EBASCO SERVICES INCORPORATED

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EBASCO

Benjamin E. Tenzer
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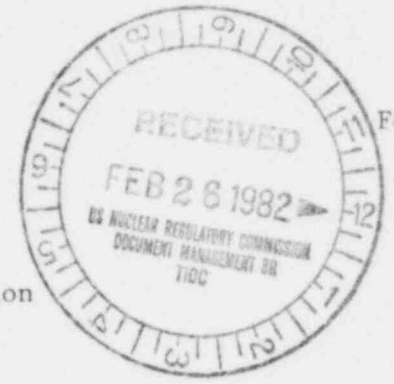

February 19, 1982

Mr. Walter P Haass, Chief
Quality Assurance Branch
Division of Project Management
U S Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Haass:

Attached for your consideration are one (1) copy each of the following undated and unsigned revisions which have been drafted for the Ebasco Nuclear Quality Assurance Program Manual (Ebasco Topical Report ETR-1001):

Table of Contents, Proposed Revision 11, pages 1 and 2 of 2

Section QA-I-1, Proposed Revision 6, QUALITY ASSURANCE PROGRAM, pages 1 through 13 of 13

Section QA-I-3, Proposed Revision 3, PERSONNEL INDOCTRINATION AND TRAINING PROGRAM IN QUALITY ASSURANCE, pages 1 through 3 of 3

Section QA-I-5, Proposed Revision 3, QUALITY ASSURANCE EVALUATION OF SUPPLIERS/CONTRACTORS, pages 1 through 4 of 4

Section QA-II-6, Proposed Revision 2, NONCONFORMANCES, pages 1 through 3 of 3

Section QA-II-7, Proposed Revision 2, CORRECTIVE ACTION, pages 1 through 3 of 3

Section QA-II-9, Proposed Revision 4, QUALITY ASSURANCE AUDITS, pages 1 through 8 of 8

Section QA-III-6, Proposed Revision 3, NONCONFORMANCES, pages 1 through 5 of 5

Section QA-III-7, Proposed Revision 3, CORRECTIVE ACTION, pages 1 through 4 of 4

Section QA-III-9, Proposed Revision 2, QUALITY ASSURANCE AUDITS, pages 1 through 5 of 5

Appendix II, Proposed Revision 1, EBASCO POSITIONS ON U S NUCLEAR REGULATORY COMMISSION REGULATORY GUIDES, pages 1 through 4 of 4

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S1/1

Locations of revisions are indicated by "R" symbols in the right hand margins. We consider the revisions are not of a substantive nature with respect to NRC's concerns; that conformance with the basic intent of Ebasco Quality Program and policy is in no way violated.

Upon receipt of your word that NRC accepts Ebasco Topical Report ETR-1001 with section revisions as indicated by Table of Contents Proposed Revision 11, we will affix our approval signatures and date and transmit to you your requested quantity of the revised sections and Table of Contents for insertion in copies of the report assigned to you. This will be considered as Change No. 11 to the report.

I will be pleased to answer any questions you may have in regard to the above.

Very truly yours,

BET/jb

cc: W Balke
B R Mazo

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION	
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER	TABLE OF CONTENTS	REVISION 11	R11
		DATE	R11

Part I - General

Part II - Engineering Offices

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL TABLE OF CONTENTS	SECTION

Part III - Construction Site

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION QA-I-1
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER		REVISION 6 R6 DATE R6

1.0 SCOPE

The purpose of this section is to describe the Quality Assurance Program Ebasco Services Incorporated and its applicability to safety-related activities and services performed by Ebasco in the design and construction of nuclear power stations. This Program has been designed to meet the requirements of the United States Nuclear Regulatory Commission 18 Quality Assurance Criteria of 10CFR50, Appendix B. It has also been designed to meet the regulatory position of the following US NRC Regulatory Guides and ANSI Standards, with exceptions and clarifications as stated in Appendix II of this manual:

1. Reg. Guide 1.28 Rev. 2 (2-79)
2. Reg. Guide 1.30 Rev. 0 (8-72)
3. Reg. Guide 1.37 Rev. 0 (3-73)
4. Reg. Guide 1.38 Rev. 2 (5-77)
5. Reg. Guide 1.39 Rev. 2 (9-77)
6. Reg. Guide 1.58 Rev. 1 (9-80)
7. Reg. Guide 1.64 Rev. 2 (6-76)
8. Reg. Guide 1.70 (Chap. 17) Rev. 3 (11-78) R6
9. Reg. Guide 1.74 Rev. 0 (2-74)
10. Reg. Guide 1.88 Rev. 2 (10-76)
11. Reg. Guide 1.94 Rev. 1 (4-76)
12. Reg. Guide 1.116 Rev. OR(5-77)
13. Reg. Guide 1.123 Rev. 1 (7-77) R6
14. Standard N45.2.12, Rev. 0 (11-77) R6

Table I-1.1 provides a matrix which shows the sections of the Ebasco Nuclear Quality Assurance Program Manual that correspond to the requirements of 10CFR50, Appendix B and US NRC Regulatory Guide 1.28, Rev. 0. The Ebasco Qualtiy Assurance Program is comprised of: The Ebasco Nuclear Quality Assurance Program Manual, written corporate policies, procedures, departmental instructions, and drawings related to quality. Table I-1.2 provides a matrix of the principal implementing procedures with 10CFR50, Appendix B. Table I-1.3 is a listing of these procedures by title.

The Ebasco Nuclear Quality Assurance Program Manual has been designed to meet the requirements of 10CFR50.34 (7) for a quality assurance program description. It will be incorporated into applicable portions of safety analysis reports by references as provided by 10CFR50.32.

The Ebasco Quality Program is in force at Ebasco Engineering Offices and Construction Operations. Ebasco Engineering Offices are those direct organized units where design, engineering, procurement and related functions are performed. Construction Operations encompass those activities related to the construction of a nuclear power station. Ebasco's responsibility for implementing the Ebasco Quality Program shall begin at the commencement of activities affecting quality and shall end with the turnover of completed systems to the Client.

Definitions pertaining to the Ebasco Quality Program are listed in Appendix I of this manual.

2.0 QUALITY ASSURANCE ENGINEERING

2.1 The Ebasco Qualtiy Assurance Engineering Department is responsible for establishing new, and updating existing quality assurance requirements. In addition, this department is responsible to administer and enforce the implementation of the Ebasco Quality Assurance Manual.

3.0 QUALITY PROGRAM COMMITTEE

3.1 The Ebasco Quality Program Committee is responsible for and has authority to make and approve procedures for any changes to this Manual. This committee is comprised of representatives of the Materials Engineering and Quality Assurance, Engineering, Construction Projects, Purchasing, Consulting Engineering, Advanced Technology, and Plant Operations and Betterment Departments; and of Envirosphere Company. These representatives are appointed by the Vice President of the respective department. R6

The Vice President Materials Engineering and Quality Assurance is designated by the Executive Vice President Operations as the Chairman of the Quality Program Committee. A member of Quality Assurance Engineering Department shall be designated by the Chairman as Quality Program Coordinator, who shall function as the Quality Program Committee's secretary and be a member of the Committee. R6

The Chief Quality Assurance Engineer is designated by the Vice President Materials Engineering and Quality Assurance as a permanent representative of the Materials Engineering and Quality Assurance Department on the Quality Program Committee. R6

The Committee shall be responsible for and shall have authority to make any changes to the policies and procedures of the Ebasco Quality Program. All changes or revisions to the Ebasco Quality Program shall be processed through the Quality Program Committee by the Quality Program Coordinator.

3.2 Ebasco Quality Program Procedures document the various significant activities of th Quality Program that are the direct responsibility of the Quality Program Committee or the Quality Program Coordinator. These procedures include but are not limited to the following: R6

3.2.1 Quality Program Procedure No. 4 entitled, QUALITY PROGRAM COORDINATOR - DESCRIPTION OF POSITION, DUTIES, RESPONSIBILITIES.

3.2.2 Quality Program Procedure No. 5 entitled, DEVIATING EBASCO PROJECT - RELATED QUALITY ASSURANCE PROGRAMS FROM THE EBASCO NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL. This provides for control of such deviatons by requiring execution of an authorization form involving approval of specified authorities to assure, among other things, that safety and/or quality will not be sacrificed.

3.2.3 Quality Program Procedure No. 6 entitled, ASSIGNMENT, DISTRIBUTION AND CONTROL OF THE EBASCO NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL.

3.2.4 Quality Program Procedure No. 7 entitled, REVISIONS TO THE EBASCO NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL.

4.0 GENERAL

4.1 Section QA-I-2 of this Manual describes the organizational structure, functional responsibilities, levels of authority and lines of internal and external communication for management, direction and execution of the Ebasco Quality Assurance Program. By the Statement of Authority at the front of this manual, Ebasco's President mandates the company - wide use of this manual and its supporting documents which make up the Ebasco Quality Program. R6

4.2 It shall be the responsibility of each Ebasco department and the individual personnel of that department to adhere to the requirements of this Program. Sections QA-II-1 and QA-III-1 of this Manual require these departments to develop and control instructions, procedures and/or drawings which describe the manner in which activities affecting quality are to be accomplished. When documented evidence is required for the satisfactory performance of these activities, checklists, forms and/or other appropriate means shall provide this evidence. The documents which contain the procedures listed in Table I-1.3 and used to implement the Ebasco QA Program are: R6

4.2.1 Company Procedures Manual - Administrative

4.2.2 Company Procedures Manual - Engineering

4.2.3 Company Procedures Manual - Nuclear

4.2.4 Company Procedures Manual Procurement

4.2.5 Company Procedures Manual - Projects R6

4.2.6 Quality Assurance Engineering Department-Quality Assurance Procedures Manual

4.2.7 Quality Assurance Engineering Department - Site Quality Assurance Procedures Manual

4.2.8 Nuclear Licensing Department Procedures Manual

4.2.9 Manual of Vendor Quality Assurance Procedures R6

4.2.10 Nuclear Quality Control Site Procedures Manual

The above listed manuals may also contain departmental working procedures which do not describe activities affecting quality and therefore are not governed by the requirements of this Manual. Furthermore, certain implementing procedures may require changes in order to suit unique client requirements, which procedures for a specific project will be included in a project manual of procedures and/or a site manual. In this case, the changed procedure shall be designated a Project Procedure. These procedures will be subject to controls similar to those applicable to the original documents. R6

4.3 In addition to the requirements of Sections QA-II-1 and QA-III-1 and paragraph 4.2 above, Sections QA-II-8 and QA-III-8 further assure control over quality related activities by requiring that special processes shall be performed in acordance with written qualified procedures, and that they shall be performed only by qualified personnel. All qualifications shall be in accordance with applicable codes, standards, specifications and other requirements as applicable. The Ebasco Quality Program provides for the verification of quality requirements through written policies, procedures and instructions for the performance of inspections and tests. These inspections and tests are performed on Ebasco purchased items as well as on services supplied by Ebasco. All inspections shall be performed by individuals other than those who performed the activity.

