CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT
362 INJUN HOLLOW ROAD • EAST HAMPTON, CT 06424-3099

DEC 20 2005
CY-05-246
Docket No. 50-213

Re: 10 CFR 50.54(a)

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555-0001

Haddam Neck Plant
Revision to the
Connecticut Yankee Quality Assurance Program (CYQAP)

In accordance with 10 CFR 50.54(a)(4), Connecticut Yankee Atomic Power Company (CYAPCO) is submitting a revision (proposed change to Revision 6) to the Connecticut Yankee Quality Assurance Program (CYQAP) for the Haddam Neck Plant (HNP) for your review and approval. The proposed change involves a complete revision and replaces the current CYQAP.

On March 30, 2005, all spent fuel and GTCC Waste was removed from the Spent Fuel Pool and transferred to the Independent Spent Fuel Storage Installation at the HNP site. All safety–related Structures, Systems, and Components (SSCs) have been removed from service and have undergone or are undergoing demolition. On June 20, 2005, CYAPCO submitted a change to the CYQAP to reduce commitments with ANSI Standards and Regulatory Guides. As permitted by 10 CFR 50.54(a)(4)(iv),the change (Revision 6) was implemented on October 4, 2005 (i.e., 60 days after the date of CYAPCO request of June 20, 2005) and continues to satisfy the criteria of Appendix B to 10 CFR 50 and the Quality Assurance requirements of 10 CFR 71 and 10 CFR 72.

Since the proposed change, submitted herein, is a complete revision, a mark-up was deemed impractical and is not provided. The proposed change (Revision 7) of the CYQAP is provided in Attachment 2 and a discussion of changes is provided in Attachment 1. As required by 10 CFR 50.54(a)(4)(ii), Attachment 1 provides a comparison of the existing program (CYQAP, Revision 6) with the proposed revision of the CYQAP, identifies any changes considered to be a

Q004

reduction in commitment, and provides a basis for concluding the program, as changed, continues to meet the criteria of Appendix B to10 CFR 50, and the Quality Assurance Requirements of 10 CFR 71 and 10 CFR 72.

In accordance with 10 CFR 50.54(a)(4)(iv), CYAPCO will implement proposed Revision 7 of the CYQAP upon approval by the NRC or after 60 days from the date of this letter.

There are no regulatory commitments contained within this letter.

If you should have any questions regarding this submittal, please contact Mr. G. P. van Noordennen at (860) 267-3938.

Sincerely,

Joseph Bourassa 12/20/05

J. F. Bourassa Date
Director of Nuclear Safety/Regulatory Affairs

Attachments:

1. Description and Justification of the Proposed Change to the CYQAP
2. Proposed Revision 7 of the CYQAP.

cc: Mr. S. J. Collins, NRC, Region 1 Administrator
Ms. M. T. Miller, Chief, Decommissioning Branch, NRC Region 1
Mr. T. B. Smith, NRC, Project Manager
Dr. E. L. Wilds Jr., CT DEP, Director, Radiation Division

CY-05-246
Docket No. 50-213

Attachment 1
Haddam Neck Plant
Description and Justification of the Proposed Change to the CYQAP

December 2005

Haddam Neck Plant
Description and Justification of the Proposed Change to the CYQAP

The purpose of this attachment is to discuss the changes to the CYQAP, Revision 6. Since the proposed revision is a complete rewrite of the CYQAP, only the major or substantial changes are described along with the justification for those changes

1. Table of Contents

The table of contents is being revised to reflect the proposed revision. These changes include changing the name of individual parts of the CYQAP and renaming of certain Appendices. These changes are editorial in nature.

Determination of Impact

10 CFR 50.54(a)(3) does not consider quality assurance program changes involving administrative improvements and clarifications, spelling corrections, punctuation, or editorial items, as reduction in commitment. Therefore, the proposed changes may be made without prior approval of the NRC.

2. Abstract & Policy Statement

The Abstract and the Policy Statement have been removed and are addressed in Section A of the Proposed Revision of the CYQAP.

Determination of Impact

The proposed changes are editorial in nature and do not constitute a reduction in commitment. Therefore, the proposed changes may be made without prior approval of the NRC.

3. Sections QAP 1.0 through QAP 18.0

The proposed revision to the QAP is a complete rewrite and replaces the current CYQAP. The proposed revision reduces the methodology details in the document and it also integrates some of the current Appendices into the body of the document. The methodology details will be implemented via applicable implementing procedures. The name of the document is also changed from CYQAP to QAP. Figure 1-1, Organization chart has been revised to reflect minor changes to the organization and the figure is included as Attachment D in the proposed revision. The proposed change will not require performing audits/surveys of calibration suppliers. Specifically, Section C.2.b states: Suppliers providing commercial grade calibration services who are accredited by

a nationally recognized accrediting body, using procedures consistent with those found in ANSI/ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories", do not have to be periodically surveyed if the conditions of the NRC Safety Evaluation dated September 28, 2005 are met. Controls shall be established in applicable procedures to ensure the requirements of the NRC Safety Evaluation are satisfied. This alternative is included in Appendix B to the QAP.

