Copy No. 001

ARKANSAS NUCLEAR ONE

QUALITY ASSURANCE

MANUAL

OPERATIONS

ANO
Arkansas Nuclear One

Q004
1/13

ARKANSAS NUCLEAR ONE

QUALITY ASSURANCE MANUAL OPERATIONS

REVISION 10

APPROVED: _____ DATE: 8-26-88
SUPERINTENDENT QUALITY ASSURANCE

APPROVED: _____ DATE: 8/27/88
GENERAL MANAGER NUCLEAR QUALITY

APPROVED: _____ DATE: 8-29-88
VICE PRESIDENT NUCLEAR

RECORD OF REVISIONS

REVISION NUMBER	DESCRIPTION	DATE
0	Initial Issue	6/11/74
1	Response to AEC Questions Submitted 11/21/74. Revisions to Section 2, 4, and 7 as indicated.	12/13/74
2	Response to NRC Questions Submitted 2/7/75. Procedure Numbers 1005.xx changes to 1004.xx (Number Change Only).	3/4/75
3	General revision to change AEC to NRC, update organization, reflect NSP revisions, minor program implementation changes.	9/8/76
4	Eliminate Quality Assurance Committee Changes to Procurement Control - Qualification of Vendors. Organizational Changes. Incorporate Technical Specification Changes.	9/8/77
5	Incorporate Organizational Changes and responses to subsequent NRC Questions. Incorporate Regulatory Guides and retype document in its entirety in standardized format.	10/10/80
6	Incorporate organizational changes, delete procedural references throughout manual, and accurately reflect current regulatory commitments and QA practices related to the safe operation of AP&L nuclear plants. Manual has been reformated and retyped in its entirety.	5/30/84
7	Changes given below are identified on the pages by a bar in the left margin, placed next to the affected area. Corrected by errata (includes misspelled words) on the following pages: A-1 2-5 10-6 T1-9 A-2 3-2 11-5 T1-13 1-10 3-3 13-2 T3-1	05/31/85

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7 (Cont.)	1-12 3-4 13-4 T3-2 1-18 4-2 15-2 T3-3 1-19 5-2 15-3 1-20 5-3 15-5 1-22 5-4 15-4 1-23 6-2 16-1 7-2 T1-6 9-1 Page C-7: revised definition Page C-8: revised definition Page 1-9: revised paragraph 1.4.2(1) Page 1-10: revised paragraph 1.4.2.1 Page 1-11: added paragraph 1.4.2.1.1 : paragraph 1.4.2.2 redesignated 1.4.2.1.2 : added paragraph 1.4.2.1.3 : paragraph 1.4.2.3 redesignated 1.4.2.2 and revised Page 1-12: paragraph 1.4.2.3.1 redesignated 1.4.2.2.1 Page 1-13: added 7) to paragraph 1.5.1.3 Page 1-14 & 15: revised paragraph 1.5.3 to delete Planning/Scheduling Supervisor Page 1-21: added paragraph 1.5.8 Pages 1-1 to 1-23: paragraph locations changed Page 2-2: paragraph 2.2.2 redesignated 2.2.3 and revised Page 2-2: paragraph 2.2.3 redesignated 2.2.4 Page 2-2: paragraph 2.2.4 redesignated 2.2.5 Page 2-2: new paragraph 2.2.2 added Page 2-3: revised paragraph 2.2.5(2) Page 2-7 and 2-8: revised paragraph 2.6.4 Pages 2-3 to 2-9: paragraph locations changes Page 7-3: revised paragraphs 7.2.3 and 7.2.4 Pages 7-3 to 7-7: paragraph locations changes Page 15-1: revised paragraph 15.2.1 Page 18-3: revised paragraph 18.3.2 Pages 18-3 to 18-6: paragraph locations changes Page F-1: revised Figure 1	

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7 (Cont.)	Page F-2: revised Figure 2 Page F-3: revised Figure 3 Page F-5 revised Figure 5 Page F-6: revised Figure 6 Page T2-1: revised titles Page AA-1 to AA-3: new Appendix A added Page AB-1 to AB-8: new Appendix B added	
8	Changes given below are identified on the pages by a bar in the left margin, placed next to the affected area. Corrected by errata (including misspelled words) on the following pages: A-1 5-1 16-1 17-5 B-1 6-1 16-3 AB-2 2-1 7-5 17-1 AB-4 2-6 11-5 17-2 AB-10 3-5 15-1 17-4 AB-11 4-1 Page A-1 :Revised 2nd, 3rd, and 4th paragraphs Page A-2: :Revised 1st paragraph :Changed signature Page B-5 :Added ANSI N3.1 :Added paragraph at end of section Page C-7 :Revised definition Page C-9 :Revised definition Pages 1-1 to 1-23 :Rewritten to reflect new organization Page 2-1 :Revised paragraph 2.2.1 :Added paragraph 2.2.2 Page 2-2 :Paragraphs 2.2.3 and 2.2.4 were 2.2.2 and 2.2.3 :Revised paragraphs 2.2.3 and 2.2.4	06/10/86

REVISION NUMBER	DESCRIPTION	DATE
8 (Cont.)	Page 2-3 :Title changes, paragraph 2.2.5 :Paragraph 2.2.5 was 2.2.4 :Old Paragraph 2.2.5 incorporated into Paragraph 2.2.2 :Paragraph 2.3.1, title change	
	Page 2-4 :Title changes, paragraphs 2.3.3 and 2.3.4 :Revised paragraph 2.4.1	
	Page 2-5 :Title changes, paragraphs 2.4.3, 2.5.1, 2.5.2	
	Page 2-6 :Revised paragraph 2.5.2 and 2.6.1 :Title change, paragraph 2.5.3	
	Page 2-8 :New paragraph 2.6.6 added :Paragraph 2.6.7 was 2.6.6 :Revised paragraph 2.6.7 & 2.7.1	
	Page 2-9 :Title change paragraph 2.7.2	
	Page 3-1 :Revised paragraph 3.2.1	
	Page 3-2 :Title changes, paragraph 3.4.1	
	Page 3-4 :Revised paragraph 3.5.1 & 3.5.3	
	Page 3-5 :Title change, paragraph 3.5.4	
	Page 4-1 :Title change, paragraph 4.2.1	
	Page 4-2 :Revised paragraph 4.3	
	Page 4-3 :Revised paragraph 4.4	
	Page 5-2 :Revised paragraph 5.3.1 :Title changes, paragraph 5.2.2 and 5.3.2	
	Page 5-4 :Revised paragraph 5.4.2	
	Page 6-1 :Revised Paragraphs 6.1 & 6.2.2	
	Page 5-2 :Title change, paragraph 6.2.3 :Added paragraph 6.2.4	
	Page 7-1 :Title changes, paragraph 7.2.1 & 7.2.2	
	Page 7-3 :Revised paragraph 7.2.3 :Title change, paragraph 7.3.1	
	Page 7-4 :Title changes, paragraphs 7.3.2 & 7.3.3	
	Page 7-5 :Revised paragraph 7.4.3	
	Page 10-4 :Title changes, paragraphs 10.3.2.3 & 10.4.1	
	Page 10-5 :Revised paragraph 10.4.2	
	Page 10-6 :Revised paragraph 10.5.3	
	Page 12-1 :Added paragraphs 12.1.2 & 12.1.3	
	Page 12-2 :Title change, paragraph 12.2.4 :Revised paragraph 12.3.1	
	Page 13-2 :Title changes, paragraph 13.3.2	
	Page 13-3 :Title change, paragraph 13.5.3	
	Page 13-4 :Title change, paragraph 13.5.5	

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8 (Cont.)	Page 15-1 :Revised paragraph 15.1, 15.2.1 & 15.2.2 & 15.2.2	
	Page 15-2 :Revised paragraphs 15.2.3 & 15.2.4	
	Page 15-3 :Added paragraph 15.2.6 :Paragraph 15.2.7 was 15.2.6 :Moved old subsection 15.3 to Section 16 :Subsection 15.3 was 15.4 :Revised paragraph 15.3.1 & 15.3.2	
	Page 15-4 :Subsection 15.4 was 15.5 :Subsection 15.5 was 15.5.2 with revisions	
	Page 16-1 :Revised paragraph 16.2.1 & 16.2.2	
	Page 16-2 :Deleted paragraphs 16.2.4 & 16.2.4.1 :Paragraphs 16.2.4 & 16.2.5 were 16.2.4.2 and 16.2.4.3 :Revised paragraphs 16.2.3, 16.2.4 & 16.2.5 :Subsection 16.3 was 16.2.5 with revisions	
	Page 16-3 :Subsection 16.4 was 16.3 :Revised paragraph 16.4(1) & (3) :Subsection 16.5 was 16.3.2 and and Subsection 15.3	
	Page 16-4 :Subsection 16.6 was 16.4	
	Page 17-4 :Title change, paragraph 17.3.4 :Revised paragraph 17.4.1.2	
	Page 18-1 :Title change, paragraph 18.2.1	
	Page 18-2 :Title change, paragraph 18.2.2 :Revised paragraph 18.3.1	
	Page 18-4 :Title change, paragraph 18.4.1	
	Page 18-5 :Revised paragraphs 18.4.4, 18.4.5 & 18.5	
	Page 18-6 :Revised paragraph 18.6	
	Page F1 Thru F-8 :Revised organization charts	
	Page T1-1 :Revised first paragraph, third column	
	Page T1-2 :Add ANSI N18.7 (Sections 5.2.7.1)	
	Page T1-3 :Add ANSI N18.7 (Section 5.2.17)	
	Page T2-1 :Revised Table 2	
	Page T3-1 :Revised all paragraphs	
	Page T3-2 :Revised all paragraphs	
	Page T3-3 :Deleted	

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8 (Cont.)	Page AA-1 :Revised paragraph 1.1 Page AA-2 :Revised introductory paragraph Page AA-3 :Revised Section 12 Page AA-4 :Added Page AB-3 :Title change, paragraph 2.1(1) :Revised paragraph 2.1(2) Page AB-4 :Title changes, paragraphs 2.1(3) (4) & (5) Page AB-5 :Revised paragraph 2.1(6) & 2.1(8) :Title changes, paragraph 2.1(7) Page AB-7 :Revised paragraph 5.1 All pages in Manual :Title block revised	
9	Changes given below are identified on the pages by a bar in the left margin, placed next to the affected area. Corrected by errata (including misspelled words) on the following pages: B-5 C-10 10-5 C-1 1-4 AA-2 C-2 5-4 AA-3 C-6 7-5 Page A-1: Title change in 2nd paragraph Page A-2: Resigned Policy Page B-5: Clarify ANO Unit 2 Code Commitments Page C-1: Added definition Page C-3: Revised definition and added new definition Page C-5: Added definition Page C-7: Revised definition Page C-8: Revised definition Page 1-1 thru 1-3: Rewritten to reflect current organization Page 1-9: Revised responsibilities Page 1-10: Changed name title Page 1-13: Revised responsibilities in paragraph 1.4.1.3.2. Changed name title	7/22/87

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9 (Cont.)	Page 1-14: Revised responsibilities within paragraphs 1.4.1.3.2.1 and 1.4.1.3.2.3	7/22/87
	Page 1-15: Changed name title	
	Pages 1-15 thru 1-16: Revised responsibilities in paragraphs 1.4.1.3.2.3.3 and 1.4.1.3.2.4	
	Page 1-17: Added paragraph 1.4.1.3.2.5. Changed name title	
	Page 1-18: Delete 1.4.1.3.3.e and changed name title	
	Page 1-19: Clarified paragraph	
	Page 1-20: Revised responsibilities	
	Page 1-21: Revised responsibilities in paragraph 1.4.2.2	
	Pages 1-21 thru 1-23: Paragraph 1.5 deleted and paragraphs 1.6, 1.6.1, 1.6.2, 1.6.3, and 1.7 renumbered accordingly	
	Page 1-22: Changed name title	
	Page 2-1: Revised paragraph 2.2.1	
	Page 2-3: Revised paragraph 2.2.5 and Added paragraph 2.2.6	
	Page 2-4: Changed name title	
	Page 2-9: Revised paragraph 2.6.6.	
	Page 3-1: Revised paragraph 3.2.1	
	Page 3-4: Revised paragraphs 3.4.4, 3.5.1, and 3.5.2	
	Page 3-5: Changed name title	
	Page 4-1: Changed titles	
	Page 4-3: Revised paragraph 4.4	
	Page 5-2: Changed name title	
	Page 5-3: Changed organization titles	
	Page 5-4: Changed name title	
	Page 6-2: Revised paragraph 6.2.4	
	Page 7-2: Revised paragraphs 7.2.2(1) and 7.2.2(5). Deleted paragraph 7.2.2(6)	
	Page 7-5: Revised paragraph 7.4.3	
	Page 10-3: Revised paragraph 10.3.2.2	
	Page 10-6: Revised paragraphs 10.5.2 and 10.6	
	Page 11-3: Title changes	
	Page 13-2: Revised paragraph 13.3.2	
	Page 13-4: Revised paragraph 13.5.3	7/22/87
	Page 15-2: Changed name title	

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9 (Cont.)	Page 16.1: Revised paragraph 16.2.2 Page 16.2: Deleted paragraph 16.2.3 and renumbered 16.2.4 and 16.2.5 accordingly. Revised new paragraph 16.2.3 Page 16-3: Revised paragraph 16.5.2 Page 16-4: Changed name title Page 18-6: Title changes Pages F-1 thru F-7: Revised organization charts Page F-8: Deleted page Page T2-1: Revised Table 2 Page T3-1: Revised section 2 to Table 3 Page T3-2: Changed name title in section 4. Revised section 5 to Table 3 Page AB-3: Moved from page AB-4 Page AB-4: Changed name title in paragraph 2.1.3 and Revised paragraph 2.1.4 Page AB-5: Deleted paragraph 2.1.8 The following pages were revised due to format changes: C-4, 1-5, 1-6, 1-7, 1-8, 1-11, 1-12, 1-23, 2-2, 2-5, 2-6, 2-7, 2-8, AB-6, AB-7, AB-8, AB-9, AB-10, AB-11, AB-12	
10	Retype manual in its entirety on new pages; also made grammatical corrections (including misspelled words and punctuations throughout). Changes given below are identified on the pages by a bar in the left margin, placed next to the affected area. "AP&L" or "Plant" was deleted or replaced with "ANO" in the following sections: Page A-1: Paragraphs 1, 2 & 3 Page A-2: Paragraph 3 Page 2-1: Section 2.1 Page 2-2: Section 2.2.2 Page 2-4: Section 2.3.1	

REVISION NUMBER	DESCRIPTION	DATE
10 (Cont.)	Page 2-5: Sections 2.3.4 & 2.4.1 Page 2-6: Section 2.4.3 Page 2-7: Section 2.6.1 Page 3-5: Section 3.7 Page 4-1: Section 4.2.1 Page 4-2: Section 4.2.3 Page 5-1: Section 5.1.1 Page 5-3: Sections 5.3.2, 5.3.3 & 5.4.1 Page 7-3: Sections 7.2.3 & 7.2.4 Page 7-4: Sections 7.3.3 & 7.4.1 Page 7-5: Sections 7.4.2 & 7.4.3 Page 7-6: Section 7.5.1 Page 12-3: Section 12.3.3 Page 13-2: Section 13.3.2 Page 15-3: Sections 15.3.1 & 15.3.2 Page 17-1: Section 17.2.1 Page 17-2: Section 17.2.2 Page 17-4: Sections 17.3.4 & 17.4.1 Page 18-2: Section 18.3.2 Page 18-5: Section 18.4.4 Page 18-6: Section 18.6 Page T1-1: Heading & General Page T1-2: ANSI N18.7 Page T1-9: R.G. 1.58 Page T3-1: #1 & #2 Page AB-1: Sections 1.1 & 1.2 Page AB-2: Section 1.4 Page AB-5: Section 2.1, #4 & #6 Page AB-6: Sections 3.1 & 3.3 Page AB-7: Section 6.1 Page AB-8: Section 8.1 Page AB-11: Sections 16.1 & 18.1 "ANO", "Plant", "LRGO" and "Departmental" was deleted or replaced with "Approved" in the following sections: Page 2-3: Sections 2.2.4 & 2.2.6 Page 2-4: Section 2.3.2 Page 2-5: Section 2.3.3 Page 2-7: Section 2.5.2 Page 2-8: Section 2.6.3 Page 2-10: Section 2.6.7 Page 3-1: Section 3.2.1 Page 3-2: Section 3.3	

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10 (Cont.)	Page 3-4: Sections 3.4.4, 3.5.1 & 3.5.2 Page 4-1: Section 4.1 Page 4-2: Section 4.3 Page 5-3: Section 5.3.3 Page 6-1: Section 6.2.2 Page 7-3: Sections 7.2.3 & 7.2.4 Page 7-5: Sections 7.4.3 & 7.4.4 Page 7-6: Section 7.4.6 Page 7-7: Sections 7.5.2 & 7.7 Page 8-1: Sections 8.1.1 & 8.1.2 Page 8-2: Sections 8.2.2 & 8.2.3.1 Page 8-3: Section 8.4.1 Page 9-1: Sections 9.1 & 9.2.2 Page 9-2: Sections 9.3.2 & 9.3.4 Page 9-3: Section 9.5 Page 10-3: Sections 10.3.2.2 Page 12-2: Section 12.2.1 Page 12-3: Sections 12.3.4 & 12.3.5 Page 12-4: Sections 12.4.2 & 12.4.3 Page 13-2: Section 13.3.2 Page 13-3: Sections 13.4.2 & 13.4.4 Page 13-4: Sections 13.5.3 & 13.6.1 Page 14-1: Section 14.1.1 Page 14-2: Section 14.2.2 Page 14-3: Sections 14.2.4 & 14.2.5 Page 14-4: Sections 14.2.7 & 14.3.2 Page 14-5: Sections 14.3.2 & 14.4.2 Page 15-1: Sections 15.2.1 & 15.2.2 Page 15-2: Section 15.2.4 Page 15-3: Section 15.2.6 Page 16-1: Section 16.2.1 Page 16-2: Sections 16.2.3 & 16.3 Page 16-3: Section 16.5.2 Page 17-1: Section 17.1.2 Page 17-3: Sections 17.3.1.2, 17.3.2.2 & 17.3.3 Page 17-4: Sections 17.3.4, 17.4.1, 17.4.1.1 & 17.4.1.2 Page 17-5: Sections 17.5.1 & 17.6 Page T3-1: #2 Page AA-2: Sections 3 & 5 Page AA-3: Sections 11 & 13 Page AB-6: Section 3.1 Page AB-7: Sections 5.1 & 6.1 Page AB-8: Section 10.1 Page AB-10: Sections 13.1 & 14.1	

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10 (Cont.)	Changed "quality program" and "Quality Assurance Program" to "the QA Program" in the following sections:	

Page A-1: Paragraphs 1, 2, 3 & 4
Page A-2: Paragraphs 2 & 3
Page B-1: Paragraphs 2, 3 & 4
Page B-3: Paragraph 1
Page B-5: Paragraphs 2 & 9
Page 2-1: Sections 2.1 & 2.2
Page 2-5: Section 2.4.1
Page 2-6: Section 2.4.3
Page 2-7: Sections 2.5.3 & 2.6.1
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Page 2-9: Sections 2.6.5 & 2.7.1
Page 2-10: Section 2.7.2
Page 3-5: Section 3.6
Page 5-2: Section 5.3.2
Page 5-3: Section 5.3.2
Page 9-1: Section 9.2.2
Page 18-1: Sections 18.1.2 & 18.2.1
Page 18-4: Section 18.4.2
Page T1-1: Heading
Page T3-2: #4 & #5

Other specific changes as follows:

Page A-1: 1st Paragraph, Revised 1st sentence
Page A-1: 2nd Paragraph, Revised titles
Page A-2: 1st Paragraph, Revised responsibility
Page B-1: 1st Paragraph, Revised 1st sentence
Page B-5: ASME Section III, Updated code edition
Page B-5: ASNT SNT-TC-1A-1980, Added Sentence
Page B-5: Revised "*" Sentence
Page C-4: Added "F-List" Definition
Page C-7: Modified Definition
Page C-8: Added "S-List" Definition
Page C-9: Modified Definition
Page C-10: Modified Definition

REVISION NUMBER	DESCRIPTION	DATE
10 (Cont.)	Page 1-1 to 1-23: Rewritten to reflect current organization.	
	Page 2-1: Section 2.2, Revised responsibilities in last sentence	
	Page 2-2: Section 2.2.3, Added "quality"	
	Page 2-3: Section 2.2.5, Revised responsibilities, 1st, 2nd & last sentence	
	Page 2-3: Section 2.2.6, Revised responsibilities, 2nd sentence	
	Page 2-3: Added Section 2.2.7	
	Page 2-4: Added Section 2.2.8	
	Page 2-4: Section 2.3.1, Changed title	
	Page 2-5: Section 2.3.4, Revised section	
	Page 2-7: Section 2.5.2, Revised first section	
	Page 2-10: Section 2.7.2, Deleted "audit"	
	Page 3-1: Section 3.2.1, Changed title and deleted "required"	
	Page 3-2: Section 3.3, Revised 1st sentence	
	Page 3-2: Section 3.4.1, Revised 1st sentence	
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	Page 3-4: Section 3.4.4, Revised responsible organization	
	Page 3-4: Section 3.5.1, Revised responsible organization	
	Page 3-4 and 3-5: Section 3.5.3, Revised section	
	Page 3-5: Section 3.5.4, Changed title	
	Page 3-5: Section 3.6, Added "root"	
	Page 4-1: Deleted "whether procured by LRGO or plant procurement group"	
	Page 5-1: Section 5.1.1, Added "quality engineering" and "off-site"	
	Page 5-2: Section 5.2.2, Revised last sentence	
	Page 5-2: Section 5.3.2, Added "6000.XX", revised responsibilities and revised last sentence	
	Page 5-3: Section 5.3.3, Revised 1st sentence	
	Page 5-4: Section 5.4.2, Revised responsibiliities	
	Page 6-1: 6.2.2 Revised title	
	Page 6-2: 6.2.3 Revised title	

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10 (Cont.)	Page 6-2: Section 6.2.4, Revised section	
	Page 6-3: Section 6.7, Revised 1st sentence	
	Page 7-2: (1), Revised responsibilities	
	Page 7-3: Section 7.2.3, Revised last sentence	
	Page 7-4: Section 7.3.2, Deleted "Quality Control"	
	Page 7-4: Section 7.4.1, Revised last sentence	
	Page 7-5: Sections 7.4.2 & 7.4.3, Revised responsibilities	
	Page 8-3: Section 8.3, Revised section	
	Page 9-3: Section 9.5, Added "review" & title change	
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	Page 15-4: Section 15.5, Revised responsibilities	
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	Page 16-1: Section 16.2.2, Deleted "and evaluate their safety significance" & revised 3rd sentence	
	Page 16-2: Section 16.3, Revised responsibilities	
	Page 16-3: Section 16.5, Revised heading	
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	Page 16-3: Section 16.5.2 Revised responsibilities	

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10 (Cont.)	Page 16-4: Section 16.5.4, Revised section Page 17-1: Section 17.1.1, Added "operation" 1st sentence Page 17-1: Section 17.1.2, Added "maintenance" and "personnel experience" Page 17-1: Section 17.1.2, Revised last sentence Page 17-2: Section 17.2.2, Revised responsibility Page 17-3: Section 17.3.1.2, Revised section Page 17-4: Section 17.3.4, Revised responsibilities Page 17-4: Section 17.4.1, Revised section Page 17-4: Section 17.4.2, Revised section Page 17-5: Section 17.5.2, Revised 1st sentence Page 17-5: Section 17.5.2, Revised (2) Page 18-1: Section 18.1.1, Revised 1st sentence Page 18-5: Section 18.4.4, Revised section Page 18-5: Section 18.5, Revised responsibility Page F-1 to F-7: Updated Figures Page T1-2: Added ANSI N18.7 (Section 5.2.7) Page T1-5: Added ANSI N45.2.2 (Section 6.4.2) Page T1-15 & T1-16: Added ANSI N45.2.9 (Section 4.3) Page T1-17: Added ANSI N45.2.23 (Section 2.3.1.3) Page T1-18: Added AWS D1.1 (Section 5.2.8.4) Page T2-1: Updated matrix Page T3-1: Revised #2 & #3 Page T3-2: Revised responsibilities #4 & #5 Page AB-2: Revised Section 1.5, #4 Page AB-3: Revised Section 2.1, #2 & #3 Page AB-5: Revised Section 2.1, #5, #6 & #7 to #4, #5 & #6 Page AB-6: Changed "QA" to "NQ" Page AB-6: Section 3.3, Revised responsibilities Page AB-9: Change "QA and QC" to "NQ"	

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12.0	CONTROL OF MEASURING AND TEST EQUIPMENT	12-1 to 12-4	10
13.0	HANDLING, STORAGE AND SHIPPING	13-1 to 13-5	10
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ARKANSAS NUCLEAR ONE POLICY STATEMENT
QUALITY ASSURANCE PROGRAM FOR OPERATIONS

It is the policy at Arkansas Nuclear One, Units 1 & 2 (ANO) and its supporting Organizations that the Quality Assurance Program for Operations (QA Program) meets the requirements of the Code of Federal Regulations, Title 10, Part 50, Appendix B, with respect to operation, maintenance, refueling, repair and modifications, and inservice inspection. The QA Program shall also meet the requirements of the ASME Boiler and Pressure Vessel Code with respect to items constructed, repaired or replaced to Code requirements.