4.4 In order to extend the control of activities affecting quality to the supplier level, suppliers of Ebasco purchased items and services shall be evaluated with respect to quality assurance capability in accordance with the requirements of Section QA-I-5. QA-I-5 requires Ebasco suppliers to have in effect quality programs that meet the requirements of 10CFR50 Appendix B and ANSI N45.2 that are applicable to the items being purchased. Items shall not be purchased from suppliers that do not meet the applicable requirements of Section QA-I-5.

In addition to the initial quality assurance evaluation of suppliers the Ebasco Quality Program provides for the in-process surveillance of items in the supplier's shops. This surveillance program is described in Sections QA-II-5 and QA-III-5.

5.0 INDOCTRINATION AND TRAINING

Section QA-I-3 provides for the company-wide indoctrination and training of Ebasco personnel engaged in activities subject to the requirements of the Ebasco Quality Assurance Program. The objectives of the training program are to familiarize applicable Ebasco personnel with this Quality Assurance Program, herein defined as the Ebasco Topical Report ETR-1001 and the implementing procedures identified in Table I-1.3. Overall responsibility for training as delineated in QA-I-3 rests with the Quality Assurance Engineering Department. R6

6.0 REVIEW OF QUALITY PROGRAM ADEQUACY

6.1 The adequacy of the Ebasco Quality Program is reviewed on a regular basis. The determination of program adequacy is based on audit results and trend analyses. Sections QA-II-9 and QA-III-9 provide for the performance and followup of audits by Quality Assurance Engineering and of audits of the Materials Engineering and Quality Assurance functions.

6.2 Audits performed by Quality Assurance Engineering are designed to evaluate the Quality Program effectiveness on a project basis. When corrective action is necessary, re-audits are scheduled to assure implementation of corrective action. Section QA-II-9 defines review activities and reports involved in the auditing function.

6.3 Information on audits performed by Quality Assurance Engineering shall be submitted to the Quality Assurance Engineering Internal Audit Supervisor. He shall make an analysis of the available quality data with respect to quality trends and report the result of the analysis in accordance with Quality Assurance Engineering Procedure QA-D.3. The Vice President of Materials Engineering and Quality Assurance shall be responsible for initiating the implementation of any changes or corrective action deemed necessary to improve the effectiveness of the Ebasco Quality Assurance Program. R6

MATRIX OF COMPLIANCE TO
USNRC 10 CFR 50 APPENDIX B AND ANSI N45.2

TABLE I-1.1

10CFR50 APPENDIX B. CRITERIA	ANSI N45.2 PARAGRAPH	EBASCO NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL SECTION
I	3	QA-I-2
II	2	QA-I-1, QA-I-3
III	4	QA-I-4
IV	5	QA-II-3, QA-III-3
V	6	QA-II-1, QA-III-1
VI	7	QA-II-2, QA-III-2
VII	8	QA-I-5, QA-II-2, QA-II-4, QA-III-2, QA-III-4
VIII	9	QA-III-10
IX	10	QA-II-8, QA-III-8
X	11	QA-II-5, QA-III-5, QA-III-11
XI	12	QA-III-12
XII	13	QA-III-13
XIII	14	QA-III-14
XIV	15	QA-III-15
XV	16	QA-II-6, QA-III-6
XVI	17	QA-II-7, QA-III-7
XVII	18	QA-I-6
XVIII	19	QA-II-9, QA-III-9

TABLE 1-1.2
MATRIX OF COMPLIANCE OF PRINCIPAL IMPLEMENTING
PROCEDURES TO 10CFR50 APPENDIX B

Criterion	Administrative (A-) Procedures	Engineering (E-) Procedures	Licensing (L-) Procedures	Nuclear (N-) Procedures	Purchasing Dept (PD-) Procedures	Project Dept (PJ-) Procedures	Quality Assurance (QA-) Procedures	Construction Dept. Procedures	Quality Program (QP-) Procedures	Vendor Qual. Assur.Dept. (VQAD-)Procedures	
I				-21				QS-2			
II								QS-1,QS-3	-4,-5,-6.-7		
III		-1,-2,-7,-8,-9,-15, -21,-30,-45,-52,-68,-69 -72,-74,-76,-77,-82,-86	-0,-1,-2,-3, -7,-8				-D.1,-D.2	QS-4,QS-8			R6
IV		-8,-19			-3,-5,-6,-10, -11		-D.1,-D.2,-P.6	QS-6			
V	-1	-7		-23			-G.1,-G.2,-P.1	QS-1			R6
VI	-1,	-2,-3,-6,-7,-8,-9,-15 -21,-65,-73,-82,-86,-88 -89					-G.1,-G.2,-S.3,-S.9	QS-5			R6
VII		-89			-6		-G.3,-P.1,-P.5,-P.9,-S.10	QS-6,QS-7		-1 through-13, -15,-17,-18,-19	
VIII							-S.12,-S.13,-S.14,-S.16 -S.18,-S.21,-S.22	QC.3			
IX		-73					-P.1,-P.7,-P.12,-S.16,-S.17 -S.18,-S.19,-S.20	QC-3			
X							-G.3.1,-G.3.2,-P.5,-P.12,	QC-3,QS-6			
XI						-2	-G.3.2,-P.1,-P.5,	QC-3			
XII							-S.8	QC-4			
XIII							-P.1,-S.5,-S.6	QC5			
XIV							-P.1,-P.5	QC-3			
XV		-72					-P.3,-S.7	QC-1			
XVI		-72					-D.3,-P.3,-S.7	QC-2			
XVII						-1	-D.5,-G.3,-G.4,-P.9,-P.12 -S.3,-S.4,-S.10	QS-5			R6
XVIII							-D.4.-D.5,-D 5.1,-D.5.2,-G.3, -P.9,-S.2,-S.3,-S.5,-S.6, -S.8 thru - S.22	QC-3			R6

TABLE I-1.3

PRINCIPAL IMPLEMENTING PROCEDURES

Procedure No.	Title	
A-1	Procedures - Authorization and Preparation	
E-1	Review of Vendors Drawings	
E-2	Release of Drawings for Fabrication and Construction	
E-3	Procedure for Controlling Original Drawings Requisitioned from the Drawing Files Room	
E-6	EMDRAC System	
E-7	Processing Drawings for Review and Approval	
E-8	Approval Signatures Required on Ebasco Drawings	
E-9	Processing Conceptual Design Documents for Review and Approval R6	R6
E-15	Preparation of Ebasco Standard Specifications	
E-19	Documentation, Processing and Resolution of Specification Technical Questions from Bidders	
E-21	Preparation of Project Equipment Specifications	
E-30	Preparation of Calculations	
E-45	Preparation of Safety Analysis Reports and Establishment of Design Bases for Nuclear Projects	
E-52	Coordination of NSSS Interfaces	
E-65	Control of Project Related Design Documents	
E-68	Division of Responsibility Between Disciplines	
E-69	Design Change Notice/Field Change Request	
E-72	Control of a Nonconformance by a Vendor	
E-73	Microfilming Project - Related Drawings and Documents	

TABLE I-1.3
(Cont'd)

Procedure No.	Title	
E-74	The Use and Documentation of Sketches	,
E-76	Guidelines for Design Verification	,
E-77	Selection, Identification and Documentation of Design Inputs	,
E-82	Ebasco Site Support Engineering Operation	,
E-86	Processing Inquiry Memorandum, Purchase Requisition, Contract And Supplements	,
E-88	Preparation, Approval and Distribution of Engineering and Design Guides	,
E-89	Expanded Purchasing Program Including Proposal Evaluation	,
L-0	Preparation and Control of Nuclear Licensing Department Procedures	,
L-1	SAR Preparation	,
L-2	SAR Amendment Preparation	R6
L-3	Processing SAR Change Requests	,
L-7	Nuclear Safety Design Review	,
L-8	Preparation of Radiological Impact Assessments	,
N-21	Nuclear Quality Program Authorization and Implementation	,
N-23	Reporting a Defect/Noncompliance to the NRC	,
N-24	Ebasco Management Quality Assurance Audit Committee	,
PD-3	Development of Project Bidders List	,
PD-6	Early Procurement of Critical Materials	,
PD-10	Quotation Evaluation and Recommendation to Purchase	,
P-11	Preparation of Purchase Orders and Supplements	

TABLE I-1.3
(Cont'd)

Procedure No.	Title	
PJ-1	Filing System - Nuclear Projects	'
PJ-2	Project Communications	'
QA-G.1	Preparation and Control of Quality Assurance Engineering Department Procedures	'
QA-G.2	Control and Distribution of Project-Related Manuals	'
QA-G.3	Qualification of QA Audit Personnel	'
QA-G.3.1	Requirements for the Qualification/Experience Review and Certification of Designated Level III QC Individuals	'
QA-G.3.2	Qualification of QA/QC Personnel to ANSI N45.2.6 Requirements	'
QA-G.4	Quality Assurance Engineering Records	'
QA-D.1	Review of Safety-Related Component Specifications	'
QA-D.2	Review of Engineering Drawings	R6
QA-D.3	Determination and Analysis of Quality Trends	'
QA-D.4	Resolution of External Audit Findings	'
QA-D.5	Internal Audits	'
QA-D.5.1	Internal Auditing of Vendor Quality Assurance Representatives	'
QA-D.5.2	Site Audit Procedure	'
QA-P.1	Review of Vendor's Procedures	'
QA-P.3	Review of Nonconformances	'
QA-P.5	Requirements for Preparation, Implementation and Control of QA Plans	'
QA-P.6	Evaluation of Bid Exceptions	'
QA-P.7	Review of Nondestructive Examination (NDE) Procedures	'

TABLE I-1.3
(Cont'd)

