



Duquesne Light

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May 7, 1975

United States Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Reactor Licensing
Washington, D.C. 20555

Attention: Mr. Angelo Giambusso, Director

Subject: Beaver Valley Power Station - Unit No. 1
Compliance with WASH Documents
Docket No. 50-334

Gentlemen:

As requested in your letter of April 9, 1975, we are preparing an amendment to the Final Safety Analysis Report (FSAR) for Beaver Valley Power Station Unit No. 1 that will clarify our commitment to the guidance provided in WASH 1284, WASH 1309, and WASH 1283.

We wish, however, to call to your attention existing specific commitments to the following Regulatory Guides listed in your letter:

Regulatory Guide 1.8, "Personnel Selection and Training," in Volume 1, Paragraph 1.3.3.8. (FSAR)

Regulatory Guide 1.30, "Quality Assurance Requirements for the Installation, Inspection and Testing of Instrumentation and Electric Equipment," in Volume 1, Paragraph 1.3.3.30.

Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," in Volume 1, Paragraph 1.3.3.33.

DUQUESNE LIGHT COMPANY

By

E. J. Woolever
Vice President

United States Nuclear Regulatory Commission

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(CORPORATE SEAL)

Attest:



H. W. Staas
Secretary

COMMONWEALTH OF PENNSYLVANIA)

) SS:

COUNTY OF ALLEGHENY)

On this 7th day of May, 1975, before me,
DONALD W. SHANNON, a Notary Public in and for said
Commonwealth and County personally appeared E. J. Woolever
who, being duly sworn, disposed, and said that (1) he is
Vice President of Duquesne Light, (2) he is duly authorized
to execute and file the foregoing Submittal on behalf of
said Company, and (3) the statements set forth in the Sub-
mittal are true and correct to the best of his knowledge,
information and belief.

WITNESS my hand and seal the day and year first
above written.



DONALD W. SHANNON, Notary Public
Pittsburgh, Allegheny Co., Pa.
My Commission Expires
June 7, 1975

documented and the corrective action is verified through the mechanisms provided in the DLC, S&W, and Westinghouse Manuals.

A.2.1.17 QA records

The official quality file for the BVPS is maintained at the S&W Field Quality Control office. This file is monitored and audited by DLC.

Included in the records maintained are purchase orders, drawings, specifications, correspondence, procedures, audit reports, minutes of meetings, QA checksheets, codes and standards, and similar material.

A file system has been established to assure retrievability of such records. In the case where records are not stored at the site, locations for storage are reviewed and/or approved by DLC. Vendors retaining records for certain periods of time are instructed that such records must be submitted to the applicant at the conclusion of his (the vendor) storage responsibility.

A.2.1.18 Audits

DLC retains the ultimate responsibility for QA at BVPS. This responsibility is exercised mainly through an audit program. These audits are performed against the S&W and Westinghouse commitments. These include QA/QC procedures, specifications, drawings, instructions, and similar information. Internal audits of DLC are also documented and maintained in the file.

As agents for DLC, S&W also performs audits at the vendor shops through their Procurement Quality Control Division and audits at the site through the Field Quality Control Division. Both divisions are audited periodically by DLC.

Audit reports are utilized to assess the adequacy of the DLC QA Program. A record of all audits is maintained and periodically reviewed to assure necessary followup action. Audits are reported at each Project Management Committee Meeting to assure that the necessary level of management is involved and has an awareness of the audit program.

All audits are performed utilizing a preplanned checklist. The checklist will include address to the specific QA criteria of Appendix B of 10CFR50, results of previous audits, inspection reports, nonconformance reports, adherence to specifications, and other items as identified in the respective organization QA manuals.

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
1.	General	<p>Certain Regulatory Guides invoke or imply Regulatory Guides and standards in addition to the standard each primarily endorses.</p> <p>Certain ANSI Standards invoke or imply additional standards.</p>	<p>The Con Edison commitment refers to the Regulatory Guides and ANSI Standards, specifically identified in the "Foreword". Additional Regulatory Guides, ANSI Standards, Guides and similar documents implied or referenced in those specifically identified in the "Foreword" are not part of this commitment.</p>
2.	General	<p>Certain ANSI Standards extend the scope of applicability to include systems, structures, and components whose satisfactory performance is required for a plant to operate reliably.</p>	<p>Our commitment to these standards applies only to those systems, structures, and components whose satisfactory performance is required to prevent postulated accidents that could cause undue risk to the health and safety of the public; or to mitigate the consequences of such accidents. Reliable operation of the plant may depend upon other systems, structures and components which are not covered by this commitment.</p>

421.22 ✓

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
5.	General	NRC Regulatory Guides and ANSI Standards do not provide for deviation from any requirement(s) when emergency or other urgent conditions make such deviation necessary.	<p>The majority of ANSI Standards to which Con Edison has committed are concerned with the design and/or construction phases of nuclear power plants. Consequently, Con Edison has adapted these standards to its operations phase, where practicable, and has developed provisions for certain conditions not addressed in the standards.</p> <p>In the event of an emergency condition which, if not promptly corrected could likely affect the health and safety of the public, the Manager, Nuclear Power Generation or his designated alternate(s) may authorize emergency repairs and deviations from written procedures. The nature of the emergency, its cause and the corrective action taken are documented.</p>

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
3 (Cont'd)			<p>Waivers to specific procedures may be authorized by the Manager, NPG or his designated alternate if necessary to avoid significant loss of unit capacity with due consideration for public health and safety. Such waivers, including the need therefor, are documented.</p> <p>421.5 ✓ The above provisions assure procedural control for by-passing critical inspections, tests, and operations.</p>
4.	General	Certain ANSI standards contain requirements which, under certain conditions, may conflict with limiting personnel radiation exposure.	<p>The majority of ANSI Standards to which Con Edison has committed are concerned with the design and/or construction phases of nuclear power plant. Consequently, Con Edison has adapted these standards to its operations phase, where practicable, and has developed provisions for certain conditions not addressed in the standards.</p> <p>When conformance with particular standards requirements; e.g., cleaning of fluid systems, housekeeping, would conflict with limiting personnel radiation exposure, the degree of conformance to the standards is determined by appropriate levels of management.</p>

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5.	General	Various standards require inspections, examinations and tests, but do not specify the frequencies of these activities.	Except in ANSI N45.2.5, the frequencies of required inspections, examinations and tests are not specified in the standards. Accordingly, the frequency of inspections, examinations and tests required by the standards - other than ANSI N45.2.5 - is identified on a job - by job-basis. The amount of inspections, examinations and tests identified is based upon the safety significance of the item involved.
6.	ANSI N18.7 Section 5.2.2	"Temporary changes which clearly do not change the intent of the approved procedure shall, as a minimum, be approved by two members of the plant staff knowledgeable in the areas affected by the procedures."	Temporary changes will be authorized per the provisions of the Administrative Controls Section of the Facility Technical Specifications.

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
7.	ANSI N.18.7 First Sentence of 5.2.7	(a) "Maintenance or modification...shall be performed in a manner to ensure quality at least equivalent to that specified in original design bases and requirements, materials specifications, and inspection requirements .."	Requirements (a), (b) and (c), as a whole, require a degree of quality for replacement items consistent with their function. Our program allows this degree of quality to be more or less stringent than the original, provided the specified quality requirements are reviewed and approved by Engineering prior to use. ✓
	First Sentence of 5.2.7.1	(b) "A maintenance program shall be developed to maintain safety related structures, systems and components at the quality required for them to perform their intended functions."	421.2
	ANSI N18.7 Para (1) of 5.2.13	(c) "Purchased to specifications and codes equivalent to those specified for the original equipment, or those specified by a properly reviewed and approved revision."	

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
8.	ANSI N18.7 Section 5.2.14	General requirements for nonconforming items	Paragraph 5.2.14 applies to programmatic as well as to specific provisions of ANSI N18.7 and its associated references. Consistent with paragraph 5.2.14, our quality assurance program will contain provisions for controlled, documented waivers to its requirements.
9.	ANSI N18.7 Section 5.2.13.1	Requires certain pro- visions in procurement documents.	Per 5.2.13 procurement document contents for replacement items will be based primarily on <u>original procurement document</u> <u>contents</u> . The provisions of 5.2.13.1 will be included if required by original procure- ment document or warranted by performance of the item. Procurement document content for new items will meet the requirements of 5.2.13.1. When requirements of ANSI standards are included in procurement documents, the requirements may not be identified as excerpts from ANSI standards. Procurement documents are developed and reviewed in accordance with paragraph 5.2.13 of the Q.A. Program description.

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10.	ANSI N18.7 Section 5.2.13.1, (2)	"... drawings, specification and industrial codes and standards... shall be identified by titles and dates of issue..."	Drawings are identified by drawing number, revision number, and title.
11.	ANSI N18.7 Section 5.2.13.1 1st Para.	Where changes are made to procurement documents, they shall be subject to the same degree of control as was used in the preparation of the original documents.	Consistent with the requirements of ANSI N45.2.11, paragraph 7.2, minor changes to (procurement) documents, such as, inconsequential editorial corrections, or changes to commercial terms and conditions may not require that the revised (procurement) document receive the same review and approval as the original documents.
12.	ANSI N18.7 Section 5.2.17	"Inspection shall be performed by qualified individuals other than those who performed or directly supervised the activity being inspected."	Examinations, checks, and inspections of work at Indian Point Station are normally accomplished and documented by foremen responsible for the work. Where independent examinations, checks, and inspections are determined appropriate, personnel who do not perform the work and do not directly supervise the

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
12. (Cont'd)			work are utilized. These independent examinations, checks, and inspections are comparable in extent to corresponding construction phase activities.
13.	ANSI N18.7 Section 5.2.17 Last Paragraph, next to last sentence	Deviations, their cause, and any corrective action completed or planned shall be documented.	Consistent with the documentation requirements of Criterion XVI, Appendix "B" to 10 CFR 50, for corrective action, <u>significant</u> deviations, their cause and any corrective action completed or planned are documented. Results of inspections used to accept or reject items shall be documented in all cases.
14.	ANSI N18.7 Section 6 References	"When the preceding American National Standards referred to in this document are superseded by a revision approved by the American National Standards Institute, Inc., the revision shall apply."	Our commitment to ANSI standards does not extend beyond the standards (date, revision, etc.) identified in that commitment.

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std.</u> <u>Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/</u> <u>Exception</u>
15.	ANSI N18.7 ANSI N45.2 ANSI N45.2.2 ANSI N45.2.13	General and specific procurement requirements.	Alternate methods to those specified in these standards may be used in special cases to support procurement of items; e.g. those items urgently needed, items where commercial quality is sufficient or sole source items. In these cases, prior to procurement, exceptions to the standard requirements will be documented and concurred in by Engineering, NPG and QA.
16.	ANSI N45.2.2 Section 2.1	"The specific items to be governed by this standard shall be identified."	Items governed by this standard or portions thereof are identified on a case-by-case basis during the design document and procurement document development processes.

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17.	ANSI N45.2.2 Section 2.7	Each of the specific items governed by this standard shall be classified into one of four levels.	All safety-related items are protected to an extent commensurate with their sensitivity and importance to safety, but are not specifically classified in various levels per the guidance of paragraph 2.7. Therefore, satisfaction of requirements for packaging, shipping, receiving, storage and handling for particular items could be different than those suggested.
18.	ANSI N45.2.2 Subsection 3.9	General marking requirements.	Some items are of a size, shape or consistency which preclude marking. Marking in such cases is applied to box, box or other enclosure. Tagging is employed, where necessary.

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19.	ANSI N45.2.2 Subsection 5.2.1	"Preliminary visual inspection or examination shall be performed prior to unloading..."	Inspection after unloading is sufficient to determine the condition of many items. In special instances, pre-unloading examination is performed.
20.	ANSI N45.2.2 Section 5.2.2	The 'receiving' inspections shall be performed in an area equivalent to the level of storage requirement for the item.	Receiving inspection is performed in a manner and in an environment which do not endanger the requisite quality of an item; however, receiving inspection area environmental controls may be less stringent than storage environmental requirements for that item.
21.	ANSI N45.2.2 Paragraph 5.2.3	..."The 'Special Inspection' procedure, complete with documentation instructions shall be attached to the item or container..."	The "Special Inspection" procedure shall be readily available to inspection personnel and may be attached to the item or container.

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22.	ANSI N45.2.2 Paragraph 5.3.3	"A statement documenting the authority and technical justification for the conditional release... shall be prepared..."	A statement documenting the authority and justification for the conditional release is prepared. Justification may not always be of a technical nature.
23.	ANSI N45.2.2 Subsection 6.2.4	The use or storage of food, drinks and salt tablet dispensers in any storage area is prohibited.	People working in storage areas have a right of access to water dispensers per OSHA requirements. Additionally, due to location and layout of the building, personnel temporarily store lunches in the workplace. This area is regularly policed for sanitation.

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24.	ANSI N45.2.2 Appendix (A-3) A.3.9 (1) Second Group	"Container markings shall appear on a minimum of two sides of the container, preferably on one side and one end."	Containers are adequately marked for storage, identification and retrieval. Multiple marking requirements are imposed, where necessary.
25.	ANSI N45.2.2 Appendix (A-3) A.3.9 (4) Second Group	"Container markings shall be... no less than 3/4" high container permitting."	Container markings are of a size which permits easy recognition.
26.	ANSI N45.2.2 Appendix (A-3) A.3.9 (6)	"Container marking shall include the following information:..."	The information required in container marking is evaluated on a case-by-case basis. Marking is adequate in each case.
27.	ANSI N45.2.2 Appendix (A-3) Section A 3.5.1 (1)	"Non-metallic plugs and caps shall be brightly colored."	Non-metal plugs and caps are of a suitably visible color.

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28.	ANSI N45.2.2 Appendix (A-3) Section A 3.5.1 (5)	Plugs or caps shall be secured with tape or other means as necessary to prevent accidental removal.	In cases where plugs or caps do not snugly fit, additional securing devices or measures will be used.
29.	ANSI N45.2.3	Identifies various house-keeping requirements, including cleanliness, fire prevention and fire protection which must be accomplished during the progress of construction.	When this standard is applied, its requirements are implemented in those areas affected by work activities associated with modifications or maintenance as determined necessary by Engineering or Q.A. Remaining provisions of para. 5.2.10 of 18.7 will be adhered to.
30.	ANSI N45.2.4 Section 3.0	Pre-construction verification.	This section requires verification that items are in satisfactory condition for installation and have not suffered since initial receipt inspection. Documentation of that verification in addition to the documentation of the initial receipt inspection is not required.

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31.	ANSI N45.2.4 Section 5.2	Identifies various tests to be performed.	Consistent with section 5.2 of IEEE 336, Draft 1, Revision 2, 1976, these tests will be performed "as appropriate" as determined by Engineering or Nuclear Power Generation.
32.	ANSI N45.2.4 Subsection 5.2.2 Mechanical Tests	"Mechanical tests shall be performed to ascertain that... components or systems can withstand system pressure ratings".	For the plant operational phase "system pressure ratings" is interpreted to mean system operating pressure. For the Reactor Coolant System, Facility Technical Specification identify testing requirements.
33.	ANSI N45.2.4 Subsection 6.2.1	"Items requiring calibration shall be tagged... indicating date of calibration and identity of person..."	Items requiring calibration are tagged indicating date of calibration. Identity of person that performed the calibration shall be indicated on tag or traceable through records.

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
34.	ANSI N45.2.5 Section 2.5	Requires periodic calibration of thermometers.	The initial accuracy of liquid-in-glass thermometers is established and, because of their inherent stability, they need not be "adjusted or calibrated at prescribed intervals".
35.	ANSI N45.2.5 Section 2.5.2 Second paragraph	"... when discrepancies... are found all items inspected shall be considered unacceptable."	Consistent with ANSI N18.7, 5.2.16 when devices are found to be out of calibration, an evaluation shall be made and documented concerning the validity of previous tests.
36.	ANSI N45.2.4 Subsection 6.2.2 Systems Tests	"These tests shall be made to verify that all parts of a system properly coordinate with each other".	For the plant operation phase, this requirement is interpreted as not requiring that an entire system be re-tested after completion of modification of only a portion of that system. The testing requirements of the Facility Technical Specifications are met for inoperable equipment.

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37.	ANSI N45.2.5 Section 3.3.4	"Inspections shall be performed to verify that the process is suitable for the particular application. Verify that manpower, equipment and materials are available..."	Design controls verify qualifications of processes and suitability for particular applications. Verification of availability of manpower equipment, etc. is performed by project management rather than inspection personnel.
38.	ANSI N45.2.5 Section 4.2	This section specifies inspections of storage handling facilities stock piles, water, etc.	Quality of materials is verified prior to batching in lieu of these inspections.
39.	ANSI N45.2.5 Section 5.4	Various wrenches require calibration twice daily or weekly.	This requirement will be conformed with in the case of continued use. For intermittent use calibration frequency is based upon usage and calibration intervals may be greater than days or weeks.

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40.	Regulatory Guide 1.58 ANSI N45.2.6	General requirements for inspection, examination and testing personnel.	NDE personnel meet the requirements of SNTC-1A. Other personnel are qualified as discussed in Sections 3.3 and 3.4 of the Program Description.
41.	ANSI N45.2.8 Section 3.2	If checks disclose apparent loss of identification, affirm identification prior to release for installation.	We will check identification of an item prior to release for installation; however, option is maintained to knowingly install equipment lacking full identification providing deficiencies are resolved prior to its use; i.e., operation. Such action is recorded in quality control documents.
42.	ANSI N45.2.9 Section 1.1	"This standard provides general requirements... of nuclear power plants".	The requirements of this standard will be applied to records generated after this standard is implemented.
		421.24 ✓	

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
43.	ANSI N45.2.9 Section 1.4	Definition of Quality Assurance Records.	This definition results in unreasonable requirements regarding time of application of the record system. Con Edison will introduce records into the system as soon as practical after completion of the document.
44.	ANSI N45.2.9 Section 3.2.2	<p>The quality assurance records shall be listed in an index.</p> <p>The index shall indicate, as a minimum, record retention times, where the records are to be stored and the location of the records within the storage area.</p>	<p>The <u>types</u> of quality assurance records shall be listed in an index.</p> <p>In accordance with Draft ANSI N45.2.9, paragraph 3.2.2, October 1976, the index will indicate the location of the records within the storage <u>system</u>.</p>
45.	ANSI N45.2.9 Section 4.2	A specific submittal plan shall be established for quality assurance records by agreement between the purchaser and supplier.	Purchase orders identify any particular record submittal requirements, as applicable. Acceptance of the purchase order by the supplier constitutes agreement with the purchaser.

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std.</u> <u>Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/</u> <u>Exception</u>
46.	ANSI N45.2.9 Sections 4.3 4.4 and 5.3	<p>"... a receipt control system shall include:</p> <ol style="list-style-type: none"> 1. A records checklist... 2. A record of... records received. 3. Procedures for receipt and inspection of... records. <p>... system shall permit ... assessment... status... of records.</p> <p>... a method for verifying that records received are in agreement ... and are in good condition.</p> <p>... a method of verifying that the records agree with pre-established records checklist."</p>	<p>We will provide these administrative controls for our Engineering and NPG record storage area(s) but, where only a small number of non-permanent records are controlled by individual organization(s), these auxiliary administrative controls are unnecessary.</p>

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
47.	ANSI N45.2.9 Section 5.4	"Special processed records shall be stored... as recommended by the manufacturer of these materials."	In determining storage requirements, we will take into account recommendations of the manufacturer if available. Normally, these recommendation will be followed; however, a blanket commitment is impracticable as we must retain the flexibility for final determination of storage needs.
48.	ANSI N45.2.9 Section 5.6	"For storage of film... controls shall be provided... as recommended by the manufacturer."	
49.	ANSI N45.2.9 Section 5.5	A full time security system shall be established to preclude the entry of unauthorized personnel into the storage area. This system shall guard against larceny and vandalism.	For the purpose of this commitment "storage area" is interpreted to mean a Con Edison facility which contains records; e.g., the Indian Point site, 4 Irving Place, etc. and "security system" is interpreted to mean security measures.

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
50.	ANSI N45.2.9 Section 5.6	Requires a "Facility" or duplicate records.	Non-permanent records need not be duplicated or stored in a "Facility" but are required to be stored per NFPA Class I record provisions.
51.	ANSI N45.2.9 Section 6.2	"Storage system shall provide for the accurate retrieval of information without undue delay."	In accordance with Draft ANSI N45.2.9, paragraph 6.2, October 1976, the storage system shall provide for the accurate retrieval of information.
52.	Regulatory Guide 1.88	"When NFPA 232-1975 is used, Quality Assurance Records should be classified as NFPA Class I Records".	When a single record storage facility is maintained, permanent (lifetime) records will be afforded fire protection in accordance with NFPA Class I record provisions.
			421.25 ✓ Fire protection in accordance with NFPA Class 2 provisions shall be provided for records designated as non-permanent.
53.	ANSI N45.2.9 Section 5.6	"An alternative to... a record storage facility... is...duplicate records stored in a separate remote location."	Our duplicate records may be stored in separate rooms distant from one another but within the same building providing their simultaneous exposure to hazards is unlikely.

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/ Exception</u>
53. (Cont'd)		421.26 ✓	If records are stored in the same building, protection will be provided to assure that simultaneous exposure to hazards is unlikely.
54.	ANSI N45.2.9 Section 6.2	A list shall be generated designating those personnel who shall have access to the files.	Lock and key controls, duplication of records in separate locations and other security measures could obviate the need for access lists. In cases where access lists are utilized, they are not required in all cases to identify specific individuals.
55.	ANSI N45.2.9 Section 7.2	"Upon final transfer the owner shall... acknowledge receipt..."	Except for special cases as agreed to by Con Edison and the vendor, acknowledgment or receipt of vendor Q.A. records is unnecessary.
56.	ANSI N45.2.9 Appendix A	Applicable Codes and Standards used in Design.	Codes and standards used in design are not considered "records" to be stored and controlled per the requirements of N.45.2.9. They will be stored and controlled in accordance with normal library practices.

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57.	ANSI N45.2.10	"Quality Assurance Terms and Definitions."	Where terms defined in ANSI N45.2.10 are also defined in other standards to which Con Edison has referred in the "Foreword" of the program description, the definitions in those other standards shall apply.
58.	ANSI N45.2.10	Definitions of "Certificate of Conformance" and "Certificate of Compliance".	Based upon the guidance of ANSI N45.2.13, 10.2, the definitions of these two terms will be exchanged.
59.	ANSI N45.2.10	Definition of "Modification".	Modification - A change to an item's configuration, materials(s) or function(s) such that the item does not conform to previously approved design documents.
60.	ANSI N45.2..11 Section 2.2	Program procedures shall cover making experience reports available to cognizant design personnel.	A variety of experience reports from a number of sources are made available to design personnel without benefit of written procedures.

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std.</u> <u>Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/</u> <u>Exception</u>
61.	ANSI N45.2.11 Section 2.2	"Program procedures shall cover necessary training of personnel performing activities covered by this standard."	Procedures describing technical training are unnecessary. However, our program includes procedures for programmatic training of Engineers.
62.	ANSI N45.2.11 Section 6.3	"The results of the review shall be documented... a number of basic questions that shall be addressed..."	Con Edison documents completion of the design verification activity, but does not necessarily document that each of the questions listed has been considered in the verification process. The subjects required to be considered during design review are identified in procedures.
63.	ANSI N45.2.13 Section 5.2	Specifies subjects to be evaluated during bid evaluation.	Except in special cases items d., e., and f. may be evaluated prior to submittal to bids.

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<u>Item No.</u>	<u>Regulatory Guide/ANSI Std.</u> <u>Reference</u>	<u>Requirement</u>	<u>Interpretation/Alternate/</u> <u>Exception</u>
64.	ANSI N45.2.11 Section 3.1	"Changes from specified design inputs including the reason for the changes shall be identified, approved, documented and controlled."	Changes from specified design inputs and quality standards are identified, approved, documented and controlled. The reasons for the changes need not be documented.
	Section 4.2	"Changes from specified quality standards including reasons for the changes shall be identified, approved, documented and controlled."	
65.	ANSI N101.4	Identifies numerous detailed, specific requirements that must be accomplished in the course of procuring, applying and inspecting protective coatings.	When N101.4 is applied, new quality requirements will be developed based on it's provisions, but specific requirements, such as documented site meetings, field demonstrations, substrate priming, applicator reporting, inspection reporting and report forms will be considered on a job-by-job basis.