Under the QA Program, the Vice President Nuclear is the final management authority responsible for assuring that this policy statement and the QA Program are implemented within ANO and its supporting organizations. The Executive Director Human Resources, and Executive Director Administrative Services are responsible for the procedural implementation of the QA Program within their assigned areas. The Executive Director Nuclear Operations is responsible for the daily implementation of the QA Program's procedural requirements at ANO.

The General Manager Nuclear Quality is responsible for establishing the QA Program. Responsibility for approval of the QA Program shall be identified within this manual.

Nuclear Quality personnel reporting to the General Manager Nuclear Quality are responsible for auditing the QA Program as necessary and inspecting/monitoring activities required by the QA Program to assure compliance with its requirements. Disputes involving quality, arising from difference of opinions between Nuclear Quality personnel and other

personnel, which cannot be settled interdepartmentally, shall be presented to the Vice President Nuclear for resolution. The General Manager Nuclear Quality has direct access to the President and Chief Executive Officer on matters concerning nuclear quality.

The General Manager Nuclear Quality through the Superintendent Quality Assurance is to provide for an annual review of the adequacy and overall effectiveness of the QA Program. Any defects in the implementation of either this policy or the QA Program that are revealed during the review are to be reported to appropriate levels of management together with appropriate recommendations.

Implementation of this policy is necessary in order to achieve the reliability and safety required at ANO. Each person involved in activities concerning ANO is to be responsible for assuring quality in his own work, and for compliance with the requirements of the QA Program. The QA Program policies, manuals, and procedures are mandatory requirements which must be implemented and enforced by all responsible organizations and individuals.

T. G. Campbell
Vice President Nuclear

Date: 8-29-88

INTRODUCTION

This manual describes the Quality Assurance Program for Operations (QA Program) applied to Arkansas Nuclear One, Units 1&2 (ANO) and its supporting Organizations. This manual is intended to serve as a standard reference for safety analysis reports to fulfill the requirements of the Standard Format and Contents of Safety Analysis Reports for Nuclear Power Plants, Section 17, published by the Nuclear Regulatory Commission.

The objective of the QA Program is to control those phases, as applicable, for the design, procurement, manufacture and fabrication, installation, operation, testing, refueling, repair, maintenance or modification to existing safety related (Q-List) structures, systems and components that prevent or mitigate the consequences of a postulated accident which may cause undue risk to the health and safety of the public. The QA Program is an outgrowth of the principle that quality assurance emanates from each individual contributor and that management is responsible for creating an awareness of quality.

The QA Program is designed to comply with the requirements of 10CFR50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants, and also to comply with the quality assurance requirements of the ASME Boiler and Pressure Vessel Code, Section XI for repair, replacement, and inservice inspection of items covered by the Code and Licensing commitments.

The QA Program is also designed to comply with the NRC positions contained in the following regulatory guides, subject to specific exceptions noted in Table 1 of this manual:

1.8, Rev. 1-R	Personnel Selection and Training (5/77)
1.28, Rev. 1	QA Program Requirements-Design and Construction (3/78)

1.30	QA Requirements for Installation, Inspection and Testing of Instrumentation and Electrical Equipment (8/72)
1.33, Rev. 2	QA Program Requirements-Operations (2/78)
1.37	QA Requirements for Cleaning of Fluid Systems and Associated Components of Water Cooled Nuclear Power Plants (3/73)
1.38, Rev. 2	QA Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items for Water Cooled Nuclear Power Plants (5/77)
1.39, Rev. 2	Housekeeping Requirements for Water Cooled Nuclear Power Plants (9/77)
1.58, Rev. 1	Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel (9/80)
1.64, Rev. 2	QA Requirements for the Design of Nuclear Power Plants (6/76)
1.74	QA Terms and Definitions (2/74)
1.88, Rev. 2	Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records (10/76)
1.94, Rev. 1	QA Requirements for Installation, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants (4/76)
1.116, Rev. 0-R	QA Requirements for Installation, Inspection and Testing of Mechanical Equipment and Services (5/77)
1.123, Rev. 1	QA Requirements for Control of Procurement of Items and Services For Nuclear Power Plants (7/77)

1.144, Rev. 1	Auditing of Quality Assurance Programs for the Nuclear Power Plant (9/80)
1.146	Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants (8/80)

Based upon compliance to these regulatory guides, the QA Program also complies with the following American National Standards Institute (ANSI) standards subject to exceptions noted in Table 1 of this manual:

N45.2-1977	Quality Assurance Program Requirements for Nuclear Facilities
N45.2.1-1973	Cleaning of Fluid Systems and Associated Components During the Construction Phase of Nuclear Power Plants
N45.2.2-1972	Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants (During the Construction Phase)
N45.2.3-1973	Housekeeping During the Construction Phase of Nuclear Power Plants
N45.2.4-1972	Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Stations
N45.2.5-1974	Supplementary Quality Assurance Requirements for Installation and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants

N45.2.6-1978	Qualifications of Inspection, Examination and Testing Personnel for Nuclear Power Plants
N45.2.8-1975	Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and System for the Construction Phase of Nuclear Power Plants
N45.2.9-1974	Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants
N45.2.10-1973	Quality Assurance Terms and Definitions
N45.2.11-1974	Quality Assurance Requirements for the Design of Nuclear Power Plants
N45.2.12-1977	Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants
N45.2.13-1976	Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants
N45.2.23-1978	Qualification of Quality Assurance Program Audit Personnel for Nuclear Facilities
N18.1-1971	Selection and Training of Nuclear Power Plant Personnel
N18.7-1976	Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants
N3.1-1981	Selection, Qualification, and Training of Personnel for Nuclear Power Plants

The above requirements are implemented by controlling activities as described in this manual and by procedures referenced in this manual.

The QA Program is also designed to comply with the following codes and standards, as applicable to those activities to which they are referenced within various sections of this manual:

ASME Section III, Division 1 - 1986 Edition, No Addenda*
ASME Boiler and Pressure Vessel Code - Nuclear Power Plant Components

ASME Section XI - 1974 Edition, Summer 75 Addenda (ANO Unit 2)**
- 1980 Edition, Winter 81 Addenda (ANO Unit 1)
ASME Boiler and Pressure Vessel Code - Rules for Inservice Inspection of Nuclear Power Plant Components

ASNT SNT-TC-1A-1980
Recommended Practice for Nondestructive Testing Personnel Qualification and Certification (This edition shall be used in lieu of earlier editions that might be referenced in other codes or standards to which ANO is committed).

AWS D1.1-1985
American Welding Society Structural Steel Welding Code

* Earlier editions/addenda of the Code may be specified for repair or replacement (including system changes) of components or systems, within the rules of ASME Section XI.

** Repair/replacement activities shall be to the 1980 Edition, Winter 81 Addenda

Definitions of terms applicable to the QA Program are found in the Terms and Definitions section of this manual.

TERMS AND DEFINITIONS

The terms used in this manual follow the definitions provided in ANSI N45.2.10-1973, supplemented by additional terms and definitions applicable to this manual.

Approval - An act of endorsing or adding positive authorization, or both.

Appurtenance - A part that is attached to a component which has been completed.

As-Built Data - Documented data that describes the condition actually achieved in a product.

Assembly - A combination of subassemblies or components, or both, fitted together to form a unit.

Audit - An activity to determine through investigation, the adequacy of and adherence to, established procedures, instructions, specifications, codes, and standards or other applicable contractual and licensing requirements, and the effectiveness of implementation.

Basic Component - A nuclear plant structure, system or component necessary to assure the nuclear safety criteria.

Bid Evaluation - A formal evaluation of all proposals received in response to an inquiry to determine the vendor to whom the purchase order will be awarded.

Certificate of Conformance - A written statement, signed by a qualified party, certifying that items or services comply with specific requirements.

Certificate of Compliance - A written statement, signed by a qualified party, attesting that the items or services are in accordance with specified requirements and accompanied by additional information to substantiate the statement.

Certified Test Report - A written and signed document, approved by a qualified party, that contains sufficient data and information to verify the actual properties of items and the actual results of all required tests.

Certification - The action of determining, verifying and attesting, in writing, to the qualifications of personnel or material.

Characteristic - Any property or attribute of an item, process, or service that is distinct, describable, and measurable, as conforming or nonconforming to specified quality requirements. Quality characteristics are generally identified in specifications and drawings which describe the item, process, or service.

Checks - The tests, measurements, verifications or controls placed on an activity by means of investigations, comparisons, or examinations, to determine satisfactory conditions, accuracy, safety or performance.

Cleanness - A state of being clean in accordance with predetermined standards, and usually implies freedom from dirt, scale, heavy rust, oil or other contaminating impurities.

Code Inspector - A qualified nuclear inspector (ANI or ANII) employed by a legally constituted agency of a Municipality or State of the United States, or Canadian Province, or regularly employed by an Authorized Inspection Agency and having authorized jurisdiction at the site of manufacture for installation, repair, modification, and inservice inspection of ASME Boiler and Pressure Vessel items designated safety-related.

Commercial-Grade - Those items contained in Q systems and equipment that are: (1) not subject to design or specification requirements unique to nuclear facilities or activities; (2) used in application other than nuclear facilities or activities; and (3) to be ordered on the basis of specifications set forth in manufacturer's published product description.

Component - A piece of equipment such as a vessel, piping, pump, valve or core support structure, which will be combined with other components to form an assembly.

Computer Code - The application software utilized within a digital computer to accomplish a specific function or task. Computer codes requiring quality assurance are those whose satisfactory performance is required to prevent accidents which may cause undue risk to the health and safety of the public or relied upon to mitigate the consequences of such accidents if they were to occur. This involves those computer codes utilized in design and analyses of Q-list components, and those utilized as an active portion of Q-list components.

Contaminants - Foreign materials such as mill scale, dirt, oil, chemicals and any matter than renders a fluid, solid or surface impure and unclean according to preset standards of acceptable cleanness.

Contractor - Any organization under contract for furnishing items or services. It includes the terms Vendor, Supplier, Subcontractor, Fabricator and sub-tier levels of these where appropriate.

Dedication - Designating a commercial-grade item for use as a basic component after receipt. This implies that all required inspections, examinations, testing, and documentation are completed to assure compliance with the Procurement Documents.

Defective Material - A material or component which has one or more characteristics that do not comply with specified requirements.

Deviation - A nonconformance or departure of a characteristic from specified requirements.

Documentation - Any written or pictorial information describing, defining, specifying, reporting or certifying activities, requirements, procedures, or results.

Examination - An element of inspection consisting of investigation of materials, components, supplies or services to determine conformance to those specified requirements which can be determined by such investigation. Examination is usually nondestructive and includes simple physical manipulation, gaging, and measurement.

F-List - A list of Non-Q fire protection equipment within the scope of the "Quality Program for Fire Protection" (Appendix B) - that is, those fire protection and detection systems, and those structures and components (such as fire doors, fire dampers, and penetration seals) which, as identified in the plant's fire hazards analysis report, are required to restrict the damage caused by a single exposure fire to safety-related equipment and equipment required to achieve and maintain safe plant shutdown to within those limits set forth in Section I of Appendix R to 10CFR50. This list is maintained current in the SIMS computer data base.

Handling - An act of physically moving items by hand or mechanical means, but not including transport modes.

Inquiry - A document that contains the necessary information for a vendor to make a proposal. An inquiry may include specifications pertaining to the equipment, materials or services proposed to be procured.

Inspector (Owner's) - A qualified inspector employed by the Owner whose duties include the verification of quality-related activities or installations or both.

Inspection - A phase of quality control which by means of examination, observation or measurement determines the conformance of materials, supplies, components, parts, appurtenances, systems, processes or structures to predetermined quality requirements.

Item - Any level of unit assembly, including structure, system, subsystem, subassembly, component, part or material.

Job Order (J.O.) - The document used for identifying and administratively controlling the work effort on station equipment and systems. It identifies applicable procedures and drawings; documents reviews, approvals and results of inspections and tests; and provides a mechanism for planning, scheduling and authorizing work.

Manufacturer - One who constructs any class of component, part, or appurtenance to meet prescribed design requirements.

Material - A substance or combination of substances forming components, parts, pieces and equipment items. (Intended to include such as machinery, castings, liquids, formed steel shapes, aggregates, and cement.)

Modification - A planned change in plant design or operation and accomplished in accordance with the requirements and limitations of applicable codes, standards, specifications, licenses and predetermined safety restrictions.

Nonconformance - A deficiency in characteristic, document or procedure which renders the quality of an item unacceptable or indeterminate. Examples of nonconformance include: physical defects, test failures, incorrect or inadequate documentation, or deviation from prescribed processing, inspection or test procedures.

Nuclear Safety Criteria - (1) Integrity of the reactor coolant pressure boundary; (2) capability to shutdown the reactor and maintain it in a safe shutdown condition; and (3) capability to prevent or mitigate the consequences of accidents which could result in potential off-site exposures comparable to those referred to in 10CFR100.11.

Objective Evidence - Any statement of fact, information or record, either quantitative or qualitative, pertaining to the quality of an item or service based on observations, measurements or tests which can be verified.

Operation - The total of administrative, maintenance and monitoring activities necessary to sustain the power-generating capabilities of the plant after initial start-up.

Owner - The person, group, company or corporation who will have or has title to the facility or installation under construction.

Package - A wrapping or container including its contents of materials or equipment.

Packaged Unit - An assembly of items and parts which can be disassembled without destroying the integrity of the individual parts.

Part - An item which has work performed on it and which is attached to and becomes part of a component before completion of the component.

Plant - The equipment, piping, structures, buildings and property that comprise an installation or facility.

Procedure - A document that specifies or describes how an activity is to be performed. It may include methods to be employed, equipment or materials to be used and sequence of operations.

Procurement Documents - Contractually binding documents that identify and define the requirements that items or services must meet in order to be considered acceptable by the purchaser.

Project - A planned series of activities including all actions necessary to provide, utilize, and maintain a facility or portion thereof.

Proposal - A bid, usually written by a vendor in response to an inquiry, which provides the issuing party with the vendor's proposed compliance to the inquiry and the cost.

Purchase Order (or Contract) - A document authorizing a vendor to provide equipment, material or services in accordance with stated terms and conditions.

Purchaser - The organization or organizations responsible for issuance and administration of a contract, subcontract or purchase order.

Q-List - A list of safety-related structures, systems, and components - that is, those structures, systems and components that must remain functional during and following design basis events to ensure that the Nuclear Safety Criteria are satisfied.

Qualification (Personnel) - The characteristics or abilities gained through training or experience or both that enable an individual to perform a required function.

Qualified Party - A person or organization competent and recognized as knowledgeable to perform certain functions.

Qualified Procedure - A procedure which incorporates all applicable codes and standards, manufacturer's parameters, and engineering specifications and has been proven adequate for its intended purpose.

Qualified Vendor List - A listing of vendors having quality assurance programs consistent with the requirements of applicable portions of 10CFR50, Appendix B. For vendors supplying ASME Code items, they shall also have a quality program consistent with the requirements of applicable portions of ASME Section III, Division 1, subsection NCA.

Quality Assurance - All those planned and systematic actions necessary to provide adequate confidence that an item or a facility will perform satisfactorily in service.

Quality Control - Those quality assurance actions which provide a means to control and measure the characteristics of an item, process or facility to established requirements.

Receiving - Taking delivery of an item at a designated location.

Repair - The process of restoring a nonconforming characteristic to a condition such that the capability of an item to function reliably and safely is unimpaired, even though that item still may not conform to the original requirement.

Report - Something (document) that gives information for record purposes.

Review - An element of inspection to determine conformance to specified requirements, which can be determined by examination of documents and activities.

Rework - The process by which a nonconforming item is made to conform to a prior specified requirement by completion, remachining, reassembling or other corrective means.

S-List - A list of non-Q, non-F Components subject to one or more the QA Program requirements of 10CFR50, Appendix B. This list is maintained current in the SIMS Computer Data Base.

Safety-Related (Q) - Safety-related structures, systems and components are those that must remain functional during and following design basis events to ensure that the Nuclear Safety Criteria are satisfied.

Source Surveillance - A review, observation or inspection for the purpose of verifying that an action has been accomplished as specified at the location of material procurement or manufacture.

Specification - A concise statement of a set of requirements to be satisfied by a product, material or process indicating, whenever appropriate, the procedure by means of which it may be determined whether the requirements given are satisfied.

Standard - The result of a particular standardization effort approved by a recognized authority.

Storage - The act of holding items at the construction site or in an area other than its permanent location in the plant.

Subsystem - A group of assemblies or components or both combined to perform a single function.

Surveillance - The continuing analysis and evaluation of records, methods and procedures, including the act of verification, to assure conformance with technical requirements.

System - A group of subsystems united by some interaction or interdependence, performing many duties but functioning as a single unit.

System Performance Test - A test performed on a completed system including electric, instrumentation, controls, fluid and mechanical subsystems under normal or simulated normal process conditions such as temperature, flow, level, and pressure.

Testing The determination or verification of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental or operating conditions.

Titles - Titles of individuals such as General Manager Nuclear Quality when used in this manual, assign the responsibility of performing the requirement to the noted individuals or their appointed designees.

Transit - The state of being conveyed or transported from one place to another.

Transit Carrier (Open) - Trucks, trailers, railroad cars, barges, aircraft or ships which do not afford items protection from the environment.

Transit Carrier (Closed) - Trucks, trailers, railroad cars, barges, aircraft or ships which provide protection of items from the environment by nature of their closed design.

Use-As-Is - A disposition which may be imposed for a nonconformance when it can be established that the discrepancy will result in no adverse conditions and that the item under consideration will continue to meet all engineering functional requirements including performance, maintainability, fit and safety.

Vendor - Any organization under contract for furnishing items or services. It includes the terms Contractor, Subcontractor, Supplier, Fabricator and sub-tier levels of these where appropriate.

Verification - An act of confirming, substantiating and assuring that an activity or condition has been implemented in conformance with the specified requirements.

Work Instructions - Written instructions used to transmit detailed information on the specific measures necessary to comply with the requirements of quality assurance procedures or any complex or difficult quality-related task.

Work Package - A collection of applicable documents, such as procedures, cleanliness control forms, inspection and test forms, hold card forms, Ignition Source Permits, drawings, technical manuals, etc., needed to perform the job.

1.0 ORGANIZATION

1.1 SCOPE

This section describes the Nuclear organizational structure and responsibilities for establishing and executing the QA Program for, Arkansas Nuclear One, Units 1 & 2 (ANO) in compliance with 10CFR50, Appendix B and applicable licensing commitments identified in the Introduction. It also includes a description of the interfaces with other organizations who may be delegated the work of establishing and executing portions of the QA Program. The Arkansas Power & Light Company's (AP&L) Corporate Organization relevant to the operation of ANO is shown in figure 1.

1.2 GENERAL RESPONSIBILITIES

The ultimate responsibility for ANO, including quality assurance, lies with the Vice President Nuclear . He provides management assessment of the QA Program through review of reports generated by the Nuclear Quality (NQ) Organization and reports of NRC activities.

1.3 NUCLEAR ORGANIZATION

This Organization, headed by the Vice President Nuclear is responsible for all activities related to the operation of ANO. These activities include as a minimum: design, operation, maintenance, inservice inspection and test, modification and those additional activities discussed in Sections 2.0 through 18.0 of this manual. The Vice President Nuclear who reports to the President and Chief Executive Officer (see figure 1) is responsible for the formulation, licensing, implementation and discharge of operating policies and procedures relative to nuclear plant operations, nuclear quality and nuclear fuel management. His duties include the following:

(1) Providing technical direction and administrative guidance to the:

a. Executive Director Nuclear Operations
b. General Manager Nuclear Quality
c. General Manager Design Engineering
d. General Manager Nuclear Oversight/Support

(2) Ensuring conformance to the QA Program by instituting the necessary procedures and instructions within the Nuclear organization

(3) Providing for review and approval of design and engineering performed for ANO

(4) Providing for review and approval of procurement documents for equipment, material and services

(5) Providing for liaison between ANO and applicable regulatory agencies

(6) Providing and maintaining a qualified and suitable staff to carry out required departmental functions

(7) Providing for procurement and design review of nuclear fuel

(8) Assuming overall responsibility for the fire protection, emergency planning and radiation protection programs implemented at ANO

1.3.1 Executive Director Nuclear Operations

The Executive Director Nuclear Operations reports to the Vice President Nuclear (see figure 2) and has direct responsibility for operating ANO in

a safe, reliable and efficient manner. He is responsible for operating ANO in accordance with the provisions of the operating licenses.

The Executive Director Nuclear Operations has the authority to shut down the plant if required and has final approval of overall plant administrative procedures.

The Executive Director Nuclear Operations provides technical direction and administrative guidance to the:

(1) General Manager ANO Plant
(2) General Manager Plant Support
(3) Manager ANO Engineering
(4) Manager Licensing
(5) Manager Budgets and Planning

1.3.1.1 General Manager ANO Plant

The General Manager ANO Plant (see figure 3) reports to the Executive Director Nuclear Operations and is responsible for the actual operation of the nuclear units, the maintenance of plant equipment and facilities and the planning/scheduling of plant work activities. The operations organization is shown in figure 4. The General Manager ANO Plant provides technical direction and administrative guidance to the:

(1) Manager Operations
(2) Manager Maintenance
(3) Manager Work Control Center
(4) Manager Plant Modifications

1.3.1.1.1

The Manager Operations is responsible for directing the actual day-to-day operations of the plant. He supervises the operating staff and

interfaces with the Manager Maintenance to accomplish operation-related maintenance activities. The Manager Operations provides technical direction and administrative guidance to the Superintendent Operations for each unit.

1.3.1.1.1.1

The Superintendents Operations report to and assist the Manager Operations in directing the day-to-day operation of each unit of ANO. They are responsible for coordination of the daily review of operating surveillance tests and coordination of operation-related maintenance activities. They assist the Manager Operations in the supervision of core refueling, which includes advance planning for the outage, plant preparation, equipment checkout and the refueling operations. The Superintendents Operations provide technical direction and administrative guidance to the:

(1) Supervisors Shift Operations
(2) Supervisors Technical Operations

1.3.1.1.1.1.1

The Supervisors Shift Operations report to the applicable Superintendent Operations and are responsible for the actual operation of the unit during their assigned shifts. The Supervisor Shift Operations is cognizant of operation activities being performed while on duty. The Supervisor Shift Operations on duty has the authority to shut down the unit if, in his judgement, conditions warrant such action. The Supervisors Shift Operations are holders of Senior Reactor Operator Licenses. The Supervisors Shift Operations provide technical direction and administrative guidance to the:

(1) Supervisors Control Room
(2) Shift Administrative Assistants

1.3.1.1.1.1.1.1

The Supervisors Control Room report to and assist the applicable Supervisor Shift Operations and are responsible for the actual operations in the Control Room and for the activities of the operators during their assigned shift. The Supervisors Control Room are holders of Reactor Operator Licenses. The Supervisors Control Room provide technical direction and administrative guidance to the:

(1) Assistant Plant Operators (Holders of Reactor Operators Licenses)
(2) Waste Control Operators
(3) Auxiliary Operators

1.3.1.1.1.1.2

The Shift Administrative Assistants report to the applicable Supervisor Shift Operations and are responsible for general operations administrative duties.

1.3.1.1.1.2

The Supervisors Technical Operations report to the applicable Superintendent Operations and are responsible for providing coordination, supervision and control of the Operations Technical Staff for the unit assigned and also act as single points of contact for each unit's staff when interfacing with other groups.