Procedure No.	Title	
QA-P.9	Quality Assurance Vendor Evaluations	,
QA-P.12	Procedure for Review of Radiographic Film Submittals	,
QA S-1	Planning of Site QA Engineering Activities	,
QA S-2	General Audit Procedure	,
QA S-3	Processing of QA Engineering Audit Reports	,
QA S-4	Quality Assurance Records Audit	,
QA S-5	Material Receipt Audit	,
QA S-6	Material and Component Storage Audit	,
QA S-7	Processing of Nonconformance Reports	,
QA S-8	Calibration and Gage Control Audit	,
QA S-9	Document Control Audit	,
QA S-10	Vendor Documentation Audit	R6
QA S-11	System Turnover Audit	,
QA S-12	Civil Activities Audit	,
QA S-13	Structural Steel Audit	,
QA S-14	Reinforcing Steel Audit	,
QA S-15	Protective Coating Audit	,
QA S-16	Welding Material Control Audit	,
QA S-17	Welder Qualifications Audit	,
QA S-18	Mechanical and Welding Audit	,
QA S-19	Nondestructive Examination Audit	,
QA S-20	Radiographs Review Audit	,

TABLE I-1.3
(Cont'd)

Procedure No.	Title	
QA S-21	Electrical Activities Audit	,
QA S-22	Instrumentation Activities Audit	,
QA S-23	Qualtiy Assurance Instructions	,
QC-1	Nonconformances	,
QC-2	Corrective Action	,
QC-3	Inspection and Test Control	,
QC-4	Control of Measuring and Testing Equipment	,
QC-5	Receiving, Handling and Storage	,
QP-4	Quality Program Coordinator-Description of Position, Duties, Responsibilities	,
QP-5	Deviating Ebasco Project-Related Quality Assurance Programs from the Ebasco Nuclear Quality Assurance Program Manual	,
QP-6	Assignment, Distribution and Control of the Ebasco Nuclear Quality Assurance Program Manual	R6
QP-7	Revisions to the Ebasco Nuclear Quality Assurance Program Manual	,
QS-1	Preparation, Control and Distribution of Construction Department Standards	,
QS-2	Organization and Responsibilities, Construction Department Staff	,
QS-3	Indoctrination and Training	,
QS-4	Design Change Control	,
QS-5	Document Control	,
QS-6	Procurement Control - Field Purchase Orders	,
QS-7	Construction Contracting	,
QS-8	Design Control Review of Specifications and Drawings	,

TABLE I-1.3
(Cont'd)

Procedure No.	Title	
VQAD-1	Procedure for Assignment of Purchase Orders and Sub-Orders for Examination Nuclear Safety Related Equipment and Designated Equipment	,
VQAD-2	Procedure for Assignment of Purchase Orders and Sub-Orders for Examination Fossil Fuel Plants and Non-Nuclear Safety Class Equipment	,
VQAD-3	Transmittal, Distribution and Use of Quality Assurance Plan for Vendors, Manufacturers, Contractors and Associated Quality Assurance Forms	,
VQAD-4	The use of Form 719-QA-W "Quality Assurance Report"	,
VQAD-5	Setting Up and Maintaining Purchase Order File	,
VQAD-6	Processing Quality Assurance Non-Conformance Report Form 6009-11 Follow-Up of Non-Conformance and Review of Vendor Rework Records	,
VQAD-7	Use of "Problems That Require Resolution" Form	,
VQAD-8	Preparation and Control of Vendor Quality Assurance Report Release for Shipment Form No. 1305	R6
VQAD-9	Review and Processing Quality Assurance Reports Form 719-QA-W	,
VQAD-10	Preparation and Control of Implementing Procedures	,
VQAD-11	Review of Radiographs by Vendor Quality Assurance Representatives	,
VQAD-12	Notification of Material Shipped Without Release	,
VQAD-13	Review of Vendor Documentation	,
VQAD-15	Setting up and Maintaining Purchase Order Files in New York Office	,
VQAD-17	Interface between Vendor Quality Assurance and Quality Assurance Engineering Departments	,
VQAD-18	Interface between Vendor Quality Assurance and Materials Application Departments	,
VQAD-19	Qualification of Inspection, Examination and Testing Personnel for Nuclear Facilities.	,

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION QA-I-3
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER	PERSONNEL INDOCTRINATION AND TRAINING PROGRAM IN QUALITY ASSURANCE	REVISION 3 R3 DATE R3

1.0 SCOPE AND PURPOSE

1.1 This Section describes the Program for indoctrination and training of Ebasco personnel engaged in activities affecting quality with respect to the requirements of the Ebasco Nuclear Quality Assurance Program Manual ETR-1001 and its supporting principal implementing procedures. Ebasco personnel shall be indoctrinated and trained, as necessary, to assure that proficiency is achieved and maintained in those parts of the Quality Assurance Program as it applies to the individuals responsibility.

2.0 GENERAL

2.1 The Indoctrination and Training Program is a combined effort of the disciplines/departments implementing any protion of the Manual and its principal implementing procedures, the Corporate Training and Development Department and the Quality Assurance Engineering Department. Each project which is comprised of personnel from various disciplines/ departments, is responsible to assure the indoctrination and training for the project except for the personnel from the Construction, Quality Assurance Engineering and Vendor Quality Assurance Representative Departments. These Departments are responsible to schedule, indoctrinate and train their personnel, and to record this indoctrination and training. R3

3.0 PROGRAM REQUIREMENTS

3.1 Written preplanned lessons shall comprise the substance of the indoctrination and training program. These lessons shall address one or more quality related topics, to achieve one or more stated educational objectives. The training will be given by trained supervisors or their designees within each applicable discipline/department, or by a Quality Assurance Engineering Education Specialist or designee when the need arises. The Quality Assurance Engineering Department will primarily be responsible for briefing the selected trainer within the discipline/ department in methods of conduction the required training. Since the Construction, Quality Assurance Engineering (home office and site) and Vendor Quality Assurance Representative Department are responsible for the preparation and approval of their own procedures, training of affected personnel will be conducted by supervisors or their designees within these departments or by the Quality Assurance Engineering Education Specialist.

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL PERSONNEL INDOCTRINATION AND TRAINING PROGRAM IN QUALITY ASSURANCE	SECTION QA-I-3

PROGRAM REQUIREMENTS (Cont'd)

3.2 For Engineering Disciplines, Purchasing and Licensing, a list of the principal implementing procedures which affected personnel are required to be familiar with is maintained by the Quality Assurance Engineering Department. This list is used as a reference with respect to what required training lessons must be developed, revised or deleted from the program. This list is approved by the Quality Assurance Engineering Education Specialist or designee. It will be updated, as required to reflect any changes in implementing procedures status. All training lessons and their revisions shall be reviewed and approved by the Quality Assurance Engineering Department, to assure compliance with the Ebasco Nuclear Quality Assurance Program Manual ETR-1001 requirements. Where a principal implementing procedure has been changed to suit a project unique requirements, an addendum or modification to subject list shall be utilized to identify these procedures by the Quality Assurance Engineering Education Specialist and Training sessions be prepared accordingly. Copies of the training lessons and other training material shall be kept on file in the Quality Assurance Engineering Department.

3.3 For Construction, Quality Assurance Engineering and Vendor Quality Assurance Representative Departments, training lessons are maintained by each respective department. The training lessons relate to activities the personnel shall be performing. A responsible person within the the respective department shall determine the training requirements for each individual based on that individual's assigned responsibilities and past experience. Training lessons are updated when required and reflect any changes in the program. Copies of these training lessons shall be kept on file in the respective Departments. R3

4.0 RECORDS

4.1 The Corporate Training and Development Department maintains a computerized employee history training file of Ebasco personnel. It identifies the type of training that an employee receives, including the indoctrination and training received by Engineering personnel in accordance with this Program's requirements, when applicable. The Corporate Training and Development Department maintains the original attendance records of applicable personnel for input to the computer on a monthly basis. The computerized records shall identify the participant, the course given and the attendance date. The original attendance records shall identify the instructor and time duration.

4.2 Individual training files for each person receiveing indoctrination and training other than those identified on the computerized file be maintained by each affected department. These records will indicate, as applicable, the subject matter, the training received, attendance date, time duration, instructor, and special qualifications or restrictions, if any.

5.0 SCHEDULING

5.1 Scheduling training of applicable discipline/department personnel will be coordinated with the Quality Assurance Engineering Education Specialist where necessary. As new personnel are added to a Project or within a department, appropriate indoctrination and training sessions will be scheduled based on the requirements of this Manual.

6.0 PROGRAM UPDATING

6.1 This indoctrination and training program is subject to continuous development to broaden and improve its effectiveness. The Quality Assurance Education Specialist will hold periodic discussions with those groups involved with the training program to coordinate recommendations for updating. The Quality Assurance Education Specialist is responsible for updating the Program for the Quality Assurance Engineering Department. R3

7.0 ADMINISTRATION

7.1 The Quality Assurance Engineering Department shall have overall responsibility for administrating the training program. It shall provide technical expertise for developing necessary programs, and review existing programs for currency.

7.2 Each Department Head is responsible to see that the appropriate people attend the training program(s) they are scheduled for.

8.0 AUDITS

Audits of indoctrination and training activities shall be performed to assure compliance with this Program. Such audits shall be performed in accordance with the requirements of Section QA-II-9 of this Manual.

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION QA-I-5
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER	QUALITY ASSURANCE EVALUATION OF SUPPLIERS/CONTRACTORS	REVISION 3 R3 DATE R3

1.0 SCOPE

The purpose of this section is to establish the criteria for evaluating suppliers/contractors of safety-related items and services procured, either by means of purchase orders issued through the Engineering and Site Offices or by means of Construction Contracts issued at the various construction sites. Such suppliers/contractors shall be evaluated for their adherence to the portions of 10CFR50 Appendix B, ANSI N45.2 and applicable daughter standards, and other Ebasco requirements that are applicable to the items or services supplied.

2.0 RESPONSIBILITIES

Quality Assurance Engineering shall be responsible to assure, through implementation of departmental procedures, that safety-related items and services procured by Ebasco at Engineering Offices and Construction Sites are procured only from vendors and contractors who meet the applicable requirements of this section.

For site procurements involving purchase orders and construction contracts, the Senior Quality Control Supervisor or his designee may attend and participate in the evaluation of suppliers as described in Ebasco Site Quality Control procedures.

3.0 QUALIFICATION REQUIREMENTS

3.1 Qualification of a supplier/contractor shall be determined from results of the following:

3.1.1 A review of the supplier's/contractor's Quality Assurance Manual.

3.1.2 A facility or site audit of the supplier's/contractor's Quality Assurance program to assure satisfactory implementation of that program. (Facility audits of Contractors' Quality Assurance programs shall be performed at the site after contract award but prior to start of installation of safety related items or performance of safety related work).

