted electrical leads and temporary trip point settings. PHPP takes exception to this requirement when the installation and removal of such temporary modifications is specifically addressed in an approved instruction. These instructions will ensure that the circuitry is returned to its original configuration when the operation is completed.		
Section 5.2.7 - Since certain emergency situations could arise which might prevent preplanning of all activities, CEI will comply with an alternate to the first sentence in the second paragraph which reads: "Except under emergency or abnormal operating conditions where immediate actions are required to protect the health and safety of the public, to protect equipment or personnel, or to prevent the deterioration of plant conditions to a possibly unsafe or unstable level, maintenance or modification of equipment shall be preplanned and performed in accordance with procedures. Where written procedures would be required and are not used, the activities that were accomplished are documented after-the-fact and receive the same degree of review as if they had been preplanned."		

TABLE 1.8-2 (Continued)

Regulatory Guide (Rev.;RRRC Category)

Degree of Compliance

Reference

1.33 (Continued)

Section 6.2.1 of ANSI N45.2.4-1972:

The last paragraph of this section deals with tagging and labeling. CEI will comply with an alternate last paragraph which reads: "Each safety-related item of process instrumentation is identified within our Repetitive Task Program. This program maintains a record of calibration status including the date of calibration. This data and the identity of the person performing the calibration is readily available. In certain cases we may also use tags or labels attached to the installed instrumentation to provide this information.

TABLE 1.8-2 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Compliance</u>	<u>Reference</u>
<u>1.37 - (Revision 0 - 3/77;RRRC Cat. 1)</u>		
Quality assurance requirements for cleaning of fluid systems and associated components of water cooled nuclear plants	For operations, Reg. Guide 1.37 will be applied to activities comparable in nature and extent to construction phase activities.	17.2 4.5 6.1.1 10.3.6 FSAR Ref. Only
<u>1.38 - (Revision 2 - 5/77;RRRC Cat. 1)</u>		
Quality assurance requirements for packaging, shipping, receiving, storage, and handling of items for water cooled nuclear power plants	For operations, Reg. Guide 1.38 will be applied to activities comparable in nature and extent to construction phase activities with the following clarifications to ANSI N45.2.2-1978:  Section 5.2.1 of ANSI N45.2.2 requires that a preliminary visual inspection or examination for shipping damage be performed prior to unloading. The majority of items received during the operational phase are small in physical size	17.2



TABLE 1.8-2 (Continued)

<u>Regulatory Guide (Rev.;RERC Category)</u>	<u>Degree of Compliance</u>	<u>Reference</u>
1.38 - (Revision 2 - 5/77;RERC Cat. 1)	<p>and consequently, it is impractical to perform shipping damage inspection prior to unloading. In lieu of this requirement, CEI will inspect incoming items for shipping damage during unloading and/or unpackaging prior to use.</p> <p>Section 5.5 of ANSI H45.2.2 provides for "rework" and "use as is" dispositions for nonconforming items. The "repair" disposition, as defined in ANSI H45.2.10 will also be used by PHPP when appropriate.</p> <p>Section 6.5 of ANSI H45.2.2 requires that items released from storage and placed in their final locations within the power plant be inspected and cared for in accordance with the requirements of Section 6 of this standard and other applicable standards. In lieu of this requirement, CEI will, whenever feasible, transfer items from their appropriate storage areas to staging areas within the plant which provide equivalent environmental conditions to those which the items were designed to withstand. Item identification and acceptance standards will be maintained within these staging areas.</p> <p>Section A.3.4.2 of ANSI H45.2.2 addresses Inert Gas Blankets. There may be cases involving large or complex shapes for which an inert or dry air purge flow is provided rather than a static gas blanket due to the difficulty in providing a leak proof barrier. In these cases, a positive pressure purge flow may be utilized as an alternate to a leak proof barrier.</p>	