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<u>Item No.</u>	<u>Reg. Guide/ANSI Std. Ref.</u>	<u>Guideline</u>	<u>Interpretation/Alternate</u>
	ANSI N45.2.1, 1973 "Cleaning of Fluid Systems...." (cont'd)		
		The sixth "should"	The degree of surface cleanliness and the frequency of cleaning will

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<u>Item No.</u>	<u>Reg. Guide/ANSI Std. Ref.</u>	<u>Guideline</u>	<u>Interpretation/Alternate</u>
	ANSI N45.2.1, 1973 "Cleaning of Fluid Systems...."		
1.	Subsection 3.1.1	"Such items should receive their required level of cleanliness..."	This "should" is beyond the scope of this standard as indicated by the last sentence on the page.
2.	Subsection 3.1.2.1	Under "NOTE", "Localized rusting...should be evaluated metallurgically."	Laboratory type tests on localized rusting will be conducted when the need for such tests is determined by Engineering or QA.
3.	Section 5.	The fourth "should" requires fabrication of a complete unit where inspection can be blocked.	The special fabrication and inspection requirements

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<u>Item No.</u>	<u>Reg. Guide/ANSI Std. Ref.</u>	<u>Guideline</u>	<u>Interpretation/Alternate</u>
	ANSI N45.2.1, 1973 "Cleaning of Fluid Systems...." (cont'd)		
8.	Subsection 7.1	The first "should" requires attachment of loose tools "to either the workman or the exterior of the system with a lanyard."	Loose tools will be controlled as specified by procedure or by QA. Precautionary measures such as barriers between work areas, and tool check-in and check-out controls may obviate the need for attachment.
9.	Subsection 7.2.2	The first "should" specifies a method for determining the effectiveness of alkaline cleaning.	When alkaline cleaning is performed, it will be accomplished in accordance with the require-

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[illegible]

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<u>Item No.</u>	<u>Reg. Guide/ANSI Std. Ref.</u>	<u>Guideline</u>	<u>Interpretation/Alternate</u>
	ANSI N45.2.1, 1973 "Cleaning of Fluid Systems...." (cont'd)		
4.	Section 5. (cont'd)	The sixth "should" requires cleaning of surfaces before proceeding to the next installation or construction step.	The degree of surface cleanliness and the frequency of cleaning will be as determined by Engineering or QA.
5.	Section 5.	The seventh "should" prohibits the use of mineral or organic acids on stainless steel.	Organic acids will be used only as permitted by Engineering. After their use, however, all residual traces of the acid will be removed.
6.	Section 5.	The eighth "should" requires removal of local rusting from corrosion-resistant alloys by mechanical means.	When the need for removal of rust is determined, it shall be removed by mechanical means.
7.	Section 6.	The second "should" requires personnel entering the system to wear clean outer clothing and shoe covers.	We interpret system to mean the primary coolant system.

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<u>Item No.</u>	<u>Req. Guide/ANSI Std. Ref.</u>	<u>Guideline</u>	<u>Interpretation/Alternate</u>
	ANSI N45.2.1, 1973 "Cleaning of Fluid Systems...." (cont'd)		
8.	Subsection 7.1	The first "should" requires attachment of loose tools "to either the workman or the exterior of the system with a lanyard."	Loose tools will be con- trolled as specified by procedure or by QA. Precautionary measures such as barriers between work areas, and tool check-in and check-out controls may obviate the need for attachment.
9.	Subsection 7.2.2	The first "should" specifies a method for determining the effectiveness of alkaline cleaning.	When alkaline cleaning is performed, it will be accomplished in accor- dance with the require- ments of Engineering.
10.	Subsection 7.2.2 (cont'd)	The second "should" requires flushing of pockets and dead legs.))))
		The third "should" requires that atten- tion be given to removal of solution.)))))
		The fourth "should" re- quires system to be sealed.)))
			When alkaline cleaning is performed, it will be ac- complished in accordance with the requirements of Engineering.

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<u>Item No.</u>	<u>Reg. Guide/ANSI Std. Ref.</u>	<u>Guideline</u>	<u>Interpretation/Alternate</u>
	ANSI N45.2.1, 1973 "Cleaning of Fluid Systems..." (cont'd)		
11.	Subsection 7.2.3	<p>The first "should" requires flushing to remove chelating agents.</p> <p>The second "should" requires flushing of pockets and deadlegs.</p> <p>The third "should" requires that attention be given to removal of solution.</p> <p>The fourth "should" requires system to be sealed.</p>	<p>When chelate cleaning is performed, it will be accomplished in accordance with the requirements of Engineering.</p>
	ANSI N45.2.2, 1972 "...Packaging, Shipping, Receiving, Storage, and Handling..."		
12.	Subsection 4.3.6	Requires location and stacking limits to be specified on crates and boxes.	Consistent with the provisions of ANSI N45.2.2, 1972 Appendix "A", A.3.9.6 (e), such requirements will be specified, "as appropriate."

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Item No.	Reg. Guide/ANSI Std. Ref.	Guideline	Interpretation/Alternate
13.	ANSI N45.2.2, 1972 "...Packaging, Shipping, Receiving, Storage, and Handling..." (cont'd) Appendix A, A.3.5.2, (1), (a)	Limits halogen and sulphur content of tape.	Engineering may allow the use of tapes containing greater amounts of halogen after appropriate evaluation.
14.	ANSI N45.2.9, 1974 "...Records..." Subsection 3.2.2	The second "should" requires compatibility between the organization's system and the owner's system.	Special compatibility requirements of organization's records index system will be identified, where necessary, in procurement documents.
15.	Subsection 5.6	The first "should" requires that records shall be protected by NFPA, Class A, four hour minimum rated facility.	See Q.A.P.D. 2/22/77. Table A, Page A-23, dated 3/8/77, Item #52.

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Item No.	Reg. Guide/ANSI Std. Ref.	Guideline	Interpretation/Alternate
16.	ANSI N45.2.9, 1974 "...Records..." (cont'd) Subsection 7.3	Requires that non-permanent records be retained for the time specified in Appendix A.	Procedures will identify retention times of non-permanent records.
17.	Regulatory Guide 1.58, 8/73 "...Examination and Testing Personnel"	Endorses the recommendations and requirements of ANSI N45.2.6, 1973.	See Q.A.P.D., 2/22/77, Table A, Page A-19, dated 2/24/77 item #40.
18.	ANSI N45.2.5, 1974 "...Concrete...Structural Steel..."	The requalification procedure for cadweld splices should be identical to the original qualification procedure.	The content of the requalification procedure shall be determined by Engineering.

A.2.2 Operations Quality Assurance Program Introduction and Scope

An Operation Quality Assurance Program is established by Duquesne Light Company for the operations phase of Beaver Valley Power Station. The program is written to conform to the requirements of 10CFR50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants," and NRC Regulatory Guide 1.33 "Quality Assurance Requirements (Operations)." The guidance contained in WASH 1284, dated October 26, 1974, WASH 1309, dated May 10, 1974 and WASH 1283, dated May 24, 1974 is utilized as indicated in the Attachment to Section A.2. The purpose of the Operations Quality Assurance Program is to assure that the installed quality of the Beaver Valley Station is maintained throughout the life of the plant.

The Operations Quality Assurance Program applies to all safety related (Category I) structures, systems, and components, throughout the life of the plant. The Category I structures, systems, and components are identified in Table A.1-1.

A.2.2.1 Organization

The organizations which have responsibilities for performing activities affecting quality, during the operations phase of Beaver Valley Power Station are shown in the organization chart of Figure A.2-3. The Operations Quality Assurance Program identifies in detail the functional responsibilities of the organizations within Duquesne Light Company which participate in quality related activities.

The Operations Quality Assurance Program is established and managed by the Quality Assurance Manager, who reports to the Vice President, Engineering and Construction Division. The Quality Assurance Manager has the authority to report quality matters to any level necessary within Duquesne Light Company, including the President, and the Vice President, Operations Division, in order to establish effective corrective action. The Duquesne Light Company President, the Vice President, Operations Division and the Vice President, Engineering and Construction Division, comprise the Executive Management Group.

The effort of the Quality Assurance Manager is directed solely to Quality Assurance. He purposely has no responsibilities for station costs or schedule considerations.

Sufficient personnel are made available to implement the Duquesne Light Company Quality Assurance Program. The Duquesne Light Company Quality Assurance Program provides written policies, procedures, and instructions governing the Quality Assurance activity.

In addition to the Duquesne Light Company Quality Assurance Program, a quality control program is established which describes the activities performed (at Beaver Valley Power Station) by the Quality Control Supervisor and his staff. The Quality Control Supervisor reports to the Superintendent of Nuclear Services.

cluded in Appendix C to this Plan.

The Manager-Operational Quality Assurance is responsible for maintaining a comprehensive training program for both the original training and retraining of personnel in the Operational Quality Assurance Staff. The training program will include, as appropriate: lectures, formal schools, job experience, and individual study. He also ensures that quality assurance indoctrination is given to Generation Division personnel who are not in the Operational Quality Assurance Staff, but whose job responsibility will affect quality.

Each Manager maintains training programs and procedures to ensure the proper job related training and qualification of his personnel. Each Station Superintendent is responsible for the indoctrination and training of plant staff personnel performing activities affecting quality or operations, and for ensuring that, where required, operators are formally licensed or qualified.

The control of contractors who perform nuclear related engineering, construction or other technical services is specified in Section V (PROCUREMENT CONTROL) of this Plan.

The Manager-Safety and Security is responsible for maintaining a comprehensive training program for both original training and retraining of Fire Brigade personnel.

Contractors who perform Repair Authorization related work are required to have one or more of the following: an appropriate, valid ASME code stamp for the work performed; a valid Repair Certificate of Authorization from the National Board of Boiler and Pressure Vessel Inspectors; a valid Repair Authorization from the State of New Jersey; or else, they shall work as an extension of the Jersey Central Power & Light Company Repair Authorization Program.

Each Manager is responsible for specifying which requirements a contractor will utilize in the performance of that work which is performed under the guidance of his organization. These requirements shall be specified in the appropriate procurement documents.

For nuclear safety applications, the Plant Operations Review Committee (PORC), the Independent Safety and Review Group (ISRG), and the General Office Review Board (GORB) provide: safety reviews of procedures, tests, experiments, and modifications; review of plant operations; investigation of Reportable Occurrences, and Technical Specification Violations, etc., as required in the Safety Technical Specifications, Section 6.5.

For activities falling within the scope of Part I of the Quality Assurance Systems List, Jersey Central Power & Light Company shall utilize the guidance of the following documents as follows:

1. Regulatory Guide 1.8, Revision 1, September 1975, "Personnel Selection and Training" - Exceptions:

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- A. Guidelines have long been established in the company with respect to awarding jobs to plant maintenance, operations, and other bargaining unit personnel who may be involved in testing, examination and inspection activities. Personnel are qualified in accordance with the Jersey Central Power & Light Company Job Description Manual. JCP&L believes that the requirements specified in the Job Description Manual meet the intent, and in many cases, exceed the requirements of ANSI N18.1. In certain specific cases, we envision that there may be individuals in the future who will be qualified by JCP&L because it feels the individual is capable of performing a job even though he does not meet the detailed guidance contained in ANSI N18.1 with respect to length of experience and formal training.
 - B. In the event there is a conflict between ANSI N18.1 and the Station Safety Technical Specifications, Section 6.5 on personnel qualifications, the Station Safety Technical Specifications shall apply.
2. Regulatory Guide 1.28, June 7, 1972, "Quality Assurance Program Requirements (Design and Construction)" - Exceptions:
 - A. The JCP&L Co. Operational Quality Assurance Plan has been written to implement the requirements of 10CFR50 Appendix B as was ANSI N45.2. The content and level of detail in both the JCP&L Co. Operational Quality Assurance Plan and ANSI N45.2 are essentially the same; and, therefore, JCP&L Co. considers that its Operational Quality Assurance Plan parallels the intent of ANSI N45.2 and is its mechanism for the implementation of 10CFR50 Appendix B. For this reason, a specific commitment to ANSI N45.2 does not enhance the Operational Quality Assurance Plan.
 3. Regulatory Guide 1.30 - August 11, 1972, "Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment" - Exceptions:
 - A. ANSI N45.2.4 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice ANSI N45.2.
 - B. Sections 5.2 and 6.2 of ANSI N45.2.4 list tests which are to be conducted during the construction phase. In lieu of this, JCP&L Co. utilizes its Engineering and/or Maintenance organizations to

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establish the need for specific tests or test procedures during the operational phase. Test procedures are reviewed by PORC.

→ Regulatory Guide 1.33

4. Regulatory Guide 1.37 - March 16, 1973, "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants" - Exceptions:

- A. ANSI N45.2.1 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice ANSI N45.2.
- B. Section 4.0 of ANSI N45.2.1 states that items are not to be delivered to the point of installation sooner than necessary unless the installation location is considered a better storage area. JCP&L Co. strategy for the storage of items is based on many factors, one of which is to not adversely affect the items acceptability while in storage. If other factors make it desirable to store an item at the installation site, and the location is acceptable from a quality standpoint, it is not our intention to eliminate that site as a potential storage area.
- C. Section 6.0 of ANSI N45.2.1 states that where environmental contamination causes degradation of quality, seals are installed and the item is tagged with identifications and instructions for seal removal. JCP&L Co. utilizes procedural controls which specify the authorization requirements for seal removal. "Tags" are not normally utilized.
- D. In that this is an Operational Quality Assurance Plan, many aspects of this standard are not applicable, except possibly on rare occasions. For this reason, JCP&L does not intend to have established procedures for all aspects of this ANSI Standard.

5. Regulatory Guide 1.38 - March 16, 1973, "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants"- Exceptions:

- A. ANSI N45.2.2 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice ANSI N45.2.
- B. Section 7.4 of N45.2.2 states that a system should be established to indicate acceptability of all equipment and rigging after each inspection, specify control of nonconforming lifting equipment, and supplement periodic inspections with special visual and nondestructive

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examinations and dynamic load tests. In lieu of this, JCP&L Co. does perform dynamic load tests on new equipment, preventive maintenance on cranes, nondestructive examination of lifting hooks annually, and a visual inspection of lifting equipment prior to use.

- C. Off-site inspection, examination or testing will be audited under the direction of a qualified lead auditor vice an individual certified to ANSI N45.2.6.
 - D. Packages will be marked with the weight when deemed necessary in lieu of when the weight is in excess of 100 pounds.
6. Regulatory Guide 1.39 - March 16, 1973, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants" - Exceptions:
- A. ANSI N45.2.3 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice ANSI N45.2.
 - B. Section 2.1 of ANSI N45.2.3 states that cleanness requirements for housekeeping activities are established on the basis of zone designations. JCP&L does not intend to utilize zone designations. There are specific requirements for general plant cleanness. When planning a specific activity, one of the many items considered is cleanness requirements and specific requirements will be established when necessary. In addition, clothing requirements, access restrictions, etc. are governed by health physics practices and/or are established for specific situations.
 - C. Section 3.2.3 of ANSI N45.2.3 discusses fire protection. Except for the quality assurance aspects of fire protection, no specific commitments are made in this Plan. As part of other activities, JCP&L Co. has established positions or commitments relating to fire safety or protection.
 - D. ANSI N45.2.3 discusses construction related aspects, such as: temporary construction facilities, exceptionally large accumulations of materials, refuse and garbage dumps, and the mobilization and deployment of construction tools, supplies, and equipment. These aspects of ANSI N45.2.3 are not applicable to an operational plant and are not considered in JCP&L Co. operationally-oriented procedures.
7. Regulatory Guide 1.54 - June 1973, "Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants" - Exceptions:

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- A. ANSI N101.4-1972 will be used in conjunction with the JCP&L Co. Operational Quality Assurance Plan vice ANSI N45.2.
 - B. When performing coating repairs or touch-up, the original coatings and application requirements will most likely be utilized for compatability with existing coating systems. For this reason, it may not be possible to comply with all requirements which are imposed on the coatings or coating manufacturer.
8. Regulatory Guide 1.58 - August 1973, "Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel" - Exceptions:
- A. ANSI N45.2.6 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice ANSI N45.2.
 - B. The Operational Quality Assurance Organization is responsible for Quality Assurance including a significant portion of Quality Control; however, there are typical quality control functions which rightfully belong to other organizations. Some examples are: performing surveillance testing of installed plant equipment, taking dimensions on parts that JCP&L manufactures; and obtaining cycle times on valves. The Site Quality Assurance organization, in respect to the preceding examples, is performing a verification function. It will not generally retake all measurements taken by the mechanic; but it may observe the taking of measurements or take spot measurements to verify the correctness of the mechanic's measurements. In the area of surveillance testing, it may observe the performance of the surveillance testing to assure compliance with established procedures, etc., on a sample basis. In the case of the mechanic, operator, etc., at an operating nuclear power plant, the plant individual actually does maintenance or operations work and as part of this work, makes measurements or conducts tests of operability. The type of inspection and test work done by Oyster Creek Station personnel will normally fall under the concept of calibration, repair, or operation, as defined in ANSI N18.1, and, therefore, comes under the guidance of ANSI N18.1, Section 3.2.4 as being one of the skills required of these people. The Operational Quality Assurance personnel more closely parallel the inspection, and test personnel concept discussed in ANSI N45.2.6, and therefore, are under the requirements of ANSI N45.2.6. In this light, JCP&L will:

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- 1) As specified in this Plan, utilize the guidance of ANSI N18.1 - 1971 for plant personnel performing inspection, examination, and testing functions associated with normal operation of the plant, such as surveillance testing, maintenance, and certain technical reviews routinely assigned to the on-site operating organization.
 - 2) As specified in this Plan, utilize the guidance of ANSI N45.2.6 - 1973 for Quality Assurance personnel whose qualifications are not required to meet those specified in ANSI N18.1 and who are performing inspection, examination and testing activities during the operational phase of the plant. The Q.A. experience cited for Levels I, II, and III shall be interpreted to mean actual experience in carrying out the types of inspection, examination, and testing activities being performed, or else in performing the types of activities being inspected, examined or tested.
- 8 C
9. Regulatory Guide 1.64 - Revision 2, June 1976, "Quality Assurance Requirements for the Design of Nuclear Power Plants" - Exceptions:
 - A. ANSI N45.2.11 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice ANSI N45.2.
 10. Regulatory Guide 1.74 - February 1974 - "Quality Assurance Terms and Definitions" - Exceptions:
 - A. JCP&L has chosen to include definitions in its Operational Quality Assurance Plan. It considers these definitions as its alternative to committing to this Regulatory Guide.
 11. Regulatory Guide 1.88 - Revision 1975 comment version, "Collection Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records" - Exceptions:
 - A. ANSI N45.2.9 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice ANSI N45.2.
 - B. Section 1.2 of ANSI N45.2.9, Applicability, with respect to contractors, suppliers, vendors, etc., Jersey Central Power & Light Company will establish specific requirements for the collection, storage, and maintenance of

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Quality Assurance Records and impose them through procurement documents. In addition to the considerations in this standard, consideration will be given to the specific standards of the supplier industry involved and realistic requirements will be established.

- C. Section 5.5 of ANSI N45.2.9, Safekeeping, Jersey Central Power & Light Company will establish security measures which will restrict access to record storage areas and will provide protection against record loss through larceny and vandalism.
 - D. With regard to the storage of records, JCP&L utilizes the duplicate file concept and has duplicate files in widely separated locations, but there are certain records, (Single Copy Records), which are not good candidates for duplication because of the nature of the record. Examples of these exceptions are strip charts, radiographs, and other recorder charts.
 - E. Jersey Central Power & Light Company utilizes a vault for Single Copy Records. Single Copy Records are collected on a "Day to Day" basis for a period of time which is dependent upon the nature of the record and the need for access to that record. We do not envision that this time period will exceed six (6) months. During this time, the records will be kept in an air conditioned, fire resistive building, such as the main and auxiliary office buildings at the plant, on metal shelves or in metal desks or file cabinets. Strip charts (a major portion of the Single Copy Records) will be kept on steel shelves in the plant Document Center which is located in an air conditioned, fire resistive building. If Single Copy Records are kept on site in excess of six months, they will be kept in a one hour rated file cabinet or better. These file cabinets will be located in a fire resistive, air conditioned building.
 - F. Single Copy Records may have to be removed from the vault, from time to time, for reference. Examples could include operational needs, NRC inspections, and answering NRC inquiries. In the event this need occurs, the records will be safeguarded in the same manner as Item 11.E above.
12. Regulatory Guide 1.94 - April 1976, "Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants" - Exceptions:
- A. This Regulatory Guide deals with the construction of containment structures and other structures needed to prevent or mitigate the consequences of a postulated accident.

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In that this Quality Assurance Plan addresses the operational phase and no construction which would apply under this Regulatory Guide is anticipated without special licensing approvals, JCP&L chooses not to take a position on Regulatory Guide 1.94.

13. ANSI N18.7-1972, - "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants" - Exceptions:
 - A. ANSI N18.7 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice ANSI N45.2.
 - B. Section 4.0 discusses review and audit. JCP&L has revised Section 6.5 of the Safety Technical Specifications and this document states JCP&L Co.'s position on this subject.
14. ANSI N45.2.8 - Draft 3, Revision 3, April 1974, "Supplementary Requirements for Installation Inspection and Testing of Mechanical Equipment and Systems" - Exceptions:
 - A. ANSI N45.2.8 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice ANSI N45.2.
 - B. Much of this standard applies to construction and preoperational testing. As a result, many of the listed tests are not appropriate in an operational plant. In lieu of this, JCP&L Co. utilizes its Engineering and/or Maintenance organizations to establish the need for specific tests or test procedures during the operational phase. Test procedures are reviewed by PORC.
15. ANSI N45.2.12 - Draft 3, Revision 4, February 22, 1974, "Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants" - Exceptions:
 - A. ANSI N45.2.12 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice N45.2.
 - B. With regard to Section 3.4.2 of ANSI N 45.2.12, this Operational Quality Assurance Plan establishes audit schedule requirements in Section XII (AUDITS) and supersedes ANSI N 45.2.12 in this area.

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16. ANSI N45.2.13 - August 1974, Revision 0, Draft 3, "Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants" - Exceptions:

- A. ANSI N45.2.3 Guidance will be utilized in conjunction with the JCP&L Operational Quality Assurance Plan vice ANSI N45.2.
- B. When establishing supplier Quality Assurance Program requirements and evaluating Quality Assurance Programs, Jersey Central Power & Light Company shall utilize Section VII of this Plan which may include imposing one or more of the following documents:
 - 1) 10CFR50, Appendix B;
 - 2) Jersey Central Power & Light Company Operational Quality Assurance Plan and Program (excluding commitment ANSI N45.2 Guidance);
 - 3) ANSI N45.2;
 - 4) Section III of the ASME Boiler and Pressure Vessel Code (for Section III code work);
 - 5) Other National Consensus Codes (when that code is specified and has quality requirements included as part of the code);
- C. Section VII of this Plan clearly defines Jersey Central Power & Light Company's mechanism for evaluating and controlling suppliers. The program defined therein is complete and detailed, and is JCP&L's mechanism for accomplishing such activities. In this regard, no specific commitment is made by JCP&L to ANSI N45.2.13 in this area.
- D. Jersey Central Power & Light Company utilizes Certificates of Compliance for many purposes varying from: a distributor certifying that it provided a commercial quality component, manufactured by an organization other than the distributor, in accordance with rather straightforward procurement documents; to, a manufacturer who manufactures extremely complex components to very detailed specifications. In the first case, the distributor may act as a middleman whose activities are nothing more than ordering a standard catalog numbered item, storing it, and eventually delivering it to the customer. In this case, the procurement documents may require that a responsible individual in the organization document the fact that the distributor is providing an item which meets the procurement document requirements. It is

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often a straightforward task to verify the certificate's validity by performing a one to one correlation of the actual item part numbers to the item part numbers on the procurement documents during receipt inspection. In the second case, procurement documents may require that the supplier's quality program detail the mechanism for preparing and approving Certificates of Compliance as well as detailed directions that must be included in the certificate. In this case, many mechanisms (such as Audit, Surveillance, and Shipment Release) are utilized, as necessary, to verify the validity of the certificate. In conclusion, the uses of a Certificate of Compliance are many and varied, and the degree of administrative control and certificate complexity is a function of the item being procured.

17. In the event Jersey Central Power & Light Company determines that there are equivalent or better means of accomplishing an objective than stated above, it shall implement that means and inform the Nuclear Regulatory Commission (NRC) by means of an Operational Quality Assurance Plan change in accordance with 10CFR50.59.
18. In its commitment to a specific ANSI Standard by specific reference to that standard or by implication through reference to a document which requires implementation of the standard, Jersey Central Power & Light Co. does not commit to any standard referenced in that standard to which it has committed. Any commitment to such a standard is limited to its commitment to specific standards in licensing documents.
19. In many cases, Jersey Central Power & Light Co. has defined terms in a manner which is consistent with its program. In this regard, it does not necessarily comply with definitions of terms which are included in any standard to which it is committed.

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APPENDIX B
(Exceptions)

The sub-categories of this Appendix summarize the exceptions noted in Section II of the Yankee Atomic Electric Company Operational Quality Assurance Manual.