3.1.3 Evidence of manufacturer's Certificate of Authorization (i.e., ASME N-type stamp), if applicable.

3.1.4 For Contractors who have provided unique or special services (i.e., laboratories, consultants, research facilities, etc.) evidence based upon historical data substantiating their capability on other Ebasco projects or industry demonstrated and/or recognized technical expertise.

3.0 RESPONSIBILITIES (cont'd)

3.2 For purchase orders issued by the Engineering and Site Offices, a supplier, to be considered qualified to be awarded a purchase order, must have satisfactorily met the requirements of Paragraph 3.1 above. For Construction Contracts issued by the Construction Department, a contractor may be awarded a construction contract before meeting the requirements of Paragraph 3.1 above, but this is contingent upon his satisfactorily meeting the requirements before starting any safety-related work.

3.3 For Engineering and Site Offices purchase orders, Quality Assurance Engineering shall maintain and issue, to appropriate department heads, a list of Vendors considered qualified with regard to Quality Assurance capability in accordance with Quality Assurance Engineering procedures. Only Vendors who have satisfactorily met requirements of Paragraph 3.1 above shall be included on this list. Safety-related items and services shall be purchased only from Vendors included on this list. A Vendor may be removed from this list if it is found that unresolved conditions adverse to quality may have developed and remain unresolved.

For Construction Department Construction Contracts, the Manager of Construction Engineering will maintain a file of Contractors who have satisfactorily met the requirements of Paragraph 3.1.

3.4 A supplier may be issued a purchase order without being required to have a Quality Assurance program or being subject to a facility audit for "off-the-shelf" items. Off-the-shelf items are those that do not have unique design or specification requirements, and do not require the manufacturer to perform a separate or special operation or test to qualify the item for use in a specific nuclear power plant facility. Documentation of qualification for "off-the-shelf" items, when applicable, shall be requested and obtained prior to purchase order award for evaluation so as to provide auditable evidence of review and acceptance thereof. Receiving inspection in accordance with Section QA-III-11 shall be documented to include evidence that these items are in conformance with the purchase order requirements. R2

4.0 SUPPLIER QUALITY ASSURANCE MANUALS

4.1 For Engineering and Site Offices purchase orders, vendor Quality Assurance manuals shall be submitted to Ebasco for review at the time the vendors submit their bid, provided a previous submittal of the manual has not been made. For Construction Department Construction Contracts, the Quality Assurance manuals shall be submitted either before or after award of a contract, but prior to performance of any safety-related work.

4.2 All Quality Assurance manuals shall be reviewed by Quality Assurance Engineering in accordance with departmental procedures and check lists, which includes the requirement for independence of supplier inspection personnel.

5.0 SUPPLIER/CONTRACTOR FACILITY AUDITS

5.1 For purchase orders issued at the Engineering and Site Offices, the Quality Assurance Engineering Department, prior to award of a purchase order, shall conduct a Quality Assurance audit of the prospective supplier's facility in accordance with departmental procedures and checklists.

For Construction Contracts issued by the Construction Department, the Quality Assurance Engineering Department shall conduct a Quality Assurance audit of the prospective contractor's site facility either before or after award of contract but prior to start of any safety-related work. The Senior Quality Control Supervisor or his designee may participate in this audit.

5.2 Section QA-II-9 establishes the requirements for the performance of supplier/contractor facility or site audits. These requirements are satisfied by the implementation of departmental procedures which include provisions for the following:

(a) Training and Qualification of Auditors

(b) Proficiency of Audits

(c) Audit Planning

(d) Audit Notification

(e) Audit Performance

(f) Reporting of Audit Results

(g) Audit Follow-Up

(h) Audit Records

(i) Trend Analysis of Audit Records

6.0 PERIODIC RE-AUDITS

6.1 All qualified suppliers/contractors shall have their Quality Assurance manual re-evaluated and their facility re-audited in accordance with an established schedule to determine continued compliance to applicable NRC, ANSI and Ebasco requirements. All re-audits shall be performed and documented as specified in this section for initial audits.

6.2 The periodic re-audit schedule shall be determined by the Chief Quality Assurance Engineer or his designee. The frequency shall be established utilizing pre-award audit findings, supplier/contractor history and supplier trend analysis. Maximum time for re-evaluation shall not exceed three years.

7.0 TREND ANALYSIS OF SUPPLIER/CONTRACTOR AUDIT REPORTS

The Quality Assurance Engineering Internal Audit Supervisor shall make an analysis of the available Quality data, such as supplier/contractor audit reports and other appropriate documentation with respect to quality trends and report the result of the analysis. Distribution of the trend analysis reports shall be made in accordance with the requirements of Quality Assurance Engineering Procedure QA-D.3. R3

8.0 RECORDS

All documents and records relating to a supplier's/contractor's quality program and audit status shall be secured and maintained by the Quality Assurance Engineering Department at the Engineering Office for Engineering Offices purchase orders and by the Quality Assurance Site Supervisor at the site for site purchase orders, all in accordance with departmental procedures and the applicable requirements of Section QA-I-6 of this manual.

Documents and records relating to Construction Contracts shall be secured through the Contracts Administrator and distributed to the Quality Records Supervisor for filing, all in accordance with departmental procedures and Section QA-I-6 of this manual. A copy of the contractors audit reports and any trend analysis should be sent to the Manager of Construction Engineering for future reference.

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION QA-II-6
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER	NONCONFORMANCES	REVISION 2 R2 DATE R2

1.0 SCOPE

1.1 This section establishes the requirements for the identification, control and disposition of materials, parts, components or services found to be in nonconformance with Ebasco requirements. Nonconformances may be either detected by an Ebasco Vendor Quality Assurance Representative, by the Supplier or others. All activities described in this Section of the manual shall be performed in accordance with written instructions and/or procedures.

2.0 CONTROL OF SUPPLIER NONCONFORMANCES

2.1 Section QA-I-5, "Evaluation of Suppliers" requires suppliers to have procedures which control nonconforming items and services to prevent their inadvertent use or installation. These procedures shall require, as appropriate, identification, documentation, segregation, review and disposition of nonconformances.

3.0 REPORTING OF NONCONFORMANCES R2

3.1 All nonconformances to Ebasco Purchase Order requirements which render the quality of an item or service unacceptable or indeterminate shall be reported to Ebasco Quality Assurance Engineering by one of the following methods:

3.1.1 When a nonconformance is detected by an Ebasco Vendor Quality Assurance Representative, he shall initiate a Quality Assurance Engineering Nonconformance Report by detailing the description of the nonconformance on the form and obtaining a recommended disposition from the appropriate Supplier personnel. The report shall then be forwarded to the Project Quality Assurance Engineer (PQAE) for processing in accordance with Paragraph 4.0 below.

3.1.2 All nonconformances detected by the supplier that are dispositioned as repair, rework or use as is and will not conform to Ebasco specification and drawing requirements after corrective action has been taken shall be reported to Ebasco. The Supplier shall report these nonconformances to Ebasco by forwarding copies of his nonconformance reports to the Project Quality Assurance Engineer. The Supplier shall not initiate corrective action until receipt of written approval or other appropriate disposition from Ebasco.

3.2 Reporting of nonconformances as they pertain to compliance with the requirements of this Quality Assurance Program Manual when detected by others than Vendor Quality Assurance Representatives shall fall under the auspices of Section QA-II-9, Section QA-III-9 and applicable implementing procedures. R2

4.0 REVIEW OF NONCONFORMANCE REPORTS

4.1 Upon receipt of a nonconformance report, the PQAE shall:

a) Log in the report.

b) Review the report to determine the nature of the nonconformance.

c) The PQAE shall then transmit the report to the appropriate engineer(s) for review and evaluation.

4.2 Appropriate engineer(s) shall review and evaluate the nonconformance report, decide on the suitability of the Supplier's recommended disposition and enter details of the evaluation on the report. The report shall then be returned to the PQAE.

4.3 Upon receipt of the reviewed and evaluated report, the PQAE shall log in results of the review and distribute copies of the report to the Vendor Quality Assurance Department and others, as necessary.

5.0 NOTIFICATION

5.1 Upon receipt of the reviewed and evaluated report, the Project Quality Assurance Engineer or his designee from the Quality Assurance Engineering Dept. shall notify the Supplier of the results of Ebasco's review by issuing a copy of the reviewed and evaluated report to the Supplier. R2 R2

6.0 REINSPECTION

6.1 The Vendor Quality Assurance Representative shall verify, if indicated on the Nonconformance Report, that the recommended disposition has been accomplished and that reinspection, when required, was performed.

6.2 The Vendor Quality Assurance Representative shall assure that reinspection when required is performed on all items and services reported as nonconforming. Reinspection shall be performed in accordance with the requirements of the governing Code(s) and in accordance with requirements at least as stringent as those by which the nonconformance was detected. The completed nonconformance report form shall provide sufficient detailed information for as-built records and shall be included in the documentation package sent to the jobsite.

6.3 Nonconformances not corrected in accordance with the requirements of the Nonconformance Report shall not be accepted by the Vendor Quality Assurance Representative. Items or services shall not be accepted by the Vendor Quality Assurance Representative until such time as the appropriate corrective action has been accomplished.

7.0 TREND ANALYSIS OF NONCONFORMANCES

The Quality Assurance Internal Audit Supervisor shall make an analysis of the available quality data, such as nonconformance reports from the sources mentioned above, with respect to quality trends and report the result of the analysis. Distribution of the trend analysis reports shall be made in accordance with the requirements of Quality Assurance Engineering Procedure QA-D.3,"Determination and Analysis of Quality Trends. R2

8.0 RECORDS

8.1 Nonconformance Reports shall be maintained in accordance with Section QA-I-6. R2

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION QA-II-7
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER	CORRECTIVE ACTION	REVISION 2 R2 DATE R2

1.0 SCOPE

1.1 This section establishes the requirements for the identification, analysis and implementation of corrective action for safety-related items and services. This section applies to activities performed at the Engineering Office.

2.0 GENERAL

2.1 Corrective action shall be required for identified and documented nonconformances associated with safety-related items or services.

2.2 The need for corrective action may be identified from the following sources:

2.2.1 Ebasco management audits performed in accordance with Section QA-II-9 of this Manual.

2.2.2 Quality Assurance audits performed by Quality Assurance Engineering in accordance with Section QA-II-9 of this Manual.