1.3.1.1.2

The Manager Maintenance is responsible for the maintenance of plant equipment and facilities as defined by plant maintenance program implementing procedures and ensuring that maintenance of equipment is

performed in compliance with applicable standards, codes, specifications and procedures. The Manager Maintenance is also to coordinate operation-related maintenance activities with the Manager Operations and is responsible to make repairs on any structure, system or component under his control. The Manager Maintenance provides technical direction and administrative guidance to the:

(1) Superintendent Mechanical Maintenance
(2) Superintendent Electrical Maintenance
(3) Superintendent Instrumentation & Control
(4) Superintendent Shift Maintenance
(5) Senior Maintenance Coordinator

1.3.1.1.3

The Manager Work Control Center is responsible for the planning/scheduling of station work activities and the maintenance of the equipment history and associated reports. He supervises the Work Control Center staff and interfaces with the Manager Operations and Manager Maintenance to accomplish the scheduling of the outage/non-outage work activities. The Manager Work Control Center provides technical direction and administrative guidance to the:

(1) Superintendent Planning & Scheduling
(2) Superintendent Outage Management
(3) Supervisor Maintenance History

1.3.1.1.4

The Manager Plant Modifications reports to the General Manager ANO Plant and is responsible for directing the activities of his staff relating to work associated with plant construction and modifications, interfacing with other departments to assure effective implementation of job

assignments and providing cost and schedule controls for department activities. He is also responsible for providing engineering support during the implementation and close-out of design modifications generated in support of ANO. He provides technical direction and administrative guidance to the:

(1) Superintendent Installation
(2) Superintendent Project Engineering
(3) Administrative Coordinator

1.3.1.2 General Manager Plant Support

The General Manager Plant Support (see figure 5) reports to the Executive Director Nuclear Operations and is responsible for providing the necessary on-site support services for ANO in the areas of health physics, technical analysis, radwaste, security, training and administrative services. The General Manager Plant Support provides technical direction and administrative guidance to the:

(1) Manager Plant Administration
(2) Manager Training
(3) Manager Technical Support
(4) Superintendent Security
(5) Superintendent Operations Assessment

1.3.1.2.1

The Manager Plant Administration reports to the General Manager Plant Support and is responsible for providing administrative services in support of plant activities. The duties and responsibilities of the Manager Plant Administration include the following:

(1) Technical direction and administrative guidance to the:

a. Superintendent Office Services
b. Superintendent Materials Management
c. Superintendent Computer Support
d. Administrator Human Resources

(2) Accumulation, storage and disposition of quality assurance records related to all phases of ANO

(3) Material management, storage of materials, parts and equipment, issuance of tools and test equipment and the identification of surplus materials

(4) Personnel employment and industrial relations at the plant

(5) Maintenance, revision and development of computer software for the plant monitoring and control room simulator computers and for providing technical assistance to the Superintendent Reactor Engineering in development and use of test apparatus for evaluation of fuel, core and Nuclear Steam Supply System (NSSS) performance

1.3.1.2.2

The Manager Training reports to the General Manager Plant Support and is responsible for the training and retraining of plant personnel and general office personnel as established by approved procedures. The Manager Training is also responsible for the implementation and maintenance of the ANO Emergency Plan. The Manager Training directs the activities of the ANO training staff and provides technical direction and administrative guidance to the:

(1) Superintendent Operations Training
(2) Supervisor Emergency Planning
(3) Supervisor Maintenance Training
(4) Supervisor Administrative Training
(5) Supervisor Technical Support Training
(6) Supervisor Simulator Support

1.3.1.2.3

The Manager Technical Support reports to the General Manager Plant Support and is responsible for the establishment and implementation of the health physics, radiochemistry, chemistry and environmental monitoring and radioactive waste programs at ANO. His duties and responsibilities include the following:

(1) Providing technical direction and administrative guidance to the:

a. Superintendent Health Physics
b. Superintendent Technical Analysis
c. Superintendent Radwaste
d. Health Physics Specialist

(2) Analyzing the reactor plant water conditions and providing recommendations to maintain conditions

(3) Processing, packaging, storing, and shipping radwaste generated at ANO in accordance with plant procedures and state and federal regulation

(4) Establishing water chemistry criteria, analyze secondary plant water and auxiliary water conditions and provide recommendations to maintain conditions within acceptable limits

(5) Assuring radiation exposure to plant personnel is maintained as low as reasonably achievable and authority to stop work in radiation areas if it is determined that a potential for an unanticipated excessive exposure to plant personnel or the environment may exist

1.3.1.2.4

The Superintendent Security reports to the General Manager Plant Support and is responsible for plant security including coordination of efforts of the security force and managing the operation of the security system.

1.3.1.2.5

The Superintendent Operations Assessment provides the capability to perform engineering evaluations of equipment and system performance over extended periods of operating experiences which occur both at ANO and at other nuclear power plants and to make recommendations as a result of these evaluations to help plant operations personnel in preventing or dealing with similar occurrences. He also provides technical direction and administrative guidance to the Shift Technical Advisers.

1.3.1.3 Manager ANO Engineering

The Manager ANO Engineering reports to the Executive Director Nuclear Operations and is responsible for providing on-site engineering support services (including fire protection and prevention) to the plant staff. The Manager ANO Engineering provides technical direction and administrative guidance to the:

(1) Superintendent Reactor Engineering
(2) Superintendent Plant Engineering
(3) Superintendent Engineering Services

1.3.1.3.1

The Superintendent Reactor Engineering is responsible for monitoring reactor core and NSSS performance; conducting reactor performance and physics testing to ensure safe and reliable operation; providing current, accurate information to operations; collection and transmittal of nuclear fuel management data to the Core Reload Design Senior Engineer in Little Rock and the reactor vendors as required; on-site safeguards and accountability of the nuclear fuel; and assisting in the planning of all fuel movements including new fuel receipt and inspection, fuel shuffling at refueling, inspection of irradiated fuel and shipment of spent fuel.

1.3.1.3.2

The Superintendent Plant Engineering is responsible for drawing control, engineering support of plant activities, evaluating equipment and system performance and plant efficiency, and investigating and evaluating equipment malfunctions or failures.

1.3.1.3.3

The Superintendent Engineering Services is responsible for the implementation and coordination of the Inservice Inspection program, on-site Welding program, and the Inservice Testing program at ANO. He is also responsible for coordination of the ANO fire protection and fire prevention programs. These programs include conducting periodic checks to examine control of combustibles, housekeeping and other fire prevention efforts. He is also responbisle for the steam generator integrity program, check valve inspection program, secondary piping erosion-corrosion monitoring, fan and filter performance testing, evaluation of possible consequences of boric acid corrosion on carbon steel, and for coordinating the technical manual, component data base and preventive maintenance programs at ANO.

1.3.1.4 Manager Licensing

The Manager Licensing reports to the Executive Director Nuclear Operations and has overall responsibility for the management and oversight of NRC inspection activities and interactions with the NRC regional and Washington, DC offices. The Licensing organization is shown in figure 5. The Manager Licensing provides technical direction and administrative guidance to the:

(1) Supervisor Licensing (on-site)
(2) Supervisor Licensing (off-site)

1.3.1.4.1

The Supervisor Licensing (on-site) reports to the Manager Licensing and is responsible for the following duties:

(1) Interfacing with on-site and regional regulatory agencies and the Manager Licensing pertaining to Licensing and regulatory matters

(2) Providing evaluations and recommendations in meeting regulatory commitments

(3) Establishing and maintaining a system for monitoring License Event Reports and NRC Inspection Reports

(4) Providing technical direction and administrative guidance to the on-site Nuclear Safety and Licensing Specialists

1.3.1.4.2

The Supervisor Licensing (off-site) reports to the Manager Licensing and is responsible for the following duties:

(1) Interfacing with NRC, Washington, DC offices and the Manager Licensing pertaining to Licensing and regulatory matters

(2) Establishing and maintaining programs for the maintenance of Licensing Base Documents (License, SAR, Technical Specification, Emergency Plan, QA Manual Operations)

(3) Reviewing NRC Correspondence (incoming and outgoing) and related industry documents to remain cognizant of activities that may affect ANO

(4) Providing technical direction and administrative guidance to the Little Rock based Nuclear Safety and Licensing Specialists

1.3.1.5 Manager Nuclear Budgets and Planning

The Manager Nuclear Budgets and Planning reports to the Executive Director Nuclear Operations and provides budgetary and fiscal planning, scheduling, and management support to the Nuclear Organization. The responsibilities involve the development and administration of fiscal and long-range planning programs to provide accurate and effective tools, information and analysis for the overall management of ANO. The Manager Nuclear Budgets and Planning provides technical direction and administrative guidance to:

(1) Superintendent Nuclear Planning
(2) Plant Controller
(3) Supervisor Plant Projects

1.3.2 General Manager Nuclear Quality

The Nuclear Quality (NQ) organization as shown in figure 6 is under the direction of the General Manager Nuclear Quality who reports to the Vice President Nuclear. The NQ organization performs reviews, surveillance,

inspection and audit functions during the operational phase of ANO. The NQ Organization is also independent of plant operations and has sufficient independence from cost and schedule when opposed to safety considerations. The General Manager Nuclear Quality has direct access to all management levels, which assures his staff the ability to: identify quality problems; initiate, recommend or provide solutions through designated channels; and verify implementation of solutions.

The qualification requirements of the General Manager Nuclear Quality are established within his job description which include the following prerequisites:

(1) Possess a degree from an accredited school in engineering or a related scientific discipline or equivalent

(2) Possess a minimum of four years experience in the field of quality assurance/control with at least two years in the nuclear field or equivalent number of years of nuclear plant experience in a supervisory position with at least one year experience in the implementation of the quality assurance program

(3) Exhibit the ability to plan, schedule and direct the activities of others assigned to or functioning within the NQ organization

Duties and responsibilities of the General Manager Nuclear Quality include the following:

(1) Technical direction, administrative guidance and supervision to the Superintendent Quality Assurance and Superintendent Quality Control/Quality Engineering

(2) Approving of the QA Manual Operations and revisions thereto

(3) Approving of QA and QC/QE procedures and revisions thereto as established within NQA procedures

1.3.2.1 Superintendent Quality Assurance

The Superintendent Quality Assurance reports to the General Manager Nuclear Quality. Duties and responsibilities of the Superintendent Quality Assurance include the following:

(1) Developing the QA Program requirements for operation, maintenance, and modification activities related to safety-related (Q-listed) systems, structures and components

(2) Auditing of the quality activities as described in Section 18.0 of this manual

(3) Reviewing, approving and verifying of the quality assurance requirements placed upon contractors or vendors that provide equipment, material or services for ANO

(4) Authority to stop work where conditions exist that prohibit effective quality programs, or if faulty materials, incorrect workmanship or procedures are detected

(5) Reviewing, approving, and controling of vendor quality manuals and procedures and revisions thereto

(6) Reviewing and approving of quality assurance programs for outside organizations participating in the QA Program

(7) Providing and maintaining a qualified and suitably trained staff to carry out required staff functions

(8) Formulating programs for maintaining the professional competence of personnel within the Quality Assurance section and providing assistance in Quality Assurance training and indoctrination programs for management, engineering and plant personnel whose activities affect quality

(9) Providing technical direction and guidance to the Supervisors Quality Assurance and their staff

(10) Inspecting, auditing or reviewing practices, records, files, instructions, directions or documents concerned with all areas affecting quality

(11) Scheduling and coordinating audits or surveillance efforts in the areas assigned, documenting findings and reporting results to the General Manager Nuclear Quality and the Manager of the audited area

(12) Providing to the General Manager Nuclear Quality on an annual basis the results of a review of the QA Program to determine the effectiveness and proper implementation of the QA Program

1.3.2.2 Superintendent Quality Control/Quality Engineering

The Superintendent Quality Control/Quality Engineering reports to the General Manager Nuclear Quality and is responsible for verifying the implementation of the Quality Control program at ANO. The duties and responsibilities of the Superintendent Quality Control/Quality Engineering include the following:

(1) Interface with plant staff in developing quality control requirements and inspection points for operation, maintenance and modification activities related to safety-related

(Q-listed) and fire protection-related (F-listed) systems, structures and components

(2) Interface with the Superintendent Quality Assurance or his representative for technical assistance in resolving significant conditions adverse to quality

(3) Authority to stop unsatisfactory work and authority to place an item in a nonconforming status when such an item is determined to be in violation of purchase documents, applicable codes and standards or SAR requirements

(4) Assuring surveillance inspections and reviews of plant activities and documents are conducted in accordance with approved procedures

(5) Providing technical direction and guidance to the Supervisor Quality Engineering and Supervisors Quality Control and their staff

(6) Providing and maintaining a qualified and suitable trained staff to carry out required staff functions and formulate programs for maintaining the professional competence of personnel within the Quality Control/Quality Engineering section

1.3.3 General Manager Design Engineering

The General Manager Design Engineering (see figure 7) reports to the Vice President Nuclear and is responsible for maintaining the design of ANO. His duties include the following:

(1) Providing technical direction and administrative guidance to;

a. Manager Mechanical, Civil, Structural Design
b. Manager Electrical, Instrumentation & Control Design
c. Manager Nuclear Design Services

(2) Assuring conformance to the QA Program by instituting the necessary quality-related procedures and instructions within Design Engineering

(3) Providing for review and approval of design and engineering activities performed by contractors, vendors, and Nuclear personnel in Design Engineering projects

(4) Providing for review and approval of procurement documents for equipment, material and services for off-site engineering projects, as appropriate

(5) Providing and maintaining a qualified and suitably trained staff to carry out required departmental functions

(6) Directing the development of programs aimed at maximizing efficiency and availability

(7) Providing for review and analysis of outage data and make recommendations for improving availability or performance

(8) Providing project control systems, methods and reporting formats to support managerial requirements

(9) Providing for procurement and design review of nuclear fuel

(10) Providing for development and control of design-basis information

1.3.4 General Manager Nuclear Oversight/Support

The General Manager Nuclear Oversight/Support (see figure 7) reports to the Vice President Nuclear and is responsible for providing off-site support to ANO in the areas of:

(1) Staff support for the Safety Review Committee (SRC)

(2) Corporate management oversight of various line functions

(3) Administrative support for radiological protection and chemistry programs

(4) Management of Owners' Group and Industry Group activities

(5) Technical direction and administrative guidance to:

a. Corporate Health Physicist
b. Project Manager Nuclear Industry Support
c. Senior Maintenance Coordinator
d. SRC Administrative Assistant
e. Special Project Coordinators

1.3.5 Independent Review Organizations

In addition to the responsibilities of key individuals within the Nuclear Organization who are involved with the overall quality program, the following committees have been established as management tools to independently review activities occurring during the operational phase of ANO.

1.3.5.1 Safety Review Committee (SRC)

The SRC is chaired by the Vice President Nuclear and is responsible for providing off-site independent reviews and/or audits relating to: the Safety Analysis Reports, Technical Specifications, procedures and changes thereto; unreviewed safety questions; violations, deviations and reportable events; and any other matter involving safe operation of ANO which the committee deems appropriate or is referred to them by the on-site operating group. The SRC is also to review the reports and meeting minutes generated from the Plant Safety Committee.

1.3.5.2 Plant Safety Committee (PSC)

The PSC reports to the Executive Director Nuclear Operations and is responsible for reviewing activities specified in the Technical Specifications for the purpose of:

(1) Rendering determinations in writing with regard to whether or not an unreviewed safety question (defined by 10CFR50.59) is involved

(2) Furnishing written recommendations to the Executive Director Nuclear Operations for approval

These activities include changes to plant procedures and Technical Specifications, proposed modifications to plant systems, changes to plant security and emergency plans and review of facility operations to detect potential nuclear safety hazards.

1.3.5.3 Committee Structure

The organizational structure and administrative requirements specific to each committee are described in the Technical Specifications for each operating unit and in internal procedures/documentation.

1.4 OUTSIDE SUPPORT ORGANIZATIONS

1.4.1 Senior Vice President Finance & Administration & Chief Financial Officer

Administrative Services and Human Resources headed by the Senior Vice President Finance & Administration & Chief Financial Officer is involved in procurement and training activities requiring execution of the QA Program. The organization is noted in figure 1. The Senior Vice President Finance & Administration & Chief Financial Officer provides technical direction and administrative guidance to the:

(1) Executive Director Corporate Services
(2) Executive Director Human Resources

1.4.1.1 Executive Director Corporate Services

The Executive Director Corporate Services, who reports to the Senior Vice President Finance & Administration & Chief Financial Officer, is responsible for the procurement of materials, parts and components requested by Nuclear personnel off-site and for supporting the procurement activities at ANO.

1.4.1.1.1

The General Manager Procurement & Materials Management reports to the Executive Director Corporate Services and is responsible for the following duties and activities:

(1) Providing technical direction and administrative guidance to the Manager of Procurement

(2) Preparing purchase orders based upon receipt of reviewed and approved Purchase Requisitions

(3) Performing the commercial interface functions between ANO and vendors/contractors

(4) Ensuring that quality documentation prepared by ANO personnel is included in appropriate procurement documents

1.4.1.2 Executive Director Human Resources

The Executive Director Human Resources reports to the Senior Vice President Finance & Administration & Chief Financial Officer and is responsible for the administration of the training and development effort of Nuclear personnel off-site. The Executive Director Human Resources provides technical direction and administrative guidance to the AP&L Manager Training.

1.5 ORGANIZATIONAL INTERFACES AND RESPONSIBILITIES

As owner, AP&L assumes full responsibility and authority for the plant including action to assure that the plant is operated in accordance with sound engineering practices, licensing requirements and applicable codes, specifications and procedures.

Each supplier of equipment, material or services and each maintenance or modification contractor is responsible for administering the applicable quality control functions as required by ANO. The NQ organization is responsible for assuring by surveillance, inspection, audit or review of objective evidence (e.g., review audit reports conducted by others, etc.) that these functions are accomplished for systems, structures and services that affect the safety and integrity of the plant.

Visits to manufacturers' shops by Quality Assurance personnel are conducted, when deemed necessary, based upon safety significance,

complexity, method of acceptance and past history of the vendor, to establish product quality and to assure that quality assurance and quality control programs function in accordance with ANO requirements.

2.0 QUALITY ASSURANCE PROGRAM

2.1 SCOPE

This QA Program is to assure that ANO is operated in a safe, reliable and efficient manner and in accordance with NRC regulations, applicable industrial standards and codes and applicable Company policies, rules, procedures and licensing documents. A matrix of quality procedures cross referenced to each criterion of 10CFR50, Appendix B, is included in Table 2 to this manual.

2.2 GENERAL

2.2.1

This QA Program is applied to those safety-related structures, systems and components and to those expendable and/or consumable items* whose satisfactory performance is required to prevent accidents which may cause undue risk to the health and safety of the public or to mitigate the consequences of such accidents if they were to occur. These structures, systems and components are identified in the summary level and component level Q-lists for each nuclear unit. The Summary Level Q-Lists (SLQL) are located in the SARs and information for the component level Q-lists (CLQL) is maintained current in the Station Information Management System (SIMS) for each nuclear unit. When structures, systems and components as a whole are on the SLQL or CLQL, portions not associated with a loss of safety function as determined by Design Engineering or Plant Engineering are to be considered Non-Q, unless otherwise dispositioned by Design Engineering or Plant Engineering

*Expendable and/or consumable items are to include, as a minimum: nuclear fuel, weld rods, boric acid, and diesel fuel.

2.2.2

Expendable and/or consumable items where quality is necessary for the performance of Q-listed structures, systems and components are identified and controlled in accordance with Technical Specifications and/or procedures.

The following expendable and/or consumable items are to be controlled in the following manner to assure service quality:

(1) Diesel Fuel - Service quality is ensured by applicable provisions/tests required by the Technical Specification for each operating nuclear unit

(2) Welding Rod - Service quality is ensured by procurement from an evaluated source, requiring material test results when specified by the ASME Code or applicable design document, and controlling the rod on-site prior to use to prevent degradation

(3) Boric Acid - Service quality is ensured by procurement from an evaluated source, requiring a batch analysis to ensure conformance with our specification requirements, and on-site control prior to use to prevent degradation

2.2.3

The quality program for transport packages containing radioactive materials is addressed in Appendix A of this manual and implemented through appropriate approved procedures. The effectiveness of this quality program is verified through scheduled audits conducted by the NQ Organization, under the cognizance of the SRC.

2.2.4

The quality program for fire protection is addressed in Appendix B of this manual and in the applicable section of the SAR and Technical Specifications for each operating nuclear unit and implemented through appropriate approved procedures. The effectiveness of the fire protection program is verified through scheduled audits conducted by the NQ organization, under the cognizance of the SRC.

2.2.5

The SLQL (as part of the SAR) is under the control of the Manager Licensing. The Licensing section maintains an up-to-date list of personnel issued a copy of the SAR for each nuclear unit and assures that reviews, approvals, distributions and changes thereto are performed in accordance with approved procedures. Changes to the SLQL require review/approval by the applicable Manager Design Engineering, Superintendent Quality Assurance and Manager Licensing.

2.2.6

The CLQL is maintained on a computer data base (SIMS) and is controlled in accordance with approved procedures. Design Engineering is responsible for the technical adequacy of the CLQL and ANO Engineering is responsible for the administrative controls on the CLQL within SIMS. Evaluations, reviews and approvals to changes to the CLQL are performed in accordance with applicable procedures.

2.2.7

The component level F-list (CLFL) is maintained on the SIMS component data base by ANO Engineering. Components classified as "F" on this list fall under the requirements of Appendix B of this manual. The controls for this list are similar to the controls utilized for the Q-list.

2.2.8

Components that are not Q-listed or F-listed and which are subject to ASME code requirements or similar design standards, regulatory requirements or licensing commitments or other ANO commitments are classified as "S" in the SIMS component data base. The controls for this list are similar to controls for the Q-list. This list is also referred to as the component level S-list (CLSL).

2.3 RESPONSIBILITIES

2.3.1

ANO recognizes that quality assurance is an interdisciplinary function involving many organizational groups, encompasses many functions and activities and extends to various levels in all participating organizations (from the President and Chief Executive Officer to all workers whose activities may influence quality). The QA Program designates responsibilities and duties of specific individuals, which may be performed by their appointed designees.

2.3.2

The QA Program assigns the responsibility for quality to the departments performing the work and includes as a basic requirement that individuals responsible for verification of conformance are qualified and do not perform or directly supervise the work. Additionally, independent reviews, audits and surveillances are provided by individuals not reporting to the groups responsible for performing the work.

2.3.3

The QA Program also includes provisions that require suppliers, contractors, subcontractors, consultants, etc. to maintain and use quality assurance programs reviewed and approved by the Superintendent Quality Assurance. Audits or surveillances by the NQ organization provide assurance of compliance with applicable procedures.

2.3.4

The Senior Engineer Core Reload Design within the Nuclear Design Services section and the Superintendent Reactor Engineering are responsible for the assurance that nuclear fuel used at ANO is designed, procured, manufactured and utilized in accordance with regulatory requirements, and related industrial codes and standards. On-site quality control of nuclear fuel is implemented through the use of plant administrative procedures. These procedures include the receipt, inspection, handling, storage and accountability of Special Nuclear Material (SNM). Individuals who perform receipt inspections are qualified in accordance with paragraph 2.6.3 of this manual. The Quality Control/Quality Engineering Superintendent maintains a listing of those individuals qualified to perform receipt inspection on nuclear fuel.

2.4 PROCEDURES

2.4.1

Activities which affect quality are defined in appropriate procedures, which are developed to cover administration and control. The procedures state the policies and instructions necessary to fulfill the intent of the QA Program. Procedures provide for standard forms, lists, and checkoffs used in documenting the inspections, certifications, reviews,

surveillances and audits. Programs and procedures are modified or supplemented from time-to-time as the need for change arises during the life of the plant. Quality program policies, procedures and instructions are contained in the documents listed in Table 3.

2.4.2

Procedures assure that activities affecting quality are performed under suitably controlled conditions. Controlled conditions include the use of appropriate equipment, suitable environmental conditions for performing the activity such as adequate cleanness and assurance that required prerequisites for the given activity have been satisfied. Administrative procedures also assure that the need for special controls, processes, tests and equipment to attain the required quality and the need for verification of quality by inspections, evaluations or tests is taken into account.

2.4.3

Other organizations outside of the Nuclear organization may establish written procedures to control support activities affected by the requirements of the QA Program. Procedures developed by such organizations are prepared and reviewed for technical adequacy within the cognizant organization, reviewed by the Superintendent Quality Assurance and approved by the cognizant organization's department head.

2.5 PROGRAM REVISION AND CONTROL

2.5.1

Program revision and control shall be the responsibility of the General Manager Nuclear Quality.

2.5.2

Proposed changes to this manual are to be submitted by the Superintendent Quality Assurance to affected management personnel for review and comment prior to approval and transmittal to the Nuclear Regulatory Commission. After resolution of comments, changes are to be approved by the Superintendent Quality Assurance, General Manager Nuclear Quality and the Vice President Nuclear.

2.5.3

The Nuclear Regulatory Commission is to be notified of changes to this quality program annually for those changes that do not reduce the commitments in the program description previously accepted by the Nuclear Regulatory Commission. Changes to the program description that reduce the commitments are to be submitted and approved by the Nuclear Regulatory Commission prior to implementation. The General Manager Nuclear Quality is to determine if changes do or do not reduce the commitments of the QA Program.

2.6 PERSONNEL

2.6.1

Employees whose duties and responsibilities are related to the QA Program activities at or in support of ANO are to participate in appropriate indoctrination and training programs to assure that suitable proficiency is achieved and maintained in the work they are performing. Such training shall include, as a minimum: plant security (badged personnel only), discussion of the overall Company policies, procedures and instructions which establish the QA Program, an explanation of the quality organization and a discussion of those procedures which implement the QA Program related to the employee's specific job-related activity.

2.6.2

The education, experience and responsibility requirements of individuals involved in the QA Program are documented in job descriptions which are approved and periodically reviewed by management. Requirements for education, experience and proficiency levels are commensurate with the degree of importance of the job assignment. Experience and training requirements for plant staff personnel are to meet the requirements of ANSI N18.1-1971 and Regulatory Guide 1.8 (9/75), unless otherwise noted in Table 1. Personnel whose qualifications do not meet those specified in ANSI N18.1-1971, and who are performing inspection, examination and testing activities during the operational phase of the plant, are to meet the requirements of ANSI N45.2.6-1978, unless otherwise noted in Table 1.