<u>Appendix B Sub-Category</u>	<u>Standard/Guide</u>	<u>Title</u>
B-1	ANSI N18.7-1976	Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants
B-2	ANSI N45.2.3-1973	Housekeeping During the Construction Phase of Nuclear Power Plants
B-3	ANSI N45.2.10-1973	Quality Assurance Terms and Definitions
B-4	ANSI N45.2.12 (Draft 4 Revision 2-1976)	Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants
B-5	ANSI N45.2.2-1972	Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants

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20 Turnpike Road Westborough, Massachusetts 01581

ANSI N18.7 - 1976, Administrative Controls and Quality Assurance for the
Phase of Nuclear Power Plants

EXCEPTION:

The following exception is taken by the Yankee operating plants.

ANSI standards not referenced in ANSI N18.7-1976 but which are referenced in an ANSI standard endorsed by N18.7-1976 shall not be considered as applicable to the Yankee Operational Quality Assurance Program.

ALTERNATIVE:

The Yankee plants may use the noted standards as guides, as necessary.

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APPENDIX B (Exceptions) Sub Category B-1	2 of 12	6	10/19/78



ANSI N45.2.3-1973, Housekeeping During the Construction Phase of Nuclear Power Plants

A. EXCEPTION:

Subsection 2.1 - Planning

The Yankee operating plants take exception to the five-zone requirements specified in the subject standard.

ALTERNATIVE:

The Yankee operating plants shall establish as a minimum a three zone program as follows:

Zone III

Zone III criteria shall be applied to major portions of the reactor coolant system which are opened for inspection, maintenance or repair.

1. Access control over personnel shall be required.
2. Cleanliness shall be maintained, commensurate with the work being performed, so as to preclude the entry of foreign material to the Reactor Coolant System.
3. A documented cleanliness inspection shall be performed immediately prior to closure.

NOTE: The Zone III requirements may be expanded for certain maintenance/repair activities if deemed appropriate by plant management. In such instances applicable sections of Zones I & II shall be specified.

Zone IV

Zone IV criteria shall be applied to the radiation control areas of the plant.

1. Standard janitorial and work practices shall be utilized to maintain a level of cleanliness commensurate with company policy in the areas of Housekeeping, Plant and Personnel Safety and Fire Protection.
2. Additional housekeeping requirements shall be implemented as required for the control of radioactive contamination.

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APPENDIX B (Exceptions) Sub Category B-2	3 of 12	6	10/19/78

ANSI N45.2.3-1973 (Cont.)

Zone IV

3. Smoking and eating shall be controlled consistent with good health physics practices and to maintain cleanliness.

Zone V

Zone V criteria shall be applied to the remainder of the plant.

1. Standard janitorial and work practices shall be utilized to maintain a level of cleanliness commensurate with company policy in the areas of Housekeeping, Plant and Personnel Safety and Fire Protection.

TITLE	PAGE	REV. NO.	DATE
APPENDIX B (Exceptions) Sub Category B-2	4 of 12	6	10/19/73

YANKEE ATOMIC ELECTRIC COMPANY

B. EXCEPTION:

Subsection 3.2 - Control of Facilities

The Yankee operating plants take exception to the control of tools, equipment, materials and supplies used in Zone III.

ALTERNATIVE:

The Yankee operating plants shall verify control for Zone III as indicated in Exception A of this sub-category.

TITLE	PAGE	REV. NO.	DATE
APPENDIX B (Exceptions) Sub Category B-2	5 of 12	6	10/19/78



ANSI N45.2.10-1973, Quality Assurance Terms and Definitions

EXCEPTION:

Subsection 2 - Terms and Definitions

The Yankee operating plants take exception to the definitions of "Certificate of Conformance" and "Certificate of Compliance".

ALTERNATIVE:

The Yankee operating plants shall reverse the definitions of the above terms so our Program will be in compliance with the implied definitions in the ASME B&PV Code and Yankee specifications.

TITLE	PAGE	REV. NO.	DATE
APPENDIX B (Exceptions) Sub Category B-3	6 of 12	6	10/19/76



ANSI N45.2.12 Draft 4, Rev. 2-1976. Requirements for Auditing of Quality Assurance Programs for Nuclear Plants

EXCEPTION:

Subsection 4.2.2 Team Selection

The Yankee operating plants take exception to the requirement for a "Lead Auditor".

ALTERNATIVE:

Team Selection - In selecting personnel for auditing assignments, consideration shall be given to special abilities, specialized technical training, prior pertinent experience, personal characteristics, and education. One or more auditors comprise an audit team. Auditor responsibilities include establishing the pace of the audit, assuring communications with the organization being audited, participation in the audit performance, and preparation and issuance of reports.

TITLE	PAGE	REV. NO.	DATE
APPENDIX B (Exceptions) Sub Category B-4	7 of 12	6	10/19/78

YANKEE ATOMIC ELECTRIC COMPANY

ANSI N45.2.2 - 1972 Packaging, Shipping, Receiving, Storage & Handling
of Items for Nuclear Power Plants

A. Exception

Subsection 3.7.1 & A3.7.1-Containers

The Yankee operating plants take exception to the specific requirements for containers.

Alternative

Containers shall be of suitable construction to assure material is received undamaged.

Justification

Containers shipped by closed carrier, stored inside and not subjected to a wet environment do not require weatherresistant fiberboard, therefore, this is an unnecessary expense. Additionally, numerous vendors utilize shipping containers that do not comply with the specific requirements of this section, i.e., flaps overlap. The acceptance criteria for a shipping container should be established based on the capability of the container to maintain the component/material in a safe condition. Technology has advanced beyond the standard.

B. Exception

Subsection 3.7.2 - Crates and Skids

The Yankee operating plants take exception to the requirement that skids and runners shall be used on boxes with a gross weight of 100 pounds or more.

Alternative

Skids or runners shall be used on boxes with a gross weight of 100 pounds or more if practical.

Justification

Storage methods and container design frequently are such that runners or skids are not feasible.

TITLE	PAGE	REV. NO.	DATE
Appendix B (Exceptions) Subcategory B-5	8 of 12	6	10/19/78

YANKEE ATOMIC ELECTRIC COMPANY

ANSI N45.2.2 (cont.)

C. Exception

Subsection 5.2.1 - Shipping Damage Inspection

The Yankee operating plants take exception to the requirement that a preliminary visual inspection or examination be performed prior to unloading.

Alternative

The Yankee operating plants shall perform those required inspections after unloading. In special instances, pre-unloading inspections shall be performed.

Justification

Post unloading inspection is adequate to determine any damage that may have been incurred during shipping and handling.

D. Exception

Subsection 5.2.2 - Item Inspection

The Yankee operating plants take exception to the requirement, that "The inspections shall be performed in an area equivalent to the level of storage requirements for the item."

Alternative

The Yankee operating plants shall perform receiving inspection in a manner and in an environment which do not endanger the requisite quality of the item; however, receiving area environmental controls may be less stringent than storage environmental controls for that item. When inspections are performed in receiving areas with environmental controls less stringent than storage area environmental controls, a time limit shall be established on a case basis for retention of items in the receiving area. Retention time shall be such that deterioration is prevented and applicable manufacturer recommendations are addressed.

Justification

Receipt inspection activities are for a much shorter duration and therefore should not be subjected to the same stringent requirements as required for storage.

TITLE	PAGE	REV. NO.	DATE
Appendix B (Exceptions) Subcategory B-5	9 of 12	6 Amendment 1	3/29/79

YANKEE ATOMIC ELECTRIC COMPANY

ANSI N45.2.2 (cont.)

E. Exception

Subsection 5.2.3 - Special Inspection

The Yankee operating plants take exception to attaching special inspection procedures to the item or container.

Alternative

Special inspection procedures shall be readily available to personnel performing inspections.

Justification

Procedures are subject to less abuse and more stringent controls when maintained on file and not attached to the item. Inspection status is maintained by tagging and procedure control.

TITLE	PAGE	REV. NO.	DATE
Appendix B (Exceptions) Subcategory B-5	10 of 12	6 Amendment 1	3/29/79

YANKEE ATOMIC ELECTRIC COMPANY

ANSI N45.2.2 (cont.)

F. Exception

Appendix A- Subsection A3.5.1(1) - Caps & Plugs

The Yankee operating plants take exception to the requirement that non-metallic plugs and caps shall be brightly colored.

Alternative

Non-metallic plugs and caps shall be of a contrasting color.

Justification

The purpose of utilizing brightly colored plugs and caps is to assist in assuring obstructions are not inadvertently placed in operating components or systems. By using plugs and caps of a contrasting color this objective can be achieved.

G. Exception

Appendix A-3 Subsection A3.9(1) - Second Group, Markings

The Yankee operating plants take exception to the requirement that container markings shall appear on a minimum of two sides.

Alternative

Containers shall be adequately marked to provide identification and retrievability.

Justification

Containers are tagged to provide identification and inspection status. Employment of two tags on small containers adds bulk and confusion and does not provide for better identification or traceability.

TITLE	PAGE	REV. NO.	DATE
Appendix B (Exceptions) Subcategory B-5	11 of 12	6 Amendment 1	3/29/79

YANKEE ATOMIC ELECTRIC COMPANY

ANSI N45.2.2 (cont.)

H. Exception

Appendix A-3, Subsection A.3.9(4) - Second Group Marking

The Yankee operating plants take exception to the requirement that container markings shall be no less than 3/4" high container permitting.

Alternative

Container markings shall be of a size which permits easy recognition.

Justification

Markings were intended to provide identification and instructions. The criteria should be that the markings clearly provide the same.

I. Exception

Appendix A-3 Subsection A.3.9(6) - Second Group, Marking

The Yankee operating plants take exception to the information required for container marking.

Alternative

Marking shall be adequate in each case to provide identification, traceability and instructions for special handling, as applicable.

Justification

The information required is excessive. Cluttering a container with excessive markings only reduces the main objectives, maintaining identification and establishing special controls.

TITLE	PAGE	REV. NO.	DATE
Appendix B (Exceptions) Subcategory B-5	12 of 12	6 Amendment 1	3/29/79

APPENDIX C

QUALITY ASSURANCE PROGRAM
NRC REGULATORY GUIDE
COMMITMENTS
AND
EXCEPTIONS

Engineering, in establishing specific requirements for design will use regulatory guide positions controlled by Technical Functions in a project criteria document. Examples of positions taken relative to regulatory guides are listed. Those identified by an asterisk cover regulatory guides which are specifically quality related or impacted and are therefore controlled by this manual.

The TMI Quality Assurance Program complies with Section C of the NRC Regulatory Guides indicated below. Exceptions to NRC Regulatory Guide position are detailed in Part 2 of this Appendix.

This Appendix addresses additional Reg. Guides not listed in Rev. 7 of the Operational Quality Assurance Plan. Compliance with these added Reg. Guides will apply to modifications, additions and activities performed after issue of Rev. 8 and does not imply backfitting and/or retroactive compliance. It is also to be recognized that existing plant conditions, may prevent or preclude the satisfaction of all requirements of a specific design related regulatory guide. The deviation will be documented and, along with the justification, will be approved by the Manager - Engineering and Design.

APPENDIX C, PART I

APRIL, 1980

REG. GUIDE

		ANSI STD.	DEGREE COMPLIANCE	REMARKS
*1.88 10/76, Rev. 2	Collection Storage and Maintenance of Nuclear Power Plant Quality Assurance Records	N45.2.9 1974	Modified	See alternate method attached.
1.94 4/76, Rev. 1	QA Requirements for Installation, Inspection and Testing of Structural Concrete & Steel during Nuclear Power Plant Construction	N45.2.5 1974	Modified	See alternate method attached.
1.116 5/77, Rev. O-R	QA Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems	N45.2.8 1975	Modified	See alternate method attached.
*1.123 7/77, Rev. 1	QA Requirements for Control of Procurement of Items and Services for Nuclear Power Plants	N45.2.13 1976	Full	Comply with "Regulatory Position".
*1.144 1/79	Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants	N45.2.12 1977	Modified	See comments attached.
1.26 2/76, Rev. 3	QA Classifications and Standards for Water Streams and Radioactive Waste Containing Components of Nuclear Power Plants		Modified	See alternate method attached.
*1.31 4/78, Rev. 3	Control of Ferrite Content in Stainless Steel Weld Metal		Full	
1.63 7/78, Rev. 2	Electric Penetration Assemblies in Containment Structure for Light Water Cooled Nuclear Power Plants	I.EEE-317 1976	Modified	See clarification attached.
1.29 9/78, Rev. 3	Seismic Design Classification		Modified	Same comment as for Reg. Guide 1.26.

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APPENDIX C, PART I

COMMITMENT TO QUALITY ASSURANCE REGULATORY GUIDES FOR THREE MILE ISLAND

APRIL, 1980

REG. GUIDE		ANSI STD.	DEGREE OF COMPLIANCE	REMARKS
*1.6 5/77, Rev. 1-B	Personnel Selection and Training	N18.1 1971	Full	Comply with "Regulatory Position". **
*1.28 2/79, Rev. 2	Quality Assurance Program Requirements (Design and Construction)	N45.2 1977	Full	Comply with "Regulatory Position".
1.30 8/11/72	QA Requirements for the Installation, Inspection and Testing of Instrumentation and Electrical Equipment	N45.2 1972	Full	Comply with "Regulatory Position".
*1.33 2/78, Rev. 2	Quality Assurance Program Requirements (Operation)	N18.7 1976	Modified	See alternate method attached.
1.37 3/16/73	QA Requirements for Cleaning of Fluid Systems and Associated Components of Water Cooled Nuclear Power Plants	N45.2.1 1973	Modified	See alternate method attached.
1.38 5/77, Rev. 2	QA Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items for Water Cooled Nuclear Power Plants	N45.2.2 1972	Modified	See alternate method attached.
1.39 9/77, Rev. 2	Housekeeping Requirements for Water Cooled Nuclear Power Plants	N45.2.3 1973	Full	Comply with "Regulatory Position".
1.54 6/73	QA Requirements for Protective Coatings Applied to Water Cooled Nuclear Power Plants	101.4 1972	Modified	See alternate method attached.
*1.58 7/79 Proposed Rev. 1	Qualifications of Nuclear Power Plant Inspection, Examination and Testing Personnel	N45.2.6 1978	Modified	See alternate method attached.
1.64 6/76 Rev. 2	Quality Assurance Requirements for the Design of Nuclear Power Plants	N45.2.11 1974	Modified	See alternate method attached.
*1.74 2/74	Quality Assurance Terms and Definitions	N45.2.10 1973	Full	Comply with "Regulatory Position".

** Qualification requirements for Radiation Protection Manager are satisfied by Radiation Protection Manager or his deputy.

APPENDIX C, PART 2

NRC Regulatory Guide 1.30, August 1972

Quality Assurance Requirements for the Installation, Inspection and Testing of Instrumentation and Electric Equipment

Met-Ed shall comply with the Regulatory Position established in this Regulatory Guide in that QA programmatic/administrative requirements included therein shall apply to maintenance and modification activities even though such requirements were not in effect originally. Technical requirements associated with maintenance and modifications shall be the technical requirements or better (e.g., code requirements, material properties, design margins, manufacturing processes, and inspection requirements).

NCR Regulatory Guide 1.33, Rev. 2, February 1978

Quality Assurance Program Requirements (Operation)

The TMI QA Program complies with the regulatory position of this guide with the following clarifications:

1. Paragraph C.4.a is interpreted to mean audits will be made once each 6 months to verify the nonconformances and corrective action program is properly implemented and documented, particularly as related to actions taken to correct deficiencies that affect items important to safety.
2. Paragraph 5.2.8 of ANSI N18.7 - 1976 titled "Surveillance Testing and Inspection" ✓

In lieu of a "master surveillance" schedule, a technical specification surveillance testing schedule shall be established reflecting the status of all inplant surveillance tests and inspections.

3. Paragraph 5.2.15 of ANSI N18.7 - 1976 titled "Review, Approval and Control of Procedures"

The third sentence of the third paragraph is interpreted to mean applicable procedures shall be reviewed following a reportable incident such as an accident, an unexpected transient, significant operator error, or equipment malfunction.

4. Paragraph 5.2.17 of ANSI N18.7 - 1976 titled "Inspections"

APPENDIX C, PART 2

Not all inspections will require a separate inspection report. Inspection requirements may be integrated into appropriate procedures or other documents with the procedures or documents with the procedure or document serving as the record; however, records of inspections will be identified and retrievable.

NRC Regulatory Guide 1.37, March 16, 1973

Quality Assurance Requirements for Cleaning Fluids Systems and Associated Components of Water Cooled Nuclear Power Plants

The TMI Quality Assurance Program complies with the regulatory position of this guide with the following clarifications:

1. The second sentence of paragraph C.3 should be amended to read:

"The water quality for final flushes of fluid systems and associated components shall be at least equivalent to the quality required for normal operation. This requirement does not apply to dissolved oxygen or nitrogen limits nor does it infer that chromates or other additives normally in the system water will be added to the flush water."

2. Paragraph C.4 should be amended to add:

Material such as inks, temperature indicating crayons, labels, wrapping materials (other than polyethylene), water soluble dam materials, lubricants, NDT penetrant materials and couplants, which contact stainless steel or nickel alloy material surfaces shall contain no more than trace elements of lead, zinc, copper, mercury or other low melting alloys or compounds. Maximum levels of water leachable chloride ions, total halogens and sulfur compounds shall be imposed on the aforementioned materials.

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NRC Regulatory Guide 1.38, Rev. 2, May 1977

Quality Assurance Requirements for Packaging, Snipping,
Receiving, Storage and Handling of Items for Water Cooled
Nuclear Power Plants

The TMI Quality Assurance Program complies with the regulatory position of this guide with the following modifications:

1. Section 3.6 of ANSI N45.2.2 - 1972 concerns prevention of halogenated materials from contacting stainless steel or nickel alloy materials. The position stated in Reg. Guide 1.37 also applies to this guide.

2. Section 3.7.1 of ANSI N45.2.2 - 1972

Cleated, sheathed boxes will be used up to 1000 lbs. rather than 500 lbs. as specified. This type of box is safe for, and has been tested for, loads up to 1000 lbs. Other material standards (i.e., FED Spec. PPP-B-601) allow this. Special qualification testing shall be required for loads in excess of 1000 lbs.

3. Section 6/2/1 of ANSI N45.2.2 - 1972

For storage of level D items access will be controlled and limited by posting. Other positive controls such as fencing or posting of guards will be provided for higher storage levels.

4. Section A.3.4.1 Appendix to ANSI 45.2.2 - 1972

The last sentence of A.3.4.1(4) and (5) should be corrected as follows:

(4) "However, preservatives for inaccessible inside surfaces of pumps, valves and pipe systems containing reactor coolant water shall be the water flushable type."

(5) "The name of the preservative used shall be indicated to facilitate touch up."

5. With regard to Section A.3.5.2 of the Appendix to ANSI N45.2.2 - 1972 entitled "Tapes and Adhesives":

Tapes will meet a sulphur limit of 0.30% by weight instead of 0.10% as specified in A.3.5.2(1)(a).

APPENDIX C, PART 2

This limit is reasonable based upon the chemical content of commercially available tapes. Tapes will be of a contrasting color rather than "Brightly Colored" as required by A.3.5.1(3).

6. With regard to Section A.3.7.1 of the Appendix to ANSI N45.2.2 - 1972 entitled "Fiberboard Boxes":

In lieu of A.3.7.1(3) and (4), the following will be imposed: Fiberboard boxes shall be securely closed either with a water resistant adhesive applied to the entire area of contact between the flaps, or all seams and joints shall be sealed with not less than 2-inch wide, water resistant tape.

NRC Regulatory Guide 1.39, Rev. 2, September 1977

Housekeeping Requirements for Water Cooled Nuclear Power Plants Endorses ANSI N45.2.3 - 1973

The Operational Quality Assurance Program complies with this guide with the following clarification:

1. With regard to Sections 2.1 and 3.2 of ANSI N45.2.3 - 1973 entitled "Planning and Control of Facilities", respectively:

The TMI Nuclear Station will not utilize the five level zone designation system referenced in ANSI N45.2.3, but will utilize standard janitorial and work practices to maintain a level of cleanliness commensurate with company policy in the areas of housekeeping, plant and personnel safety, and fire protection.

Cleanliness will be maintained, consistent with the work being performed, so as to prevent the entry of foreign material into systems considered important to safety. This will include as a minimum documented cleanliness inspections which will be performed immediately prior to system closure. Control of personnel, tools, equipment, and supplies will be established when major portions of the reactor system are opened for inspection, maintenance of repair.

Additional housekeeping requirements will be implemented as required for control of radioactive contamination.

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NRC Regulatory Guide 1.54, June 1973

Quality Assurance Requirements for Protective Coatings
Applied to Water Cooled Nuclear Power Plants

Endorses ANSI N101.4 - 1972

The Operational Quality Assurance Program complies with this guide with the following clarification:

1. Met-Ed shall comply with the Regulatory Position established in this Regulatory Guide in that QA programmatic/administrative requirements included therein shall apply to maintenance and modification activities even though such requirements were not in effect originally. Technical requirements associated with maintenance and modifications (e.g., code requirements, material properties, design margins, manufacturing processes, and inspection requirements) shall be the original requirements or better.
2. The guidance of Regulatory Guide 1.54 shall be followed for organic protective coatings selected and evaluated in accordance with pertinent sections of ANSI N101.2 when applied to interior surfaces of the containment. The supplier's quality assurance program shall be approved prior to implementation. Quality Assurance documentation may not be similar to records and documents listed in Sections 7.4 through 7.8 of ANSI N101.4 but will be evaluated to assure that they provide at least the same degree of documentation as required by this standard.

NRC Regulatory Guide 1.58, Proposed Rev. 1, July 1979

Qualifications of Nuclear Power Plant Inspection,
Examination, and Testing Personnel

Endorses ANSI N45.2.6 - 1978

The Operational Quality Assurance Program complies with this guide with the following clarification:

1. The guidance of Regulatory Guide 1.58 shall be followed as it pertains to the qualifications of personnel who verify conformance of work activities to quality requirements. The qualifications of plant operating personnel concerned with day-to-day

APPENDIX C, PART 2

operation, maintenance, and certain technical services shall conform to Regulatory Guide 1.8.

2. Not all personnel who:
 - A. Review and approve inspection and testing procedures,
 - B. Evaluate the adequacy of activities to accomplish the inspection and test objectives,
 - C. Evaluate the adequacy of specific programs used to train and test inspection and test personnel,
 - D. Certify Level III individuals in specific categories or classes,

Will be certified as meeting the Level III capability requirements of ANSI N 45.2.6-1978.

Rather these personnel will be determined by management through evaluation of their education experience, and training to be fully qualified and competent to perform these functions. The basis for the determination will be documented.

NRC Regulatory Guide 1.64, Rev. 2, June 1976

Quality Assurance Requirements for the Design of Nuclear Power Plants

Endorses ANSI N45.2.11 - 1974

Met-Ed shall comply with the Regulatory Position established in this Regulatory Guide in that QA programmatic/administrative requirements included therein shall apply to maintenance and modification activities even though such requirements were not in effect originally. Technical requirements (e.g., code requirements, material properties, design margins, manufacturing processes, and inspection requirements) associated with maintenance and modifications shall be the original requirements or better.

The Operational Quality Assurance Program complies with this guide with the following clarification to paragraph C.2(1) of Regulatory Guide 1.64: If in an exceptional circumstance the designer's immediate Supervisor is the only technically qualified individual available, this review can be conducted by the Supervisor, providing that: (a) the other provisions of the Regulatory Guide are satisfied, and (b) the justification is individually documented and approved in advance by the Supervisor's

APPENDIX C, PART 2

management, and (c) quality assurance audits cover frequency and effectiveness of use of Supervisors as design verifiers to guard against abuse.

NRC Regulatory Guide 1.94, Rev. 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 ✓

Endorses ANSI N45.2.5 - 1974

The Operational quality Assurance Program complies with this guide with the following clarification:

Met-Ed shall comply with the Regulatory Position established in this Regulatory Guide in that QA programmatic/administrative requirements included therein shall apply to maintenance and modification activities even though such requirements were not in effect originally. Technical requirements associated with maintenance and modifications shall be the original requirements or better (e.g., code requirements, material properties, design margins, manufacturing processes, and inspection requirements).

NRC Regulatory Guide 1.116, Rev. D-R, May 1977

Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems ✓

Endorses ANSI N45.2.8

The Operational Quality Assurance Program complies with this guide with the following clarification:

Met-Ed shall comply with the Regulatory Position established in this Regulatory Guide in that QA programmatic/administrative requirements included therein shall apply to maintenance and modification activities even though such requirements were not in effect originally. Technical requirements associated with maintenance and modifications shall be the original requirements or better (e.g., code requirements, material properties, design margins, manufacturing processes, and inspection requirements).