2.2.3 Nonconformances detected at a supplier's facility as described in Section QA-II-6 of this Manual.

2.2.4 Audits of Ebasco performed by the Client or regulatory bodies.

2.3 Determination and review of corrective action items shall be made as early as possible in order to preclude the possible repetition of deficiencies.

2.4 During the review of all corrective action items, consideration shall be given to the training of personnel if it is determined that this was a cause of the deficiency.

2.5 Dissemination of corrective action information to responsible individuals shall be performed in a minimum length of time.

3.0 DETERMINATION AND IMPLEMENTION AND IMPLEMENTATION METHODS

3.1 Ebasco Management Audits

3.1.1 Ebasco Management Audits of Quality Assurance Engineering Functions shall be performed in accordance with section QA-II-9 of this Manual. The purpose of these audits is to verify compliance with the Ebasco Nuclear Quality Assurance Manual.

3.0 DETERMINATION AND IMPLEMENTATION METHODS (Cont'd)

3.1.2 Any deficiency in performance shall be reported and resolved in accordance with section QA-II-9. R1

3.2 Quality Assurance Engineering Audits

3.2.1 Quality Assurance Engineering shall perform internal audits as required by Section QA-II-9. These audits are designed to verify that responsible groups within Ebasco are complying with the requirements of the Ebasco Quality Program. Quality Assurance Engineering shall also perform follow-up action as described in Section QA-II-9 to assure that corrective action, if required, has been accomplished. If disagreement about the type or effectiveness of corrective action exists, the problem shall be reviewed by successively higher levels of management until satisfactory resolution is obtained.

3.2.2 Audits of potential Ebasco suppliers shall be performed as described in Sections QA-II-9 and QA-I-5 of this Manual. If any aspect of a supplier's quality assurance program does not meet the Ebasco requirement and the supplier is being considered for award, he must implement corrective action to rectify the problem areas disclosed by the Ebasco evaluation. Supplier corrective action items shall be administered in accordance with Section QA-I-5. R1

R1

3.3 Supplier Nonconformance

3.3.1 Section QA-II-6 requires the initiation of a nonconformance report for nonconformances detected at the supplier's facility. These reports shall be submitted to Ebasco and processed in accordance with Section QA-II-6 of this Manual. Section QA-II-6 also assures that reinspection of nonconforming safety-related items and services is performed and that deficiencies have been resolved and appropriate corrective action has been taken prior to acceptance of these items or services by Ebasco. R1

3.3.2 During the review of nonconformance reports, a determination of the adequancy and effectiveness of inspection and test procedures, process controls and sampling plans shall be made. If it is ascertained that an improvement in inspection techniques and procedures or an increased sampling rate will improve quality, the vendor shall be notified of the corrective action required to upgrade his system. R1

3.4 Client or Regulatory Agency Audits R1

3.4.1 Audits of Ebasco Engineering Office activities may be performed by the Client and/or appropriate regulatory agencies. If corrective action is required as a result of one of these audits, Ebasco Quality Assurance Engineering shall be responsible for obtaining a response from the cognizant individual(s) at Ebasco for submittal to the auditing body. R1

4.0 DETERMINATION AND ANALYSIS OF QUALITY TRENDS

In order to identify the recurrence of quality problems, Ebasco has developed a method, specified in Quality Assurance Engineering procedures, for the determination and analysis of quality trends. Quality data, such as Quality Assurance Engineering Audits, Supplier Nonconformances and Client or Regulatory Agency Audits, shall be utilized. The Quality Assurance Engineering Internal Audit Supervisor shall make an analysis of the available Quality data with respect to quality trends and report the result of the analysis. Distribution of the trend analysis reports shall be made in accordance with the requirements of Quality Assurance Engineering Procedure QA-D.3. R2

5.0 RESOLUTION OF CONFLICTS

In the event that disagreement exists between the individual(s) who detect a deficiency and those persons responsible for the function found to be deficient, methods exist at Ebasco for resolution of these conflicts. If no agreement can be reached, successively higher levels of management shall be contacted until the conflict is resolved.

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION QA-II-9
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER	QUALITY ASSURANCE AUDITS	REVISION R4 R4 DATE R4

1.0 SCOPE

1.1 This section establishes the requirements and guidelines for preparation, performance, reporting and follow-up of Quality Assurance audits, both internal and external, as performed by Ebasco Quality Assurance Engineering, and internal audits of the Quality Assurance Engineering and Materials Applications functions as performed by the Management Audit Committee. These requirements apply to audits performed on activities affecting safety-related items and services.

2.0 GENERAL REQUIREMENTS FOR ALL INTERNAL AND EXTERNAL AUDITS

2.1 Audit Personnel

2.1.1 Shall be independent of direct responsibility for performance of the activity being audited.

2.1.2 Shall be qualified to perform Quality Assurance Audits based on experience and training.

2.2 Training and Orientation

2.2.1 Audit personnel shall have experience or be given training or orientation to assure their competence for performing audits. The competence of personnel to perform audits shall be developed by one or more of the following methods:

(a) Providing personnel with working knowledge of appropriate regulatory documents, practices, codes and standards.

(b) Training or orientation in general and specialized methods of planning and performing audits.

(c) On-The-Job training under direct supervision of an experienced qualified auditor.

2.2.2 The requirements for training and orientation of auditors shall be developed by Quality Assurance Engineering for their audit functions.

2.3 Proficiency of Auditors

2.3.1 Auditors performing audits shall maintain their proficiency through one or more of the following methods:

(a) Regular, active participation in the audit process

(b) Review and study of codes, standards and procedures, related to Quality Assurance Programs and program auditing

(c) Participation in training or orientation programs

2.4 Audit Planning

2.4.1 Audits shall be planned in advance to assure adequate coverage of the program being audited.

2.4.2 Both internal and external audits shall be prepared and conducted in accordance with written procedures. These procedures shall require the use of preplanned documents which will assure that organizations are audited to the extent necessary and that the reports include the necessary information. R4

2.5 The Audit Team

2.5.1 The audit shall be performed by one or more individuals at least one of whom shall be qualified. A qualified auditor shall be established as the team leader for audits conducted by all teams comprised of two or more auditors. The team leader shall be responsible for:

(a) Orientation of the team

(b) Assure communication between the team and the Ebasco Department organization or Supplier being audited

(c) Coordinating preparation and issuance of audit reports

2.5.2 The team leader shall assure that the team is prepared prior to performing the audit. Information such as appropriate procedures, manuals and prior audit reports shall be made available to the team members. Each auditor shall be provided with any appropriate audit plans, procedures or checklists necessary to performing the audit.

2.6 Audit Notification

2.6.1 The appropriate Ebasco departmental personnel or Supplier to be audited shall be notified of a scheduled audit and the scope of the audit. Such notification shall be given a reasonable time before the audit is to be performed. R2

2.7 Audit Performance

2.7.1 Checklists and/or written procedures prepared during audit planning shall be used to conduct the audit.

2.7.2 An informal pre-audit conference may be arranged at the audit site in order to confirm audit scope and discuss the audit plan.

2.7.3 A post-audit conference shall be conducted to:

(a) Inform those audited of the audit results, which shall include all nonconformances.

(b) Assure understanding of audit results.

(c) Establish the course of corrective action if necessary.

(d) Draw special management attention to any nonconformances identified that need immediate corrective action.

2.8 Reporting of Audit Results

2.8.1 An audit report shall be compiled by one or more members of the audit team and shall be signed by all the audit team members. The audit report shall provide:

(a) Description of the audit scope

(b) Identification of the auditors

(c) Persons contacted

(d) A Summary of audit results including an evaluation statement regarding the effectiveness of the Quality Assurance Program elements which were audited.

(e) Detailed description of nonconformances and causes thereof where possible. R4

(f) Recommendations for correcting nonconformance or improving the Quality Assurance Program, if possible. Such recommendations may be those of the audited party, provided they meet with the approval of all audit team members.

2.8.2 The audit group shall prepare an audit report for each audit performed. Reports shall be distributed in accordance with Quality Assurance Engineering Procedures QA-D.5 and QA-P.9, and Company Procedure N-24, for Internal, Vendor Evaluation and Management Audits, respectively. Recipients shall include at least the individual audited and his supervisor or Lead Discipline Engineer, and the Project Quality Assurance Engineer for internal audits; and the vendor audited and the Project Quality Assurance Engineer for Vendor Evaluation Audits.

2.8.3 The audit report shall be issued in a timely manner as defined in the Quality Assurance implementing procedures.

2.9 Audit Follow-Up

2.9.1 Similarily, a response to the audit report shall be prepared and submitted in a timely manner as defined in the Quality Assurance implementing procedures. The response shall clearly state the corrective action taken and the date of completion

2.9.2 Follow-up action shall be performed by one or more members of the audit team to:

(a) Assure that the written reply to the audit report is received.

(b) Assure that corrective action is identified and scheduled for each nonconformance.

(c) Confirm that nonconformances are resolved and corrective action when necessary, is accomplished.

2.9.3 Follow-up action may be accomplished through written communication, reaudit, or other appropriate means.

2.9.4 The Quality Assurance Engineering Audit Group shall perform a quarterly review of their audits to assure that corrective action has been taken in a timely manner. A quarterly Review Report on the resolution of deficiencies and corrective action will be prepared by the Quality Assurance Engineering Audit Group and forwarded to the Chief Quality Assurance Engineer and Vice President Materials Engineering and Quality Assurance.

2.10 Audit Records

2.10.1 Records generated during audit preparation, performance or follow-up shall be retained for all audits in accordance with the applicable requirements of Section QA-I-6 of this Manual and written implementing procedures. Such records shall include:

(a) Audit plans and checklists

(b) Audit reports

(c) Written replies to audit reports

(d) Status of required corrective action

(e) Other document which support audit findings and corrective actions as appropriate

2.10.2 Records of Training and experience of auditors shall be maintained for all personnel who are performing audits or who have previously performed audits. These shall be retained for the same period of time as required for the audit reports with which the auditors are associated.