2.6.3

Personnel performing inspection and examination activities are to be indoctrinated and trained to assure they are aware of the requirements which govern their activity. Inspection and examination personnel are to be qualified according to the applicable codes, standards, specifications, regulatory requirements and approved procedures. Personnel performing inspections on those activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during initial plant design and construction are to meet the provisions of Regulatory Guide 1.58, Rev. 1 (9/80) and ANSI N45.2.6-1978, in lieu of ANSI N18.1-1971.

2.6.4

Personnel involved with welding of materials, systems or components are to meet the appropriate qualification requirements of the ASME Boiler and Pressure Vessel Code, Sections III and XI, or for structural welds, the American Welding Society (AWS) Structural Steel Code D1.1. Personnel

involved with nondestructive examination of materials, components or systems are to meet the qualification requirements of the American Society Nondestructive Testing Recommended Practice SNT-TC-1A or ASME Section III and XI for ASME Code materials, components or systems. Personnel are to be certified to perform these tasks in accordance with these codes and standards.

2.6.5

Personnel performing audits of the QA Program are to meet the experience, training and qualification/certification requirements of ANSI N45.2.23-1978, and Regulatory Guide 1.146 (8/80), unless otherwise noted in Table 1.

2.6.6

Personnel appointed to the SRC shall collectively have the experience and competence required by ANSI/ANS N3.1-1981. Personnel appointed to the PSC shall collectively meet those requirements identified in the Technical Specifications applicable to each nuclear unit.

2.6.7

Training records are to be maintained in accordance with approved procedures. For formal training programs, documentation is to include the objective, content of the program, attendees and date of attendance.

2.7 PROGRAM REVIEW

2.7.1

The General Manager Nuclear Quality through the Superintendent Quality Assurance is responsible for a review of the QA Program on an annual basis to determine the effectiveness and proper implementation of the QA

Program.

2.7.2

Management reviews of the status and adequacy of the QA Program are accomplished through regular reports and presentations by the NQ organization and through reviews of quality assurance reports. Quality assurance reports supply data on the status of outstanding audit and corrective action items and may identify the status of other significant QA Program activities as requested by management.

3.0 DESIGN CONTROL

3.1 SCOPE

Design activities are to be controlled to assure that proposed plant changes to the str ctures, systems, equipment and components conform to applicable regulatory requirements and that design bases are correctly translated into appropriate design documents. Design control activities are to be in accordance with the requirements of Regulatory Guide 1.64, Rev. 2 (6/76), unless otherwise noted in Table 1.

3.2 GENERAL

3.2.1

Design Engineering, Project Engineering and Plant Engineering are responsible for the continued upgrading and modification of plant design. Design documents (drawings, specifications, procedures and instructions) originating or released through these departments are to be based upon the regulatory requirements, licensing based documents, functional requirements, quality standards and design bases in accordance with NRC licensing requirements. Design activities may include calculations, analyses, materials selection, equipment arrangement and layouts, accessability for inservice inspection, and the specification of test and inspection criteria. Those design activities performed by individuals within Design Engineering, Project Engineering and Plant Engineering are controlled by the use of plant modification process (PMP) control procedures and by applicable administrative and departmental procedures. These procedures include controls to assure that verified computer codes are certified for use and that their use is specified.

3.2.2

Design standards and requirements are to be at least equivalent to those employed during the construction of the plant and are to be consistent with the Technical Specifications and License requirements.

3.3 DESIGN INTERFACE

Design control activities include measures for the identification and control of design interfaces between the various engineering disciplines within Design Engineering, between Design Engineering, Project Engineering, and Plant Engineering personnel, between engineering personnel and other support organizations, and between engineering personnel and firms/suppliers outside the Nuclear organization. These measures include the development of procedures among the participating organizations for the review, approval, release, distribution and revision of documents involving design interface. Coordination of the interface control is the responsibility of the originating organization's management unless otherwise specified in a procedure applicable to the design activity. Design information between interfacing organizations is to be documented and retained for permanent records.

3.4 DESIGN VERIFICATION

3.4.1

To assure the design is adequate and the above requirements and procedures are implemented, Design Engineering, Project Engineering, and Plant Engineering are to verify the adequacy of the design through the performance of design reviews, the use of alternate or simplified calculation methods, or the performance of a qualification testing program. The extent and depth of design verification performed by the responsible organization is determined by an assigned engineering

reviewer based upon the importance and complexity of the design, the degree of standardization and its similarity with proven designs. In all cases, the design verification is to be complete prior to relying upon the component, system or structure to perform its function.

3.4.2

The verification process is to be performed by competent individuals or groups other than those who performed or supervised the design but who may be from the same organization. This verification, however, may be performed by the originator's supervisor in accordance with departmental procedures if he is the only individual in the organization competent to perform the verification and provided the need is individually documented and approved in advance by the responsible Manager or Superintendent. The frequency and effectiveness of the use of Supervisors as design verifiers is to be verified by Nuclear Quality personnel through scheduled audits to guard against abuse. Where changes to previously verified designs have been made, design verifications are required for the change, including evaluation of the effects of the changes on the overall design.

3.4.3

When a test program is used to verify the adequacy of a design, it is to include suitable qualification testing of a prototype or initial production unit under the most adverse conditions and carried out in accordance with documented procedures and/or instructions. Testing is to be performed as early as possible prior to installation of plant equipment, or prior to the point when the installation would become irreversible.

3.4.4

Design work performed by organizations outside of the Nuclear organization is to receive a documented review and approval by engineering personnel in accordance with PMP control procedures and applicable departmental procedures.

3.5 DESIGN CHANGE

3.5.1

Methods for the preparation, review, approval and implementation of design changes, including field changes, are documented in PMP control procedures and departmental procedures for Design Engineering, Project Engineering and Plant Engineering. Design changes are subject to review and verification by the same organization which reviewed and verified the original design unless otherwise specified in departmental procedures for design control. If changes to an approved design are required to meet plant requirements or conditions, Field Change Requests (FCR) may be issued or otherwise documented by a cognizant engineer and transmitted with the changes for review and approval in accordance with PMP control procedures and applicable departmental procedures.

3.5.2

Changes from specified design inputs, such as design bases, regulatory requirements, codes and standards (including quality standards) are to be identified, approved, documented and controlled through PMP control procedures and applicable departmental procedures.

3.5.3

During preparation of a design change, the responsible engineering organization is to perform a review per 10CFR50.59 to verify compliance

with the SAR and to determine if NRC approval of the design change is required. The review is to be documented, reviewed and approved by the PSC. In addition, any 10CFR50.59 evaluations shall also be reviewed and approved by the SRC.

3.5.4

Design changes are also to be submitted to the Superintendent Quality Control/Quality Engineering prior to plant implementation to verify the use of appropriate quality codes, standards and inspection requirements in the design documents.

3.6 CORRECTIVE ACTIONS

When design changes are made as a result of design deficiencies or errors, corrective actions (for significant conditions) are to be taken in accordance with Section 16.0 to determine the root cause and to institute appropriate changes in the design process and/or QA Program to prevent recurrence. When a significant design change is necessary because of an incorrect design, the design process and verification procedures shall be reviewed and modified as necessary.

3.7 DESIGN RECORDS

The Manager Plant Administration is responsible for maintaining permanent records of the design documents for the construction and testing phases. In addition, he shall be responsible for maintaining records of the upgrading or modification of these documents as described in this section. The controls for maintaining these records are established by specific procedures described in Section 17.0 of this manual. These records provide the historic reference necessary for the safe and reliable operation of ANO.

4.0 PROCUREMENT DOCUMENT CONTROL

4.1 SCOPE

Requirements for the procurement of items and services are to be clearly stated and documented to assure that applicable regulatory requirements, design bases, technical requirements and quality assurance criteria are included or referenced in the procurement documents. Procurement document control activities are to be in accordance with approved procedures and are to meet the provisions set forth in NRC Regulatory Guide 1.123, Rev. 1 (7/77), unless otherwise noted in Table 1.

4.2 PROCUREMENT DOCUMENTS

4.2.1

The procurement of materials, parts and components are generated through the preparation of a Purchase Requisition (PR) and subsequent issuance of a Purchase Order (PO), or when additional services from the Vendor are required, through the preparation and issuance of a Contract. The procurement of services is initiated through the preparation and issuance of a Contract. The preparation, review, approval and issuance of these procurement documents are to be in accordance with applicable procurement and contract administration procedures. Purchase Orders for items are issued through the Procurement section. Contracts for items and/or services are issued through the Contracts Administration Section.

4.2.2

Procurement documents are to include or reference specific design specifications for the items or services to be procured which define specific codes, standards, tests, inspections, environmental qualifications, and records to be applied and/or furnished. For standard "off-the-shelf" items, reference to the item's catalog number and

identification number may be included on the procurement document in lieu of a design specification. New or revised specifications for replacement items are to be evaluated by the responsible engineering organization against the original specification for the item. The evaluation is to be in accordance with applicable engineering procedures and will result in the establishment of new baseline and technical quality requirements, which are to be used for subsequent procurements.

4.2.3

Procurement documents are also to include the identification of quality assurance program requirements applicable to the items or services procured. Procurement documents also establish requirements for source audits and inspections, extension of the procurement requirements to lower-tier suppliers or subcontractors, and preparation and delivery of documentation. These requirements may either be in the form of documents attached to the PO or Contract or by incorporating them in the specific design specifications. Quality programs are to be specified by invoking the appropriate sections of 10CFR50, Appendix B, the appropriate ANSI standards and/or the appropriate ANO-generated quality requirements for items or services. The appropriate sections of the ASME Boiler and Pressure Vessel Code are to be invoked for items originally designed to meet ASME requirements.

4.3 REVIEW OF PROCUREMENT DOCUMENTS

The Quality Assurance section within the NQ organization, as identified in the applicable procedures for procurement and contract administration activities, is to review all procurement documents to assure that the required quality requirements (including source surveillance and/or inspection) are imposed on suppliers/contractors.

4.4 CHANGES TO PROCUREMENT DOCUMENTS

Changes to procurement documents are to have the same degree of control and review as imposed on the original documents. Changes such as inconsequential editorial corrections or changes to commercial terms and conditions may be made by Procurement or Contract Administration personnel, as appropriate, after concurrence from the originator or organization which originated the document.

5.0 INSTRUCTIONS, PROCEDURES AND DRAWINGS

5.1 SCOPE

5.1.1

Instructions, procedures and drawings are provided for the control of those activities which affect quality and safety at ANO. Activities covered by written procedures include, as a minimum: administrative, general plant operations, start-up, shutdown, power operation and load changing, process monitoring, fuel handling, modification, maintenance and repair, radiation control, calibration and test, chemical-radiochemical control, plant emergencies, test and inspection, quality assurance, quality control, quality engineering and off-site activities in support of ANO. The format, content and philosophy of instructions and procedures are to comply with the guidelines in ANSI N18.7-1976 and Regulatory Guide 1.33 (2/78) unless otherwise noted in Table 1.

5.1.2

Instructions and procedures are also provided for the control of activities relating to the repair, replacement or modifications to ASME Code, Section III, Class 1, 2 or 3 components required to be operable to mitigate the consequences of a postulated accident.

5.2 GENERAL

5.2.1

Instructions, procedures and drawings are to include appropriate quantitative criteria such as dimensions, tolerances and operating limits and/or qualitative criteria such as comparative workmanship samples to determine that important activities have been satisfactorily

accomplished. Each procedure is to be sufficiently detailed so that a qualified individual may perform the required function(s) without direct supervision and is to include measures to document the activity being performed.

5.2.2

To assure the accomplishment of activities in accordance with approved instructions, procedures and drawings, each supervisor is responsible for quality compliance of his personnel. Verification that activities are accomplished in accordance with approved instructions, procedures and drawings is obtained through various levels of surveillance, inspection and audit by the NQ organization.

5.3 REVIEW OF INSTRUCTIONS, PROCEDURES AND DRAWINGS

5.3.1

Instructions, procedures and drawings are prepared, reviewed and approved in accordance with applicable administrative procedures.

5.3.2

Plant procedures identified in the Technical Specifications for each unit and changes thereto which describe activities required to implement the QA Program are to be reviewed by the PSC prior to submittal of the procedures to designated plant management for approval and subsequent issuance. Plant Administrative procedures (1000.XX & 6000.XX Series) are also reviewed by the NQ organization to verify compliance to the QA Program requirements. Procedures describing Little Rock activities required to implement the QA Program are to be reviewed and approved by a

procedures task force committee and NQ organization to assure compliance to the QA Program requirements prior to submittal of the procedures to the Department Head responsible for implementation for his approval and subsequent issuance.

5.3.3

Procedures and instructions are to be reviewed no less than every two years or prior to each use, if utilized less frequently, then once very two years, to determine if changes are necessary to meet NRC commitments and current ANO practices. Applicable procedures (i.e. those that relate to the incident cause) are to be reviewed following an unusual incident such as an accident, unexpected transient, significant operator error or equipment malfunction. Applicable procedures are also to be reviewed following any modification to a plant system.

5.3.4

Drawings related to plant changes and modifications are controlled as described in Section 3.0 and 6.0 of this manual.

5.4 CHANGES TO PROCEDURES

5.4.1

Changes or revisions to approved instructions, procedures and drawings are to be reviewed and approved by the same organizations or groups that performed the original review, unless otherwise noted in specific ANO procedures and controlled in the same manner as the original.

5.4.2

Temporary changes (interim approval) to approved plant procedures which do not change the intent of the procedure may be made provided such changes are approved by two members of the plant management staff, at least one of whom holds a Senior Reactor Operator's License on the unit affected. The change is to be documented, reviewed by the PSC and approved by designated plant management within 14 days of implementation. Temporary changes to approved plant procedures which change the intent of the procedure may be made provided such changes are reviewed by the PSC and approved by designated plant management prior to implementation. Temporary changes to approved plant procedures are to specify the period of time during which they may be used and be made readily available to affected members of the plant staff. In the event of an emergency not covered by an approved procedure, operations personnel may take action, without obtaining approvals, to minimize personnel injury and damage to the facility and to protect health and safety.

6.0 DOCUMENT CONTROL

6.1 SCOPE

The various quality program documents identified in Table 3 provide means to control the review, approval, issuance, use and retrievability of documents, such as calculations, computer codes, analyses, QA Manual Operations, SAR, instructions, procedures, specifications, manuals and drawings, including changes thereto, which prescribe activities affecting quality.

6.2 RESPONSIBILITIES

6.2.1

Each organization originating documents which prescribe activities affecting quality is responsible for the establishment of document control procedures which identify individuals or groups responsible for preparation, review, approval and maintenance of the document and for the issuance of these procedures to the affected individuals or groups.

6.2.2

Review of these documents for concurrence with quality-related requirements is to be performed by the appropriate Quality Assurance or Quality Control/Quality Engineering section within the NQ organization or by the appropriate reviewer as described in approved procedures.

6.2.3

The Manager Plant Administration is responsible for the control and issuance of plant procedures, and revisions thereto, to assure distribution in accordance with plant procedures. The Manager Plant Administration is also responsible for the storage and control of

approved historical plant documents and the storage of historical drawing records. The Manager ANO Engineering is responsible for the control and issuance of drawings and revisions thereto to ensure that they reflect the as-built conditions of the plant.

6.2.4

The General Manager Nuclear Oversight/Support is responsible through a Special Project Coordinator for the control and issuance of Little Rock procedures, and revisions thereto, to assure distribution in accordance with approved procedures.

6.3 IDENTIFICATION

Documents are to be identified by a title descriptive of their purpose or applicability and marked or stamped as to their current status (Draft, For Information Only, Void, etc.) per departmental procedures. Revision status of a document is to be identified in document registers, distribution lists and/or within the revision record page/block of the document.

6.4 DISTRIBUTION

Distribution lists and/or document registers are to be maintained by the organization responsible for issuance of the document. These lists are to identify the revision status of the document and are to be reviewed and updated periodically by the responsible organization to maintain them in a current status. These lists are available to individuals using the document to assure they are in receipt of the current document. These measures are to preclude the possibility of using outdated or inappropriate documents.

6.5 CHANGES

6.5.1

Changes to controlled documents are to be reviewed and approved by the same organizations which performed the original review and approval unless otherwise specified in departmental procedures applicable to the affected activity.

6.5.2

Obsolete or superceded documents are to be destroyed or marked to prevent inadvertent use in accordance with applicable document control procedures.

6.6 STORAGE

Documents which affect quality are to be stored and maintained at the plant in permanent storage facilities and controlled as described in Section 17.0 of this manual.

6.7 VERIFICATION

Quality Control/Quality Engineering personnel, through their various levels of quality review, surveillance and inspection activities, and Quality Assurance personnel, through their audit activities, assure proper documents are being used and made available to those individuals performing the work.

7.0 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

7.1 SCOPE

The purchase of material, equipment and services is controlled to assure that, whether purchased directly or through vendors, the material, equipment and services which affect quality conform to the procurement documents. Procurement control includes provisions for source evaluation and selection, objective evidence of quality furnished by the contractor, surveillance and audit at the source, examination of products upon delivery and testing of received material for conformance to procurement criteria. The depth and necessity of procurement controls depend upon the uniqueness and complexity of the item/service, procurement frequency with the same supplier and past supplier performance for the specific items or services covered by the procurement document. The control of purchased material, equipment and services is to be in accordance with the requirements of Regulatory Guide 1.38, Rev. 2 (5/77) and 1.123, Rev. 1 (7/77), unless otherwise noted in Table 1.

7.2 SOURCE EVALUATION AND SELECTION

7.2.1

A Qualified Vendors List (QVL) is to be maintained and controlled under the direction of the Superintendent Quality Assurance. The QVL identifies those vendors/contractors that have been evaluated and approved by the NQ organization to furnish material, equipment or services, and identifies any restrictions imposed by the NQ organization on the vendor/contractor as a result of their evaluation.

7.2.2

Vendors/contractors are evaluated and placed on the QVL by any of the following methods, as approved by the Superintendent Quality Assurance:

(1) Source survey by NQ personnel to verify compliance to applicable 10CFR50, Appendix B requirements or to applicable ASME Section III quality assurance program requirements. (This is not applicable to ASME procurements unless justified in accordance with the ANO ASME Section XI Repair and Replacement Program.)

(2) Evaluation and acceptance of source surveys performed by others (e.g., CASE, other utilities, NSSS suppliers, and prime contractors) indicating a program meeting the appropriate requirements of 10CFR50, Appendix B. (This method is not applicable for ASME procurements.)

(3) A review of the vendors/contractors current quality records supported by evidence of documented qualitative and quantitative information which can be objectively evaluated. This includes review and approval of the vendor's/contractor's quality assurance program, manual and procedures, when available. (This method is not applicable for ASME procurements).

(4) Evaluation of the vendor's/contractor's history of providing a product/service which performs satisfactorily in actual use. Evaluation information includes: experience of users of identical or similar products/services of the prospective vendor/contractor; and/or procurement records that have been accumulated in connection with previous procurement activities and operating experiences. (This method is not applicable to ASME procurements).

(5) Verification that a vendor is a holder of an ASME Certificate of Authorization issued as a result of an ASME survey. (This method is applicable for both ASME and 10CFR50, Appendix B procurements.)

7.2.3

Vendors/contractors listed on the QVL are to be selected for procurement of material, equipment or services except for items designated "commercial-grade" per approved procedures and as noted in paragraph 7.2.4. Standard catalog items may be procured from a vendor/contractor not listed on the QVL provided the manufacturer of the item is on the QVL and all requested documentation originates from the manufacturer. The QVL is periodically reviewed and updated per quality assurance procedures to ensure it is maintained current. This list of qualified vendors/contractors is available to personnel involved in the procurement process.

7.2.4

Services by contractors which provide only technical guidance/support or which require work activities to be performed under the scope of the QA Program may be furnished by contractors not listed on the QVL. The contractors work activities and personnel are to be controlled in accordance with approved procedures to assure that the contractor conforms to the procurement documents.

7.3 SOURCE SURVEILLANCE AND AUDIT

7.3.1

The effectiveness of a vendor's/contractor's quality assurance program is assessed by NQ personnel at intervals consistent with the importance, complexity, method of receipt and quantity of the products or services. This assessment may be through source surveillance, source audit, receipt inspection, independent testing or review of source documentation files.

7.3.2

Requests for source surveillance are made by the originator of the PR/Contract, or Quality Assurance section within the NQ organization during their review of the procurement document (reference section 4.3) Source surveillance is to be performed by Quality Assurance personnel or their appointed representative in accordance with surveillance plans approved by the Superintendent Quality Assurance and the results documented per quality assurance procedures. Reports documenting inspections performed and discrepancies observed are prepared by the person performing the surveillance to document compliance to the procurement documents and for future use as historical quality performance data.

7.3.3

Audits of the vendor's/contractor's quality assurance programs are periodically performed under the direction of the Superintendent Quality Assurance to verify implementation of a satisfactory quality program on the items or services being procured. Audits performed by others (e.g., CASE, other utilities, or prime contractors), as evaluated and approved by the Superintendent Quality Assurance, may be used as an alternative to audits by NQ personnel to verify the vendor/contractor is implementing a satisfactory quality program. Audits are to be conducted in accordance with Section 18.0 of this manual. (This alternative method does not apply to ASME procurements.)

7.4 RECEIPT INSPECTION

7.4.1

Materials and equipment, including ASME Code materials and equipment, are subject to inspection upon receipt at ANO. The degree of inspection is specified in the procurement documents. Receipt inspection is performed in accordance with approved procedures.

7.4.2

Receipt inspection activities are to be documented and include, as a minimum: examination of material or equipment for shipping damage, proper identification and quantity; and the review of vendor documentation to verify compliance with the procurement document. In addition, if material and equipment received at ANO were not inspected at the vendor's facility by NQ personnel, an inspection is to be performed by qualified NQ personnel at the point of receiving to verify that the material or equipment conform to the inspection requirements identified in the procurement documents.

7.4.3

Vendors are to furnish documentation as required by the procurement documents for objective evidence that the material or equipment conforms to the procurement requirements. Review and acceptance of this documentation are to be performed by NQ personnel prior to installation or use of such material or equipment and the results documented unless otherwise specified in approved procedures. Certificates of Conformance may be required by procurement documents which identify the requirements met by the vendor. The validity of the vendor's certification program is to be periodically verified through scheduled source surveillance and audit activities or through independent testing of the item by ANO.

7.4.4

Accepted material and equipment is released, identified as to its inspection status and forwarded to a controlled storage area or released for installation per applicable approved procedures.

7.4.5

Acceptance of services furnished by a contractor is to be identified in the procurement documents. Depending upon the service performed, acceptance may be by technical verification of the data produced, surveillance and/or audit of the activity, or review of objective evidence for conformance to the procurement document requirements. The acceptance method is to be performed by qualified individuals knowledgeable in the service provided.

7.4.6

Independent testing of selected material is to be performed in accordance with approved procedures/instructions to verify conformance to procurement criteria and the validity of the vendor's certification documents.

7.5 NONCONFORMING ITEMS

7.5.1

Nonconformances identified by the vendor/contractor which adversely affect reliability, performance or interchangeability of the item and dispositioned repair or use as is are to be submitted to and accepted by ANO prior to closure of the nonconformance by the vendor/contractor. These nonconformances are to be documented and become part of the procurement documentation furnished by the vendor/contractor for the material, equipment or services procured.

7.5.2

Material and equipment found to be deficient or missing procurement documentation during receiving inspection or found to be deficient as a result of independent testing is to be clearly identified, segregated

from acceptable items and dispositioned per approved procedures and as described in Section 15.0 of this manual.

7.6 SPARE PARTS

Spare parts are to be purchased to the original design requirements or to those specified by a properly reviewed and approved revision to the design requirements. The applicable quality assurance requirements and documentation requirements for spare parts are to be included in the procurement documents.

7.7 STORAGE

Material and equipment are to be handled and stored as described in approved procedures and Section 13.0 of this manual.

8.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

8.1 SCOPE

8.1.1

Measures for the identification and control of materials, (including consumables), parts and components, including partially fabricated subassemblies, are to be established within approved procedures. These procedures are to relate an item of production (batch, component, part, etc.) at any stage, from initial receipt through fabrication, installation, repair or modification to an applicable drawing, specification or other pertinent technical documents. These measures are to assure that only correct and accepted items are used and installed.

8.1.2

Methods for the traceability of materials, parts and components to specific inspection and test records, when required by codes, standards, specifications or procurement documents, are to be established within approved procedures and maintained throughout the life or consumption of the item.

8.2 IDENTIFICATION

8.2.1

Materials, parts and components are to be identified by the vendor in accordance with the applicable design standards, codes and/or instructions specified in the procurement documents.

8.2.2

Materials, parts and components are to be identified and/or tagged at the plant in accordance with applicable approved procedures. These tags identify the status of and provide traceability to the item throughout storage and release for installation.