NRC Regulatory Guide 1.26, Rev. 3, February 1976

Quality Group Classifications and Standard for Water, Steam and Radioactive Waste Containing Components of Nuclear Power Plants ✓

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Since the original design and construction of the Three Mile Island Plants was to different classification criteria than contained in this guide; TMI will comply with the regulatory position of this guide with the following clarifications:

1. For modifications to existing plant systems and for new construction, items will be classified by Technical Functions according to this guide providing such action will improve the safety of the system being modified or make a significant improvement in overall plant safety. Otherwise the items will be classified the same as the original design and construction.
2. Tie-in's to existing plant systems will be made to the same or more recent applicable code, standard and technical requirements which were applicable to the system to which the tie-in is to be made.

NRC Regulatory Guide 1.63, Rev. 2, July 1978

Electric Penetration Assemblies in Containment Structures for Light Water Cooled Nuclear Power Plants

Met-Ed will comply with the regulatory position of this guide with the following clarification:

For modifications to existing structures and to new constructions, this guide will be utilized providing its use will improve the safety of the structure being modified or make a significant improvement in overall plant safety. Otherwise, the same or more recent applicable code, standard and technical requirements applicable to the original design and construction will be utilized.

NRC Regulatory Guide 1.144, January 1979

Auditing of Quality Assurance Programs for Nuclear Power Plants

Met-Ed is in basic agreement with the position set forth in the Regulatory Guide subject to the following comments:

1. Section C.3.a(2)

The proposed scheduling requirement for internal audits appears to change the basis for having a rational, programmatic approach to auditing. In its place, the new regulatory guide requires mandatory auditing of all program elements on a yearly

APPENDIX C, PART 2

basis. The latter would require that all elements obtain the same attention regardless of importance, past performance, or to what extent other aspects of quality assurance measuring and evaluating techniques are used; as an example, the extent to which surveillance and process monitoring is used. Accordingly, minimum schedule frequency will be as defined in Regulatory Guide 1.33.

2. Section C.3.b(1)

Source inspection provides a controlled basis for replacing the need for external audits. Quality assurance program surveillance will also be used as another alternative.

3. Section C.3.b(2)

While the licensee is responsible for procurement control, this can be exercised through an annual evaluation of the contractor's performance using pertinent results from manufacturing surveillance, source inspection, receiving inspection, and other applicable factors. The evaluation would include a recommendation as to the need for a scheduled program or problem area audit. Hence, auditing, like surveillance and inspection, will be treated as a quality assurance tool used for evaluation. Furthermore, the recommendation to audit will include provisions for reviewing the importance and impact of the particular contractor's scope and status.

NRC Regulatory Guide 1.88, Rev. 2, October, 1976

Collection, Storage, and Maintenance of Nuclear Power Plant Availability Assurance Records

Met-Ed will comply with the intent of this regulatory guide by compliance with the requirements of ANSI/ASME NQA-1-1979, Supplement 17S-1 and Appendix 17A-1.

TABLE 17.2-1

OPERATIONAL QUALITY ASSURANCE PROGRAM

Page 1

COMPLIANCE MATRIX

NRC Reg. Guide	ANSI Standard	Subject	Clarifications & Exceptions	
1.8 Rev. 1	N18.1 - 1978	Personnel Selection & Training	See Chapter 13	22
1.17 Rev. 1	N18.17 - 1973	Security	Not included in the OQA Program	5
1.28 Rev. 1	N45.2 - 1977	QA Requirements	Full compliance	
1.30 8/72	N45.2.4 - 1972	Electrical Installation, Inspection & Testing	Commitment to the extent required by ANSI N18.7-1976*	6
1.33 Rev. 2	N18.7 - 1976	Administrative Controls & Operational QA	Full compliance	
1.37 3/73	N45.2.1 - 1973	Cleaning Fluid Systems & Components	Commitment to the extent required by ANSI N18.7-1976*	
1.38 Rev. 2	N45.2.2 - 1972	Packaging, Shipping, Receiving, Storage & Handling	Commitment to the extent required by ANSI N18.7-1976*	5
1.39 Rev. 2	N45.2.3-1973	Housekeeping	Commitment to the extent required by ANSI N18.7-1976*	6
1.54 6/73	N101.4 - 1972	QA for Protective Coatings	Commitment to the extent required by ANSI N18.7-1976*	
1.58 Rev. 1	N45.2.6 - 1978	Qualifications of Inspection, Examination, & Testing Personnel	Commitment to the extent required by ANSI N18.7-1976*; personnel who only handle test results or perform document control activities will not be certified.	22
1.64 Rev. 2	N45.2.11 - 1974	QA for Design	Full compliance	
1.74 2/74	N45.2.10 - 1973	QA Terms & Definitions	Full compliance	
1.88 Rev. 2	N45.2.9 - 1979	Collection, Storage & Maintenance of Records	Full compliance	20
1.94 Rev. 1	N45.2.5 - 1974	Concrete & Structural Steel Installation, Inspection, & Testing	Commitment to the extent required by ANSI N18.7-1976*	
1.116 Rev. 0-R	N45.2.8 - 1975	Mechanical Installation, Inspection & Testing	Commitment to the extent required by ANSI N18.7-1976*	6
1.123 Rev. 1	N45.2.13 - 1976	QA for Procurement of Items & Services	Full compliance	6

TABLE 17.2-1 (Continued)

page 2

1.120 Rev. 1	N/A	Fire Protection Guidelines for Nuclear Power Plants	Full compliance limited to Regulatory Position C.3, Quality Assurance Program	6	12
1.144 1/79	N45.2.12-1977	Auditing of QA Programs	Full compliance	6	
<u>1.146 8/80</u>	N45.223-1978	Qualification of QA Program Audit Personnel	Full compliance	20	

*These standards will be applied as directed by the Manager-NQA for activities which "...are comparable in nature and extent to related activities occurring during construction" as required by ANSI N18.7-1975.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

USNRC LETTER DATED AUGUST 10, 1977

PHILADELPHIA ELECTRIC

PEACH BOTTOM ATOMIC POWER STATION

UNITS 2 AND 3

DOCKET NO'S. 50-277 AND 50-278

OCTOBER 1977

Responses to Request for Additional Information
NRC Letter G. Lear to E. G. Bauer, Jr., August 8, 1977

Question 1.

Appendix 17.2.B The Engineering & Research Department has not provided a commitment to comply with Regulatory Guide 1.33, 11/3/72, "Quality Assurance Program Requirements," Regulatory Guide 1.39, 3/16/73, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants" and Regulatory Guide 1.88, 10/1976, "Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records" in the Appendix 17.2.B of the OQA program. Since these Regulatory Guides can apply during the modification phase, it is requested that a commitment to comply with these Regulatory Guides be provided in Appendix 17.2.B for activities associated with the Engineering & Research Department.

Response:

Revised 17.2 Appendix B to provide commitments as requested in Question 1.

Question 2.

A question on Section 17.2, previously submitted to Philadelphia Electric Company has not been answered. The Engineering & Research Department will be involved in vendor QA evaluations and surveillance and major modifications work as requested by the Electric Production Department. Since the Electric Production Department is principally responsible for Peach Bottom Atomic Power Station, Unit Nos. 2 and 3, it is expected any delegation of QA authority within Philadelphia Electric Company will comply with the controls described in Section 17.2 of the FSAR. Accordingly, describe the extent that the Engineering & Research Department will comply with the controls of Section 17.2 when performing modifications to Peach Bottom Atomic Power Station, Unit Nos. 2 and 3.

Response:

The previous question on Section 17.2 was answered in the submittal of May 20, 1977 where the application of the OQA Program to Engineering & Research Department activities was shown by referencing numerous sections of FSAR Section 17.2. By way of additional clarification, the Engineering & Research Department complies with the corporate administrative controls described in FSAR Section 17.2 which apply to personnel working at the plant site. Design, procurement and installation of major modifications for Peach Bottom Atomic Power Station, Unit Nos. 2 and 3 is performed by the Engineering & Research Department under the controls of the Peach Bottom Atomic Power Station Quality Assurance Plan Volume I. Volume I will be revised to contain quality assurance provisions similar to those described in FSAR Section 17.2 as applicable to Engineering & Research Department activities, and to provide for implementation of the Engineering & Research commitments to the Regulatory Guides and ANSI Standards as contained in FSAR Appendix 17.2B. Volume I will be subject to review and acceptance by the Electric Production Department.

PEACH BOTTOM ATOMIC POWER STATION
UNITS 2 & 3
FSAR PAGE REVISIONS

The following pages are to be inserted into your copy of the
FSAR. These pages are replacements as indicated below:

Volume 6

Delete

Page 17.2. B-1
through
17.2. B-6

Substitute

Page 17.2. B-1
through
17.2. B-7

Dated October 1977

PBAPS

APPENDIX 17.2.B

REGULATORY GUIDES AND ANSI STANDARDS
ENGINEERING AND RESEARCH DEPARTMENT

The Engineering and Research Department follows ANSI Standards and USNRC Regulatory Guides as described below:

1. Regulatory Guide 1.58, August 1973, Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel. Endorses ANSI N45.2.6-1973.

The Engineering and Research Department follows Regulatory Guide 1.58, August, 1973 and ANSI N45.2.6 (1973) exclusive of other documents referenced therein.

Two particulars of ANSI N45.2.6 (1973) are implemented by the Engineering and Research Department through alternate equivalent means described below.

- a. Par. 2.2.2 (Proficiency Testing). Specification SNT-TC-1A is applied to non-destructive testing (i.e. P.T., U.T., M.T., and Eddy Current) only, and not to visual inspections.
- b. Section 3.2.1 Physical. The Medical Department of the Philadelphia Electric Company records a detailed evaluation of the physical and mental status of each employee. This evaluation begins with a thorough pre-employment examination, and it continues throughout the period of service of each employee. The collection of this data is accomplished by: (1) Examinations and evaluations of each employee who is disabled beyond a period of five days, repeated at various intervals until he is capable of returning to work; (2) Requirement that the family physician submit a definitive diagnosis and reports of therapy; (3) Examination of employees who are incapable of performing full duty for determination of capabilities for limited duty or restricted work; (4) Examinations of employees for specific work assignments; (5) Evaluation of employees referred by their department

because of apparent problems and suspected disabilities. In addition, the Construction and Research Divisions either have or are developing procedures which require vision examinations of those personnel who perform inspections and specialized testing, in accordance with ANSI N45.2.6 (1973). These procedures will be fully implemented by January 1, 1978.

2. Regulatory Guide 1.30, August 11, 1972, Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment. Endorses ANSI N45.2.4 - 1972.

The Engineering and Research Department follows Regulatory Guide 1.30, August 11, 1972 and ANSI N45.2.4 (1972) exclusive of other documents referenced therein.

One particular of ANSI N45.2.4 (1972) is implemented by the Engineering and Research Department through alternate equivalent means described below.

- a. As an alternative to ANSI B31.7-1969 (referenced in ANSI N45.2.4 (1972), Section 9, Item 6) PECO follows USAS B31.1.0-1967 since Peach Bottom Units 2 and 3 were constructed to USAS B31.1.0-1967.

3. Regulatory Guide 1.37, 3/16/73, Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants. Endorses ANSI N45.2.1-1973.

The Engineering and Research Department follows Regulatory Guide 1.37, 3/16/73 and ANSI N45.2.1 (1973) exclusive of other documents referenced therein.

4. Regulatory Guide 1.38, 3/16/73, Quality Assurance Requirements for packaging, Shipping, Receiving, Storage and Handling of Items for Water-Cooled Nuclear Power Plants. Endorses ANSI N45.2.2-1972.

The Engineering and Research Department follows Regulatory Guide 1.38, 3/16/73 and ANSI N45.2.2 (1972) exclusive of other documents referenced therein.

Two particulars of ANSI N45.2.2 (1972) are implemented by the Engineering and Research Department through alternate equivalent means described below.

- a. With regard to paragraph 7.4 (Inspections of Equipment and Rigging) Engineering and Research Department will develop an equivalent alternate approach. A procedure covering inspection of hoisting and rigging equipment will be implemented by January 1, 1978. This procedure will include provisions for inspection of hoisting and rigging equipment prior to use, accept/reject criteria (for such characteristics as wear, fraying, cleanliness, distortion, or other damage or deterioration), control of nonconforming equipment and documentation of inspection results.
 - b. As an equivalent alternative to the four levels of classification established by ANSI N45.2.2 (1972), Section 2.7, each component is treated on an individual basis. The Engineering and Research Department requires that each specification contain handling storage, packaging, and shipping information. This information incorporates the guidance and recommendations which are appropriate to each classification for packaging, shipping, handling, and storage of equipment or materials described in the specification.
5. Regulatory Guide 1.64, Revision 1, February 1975, Quality Assurance Requirements for the Design of Nuclear Power Plants. Endorses ANSI N45.2.11-(1974).

The Engineering and Research Department follows Regulatory Guide 1.64, Rev. 1, February, 1975 and ANSI N45.2.11(1974) exclusive of other documents referenced therein.

6. ANSI N45.2.8-(1975), Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants.

The Engineering and Research Department follows ANSI N45.2.8-(1975) exclusive of other documents referenced therein.

One particular of ANSI N45.2.8-(1975) is implemented by the Engineering and Research Department through alternate equivalent means described below:

- a. Section 2.1 - This section requires the establishment of a formal and documented plan for each item of work. The PECO procedure specifies the issuance of Job Memoranda, which serve the equivalent purpose of outlining major project requirements.
7. Regulatory Guide 1.54, June, 1973, Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants. Endorses ANSI N101.4-1972.

The Engineering and Research Department follows Regulatory Guide 1.54, June, 1973 and ANSI N101.4 (1972) exclusive of other documents referenced therein. One particular of ANSI N101.4 (1972) will be implemented by the Engineering and Research Department through alternate equivalent means described below:

- a. In Para. (5) and (6) PECO will initiate, prior to coating application, a procedure(s) that will ensure satisfactory application and inspection of coatings applied to Nuclear Facilities.

8. ANSI N45.2.5-1974 Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Steel and Structural Concrete.

ANSI N45.2.5 (1974) exclusive of other documents referenced therein will be implemented by the Engineering and Research Department through alternate equivalent means prior to placement of any structural steel or concrete at PBAPS Units 2 and 3.

9. Draft Standard ANSI N45.2.12 (Draft 3, Rev. 4), Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants.

The Engineering and Research Department follows the guidance of ANSI N45.2.12 (Draft 3, Rev. 4) exclusive of other documents referenced therein.

APPENDIX D.2.2.0-1
CONFORMANCE WITH NRC REGULATORY GUIDES

1. Personnel Selection and Training (Regulatory Guide 1.8,
March 1971)

The selection and training of personnel to be used at the J.A. FitzPatrick Nuclear Power Plant conforms with Regulatory Guide 1.8.

2. Quality Assurance Program Requirements (Design and Construc-
tion) (Regulatory Guide 1.28, June 1972)

The design and construction of safety related structures, systems, and components resulting from modifications or design changes are subject to quality assurance requirements that comply with the positions defined in Regulatory Guide 1.28, which endorses ANSI N45.2-1971, "Quality Assurance Program Requirements for Nuclear Power Plants". Except that the systems which were identified during the operating license proceedings and on which the engineering and design work had already been initiated prior to the issuance of the operating license will be completed in accordance with the procedures followed during the original design and construction of the J.A. FitzPatrick Nuclear Power Plant. 2

✓ 3. Quality Assurance Requirements for Installation, Inspection,
and Testing of Instrumentation and Electric Equipment
(Regulatory Guide 1.30, August 1972)

The installation, inspection, and testing of all IEEE Class IE electric power, instrumentation, control equipment and systems, including auxiliary equipment and associated material, comply with the requirements of Regulatory Guide 1.30.

4. Quality Assurance Program Requirements (Operation)
(Regulatory Guide 1.33, November 1972)

The quality assurance requirements for the operation of the J.A. FitzPatrick Nuclear Power Plant comply with Regulatory Guide 1.33.

5. Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants (Regulatory Guide 1.37, March 1973)

✓ The quality assurance requirements for cleaning of fluid systems and associated components comply with Regulatory Guide 1.37, with the following exceptions:

Regulatory Position C.3 - Safety related systems other than the following:

1. Reactor coolant pressure boundary
2. Systems required for reactor shutdown
3. Systems required for emergency core cooling
4. Reactor vessel internals that are relied upon to permit adequate core cooling for any mode of normal operation or under credible postulated accident conditions

are flushed with water in accordance with ANSI N45.2.1-73, except that the quality of water is as close as practical to that of the operating system water. The systems listed comply with NRC Regulatory Position C.3. These are the most critical systems in a plant and must be carefully protected from contamination, especially for stainless steel systems. For other QA Category I systems it is adequate to use water defined by ANSI N45.2.1-73, except that the flush water is matched as close as practical to that intended for system operation. For example, demineralized water is used for systems that operate with demineralized/deionized/condensed water. It is not necessary to flush such systems with water containing 0.15 ppm chlorides when the 1.0 ppm maximum chlorides required by ANSI would be adequate to prevent contamination.

6. Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants (Regulatory Guide 1.38, March 1973)

✓ The quality assurance requirements for packaging, shipping, receiving, storage and handling comply with Regulatory Guide 1.38 with the following exceptions.

- a. Regulatory Position C.3 - Tapes, dessicants, and dessicant bags do not contain the following as a basic and essential chemical constituent: lead, zinc, copper, mercury, cadmium and other low melting point metals, their alloys, and/or compounds.

- b. As prescribed in ANSI N45.2.2-1972 maximum levels of water leachable chlorides, total halogens, and sulfur and their compounds are imposed upon tapes.
- c. Dessicants and dessicant bags contain nonhalogenated and nonsulfur bearing materials.

✓ 7. Housekeeping Requirements for Water-Cooled Nuclear Power Plants (Regulatory Guide 1.39, March 1973)

The housekeeping program complies with Regulatory Guide 1.39.

8. Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Plant (Regulatory Guide 1.54, June 1973)
N.A.

The Quality Assurance requirements for protective coatings comply with Regulatory Guide 1.54 with the following exceptions:

In lieu of the inspection defined in Section 6.2.4 of ANSI N101.4-1972, inspection is in accordance with ANSI N5.12-1974 Section 10, Inspection For Shop and Field Work.

Regarding the extent of coverage, the following offers clarification of paragraph 1.2.4 of ANSI N101.4-72:

Regulatory Guide 1.54 will be applied as follows:

- A. Surfaces within the primary containment liner boundary:
 - a. For large surface area components, the documents shall be retained by the Authority as required by ANSI N101.4-72. These components include such items as the reactor building crane, containment, structural steel (including miscellaneous steel and handrails), concrete, ductwork, uninsulated pipe, reactor vessel support shield wall, exterior of uninsulated tanks and vessels, and major equipment supports.
 - b. For manufactured equipment such as pumps, motors, pipe hangers and supports, the documentation required by ANSI N101.4-72 shall be maintained in the Seller's files for the complete duration of the contract warranty/guarantee period. A certificate of compliance signed by responsible management personnel shall be furnished by the Seller.

- B. Other surfaces where coating failure could compromise the design function of equipment of components intended to prevent or mitigate the consequences of postulated accidents which could affect the public health and safety.

Because of the impracticability of imposing the Regulatory Guide requirements on the standard shop process used in painting valve bodies, handwheels, electrical cabinetry and control panels, loudspeakers, emergency light cases and like components, the Regulatory Guide will not be invoked for these items since the total surface of such items is relatively small when compared to the total surface area for which the requirements will be imposed. The total surface area and estimated volume covered by unknown paint which is not applied in accordance with the requirements of the Regulatory Guide will be recorded. An analysis will have to be conducted, taking into account the quantity and physical distribution throughout the primary containment of miscellaneous surfaces which will not be coated in accordance with the Regulatory Guide (no such analysis has as yet been undertaken). The analysis, based on the flow paths and the available surface area which could be obstructed by nonintegral coatings, will verify that even in the event that the uncontrolled coatings were removed by a LOCA, the effectiveness of any engineered safety system would not be compromised thereby.

The reference substitution of ANSI N5.12 as the basis for inspection, rather than ANSI N5.9 reflects a revision to a standard referenced in the based document, ANSI N101.4.

9. Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel (Regulatory Guide 1.58, August 1973)

Qualification of nuclear power plant inspection, examination, and testing personnel complies with Regulatory Guide 1.58.

10. Quality Assurance Requirements for the Design of Nuclear Power Plants (Regulatory Guide 1.64, October 1973)

214 The Quality Assurance requirements for the design or design change resulting in modification of the J.A. FitzPatrick Nuclear Power Plant comply with Regulatory Guide 1.64.

11. Quality Assurance Terms and Definitions (Regulatory Guide 1.74, February 1974)

The J.A. FitzPatrick Nuclear Power Plant Quality Assurance Program degree of compliance with Regulatory Guide 1.74 is as follows:

- A. The Authority uses the appropriate definitions of ANSI N45.2.10-1973 and supplements these terms with others defined in the Authority's Quality Assurance Program Manual for the James A. FitzPatrick Nuclear Power Plant.
- B. Stone & Webster utilizes the Quality Assurance terms and definitions described in Appendix III Glossary of SWSQAP 1-74, "Stone & Webster Standard Nuclear Quality Assurance Program". This is an acceptable alternative to Regulatory Guide 1.74.

12. Preoperational and Initial Startup Test Programs for Water-Cooled Power Reactors (Regulatory Guide 1.68)

Not applicable for our phase of operations.

JAFNPP-FSAR

PLANT ADMINISTRATIVE PROCEDURES

FIGURE D.2.2.1.2-2

<u>Procedure No.</u>	<u>Title</u>	<u>Appendix B to 10CFR50 Criteria</u>
AP-36	Maintenance of Quality Control Records	II, XI

NOTE

Procedures applicable to Criteria IX of Appendix B to 10CFR50 are found in the Site Welding Handbook and in the Nondestructive Examination Procedure Handbook.

APPENDIX 17.2.0-1

CONFORMANCE WITH NRC REGULATORY GUIDES

1. Personnel Selection and Training (Regulatory Guide 1.8, March 1971) *Garise*

The selection and training of personnel to be used at the Indian Point 3 Nuclear Power Plant conforms with Regulatory Guide 1.8.

2. Quality Assurance Program Requirements (Design and Construction) (Regulatory Guide 1.28, June 1972) *3/9/77*

The design and construction of safety related structures, systems, and components resulting from modifications or design changes are subject to quality assurance requirements that comply with the positions defined in Regulatory Guide 1.28, which endorses ANSI N45.2-1971, "Quality Assurance Program Requirements for Nuclear Power Plants".

3. Quality Assurance Requirements for Installation, Inspection, and Testing of Instrumentation and Electric Equipment (Regulatory Guide 1.30, August 1972) *Garise*

The installation, inspection, and testing of all IEEE Class IE electric power, instrumentation, control equipment and systems, including auxiliary equipment and associated material, comply with the requirements of Regulatory Guide 1.30.

4. Quality Assurance Program Requirements (Operation) (Regulatory Guide 1.33, November 1972) *Garise*

The Quality Assurance requirements for the operation of the IP3NPP comply with Regulatory Guide 1.33.

5. Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants (Regulatory Guide 1.37, March 1973) *Garise*

The Quality Assurance requirements for cleaning of fluid systems and associated components comply with Regulatory Guide 1.37, with the following exceptions:

Regulatory Position C3 - Safety related systems other than the following:

1. Reactor coolant pressure boundary
2. Systems required for reactor shutdown
3. Systems required for emergency core cooling
4. Reactor vessel internals that are relied upon to permit adequate core cooling for any mode of normal operation or under credible postulated accident conditions

are flushed with water in accordance with ANSI N45.2.1-73, except that the quality of water is as close as practical to that of the operating system water. The systems listed comply with NRC Regulatory Position C.3. These are the most critical systems in a plant and must be carefully protected from contamination, especially for stainless steel systems. For other QA Category I systems it is adequate to use water defined by ANSI N45.2.1-73, except that the flush water is matched as close as practical to that intended for system operation. For example, demineralized water is used for systems that operate with demineralized/deionized/condensed water. It is not necessary to flush such systems with water containing 0.15 ppm chlorides when the 1.0 ppm maximum chlorides required by ANSI would be adequate to prevent contamination.

6. Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants (Regulatory Guide 1.38, March 1973) *just done*

The quality assurance requirements for packaging, shipping, receiving, storage and handling comply with Regulatory Guide 1.38 with the following exceptions:

- a. Regulatory Position C.3 - Tapes, dessicants, and dessicant bags do not contain the following as a basic and essential chemical constituent: lead, zinc, copper, mercury, cadmium and other low melting point metals, their alloys, and/or compounds.
- b. As prescribed in ANSI N45.2.2-1972 maximum levels of water leachable chlorides, total halogens, and sulfur and their compounds are imposed upon tapes.
- c. Dessicants and dessicant bags contain nonhalogenated and nonsulfur bearing materials.