TABLE 1.8-2

<u>Regulatory Guide (Rev.; RRRC Category)</u>	<u>Degree of Compliance</u>	<u>Reference</u>
<u>1.39 - (Revision 2 - 9/77;RRRC Cat. 1)</u>		
Housekeeping requirements for water-cooled nuclear power plants.	<p>PNPP complies with this guide with the following clarification: Cleanliness requirements for Housekeeping activities shall be established on the basis of three zone designations.</p> <p>a. <u>Zone A</u>  This designation applies to major portions of the reactor coolant system and the Nuclear Steam Supply System which are open for inspection, maintenance or repair.</p> <p>Personnel accountability in Zone A is controlled by Security and Health Physics requirements which are implemented by the supervisors responsible for the work activity. Personnel admittance should be limited to maintain safe working conditions.</p> <p>Personnel entering this zone shall wear outer protective clothing appropriate to their work activity. This protective clothing shall only be worn within the confines of the established zone or the change area and shall be removed prior to exiting the change area.</p> <p>NOTE: Small openings for short duration into critical nuclear components, such as disassembly of a valve may not require a changeroom or protective coverings.</p> <p>Special cleaning of the area prior to disassembly may be required due to the critical nature of the work being performed.</p> <p>Special ventilation arrangements may be required to provide protection from operations in the general area which provide excessive dust and dirt.</p>	<p>17.2 12.5.3</p>

Regulatory Guide (Rev.; RRRC Category)Degree of ComplianceReference

1.39 (continued)

An equipment and material accountability log  
shall be maintained in this zone.

Material or equipment entering shall be appropriately  
cleaned prior to entry.

2) Zone B

This designation applies to the Radiological Control Areas of the Plant. The intermediate, fuel handling, containment, auxiliary, rad-waste, off-gas, heater bay, turbine power complex and turbine buildings are all in the Radiological Control Area (RCA) and are controlled by Health Physics requirements in the areas of Housekeeping, Plant and Personnel Safety, and Fire Protection. These requirements include the movement of equipment, tools and material in and out of the RCA.

3) Zone C

This designation applies to the remainder  
of the plant.

TABLE 1.8-2 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Compliance</u>	<u>Reference</u>
<u>1.54 - (Revision 0 - 6/73;RRRC Cat. 1)</u> Quality Assurance requirements for protective coatings applied to water-cooled nuclear power plants	For operations, ANSI N101.4-1972 will be applied to activities comparable in nature and extent to construction phase activities.	17.2, 6.1.1, 6.1.2 <i>See note at beginning of Table 1.8-2</i>
<u>1.55 - (Revision 0 - 6/73;RRRC Cat. 1)</u> Concrete placement in Category 1 structures	PNPP complies with this guide.	17.2 3.8     FSAR, Ref. Only
<u>1.58 - (Revision 1 - 9/80; RRRC Cat. 1)</u> Qualification of nuclear power plant inspection, examination, and testing personnel.	PNPP complies with this guide with the following clarifications:  Personnel who only handle test results or perform document control activities will not be certified.  Personnel involved in the performance, evaluation, and supervision of gas leak test methods shall meet the qualification requirements specified in Section 3, Qualifications, of ANSI/ASME N45.2.6 - 1978 as supplemented by Section C.5, C.6, C.7, C.8 and C.10 of R.G. 1.58.  For surveillance, startup testing and operations phase activities, this regulatory guide applies only to quality assurance/quality control personnel performing quality verification activities.	17.2

TABLE 1.8-2 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Compliance</u>	<u>Reference</u>
1.64 - (Revision 2 - 6/76;RRRC Cat. 1) Quality assurance requirements for the design of nuclear power plants	<p data-bbox="789 313 1555 391">PNPP complies with this guide with the following clarification:</p> <p data-bbox="789 407 1289 451">ANSI N45.2.11-1974, Section 6.1</p> <ol style="list-style-type: none"> <li data-bbox="789 467 1583 686">1) If in an exceptional circumstance, the designer's immediate supervisor is the only technically qualified individual available in the organization to perform a design verification by design review, this review may be conducted by the supervisor providing that:               <ol style="list-style-type: none"> <li data-bbox="868 703 1555 813">a) The justification is individually documented and approved in advance by the supervisor's management; and</li> <li data-bbox="868 829 1534 967">b) QA audits cover frequency and effectiveness of use of supervisors as design verifiers, to guard against abuse.</li> </ol> </li> <li data-bbox="789 1008 1561 1229">2) An individual who contributed to a given design may participate in a group verification of that design provided that the individual who contributed to the design does not (a) verify his contribution to the design, and (b) serve as chairman or leader of the group verification activity.</li> </ol>	17.2