2.11 Semi-Annual Reports to Management

2.11.1 As individual internal audit reporting is accomplished and internal audit information accumulates over a six months period, the Chief Quality Assurance Engineer will issue a summary report of Quality Assurance Engineering audit results of that period, including the resolution of deficiencies and corrective action where known and applicable, to the following: R3

(a) Vice President Materials Engineering and Quality Assurance R3

(b) Heads of departments audited

2.11.2 The Vice President Materials Engineering and Quality Assurance shall be responsible for analyzing the results of the audits performed as provided for by this section and the Ebasco Quality Assurance program except as indicated in QA-II-9 paragraph 3.4. The Vice President Materials Engineering and Quality Assurance shall also directly inform applicable line Vice Presidents in their areas of individual responsibility and the concerned Ebasco Senior Officers of the audit results. The Chief Quality Assurance Engineer shall be responsbile for initiating the implementation of any changes or corrective action deemed necessary by the Officers to improve the effectiveness of the Ebasco Nuclear Quality Assurance Program. R3

12 Trend Analysis of Audit Reports

The Quality Assurance Engineering Internal Audit Supervisor shall make an analysis of the available Quality data, such as audit reports, with respect to quality trends and report the result of the analysis. Distribution of the trend analysis reports shall be made in accordance with the requirements of the Quality Assurance Engineering Procedure QA-D-3. R4

3.0 SPECIFIC AUDIT REQUIREMENTS

3.1 Internal Quality Assurance Engineering Audits

3.1.1 Ebasco Quality Assurance Engineering performs internal audits of the various activities within Ebasco that affect safety-related structures, systems, components and services. These audits are generally performed on a project basis by the Internal Audit Group of the Quality Assurance Engineering Department in conjunction with the Project Quality Assurance Engineer in accordance with departmental implementing procedures.

3.2 Scheduling of Internal Audits

3.2.1 Internal audits shall be initiated as early in the life of the project or activity as practicable in order to assure timely implementation of the applicable Quality Assurance requirements, and to assure effective Quality Assurance during design, procurement and contracting activities.

3.2.2 Internal audits shall be regularly scheduled on the basis of the status and safety importance of the activities to assure conformance to the Ebasco Nuclear Quality Assurance Program. Applicable elements of the Quality Assurance Program shall be audited at least semi-annually or once within the life of the activity, whichever is shorter.

3.2.3 Supplemental internal audits should be conducted when:

(a) Significant changes in the Quality Assurance Program are made

(b) There is a suspicion or evidence of deficiencies or nonconformance in the Quality Assurance Program

(c) An assessment of the effectiveness of the Quality Assurance Program is necessary

(d) It is necessary to verify implementation of corrective action

3.3 External Quality Assurance Engineering Audits

3.3.1 Audits of prospective suppliers of safety-related structures, systems components and services shall be performed in accordance with the applicable requirements of this section when such audits are required by Section QA-I-5 of this Manual. Such audits shall be scheduled as early as practicable to assure timely implementation of the applicable Quality Assurance requirements.

3.3.2 Supplemental audits of Suppliers or prospective Suppliers may be performed when:

(a) Significant changes are made in the Supplier's Quality Assurance Program, or when warranted by new requirements of Ebasco or the client.

(b) There is suspicion or evidence of deficiencies or nonconformances in the Quality Assurance Program.

(c) An assessment of the effectiveness of the Suppliers' Quality Assurance Program is necessary.

(d) It is necessary to verify implementation of corrective action.

(e) It is necessary to verify proper implementation of the suppliers' Quality Assurance Program.

3.3.3 Personnel performing external Audits shall be selected by the Chief Quality Assurance Engineer or his designee and shall be qualified in accordance with Quality Assurance Engineering Procedure QA-G.3. R4 R4

3.3.4 These audits may be performed on a supplier's overall Quality Assurance Program or selected areas thereof.

3.4 Management Audits

3.4.1 A committee chaired by the Consulting Quality Assurance Engineer is responsible for conducting audits of the Ebasco Materials Applications and Quality Assurance Engineering functions to determine compliance with the Ebasco Quality Assurance Program requirements. These audits will also include evaluating Quality Assurance policies and assuring that appropriate implementing procedures are available and are being complied with.

3.4.2 This auditing shall be accomplished on an annual basis in accordance with Ebasco Procedure A-45. The auditing shall be conducted by a committee with the Consulting Quality Assurance Engineer designated as the committee chairman. The committee shall be comprised of at least two qualified representatives from either the Construction or Engineering Departments and the Consulting QA Engineer. Each committee Representative shall be appointed by his respective Vice President; however, no committee member can be directly engaged in any policy-making or administrative phase of the Ebasco Quality Assurance Program, but shall be knowledgeable in the general area of quality assurance. The committee shall be directly responsible to the Vice President Materials Engineering and Quality Assurance R3 R3

3.4.3 The committee shall prepare an audit report for each audit performed. This report shall be submitted directly to the Vice President Material Engineering and Quality Assurance with copies to other appropriate parties. R3

3.4.4 The Vice President Materials Engineering and Quality Assurance shall be responsible for informing the concerned Ebasco management of the results of the audits performed by the committee. He shall also be responsible for initiating the implementation of any changes or corrective action deemed necessary to improve the effectiveness of the Ebasco Nuclear Quality Assurance Program. R3 R3

3.4.5 The Corporate Radiation Safety Office is responsible for auditing the company for conformance to radiation safety procedures as mandated by the United States Nuclear Regulatory Commission and State Regulatory Agencies. R3

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION QA-III-6
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER	NONCONFORMANCES	REVISION 3 R3 / DATE R3

1.0 SCOPE

1.1 This section establishes the requirements for the identification, control and disposition of items or services found to be in nonconformance with the applicable requirements. Nonconformances at the construction site fall into two categories: (a) nonconformances to Ebasco site purchase order requirements (b) nonconformances detected at the construction site. All activities described in this section shall be performed in accordance with written instructions and/or Procedures.

2.0 CONTROL AND REPORTING OF SUPPLIER NONCONFORMANCES

2.1 Section QA-I-5, requires suppliers to have and implement procedures which control nonconforming items and services to prevent their inadvertant use or installation. These procedures shall require as appropriate, identification, documentation, segregation, review and disposition of nonconformances.

2.2 All nonconformances to Ebasco construction site purchase order requirements which render the quality of an item or service unacceptable shall be reported to the Ebasco Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department by one of the following methods:

2.2.1 When a nonconformance is detected by an Ebasco Vendor Quality Assurance Representative, he shall initiate a Quality Assurance Engineering Nonconformance Report by detailing the description of the nonconformance on the form and obtaining a recommended disposition from the appropriate Supplier personnel. The report shall then be forwarded to the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department for processing in accordance with paragraph 5.0 below.

2.2.2 All nonconformances detected by the supplier that are dispositioned as repair, rework or use as is and will not conform to Ebasco specification and drawing requirements after corrective action has been taken shall be reported to Ebasco. The Supplier shall report these nonconformances to Ebasco by forwarding copies of his nonconformance reports to the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department. The Supplier shall not initiate corrective action until receipt of written approval or other appropriate disposition from Ebasco.

3.0 CONSTRUCTION SITE NONCONFORMANCES

3.1 Nonconformances at the construction site may be detected by Ebasco Quality Assurance Engineering, Construction or Design Engineering staff members. All nonconformances detected shall be reported to the Quality Assurance Site Supervisor and the Quality Control Site Supervisor, or their designees from the Quality Assurance Engineering Department.

3.2 Quality Control procedures shall require that all nonconforming items shall be clearly marked or tagged as nonconforming and shall be segregated when possible.

3.3 The Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department shall document nonconformances by issuance of a Quality Assurance Engineering Nonconformance Report. A determination of whether an N-23 review is required shall be made in accordance with Company Procedure N-23. If a site contractor detects a nonconformance, it shall be processed as per approved site contractor procedures. R3

3.4 The Nonconformance Report shall then be sent to the cognizant department for recommended disposition. If contractor services are involved, the recommended disposition shall be completed by the contractor. R3

3.5 After processing of the Nonconformance Report, the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department shall distribute copies of the reviewed and evaluated report in accordance with site Quality Assurance procedures. R3

3.6 The Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department shall verify by audit or other appropriate means that the necessary corrective actions are taken.

4.0 MATERIAL REVIEW BOARD

4.1 A Material Review Board shall be set up on site and shall consist of the following individuals: Quality Program Site Manager, Senior Resident Engineer or his designee, a cognizant design engineering representative, and Client Quality Assurance Engineer, as applicable. All Nonconformance Reports with the disposition of "accept-as-is" or "repair" shall be evaluated by the Material Review Board. Final disposition shall be by unanimous decision. The Quality Program Site Manager will coordinate the activities of the Material Review Board's actions and act as chairman. R3 R3

5.0 REINSPECTION

5.1 For nonconformances to Ebasco Site Purchase order requirements, the Vendor Quality Assurance Representative shall assure that reinspection is performed on all items and services reported as nonconforming. Reinspection shall be performed in accordance with the requirements of the governing Code(s) and in accordance with requirements at least as stringent as those by which the nonconformance was detected. The completed nonconformance report form shall provide sufficient detailed information for as-built records and shall be available at the site. R3

5.1.1 Nonconformances not corrected in accordance with the requirements of the Nonconformance Report shall not be accepted by the Vendor Quality Assurance Representative. Items or services shall not be accepted by the Vendor Quality Assurance Representative until such time as the appropriate corrective action has been accomplished.

5.2 For nonconformances detected at the construction site, the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department shall assure that reinspection is performed on all items and services reported as nonconforming. Reinspection shall be performed in accordance with the requirements of the governing Code(s) and in accordance with requirements at least as stringent as those by which the nonconformance was detected. He shall document the satisfactory correction or resolution of all nonconformances in accordance with quality assurance procedures. This documentation shall provide sufficient detailed information for as-built records.

5.2.1 Nonconformances not corrected in accordance with the requirements of the Nonconformance Report shall not be accepted by Site Quality Assurance. Items or services shall not be accepted by the Site Quality Assurance until such time as the appropriate corrective action has been accomplished.

6.0 REVIEW OF NONCONFORMANCE REPORTS

6.1 Upon receipt or initiation of a nonconformance report, the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department shall perform the following functions in accordance with the applicable QA procedures. R3

6.1.1 Log in the report.

6.1.2 Review the report to determine the nature of nonconformance.

6.1.3 Where design integrity is involved, the report shall be routed to the Senior Resident Engineer who will review the report, and where necessary, contact cognizant Design Engineers to discuss the suitability of the recommended disposition.

6.1.4 Transmit the report to the cognizant engineer(s) for review and evaluation.

6.2 Cognizant engineer(s) shall review and evaluate the nonconformance, decide on the suitability of the recommended disposition, determine if the nonconformance is a deviation which is significant and therefore potentially reportable under 10CFR50.55(e) and/or 10CFR21, and make appropriate entries on the report. The report shall then be returned to the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department. R3

6.3 Upon receipt of the reviewed and evaluated report, the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department shall assure proper disposition of the review and distribute copies of the report to the Quality Control Site Supervisor or his designee from the Quality Assurance Engineering Department and others as necessary in accordance with Site QA procedures. R3 R3

6.4 The Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department shall maintain on file all nonconformance reports generated in accordance with the requirements of this section.