8.2.3

Identification of materials, parts and components is accomplished by either marking or tagging on the item or through records traceable to the item.

8.2.3.1

Physical identification is to be used to the maximum extent possible. Where physical identification is either impractical or insufficient, physical separation, procedural controls or other appropriate means are to be employed in accordance with approved procedures.

8.2.3.2

When identification markings are employed, the markings are to be clear, unambiguous and indelible and applied in such a manner as not to affect the integrity or function of the item. Markings are also to be transferred to each piece of material (plate, barstock, tubing, etc.) when subdivided. Large quantities of small items may be identified by applying markings or tags to their shipping packages, boxes or other suitable containers.

8.2.3.3

Identification markings are to be recorded on records or as-built documents if current markings are to be hidden or subject to obliteration by surface treatment or coatings during fabrication, installation, repair or modifications.

8.3 CONTROL

Plant organizations receiving materials, parts and components are to verify that they are properly identified while under their control. Nuclear Quality audit surveillance and inspection activities ensure compliance to requirements and also ensure that materials, parts, and components are being identified in accordance with this manual.

8.4 DEFECTIVE OR INCORRECT ITEMS

8.4.1

Defective or incorrect materials, parts and components identified by plant personnel or support groups are to be handled in accordance with Section 15.0 of this manual and approved procedures for nonconformances and corrective action. Defective or incorrect items are to be tagged with a "hold tag" affixed to the item or otherwise identified per approved procedures.

8.4.2.

Defective or incorrect items are to be stored in segregated areas except for those items installed or which, due to their size, weight configuration, etc., are impractical or impossible to store in the designated controlled storage area.

9.0 CONTROL OF SPECIAL PROCESSES

9.1 SCOPE

Special processes are to be controlled through the use of qualified personnel and approved procedures which meet the requirements of applicable codes, specifications, standards and other criteria stipulated in ANO licensing documents.

9.2 GENERAL

9.2.1

Special processes are those activities which require interim in-process controls in addition to final inspection to ensure quality and include such activities as welding, nondestructive examination, heat treating, coating, plating and chemical cleaning.

9.2.2

Technically qualified personnel are to establish the procedural and qualification requirements for those special processes not covered by existing codes or standards or where the QA Program requirements exceed the requirements of established codes or standards.

9.2.3

The requirements for welding and nondestructive examination are to comply with the applicable portions of the ASME Boiler and Pressure Vessel Code or for structural welds, the AWS Structural Steel Code D1.1, and the American Society of Nondestructive Testing Recommended Practices (SNT-TC-1A and supplements). The requirements for cleaning and flushing of fluid systems are to comply with the requirements of NRC Regulatory Guide 1.37, dated 3/16/73 unless otherwise noted in Table 1.

9.3 QUALIFICATION

9.3.1

Special process procedures for welding and nondestructive examinations are to be qualified prior to use to ensure compliance with applicable codes, standards or specifications. These qualifications are to be documented and also made available for review to the Code Inspector for activities on ASME items.

9.3.2

Personnel responsible for the performance and verification of special processes are to be qualified and/or certified according to applicable codes, standards, specifications, regulatory guides and approved procedures. These qualifications and certifications are to be documented and made available for review to the Code Inspector for activities on ASME items. Personnel qualification and/or certification records for a special process are to be regularly reviewed by the supervisor responsible for that special process to ensure that the appropriate documents are up-to-date and personnel are periodically re-qualified and/or re-certified in accordance with approved procedures.

9.4 RECORDS

The results of special processes are to be documented, reviewed, approved and stored in accordance with appropriate approved procedures and as addressed in other sections of this manual.

9.5 VERIFICATION

Performance of special processes in accordance with applicable codes, standards, specifications and approved procedures is verified by Quality Control/Quality Engineering personnel through their review, surveillance and inspection activities, and by Quality Assurance personnel through their audit activities.

10.0 INSPECTION

10.1 SCOPE

Inspections relating to normal operating activities and inspections relating to operating activities comparable in nature and extent to those occurring during initial plant design and construction are to be controlled to assure that inspections are performed in accordance with applicable design documents, codes, standards, specifications and procedures. Inspection activities are to be in accordance with Regulatory Guide 1.33, Rev. 2 (2/78), unless otherwise noted in Table 1.

10.2 GENERAL

10.2.1

Inspection activities relating to normal operating activities (Operational Inspections) include:

(1) Work functions associated with normal operation of the plant
(2) Routine maintenance
(3) Technical services routinely assigned to the on-site operating organization
(4) Non-routine maintenance activities and minor modifications made by the on-site operating organization that are not comparable in nature and extent to related activities occurring during initial plant design and construction

10.2.2

Inspection activities relating to operating activities comparable in nature and extent to related activities occurring during design and construction (Construction Inspections) include:

1) Non-routine maintenance, except as noted in paragraph 10.2.1
2) Modifications, except as noted in paragraph 10.2.1

The following Regulatory Guides are to be applied, as applicable, in determining the basis for required construction inspections: R.G. 1.30, Rev. 0 (4/76); R.G. 1.38, Rev. 2 (5/77); R.G. 1.39, Rev. 2 (9/77); R.G. 1.37, Rev. 0 (3/73); R.G. 1.94, Rev. 1 (4/76); and R.G. 1.116, Rev. 0-R (7/76).

10.2.3

Personnel performing inspection activities to verify quality are to be qualified as stated in Section 2.0 of this manual. When inspection techniques require specialized qualifications or skills, personnel performing the inspection are to meet applicable licensing requirements, codes and standards appropriate to the discipline involved.

10.3 CONTROL OF INSPECTIONS

10.3.1

Inspections are to be performed in accordance with approved written procedures, which set forth the requirements and acceptance limits and specify the inspection responsibilities. If inspections require detailed written procedures to perform the task, the procedures are to contain, as a minimum, the following:

(1) Qualitative and/or quantitative acceptance criteria
(2) Prerequisites for performing the inspection and any limiting conditions
(3) Identification of any special equipment and tools required to perform the inspection (when accuracy requirements for inspections exceed the accuracy of normally available process

or measuring and test equipment, such additional accuracy requirements are to be specified within those inspection procedures)

(4) A step-by-step description of the method of inspection, examination, measurement or test to be performed

(5) Identification of those inspection results to be documented. Inspection forms or checklists are to be used as an aid in documenting the inspection activity to assure quality requirements have been met

10.3.2

Operational inspections are to be performed by qualified individuals other than those who performed or directly supervised the activity being inspected. Construction inspections are to be performed by qualified individuals other than those who performed or directly supervised the activity being inspected and do not report directly to the immediate supervisors who are responsible for the activity being inspected.

10.3.2.1

Operational inspections may be performed by second-line supervisory personnel or by other qualified personnel not assigned first-line supervisory responsibility for conduct of the work.

10.3.2.2

Construction inspections are to be conducted in a manner similar to that associated with construction phase activities in accordance with applicable approved procedures.

10.3.2.3

If individuals performing inspections are not part of the NQ organization, the inspection procedures, personnel qualification criteria, and independence from undue pressure such as cost and schedule are to be reviewed and found acceptable by the Superintendent Quality Assurance or Quality Control/Quality Engineering prior to initiation of the activity.

10.3.3

If an inspection determined to be required is impossible or disadvantageous, indirect control by monitoring processing methods, equipment and personnel is to be provided to verify conformance with applicable documented instructions, procedures and drawings. Both inspection and process monitoring are to be provided when control is inadequate without both.

10.4 INSPECTION POINTS

10.4.1

Inspection hold points are established for non-routine maintenance procedures and design change packages (DCPs) by Project Engineering or Plant Engineering and reviewed by the Superintendent Quality Control/Quality Engineering for concurrence and possible assignment of additional inspection hold points to further assure conformance with applicable instructions, procedures, drawings and related documents or to meet appropriate code and regulatory requirements. Inspection hold points for work functions associated with activities other than non-routine maintenance and DCPs are established by the originating department, NQ personnel or other responsible individuals and reviewed by the Superintendent Quality Control/Quality Engineering for concurrence.

10.4.2

Inspection hold points are inserted in procedures based upon safety significance, complexity of the item or activity, degree of standardization of the item or activity, past performance of the item or activity and the ability to verify quality by job-site testing.

10.4.3

Inspection responsibilities, requirements, information and acceptance criteria for the work activity are to be identified in appropriate, approved documents (e.g. procedures, checklists, etc.)

10.4.4

For work involving the modification, repair, replacement or inservice inspection of ASME Code materials, parts and components, the work packages are to be made available to the Code Inspector prior to commencing work for his review and assignment of inspection hold points. The department responsible for the work activity is responsible for notifying the Code Inspector when the hold point is reached. Work is not to proceed past a Code Inspector's inspection hold point until signed or waived by the Code Inspector.

10.5 DOCUMENTATION

10.5.1

Inspections and process monitoring activities are to be performed and the results documented in accordance with approved procedures or instructions. Records are to: provide objective evidence that the inspections and monitoring activities were performed in compliance with

procedures, instructions or drawings to verify design requirements; show compliance with acceptance criteria or identify the cause of rejected items; and identify the appropriate inspection personnel approving the results.

10.5.2

Records are to be maintained in accordance with approved written procedures and Section 17.0 of this manual. Inspection results on ASME Code items are available to the Code Inspector for his review.

10.5.3

The results of inspection and monitoring activities are periodically evaluated per approved procedures and the results documented to determine whether the individual inspection programs demonstrate that the plant can be operated safely and as designed.

10.6 NONCONFORMANCES

Noncomforming items found as a result of inspection and monitoring activities are identified, segregated and dispositioned in accordance with approved written procedures and Section 15.0 of this manual. Rework, repair or replacement performed after completion of inspections requires re-inspaction to the extent necessary to determine acceptability to established criteria.

11.0 TEST CONTROL

11.1 SCOPE

A test program is to be established to assure that testing required to demonstrate that an item will perform satisfactorily in service is identified, documented and performed in accordance with written test procedures. These procedures are to incorporate or reference the requirements and acceptance criteria contained in applicable codes, standards and specifications and in the licensing documents. These activities include testing during the operational phases of the plant and those tests required as a result of modifications, repairs or maintenance. These activities are also to comply with the applicable provisions of Regulatory Guide 1.33, Rev. 2, unless otherwise noted in Table 1, and with the applicable sections of the ASME Boiler and Pressure Vessel Code for ASME-designated items.

11.2 PROCEDURES

11.2.1

Written procedures/instructions are to be prepared to describe the requirements for conduct of the testing activities. These procedures/ instructions are to contain or reference the information required in Section 5.0 of this manual and in the applicable Regulatory Guides pertaining to quality assurance requirements for testing activities.

11.2.2

Test procedures/instructions and revisions thereto are to be subject to the same review and approval process as outlined in Section 5.0 of this manual.

11.3 TEST CONTROLS

11.3.1

Tests relating to plant start-up following a unit shutdown or fuel loading are to be conducted per written procedures/instructions in order to evaluate plant performance as the start-up progresses. Initial start-up test programs are to be planned to permit safe fuel loading and start-up, to increase power in safe increments and to perform major testing at specified power plateaus.

11.3.2.

Surveillance tests during the operational phase of the plant are to be conducted per written procedures/instructions to assure that failures or substandard performances do not remain undetected and that the required operability is maintained to ensure they will continue to operate, keeping parameters within normal bounds, or will act to put the plant in a safe condition if they exceed normal bounds.

11.3.2.1

Mandatory in-plant surveillance tests and inspections required to assure operation within the limiting conditions of operation are identified in the Technical Specifications applicable to each unit. To ensure that the required tests are performed as scheduled within the specified time interval, surveillance procedures are established and maintained for mandatory surveillances identified in the Technical Specifications. These procedures are to specify the component or system, type of surveillance activity, frequency of activity and the cognizant individual responsible for completion of the surveillance activity.

11.3.2.2

Inservice inspections required to meet the requirements of ASME Boiler and Pressure Vessel Code, Section XI, are to be identified in the Inservice Inspection (ISI) Programs applicable to each unit. Engineering Services is to establish and maintain an ISI plan for each unit. The plan specifies the inspection items, inspection procedures, inspection intervals and types of inspections. Engineering Services is to coordinate the implementation of the ISI plans at appropriate scheduled outages. The plans are also to be made available for review by the Code Inspector.

11.3.3

Tests following plant modifications, repairs, maintenance or significant changes in operating procedures are to be conducted to confirm that they are not detrimental to the safe and efficient operation of the plant and that the components or systems demonstrate satisfactory performance.

11.3.4

Requirements for the given test to be performed are to be identified in the test procedures/instructions. Evidence is to be available to assure the following minimum requirements are met:

(1) Test equipment and measuring devices are calibrated in accordance with the requirements of Section 12.0 of this manual and are functioning properly
(2) Test personnel have been qualified to perform the test in accordance with the requirements of Section 2.0 of this manual
(3) Appropriate witness and hold point notifications have been provided

(4) Test prerequisites completed

(5) When accuracy requirements for tests exceed the accuracy of normally available process or measuring and test equipment, such additional accuracy requirements are to be specified within those test procedures

11.3.5

Testing activities are to be subject to surveillance/inspections in accordance with Section 10.0 of this manual. Testing as a result of repairs, modifications, replacement or scheduled inservice tests on ASME Code items is also subject to inspection by the Code Inspector. The assignment of inspection hold points is described in Section 10.0 of this manual.

11.3.6

Test results are to be documented in accordance with the applicable procedures/instructions. Test documents are to contain at least the following:

(1) Identity of item tested

(2) Date of test

(3) As-found condition

(4) Identification of individuals performing test

(5) Test results

(6) Corrective actions performed, if any

(7) As-left condition

11.3.7

Test results are to be evaluated by responsible qualified personnel per approved procedures to assure that test objectives and inspection requirements have been satisified. Nonconforming items are to be identified and controlled in accordance with Section 15.0 of this manual.

11.4 RECORDS

Test results are to provide objective evidence that the testing was performed in compliance with approved procedures. Test records are to be maintained and transmitted to the Document Control Center for retention in accordance with Section 17.0 of this manual.

11.5 TEST STATUS

Inspection and test status is to be controlled in accordance with the provisions of Section 14.0 of this manual.

12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

12.1 SCOPE

12.1.1

A program is established to assure that devices used for measurements, tests and calibrations are identified, controlled and calibrated against reference standards to assure that accuracy is maintained within the limits specified by the inspection or test requirements. Control of measuring and test equipment is to comply with the applicable provisions of Regulatory Guide 1.33, Rev. 2, pertaining to measuring and test equipment, unless otherwise noted in Table 1.

12.1.2

This section is generally applicable to chemical and radiochemical equipment, except for paragraphs 12.3.3, 12.3.4 and 12.4.2. The controls for the calibration of chemical and radiochemical measuring equipment are to comply with the provisions of Regulatory Guide 1.33, Rev. 2, Appendix A, Section 10.0, and performed in accordance with chemical and radiochemical control procedures.

12.1.3

This section does not apply to rules, tape measures, levels or other such devices where normal commercial practices provide adequate accuracy.

12.2 RESPONSIBILITIES

12.2.1

The cognizant superintendents/group supervisors are responsible for establishing and maintaining lists of measuring and test equipment under

their control that require periodic calibration and for the calibration of this equipment, as assigned within approved procedures.

12.2.2

The cognizant supervisor is responsible for identifying measuring and test equipment required for the activity and assures that the devices are used only by qualified personnel.

12.2.3

Personnel performing the activity are responsible for utilizing only properly identified and calibrated measuring and test equipment when performing inspections and tests for record.

12.2.4

The NQ organization is responsible for monitoring test equipment control and use in order to verify compliance with the program.

12.3 GENERAL

12.3.1

Calibration procedures are to be established for each type of measuring and test equipment. These procedures are to conform to recognized codes and standards and to local, state and federal regulations and are to be referenced on the calibration reports/logs.

12.3.2

Measuring and test equipment are to be properly controlled, calibrated and adjusted at specific intervals or prior to use to assure the necessary accuracy of calibrated equipment. Calibration intervals are to

be based upon the type of equipment, manufacturer's recommendations, stability and reliability characteristics, required accuracies, use and other conditions affecting calibration.

12.3.3

Reference standards used in the calibration of measuring and test equipment are to be traceable to the National Bureau of Standards, or if nonexistent, to accepted industry or ANO standards. Reference standards are to have an accuracy at least four times that of the measuring and test equipment. In any instance where the four times criteria is unable to be met, standards are to have an accuracy level, acceptable calibration range and precision equal to or better than those required for the ranges affected by the calibration. Accuracies less than four times will be acceptable when warranted by statistical analysis or limited by the state-of-the-art as authorized by responsible management. Reference standards are to be maintained in an environment with temperature, humidity and cleanliness controls compatible with maintaining accuracy and operating characteristics of the standards.

12.3.4

When measuring and test equipment are found to be out of calibration, an evaluation of the validity of previous inspection or test results and the acceptability of items previously inspected or tested is to be made and documented by written report in accordance with approved procedures. If any piece of measuring or test equipment is consistently found to be out of calibration, it is to be repaired or replaced.

12.3.5

Re-calibration per approved procedures is to be performed when the accuracy of either installed or calibrated equipment is questionable.

12.4 EQUIPMENT IDENTIFICATION

12.4.1

Measuring and test equipment lists are to contain sufficient information to uniquely identify each item listed and is to include, as a minimum, calibration intervals, tolerances and storage locations. The lists are also to identify the group responsible for the control of each item.

12.4.2

Items listed on measuring and test equipment lists are to be tagged, labeled or otherwise identified per approved procedures in such a manner that clearly identifies the equipment and their calibration status and provides traceability to the calibration records.

12.4.3

Measuring and test equipment found to be out of calibration is to be tagged and segregated from acceptable equipment in accordance with approved procedures until repaired and/or re-calibrated.

12.5 RECORDS

Calibration documentation is to be maintained to verify calibration status, condition, accuracy and out-of-tolerance trends of the equipment.

13.0 HANDLING STORAGE AND SHIPPING

13.1 SCOPE

Activities for the handling, storage and shipping, including cleaning, packaging and preservation of materials and equipment are to be performed in accordance with established instructions, procedures or drawings, to prevent damage, deterioration or loss of the item. Activities are to comply with the provisions of Regulatory Guide 1.38, Rev. 2, unless otherwise noted in Table 1.

13.2 GENERAL

13.2.1

Instructions for preservation are to be provided for items subject to deterioration or damage through exposure to air, moisture or other environments during fabrication, processing, assembly and interim storage periods. Items are to be cleaned, preserved and packaged as required to preclude deterioration and prevent damage. When maintenance of specific internal or external environments is necessary, it is to be included in special packaging instructions and maintenance procedures.

13.2.2

Procurement documents assure that any special cleaning, preserving, handling, packaging or shipping requirements for purchased material or equipment are taken into account.

13.2.3

For critical, sensitive, perishable or high-value articles, recommendations for their handling, storage, packaging, shipping and preservation are to be requested from the supplier per the procurement

documents and furnished to the plant prior to or upon receipt of the items at the plant.

13.3 SHIPPING CONTROLS

13.3.1

Shipping requirements are to be specified in the procurement documents. Suppliers' compliance with these requirements are to include controls to assure that items are complete and assembled as required; items have been preserved and packaged in accordance with the procurement documents; items have been marked and identified in accordance with specifications and procurement documents; items have been loaded for shipment in such a manner as to prevent damage; and required documentation is complete and furnished in accordance with the procurement documents.

13.3.2

Special nuclear material and sources are to be shipped and stored as specified in the operating licenses and other appropriate regulatory documents. The Superintendent Health Physics is responsible for assuring that radioactive sources and instruments containing radioactive sources are stored and handled per these requirements and approved procedures. The Supervisor Radwaste is responsible for assuring that low-level waste material is stored and shipped per these requirements and approved procedures. The Superintendent Reactor Engineering is responsible for assuring that special nuclear material (SNM), as defined in approved procedures, is shipped, stored and handled per these requirements and the approved procedures.

13.4 RECEIVING

13.4.1

Materials and equipment are to be received at the plant per approved procedures and subjected to a receipt inspection in accordance with Section 7.0 of this manual. As part of the inspection activity, received materials and equipment are to be inspected for damage, deterioration, cleanliness and proper identification and markings per approved procedures for receipt inspection.

13.4.2

Results of the receiving inspection and disposition of the material or equipment are to be documented on receiving inspection records. Nonconforming items are to be handled in accordance with approved procedures and Section 15.0 of this manual.

13.5 STORAGE CONTROLS

13.5.1

Materials and equipment which have completed the receiving process are to be stored based on the classification level of storage specified on the procurement documents or related design documents.

13.5.2

Storage control procedures are to be established which include, as a minimum, provisions for the following: controlled access and usage of the storage area; cleanliness and good housekeeping controls; fire protection; protection from environmental hazards; segregation of hazardous materials; and control of those items which have a specified shelf life.

13.5.3

Only items which have completed the receiving process are to be placed in a controlled storage area. Records of the items' location(s) are to be provided by the Superintendent Materials Management (see paragraph 13.3.2 for control of radioactive sources, low-level waste material and SNM) to identify those items currently in storage and to facilitate inspection and maintenance planning. Issuance of items from storage for installation or use is to be documented and controlled in accordance with approved procedures.

13.5.4

Items identified as requiring maintenance during storage are to be maintained in accordance with a documented maintenance program.

13.5.5

Storage areas are to be monitored by individuals responsible for the storage areas so that the integrity and security of stored items are effectively maintained. Inspections and examinations under the control of the Superintendent Quality Control/Quality Engineering are to be performed and documented on a periodic basis to assure that the integrity of the items and their containers is being maintained. Periodic audits under the control of the Superintendent Quality Assurance are also performed to assure compliance with storage requirements.

13.6 HANDLING CONTROLS

13.6.1

Special handling requirements are to be specified in the procurement documents and approved procedures to protect the quality of items

susceptible to handling damage. Special tools and equipment are to be provided to handle these items and are to be controlled and maintained per written procedure to assure safe and adequate handling.

13.6.2

Special handling tools and equipment are to be inspected and tested at specific times in accordance with written procedures to verify that the handling tools and equipment are adequately maintained. Inspection and test status of these handling tools and equipment are to be controlled in accordance with the applicable sections of this manual.

14.0 INSPECTION, TEST AND OPERATING STATUS

14.1 SCOPE

14.1.1

The removal from service, inprocess status and return to service of equipment, components and systems for maintenance, modifications repair, test or inspection is to be controlled per approved procedures. These controls are to assure that plant personnel are aware of equipment, structure or system conditions and to prevent their inadvertent use unless cleared by operations personnel.

14.1.2

Maintenance activities are to be performed in accordance with an established maintenance program to assure that equipment, systems and structures are maintained in a condition which allows them to perform their intended function.

14.2 EQUIPMENT CONTROL

14.2.1

Prior to removal of equipment, components or systems from service for maintenance, modification, repair, test or inspection activities, permission is to be received and documented from the Supervisor Shift Operations. The Supervisor Shift Operations is to assure that the item can be released without affecting plant safety.

14.2.2

The status of equipment, components and systems during these activities is to be identified in accordance with approved procedures/instructions, which contain, as a minimum, the following:

(1) Methods for control of equipment to maintain personnel and reactor safety and to avoid unauthorized operation of equipment or systems

(2) The use of markings or other suitable means to indicate the status of activities being performed upon individual items. Suitable means are to include identification numbers which are traceable to records or to the status of these activities

(3) Provisions for the identification of items which have satisfactorily passed the required activities. In cases where required documentary evidence is not available, the associated equipment or system is to be considered nonconforming and handled in accordance with Section 15.0 of this manual

(4) Provisions for independent verifications to ensure that necessary measures (locking or tagging) to secure and identify equipment or systems in a controlled status have been implemented correctly

14.2.3

When entry into a closed system is required, control measures are to be established to prevent entry of extraneous material and to assure that foreign material is removed before the system is reclosed.

14.2.4

During maintenance or modification activities, certain portions of systems, as identified in approved procedures, may be subject to potential contamination with foreign materials. To prevent such contamination, control measures, including measures for access control, are to be established. Immediately prior to closure, an inspection is to be conducted to assure cleanliness and the result of such inspection is to be documented.

14.2.5

If temporary modifications (such as temporary bypass lines, electrical jumpers, lifted electrical leads and temporary trip point settings) are required for a system or piece of equipment, they are to be performed in accordance with approved procedures. A status log is to be maintained by the Supervisor Shift Operations, identifying the current status of such temporary modifications. Temporary modifications are to be verified by individuals independent of the group performing the activity and documented to assure the required actions are taken to return the equipment or system to its original operating configuration and status.

14.2.6

When equipment or a system is properly identified as being ready to be returned to service, the appropriate Supervisor Shift Operations is notified and initiates the proper operation procedures. Testing of the equipment or system for functional acceptability is to be in accordance with Section 11.0 of this manual and documented to verify current status of the item.

14.2.7

Equipment, structures and systems found to be nonconforming as a result of an activity are to be handled in accordance with approved procedures and Section 15.0 of this manual.