TABLE 1.8-2 (Continued)

<u>Regulatory Guide (Rev.;RRRC Category)</u>	<u>Degree of Compliance</u>	<u>Reference</u>
1.74 - (Revision 0 - 2/74;RRRC Cat. 1) Quality assurance terms and definitions	PNPP complies with this guide.	17.2
1.88 - (Revision 2 - 10/76;RRRC Cat. 1) Collection, storage, and maintenance of nuclear power quality assurance records	PNPP complies with this guide with the clarification that where duplicate records are not maintained, records will be stored in a facility whose construction incorporates features recommended in ANSI H45.2.9-1974, with the following exceptions:  Door assemblies are Underwriter's Laboratory listed with a three hour rating to provide fire protection in accordance with ASTM E-152.  For storage of special processed records (such as radiographs and microfilm), humidity and temperature controls shall be provided so as to maintain an environmental condition as prescribed in paragraph 6.1.1 of ANSI PH 1.43-1979 in lieu of the last paragraph in section 5.6 of ANSI H45.2.9-1974.	17.2
1.94 - (Revision 1 - 4/76;RRRC Cat. 1) Quality assurance requirements for installation, inspection, and testing of structural concrete and structural steel during the construction phase of nuclear power plants	For operations, Reg. Guide 1.94 will be applied to activities comparable in nature and extent to construction phase activities.	17.2

TABLE 1.8-2 (Continued)

<u>Regulatory Guide (Rev.; RRRG Category)</u>	<u>Degree of Compliance</u>	<u>Reference</u>
<p><u>1.116 - (Revision 0 - 5/11/1988 Cat. 1)</u></p> <p>Quality assurance requirements for installation, inspection and testing of mechanical equipment and systems</p>	<p>PNPP complies with this guide with the following clarifications to ANSI N45.2.8-1975:</p> <ol style="list-style-type: none"> <li>1) Section 4.5.1.b. Pipe will be flushed to maximum velocity using permanent plant equipment or hydroblaster cleaning.</li> <li>2) Procedures will define system restoration as required to prevent contamination after cleanliness class is achieved.</li> <li>3) For operations, Reg. Guide 1.116 will be applied to activities comparable in nature and extent to construction phase activities including the clarifications made above.</li> </ol>	17.2
<p><u>1.123 - (Revision 1 - 7/77)</u></p> <p>Quality assurance requirements for control of procurement of items and services for nuclear power plants</p>	<p>PNPP complies with this guide with the following clarifications:</p> <p>Section 8.2 of ANSI N45.2.13 provides requirements for the control of nonconformances. Suppliers qualified by CEI as design agents in accordance with Regulatory Guides 1.66 and 1.123 may be permitted under specific contractual provisions to disposition nonconformances "use-as-is" or "repair" on behalf of CEI.</p> <p>Section 4 of ANSI N45.2.13-1976 provides requirements for the selection of procurement sources. For "commercial grade items", for which there are no quality assurance program or quality documentation requirements, the requirements of Section 4 need not be adhered to. Procurement documents for "commercial grade items" shall, however, contain requirements specific to the item being procured.</p>	17.2

TABLE 1.8-2 (Continued)

<u>Regulatory Guide (Rev.;RREC Category)</u>	<u>Degree of Compliance</u>	<u>Reference</u>
<u>1.144 - (Revision 1 - 9/80)</u>		
Auditing of quality assurance programs for nuclear power plants	PHPP Project complies with this guide.	17.2
<u>1.146 - (Revision 0 - 8/80)</u>		
Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants	PHPP Project complies with this guide.	17.2

TABLE 17.2-1

OPERATIONAL QUALITY ASSURANCE PROGRAM

COMPLIANCE MATRIX

Deleted

See Table 1.8-2