7.0 EVALUATION OF DISPOSITION

7.1 Nonconformance Reports may be evaluated on site if there is a cognizant departmentally authorized member of the Engineering Department, Construction Engineering Department, or other authorized personnel as applicable. R3

7.2 Nonconformances which require review by cognizant authorized members of the Engineering Department who are not assigned to the construction site shall be forwarded to the Home Office for processing in accordance with applicable implementing procedures.

8.0 DEFICIENCY NOTICES

8.1 Deficiencies in the quality of items and services detected at the construction site which do not require an engineering evaluation or can be corrected by approved standard repair procedures during the normal course of construction shall be recorded on a Deficiency Notice. Copies of all Deficiency Notices shall be transmitted to the Quality Assurance Site Supervisor who will initiate Nonconformance Reports based on information given in the Deficiency Notices when he determines that this action is necessary. In this case, the Deficiency Notice becomes a part of the Nonconformance Report and only the Nonconformance Report is required to be resolved.

8.2 Items discovered to be out-of-tolerance or not to specification at routine checkpoints of an inspection process shall not be considered as a nonconformance provided:

a. The condition is corrected prior to acceptance of the work.

b. The work does not proceed beyond the checkpoint until the correction is made.

c. The out-of-tolerance condition does not reflect on work previously accepted.

d. No violation of Procedure or Code is evident.

Damage which would affect the intergrity of an item shall be classified as a nonconformance and processed accordingly.

8.3 The processing of Deficiency Notices shall be detailed in approved Site Quality Control Procedures.

9.0 TREND ANALYSES OF NONCONFORMANCE REPORTS

The Quality Assurance Engineering Internal Audit Supervisor shall make an analysis of the available Quality data, such as nonconformance reports from the sources mentioned above (i.e. supplier and construction site), with respect to Quality trends and report the result of the analysis. Distribution of the trend analysis reports shall be made in accordance with the requirements of Quality Assurance Engineering Procedure QA-D.3. R3

10.0 RECORDS

10.1 Nonconformance Reports shall be maintained in accordance with Section QA-I-6. R3

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION QA-III-7
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER	CORRECTIVE ACTION	REVISION R3 R3 DATE

1.0 SCOPE

This section establishes the requirements for the identification, analysis and implementation of corrective action for safety related items and services. The section applies to activities performed at the construction site.

2.0 GENERAL

2.1 Corrective action shall be required for identified and documented nonconformances associated with safety-related items and services.

2.2 The need for corrective action may be identified from the following sources:

2.2.1 Inspection activities performed by Site Quality Control

2.2.2 Site Quality records document reviews R3

2.2.3 Quality Assurance audits performed by Quality Assurance Engineering in accordance with Section QA-III-9 of this manual

2.2.4 Audits of Ebasco performed by the Client or regulatory bodies

2.2.5 Nonconformances detected at a supplier's facility and at the construction site as described in Section QA-III-6 of this Manual

2.2.6 Audits of Quality Assurance Engineering performed by the Consulting Quality Assurance Engineer

2.3 Determination and review of corrective action items shall be made as early as possible in order to preclude the possible repetition of deficiencies

2.4 During the review of all corrective action items, consideration shall be given to the training of personnel if it is determined that this was a cause of the deficiency.

2.5 Dissemination of corrective action information to responsible individuals shall be performed in a minimum length of time.

2.6 At the discretion of the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department, for corrective action items identified per paragraph 3.2 of this section, a corrective action document may be issued. This document shall be used when problems are not isolated cases and when they are of sufficient magnitude to warrant a documented supervisory review per written QA procedures. This document goes beyond the standard audit action response required for all audits.

2.7 The maximum length of time for corrective action response shall be 20 working days from the receipt of notice of deficiency or nonconformance. The maximum implementation time shall be 20 working days from the acceptance of corrective action response, unless otherwise approved by the Chief Quality Assurance Engineer or his designee from the Quality Assurance Engineering Department.

2.8 It shall be the responsibility of the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department to assure that all required corrective action is implemented in a timely manner.

R3

3.0 DETERMINATION AND IMPLEMENTATION METHODS

3.1 Nonconformance Reports Generated at the Construction Site

3.1.1 Site Quality Control shall perform direct inspection of activities at the consturction site as required by Section QA-III-2 of this Manual

3.1.2 Nonconformances noted during these inspection activities shall be documented on a nonconformance report in accordance with Section QA-III-6 of this Manual. Site Quality Control shall verify that the corrective action which has been stipulated on the completed form is implemented. Site Quality Control shall maintain a log of all required corrective action and shall review this periodically to assure the resolution of deficiencies and implementation of required corrective action.

3.2 Site Quality Assurance Audits

3.2.1 Site Quality Assurance shall perform internal and external audits of activities performed at the construction site as required by Section QA-III-9 of this Manual. Site Quality Assurance shall also perform follow-up action as described in Section QA-III-9 to assure that corrective action, if required, has been accomplished. If disagreement about the type or effectiveness of corrective action exists, the problem shall be reviewed by successively higher levels of management until satisfactory resolution is obtained.

3.2.2 Audits of potential Ebasco suppliers shall be performed as described in Sections QA-III-9 and QA-I-5 of this Manual. If any

aspect of a supplier's quality assurance program does not meet the Ebasco requirements and the supplier is being considered for award, he must implement corrective action to rectify the problem areas disclosed by the Ebasco evaluation. Supplier corrective action items shall be administered in accordance with Section QA-I-5.

3.3 Supplier Nonconformance

3.3.1 Nonconformance reports shall be issued at a supplier's facility as required in Section QA-III-6 of this Manual. Section QA-III-6 requires the issuance of a nonconformance report for nonconformances detected at the supplier's facility. These reports shall be submitted to Ebasco and processed in accordance with Section QA-III-6 of this Manual. Section QA-III-6 also assures that reinspection of nonconforming safety-related items and services is performed and that deficiencies have been resolved and appropriate corrective action has been taken prior to acceptance of these items or services by Ebasco. R3

3.3.2 During the reviews of nonconformance reports, a determination of quality trends shall be made. If it is ascertained that an improvement in inspection techniques and procedures or an increased sampling rate will improve quality, the vendor or Site Quality Control, as appropriate, shall be notified of the corrective action required to upgrade the system. R3

3.4 Client or Regulatory Agency Audits

3.4.1 Audits of construction site activities may be performed by the client and/or appropriate regulatory agencies. If corrective action is required as a result of one of these audits, the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department shall be responsible for obtaining a response from the cognizant individual(s) for submittal to the auditing body.

4.0 FINAL VERIFICATION OF CORRECTIVE ACTION IMPLEMENTATION

In addition to his other duties, overall responsibility for verification of the implementation of required corrective action rests with the Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department. He shall be responsible for performing this verification for all items indicated in paragraph 3.0 above, and shall assure that the corrective action is implemented and in a timely manner. In the event that there is a disagreement between those individuals who detect a deficiency and those responsible for the function found to be deficient, the Quality Assurance Site Supervisor shall contact successively higher levels of management as necessary until resolution is obtained.

5.0 DETERMINATION AND ANALYSIS OF QUALITY TRENDS

In order to prevent the recurrence of quality problems, Ebasco has developed a method, specified in QA Procedures, for the determination and analysis of quality trends. The Quality Assurance Engineering Internal Audit Supervisor shall make an analysis of the available Quality data, such as audit reports and nonconformance reports (or other appropriate documentation) mentioned above, with respect to quality trends and report the result of the analysis. Distribution of the trend analysis reports shall be made in accordance with Quality Assurance Engineering Procedure QA-D.3. R3

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION QA-III-9
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER	QUALITY ASSURANCE AUDITS	REVISION 2 R2 / DATE R2

1.0 SCOPE

1.1 Quality-related activities at the construction site are independently audited by the Site Quality Assurance group of the Ebasco Quality Assurance Engineering Department. This section establishes the requirements and guidelines for the preparation, performance, reporting and follow-up of quality assurance audits, both internal and external, as performed by Site Quality Assurance.

2.0 RESPONSIBILITIES

2.1 The Ebasco Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department shall assign qualified Site Quality Assurance Representatives to perform audits covered by this section.

2.2 Qualification of auditors will be based on the requirements of paragraphs 5.2 and 5.3 herein and Quality Assurance Engineering procedures.

3.0 INTERNAL AUDITS

3.1 The Site Quality Assurance Representatives shall audit the various quality-related activities performed by Ebasco departments on the construction site.

3.2 These audits shall be performed in accordance with the requirements of this section and Quality Assurance Engineering procedures.

3.3 Qualifications and certification records for site quality control personnel shall be audited in accordance with Section QA-III-1, Paragraph 3.7 of this Manual.

3.4 The Site Quality Assurance Representatives shall have the authority to reject items, services or work for nonconformance to the specification, drawing or quality control requirements.

4.0 EXTERNAL AUDITS

4.1 The Site Quality Assurance Representatives shall audit the various quality-related activities performed by site construction forces.

4.2 These audits shall be performed in accordance with the requirements of this section and Quality Assurance Engineering procedures.

4.3 Prior to the award of a contract, required Audits of prospective suppliers or suppliers of site purchased safety-related items and services shall be performed by the Quality Assurance Site Supervisor or his designee(s) in accordance with the requirements of Quality Assurance Engineering procedures, and Section QA-I-5 and QA-II-9, paragraphs 2.0 and 3.4.

At the discretion of the Chief Quality Assurance Engineer, audits of suppliers or prospective suppliers may be performed by Quality Assurance Engineering personnel assigned to other Ebasco Engineering Offices.

4.4 Audits of prospective suppliers may not be necessary if the suppliers have been previously audited and found satisfactory in accordance with the requirements of Section QA-I-5.

4.4.1 When prospective site contractors of items or services are audited by Quality Assurance Engineering personnel, the Quality Control Site Supervisor or his designee shall attend and participate in the evaluation as described in Ebasco Site Quality Control Procedures. R1 R1

4.4.2 Reports of audits covered by paragraph 4.4.1 above shall be written by Quality Assurance Engineering with input, when available, from Ebasco Quality Control.