7. Housekeeping Requirements for Water-Cooled Nuclear Power Plants (Regulatory Guide 1.39, March 1973) *done*

The housekeeping program complies with Regulatory Guide 1.39. *done*

8. Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Plant (Regulatory Guide 1.54, June 1973) *Free*

The Quality Assurance requirements for protective coatings comply with Regulatory Guide 1.54 with the following exceptions:

In lieu of the inspection defined in Section 6.2.4 of ANSI N101.4-1972, inspection is in accordance with ANSI N5.12-1974 Section 10, Inspection For Shop and Field Work.

Regarding the extent of coverage, the following offers clarification of paragraph 1.2.4 of ANSI N101.4-72:

Regulatory Guide 1.54 will be applied as follows:

A. Surfaces within the primary containment liner boundary:

- a. For large surface area components, the documents shall be retained by the Authority as required by ANSI N101.4-72. These components include such items as the reactor building crane, containment, structural steel (including miscellaneous steel and handrails), concrete, ductwork, uninsulated pipe, exterior of uninsulated tanks and vessels, and major equipment supports.
- b. For manufactured equipment such as pumps, motors, pipe hangers and supports, the documentation required by ANSI N101.4-72 shall be maintained in the Seller's files for the complete duration of the contract warranty/guarantee period. A certificate of compliance signed by responsible management personnel shall be furnished by the Seller.

B. Other surfaces where coating failure could compromise the design function of equipment or components intended to prevent or mitigate the consequences of postulated accidents which could affect the public health and safety.

Because of the impracticability of imposing the Regulatory Guide requirements on the standard shop process used in painting valve bodies, handwheels, electrical cabinetry and control panels, loudspeakers, emergency light cases and like components, the Regulatory Guide will not be invoked for these items since the total surface of such items is relatively small when compared to the total surface area for which the requirements will be imposed.

The reference substitution of ANSI N5.12 as the basis for inspection, rather than ANSI N5.9 reflects a revision to a standard referenced in the based document, ANSI N101.4.

9. Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel (Regulatory Guide 1.58, August 1973) *Ans. / sum*

Qualification of nuclear power plant inspection, examination, and testing personnel complies with Regulatory Guide 1.58.

10. Quality Assurance Requirements for the Design of Nuclear Power Plants (Regulatory Guide 1.64, October 1973) *Ans. / sum*

The Quality Assurance requirements for the design or design change resulting in modification of the Indian Point 3 Nuclear Power Plant comply with Regulatory Guide 1.64.

11. Quality Assurance Terms and Definitions (Regulatory Guide 1.74, February 1974)

The Indian Point 3 Nuclear Power Plant Quality Assurance Program degree of compliance with Regulatory Guide 1.74 is as follows:

- A. The Authority uses the appropriate definitions of ANSI N45.2.10-1973 and supplements these terms with others defined in the Authority's Quality Assurance Program Manual.

12. Preoperational and Initial Startup Test Programs for Water-Cooled Power Reactors (Regulatory Guide 1.68)

Not applicable for our phase of operations.

*+ Pg 17.2-1
Ans / sum / base book*

3. A demonstrated interest in his own professional development as indicated by activities in appropriate technical societies, and/or additional study in the field or associated fields of his specialty.
4. Ability to work well with others.
5. Good oral and writing skills.
6. Initiative and sound judgment to satisfactorily complete an undertaking with minor supervision.

D.2.2 QUALITY ASSURANCE PROGRAM

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The corporate QA Program has been designed to comply with the requirements of 10CFR50, Appendix B and with the Fire Protection Program requirements of Appendix A of Branch Technical Position No. 9.5-1. This program shall be applied to all activities which can affect the health and safety of the public. During the pre-operational phase, this includes:

1. activities which affect the safety related functions of structures, systems and components, and
2. activities which affect fire protection for safety related areas.

During the operational phase, the QA Program is applied to the above activities and to applicable safety-related activities delineated in Appendix A of Regulatory Guide 1.33.

Structures, systems and components covered by the QA Program are identified in FSAR Appendix C.

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The QA Program shall be applied during the pre-operational and operational phases to an extent consistent with the items or activity's importance to safety.

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ADDED
2/15
During the operational phase, these activities shall be performed in compliance with the applicable quality-related requirements which include, but are not limited to:

1. Regulatory Guide 1.8, "Personnel Selection and Training," 9/75, (endorses N18.1).
2. Regulatory Guide 1.30, "Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation" Electric Equipment, 3/72, (endorses N45.2.4).
3. Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," 2/78 (endorses N18.7-1976/ANS-3.2).

4. Regulatory Guide 1.37, "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants," 3/73, (endorses N45.2.1).
5. Regulatory Guide 1.38, "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants," 10/76, (endorses N45.2.2).
6. Regulatory Guide 1.39, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants," 3/73, (endorses N45.2.3).
7. Regulatory Guide 1.58, "Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel," 8/73, (endorses N45.2.6). All PSE&G personnel performing inspection, examination or testing shall be qualified in accordance with this Regulatory Guide, with the following exceptions: Certification of personnel qualification will not include an expiration date and will remain in effect for the duration of employment in the same classification of qualification. Our implementation of ANSI standard N45.2.6, paragraph N45.2.6,

paragraph 2.2.4(5), will be by recording in documents other than the certificates, the date of certification and the bi-yearly re-evaluation of paragraph 2.2.3.

Should the re-evaluation result in a reclassification, a new certificate will be issued.

8. Regulatory Guide 1.64, "Quality Assurance Requirements for the Design of Nuclear Power Plants," 10/73, (endorses N45.2.11).
9. Regulatory Guide 1.74, "Quality Assurance Terms and Definitions," 2/74, (endorses N45.2.10).
10. *1/29/79 See Report to the Board 8/79 (26 open items)*
Regulatory Guide 1.88, "Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records," 10/76, (endorses N45.2.9). The following is an exception to Regulatory Guide 1.88: "Engineering and Construction records are being duplicated via microfilm as an ongoing process. When this activity is completed, Salem records will comply with this Regulatory Guide.
11. Regulatory Guide 1.94, "Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants," 4/76 (endorses N45.2.5).

Major modifications made to the Salem units will comply with Regulatory Guide 1.94.

12. Branch Technical Position 9.5-1, Appendix A, "Guidelines for Fire Protection for Nuclear Plants Docketed Prior to July 1, 1976," 2/77.

The Corporate QA Program shall be applied to the Fire Protection Program to an extent consistent with the requirements of Section C of Appendix A to BTP 9.5-1.

The overall QA program is described in the PSE&G Quality Assurance Manual which is prepared and maintained by the Quality Assurance Department. Generally, the manual consists of:

1. Corporate policy statements made by responsible heads of various organizations in PSE&G involved with QA activities.
2. QA Procedures (QAP) which enlarge on the corporate policy statements and are structured according to the 18 Criteria of 10CFR50, Appendix B. These procedures are broad in scope and applicable to all PSE&G nuclear generating

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Consumers Power

QUALITY ASSURANCE PROGRAM POLICY

QUALITY ASSURANCE PROGRAM

PALISADES
CONSUMERS POWER
POLICY NO. 2
PAGE 1 OF 17
REVISION 3
DATE 12/1/75

1.0 GENERAL

The President of Consumers Power has issued a "Statement of Authority and Responsibility" which commits the Company to develop and implement a Quality Assurance Program for Nuclear Power Plants, in compliance with NRC Regulatory Requirements and applicable Industry Codes and Standards. The Quality Assurance Program is documented in the Consumers Power Company Quality Assurance Program Manual for Nuclear Power Plants (this document). The manual defines the Quality Assurance Program established by Consumers Power to assure that its nuclear power plants are designed, constructed and operated with the controls required to prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public. The scope of the Quality Assurance Program covers design, procurement, testing, operations, maintenance, repair, refueling and modification activities associated with safe operation of the plant. The Quality Assurance Program assures that activities affecting quality are accomplished by use of appropriate equipment and under suitable environmental conditions. The program establishes the requirements for special controls, processes, test equipment, tools and qualified personnel.

2.0 BASIS DOCUMENTS

- a. NRC 10CFR50, Appendix B, Criterion 2, Quality Assurance Program
- b. NRC Regulatory Guide No 1.8, Personnel Selection and Training (Endorses ANSI N18.1)
- c. NRC Regulatory Guide No 1.28, Quality Assurance Program Requirements - Design and Construction (Endorses ANSI N45.2)
- d. NRC Regulatory Guide No 1.33, Quality Assurance Program Requirements - Operation
- e. NRC Regulatory Guide No 1.58, Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel (Endorses ANSI N45.2.6)
- f. NRC Regulatory Guide No 1.74, Quality Assurance Terms and Definitions (Endorses ANSI N45.2.10)
- g. ANSI N18.7
- h. ANSI N45.2, Criterion 2, Quality Assurance Program
- i. WASH 1283, 5/24/74; WASH 1204, 10/26/73; and WASH 1309, 5/10/74



CONSUMERS POWER

QUALITY ASSURANCE PROGRAM POLICY

QUALITY ASSURANCE PROGRAM

POLICY NO. 2

PAGE 2 OF 17

REVISION 4

DATE 3/1/76

3.0 POLICY

3.1 QUALITY ASSURANCE PROGRAM COMPLIANCE WITH NRC REGULATORY GUIDANCE

The Consumers Power Company Quality Assurance Program for Nuclear Power Plants is committed to the guidance and requirements contained in NRC Quality Assurance Regulatory Guides, and the NRC Grey, Green and Orange Books, referred to as the Rainbow Books and/or WASH Documents (1283, 5/24/74; 1309, 5/10/74; and 1284, 10/26/73, respectively.) Exceptions and/or explanations follow:

- a. Subsection "a" of Section D-1 in the Grey Book requires that, "A schedule of all safety-related nuclear power plant activities to be performed by each organization along with the required procedures or instructions to implement the corresponding Quality Assurance Program for the activity should be prepared (and periodically updated to indicate status) to assure timely development, approval and implementation of these Quality Assurance Procedures or instructions prior to initiation of the activity." Consumers Power does not have a schedule relating to timely development, approval and implementation of procedures and instructions. In lieu of this schedule, Consumers Power does require that procedures or instructions be prepared prior to initiation of safety-related activities (and revised when necessary) and does verify, during audits, that the procedures have been prepared and are being implemented.
- b. Consumers Power uses the definitions of terms provided in ANSI N45.2.10-1973 for safety-related activities with the following exceptions:
 - Audit is defined as "A documented activity performed in accordance with written procedures or checklists to verify, by examination and evaluation of objective evidence, that applicable elements of a Quality Assurance Program have been developed, documented and effectively implemented in accordance with specified requirements. An audit does not include surveillance or inspection for the purpose of process control or product acceptance."
 - Construction Phase is defined as "Activities at the building site necessary to erect and verify proper installation and performance of nuclear power plant facilities prior to initial fuel loading."
 - Nonconformance is defined as "A deficiency in characteristic, documentation, or procedure which renders the quality of an item unacceptable or indeterminate and which is considered significant to quality or safety. Examples include:



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Physical defects, test failures, incorrect or inadequate documentation, deviation from prescribed processing, inspection, or test procedures."

Procurement Documentation is defined as "Purchase Requisitions (PRs), Purchase Orders (POs), Division Purchase Orders (DPOs), Returned Material Requests (RMRs), drawings, contracts, specifications, and instructions used to define requirements for the purchase of materials, equipment or services."

- c. Section 5.6 of ANSI N45.2.9 requires that the permanent record storage facility have "structure, doors, frames, and hardware should be Class A fire-rated with a recommended four-hour minimum rating." In lieu of this, the existing Consumers Power permanent record storage facility has a two-hour fire rating.
- d. The remaining guides and/or standards below are listed because the draft revision or released edition implemented by Consumers Power Company is later than that contained in the respective WASH Document in which they appear:

Regulatory Guide 1.64 - Revision 1 (February 1975)

Regulatory Guide 1.88 (August 1974)

ANSI N45.2.9 - 1974

Regulatory Guide 1.94 (April 1975)

ANSI N45.2.5 - 1974

ANSI N45.2.8 - 1975

ANSI N45.2.12 (Draft 4, Revision 1)

ANSI N45.2.13 (Draft 3, Revision 3)

Consumers Power Company requires its suppliers to respond to the Grey and Green Books (WASH Documents 1283 and 1309) and assigns responsibility for this action to the Supplier. Alternates or exceptions taken by the Supplier to comply with or implement the regulatory guidance contained in these documents will be described and delineated in the Preliminary Safety Analysis Report.



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3.2 CLASSIFICATION OF STRUCTURES, SYSTEMS, COMPONENTS AND OPERATIONAL SAFETY ACTIONS

The Quality Assurance Program assures that structures, systems and components important to the safety of the power plant; ie, "safety-related" items, have been designed, fabricated, erected, tested and are operated to standards commensurate with the safety function to be performed. Design documents, procurement documents and Quality Assurance Program documents reflect the importance to safety of the item or activity affected by the documents.

During the design and construction phase, the Palisades SGRP or major modifications, the Architect-Engineer, with input from the NSSS Supplier, develops the original list of safety-related structures, systems and components (Q-List). The list is reviewed and approved by the assigned Project Engineer (Palisades SGRP), Engineering Supervisor (Major Modifications) or Manager - Design Production (Midland Project) with assistance in reviews from Project Engineering Services (Palisades SGRP and major modifications) and Environmental Services, Quality Assurance and Testing or Midland Project Quality Assurance to assure that the listing properly identifies and classifies safety-related items. This list identifies and classifies these safety-related items according to the requirements of 10CFR50.55(a) and the guidance of NRC Regulatory Guides 1.26 and 1.29. The safety-related items are specified in the applicable design documents and a listing of the items and their classification level is prepared for each nuclear power plant. The classification listing is revised as design changes, modifications and regulatory requirements dictate. The assigned individual, however, is responsible for controlling the classification listing and its revisions.

During the operations phase, it is the responsibility of the Plant Manager/Superintendent, with the assistance of the Director, Nuclear Activities to update and maintain the classification listing of safety-related items and operational safety actions (Q-List). The Director, Quality Assurance - Nuclear Operations, conducts a review of these classification listings and their revisions during the operations phase, and he assures that the listings properly identify and classify safety-related items and activities. Additional reviews are conducted by the Plant Review Committee (PRC). Items or activities deleted or added to the lists during the operations phase are also reviewed by the PRC.

divided reservoir allows either redundant division of the system to use the entire body of water in the reservoir. The 30-day water supply requirement is thus met even after considering any single failure. In the event of a seismic disturbance and failure which causes the development of a crack, only water stored above grade elevation will be lost. The RHR complex of diesel generators, cooling towers, RHR service water system, and auxiliaries is redundant.

For details, refer to Subsection 9.2.5.2 of this FSAR.

REGULATORY GUIDE 1.28 ^{✓ D.V.} (3/1978, Rev. 1), QUALITY ASSURANCE PROGRAM REQUIREMENTS (DESIGN AND CONSTRUCTION)

The Fermi 2 Quality Assurance (QA) program complies with ANSI N45.2-1977.

For details on the QA Program refer to Chapter 17 of this FSAR.

REGULATORY GUIDE 1.29 (9/1978, Rev. 3), SEISMIC DESIGN CLASSIFICATION

The Fermi 2 design is in conformance with the requirements of Regulatory Guide 1.29. Refer to Subsection 3.2.1 of this FSAR for a listing of safety-related structures, systems, and components that are designed to withstand the effects of a safe shutdown earthquake (SSE).

REGULATORY GUIDE 1.30 ^{✓ D.V.} (8/1972), QUALITY ASSURANCE REQUIREMENTS FOR THE INSTALLATION, INSPECTION, AND TESTING OF INSTRUMENTATION AND ELECTRIC EQUIPMENT

The Fermi 2 QA Program is in conformance with this guide.

For details refer to Chapter 17 of this FSAR.

REGULATORY GUIDE 1.31 (4/1978 Rev. 3), CONTROL OF FERRITE CONTENT IN STAINLESS-STEEL WELD METAL

Stainless steel systems and components for Fermi 2 were fabricated by General Electric or Dravo and include the following:

- a. Reactor recirculation system
- b. Control rod drive hydraulic return
- c. Control rod drive housing to flange
- d. RCIC system (suction from condensate storage).

REGULATORY GUIDE 1.32 (2/1977, Rev. 2), CRITERIA FOR SAFETY
RELATED ELECTRIC POWER SYSTEMS FOR NUCLEAR POWER GENERATING
STATIONS

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The Fermi 2 design conforms to the requirements of Revision 1, this guide, with the exception of complete compliance to Regulatory Guides 1.75 and 1.93, to which exception is taken.

For details refer to Sections 8.2 and 8.3 of this FSAR.

REGULATORY GUIDE 1.33 (2/1978, Rev. 2), QUALITY ASSURANCE PROGRAM
REQUIREMENTS (OPERATION)

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Fermi 2 will be in conformance with the requirements of Regulatory Guide 1.33, with the exception of full compliance with some regulatory guides listed in Subsection C.2. The Project's position on regulatory guides in Subsection C.2 is stated elsewhere in this appendix.

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REGULATORY GUIDE 1.34 (12/1972), CONTROL OF ELECTROSLAG WELD
PROPERTIES

No electroslag welding for Fermi 2 has been done in the field. Although Edison specifications did not specifically prohibit it, no use of electroslag welding on core support structures or ASME Class 1 or 2 vessels or components can be identified. Most of those components which would be expected to have electroslag welding were completed and fabricated before this guide was issued.

REGULATORY GUIDE 1.35 (1/1976, Rev. 2), INSERVICE SURVEILLANCE OF
UNGROUTED TENDONS IN PRESTRESSED CONCRETE CONTAINMENT STRUCTURES

12

This guide does not apply to Fermi 2, which does not utilize concrete containment.

REGULATORY GUIDE 1.36 (2/1973), NONMETALLIC THERMAL INSULATION
FOR AUSTENITIC STAINLESS STEEL

The Fermi 2 design is in conformance with the requirements of this guide.

For further discussion refer to Subsection 5.2.3.3 of this FSAR.

REGULATORY GUIDE 1.37 (3/1973), QUALITY ASSURANCE REQUIREMENTS
FOR CLEANING OF FLUID SYSTEMS AND ASSOCIATED COMPONENTS OF WATER-
COOLED NUCLEAR POWER PLANTS

The Fermi 2 project is in conformance with the requirements of 10 CFR Part 50, Appendix B. The plant startup task force is responsible for activities to ensure system cleanliness and flushing with the objective of meeting the intent of ANSI N45.2.1.

For details refer to Subsection 17.1.9 and Chapters 13 and 14 of this FSAR.

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REGULATORY GUIDE 1.38 (5/1977, Rev. 2), QUALITY ASSURANCE REQUIREMENTS FOR PACKAGING, SHIPPING, RECEIVING, STORAGE, AND HANDLING OF ITEMS FOR WATER-COOLED NUCLEAR POWER PLANTS

During the initial design and construction phase, the Fermi 2 project conforms to 10 CFR Part 50, Appendix B, but not with the measures required to comply with this guide.

The Fermi 2 project procedure is to require each manufacturer to work by written packaging and handling procedures reviewed and approved by Edison and to supply storage instructions which are followed for onsite storage. These measures are similar to the requirements in ANSI N45.2.2-1972. This standard, however, contains some specific provisions which are not feasible to implement on Fermi 2 because of the date of issue:

- a. Each specific item covered by the standard (all QA level I items) is required to be classified into one of four levels (A through D). Classification of those items already on order or delivered to the job site is not feasible for the Fermi 2 project
- b. There are numerous minor requirements which would require significant investigation to ensure compliance, both at the job site and at the vendors' facilities. These include, but are not necessarily limited to, the requirement that all tarpaulin be fire-retardant, that non-metallic caps and plugs be brightly colored, and that all hoisting equipment meet the requirements of either ANSI B30.2.0, B30.5, B30.6, or A10.5, as appropriate
- c. Inspection, examination, and testing personnel are required to be qualified in accordance with ANSI 45.2.6. The Fermi 2 position on this is stated in the conformance review of Regulatory Guide 1.58.

During the operational phase the QA program will comply with the requirements of this regulatory guide.

12

REGULATORY GUIDE 1.39 (2/1977, Rev. 2), HOUSEKEEPING REQUIREMENTS FOR WATER-COOLED NUCLEAR POWER PLANTS

The Fermi 2 project is in conformance with the regulatory position of this guide. Procedures have been written for regulation of site area, site preparation, fire prevention and protection. Further procedures will be written as site activities progress as required by ANSI N45.2.3-1973.

REGULATORY GUIDE 1.38 (3/1973), QUALITY ASSURANCE REQUIREMENTS
FOR PACKAGING, SHIPPING, RECEIVING, STORAGE, AND HANDLING OF
ITEMS FOR WATER-COOLED NUCLEAR POWER PLANTS

During the initial design and construction phase, the Fermi 2 project conforms to 10 CFR Part 50, Appendix B, but not with the measures required to comply with this guide.

The Fermi 2 project procedure is to require each manufacturer to work by written packaging and handling procedures reviewed and approved by Edison and to supply storage instructions which are followed for onsite storage. These measures are similar to the requirements in ANSI N45.2.2-1972. This standard, however, contains some specific provisions which are not feasible to implement on Fermi 2 because of the date of issue:

- a. Each specific item covered by the standard (all QA level I items) is required to be classified into one of four levels (A through D). Classification of those items already on order or delivered to the job site is not feasible for the Fermi 2 project
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- c. Inspection, examination, and testing personnel are required to be qualified in accordance with ANSI 45.2.6. The Fermi 2 position on this is stated in the conformance review of Regulatory Guide 1.58.

During the operational phase the QA program will comply with the requirements of this regulatory guide.

REGULATORY GUIDE 1.39 (3/1973), HOUSEKEEPING REQUIREMENTS FOR
WATER-COOLED NUCLEAR POWER PLANTS

The Fermi 2 project is in conformance with the regulatory position of this guide. Procedures have been written for regulation of site area, site preparation, fire prevention and protection. Further procedures will be written as site activities progress as required by ANSI N45.2.3-1973.

REGULATORY GUIDE 1.57 (6/1973), DESIGN LIMITS AND LOADING COMBINATIONS FOR METAL PRIMARY REACTOR CONTAINMENT SYSTEM COMPONENTS

The Fermi 2 containment was purchased, designed, and constructed in accordance with ASME Code Section III, 1968, and is not in conformance with the requirements of this guide, which are based on ASME Code Section III, 1971. Physical changes cannot be made without major construction schedule impact.

For details refer to Section 3.8 of this FSAR.

REGULATORY GUIDE 1.58 (8/1973), QUALIFICATION OF NUCLEAR POWER PLANT INSPECTION, EXAMINATION, AND TESTING PERSONNEL

During the initial design and construction phase, the Fermi 2 project is in compliance with 10 CFR Part 50, Appendix B in that personnel performing inspection and testing activities are qualified to do so, but there is no commitment to comply with ANSI N45.2.6.

During the operational phase, the QA program will comply with requirements of this regulatory guide.

REGULATORY GUIDE 1.59 (Rev. 2, 8/1977), DESIGN BASIS FLOODS FOR NUCLEAR POWER PLANTS

The analytical methods for assessment of design basis floods at the Fermi 2 site differ in some areas from those presented in Regulatory Guide 1.59, Revision 2. The methods employed for Fermi 2 were reviewed by the NRC staff, and were determined to be acceptable. (Refer to NUREG-0314, Sections 2.4 and 3.4).

REGULATORY GUIDE 1.60 (Rev. 1, 12/1973), DESIGN RESPONSE SPECTRA FOR SEISMIC DESIGN OF NUCLEAR POWER PLANTS

The Fermi 2 design is not in conformance with the recommendations of this guide. The DBE (now called the SSE) for this plant was defined in 1971; it was reviewed by the AEC/DRL in May 1971, and judged to be reasonable and conservative by the staff and consultants. The seismic environment required in Revision 1 by the AEC sets criteria which in some cases are up to 50 percent more conservative than those used in Fermi 2 design. The following table shows the comparison of design response spectra. Although the Fermi 2 design is not in conformance with the specific numerical requirements of this guide, the discrepancy between recommended response spectra of Revision 1 and the design of Fermi 2 does not have any significant impact on reactor safety.

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The isolation system does not have a single manual pushbutton that actuates all valves closed. A manual switch is available to close each individual valve.

The ADS cannot be actuated manually at the system level. Manual actuation is available at the component level.

Manual initiation of the low pressure coolant injection (LPCI) system is not available at the system level. However, since a low reactor pressure interlock prevents the premature opening of the injection valves from either manual or automatic initiation, actuation at the component level is considered to be adequate.

The core spray system cannot be actuated by a single manual switch. Manual switches are available in the main control room to actuate the individual system components.

The high pressure coolant injection (HPCI) system cannot be actuated by a single manual switch. Manual switches are available in the main control room to actuate the individual components of the system.