14.3 MAINTENANCE CONTROL

14.3.1

In addition to the requirements and controls identified in subsection 14.2 of this manual, a maintenance program is to be planned and scheduled through the Manager Maintenance to assure that the safety of the plant is not compromised nor the Technical Specifications violated. Maintenance activities are to be performed per approved procedures and instructions and conducted in a manner to assure quality at least equivalent to that specified in the design documents, material specifications and inspection requirements. As experience is gained in operation of the plant, routine maintenance may be altered to improve equipment performance and procedures for repair of equipment are to be improved as directed by the Manager Maintenance.

14.3.2

A preventive maintenance program, including procedures and instructions for systems, structures and components, is to be established and maintained under the Manager ANO Engineering which prescribes the frequency and type of maintenance to be performed in order to preclude equipment malfunctions. Implementation of the program is the responsibility of the ANO Plant Manager and is implemented by qualified maintenance personnel in accordance with approved procedures and

instructions which specify the work activities, acceptance requirements and the control measures to assure adequate quality. When equipment malfunctions occur, the cause is to be promptly determined, evaluated and recorded per approved procedures and Section 16.0 of this manual.

14.4 OVERALL PLANT STATUS

14.4.1

The Supervisor Shift Operations is provided sufficient knowledge of the overall plant status of equipment, structures and systems to control operation of the plant in a safe manner. The Shift Operators are to maintain a ready reference of plant systems, equipment and component alignments, as well as a status board summary of their conditions.

14.4.2

The turnover of duties to personnel on succeeding shifts is conducted in accordance with approved procedures. These procedures include documented turnover action appropriate to the duty station acknowledging the status of the nuclear power plant, its structures, systems and components (including design changes/modifications which may affect the performance of their duties) and transfer of authority.

15.0 NONCONFORMING MATERIAL, PARTS AND COMPONENTS

15.1 SCOPE

Nonconforming items are to include materials, parts, components and, as applicable, services (including computer codes) that do not conform to applicable regulations, codes, standards, specifications, drawings or licensing documents. Nonconforming items are to be controlled in accordance with approved procedures to prevent their inadvertent use or installation. These procedures are to contain measures to assure the prompt identification and notification, documentation, segregation, technical review and disposition of a nonconforming item.

15.2 GENERAL

15.2.1

It is the responsibility of each individual to identify a nonconformance and to report it to their cognizant supervisor for review and concurrence. The initiator is to document the nonconformance as identified within approved procedures. If the nonconformance is determined to be a Technical Specification violation and/or reportable to the NRC, see subsection 16.5.

15.2.2

Nonconforming items are to be identified by tagging, marking or as otherwise identified per approved procedures to control further processing or, when physical segregation is not practical, to prevent inadvertent use or installation of the item. Nonconforming items are to be segregated from acceptable items unless they are currently installed or their size, weight, configuration, etc., makes it impractical to move to a segregated area. Tags and/or markings are to remain on the item until the disposition is complete per approved procedures.

15.2.3

Reports of nonconforming items are to identify the group responsible for dispositioning the nonconformance. The assigned individual within the responsible group is to evaluate the nonconformance and confer, as appropriate, with interfacing groups to determine a recommended disposition. The disposition for materials, parts, components and as applicable, services (including computer codes), which may be reject, rework, repair or use-as-is, and any actions taken/required to be taken as a result of the disposition are to be documented on the report.

15.2.4

Review of the disposition for concurrence is to be performed by the individual/group identified within approved procedures. If the review group or individual cannot agree with the assigned individual on the disposition, the Executive Director Nuclear Operations or the Vice President Nuclear, as appropriate, is to decide. For a repair or use-as-is disposition, a cognizant individual knowledgeable in the design requirements for the affected item is also to review the report for concurrence of the disposition. Written justification for the design change, repair or deviation that has been accepted is to be documented to denote the as-built condition and is to be made a part of the report.

15.2.5

The acceptability of rework or repair of materials, parts, components, systems and structures is to be verified by re-inspecting the item as originally inspected or by a method which is at least equal to the original inspection method. The rework and repair inspection records are to be documented and become part of the permanent records for the item.

15.2.6

Upon completion of the disposition, the nonconformance report is to receive an independent review in accordance with approved procedures, for concurrence or possible assignment of additional actions pertaining to the disposition.

15.2.7

For ASME Code, Section III, Division 1 materials, parts and components dispositioned repair or use-as-is, the nonconformance report is to be subject to review and concurrence by the Code Inspector.

15.3 SUPPLIER NONCONFORMANCES

15.3.1

Procurement documents are to contain requirements for the vendor/contractor to identify to ANO those items which violate a technical or material requirement of the procurement document and which results in a disposition of repair or use-as-is. All such nonconformances are to be reported to ANO for evaluation and acceptance. The vendor/contractor is to document such nonconformances on its applicable nonconformance report which is to be included in the final documentation package submitted to ANO, in accordance with the procurement documents.

15.3.2

Upon receipt of items at the plant, Quality Assurance personnel are to review any nonconformance reports in the documentation package to ensure the nonconforming items have been properly dispositioned and accepted by ANO.

15.4 RECORDS

15.4.1

Upon completion of disposition and verification activities, the completed nonconformance report, and related documents generated to ensure proper disposition and resolution of the nonconformance, are to be forwarded to and maintained by the Document Control Center.

15.5 DEFICIENCY TRENDING

The Superintendent Operations Assessment through the Supervisor In-House Events Analysis is to maintain and issue a quarterly trending report of nonconformances to the Vice President Nuclear for review.

16.0 CORRECTIVE ACTION

16.1 SCOPE

A corrective action system is established to assure that conditions adverse to plant safety, such as failures, malfunctions, deficiencies, deviations, defective materials and equipment, abnormal occurrences and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to safety, this system is to assure that the cause of the condition is determined and corrective action taken is documented and reported to appropriate levels of management for independent review.

16.2 GENERAL

16.2.1

When deviations, deficiencies, malfunctions, nonconformances or other abnormal occurrences or conditions are encountered, they are to be reported to responsible authorities for review and disposition in accordance with approved procedures.

16.2.2

Cognizant supervisors are to review discrepancies discovered during the course of station operations and take appropriate action to resolve the discrepancies. For conditions adverse to safety, they are to initiate corrective action to preclude recurrence. For significant conditions adverse to safety, they are to initiate action to identify their root causes and take necessary corrective action to preclude repetition.

16.2.3

Evaluation of the corrective action is to be performed by the individual/group identified within approved procedures to determine its adequacy and completeness and to assure the need for additional corrective action. If the corrective action is acceptable, follow-up action to verify implementation, documentation and close-out of the corrective action commitments is to be performed per approved procedures.

16.2.4

If agreement upon the resolution cannot be achieved, the condition is to be referred to the appropriate level of management as specified in approved procedures.

16.3 SUPPLIER DEFICIENCIES

When vendors furnish products or services that do not conform to the requirements of the applicable purchase contract and, in the opinion of the cognizant supervisor, the vendor warrants consideration for reappraisal, the cognizant supervisor is to submit a vendor reappraisal request to the Superintendent Quality Assurance for determination of action to be taken. Results of the reappraisal, together with a request for specific corrective actions, are to be transmitted to the vendor. If the vendor does not improve his quality assurance system and products as requested, the Superintendent Quality Assurance is to remove the vendor from the Qualified Vendor List (QVL) in accordance with approved procedures.

16.4 SIGNIFICANT CONDITIONS

Significant conditions adverse to safety are to include, as a minimum, the following:

(1) Conditions that have a direct adverse effect on the safety of the plant per the plant Operating License and Technical Specifications

(2) Conditions that have caused the uncontrolled release of radioactive materials (liquid, solid, gaseous or air particulate) to the environs

(3) Adverse quality trends which could lead to unsafe plant operations

16.5 REPORTABLE EVENTS

16.5.1

When significant conditions adverse to safety are discovered, the responsible supervisor and department head are to evaluate the condition and determine if it is a reportable event.

16.5.2

Adverse conditions which are determined to be reportable per the Technical Specifications to the NRC are to be documented by the initiator per approved procedures, reviewed by the responsible supervisor and forwarded to the Manager Licensing so the appropriate report can be prepared.

16.5.3

Upon disposition of the report by the responsible group, the PSC reviews the report for concurrence and possible assignment of additional corrective actions and forwards the report to the Executive Director Nuclear Operations for final approval.

16.5.4

The Licensing department is responsible for transmitting approved reports to the NRC within the time period specified in the Technical Specifications and approved procedures.

16.6 VERIFICATION

Verification by surveillance or audit of the effective implementation of corrective actions is to be periodically performed and documented by Quality Assurance personnel. Audits are to be performed in accordance with Section 18.0 of this manual.

17.0 QUALITY ASSURANCE RECORDS

17.1 SCOPE

17.1.1

Documentation covering design, construction, procurement, fabrication, inspection, operation, maintenance, nonconformance and corrective action, test and audit activities is to be filed and stored to provide objective evidence of quality-related activities and to assure the ability to reconstruct significant events. Control of records is to be in accordance with Regulatory Guide 1.88, Rev. 2 (10/76) unless otherwise noted in Table 1.

17.1.2

Quality assurance records are to include operating logs; results of reviews, inspections, tests, maintenance, audits, material analyses; monitoring of work performance; qualification of personnel, procedures, and equipment; historical drawings, specifications, personnel exposure, engineering reports, calculations, procurement documents, calibration procedures and reports, nonconformance reports, corrective action reports, correspondence and related records pertinent to quality as defined in approved procedures.

17.2 RESPONSIBILITY

17.2.1

The Manager Plant Administration, is responsible for the establishment, implementation and maintenance of the records management program to be used throughout the operational life of ANO and for ensuring that documentation retention requirements comply with applicable Technical Specifications, codes and regulations.

17.2.2

Personnel, other than plant staff, and outside firms who perform work on ANO in the areas of design, procurement, maintenance, modification, testing, quality assurance and special nuclear materials are to provide documentation/certification records to ANO for subsequent storage and retention by the Document Control Center.

17.2.3

Quality Assurance personnel are to periodically audit quality-related records and records filing and storage procedures to assure that the records management program is being properly implemented. Audits are to be performed as outlined in Section 18.0 of this manual.

17.3 DOCUMENTATION RETENTION

17.3.1 Lifetime Quality Assurance Records

17.3.1.1

Lifetime records are defined as those which meet one or more of the following criteria:

(1) Those which would be of significant value in demonstrating capability for safe operation
(2) Those which would be of significant value in maintaining, reworking, repairing, replacing or modifying the item
(3) Those which would be of significant value in determining the cause of an accident or malfunction of an item
(4) Those which provide required baseline data for inservice inspection

17.3.1.2

Lifetime quality-related records are to be maintained for the life of the particular item while it is installed or stored for future use as prescribed in approved procedures.

17.3.2 Non-Permanent Quality Assurance Records

17.3.2.1

Non-permanent records are defined as those which meet all of the following criteria:

(1) Those of no significant value in demonstrating capability for safe operation
(2) Those of no significant value in maintaining, reworking, repairing, replacing or modifying the item
(3) Those of no significant value in determining the cause of an accident or malfunction of an item
(4) Those which do not provide baseline data for inservice inspection

17.3.2.2

Non-permanent records are to provide evidence that an activity was performed in accordance with applicable requirements and be retained for specified periods as directed by the approved procedures for document retention and disposition.

17.3.3

Categories of permanent and non-permanent records to be maintained and their appropriate retention periods are described in approved procedures.

17.3.4

The Superintendent Quality Assurance is responsible for receiving, inspecting and authenticating such documents as directed by approved procedures for turnover of quality assurance documents from suppliers to ANO. When approved for receipt by Quality Assurance, such records are to be transmitted to the Document Control Center for filing and storage.

17.4 STORAGE

17.4.1

Permanent records are to be microfilmed and the microfilm stored within a controlled area at ANO per approved procedures. A duplicate set of microfilm is also made and stored at a remote location.

17.4.1.1

For storage of film and other special processed records, humidity and temperature controls are to be provided to maintain an environment as recommended by the manufacturer and approved procedures.

17.4.1.2

A list is to be prepared in accordance with approved procedures designating those personnel who have access to the storage files.

17.4.2

Records storage systems are to provide for the accurate retrieval of information without undue delay and be sufficient to control and account for records removed from the storage facility.

17.5 RECORDS INDEXING AND RECEIPT CONTROL

17.5.1

Indexing methods and systems for quality-related records are delineated in approved procedures for records management.

17.5.2

Records submitted for storage in either lifetime or non-permanent files are to be subject to the following requirements for receipt control:

(1) Establishment of a records list designating the required quality-related records
(2) Establishment of a system designating criteria for document inspection to assure that records are complete, legible and received in good condition
(3) A file system to indicate which quality-related documents have been received

17.5.2.1

Implementation of receipt control requirements for storage is the responsibility of the Manager Plant Administration.

17.6 FINAL DISPOSITION

The Manager Plant Administration is responsible for disposal of quality-related records in accordance with approved procedures for document retention and disposition, which permits periodic purging of records retained past their required retention date.

18.0 AUDITS

18.1 SCOPE

18.1.1

A comprehensive system of planned and periodic audits is provided to ensure and verify compliance with all aspects of the administrative controls and quality assurance program. Audits are to be planned and performed in accordance with written procedures, plans and check lists and are to conform to the applicable portions of Regulatory Guides 1.144, Rev. 1 (9/80), and 1.146, Rev. 0 (8/80), unless otherwise noted in Table 1.

18.1.2

The audit program is to include provisions to determine the compliance with and effectiveness of the QA Program in controlling structures, systems, components and activities in accordance with the rules set forth in the codes, standards and regulations identified in the Introduction of this manual.

18.2 AUDIT PERSONNEL

18.2.1

The Superintendent Quality Assurance is assigned auditing responsibility within the QA Program and is responsible for the selection and assignment of auditors. Auditors are to be independent of any direct responsibility for performance of the activity which is to be audited and are not to report to a management representative who has direct responsibility for the activity being audited.

18.2.2

Auditors assigned auditing responsibilities are to have experience and training commensuate with the scope, complexity and/or special nature of the activities to be audited. When audit assignments are made, considerations are given to special abilities, specialized technical training, prior pertinent expertise, personal characteristics, education and capability. If no one within the NQ organization meets these prerequisites completely, technical specialists are to be used to assist in the auditing of the activity. Technical specialists are to meet the requirements of paragraph 18.2.1 of this manual.

18.2.3

Audit personnel are provided appropriate training to assure their competence for performing the required audits. Proficiency of audit personnel is maintained by one or more of the following methods:

(1) Regular, active participation in the audit process
(2) Review and study of codes, standards, procedures and instructions
(3) Participation in training or orientation programs

18.3 AUDIT SCHEDULE

18.3.1

Audits are to be performed on a planned and periodic basis in accordance with an audit schedule. Audit schedules are to be prepared at the beginning of each year by the NQ organization and approved by the Superintendent Quality Assurance, General Manager Nuclear Quality and the SRC.

18.3.2

Audit schedules assure that, as a minimum, those audit areas identified within the Technical Specifications applicable to each nuclear unit are audited, under the cognizance of the SRC, at the indicated frequencies within ANO.

18.3.3

Audits of vendor/contractor activities are to be scheduled as identified in paragraph 7.3.3 of this manual. These audits are to evaluate and verify their quality assurance program, procedures and activities, to assure compliance with the procurement documents and to verify they periodically review and audit their suppliers' quality assurance programs.

18.3.4

Periodic reviews of the audit programs are to be performed by the SRC or their appointed management representative at least semi-annually to assure that audits are being accomplished in accordance with the requirements of the Technical Specifications, this manual and Regulatory Guide 1.33, Rev. 2 (2/78), unless otherwise noted in Table 1.

18.3.5

Regularly scheduled audits may be supplemented, as required, to cover unforeseen events or changed requirements.

18.4 AUDIT IMPLEMENTATION

18.4.1

Audit plans and checklists are to be prepared by the auditor and approved by the Superintendent Quality Assurance prior to performing the audit. Checklists are to be used during the audit to assure that all requirements of the activities audited are addressed during the audit and that those procedures and instructions issued to control the audited activity are adequate.

18.4.2

Upon completion of an audit, a written report is to be prepared which includes at least the following items:

(1) Description of audit scope and date
(2) Identification of the auditor(s)
(3) A summary of audit results
(4) Details of nonconformances or programmatic deficiencies
(5) Recommendations for correcting nonconformances or improving the QA Program, as appropriate

18.4.3

Deficiencies identified as a result of an internal audit are to be recorded on an Audit Finding Report (AFR) by the auditor and issued to the department head responsible for the area audited for corrective action. The department head or their assigned designee is to provide prompt corrective action to the deficiencies identified and document on the AFR the action taken or to be taken to preclude recurrence. Appropriate follow-up including re-audits by the assigned audit group is

conducted in the deficient areas to verify proper and timely implementation of corrective action commitments. Follow-up actions are to be documented on the AFR.

18.4.4

Internal audit reports pertaining to plant activities are to be independently reviewed by the PSC and the SRC to determine if additional corrective actions need to be initiated to assure continued safe operation of ANO. Internal audit reports pertaining to off-site activities are to be independently reviewed by the SRC. In addition to these reviews, the audit reports are to be distributed, as a minimum, to the General Manager Nuclear Quality, Superintendent Quality Assurance and appropriate levels of management having responsibility in the area audited to assure their awareness of the findings.

18.4.5

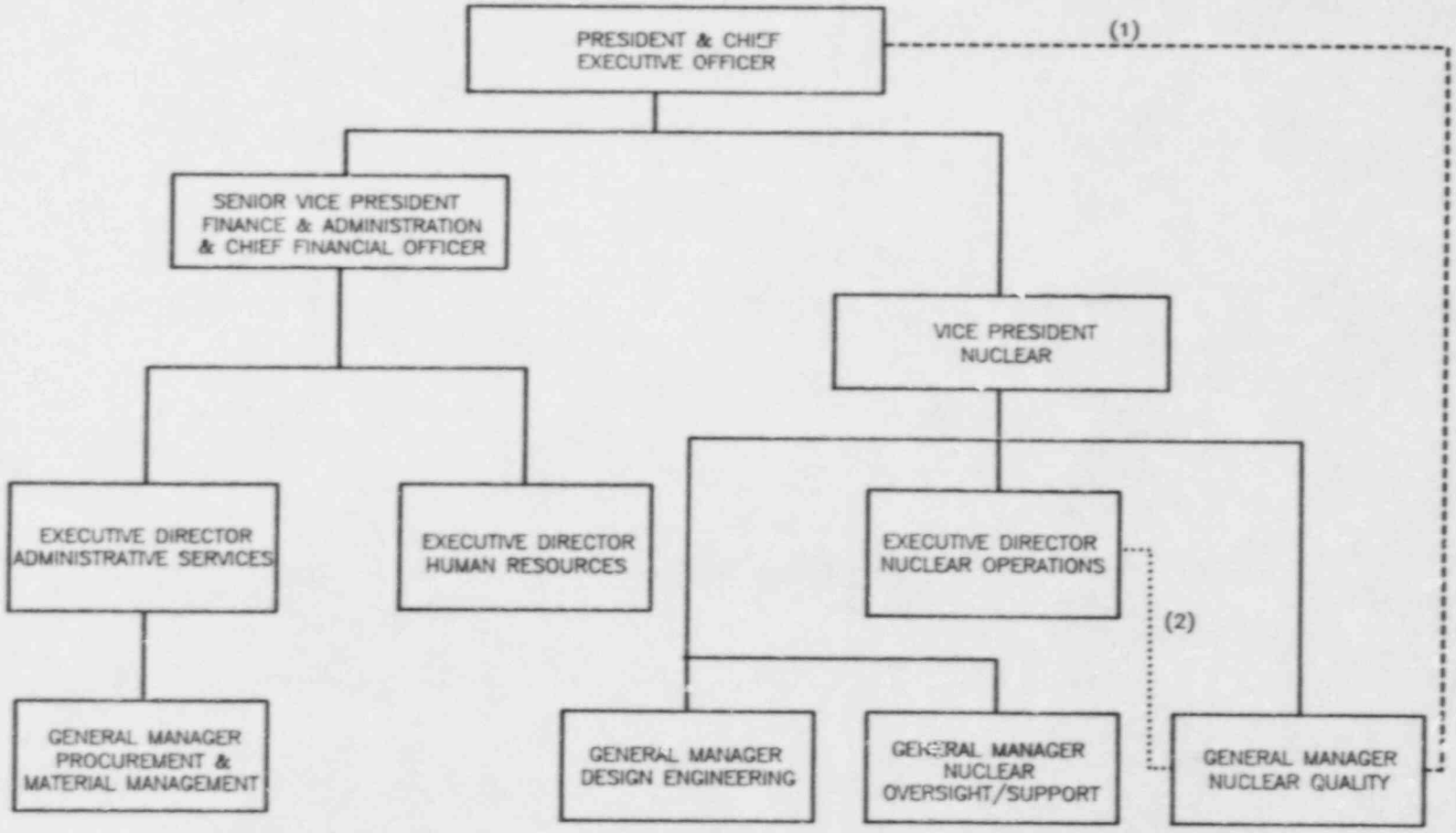
Audit results and findings related to external audits conducted by QA personnel are to be recorded and distributed to the General Manager Nuclear Quality, Superintendent Quality Assurance and a designated representative of the audited organization. Deficiencies are to be recorded on an AFR, and the audited organization is to describe actions taken to correct deficiencies and prevent recurrence on the AFR. Corrective actions are to be verified by Quality Assurance personnel and documented on the AFR.

18.5 RECORDS

Written internal/external audit reports, including checklists, AFR's and related documentation supporting the follow-up activities are to be forwarded to the Document Control Center for storage in accordance with Section 17.0 of this manual.

18.6 NUCLEAR FUEL AUDITS

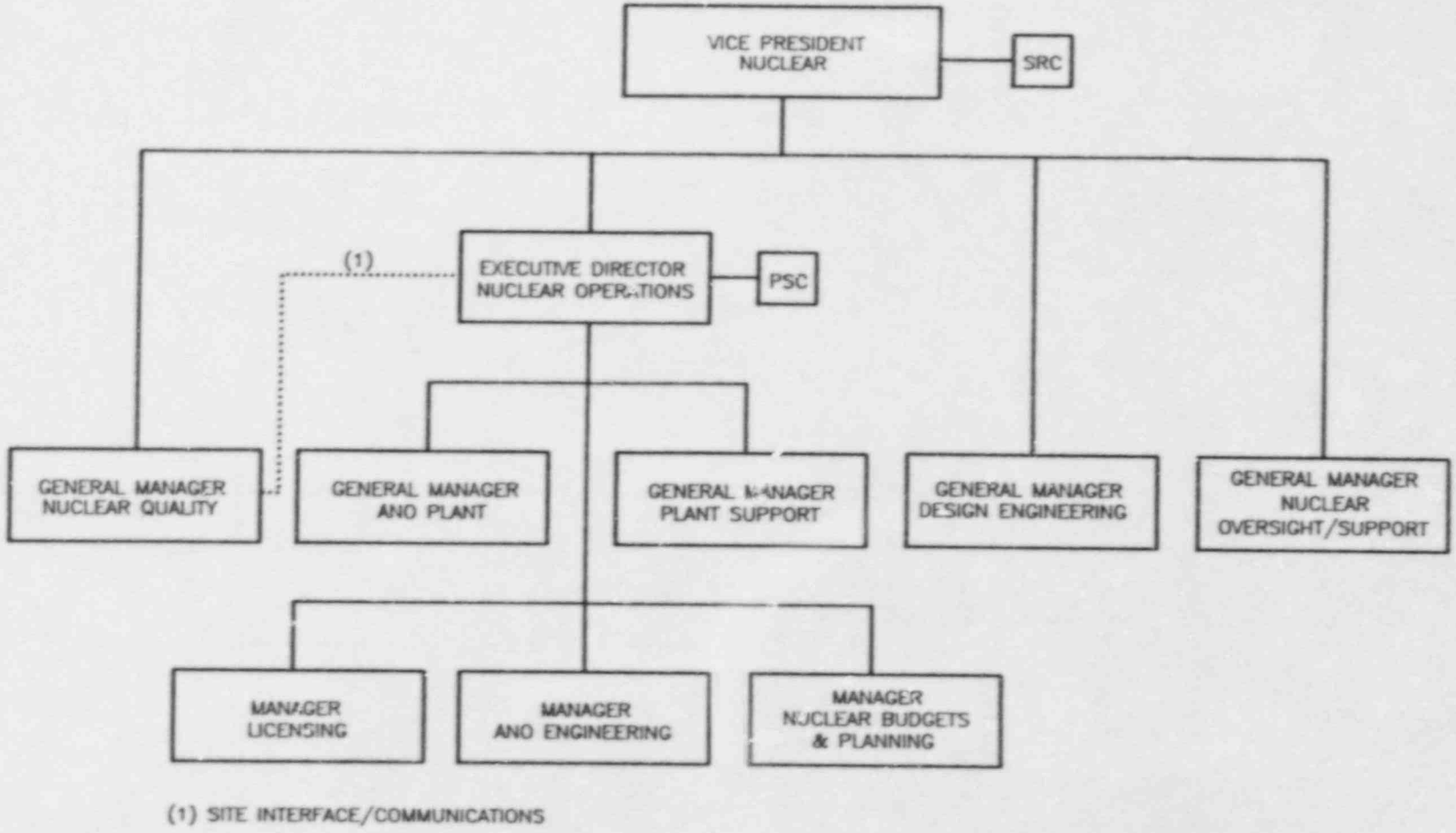
ANO delegates to System Services Inc. (SSI), a wholly-owned subsidiary of Middle South Utilities, Inc., the responsibility for performing those quality assurance functions necessary to assure that its nuclear fuel is designed and fabricated in accordance with regulatory requirements and accepted codes, standards and specifications. The SSI Quality Assurance section monitors the design and fabrication of the fuel through a program of audits of the fuel fabricator, including both design review audits and fuel fabrication audits. SSI also conducts audits of component suppliers as deemed necessary by the Manager, Quality Assurance (SSI), to ensure the quality of the fuel. Formal audit reports are issued by SSI to document their audit activities and to identify nonconformances or other items requiring action by the fuel fabricator. Resolution of nonconformances or other items requiring action is verified by SSI and documented in follow-up reports. The Superintendent Quality Assurance (ANO) is on distribution for all audit and follow-up reports. These audit reports are to be forwarded to the plant and stored in accordance with Section 17.0 of this manual.