5.0 GENERAL REQUIREMENTS FOR ALL ON-SITE INTERNAL AND EXTERNAL AUDITS

5.1 Audit Personnel

5.1.1 Shall be independent of direct responsibility for performance of the activity being audited.

5.1.2 Shall be qualified to perform quality assurance audits based on experience and training.

5.2 Training and Orientation

5.2.1 Audit personnel shall have experience and training or orientation to assure their competence for performing audits. The competence of personnel to perform audits shall be developed by one or more of the following methods:

(a) Providing personnel with working knowledge of appropriate regulatory documents, practices, codes and standards.

(b) Training or orientation in general and specialized methods of planning and performing audits.

(c) On-the-job training under direct supervision of an experienced qualified auditor.

5.2.2 The requirements for training and orientation of auditors shall be in accordance with Quality Assurance Engineering procedures. R1

5.3 Proficiency of Auditors

5.3.1 Auditors performing audits shall maintain their proficiency through one or more of the following methods:

(a) Regular, active participation in the audit process.

(b) Review and study of codes, standards and procedures, related to Quality Assurance Programs and program auditing.

5.3.2 The Chief Quality Assurance Engineer or his designee shall periodically evaluate auditors in accordance with Quality Assurance Engineering procedures to assure that the auditors are maintaining their proficiency. RJ RJ

5.4 Audit Planning

5.4.1 Preparation for audits shall include the development of a written audit plan of standard format which includes:

(a) Audit scope

(b) Approved written procedures and/or checklists which assure that the organization will be audited to the extent necessary. These procedures and/or checklists shall provide for verifying corrective action of nonconformance identified in previous audits. Audits procedures and/or checklists may developed as part of a general audit program and need not be unique for each audit.

(c) Activities to be audited

5.5 Audit Performance

5.5.1 Checklists and/or written procedures of standard format shall be used to conduct the audit.

5.6 Reporting of Audit Results

5.6.1 An audit report shall be compiled and shall be signed by those performing the audit. The audit report shall provide:

(a) Description of the audit scope

(b) Identification of the auditors

(c) Persons contacted

(d) A summary of the audit results including an evaluation statement regarding the effectiveness of the Quality Assurance Program elements which were audited.

(e) Detailed description of nonconformances and causes thereof where possible.

(f) Recommendations for correcting nonconformances or improving the Quality Assurance Program, if possible.

5.6.2 The audit report shall be issued within 10 working days.

5.7 Audit Follow-Up

5.7.1 The audited department or individual shall be required to respond to the audit report in writing within 20 working days after receipt of the audit. The Quality Assurance Site Supervisor or his designee from the Quality Assurance Engineering Department shall have the authority to require shorter response times when necessary. The shorter response time shall be stated on the specific audit reports to which they pertain. As necessary, subsequent responses may be required to verify completion of corrective action.

5.7.2 Follow-up action shall be performed by Site Quality Assurance Representatives to:

(a) Assure that the written reply to the audit report is received.

(b) Assure that corrective action is identified and scheduled for each nonconformance.

(c) Confirm that nonconformances are resolved and corrective action when necessary, is accomplished.

5.7.3 Follow-up action may be accomplished through written communication, reaudit, or other appropriate means.

6.0 TREND ANALYSIS OF AUDIT REPORTS

The Quality Assurance Engineering Internal Audit Supervisor shall make an analysis of the available quality data (such as the audit reports mentioned above) with respect to quality trends and report the result of the analysis. Distribution of the trend analysis reports shall be made in accordance with the requirements of Quality Assurance Engineering Procedure QA-D.3. R2

7.0 AUDIT RECORDS

7.1 Records generated during audit preparation, performance or follow-up shall be retained for all audits in accordance with the applicable requirements of Section QA-I-6 and written Quality Assurance Engineering procedures. Such records shall include: R1

(a) Audit plans and checklists

(b) Audit reports

(c) Written replies to audit reports

(d) Status of required corrective action

(e) Other documents which support audit findings and corrective action as appropriate.

7.2 Records of training and experience of auditors shall be maintained for all personnel who are performing audits or who have previously performed audits. These shall be retained for the same period of time as required for the audit reports with which the auditors are associated.

EBASCO SERVICES INCORPORATED	NUCLEAR QUALITY ASSURANCE PROGRAM MANUAL	SECTION APPENDIX II
APPROVAL: CHAIRMAN, QUAL. PROGRAM COMM. / CHIEF QUALITY ASSURANCE ENGINEER	EBASCO POSITIONS ON US NUCLEAR REGULATORY COMMISSION REGULATORY GUIDES	REVISION 1 R1 DATE R1

REGULATORY GUIDE 1.28 — QUALITY ASSURANCE PROGRAM REQUIREMENTS (DESIGN AND CONSTRUCTION) (SAFETY GUIDE 28, REVISION 2, 2/79) R1

EBASCO POSITION

Ebasco commits to comply with the regulatory position as written, with no exceptions or clarifications to the guide.

REGULATORY GUIDE 1.30 — QUALITY ASSURANCE REQUIREMENTS FOR THE INSTALLATION, INSPECTION, AND TESTING OF INSTRUMENTATION AND ELECTRIC EQUIPMENT (SAFETY GUIDE 30, REVISION 0, 8/72)

EBASCO POSITION

Ebasco commits to comply with the regulatory position as written with no exceptions or clarifications to the guide.

REGUALTORY GUIDE 1.37 — QUALITY ASSURANCE REQUIREMENTS FOR CLEANING OF FLUID SYSTEMS AND ASSOCIATED COMPONENTS OF WATER-COOLED NUCLEAR POWER PLANTS (REVISION 0, 3/73)

EBASCO POSITION

Ebasco commits to comply with the regulatory position as written, with no exceptions or clarifications to the guide.

REGUALTORY GUIDE 1.38 — QUALITY ASSURANCE REQUIREMENTS FOR PACKAGING, SHIPPING, STORAGE AND HANDLING OF ITEMS FOR WATER-COOLED NUCLEAR POWER PLANTS (REVISION 2, 5/77)

EBASCO POSITION

Ebasco commits to comply with the regulatory position with the following clarifications:

CLARIFICATION

Item-ANSI N 45.2.2-1972 Subdivision 2.7	Ebasco believes the intent of the ANSI classification of protection levels is met if equipment identified in Level B and C categories which was specifically designed for outdoor environment is stored at Level D (outdoor) conditions.

REGULATORY GUIDE 1.38 (cont.)

Regulatory Position C.1.c and C.2.c

Ebasco believes that storage conditions should be such that desiccants, their bags and tapes should not be subjected to leaching or radiation. Even if accidental leaching or radiation occurs, desiccants and tapes are removed prior to component installation. Subsequent routine flushing and/or cleaning would remove any harmful residues.

Ebasco will impose the more readily interpretable requirements of 0.25% maximum halogens for desiccants (C.1.c) and 0.10% halogen and sulfur content for tape (C.2.c)

REGULATORY GUIDE 1.39 HOUSEKEEPING REQUIREMENTS FOR WATER-COOLED NUCLEAR POWER PLANTS (REVISION 2, 9/77)

EBASCO POSITION

Ebasco commits to comply with the regulatory position with the following clarification:

CLARIFICATION

Item-General

Ebasco acceptance applies only to the regulatory requirements for controls at the site during the construction phase and not to the operational aspects of this guide or the referenced documents.

REGULATORY GUIDE 1.58 QUALIFICATION OF NUCLEAR POWER PLANT INSPECTION, EXAMINATION, AND TESTING PERSONNEL (REVISION 1, 9/80) R1

EBASCO POSITION

Ebasco commits to comply with the regulatory position as written, with no exceptions or clarifications to the guide.

REGULATORY GUIDE 1.64 QUALITY ASSURANCE REQUIREMENTS FOR THE DESIGN OF NUCLEAR POWER PLANTS (REVISION 2, 6/76)

EBASCO POSITION

Ebasco commits to comply with the regulatory position as written, with no exceptions or clarifications to the guide.

REGULATORY GUIDE 1.70 (Chapter 17) — STANDARD FORMAT AND CONTENT OF SAFETY ANALYSIS REPORTS FOR NUCLEAR POWER PLANTS (REVISION 3, 11/78) R1

EBASCO POSITION

The Quality Assurance Program and its applicability to safety related activities and services performed by Ebasco in the design and construction of nuclear power plants is fully delineated in this topical report (ETR-1001).

REGULATORY GUIDE 1.74 — QUALITY ASSURANCE TERMS AND DEFINITIONS (REVISION 0, 2/74)

EBASCO POSITION

Ebasco commits to comply with the regulatory position as written, with no exceptions or clarifications to the guide.

REGULATORY GUIDE 1.88 — COLLECTION, STORAGE, AND MAINTENANCE OF NUCLEAR POWER PLANT QUALITY ASSURANCE RECORDS (REVISIONS 2, 10/76)

EBASCO POSITION

Ebasco commits to comply with the regulatory position as written, with no exceptions or clarifications to the guide.

REGULATORY GUIDE 1.94 — QUALITY ASSURANCE REQUIREMENTS FOR INSTALLATION, INSPECTION AND TESTING OF STRUCTURAL CONCRETE AND STRUCTURAL STEEL DURING THE CONSTRUCTION PHASE OF NUCLEAR POWER PLANTS (REVISION 1, 4/76)

EBASCO POSITION

Ebasco commits to comply with the regulatory position as written, with no exceptions or clarifications to the guide for projects with Preliminary Safety Analysis Reports docketed on or after October 19, 1977. For prior projects, Ebasco will comply with the applicable Safety Analysis Report and other associated commitments as approved by the NRC.

REGULATORY GUIDE 1.116 — QUALITY ASSURANCE REQUIREMENTS FOR INSTALLATION, INSPECTION, AND TESTING OF MECHANICAL EQUIPMENT AND SYSTEMS (REVISION O-R, 5/77)

EBASCO POSITION

Ebasco commits to comply with the regulatory position with no exceptions or clarifications to the guide.

REGULATORY GUIDE 1.123 — QUALITY ASSURANCE REQUIREMENTS FOR CONTROL OF PROCUREMENT OF ITEMS AND SERVICES FOR NUCLEAR POWER PLANTS (REVISION 1, 7/77)

EBASCO POSITION

Ebasco commits to comply with the regulatory position with no exceptions or clarifications to the guide.

ANSI N45.2.12 — REQUIREMENTS FOR AUDITING OF QUALITY ASSURANCE PROGRAMS FOR NUCLEAR POWER PLANTS (REVISION 0, 11/77) R1

EBASCO POSITION

As presently written, EBASCO commits to comply with this standard with no exceptions of clarifications.