REGULATORY GUIDE 1.63 (10/1977, Rev. 2), ELECTRIC PENETRATION ASSEMBLIES IN CONTAINMENT STRUCTURES FOR LIGHT-WATER-COOLED REACTORS

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The guidelines presented in Regulatory Guide 1.63, Revision 2, apply to nuclear power plants for which construction permit applications were docketed after December 30, 1977. The application for Fermi 2 was docketed in 1969 and, as such, is exempt from the guidelines of Regulatory Guide 1.63. However, the Fermi 2 design complies with the intent of Regulatory Guide 1.63 (10/73, Rev. 0). For details refer to Subsections 6.2.1.2.1.5, 6.2.1.4.1.1, and 8.3.1.3 of this FSAR.

REGULATORY GUIDE 1.64 (6/1976, Rev. 2) QUALITY ASSURANCE REQUIREMENTS OF THE DESIGN OF NUCLEAR POWER PLANTS

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The NRC regulatory staff has accepted ANSI Standard N45.2.11-1974, "Quality Assurance Requirements for the Design of Nuclear Power Plants," as an acceptable method of complying with the Commission's regulations in regard to Design Control. The initial issue of Regulatory Guide (RG) 1.64, which endorsed a draft version of ANSI N45.2.11, was published in October, 1973, approximately a year after the issuance of the QA Manual. Later revisions of RG 1.64 were published in February, 1975, and June, 1976. Regulatory Guide 1.64, Revision 1, endorsed the approved ANSI Standard N45.2.11-1974, and was applicable to submittals docketed after April 1, 1975. Regulatory Guide 1.64, Revision 2, clarified the limitations on performance of "independent design verification" by supervisors, and was applicable to submittals docketed after July 15, 1976.

Review of Fermi 2 electric valve operators considering the criteria of IEEE 382-1972 shows that the valve operators are in compliance with the requirements stated in Position 1 of the guide. Valve operators within containment are provided with NEMA Class H insulation. Such insulation ensures that all primary and auxiliary electrical equipment, conduits, connections and penetrations associated with each valve operator are of watertight construction which will maintain electrical source availability. In addition, the insulation as well as the operators are seismic, radiation and temperature qualified to withstand containment normal operating conditions and the design basis accident conditions. The test sequence given in IEEE 382-1972 is more conservative than actual operating conditions. Therefore, in compliance with Position 2, Section 4.5.2 of the standard was applied in the test-analysis of the operators. These tests included periodic actuating conditions at 340°F steam atmosphere, chemical exposure to chlorinated water, and radiation testing to 2.0×10^8 rads. These conditions simulate the most severe DBA and are thus as conservative as Position 3 of this guide.

REGULATORY GUIDE 1.74 (2/1974), QUALITY ASSURANCE TERMS AND DEFINITIONS

In order to ensure that Fermi 2 has been designed and built in accordance with the commitments made in (1) the Final Safety Analysis Report, (2) a planned and systematic program of Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants, and (3) 10 CFR Part 50, a documented lexicon of terms and definitions which describes and characterizes the operating functions of plant structures, systems and components which is universal and conforming to common industrial usage must be devised. In order to comply with the intent of the recommendations of Regulatory Guide 1.74 and 10 CFR Part 50, ANSI N45.2.10 was adopted by the Fermi 2 project. This standard of word usage was applied to project contracts, letters of intent, work orders, purchase orders or proposals and legal authorizations. The recently updated document ANSI N45.2.10-1973 recommended by this guide and the Fermi 2 adopted ANSI N45.2.10 differ insignificantly. Fermi 2 word usage thus conforms generally with QA definitions contained in ANSI N45.2.10. Any changes in usage at this late date within the on-going project would be detrimental to the continuity of project documentation and personnel communication. Therefore, the changes in the updated revision of ANSI N45.2.10 have not been incorporated into Fermi 2 project documents.

REGULATORY GUIDE 1.75 (1/1975, Rev. 1), PHYSICAL INDEPENDENCE OF ELECTRICAL SYSTEMS

The Fermi 2 plant is not in full compliance with Regulatory Guide 1.75. This guide was issued after the design criteria of Fermi 2 were formulated. Revision 1 of this guide requires application of IEEE Standard 384-1974, "IEEE Trial Use Standard Criteria for Separation of Class IE Equipment and Circuits." This standard classifies associated circuits as non-Class IE circuits which

REGULATORY GUIDE 1.86 (6/1974), TERMINATION OF OPERATING LICENSES FOR NUCLEAR REACTORS

This guide is not presently applicable to the Fermi 2 project. At the time of decommissioning and dismantlement of the Fermi 2 plant, Edison intends to follow procedures in compliance with this guide.

REGULATORY GUIDE 1.87 (6/1974), CONSTRUCTION CRITERIA FOR CLASS 1 COMPONENTS IN ELEVATED TEMPERATURE REACTORS (SUPPLEMENT TO ASME SECTION III CODE CASES 1592, 1593, 1594, 1595 and 1596)

This guide is not applicable to the Fermi 2 BWR.

REGULATORY GUIDE 1.88 (8/1974), COLLECTION, STORAGE, AND MAINTENANCE OF NUCLEAR POWER PLANT QUALITY ASSURANCE RECORDS

Appendix B, "Quality Assurance Records," Criterion 17 of 10 CFR Part 50, Licensing of Production and Utilization Facilities, requires nuclear power plants to define record retention standards and responsibilities. This criterion, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," requires sufficient records consisting of operating logs, review, audits, test and inspection results along with material analyses and work performance data. As a guide for licensees, the NRC regulatory staff has accepted ANSI N45.2.9-1974, "Requirement for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants," as the standard and format to be used in compliance. With the exception of subdivision 1.5, this standard applies to all construction permit applicants for whom a Safety Evaluation Report (SER) has been issued after September 1, 1974. Fermi 2 SER was issued prior to this date (9/72). For this reason, the Fermi 2 Quality Assurance record system during initial design and construction does not comply with Regulatory Guide 1.88. Reformation of current records at this date in project schedule would be disruptive to the project record system.

During the operational phase, the records management operation will be conducted in compliance with the requirements of ANSI N45.2.9.

REGULATORY GUIDE 1.89 (11/1974), QUALIFICATION OF CLASS IE EQUIPMENT FOR NUCLEAR POWER PLANTS

Regulatory Guide 1.89 requires the use of IEEE Standard 323-1974, "IEEE Standard for Qualifying Class IE Equipment for Nuclear Power Generating Stations," procedures for the qualifying of Class IE equipment and interfaces in light-water-cooled nuclear plants.

Position 1 of Regulatory Guide 1.89 cites Sections 2.6.3.2.(5) of IEEE Standard 323-1974 and 6.3.5 of IEEE Standard 344-1971, "Guide for Seismic Qualification of Class I Electric Equipment for Nuclear Power Generating Stations," for specific application. Position 2 defines the radiological source term for BWR's and PWR's stated in Regulatory Guide 1.7 for use in radiation testing under IEEE Standard 344-1974.

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<u>Level of Degradation</u>	<u>Regulatory Guide 1.93 Position</u>	<u>Fermi 2 Project Position</u>
4. The available onsite ac power sources are two less than the LCO.	Power operation should not exceed 2 hours. If one source is restored within 2 hours, operation may continue for 72 hours.	If both onsite sources are lost, Fermi 2 would be shut down. However, if one source were returned, Fermi 2 would continue to operate, as long as that source was verified regularly.
5. The available onsite dc supplies are one less than LCO	Power operation may continue for a period not to exceed 2 hours. If dc power is restored unrestricted, operation may be resumed.	Fermi 2 would comply with this position. The possibility of this occurring considering the Fermi 2 dc system design is extremely remote.

REGULATORY GUIDE 1.94 (4/1976, Rev. 1), QUALITY ASSURANCE REQUIREMENTS FOR INSTALLATION, INSPECTION, AND TESTING OF STRUCTURAL CONCRETE AND STRUCTURAL STEEL DURING THE CONSTRUCTION PHASE OF NUCLEAR POWER PLANTS

The implementation of Regulatory Guide 1.94 applies to nuclear power plants submitting applications for construction permits on or after October 15, 1976. The application for Fermi 2 was docketed in 1969. The necessary tests, inspections, records, and data for compliance have not been a strict part of Fermi 2 construction procedures. For this reason, records are not in strict compliance with ANSI N45.2.5-1974. Various methods of instruction, testing, recording, and material testing have been used during the fabrication of plant structures. As a result, documentation that assures high quality in materials and workmanship has been retained by the Project's Quality Assurance group. An outline of these activities as pursued by the Fermi 2 Project is presented in Section A17.1 of this FSAR.

REGULATORY GUIDE 1.95 (1/1977, Rev. 1), PROTECTION OF NUCLEAR POWER PLANT CONTROL ROOM OPERATORS AGAINST AN ACCIDENTAL CHLORINE RELEASE

Under General Design Criterion 4, "Environmental and Missile Design Bases," of Appendix A to 10 CFR Part 50, safety-related structures, systems, and components are to be designed to accommodate the effects of, and to be compatible with, environmental conditions of normal operation, maintenance, testing, and accidents. General Design Criterion 19 further requires that the control room be capable of control of the plant during normal and abnormal conditions. Regulatory Guide 1.95 specifies requirements for protection against chlorine releases which could possibly contaminate the plant control room.

protection. The Fermi 2 FSAR, Appendix 9B, details the positions of compliance to the BTP.

ACU REGULATORY GUIDE 1.121 (8/1976), METHODS FOR PLUGGING DEGRADED PWR STEAM GENERATOR TUBES

Regulatory Guide 1.121 is not applicable to Fermi 2.

REGULATORY GUIDE 1.122 (2/1978, Rev. 1), DEVELOPMENT OF FLOOR DESIGN RESPONSE SPECTRA FOR SEISMIC DESIGN OF FLOOR-SUPPORTED EQUIPMENT OR COMPONENTS

Regulatory Guide 1.122 is required only for construction permit applicants under review. Thus, the Fermi 2 plant is not required to comply.

REGULATORY GUIDE 1.123 (7/1977, Rev. 1), QUALITY ASSURANCE REQUIREMENTS FOR CONTROL OF PROCUREMENT OF ITEMS AND SERVICES FOR NUCLEAR POWER PLANTS

The NRC regulatory staff has accepted ANSI Standard N45.2.13-1976, "Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants," as an acceptable method of complying with the Commission's regulations in regard to control of procurement. The initial issue of Regulatory Guide 1.123 applied to construction permit and operating license applications docketed after June 15, 1977, and the current revision is applicable to those docketed after August 1, 1977. The Fermi 2 QA Program for the design and construction phase was established several years before the issuance of either ANSI N45.2.13 or RG 1.123, and is based on the requirements of Appendix B to 10 CFR Part 50. At this stage of the procurement effort, it would not be feasible to make any retroactive changes in the system of Procurement Control. The Fermi 2 QA Program already includes the basic elements set forth in ANSI Standard N45.2.13. Consequently, a change to the system for control of procurement which could affect only the small fraction of the procurement effort still to be done is impractical as any possible benefits would be far out-weighed by the cost and schedule impact.

During the operational phase of Fermi 2, the procurement control program will be conducted in compliance with Regulatory Guide 1.123.

REGULATORY GUIDE 1.124 (1/1978, Rev. 1), SERVICE LIMITS AND LOADING COMBINATIONS FOR CLASS 1 LINEAR-TYPE COMPONENT SUPPORTS

The Fermi 2 construction permit was issued prior to January 10, 1978. Therefore, Regulatory Guide 1.124 does not apply.

ACU REGULATORY GUIDE 1.125 (3/1977), PHYSICAL MODELS FOR DESIGN AND OPERATION OF HYDRAULIC STRUCTURES AND SYSTEMS FOR NUCLEAR POWER PLANTS

Regulatory Guide 1.125 does not apply to Fermi 2 as the construction permit was docketed prior to November 1977.

For Reg Guide Data, see 8.0

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8.0 Implementation, WASH-1283, -1284 and -1309

The CNS QA Program for Plant Operations will utilize the guidance provided by NRC publications WASH-1283 (5-24-74), WASH-1284 (10-26-73) and WASH-1309 (5-10-74) ("rainbow" series) except as noted in the "Specific Exceptions" of this section.

The existing operational QA Program does not address all of the detailed requirements set forth in the "rainbow books". A detailed review has been made to determine where the CNS QA Program differs from the ANSI Standards cited in the "rainbow books".

With respect to the applicability of the "rainbow books" and the associated standards, it is impracticable to apply all of the requirements set forth by these documents to a plant for which important, and (in some respects) irreversible commitments were made 8 to 10 years ago. It is also impracticable to apply requirements to an operating plant which were intended solely for the design and construction phase. NPPD does not now envision any major modifications or additions to Cooper Nuclear Station. In the event that any such construction were undertaken, the District would commit to compliance with the applicable portions of the WASH Series ANSI Standards. It is NPPD's intent to apply quality standards to maintenance, repair, and modification activities which will provide results which are equal to or better than the original construction.

The following sections summarize the scope and applicability of ANSI Standards and describe specific exceptions that will be taken in applying the guidance of these documents to the CNS QA Program.

8.1 ANSI N45.2 Quality Assurance Program Requirements for Nuclear Power Plants

(a) Scope and Applicability

The guidance provided by this standard and the associated Regulatory Guides 1.28 and 1.33 shall be applied to the Operational QA Program to those activities affecting the safety-related aspects of the operational phase of CNS.

Where codes or standards are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments as set forth in the SAR, the SAR commitments shall govern. Later revisions of applicable codes and standards may be specifically invoked by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

(b) Specific Exceptions

Quality Assurance Program (Section 2)

The QA Program describes the measures utilized to comply with the requirements of 10CFR50 Appendix B. The CNS QA Program conforms to this ANSI Standard also, except as noted below.

Inspection (Section 11)

First Level inspection has been assigned to plant personnel. Contrary to the requirement of this standard that such persons shall not report directly to the same immediate supervisor, our program requires only that inspection activities to verify quality of work shall be performed by appropriately qualified persons other than those who performed the activity being inspected. To be considered qualified, persons performing inspection or verification activities shall meet the following requirements:

- 1) The inspector or verifier did not perform or directly supervise the work.
- 2) The quality of work will be demonstrated by a functional test if a pressure boundary has been breached.
- 3) The verifier's qualifications are reviewed and found acceptable by the QA organization prior to initiating the verification.
- 4) Individuals performing verification functions associated with normal operations of the plant will be qualified to ANSI N18.1-1971.
- 5) Individuals whose qualifications are not required to meet those in ANSI N18.1-1971 and who performs verification activities shall be qualified to ANSI N45.2.6-1973 except that the QA experience cited for Levels I, II and III shall be interpreted to mean actual experience in carrying out the types of inspection, examination and testing activity being performed.
- 6) All non-destructive examinations (radiography, dye penetrant, magnetic particle, and the like) will be performed by personnel qualified and certified in accordance with SNT-TC-1A.

8.2 ANSI N45.2.1 Cleaning of Fluid Systems and Associated Components During the Construction Phase of Nuclear Power Plants

(a) Scope and General Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.37 will be applied to safety-related maintenance, repair, and modification activities occurring during the operational phase of Cooper Nuclear Station except as noted below.

(b) Specific Exceptions

General Requirements (Section 2)

Cleaning requirements for almost all maintenance, repair and modification work will be considered as a part of the overall job requirements. In this respect, detailed cleaning procedures will not generally be prepared as separate documents. Necessary requirements, consistent with the scope of the work, will be included as a part

of the overall work instructions. System cleanness is controlled at CNS by the following methods:

- 1) Parts and components are checked for cleanness during receipt inspection and stored in a manner that will ensure adequate levels of cleanness are being maintained.
- 2) Work instruction will be reviewed by Quality Control to assure that adequate cleaning and access controls are incorporated into work instruction and associated safety-related activities.
- 3) Parts and components are inspected for cleanness prior to installation in accordance with CNS maintenance procedures.
- 4) The work area is maintained at a cleanliness level appropriate to the maintenance or modification activity being performed.
- 5) Quality Control inspections before, during and after safety-related maintenance or modification activities address system cleanness.
- 6) Random QA audit and surveillance of safety-related maintenance or modification activities requires verification of part, component and system cleanness.

Criteria for Cleaning (Section 3)

For cleanness classifications where the scope of plant modification work is such as to make application of the guidance provided by this standard practicable, the cleanness classifications and requirements thereof shall be evaluated and applied, as appropriate, as a part of the overall work requirements.

For most modification or maintenance work, however, involving only small portions or individual components of larger systems, it is not considered practicable to conduct cleanness tests with ASTM E11-70 Series. Appropriate cleanness will be maintained during the work and preoperational flushing will be conducted, consistent with the scope of the work performed and the original design requirements. Flushing is an additional precaution to insure system cleanness. Controlling the parts and components and the work area has provided CNS with reasonable levels of assurance that system cleanness will be maintained. In addition to the above, the Water Chemistry Department routinely samples and tests for system cleanliness, corrosion, crud build-up etc.

8.3 ANSI N45.2.2 Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants (During the Construction Phase)

(a) Scope and Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.38 shall be applied to packaging, shipping, receiving, storage and handling activities associated with safety-related items except as noted below.

(b) Specific Exception

Our program is structured to identify safety-related equipment and provide for designation of packaging, shipping, receiving, storage and handling requirements for purchased parts and materials. The classifications of this standard cannot be applied directly to individual spare parts or subassemblies of the parent equipment. Due to difference in volume, complexity, inspectability, etc., the packaging, shipping, handling and storage requirements of spare parts and subassemblies will necessarily be different from the requirements which may be imposed on the entire component or piece of parent equipment.

The majority of items purchased for an operating plant consist of components, subassemblies and individual spare parts which could be used in a multitude of different applications. Such items are purchased to the highest requirement of intended use. The volume and characteristics of purchases during the operational phase differ significantly from those purchases made during the design and construction phase, and storage facilities are considerably different. Items that require special measures of storage protection will be identified as a part of the purchasing documents. Items that must be stored outdoors (equivalent of Level D) or items that must be stored in covered but unheated conditions (equivalent of Level C) will be evaluated on an individual case basis. However, it is not considered practicable to preclassify individual parts by levels as required by Section 2.7 of this standard. Shipping and packaging requirements for such items will likewise be handled in the purchase order documents, as appropriate.

(c) Implementation

The NPPD procurement procedures for safety-related items includes a checklist to verify that the ANSI N45.2.2 requirements for packing, shipping, receiving, storage and handling are included in the procurement document. QA audits and surveillance are performed to verify that the requirements of N45.2.2 are met except as noted in (b) above.

8.4 ANSI N45.2.3 Housekeeping During the Construction Phase of Nuclear Power Plants

(a) Scope and General Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.39 for control of housekeeping requirements shall be applied to work conditions and other applicable activities which could affect quality of important operational aspects of CNS except as noted below.

(b) Specific Exceptions

General Requirements (Section 2)

The plant has been divided in zones for fire protection and security purposes. The zone designated for cleanness in the ANSI Standard

are primarily intended for control or work during construction of the plant. Therefore, the CNS facilities will not be classified by the zones designated in the Standard general housekeeping rules. Limitations on eating, drinking, and smoking are already provided in existing CNS procedures. Where special cleanness controls, tool and material accountability are required for particular types of work, temporary clean areas will be designated and defined in the procedures for accomplishing the work.

Requirements (Section 3)

Fire protection and prevention equipment will be provided as set forth in accordance with NPPD evaluation of the CNS fire protection system as submitted to the NRC on 10/17/76 and 4/6/77.

(c) Implementation

Existing maintenance procedures will be reviewed to determine the need for particular cleanness, housekeeping and control provisions. Where indicated, procedures will be revised to incorporate such provisions, using the guidance of ANSI N45.2.3. Appropriate maintenance procedures will be updated using these guidelines by July 1979.

8.5 ANSI N45.2.4 Installation, Inspection and Testing Requirements for Instrumentation and Electric Equipment During the Construction Phase of Nuclear Power Generating Stations

(a) Scope and Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.30 shall be applied to installation, inspection and testing of electrical equipment and systems associated with on-site safety-related modification work occurring during the operational phase of CNS except as noted below.

Where specific design requirements included in this standard or referenced codes and standards are in conflict with original design requirements set forth in the SAR and other appropriate design documents, the original design requirements shall govern.

(b) Specific Exceptions

Definitions (Section 1.4)

The definition of Class I and Class IE electrical equipment set forth by this standard does not conform to the equipment categories of CNS. Essential electrical items upon which the Operational QA Program is based are included in the SAR Amendment 39. The scope and applicability of this standard shall necessarily be limited to these defined areas.

Procedures and Instructions (Section 2.3)

Appropriate requirements for installation, inspection and tests will be set forth by job specifications and work instructions developed as a part of the modification work package. It is not intended that separate procedures be established which specifically address the various areas of this standard. However, in the development of the work package, consideration will be given to the areas outlined in Section 2.3, as appropriate.

Installation, Verification and Test (Section 4.0, 5.0 and 6.0)

The requirements of the installation and the associated inspections, verifications and tests are included in the work instructions as appropriate, consistent with the scope of the work and the importance of quality. In the development of the work instructions, consideration will be given to the guidance provided by Sections 4.0, 5.0 and 6.0 of this standard, and appropriate requirements will be incorporated into the instructions. It is not intended that separate procedures be established which specifically address all of the areas referenced.

Applicable Codes, Standards and Guides (Section 9.0 and Appendix B)

Application of the guidance provided by the additional codes and standards listed in Appendix B will be considered to the extent that such codes and standards provide useful and practical guidance for the work being performed. Commitment to the guidance of N45.2.4 shall not include commitment to the guidance of referenced standards. (See Regulatory Guide 1.30, Safety Guide 30.)

8.6 ANSI N45.2.5 Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants

(a) Scope and Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.94 shall be applied to activities involving safety-related concrete and structural steel work occurring during the operational phase of Cooper Nuclear Station except as noted below.

(b) Specific Exceptions

Procedures and Instructions (Section 2.2)

Appropriate requirements for installation, inspection and tests will be set forth by job specifications and work instructions developed as a part of the modification work package. It is not intended that separate procedures be established which specifically address the various areas of this standard. However, in the development of the work package, consideration will be given to the areas outlined in Section 2.2, as appropriate.

Personnel Qualifications (Section 2.4)

The Operational QA Program includes provisions for ensuring that qualified personnel are assigned to monitor work activities. (Please refer to Section 8.7 of this document.)

Calibration and Control (Section 2.5.2)

The requirements of control and calibration of measuring and test equipment set forth by this standard shall be applied to all measuring and test equipment used by NPPD or their agents, test laboratories and contractors. Such requirements, however, will not be imposed on commercial batch plant facilities. Instrumentation at commercial batch plant facilities will be evaluated by CNS plant management to determine that sufficient accuracy can be obtained and will be verified by an independent QA audit.

Qualification Tests (Section 3.2.1)

For small quantities of concrete involved in modification work, all concrete must be purchased from commercial concrete batch plants. For small quantities of concrete, it is unreasonable to expect commercial facilities to shut down normal operations to provide certified aggregate, cement, admixtures, fly ash, water, etc. In this respect, the qualification tests required by Table A for aggregate; cement; admixtures; fly ash and pozzolans; water and ice will not be required. Appropriate evaluations will be made to determine that good quality and generally acceptable materials are used. CNS plant management evaluation, coupled with slump tests, air entrainment tests and concrete cylinder strengths, will provide adequate control and qualification of the concrete. The results of evaluation will be verified by an independent QA audit.

Design mixes consistent with, or equivalent to, original requirements will be specified and the results of the cylinder tests will be evaluated by CNS plant management based on the acceptance criteria associated with the original design mix requirements and will be verified by an independent QA audit.

Protection of Materials (Section 4.2)

The inspection requirements of Section 4.2 will not generally be performed, as the small quantities of concrete involved in modification work will no doubt be mixed using materials already in the batch plant bins. Control of storage of materials would not be practicable.

Measuring, Mixing and Transporting (Section 4.3)

If available, appropriate certifications shall be obtained from the concrete supplier which verify the adequacy of truck mixers per the requirements of ACI-304, ASTM C-94. Where certifications are not available, two concrete test cylinders representing the first and last one-third of truck mixer contents shall be taken for evaluation of the mixer truck, over and above the normal concrete cylinders taken to evaluate the in-place concrete. The concrete batch plant facility shall be inspected by CNS plant management and the CNS QA staff to assure that reasonable controls are being exercised with reference to the inspection guidelines set forth by Section 4.3(1) and (2).

Preplacement Preparation (Section 4.4)

Inspection of sils and earthwork will meet the general requirements set forth. The extent to which individual inspection requirements are met will depend upon the nature and scope of the work to be performed.