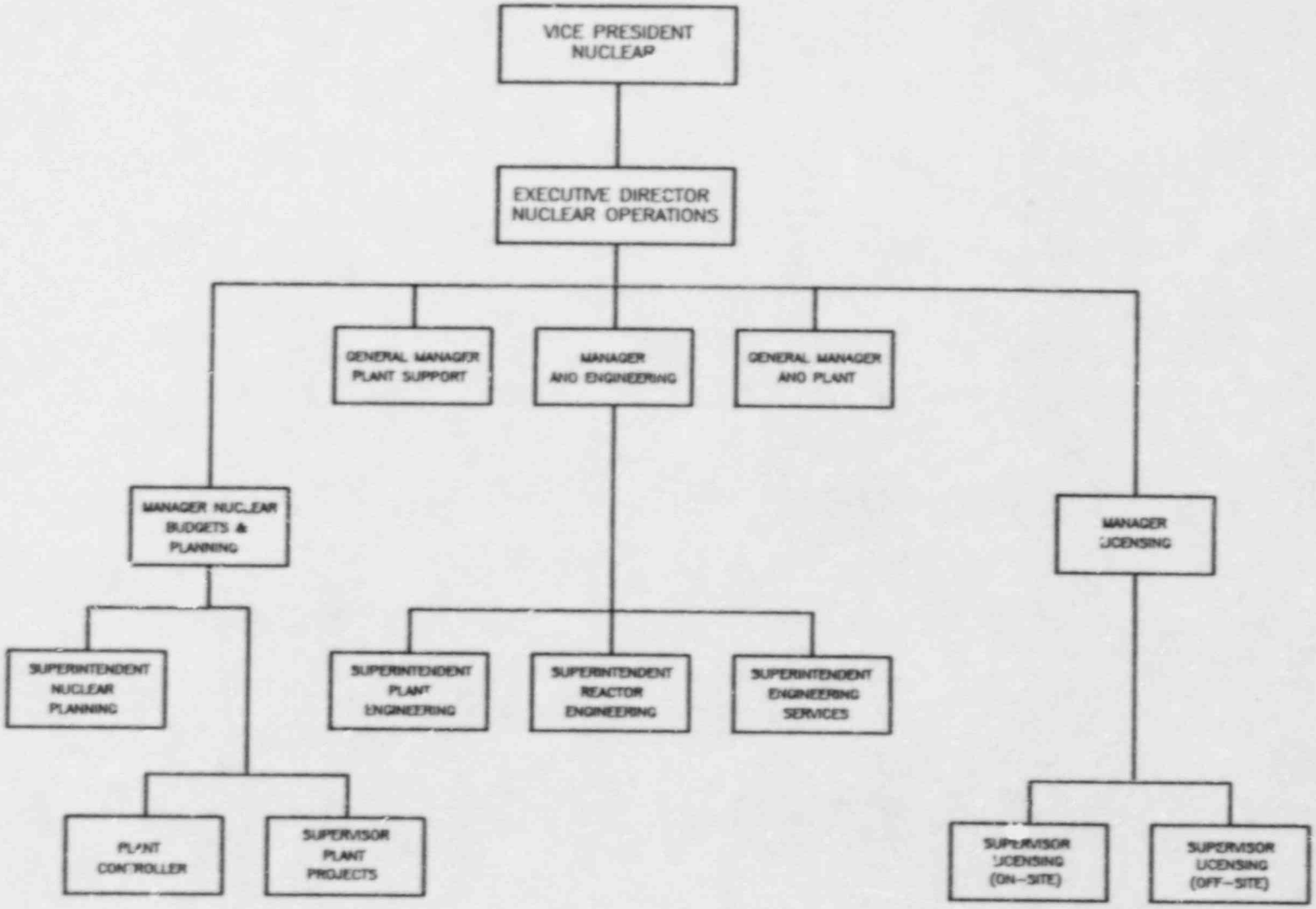
(1) ACCESS ON MATTERS CONCERNING NUCLEAR QUALITY

(2) SITE INTERFACE/COMMUNICATIONS

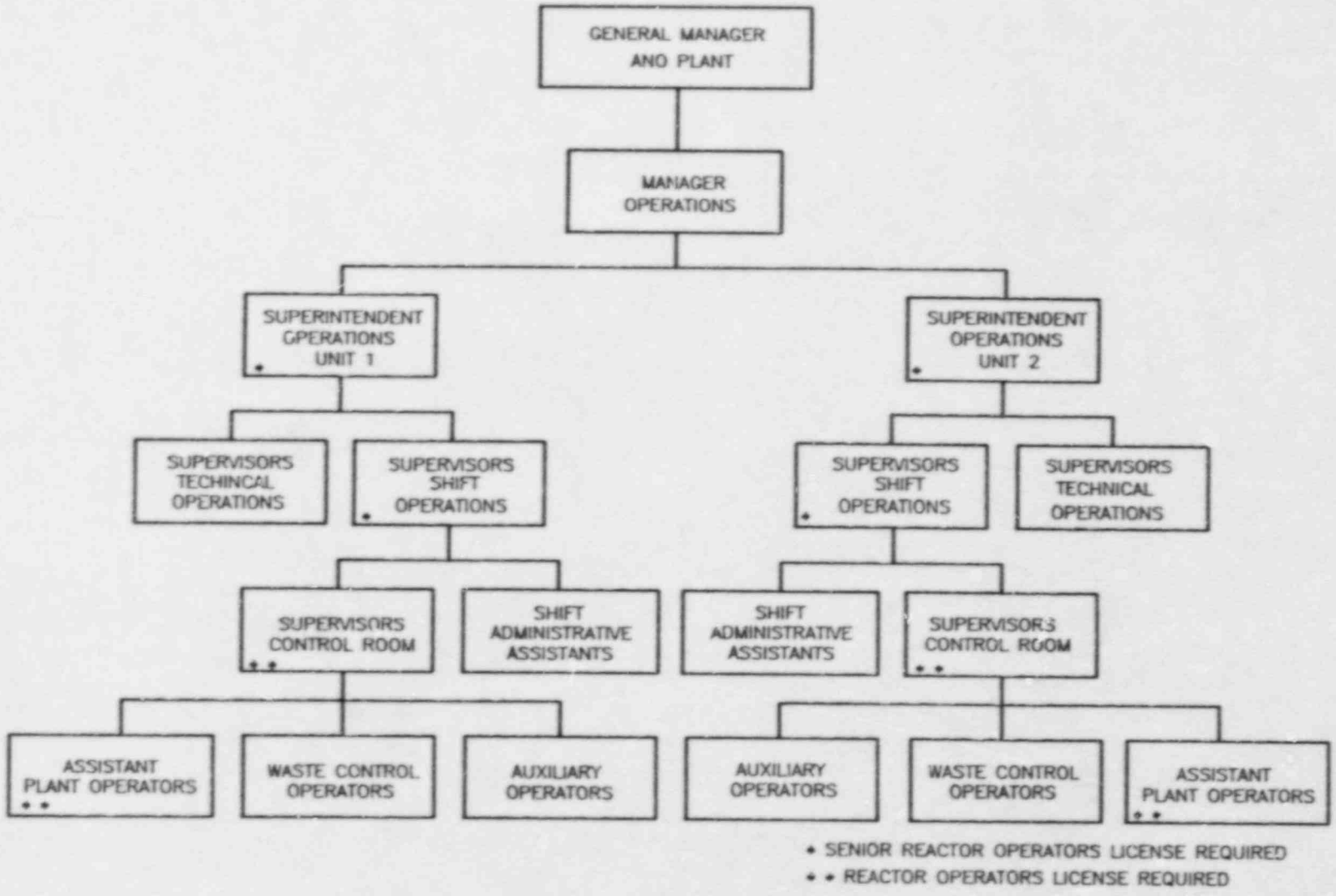
CORPORATE & OUTSIDE SUPPORT ORGANIZATION



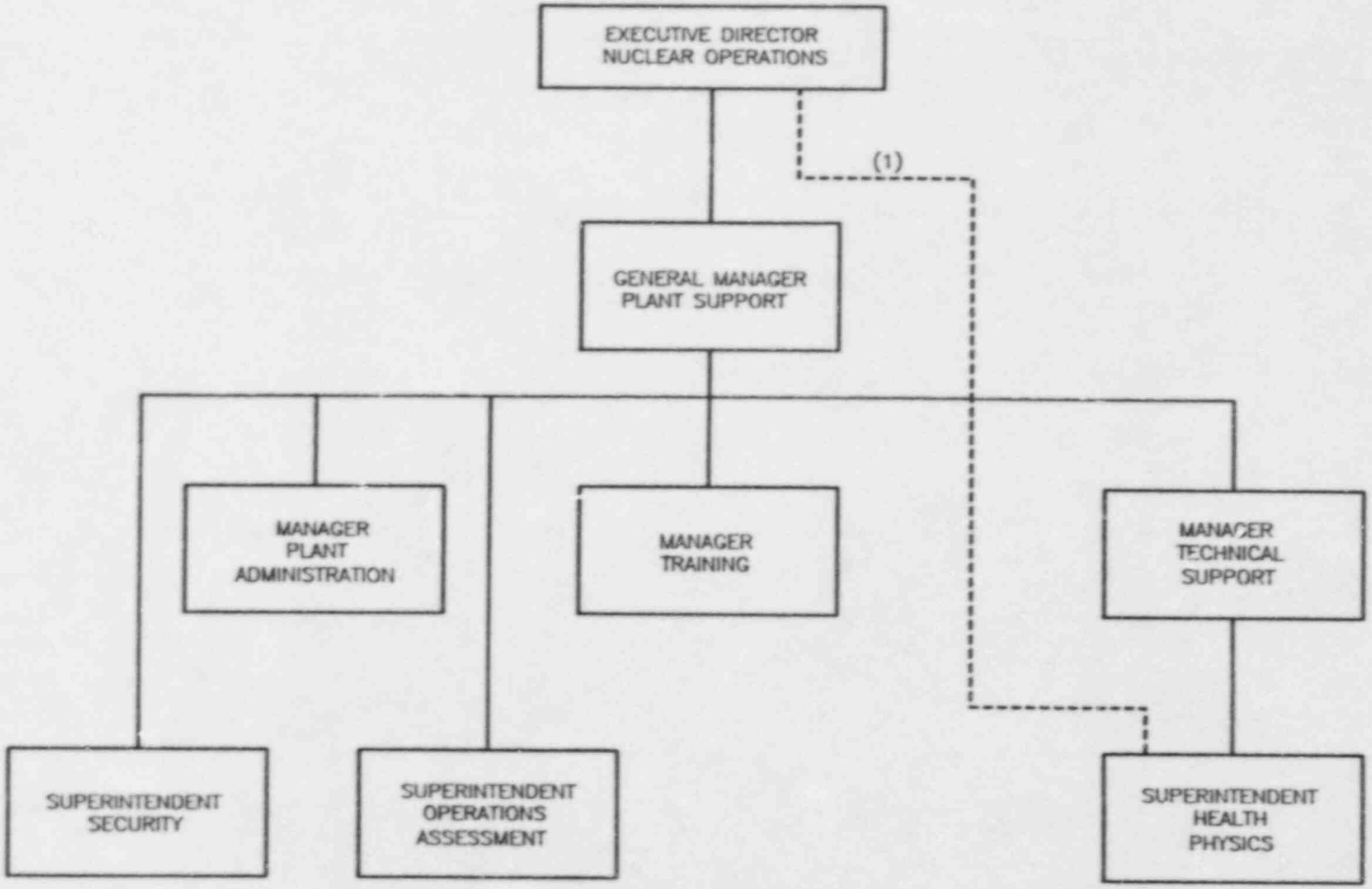
NUCLEAR ORGANIZATION



NUCLEAR OPERATIONS
ORGANIZATION

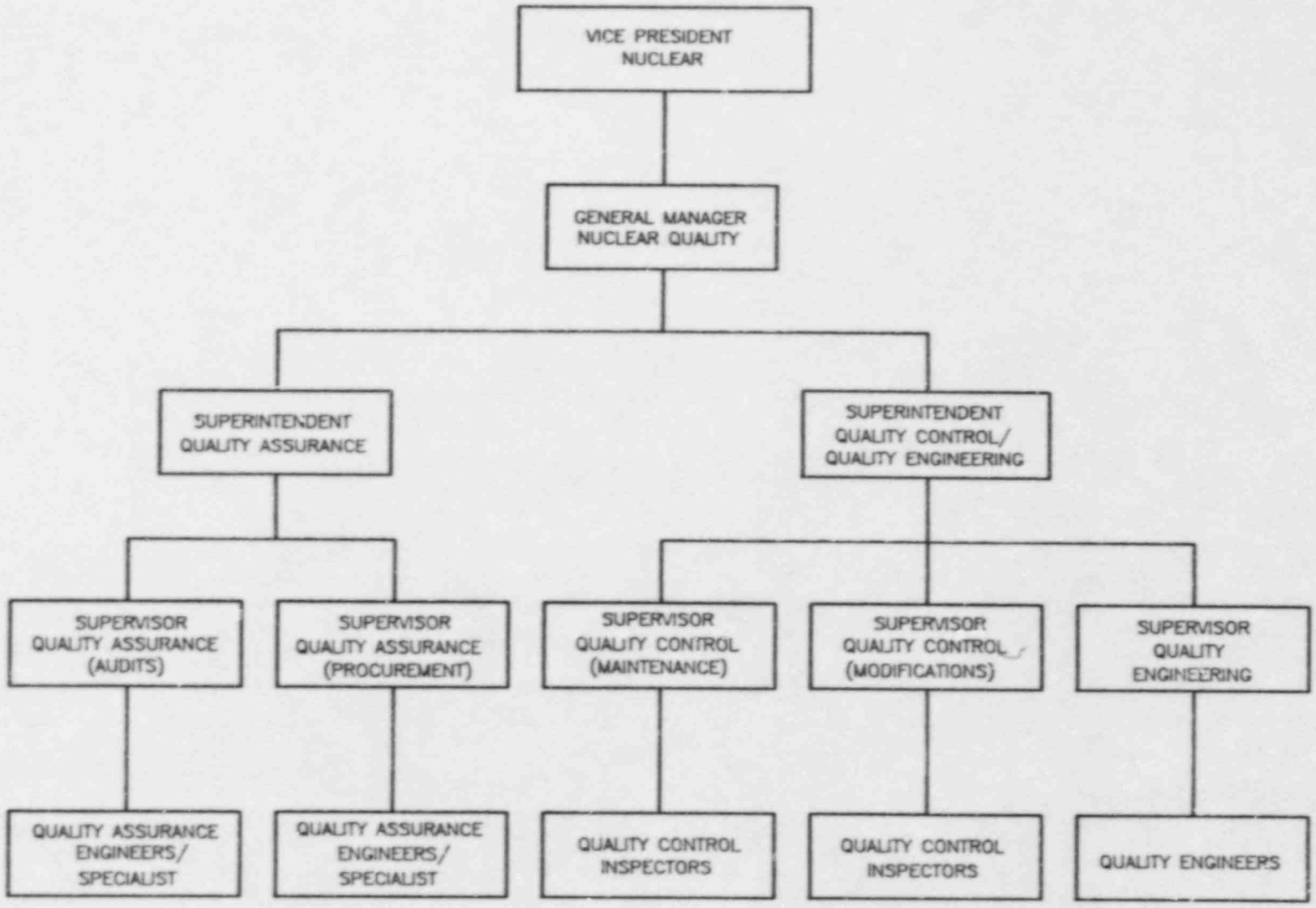


PLANT OPERATIONS ORGANIZATION

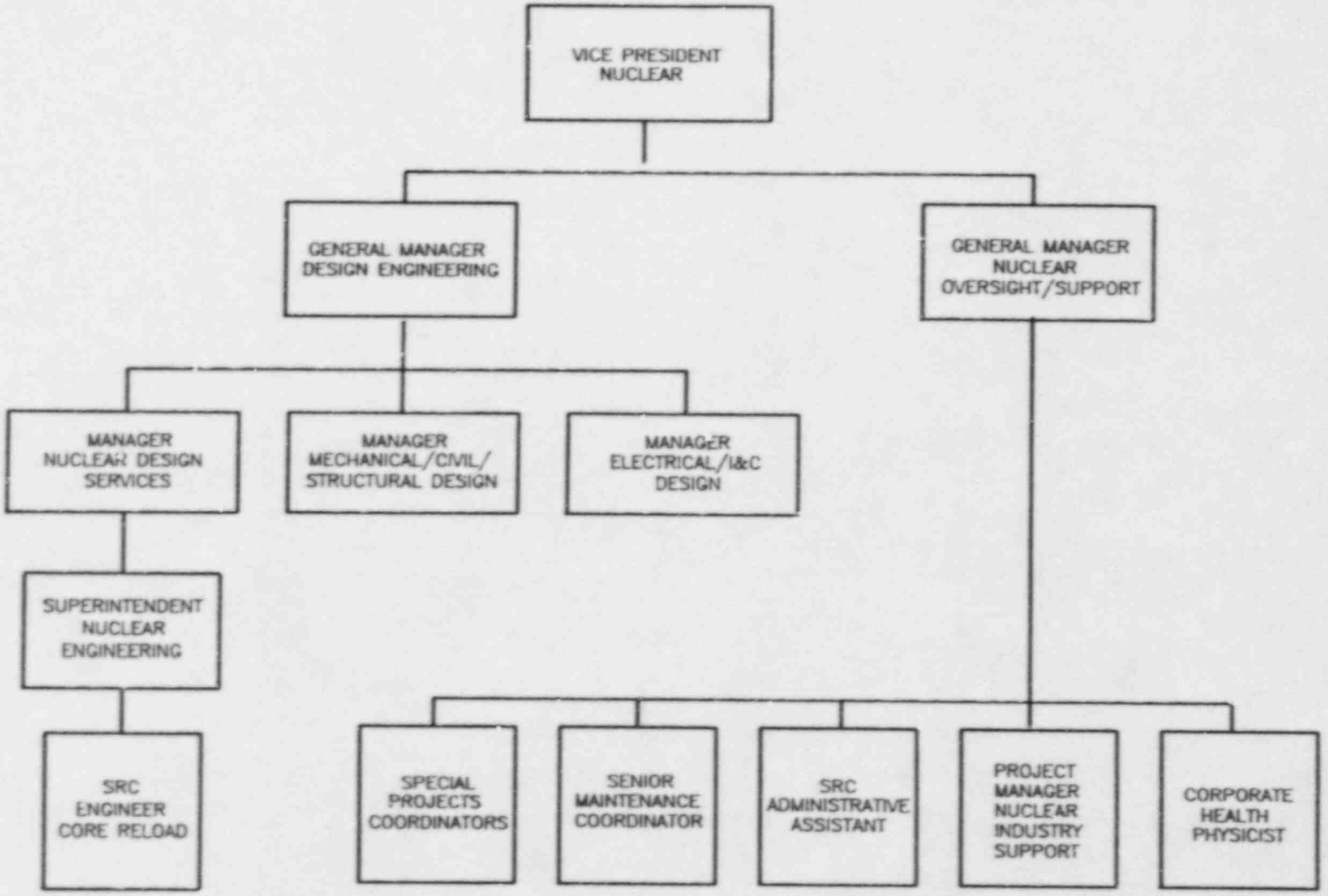


(1) THE SUPERINTENDENT HEALTH PHYSICS REPORTS TO THE MANAGER TECHNICAL SUPPORT IN ADMINISTRATIVE MATTERS AND ROUTINE HEALTH PHYSICS CONCERNS AND TO THE EXECUTIVE DIRECTOR NUCLEAR OPERATIONS IN MATTERS OF RADIOLOGICAL HEALTH SAFETY AND POLICY.

PLANT SUPPORT ORGANIZATION



NUCLEAR QUALITY ORGANIZATION



LITTLE ROCK NUCLEAR SUPPORT ORGANIZATION

TABLE 1

ARKANSAS NUCLEAR ONE EXCEPTIONS/INTERPRETATIONS
OF REGULATORY GUIDES AND ANSI STANDARDS APPLICABLE
TO THE QA PROGRAM

Regulatory Guide/ ANSI Standard	Requirement	Exceptions/ Interpretation
General	Certain Regulatory Guides invoke or imply Regulatory Guides and standards in addition to the standard each primarily endorses. Certain ANSI Standards invoke or imply additional standards.	The ANO commitment refers to the Regulatory Guides and ANSI Standards, specifically identified in this manual. Additional Regulatory Guides, ANSI Standards, Guides and similiar documents implied or referenced in those specifically identified in this manual are not part of this commitment.
General	Certain ANSI Standards and/or Regulatory Guides extend the scope of applicability to include systems, structures, and components whose satisfactory performance is required	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

	for a plant to operate reliably on "high-value articles."	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.
ANSI N18.7 (Section 5.2.7)	The following standards contain .....during initial plant design and construction. AWS Qualification of Inspection, Examination and Testing Personnel for the Construction Phase of Nuclear Power Plants, N45.2.6-1973...	ANO has committed to R.G. 1.58, Rev. 1/ANSI N45.2.6 - 1978 which shall be used in lieu of 1973 edition.
ANSI N18.7 (Section 5.2.7.1)	The causes of the malfunctions shall be promptly determined, evaluated, and recorded.	ANO will comply with this requirement, where applicable. This clarification is needed since it is not always possible to promptly determine the cause of the malfunction.
ANSI N18.7 (Section 5.2.13.1)	Where changes are made to procurements, they shall be subject to the same degree of	Consistent with the requirements of ANSI N45.2.11, paragraph 7.2, minor changes to (procurement) documents, such as, inconsequential editorial

	control as was used in the preparation of the original documents.	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.
ANSI N18.7 (Section 5.2.17)	Records shall be kept in sufficient detail to permit adequate confirmation of the inspection program.	Not all inspections will require generation of a separate inspection report. Inspection requirements may be integrated into appropriate procedures or other documents with the procedure or document serving as the record. However, records of inspections will be identifiable and retrievable.
ANSI N45.2.1 (Section 3.2)	Fresh water criteria for chlorides, and Jackson Turbidity Units.	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 N45.2.2 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.

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 does not endanger the requisite quality of an item. The receiving inspection area environmental controls may be less stringent than storage 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 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.
ANSI N45.2.2 Subsection 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 the location and layout of the building, personnel may temporarily store lunches in the work place.

		This area is polished for sanitation.
ANSI N45.2.2 (Section 6.4.2)	Care of items in storage shall be exercised in accordance with the following:	Types of components that could require maintenance while in storage shall be identified and evaluated for specific maintenance requirements. Maintenance activities 6.4.2(6) through (8) listed in this requirement shall be considered during this evaluation and any deviations shall be justified and documented.
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.
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.
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-base basis. Marking is adequate in each case.

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.
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.
ANSI N45.2.2 Appendix (A-3) Section A 3.9	Marking of items not within a container.	The last paragraph of Section A.3.9 could be interpreted as prohibiting any direct marking on bare austenitic-stainless-steel and nickel-alloy metal surfaces. In lieu thereof, paragraphs 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 containing 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-resistant alloys. Low-sulfur, 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: (a) Total inorganic and organic halogen content shall not exceed one (1) percent. (b) The sulfur content shall not exceed one (1) percent.
ANSI N45.2.2	Inert Gas Blankets	There may be cases involving large or complex shaped items for which an inert or dry air purge is provided, rather than a static gas blanket, in order to provide adequate protection due to difficulty of providing a leak proof barrier. In these cases, a positive pressure purge flow may be utilized as an alternate to a leak-proof barrier.
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 break-

		down 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 are 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 Regulatory Guide 1.116/ANSI N45.2.8	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 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.
ANSI N45.2.4	Identifies various tests to be performed.	These tests will be performed as determined by Engineering or Nuclear Operations based upon the significance of change or modification.
R.G. 1.58 (Section C.6)	In addition.., the candidate should be a high school graduate or have earned the General Education Development (GED) equivalent of a high school diploma.	ANO takes exception to this requirement. ANO's education and experience requirements are in accordance with ANSI N45.2.6-1978.