In-Process Tests on Concrete and Reinforcing Steel (Section 4.8)

Except for normal batch qualification tests (slump, air content, temperature and compressive strength) and initial reinforcing steel certifications, the in-process tests required by Table B are generally applicable to the periodic control which must be exercised with reference to long-term construction type programs. The in-process test requirements of Table B are not considered applicable to short-term modification work as would be required by QA at CNS.

(c) Implementation

Where the need arises, measures will be implemented to meet this standard with the exceptions noted above.

8.7 ANSI N45.2.6 Qualification of Inspection, Examination and Testing Personnel for the Construction Phase of Nuclear Power Plants

(a) Scope and Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.58 shall be applied to inspection, examination and testing activities associated with safety-related operations, including maintenance, repair and modification except as noted below.

(b) Specific Exceptions

It has always been the belief of CNS and NPPD that, in order to be effective, quality control must be built into the operation of the plant. With this in mind, CNS incorporated quality control inspection and test functions directly into the station operating procedures. Inspection points are then witnessed and signed-off by members of the operating staff not directly involved in the activity being inspected. Assignment of QC inspectors is a function of station management. The majority of the QC inspections are assigned to engineers, licensed reactor operators or lead technicians. This method for selecting and assigning inspectors has assured station management that the best qualified individual (either through education or years of experience) is assigned to monitor "essential" or safety-related activities. Inspectors will meet the requirements listed in paragraph 8.1 (of this amendment) under the part titled "Inspection".

The method endorsed by ANSI N45.2.6 places emphasis on certifying individuals and establishing levels of qualification. It is our contention that even though an individual is certified and qualified to the appropriate level, he may not be the best inspector in all situations.

The current method of selecting and assigning QC inspectors at CNS has proven to be very effective. We therefore take exception to Sections 2.0 and 3.0 of ANSI N45.2.6. If future operation indicates that our present system is inadequate, the Station Operating Review Committee will reevaluate the QC system and commit to ANSI N45.2.6 or provide an acceptable alternate.

CNS does not have the in-house capability to perform nondestructive examinations in accordance with SNT-TC-1A. These services are currently contracted to an approved vendor. Any required nondestructive examinations will be performed by personnel who are qualified and certified per SNT-TC-1A.

8.8 ANSI N45.2.8 Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants

(a) Scope and Applicability

The guidance provided by this standard shall be applied to installation, inspection and testing of mechanical equipment and systems associated with on-site safety-related modification work occurring during the operational phase of CNS.

Where specific design requirements included in this standard or referenced codes and standards are in conflict with original design requirements set forth in the SAR and other appropriate design documents, the original design requirements shall govern.

8.9 ANSI N45.2.9 Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants

(a) Scope and Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.88 shall be applied to quality assurance records associated with the operational phase of CNS.

For those design, manufacturing, construction and operating records generated prior to implementation of this standard, it is not our intent to backfit the detailed requirements of this standard to those records. All such records, however, have been initially designated for lifetime storage, until specific review dictates otherwise, and will be stored in the permanent record storage facility. Appropriate record indexes and filing system shall be established to permit reasonable identification and retrieval. The records will be stored and preserved per the requirements of Section 5.0 of this standard.

8.10 ANSI N45.2.10 Quality Assurance Terms and Definitions

(a) Scope and Applicability

The quality assurance terms and definitions contained in this standard shall be used as guidance and applied as appropriate to the Operational QA Program for CNS.

The use of this standard and the associated Regulatory Guide 1.74 shall be effective immediately. There may be instances where existing procedures contain definitions that may not be in strict accordance with those provided by this standard. As existing procedures are revised, however, such definitions shall be evaluated to determine if all definitions meet those provided by this standard.

8.11 ANSI N45.2.11 Quality Assurance Requirements for Design of Nuclear Power Plants

(a) Scope and Applicability

The guidance provided by this standard and the associated Regulatory Guide 1.64 shall be applied to design activities involving safety-related modification work and the revision or development of plant design documents occurring during the operational phase of CNS.

Where codes, standards or design requirements are referenced, or are incorporated into the standard by reference, which are in conflict with original design commitments as set forth in the SAR, the SAR commitments shall govern. Later revisions of applicable codes and standards may be specifically invoked by the design requirements where deemed appropriate, consistent with the overall commitment to maintain the plant in an "equal to or better than" original condition.

8.12 ANSI N45.2.12 - 1974 Requirements for Auditing of Quality Assurance Programs for Nuclear Plants

(a) Scope and Applicability

Except as expressly modified below, the guidance provided by this standard shall be applied to the audit program identified by the Operational QA Program for CNS.

Program to be audited at least once every year and complies with the guidance provided in Regulator Guide 1.33.

(b) Specific Exceptions

Follow-up (4.5.1)

The audited organization is required by existing procedures to respond in writing to deficiencies noted in the audit report. A minimum response-time is not specified because corrective action varies depend-

ing on the nature and extent of the deficiency. However, corrective action is subject to follow-up audits and reports to higher management within eight (8) weeks of issuance of the original audit report.

8.13 ANSI N45.2.13 - Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants

(a) Scope and Applicability

The guidance provided by this standard shall be applied to the procurement of safety-related parts, components, materials and services during the operational phase of CNS.

(b) Specific Exceptions

It must be recognized, however, that equipment and components purchased during the design and construction phase were not purchased on the basis of present-day standards, especially with reference to vendor qualification and vendor quality assurance programs. In this respect, replacement parts and spare parts for existing equipment are often limited to sole-source suppliers. Such replacement parts or spare parts are purchased to appropriate quality standards to maintain an "equal to or better than" condition but it is not considered practicable to backfit the requirements of the standards to all such vendors.

8.14 ANSI N18.1 - 1971 Selection and Training of Nuclear Power Plant Personnel

(a) Scope and Applicability

The guidance provided by this standard shall be applied to the selection and training of personnel at CNS.

8.15 ANSI N18.7 - 1972 Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

(a) Scope and Applicability

The operational QA Program for CNS conforms to the guidance provided by this standard and the associated Regulatory Guide 1.33 excepted as noted below.

(b) Specific Exceptions

Where ANSI N18.7 - 1972 parallels the requirements of ANSI N45.2 through ANSI N45.2.13, exceptions taken shall be applicable to this standard as well.

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1.0 Policy Statement

Northern States Power Company (NSP) has established and is implementing an Operational Quality Assurance Program. This quality assurance program is applicable to NSP nuclear plants that are regulated under provisions of an NRC Operating License.

The quality assurance program, as applied to activities affecting safety related functions, shall comply with and be responsive to applicable regulatory requirements and applicable industry codes and standards including:

1. 10CFR50, Appendix B "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants".
2. NRC Operating Licenses.
3. The ASME Boiler and Pressure Vessel Code, Section XI, "Inservice Inspection".

The Operational Quality Assurance Program shall incorporate: (1) the requirements of ANSI N18.7-1976 as modified by Table 1-1 and (2) the requirements of the following standards: to the extent specified by ANSI N18.7-1976, as modified by the Regulatory Position of the Regulatory or Safety Guides referenced below.

1. ANSI N18.1-1971
(Regulatory Guide 1.8 Rev: 1). 9/15 ✓
2. ANSI N45.2-1971
3. ANSI N45.2.1-1973
(Regulatory Guide 1.37, 3-16-73). ✓
4. ANSI N45.2.2-1972
(Regulatory Guide 1.38, Rev: 2). 5/17 ✓
5. ANSI N45.2.3-1973
(Regulatory Guide 1.39, Rev: 1). 4/17 ✓
6. ANSI N45.2.4-1972
(Safety Guide 30 August 11, 1972). 4/17 ✓
7. ANSI N45.2.5-1974
(Regulatory Guide 1.94, Rev:1). 4/76 ✓
8. ANSI N45.2.6-1973
(Regulatory Guide 1.58, August, 1973). ✓
9. ANSI N45.2.8-1975 ✓

Table 1-1

Exception to ANSI N 18.7 - 1976

1. Section 5.2.13.2 last paragraph; change "quality" to "quantity." This change corrects an error in the standard. ✓
2. Section 6; delete this section. The referenced documents are explicitly referenced in the Operational Quality Assurance Plan. ✓
3. Documentation required by ANSI 18.7-1976 may be deferred for emergency work. Emergency work is defined as that work that must be completed immediately and which, if delayed, may result in an unsafe condition or significantly interfere with reliable plant operation. ✓
4. Section 5.2.2; replace the 3rd sentence with the following - "Procedure changes shall be reviewed and approved as required by the Technical Specification." Delete the 4th sentence. ✓
5. Section 5.2.5; replace the 2nd and 3rd sentences with "Temporary procedures shall be reviewed and approved as required by the Technical Specifications." ✓
6. Section 5.2.9; delete this section. The Plant Security Plans contain appropriate security provisions. ✓
7. Section 5.2.11, 1st sentence; change "abnormal occurrences" to "reportable occurrences." ✓
8. Section 5.2.13.2, 4th paragraph; change the 1st sentence to read "..... installation or use of such items that serve a safety function." ✓
9. The provisions of Section 5.2.15 of ANSI N18.7-1976 shall govern review, approval, and control of required procedures except that for procedures required by the Plant Technical Specifications, the review and approval requirements stipulated in such Technical Specifications shall be utilized rather than those contained in Section 5.2.15. ✓
10. Section 5.3; change the last sentence to read "Procedures shall be prepared and approved prior to implementation as required by 5.2.15." ✓
11. Exceptions to Regulatory Guides and ANSI Standards for those principal contractors, retained by NSP, such as NSSS contractors and A/E Firms, which exceptions have been approved by the NRC. ✓

retained +

10. ANSI N45.2.9-1974 ✓
(Regulatory Guide 1.88, Rev: 2) except that radiographs shall not be retained due to their non-permanent nature; records which document the acceptability (Radiographic Review Forms) shall be retained as stipulated in the Standard. ✓
1976
11. ANSI N45.2.10-1973 ✓
(Regulatory Guide 1.74, February, 1974). ✓
Lifetime Sensitive type retained till the life of the item
12. ANSI N45.2.11-1974 ✓
(Regulatory Guide 1.64 Rev: 2). ✓
4/76
13. ANSI N45.2.12 (Draft 4, Revision 2, Jan 1, 1976) as modified by ✓
ANSI N18.7-1976.
14. ANSI N45.2.13-1976 ✓
15. ANSI N101.4-1972 ✓
(Regulatory Guide 1.54, June, 1973). ✓

Management directives and departmental instructions and procedures shall provide for compliance with appropriate regulatory, statutory, license and industry requirements. Specific quality assurance requirements and organizational responsibilities for implementation of these requirements shall be specified in implementing directives and instructions.

Compliance with this policy and the provisions of the Operational Quality Assurance Program is mandatory for NSP personnel with respect to nuclear plant operational activities or activities which support nuclear plant operation. Personnel shall therefore, be familiar with the requirements and responsibilities of the program that are applicable to their individual activities and interfaces.

The Executive Vice President, through an independent organization, shall periodically have the Operational Quality Assurance Program reviewed to assure its adequacy.

TABLE H.O-1
COMMITMENT TO REGULATORY GUIDES
AND ANSI STANDARDS

1. Regulatory Guide 1.8 (Safety Guide 8) dated March 10, 1971

OK

Full commitment except that Point Beach commits to ANSI N18.1-1971 in lieu of the proposed ANSI N18.1 dated June 22, 1970.

2. Regulatory Guide 1.28 (safety Guide 28) dated June 7, 1972

OK

ANSI N18.7-1976 states in part, "This standard fully and completely describes the general requirements and guidelines of...[ANSI] N45.2-1971 as those requirements, and guidelines apply during the operational phase of plant life." As such, commitment to ANSI N18.7-1976 for Point Beach obviates the need to commit to Regulatory Guide 1.28 which endorses ANSI N45.2-1971.

Point Beach does, however, commit to the position of Regulatory Guide 1.28 to the extent of requiring its vendors to have quality assurance programs which meet the appropriate requirements of ANSI N45.2-1971 as mentioned in Section 5.2.13.1 of ANSI N18.7-1976.

3. Regulatory Guide 1.30 (Safety Guide 30) dated August 11, 1972

OK

Commitment to follow the position of Regulatory Guide 1.30, which endorses and supplements ANSI N45.2.4-1972, for activities occurring during the operational phase that are comparable in nature and extent to related activities during construction.

4. Regulatory Guide 1.37 dated March 16, 1973

OK

Commitment to follow the position of Regulatory Guide 1.37, which endorses and supplements ANSI N45.2.1-1973, for activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during construction.

5. Regulatory Guide 1.38, Revision 1, dated October 1976

OK

Commitment to follow the position of Regulatory Guide 1.38, which endorses and supplements ANSI N45.2.2-1972, for activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during construction.

6. Regulatory Guide 1.39, Revision 1, dated October 1976

OK

Commitment to follow the position of Regulatory Guide 1.39, which endorses and supplements ANSI N45.2.3-1973, for activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during construction except that Point Beach does not commit to the documentation requirements of ANSI N45.2.3-1973 and provides an alternative to the housekeeping zone requirements therein. Description of these differences are provided in Section 2.4 of this Appendix.

7. Regulatory Guide 1.54 dated June 1973

OK

Commitment to follow the position of Regulatory Guide 1.54, which endorses and supplements ANSI N101.4-1972, for activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during construction.

8. Regulatory Guide 1.58 dated August 1973

OK

Commitment to follow the position of Regulatory Guide 1.58, which endorses and supplements ANSI N45.2.6-1973, for activities occurring in the operational phase that are comparable in nature and extent to related activities during construction, except that Point Beach does not commit to the levels of qualification nor separate certification requirements of ANSI N45.2.6-1973. Description of these differences are provided in Section 10.6 of this Appendix.

9. Regulatory Guide 1.64 dated October 1973

OK Commitment to follow the position of Regulatory Guide 1.64, except that Point Beach commits to ANSI N45.2.11-1974 in lieu of Draft 3, Rev. 1 dated July 1973, for design activities associated with modification of safety-related structures, systems and components.

10. Regulatory Guide 1.74 dated February 1974

OK Full commitment.

11. Regulatory Guide 1.88, Revision 1, dated December 1975

OK Commitment to follow the position of Regulatory Guide 1.88, which endorses and supplements ANSI N45.2.9-1974 and NFPA 232-1970, except that Point Beach does not commit to all details of construction of a records storage facility in NFPA 232-1970. Point Beach has determined that the existing records storage facility provides a level of protection to the vital records at the Plant which is equivalent to the requirements of Regulatory Guide 1.88. Description of the differences are provided in Section 17.5 of this Appendix.

12. Regulatory Guide 1.94 dated April 1976

OK Commitment to follow the position of Regulatory Guide 1.94, which endorses and supplements ANSI N45.2.5-1974, for activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during construction.

13. ANSI 18.7-1976

OK Refer to Section 0 of this Appendix for details of the Point Beach commitment.

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APPENDIX A ANSI N18.7-1976 EXCEPTIONS, INTERPRETATIONS, QUALIFICATIONS

GENERAL

We have adopted ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants", to provide a basis for establishing an operational quality assurance program that meets the requirements of 10CFR50 Appendix B. We feel that the standard provides an acceptable means to satisfy the criteria of 10CFR50 Appendix B, but does not limit the use of alternate means to ensure safe operation of the plant. In this regard, we have attempted to list below those portions of this standard to which we list exceptions, interpretations and/or qualifications.

Standards in general present objectives to be met with the method of implementation left general enough to provide for various interpretations for implementation. In the review of our program in accordance with the adoption of these new standards, many changes in implementation have been made. Where questions of interpretation were raised a conscientious interpretation has been formalized with the QA staff. Wherever future questions of interpretation arise they will be decided in a similar manner with continued disagreement being brought before corporate management for resolution.

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When a short term or one time contradiction to the program is discovered, a non-conformance action will be taken within the QA organization to ensure a conscientious effort to maintain a quality level equivalent to the safety significance of the activity involved. When a long term or permanent contradiction to the program exists, a program change shall be implemented providing the same level of review as the adoption of this program, and the change will be submitted to the NRC.

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Finally, wherever Technical Specifications overlap or contend with the administrative controls provided for in this program, the Technical Specifications will take precedent.

4.3 & 4.4 Concerning Receipt Control.

Our plant QA/QC staff has been designated as the group responsible for receiving and storing records. This staff does not control which records are sent to them, however, there is a² record index system identifying which records are under the control of the QA Program.³ We have assigned responsibility for assuring QA records are retained in the QA Vault to the various department heads. Also, there is no log of incoming records.⁴ However, the previously mentioned index is kept up to date and serves as a list of records received and retained. ⁴ We have a procedure which partially covers the receipt control of records but none specifically for this action. We do not plan at this time to implement any further controls on the receipt of records.

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Concerning Permanent and Temporary Storage Facilities.

We meet the criteria specified in this paragraph for those records stored in the QA Vault, however, we differ in our use of temporary storage facilities, the definition of a working QA document and the transport of QA records to the vault. Several in-house generated QA documents/records are maintained in working files, e.g., NSRAC Meeting Minutes, training records and radiological survey data. These documents/records which we feel are working documents until no longer used on a routine basis are kept in locked, fire-proof file cabinets and are at some later date transferred to the QA Vault. Duplication or filing in the vault would be unacceptable due to the quantity and frequent use of these documents. We find our handling of these documents acceptable due to the relative short duration of filing in temporary quarters and relative insensitivity of these documents to the safety of the plant. Finally, we do not have a courier service to immediately transfer a QA record just completed to the vault. Some records are transferred by personnel delivery and others through the routine in-company mail service. At this time we do not plan to implement any further controls on transferring documents to the QA Vault.

Regulatory Guide/ANSI Std.
Reference Requirement

Interpretation/Alternate/Exception

General	Certain Regulatory Guides invoke or imply Regulatory Guides and standards in addition to the standard each primarily endorses.	The AP&L commitment refers to the Regulatory Guides and ANSI Standards, specifically identified in this TOPICAL. Additional Regulatory Guides, ANSI Standards, Guides and similar documents implied or referenced in those specifically identified in this TOPICAL are not part of this commitment.
	Certain ANSI Standards invoke or imply additional standards.	
General	Certain ANSI Standards and/or Regulatory Guides extend the scope of applicability to include systems, structures, and components whose satisfactory performance is required for a plant to operate reliably, on "high-value articles."	Our commitment to those standards applies only to those systems, structures, and components whose satisfactory performance is required to prevent postulated accidents that could cause undue risk to the health and safety of the public; or to mitigate the consequences of such accidents. Reliable operation of the plant may depend upon other systems, structures and components which are not covered by this commitment.
General	Certain Regulatory Guides and ANSI Standards contain both requirements and guidance.	Our commitments apply to the requirements. It is our intent to implement the guidelines contained in the ANSI Standards endorsed by R.G.'s 1.30, 1.37, 1.39 Rev. 2, 1.58, 1.64 Rev. 2, 1.88 Rev. 2, 1.94 Rev. 1 and 1.116 Rev. 0-R unless acceptable alternatives are contained within this TOPICAL. The majority of ANSI Standards to which AP&L has committed are concerned with the design and/or construction phases of nuclear power plants. Consequently, AP&L has adapted
General	NRC Regulatory Guides and ANSI Standards do not provide for deviation from any requirement(s) when emergency or other urgent conditions make deviation necessary.	



<u>Regulatory Guide/ANSI Std.</u>	<u>Requirement</u>	<u>Interpretation/Alternate/Exception</u>
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Reference

Requirement

Interpretation/Alternate/Exception

operations phase, where practicable, and has developed provisions for certain conditions not addressed in the standards.

In the event of an emergency condition which, if not promptly corrected could likely affect the health and safety of the public, the Director, Generation Operations or his designated alternate(s) may authorize emergency repairs deviations from written procedures. The nature of the emergency, its cause and the corrective action taken are documented.

In the event of an emergency not covered by an approved procedure, operations personnel shall take actions so as to minimize personnel injury and damage to the facility and to noted health and safety.

General

Certain ANSI Standards contain requirements which, under certain conditions, may conflict with limiting personnel radiation exposure.

The majority of ANSI Standards to which AP&L has committed are concerned with the design and/or construction phases of nuclear power. Consequently, AP&L has adapted these standards to its operations phase, where practicable, and has developed provisions for certain conditions not addressed in the standards.

When conformance with particular standards requirements; e.g., cleaning of fluid systems, housekeeping, would conflict



Regulatory Guide/ANSI Std.
Reference Requirement

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General

Various standards require inspections, examinations, and tests, but do not specify the frequencies of these activities.

conflict with limiting personnel radiation exposure, the degree of conformance to the standards is determined by appropriate levels of management.

Except in ANSI N45.2.5, the frequencies of required inspections, examinations and tests are not specified in the standards. Accordingly, the frequency of inspections, examinations and test required by the standards--other than ANSI N45.2.5--is identified on a job-by-job basis. The amount of inspections, examinations and tests identified as based upon safety significance complexity of the item or activity and degree of standardization of the item or activity.

ANSI N.18.7
First Sentence
of 5.2.7

(a) "Maintenance or modification shall be performed in a manner to ensure quality at least equivalent to that specified in original design bases and requirements, materials specifications, and inspection requirements.."

(b) "A maintenance program shall be developed to maintain safety-related structures, systems and components at

Requirements (a), (b), and (c), as a whole, require a degree of quality for replacement items consistent with their function. It is AP&L's intent that maintenance and modifications including procurement and use of replacement items are to technical requirements equal to or better than those specified on the original item or activity. A reduction in the technical and administrative requirements from the endorsed ANSI Standards shall be documented with appropriate rationale for the reduction and approved by Engineering.



Regulatory Guide/ANSI Std.
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required for them to perform their intended functions.

and QA/QC personnel.

- (c) "Purchased to specifications and codes equivalent to those specified for the original equipment, or those specified by a properly reviewed and approved revision."

ANSI N18.7

General Requirements for nonconforming items.

Paragraph 5.2.14 applies to programmatic as well as to specified provisions of ANSIN 18.7 and its associated references. Consistent with paragraph 5.2.14, our quality assurance program will contain provisions for controlled, documented waivers to its requirements.

ANSI N18.7
Section 1

Requires certain provisions in procurement documents.

Per 5.2.13 procurement document contents for replacement items will be based primarily on original procurement document contents. The provisions of 5.2.13.1 will be included if required by original procurement document or warranted by performance of the item. When requirements of ANSI standards are included in procurement documents, the requirements may not be identified as excerpts from ANSI standards. Procurement documents are developed and reviewed as described in Section 4 of this TOPICAL.

ANSI N18.7
Section
5.2.13.1
1st Para.

Where changes are made to procurements, they shall be subject to the same degree of control as was used in the preparation of the original documents.

Consistent with the requirements of ANSI N45.2.11, paragraph 7.2, minor changes to (procurement) documents, such as, inconsequential editorial corrections, or changes to commercial terms and

Regulatory Guide/ANSI Std.
Reference Requirement

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ANSI N18.7
Section
5.2.17, Last
Paragraph,
next to last
sentence.

Deviations, their cause,
and any corrective action
completed or planned shall
be documented.

conditions may not require that
the revised (procurement) docu-
ment receive the same review and
approval as the original documents.

Consistent with the documentation
requirements of Criterion XVI, Ap-
pendix "B" to 10 CFR 50, for cor-
rective action completed or plan-
ned are documented.

ANSI N18.7,
Section 6
References.

"When the preceding
American National
referred to in this
document are super-
seded by a revision
approved by the Am-
erican National Stand-
ards Institute, Inc.,
the revision shall ap-
ply.

Our commitment to ANSI
Standards does not extend
beyond the standards (date,
revision, etc.) identified
in this TOPICAL.

ANSI N18.7
Section 4.5

Review of Reports

Consistent with requirements
of ANSI N45.2.12, reports of
audits conducted by QA person-
nel shall be distributed to
responsible management of both
the audited and auditing or-
ganizations for review. Vio-
lations of applicable statutes,
codes, regulations, orders,
Technical Specifications,
license requirements or of
internal procedures or in-
structions discovered.
during audit conductance
are reviewed by the in-
dependent review body.

Regulatory
Guide 1.123

Section C Paragraph 2

The quality assurance pro-
gram requirements for con-
trol of procurement of safety



<u>Regulatory Guide/ANSI Std. Reference</u>	<u>Requirement</u>
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<u>Interpretation/Alternate/Exception</u>

related items and services are established in accordance with the requirements of ANSI N45.2.13, normally, by invoking portions of 10 CFR 50 Appendix B/ANSI N45.2 as well as other applicable codes and standards, or by invoking other specific requirements which meet the intent of this standard. The Appendix to N45.2.13 is used for guidance in making determination. For safety related parts of Code items not covered by the Code, such as non-pressure retaining parts, or for Code items performing safety related functions other than pressure retaining, the requirements of the Code program:

- (a) May be extended to cover such parts and quality related activities when the requirements of the Code program are considered to meet the intent of the ANSI Standard.
- (b) Will be supplemented by the applicable quality assurance requirements in accordance with ANSI N45.2.13 (as endorsed by Regulatory Guide 1.123) to cover the appropriate quality related activities for which the Code program requirements are not considered equivalent.