R.G. 1.74/ 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.
R.G. 1.94/ ANSI N45.2.5 (Section 1.4)	Section 1.4 defines inprocess 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 those 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.
ANSI N45.2.5 (Section 4.5)	Requirement: 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."

Interpretation:
In order to clari:
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 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.

ANSI N45.2.5
(Section 4.8)

Requirement:

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. Pump concrete must be sampled from the pump line discharge."

Interpretation:

For performance of correlation tests, the requirements of ANSI N45.2.5-1974 shall be followed.

ANSI N45.2.5
(Section 4.8)

Requirement:

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:

Interpretation:

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 through #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, i.e., 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.

ANSI N45.2.5
(Section 4.9)

Requirement:

Section 4.9, Mechanical (Cadweld) 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..."

Interpretation:

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

a. Hozizontal, 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 activitely engaged in preparing and assembling caoweld mechanical splices at the final splice location. Separate test cycles will be established for each bar size and each splice position.

ANSI N45.2.9
(Section 4.3)

As a minimum, a receipt control system shall include procedures

When records are submitted for storage, personnel receiving the records are not subject to the

	for receipt and inspection of incoming records.	requirements of ANSI N45.2.6-1978 nor Section 10.0 of this Manual for inspection of incoming records.
ANSI N45.2.12 (Section 4.2.1)	An individual audit plan describing the audit to be performed shall be developed and documented by the auditing organization. This plan shall identify the audit scope, the requirements, the activities to be audited, organizations to be notified, the applicable documents, the schedule, and written procedures or checklists.	For those routine audits conducted during operations, a written procedure(s) covering each audit may be utilized. Procedure(s) will identify the audit scope, a requirement that individual checklists be utilized listing requirements which are to be audited and notification of the audited group.
ANSI N45.2.13 (Section 10.2.d)	The certificate should be attested to by a person who is responsible for this quality assurance function and whose function and	The person attesting to a certificate shall be an authorized and responsible employee of the supplier, and shall be identified by the Supplier.

	position are described in the Purchaser's/ Supplier's quality assurance program.	
R.G. 1.64 (Section C.2)/ANSI N45.2.11	While design verification by the designer's immediate supervisor is encouraged, it should not be construed that such verification constitutes the required independent design verification, ...	Consistent with the requirement of ANSI N45.2.11, paragraph 6.1, design verification may be performed by the originator's supervisor, if the supervisor is the only individual in the organization competent to perform the verification.
ANSI N45.2.23 (Section 2.3.1.3)	Certification of competence in engineering, sciences, or quality assurance specialties issued and approved by a State Agency, or National Professional or Technical Society, score two (2) credits.	ANO considers holders of NRC-issued Reactor Operator/ Senior Reactor Operator License to comply with the requirements of the section and may award two (2) credits to those individuals.

AWS D1.1 (Section 5.2.8.4)	For acceptable qualification, the weld, as evaluated by the radiograph, shall conform to the requirements of 9.2.5.2, except that 9.2.5.2.2 shall not apply.	For Welder qualification by radiography, the acceptance criteria specified in AWS B1.0 "Guide for Nondestructive Inspection of Welds", shall be used in lieu of the requirements of AWS D1.1 section 9.2.5.2.

TABLE 2

QUALITY ASSURANCE PROCEDURES MATRIX

NOTE: Procedures marked with an * shall either be superceded by PMP control procedures (6000.XX series) or revised to reflect requirements of the Plant Modification Manual by end of 1988.

		ORGANIZATION	QA PROGRAM	DESIGN CONTROL	PROCUREMENT DOCUMENT CONTROL	INSTR. PROC. & DRAWINGS	DOCUMENT CONTROL	CONT. OF PURCHASED ITEMS	IDENT. & CONTROL OF ITEMS	CONT. OF SPECIAL PROCESSES	INSPECTION	TEST CONTROL	CONT. OF MEASUR. & TEST EQUIP.	HANDLING, STORAGE & SHIPPING	INSP. TEST & OPER. STATUS	NONCONFORMING ITEMS	CORRECTIVE ACTION	QA RECORDS	AUDITS
QAMO-FIGURES	ORGANIZATION CHARTS	X																	
OP-1000.01	ORGANIZATION AND RESPONSIBILITY	X																	
NQA-1	NUCLEAR QUALITY ORGANIZATION	X																	
NQA-2	INDOCTRINATION AND TRAINING OF NUCLEAR QUALITY PERSONNEL		X																
OP-1000.15	STATION TRAINING PROGRAM		X																
ESP-112	GENERAL TRAINING		X																
NQA-4	DISTRIBUTION OF CONTROLLED NQ DOCUMENTS		X					X											
QAO-6	INTERNAL AUDITS																		X
OP-1000.103	PLANT MODIFICATION PROCESS																		
* GTEP-201	DESIGN CHANGE INITIATION AND CONTROL																		
OP-6010.001	DCP DEVELOPEMENT			X															
* OP-1000.10	CONTROL OF PROCUREMENT				X														
OP-1000.12	CONTROL OF SITE CONTRACTORS				X			X											
* ESP-213	NUCLEAR PROCUREMENT				X														
OP-1009.003	CONTRACT ADMINISTRATION PROCEDURE				X														
OP-1000.11	PURCHASE REQUISITION PREPARATION AND CONTROL				X														
* OP-1000.04	PROCEDURAL PROGRAM REQUIREMENTS					X													
* OP-1000.06	PROCEDURE REVIEW, APPROVAL AND REVISION CONTROL					X	X												
GTEP-100	PROCEDURE PREPARATION, REVIEW, APPROVAL AND CONTROL					X	X												
GTEP-210	NUCLEAR DRAWING CONTROL-GENERATION ENGINEERING					X													
OP-1000.05	PROCEDURE FORMAT AND CONTENT					X													
OP-1000.16	DOCUMENT CONTROL REQUIREMENTS						X												
* ESP-203	DOCUMENT PREPARATION, CHANGE AND REVIEW						X												
NQA-3	PREPARATION AND ISSUE OF NQ DOCUMENTS						X												
OP-1033.01	RECEIPT INSPECTION							X											
QAO-3	VENDOR QUALIFICATION PROGRAM							X											
QAO-5	VENDOR SURVEILLANCE							X											
OP-1033.02	CONTROL OF MATERIAL								X					X					
OP-1000.37	WELDING AND ASME REPAIR/REPLACEMENT									X									
OP-1000.23	QUALITY CONTROL PROGRAM										X								
OP-1000.09	SURVEILLANCE TEST CONTROL											X							
OP-1092.25	ISI PROGRAM REQUIREMENTS											X							
OP-1000.14	CONTROL OF M&TE STANDARDS												X						
OP-1000.24	CONTROL OF MAINTENANCE														X				
OP-1000.27	HOLD AND CAUTION CARD CONTROL														X				
OP-1000.28	TEMPORARY MODIFICATION CONTROL														X				
OP-1000.104	CONDITION REPORTING AND CORRECTIVE ACTIONS															X	X		
ESP-204	DESIGN DEFICIENCY/CORRECTIVE ACTION																X		
QAO-10	CORRECTIVE ACTION																X		
OP-1000.17	RECORDS MANAGEMENT																	X	
ESP-126	QUALITY ASSURANCE DOCUMENT MANAGEMENT																	X	
QAO-4	VENDOR/CONTRACTOR AUDITS																		X

TABLE 3

QUALITY PROGRAM POLICIES, PROCEDURES AND INSTRUCTION MANUALS LIST

1. Quality Assurance Manual Operations

The Quality Assurance Manual Operations establishes the policies and guidelines of the QA Program for ANO. This program is to be followed by all organizations involved in safety-related work applicable to ANO.

2. Little Rock Procedures

The Nuclear organization in Little Rock employs a system of procedures in order to implement the QA Program requirements for the control of design, engineering, nuclear fuel, licensing, training and procurement activities in support of ANO.

These procedures and revisions thereto are prepared by Nuclear personnel, reviewed and approved by the General Manager Nuclear Quality, the Procedures Task Force and the responsible department head.

3. Nuclear Quality Procedures

The NQ organization employs a system of procedures developed to assure proper implementation of the QA Program. These procedures provide technical and administrative instructions to the NQ staff to aid in implementing their responsibilities within the QA Program. These procedures are reviewed/approved by the Superintendent Quality Assurance and/or Quality Control/Quality Engineering and the General Manager Nuclear Quality.

4. Overall Plant Adminstrative Procedures Manual

The plant operation organization employs a system of procedures designated as Overall Plant Administrative Procedures. These procedures implement the QA Program requirements and control on-site activities. Overall Plant Administrative Procedures and changes thereto are prepared by the plant staff, reviewed by the Plant Safety Committee and approved by the Executive Director Nuclear Operations. The procedures and revisions are also reviewed by the Superintendent Quality Assurance to assure that the QA Program commitments are met.

5. Departmental Plant Administrative Procedures

Each department (operations, maintenance, engineering and technical support, training, etc.) at the plant has developed procedures in support of the Overall Plant Administrative Procedures and the QA Program. These procedures provide technical and administrative instructions to the various departments to aid in implementing their responsibilities within the QA Program. Each department head is responsible to perform a review of their procedures to assure conformance with the QA Program. These procedures are reviewed by the Plant Safety Committee and approved by designated plant management. Plant Modification Process procedures (6000.XX Series) which stipulate activities for Design Engineering are also reviewed and approved by the General Manager Design Engineering.

APPENDIX A

QUALITY PROGRAM FOR TRANSPORT PACKAGES

1.0 INTRODUCTION

1.1 The quality program for transport packages containing radioactive material is designed to comply with the requirements of this manual and with the quality assurance guidelines identified in 10CFR71, Subpart H - Quality Assurance, subject to exceptions noted in Attachment A to this Appendix.

1.2 Attachment A to this Appendix identifies the applicability of each section of the Quality Assurance Manual Operations to the Quality Program for Transport Packages.

1.3 Attachment B to this Appendix contains the Quality Assurance Program Approval document which shows NRC approval of this program on January 23, 1985.

ATTACHMENT A

10CFR71 Appendix H

The following sections of the most currently approved revision of the QA Manual Operations will be applied as stated below (Note specific paragraphs are to revision 10 paragraph numbers which could change during subsequent revisions).

Section 1 - Applicable

Section 2 - Applicable

Section 3 - Not applicable. ANO will use only licensed packaging which has been designed under a QA program which has been submitted to the NRC for approval.

Section 4 - Applicable

Section 5 - Applicable

Section 6 - Applicable

Section 7 - Applicable

Section 8 - Generally applicable except for paragraph 8.2.2 and 8.2.3. Due to size, uniqueness, low volume and the method of supplier identification of each package, ANO tagging of each package is not necessary.

Section 9 - Not applicable. We do not consider this subject as a "Special Process" in the context of 10CFR71, Appendix H Section 71.119 which is a restatement of 10CFR50, Appendix B Criterion 9.

ATTACHMENT A (continued)
10CFR71 Appendix H

Section 10 - Applicable

Section 11 - Not applicable. ANO will not be testing the package in the context of 10CFR71, Appendix H, Section 71.123 which is a restatement of 10CFR50, Appendix B Criterion 11.

Section 12 - Generally applicable except for paragraph 12.3.4. This paragraph only applies to Health Physics measuring and testing equipment that is used to calibrate other devices (used as a standard). Health Physics survey equipment is response checked prior to each use.

Section 13 - Generally applicable except for paragraph 13.5. ANO does not "store" package, therefore the storage section does not apply.

Section 14 - Not applicable. See Section 11 comments above.

Section 15 - Generally applicable except for references to the various types of dispositions in paragraphs 15.2.3 to 15.2.5. Nonconforming material or equipment will be returned to the vendor or will be replaced.

Section 16 - Applicable

Section 17 - Applicable

Section 18 - Applicable

ATTACHMENT B

NRC FORM 211 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION

QUALITY ASSURANCE PROGRAM APPROVAL
FOR RADIOACTIVE MATERIAL PACKAGES

1. APPROVAL NUMBER: 0341
REVISION NUMBER: 2

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and Title 10, Code of Federal Regulations, Chapter 1, Part 71, and in reliance on statements and representations heretofore made in Item 5 by the person named in Item 2, the Quality Assurance Program identified in Item 5 is hereby approved. This approval is issued to satisfy the requirements of Section 71.101 of 10 CFR Part 71. This approval is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

2. NAME: Arkansas Power & Light Company
STREET ADDRESS: P.O. Box 551
CITY: Little Rock | STATE: AR | ZIP CODE: 72203

3. EXPIRATION DATE: January 31, 1990

4. DOCKET NUMBER: 71-0341

5. QUALITY ASSURANCE PROGRAM APPLICATION DATE(S): August 27, 1979 and January 4, 1985

6. CONDITIONS

Activities conducted under applicable criteria of Appendix B of 10 CFR Part 50 to be executed in accordance with Attachment A to QA Manual (AP&L-TOP-1A) for Arkansas Power Station Nuclear One, Units 1 and 2 (Docket Nos. 50-313 and 50-368) with regard to transportation packages.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Charles E. MacDonald

CHIEF, TRANSPORTATION CERTIFICATION BRANCH
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

JAN 23 1985
DATE

APPENDIX B

QUALITY PROGRAM FOR FIRE PROTECTION

1.0 INTRODUCTION

1.1 The fire protection program was developed to define the organizational responsibilities, procedural controls, fire brigade staffing and training and the quality assurance provisions that have been established for the nuclear plant. The overall objective of the fire protection program is to minimize both the probability and consequences of postulated fires and to maintain the capability to safely shut down the plant if a fire should occur.

1.2 The scope of the fire protection program includes those fire protection and detection systems, and those structures and components (such as fire doors, fire dampers, and penetration seals) which, as identified in the plant's fire hazards analysis report, are required to restrict the damage caused by a single exposure fire to safety-related equipment and equipment required to achieve and maintain safe plant shutdown to within those limits set forth in Section 1 of Appendix R to 10CFR50.

1.3 The quality program for fire protection is designed to comply with the requirements of this manual and with the quality assurance guidelines identified in BTP-APCSB 9.5-1, Rev. 2, July 1981, Guidelines for Fire Protection for Nuclear Power Plants, subject to exceptions noted in this Appendix.

1.4 With respect to regulatory commitments, ANO is committed to implementing the requirements of the following, subject to exceptions noted in this Appendix:

1. 10CFR50, Appendix A, General Design Criterion 3 - Fire Protection.

2. Specific sections of 10CFR50.48, Fire Protection and 10CFR50, Appendix R, Fire Protection for Nuclear Power Facilities Operating Prior to January 1, 1979. These sections are as follows:

   III.G. Fire Protection Safe Shutdown Capability

   III.J. Emergency Lighting

   III.L. Alternative and Dedicated Shutdown Capability

   III.O. Oil Collection System for Reactor Coolant Pumps

1.5 Other fire protection commitments are contained in the following references and documents:

1. Facility Operating License(s) including Technical Specification(s)

2. Safety Analysis Reports (SAR)

3. Fire Protection Safety Evaluation Reports (SER)

4. Regulatory correspondence to and from the NRC (includes applicable NRC generic letters and exemption letters for ANO), identified in Division 4.0 to the Fire Protection Program Manual (FPPM).

1.6 The above requirements are implemented by controlling activities as described in this manual and appendix and by procedures referenced in this manual and appendix.

2.0 ORGANIZATION

2.1 The organizational structure and responsibilities of key personnel associated with the administration, implementation and evaluation of the fire protection program are described in Section 1.0 of this manual and as follows:

1. The Vice President Nuclear is the off-site management position which has the responsibility for the development, implementation and assessment of the effectiveness of the fire protection program. He reports directly to the President and Chief Executive Officer.

2. The Executive Director Nuclear Operations is the on-site manager responsible for the overall administration and implementation of plant operations in accordance with the fire protection program. He reports directly to the Vice President Nuclear.

3. The Manager ANO Engineering is responsible for the establishment and monitoring of fire prevention aspects of the program at the plant including control of combustibles, ignition sources and postings. He is also responsible for the fire protection aspects of the program at the plant, such as evaluation of fire detection and suppression equipment, fire barriers and alternate shutdown equipment protection. He reports directly to the Executive Director Nuclear Operations. Reporting to the

Manager ANO Engineering is the Superintendent Engineering Services. Under his direction is the Supervisor Fire Prevention/Protection. The Supervisor Fire Prevention/ Protection is responsible for:

(1) Implementing, maintaining and assessing the fire prevention aspects of the program as defined in plant procedures

(2) Performing fire protection evaluations

(3) Developing inspection and surveillance criteria

(4) Coordinating ANI fire protection inspections at the plant

(5) Providing guidance and technical support to the nuclear plant in the area of fire protection

(6) Assuring that applicable regulatory requirements are included in the fire protection program

(7) Assuring commitments regarding fire protection are identified and tracked

(8) Assuring safety evaluations (10CFR50.59) and design reviews for fire protection modifications are performed

(9) Assuring that evaluations/assessments of the fire protection program are performed and results reported to Management

(10) Maintenance and revision of the Fire Protection Program Manual

(11) Classification of F-list components for the component level F-list

4. The General Manager Nuclear Quality is responsible for assuring that the fire protection program is implemented in accordance with the QA Manual Operations, Technical Specifications and applicable procedures. This is accomplished by the performance of audits and other provisions of the QA Manual Operations. He shall assure that corrective action, when necessary, is taken. He reports directly to the Vice President Nuclear.

5. The Manager Licensing is responsible for providing other responsible organizations with regulatory information and interpretations on regulatory issues related to fire protection. He is also responsible for providing interface with the NRC on fire protection matters, engineering evaluations and analysis of fire protection systems, as related to regulatory commitments and control of license-based documents relating to fire protection. He reports directly to the Executive Director Nuclear Operations.

6. The General Manager Design Engineering is responsible for assuring that the technical requirements specified in the Operating License, Technical Specifications and other design basis documents, with respect to fire protection, have been satisfied in design modifications and design documents affecting ANO. He reports directly to the Vice President Nuclear.

3.0 QUALITY ASSURANCE PROGRAM

3.1 This quality program is to ensure that the fire protection systems for safety-related areas (as defined in paragraph 1.2 of this Appendix) are controlled in accordance with applicable NRC regulations, industrial standards and codes, policies, rules, procedures and licensing documents. The quality program is implemented through approved procedures. The effectiveness of the fire protection program is verified through surveillances and scheduled audits conducted by the NQ organization, under the cognizance of the SRC. General requirements for this program are also described in subsections 2.4 through 2.7 of this manual, except that personnel performing inspections need not be certified to ANSI N45.2.6, when inspections are performed on equipment not listed on the Q-list.

3.2 Employees whose duties and responsibilities are related to this fire protection program at or in support of the nuclear plant are to participate in appropriate training programs to assure that suitable proficiency is achieved and maintained in the work they are performing.

3.3 Fire protection training for plant personnel is included as part of industrial safety in the General Employee Training Program. Personnel are periodically retrained in industrial safety in accordance with approved procedures. Personnel assigned to the plant Fire Brigade are to receive additional indoctrination and training to assure their capability to fight fires is established and maintained. The Supervisor Fire Prevention/Protection has the overall responsibility for these training programs.

4.0 DESIGN CONTROL

4.1 Section 3.0 of this manual is applicable for design control activities pertaining to the fire protection system.

5.0 PROCUREMENT DOCUMENT CONTROL

5.1 The control of procurement documents for fire protection related materials, parts and components is described in Section 4.0 of this manual with the exception of paragraph 4.2.3, when these items are not associated with the Q-list. The procurement document is to include the requirement that items be U.L. listed or F.M. approved for fire protection use, where applicable, in accordance with approved procedures.

6.0 INSTRUCTIONS, PROCEDURES AND DRAWINGS

6.1 Inspections, tests, administrative controls, fire drills and training that govern the fire protection program are prescribed by documented instructions, procedures and drawings and are accomplished in accordance with these documents. A listing and brief description of procedures relating to fire protection activities are provided in the ANO Fire Protection Program Manual. Instructions, procedures and drawings are prepared, reviewed, approved and revised in accordance with approved procedures.

7.0 DOCUMENT CONTROL

7.1 Section 6.0 of this manual is applicable for the control of quality program documents related to fire protection.

8.0 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

8.1 The control of purchased fire protection related materials, equipment and services is described in Section 7.0 of this manual, with the following exception related to subsections 7.2, 7.3 and 7.5. For the procurement of fire protection related items or services not associated with the Q-list, the vendor/contractor qualification criteria (including periodic reassessment of their program) is not required. Nonconformances dispositioned repair or use-as-is by the vendor are to be submitted to and accepted by ANO only when so designated on the procurement document.

9.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

9.1 Section 8.0 of this manual is not applicable for the identification and control of materials, parts and components related to the fire protection system. No particular requirements for this section have been identified in BTP-APCSB 9.5-1, Rev. 2. The identification and control of materials, parts and components are conducted in accordance with existing procurement and materials management procedures and practices.

10.0 CONTROL OF SPECIAL PROCESSES

10.1 Section 9.0 of this manual is not applicable for the control of special processes, as applicable to fire protection systems. No particular special process controls have been identified by BTP-APCSB 9.5-1, Rev. 2. The control of special processes for the maintenance of the fire protection system is performed in accordance with applicable approved procedures and practices.

11.0 INSPECTION

11.1 Inspection activities applicable to the fire protection system are described in Section 10.0 of this manual with the exception of paragraphs 10.2.2 and 10.3.2.3, when inspections are performed on equipment not associated with the Q-list. The Regulatory Guides referenced in paragraph 10.2.2 are not applicable to the fire protection system. Individuals outside the NQ organization who perform inspections only need to meet paragraphs 10.3.2 and 10.3.2.1.

In addition to the provisions of this manual, inspections and surveillances are addressed for in applicable portions of the Fire Protection Program Manual and the Technical Specifications for each nuclear unit.

12.0 TEST CONTROL

12.1 A test program is to be established and implemented to ensure that testing is performed and verified on applicable systems and components to demonstrate conformance with design and system readiness requirements. The tests are to be performed in accordance with written test procedures and test results evaluated for conformance to the test objectives.

12.2 The control of testing activities is described in Section 11.0 of this manual. Surveillance testing requirements are identified in the Technical Specifications for each nuclear unit.

13.0 CONTROL OF MEASURING AND TEST EQUIPMENT

13.1 Section 12.0 of this manual is not applicable for the control of measuring and test equipment. No particular measuring and test equipment controls have been identified in BTP-APCSB 9.5-1, Rev. 2. Measuring and test equipment is controlled in accordance with applicable approved procedures and practices.

14.0 HANDLING STORAGE AND SHIPPING

14.1 Section 13.0 of this manual is not applicable for the handling, storage and shipping of fire protection-related materials and equipment. No particular requirements for this section have been identified in BTP-APCSB 9.5-1, Rev. 2. Handling, storage and shipping activities are controlled in accordance with applicable approved procedures and practices.

15.0 INSPECTION, TEST AND OPERATING STATUS

15.1 Measures are established to provide for the identification of items that have satisfactorily passed required inspections and tests and are documented per approved instructions or procedures.

15.2 Section 14.0 of this manual is applicable for identifying the inspection, test and operating status of the fire protection system.

16.0 NONCONFORMING MATERIAL, PARTS AND COMPONENTS

16.1 The control of nonconforming materials, parts and components related to the fire protection system is described in Section 15.0 of this manual, with the exception of subsection 15.3,

when the item is not associated with the Q-list. Vendor nonconformances are to be submitted to ANC only when so designated on the procurement document.

17.0 CORRECTIVE ACTIONS

17.1 A corrective action system is established to ensure that conditions adverse to fire protection, such as failures, malfunctions, deficiencies, deviations, defective components, uncontrolled combustible materials and nonconformances, are promptly identified, reported and corrected.

17.2 Corrective action activities are controlled as described in Section 16.0 of this manual, with the following exception related to subsection 16.3. Vendors furnishing fire protection items not associated with the Q-list are not required to be listed on the QVL.

18.0 QUALITY ASSURANCE RECORDS

18.1 Records which furnish evidence that the criteria enumerated in this program are being met for activities affecting the fire protection program are to be prepared and maintained as described in Section 17.0 of this manual. A listing of documents and records (including calculations, test reports, code reports and design change packages) relating to fire protection is included within the ANO Fire Protection Program Manual.

19.0 AUDITS

19.1 Audits are to be conducted and documented to verify compliance with the fire protection program, including design and procurement documents, instructions, procedures and drawings and inspection and test activities. Section 18.0 of this manual is applicable for the control of audits related to the fire protection program.

19.2 As a minimum, audits of the fire protection program are to be scheduled at specified frequencies in accordance with the Technical Specifications applicable to each nuclear unit.