For those parts or items covered by the Code, for which the Code program requirements for quality related activities are considered equivalent to



Regulatory Guide/ANSI Std.
Reference Requirement

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Regulatory Section 1.4
Guide 1.37 Definition of
ANSI N45.2.1 Contamination

the ANSI Standards, only the quality assurance requirements of the Code will apply. The invoking of N45.2.13, by specific reference, is not considered to be required.

Any undesirable foreign material such as grit, metal particles, oil, grease, loosely adhering slag or scale, film and fiber on the surface of an item, in the atmosphere or in process liquids or gases.

ANSI N45.2.1 Section 3.2
Fresh water criteria
for chlorides, and
Jackson Turbidity
Units.

Consistent with ANSI N45.2.1 Draft 3 Rev. 6 (1/78), the turbidity requirement on fresh water is deleted and the chloride requirement is revised to read "less than 250 ppm." The turbidity requirement for demineralized water is deleted.

ANSI N45.2.1 Section 3.1
Cleanliness
Classifications
Particle Size

Consistent with ANSI N45.2.1 Rev. 6 (1/78) allowable particle size will be as follows:

- (a) Section 3.1.2.5 -
There shall be no particles larger than 1/32 inch by 1/16 inch long (.8 mm X 1.6 mm).
- (b) Section 3.1.3 - There shall be no particle larger than 1/32 inch by 1/16 inch long



Regulatory Guide/ANSI Std
Reference Requirement

Interpretation/Alternate/Exception

ANSI N45.2.1 Section 5

(.8 mm X 1.6 mm).
 (c) Section 3.1.4.4 -
 There shall be no
 particle larger than
 1/16 inch by 1/8
 inch long (1.6 mm X
 3.2 mm).

AP&L will also allow the
 use of wood, metal caps,
 rubber and duct tape to
 close openings and pipe
 end when work is not in
 progress. These alterna-
 tive methods are considered
 to meet the intent of the
 Standard, which is to keep
 the internal surfaces clean.

ANSI N45.2.2 "The specific items to be
 Section 2.1 governed by this standard
 shall be identified."

Items governed by this stand-
 ard or portions thereof are
 identified on a case-by-case
 basis during the design document
 and procurement document develop-
 ment

ANSI N45.2.2 Each of the specific
 Section 2.7 items governed by this
 standard shall be clas-
 sified into one of four
 levels.

All safety-related items are
 protected to an extent com-
 mensurate with their sen-
 sitivity and importance to
 safety, but are not specifi-
 cally classified in various
 levels per the guidance of
 paragraph 2.7. Therefore,
 satisfaction of requirements
 for packaging, shipping, re-
 ceiving, storage, and handling
 for particular items could
 be different than those sug-
 gested.



Regulatory Guide/ANSI Std.

Reference Requirement

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ANSI N45.2.2 General marking
Subsection requirements.
3.9

Some items of a size, shape or consistency which preclude marking. Marking in such cases is applied to box or other enclosure. Tagging is employed, where necessary.

ANSI N45.2.2 "Preliminary visual
Subsection inspection or examina-
5.2.1 tion shall be performed
prior to unloading..."

Inspection after unloading is sufficient to determine the condition of many items. In special instances, pre-unloading examination is performed.

ANSI
N45.2.2 The (receiving inspections
Section shall be performed in an
5.2.2 area equivalent to the
level of storage require-
ment for the item.

Receiving inspection is performed in a manner and in an environment which do not endanger the requisite quality of an item. The receiving inspection area environmental requirements for that item, however, the short time spent in the less stringent receiving inspection area shall be of such duration that will not adversely affect the item being received.

ANSI
N45.2.2 "...The 'Special
Paragraph Inspection' pro-
5.2.3 cedure, complete
with documentation
instructions shall be
attached to the item or
container..."

The "Special Inspection" procedure shall be readily available to inspection personnel and may be attached to the item or container.

ANSI
N45.2.2 "A statement document-
Subsec- ing the authority and
tion 5.3.3 and technical justifi-
cation for the condi-
tional release...shall
be prepared.

A statement documenting the authority and justification for the conditional release prepared. Justification may not always be of a technical nature.



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SECTION 19

Regulatory Guide/ANSI Std.
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ANSI N45.2.2 Subsec- tion 6.2.4	The use or storage of food, drinks, and salt dispensers in any storage area is prohibited.	People working in storage areas have a right of access to water dispensers per OSHA requirements. Additionally, due to location and layout of the building, personnel may temporarily store lunches in the work-place. This area is policed for sanitation.
--	--	---

ANSI N45.2.2 Appendix (A-3) A.3.9 (1) Second Group	"Container markings shall appear on a minimum of two sides of the container, preferably on one side and one end."	Containers are adequately marked for storage, identification, and retrieval. Multiple marking requirements are imposed, where necessary.
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ANSI N45.2.2 Appendix (A-3) A.3.9 (4) Second Group.	"Container markings shall be...no less than 3/4" high container permitting."	Container markings are of a size which permits easy recognition.
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ANSI N45.2.2 Appendix (A-3)A.3.9	"Container marking shall include the following information..."	The information required in container marking is evaluated on a case-by-case basis. Marking is adequate in each case.
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ANSI N45.2.2 Appendix (A-3) Section A 3.5.1 (1)	"Non-metallic plugs and caps shall be brightly colored."	Non-metal plugs and caps are of a suitably visible color.
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ANSI N45.2.2 Appendix (A-3) Section A 3.5.1 (5)	Plugs or caps shall be secured with tape or other means as necessary to prevent accidental removal.	In cases where plugs or caps do not snugly fit, additional securing devices or measures which will not be detrimental to the item will be used.
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Regulatory Guide/ANSI Std. Reference	Requirement	Interpretation/Alternate/Exception
ANSI N45.2.2 Appendix (A-3) Sec- tion A3.9	Marking of items not within a con- tainer.	<p>The last paragraph of Sec- tion A.3.9 could be in- terpreted as prohibiting any direct marking on bare austenitic stainless steel and nickel alloy metal sur- faces. In lieu thereof, para- graphs A.3.9 (1) and (2) will be used to control marking on the surface of austenitic stainless steels and nickel base alloys subject to the following limitations: "Marking materials contain- ing sulfur, lead, zinc, mercury, copper and low melting alloys as a basic chemical constituent shall not be brought in contact, or shall not be used on surfaces of corrosion re- sistant alloys. Low sul- fur, low fluorine and/or low chlorine compounds. may be used on austenitic stainless steels." The maximum limits for the above mentioned marking materials will be as follows:</p> <p>(a) Total inorganic and organic halogen content shall not exceed one (1) percent.</p> <p>(b) The sulfur content shall not exceed one (1) percent.</p>
ANSI N45.2.2	Inert Gas Blankets	<p>There may be cases involving large or complex shaped for which an inert or dry air purge is provided, rather than static has blanket in order to provide adequate protection due to difficulty of providing a leak proof barrier. In their cases, a positive pressure purge flow may be utilized as an alternate to a leak proof barrier.</p>



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ANSI
N45.2.2
Appendix A,
A.3.5.2,
(1), (a)

Limits halogen and sulphur content of tape.

Engineering may allow the use of tapes containing greater amounts of halogens after appropriate evaluation, however, the quantities shall not be such that harmful concentrations could be leached or released by breakdown of the compounds under expected environmental conditions.

Regulatory
Guide 1.39
ANSI N45.2.3

General

Alternative equivalent requirements may be utilized to cover those situations not included in the subject Standard; for example, situations in which shoe covers and/or coveralls are required but material accountability is not. In addition, zones might be combined into the next more restrictive category in order to reduce total number of zones.

ANSI N45.2.3

Identifies various housekeeping requirements, including cleanliness, fire prevention, and fire protection which must be accomplished during the progress of construction.

When this standard is applied, its requirements implemented in those areas affected by work activities associated with modifications, operations, or maintenance as determined necessary by Plant Staff.

Regulatory
Guide 1.30
ANSI N45.2.4

Pre Construction/
Installation
Verification

This section required verification that items are in satisfactory condition for installation and have not suffered since initial receipt inspection. Upon receipt, items are inspected and stored in an environment which will not adversely affect the item. Documented routine inspections and

Regulatory
Guide 1.116
ANSI N45.2.8



Regulatory Guide/ANSI Std.
Reference Requirement

Interpretation/Alternate/Exception

ANSI
N45.2.4
Identifies various tests to be performed.

periodic audits of the storage areas assure that stored items are maintained in satisfactory conditions. Documentation of pre-construction verification in addition to documentation of initial receipt inspection, periodic storage inspections, and audits of storage is not required.

During the operational phase these tests will be performed "as appropriate" as determined by Engineering or Generation Operations based upon the significance of change or modification.

ANSI
N45.2.4
Subsection
5.2.2 Mech-
anical Tests
"Mechanical tests shall be performed to ascertain that...components or systems can withstand system pressure ratings."

For the plant operational phase, "system pressure ratings" is interpreted to mean system operating pressure. For the Reactor Coolant System, Facility Technical Specifications identify testing requirements.

ANSI
N45.2.4
Subsection
6.2.1
"Items requiring calibration shall be tagged ...indicating date of calibration and identity of person..."

Items requiring calibration are tagged indicating date of calibration. Identity of person that performed the calibration shall be indicated on the tag or traceable through records.

ANSI N45.2.4
Subsection
6.2.2
Systems
Tests
"These tests shall be made to verify that all parts of a system properly coordinate with each other."

For the plant operation phase, this requirement is interpreted as not requiring that an entire system be re-tested after completion of modification of only a portion of that



Regulatory Guide/ANSI Std.
Reference Requirement

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system. The testing requirements of the Facility Technical Specifications are met for inoperable equipment.



Regulatory Guide 1.94, Revision 1, April, 1976 (ANSI N45.2.5 - 1974, Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants).

The requirements of the reference Standard will be applied to the quality program for construction of safety related items as interpreted in the Regulatory position as modified and interpreted below.

- 1) Section 1.4 defines in-process tests and states:

"...samples of these tests must be taken from the lot or batch of materials supplied to the site for use."

This requirement for reinforcing steel will be interpreted to permit taking the rebar test specimen at the fabrication shop, prior to start of fabrication of the rebar from the heat or fraction thereof represented by the test specimen. For these tests performed at the fabrication shop, certification shall be available to provide objective evidence that the test specimens represent the material supplied for use at the site.



- 2) Section 4.5, Concrete Placement, references American Concrete Institute (ACI) standards (ACI-305-72, "Recommended Practice for Hot Weather Concreting" and ACI 306-66, "Recommended Practice for Cold Weather Concreting."

In order to clarify use of these ACI standards, we will apply the following requirements:

PLACING TEMPERATURES OF CONCRETE:

A. During hot weather concreting:

Placing temperatures of concrete will be limited to the following:

- 1) Concrete members less than 3 feet in least dimension will not exceed 90°F.
- 2) Concrete members from 3 feet to 6 feet in least dimension will not exceed 70°F.
- 3) Concrete members more than 6 feet in least dimension will have placing temperature as near 50°F as can be obtained by use of ice as necessary up to 100 percent of adding mixing water; and by shading aggregate and sprinkling the coarse aggregate the day it is to be used. Care will be taken so that no unmelted ice remains in the concrete at the end of the mixing period.

B. During the cold weather concreting:

In heating the water and aggregate, live steam to heat the fine and coarse aggregate shall not be used. The permissible range for concrete temperature shall be as follows:

- 1) Sections less than 3 feet in least dimensions:
55 to 75°F.
- 2) Mass concrete 3 feet or more in least dimension:
45 to 65°F.

The mixing water and aggregate will be purchased as required. The materials will be free of ice, snow and frozen lumps before they enter the mixer.



- 3) Section 4.8, "In-process Test on Concrete and Reinforcing Steel" states, "Samples for in-process test of concrete shall be taken at the sampling point in accordance with ASTM C172. This point may be at the truck mixer discharge if the last piece of conveying equipment is a chute, bucket, conveying system, or similar equipment. Pumped concrete must be sampled from the pump line discharge."

For performance of correlation tests, the requirements of ANSI N45.2.5 - 1978 shall be followed.

- 4) Section 4.8, "In-process Tests on Concrete and Reinforcing Steel" contains Table B entitled, "Required In-process Tests." The following modifications to this table will be applied:



4.1) REINFORCING STEEL

In-process testing of reinforcing steel will include the mechanical properties of yield strength, tensile strength and percent elongation on full size specimens for each bar size for each 50 tons or fraction thereof from each mill heat. Bend tests are performed during material qualification testing only, except as noted below for bar sizes #14 and #18.

Table A, "Required Qualification Tests" as applied to reinforcing steel will include bend tests as required by ASTM A615 and summarized below:

- a) For bar sizes #3 through #11, one full size specimen from largest bar size rolled from each mill heat, unless material from one heat differs by three or more designation numbers. When this occurs, one bend test shall be made from both the highest and lowest designation number of the deformed bars rolled.
- b) For bar sizes #14 through #18, Supplementary Requirements S1 of ASTM A615 will be applied. One full size specimen for each bar size for each mill heat. If supplementary requirements are not followed for mill tests, they will be applied as in-process tests.

The above interpretation is consistent with Regulatory Guide 1.15, "Testing Reinforcing bars for Category I Concrete Structures," Revision 1, December 1972.

In-process test specimens may be selected at the rebar fabrication shop, prior to start of fabrication of the rebar from the heat or fraction thereof represented by the test specimen.

Acceptance criteria for any failed test (qualifications as well as in-process) may be the same as that for tensile tests specified in Subarticle CC-2331.2 of ASME Section III, Div. 2 Code (1975). This states that if a test specimen fails to meet the specified strength requirements, two (2) additional specimens from the same heat and of the same bar size would be tested, and if either of the two additional specimens fails to meet the specified strength requirements, the material represented by the tests would be rejected for the specified use. Alternative use of rejected material under strict control may be subject to evaluation by the Project Engineer.



- 5) Section 4.9, Mechanical (Cadmild) Splice Testing states in paragraph 4.9.4 "Separate test cycles shall be established for mechanical splices in horizontal, vertical and diagonal bars, for each bar size and for each splicing crew..."

The terms "horizontal, vertical and diagonal bars" will be interpreted to apply respectively to the following types of splice positions:

- a. Horizontal, including 10° to horizontal
- b. Vertical, including 10° to vertical
- c. 45° angle, including 10° to 80° angle

The words "splicing crew" will be interpreted to refer to all members on the project that are actively engaged in preparing and assembling cadweld mechanical splices at the final splice location. Separate test cycles will be established for each bar size and each splice position.



Regulatory Guide 1.58 dated August 1973 (ANSI N45.2.6 - 1973, Qualifications of Inspection, Examination and Testing Personnel for the construction phase manufacturing/fabrication phase of Nuclear Power Plants).

The requirements of the referenced standard, as modified and interpreted in the regulatory position will applied to the AP&L Quality Program during the operational phase as described in this topical report subject to the following clarifications:

- 1) Substitute new Section 1.1 and 1.2 and modify first paragraph only of 1.3.

Section 1.1 Scope

This standard delineates the requirements for qualification of personnel who perform inspection, examination and testing to verify conformance to specified requirements of nuclear facility items (structures, systems and components of nuclear power plants, fuel reprocessing plants, plutonium processing plants and plutonium fabrication plants) whose satisfactory performance is required to prevent postulated accidents which could cause undue risk to the health and safety of the public; or to mitigate the consequences of such accidents if they were to occur. The requirements may also be extended to other items of nuclear facilities when specified to contract documents.

Section 1.2 Applicability

The requirements of this standard apply to personnel who perform inspections, examinations and tests during fabrication prior to and during receipt of items at the construction site, during construction, during preoperational and startup testing, and during operational phases of nuclear facilities. The requirements of this standard do not apply to personnel who perform inspections for government or municipal authorities, or who performs as authorized inspectors in accordance with the ASME Boiler and Pressure Vessel Code.

The requirements of this standard are not intended to apply to personnel who only perform inspection, examination or testing in accordance with employer practices which are in compliance with "Recommended Practice No. SNT-TC-1A and its applicable supplements. The requirements of this standard are operational, at the discretion of the employer, for application to personnel who perform calibration or to craftsmen who perform installation checkouts as part of their basic installation responsibility to ready the installation for preoperational testing.

This standard is to be used in conjunction with ANSI N45.2-1977.



The requirements apply to personnel of the owner. The requirements apply to architect-engineers, nuclear facility system designers and system suppliers, plant designers and plant constructors, equipment suppliers, outside testing agencies and consultants when specified by the owner. Other standards or codes may contain qualification requirements for personnel such as nondestructive examination personnel as required by the ASME Boiler and Pressure Vessel Code, and Quality auditor personnel as may be required by Quality Systems or Quality Assurance Program standards. When this is the case, this standard is not to be interpreted to require a duplication of effort.

Section 1.3 Responsibility

It is the responsibility of each organization participating in the project to assure that only those personnel within their respective organizations who meet the requirements of this standard are permitted to perform inspection, examination and testing activities covered by this standard that verify conformance to quality requirements.

- 2) Since this Standard does not apply to personnel who perform non-destructive examinations, delete Section 2.2.2.
- 3) Section 2.2.3. Evaluation of Performance.

The periodic interval for re-evaluation of personnel shall not exceed three years.

- 4) The requirements of this Standard shall apply only to personnel who perform inspection, examination and testing; and accordingly Section 3 and 3.1 shall be revised to read:

3. Qualifications

3.1 General

The requirements contained within this section define the minimum capabilities that qualify personnel to perform inspections, examinations and tests which are within the scope of this standard.

There are three levels of qualification. The requirements for each level are not limiting with regard to organizational position or professional status, but, rather, are limiting with regard to functional activities which are within the scope of this standard.



Following is the recommended personnel education and experience for each level. These education and experience recommendations should be treated to recognize that other factors may provide reasonable assurance that a person can competently perform a particular task. Other factors which may demonstrate capability in a given job are previous performance or satisfactory completion of capability testing.

The education and experience requirements shall make provision for personnel who have not graduated from high school or who have earned an Associate degree. According to paragraphs 3.1.1, 3.1.1, and 3.1.3 shall be revised to read:

3.1.1 Level I

- (1) Two years of related experience in equivalent inspection examination or testing activities, or
- (2) High school graduation and six months of related experience in equivalent inspection, examination or testing activities, or
- (3) Completion of college level work leading to an Associate degree in related discipline plus three months of related experience in equivalent inspection, examination or testing activities.

3.1.2 Level II

- (1) One year of satisfactory performance as Level I, or
- (2) High school graduation plus three years of related experience in equivalent inspection, examination or testing activities, or
- (3) Completion of college level work leading to an Associate degree in related discipline plus one year related experience in equivalent inspection, examination or testing activities, or
- (4) Four-year college graduation plus six months of related experience in equivalent inspection, examination or testing activities.

3.1.3 Level III

- (1) Six years of satisfactory performance as a Level II, or



- (2) High school graduation plus ten years of related experience in equivalent inspection, examination or testing activities; or high school graduation plus eight years experience in equivalent inspection, examination or testing activities, with at least two years as Level II and with at least two years associated with nuclear facilities - or, if not, at least sufficient training to be acquainted with the relevant quality assurance aspects of nuclear facility, or
- (3) Completion of college level work leading to an Associate degree and seven years of related experience in equivalent inspection, examination or testing activities, with at least two years of this experience associated with nuclear facilities - or, if not, at least sufficient training to be acquainted with the relevant quality assurance aspects of a nuclear facility, or
- (4) Four year college graduation plus five years or related experience in equivalent inspection, examination or testing activities, with at least two years of this experience associated with nuclear facilities - or, if not, at least sufficient training to be acquainted with the relevant quality assurance aspects of a nuclear facility.

6) Section 3.2.1 Physical (Revised to read)

AP&L shall identify any special physical characteristics needed in the performance of each activity. Personnel requiring these characteristics shall have them verified by examination at intervals not to exceed one year.

7) Section 3.2.2 Technical (Revised to read)

a. Level I Personnel Capabilities

A Level I person shall be capable of performing and documenting the inspections, examinations and tests that are required to be performed in accordance with documented procedures and/or industry practices. The individual shall be familiar with the tools and equipment to be employed and shall have demonstrated proficiency in their use. The individual shall also be capable of determining that the calibration status of measuring and test equipment is current, that the measuring and test equipment is in proper condition for use, and that the inspection, examination and test procedures are approved.



b. Level II Personnel Capabilities

A Level II person shall have all of the capabilities of a Level I person. Additionally, a Level II person shall have demonstrated capabilities in planning inspections, examinations and tests; in setting up tests including preparation and set-up of related equipment, as appropriate; in supervising or maintaining surveillance over the inspections, examinations and tests; in supervising and certifying lower level personnel; in reporting inspection, examination and testing results; and in evaluating the validity and acceptability of inspection, examination and test results.

c. Level III Personnel Capabilities

A Level III person shall have all of the capabilities of a Level II person. In addition, the individual shall also be capable of evaluating the adequacy of specific programs used to train and test inspection, examination and test personnel whose qualifications are covered by this standard. The individual shall also be capable of reviewing and approving inspection, examination and testing procedures and of evaluating the adequacy of activities to accomplish the inspection, examination and test objectives.

8) Section 4 Performance (Revised last sentence to read)

When a single inspection or test requires implementation by a team or group, personnel not meeting the requirements of this Standard may be used in data - taking assignments or in plant or equipment operation provided they are supervised or overseen by a qualified individual participating in the inspection, examination or test.

9) Section 5 Records (Revised to read)

A file of records of personnel qualification shall be established and maintained by the employer. Collection, storage and control of records required by this Standard shall be in accordance with R.G.1.88 Rev. 2.

10) Table 1 (Revised to read)

Implement inspection and test procedures and document results.



Regulatory Guide/ANSI Std.
Reference Requirement

Interpretation/Alternate/Exception

Regulatory
Guide 1.74
ANSI
N45.2.10

"Quality Assurance Terms
and Definitions."

Where terms defined in ANSI
N45.2.10 are also defined in
other standards to which AP&L
has referred in this program
description, the definitions
in those other standards shall
apply.

ANSI
N45.2.10

Definitions of Certifi-
cate of Conformance
of Compliance."

Based upon the guidance of
ANSI N45.2.13, 10.2, the
definitions of these two
terms will be exchanged.

ANSI
N45.2.10

Definition of "Modifica-
tion."

Modification - A change to
an item's configuration, mat-
terial(s) of function(s) such
that the item does not conform
to previously approved design
documents.

ANSI
N45.2.11
Section 2.2

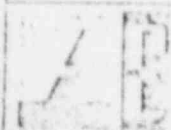
Program procedures shall
cover making experience
reports available
to cognizant design
personnel.

A variety of experience reports
from a number of sources are
made available to design person-
nel without benefit of written
procedures.

ANSI
N45.2.12
Paragraph
4.2.1

Individual Audit Plans

For those routine audits con-
ducted during operations, a
written procedure covering
classes of audits (i.e., plant
site operational audits of
plant staff activities, etc.)
will be utilized as opposed
to an individual plan for each
audit. The procedure(s) will
identify the audit scope, a re-
quirement that individual check-
lists be utilized listing re-
quirements which are to be
audited and notification of
the audited group.



Regulatory Guide/ANSI Std.
Reference Requirement

Interpretation/Alternate/Exception

ANSI
N45.2.12
Paragraph
4.2.4

Audit Notification

Audit Notification shall be given either in writing or verbally to the involved organizations.

ANSI
N45.2.12
Paragraph
4.3.1

Pre-Audit Conference

For those routine audits conducted during operations, in some instances, a formal pre-audit conference is not necessary. For those cases where formal pre-audit conferences are not held for routine on-site day-to-day audits, the audited organization shall be on distribution for the audit schedule and the auditor shall notify the organization by phone or personal contact prior to actual start of each audit. The auditor assigned the task of conducting the audit is responsible for establishing if a formal pre-audit conference is required. This decision should be made after input from the audited group.

ANSI
N45.2.12
Paragraph
4.5.1

Follow-up by Audited Organization

Management of the audited organization or activity shall respond as requested by the audit report. For less significant findings, a re-audit may be scheduled and conducted without requiring a written response. When a written response is requested, management of the audited organization or activity.



Regulatory Guide/ANSI Std.
Reference Requirement

Interpretation/Alternate/Exception

program, and no separate system exists that addresses itself solely to such verification. The degree of verification required will depend upon the type of item of service and their safety importance. The means of verification may include source witness/hold points; source audits and document reviews; independent inspections at the time of material receipt; user tests on selected commodities, such as concrete components; or tests after installation on selected components and systems. All of these means verify whether or not a supplier has fulfilled procurement document requirements, and whether or not a certification system is effective.