Determination of Impact

As noted above the methodology details in the current QAP description are not included in the proposed revision of the CYQAP. The intent of the QAP is to describe appropriate/sufficient requirements to establish how the quality assurance program meets 10 CFR 50, Appendix B, but allows flexibility in the manner by which a requirement is met. Therefore, this change in methodology details is not considered to be a reduction in commitment. Table 1 provides a comparison of the existing program (CYQAP, Revision 6) with the proposed revision of the CYQAP. Therefore, the proposed changes may be made without prior approval of the NRC. The change to the title of the document will allow Yankee Rowe and Maine Yankee to also adopt this proposed change in separate requests.

The proposed change related to audits/surveys calibration suppliers is identical the one which was approved by the NRC for the Palo Verde Nuclear units. In accordance with 10 CFR 50.54(a)(3)(i), the use of a quality assurance alternative or exception approved by an NRC Safety Evaluation, provided that the bases of the approval are applicable to the licensee's facility, is acceptable for implementation without prior NRC approval. Therefore, the proposed change does not constitute a reduction in commitment and may be implemented without prior NRC approval.

4. Appendix B, CYQAP Qualification and Experience Requirements

The content of Appendix B is removed and is included in the proposed revision (Section A.2.c.4, Quality Assurance (QA) Representatives) with the following changes. The functional requirements of the QA Manager will be assigned to the QA Representative(s). In addition, the qualification requirements for the QA Representative have also been reduced in the area of work experience from fifteen (15) years to five (5) years.

Determination of Impact

The above change represents a reduction in commitment. However, there is a decrease in the scope and the complexity of the QAP as it relates to the remaining decommissioning activities at the HNP and to the ISFSI operation. It

is appropriate to have a less qualified individual to perform the remaining simplified QA functions. Therefore, the proposed revision to the CYQAP continues to meet 10 CFR 50, Appendix B requirements.

5. **Appendix C, CYQAP Regulatory and Standards Commitments**

The Code of Federal Regulations (e.g., 10 CFR 50, Appendix B, and 10 CFR 71) listed in this Appendix have been deleted.

Determination of Impact

The Code of Regulations are regulatory requirements and are not a commitment. Therefore, it is appropriate to delete the regulations from the CYQAP without any adverse impact on the CYQAP. The code requirements need to continue to be satisfied as long as we possess the Part 50 License. Therefore, the proposed changes may be made without prior approval of the NRC.

6. **Appendix D, CYQAP, Glossary of Quality Assurance Terms**

Appendix D, "CYQAP, Glossary of Quality Assurance Terms", has been deleted in the proposed revision.

Determination of Impact

The terms listed in Appendix D are Standard Industry terms. In place of the Appendix, CYAPCO will use industry standard terminology and this aspect is provided within the text of the proposed revision of the CYQAP or the implementing procedures. An example of this change is provided in Appendix C, Paragraph 2.8.2.2 in which the definition of 6 months is identified as equivalent to 184 days. Moreover, this change is administrative in nature. Therefore, the proposed change is not a reduction in commitment. Therefore, the proposed change may be made without approval of the NRC.

7. **Appendix E, CYQAP Administrative Controls**

The content of Section 1.1, Independent Safety Review, is removed from this Appendix and is included in the proposed revision {Section A.5.d.3 (Personal Training and Qualification) and Section D, Independent Safety Review}.

Determination of Impact

Since, there are no changes to the qualification or experience requirements for the independent reviewer and scope of the review, the proposed changes are not a reduction in commitment. Therefore, the proposed changes may be made without prior approval of the NRC.

8. Appendix E, CYQAP Administrative Controls

The current CYQAP (Appendix E) has requirements for an Offsite Review Committee {i.e., Independent Review and Audit Committee (IRAC)} to function as an independent review body. It specifies membership requirements (e.g., quorum, number and qualification requirements), and frequency of meetings. The proposed revision does not include requirements for any type of independent review body. CYAPCO does not intend to use the guidance of ANSI N18.7 as a base standard, but has addressed in the proposed revision of the CYQAP those ANSI N18.7 requirements for administrative controls necessary and sufficient to provide adequate control of the remaining decommissioning activities and continued ISFSI operational activities. Note that Regulatory Guide 1.33 which endorses the ANSI N18.7 standard is not a commitment in the current version of the CYQAP.

Determination of Impact

The requirements for an independent review function were based on ANSI N18.7-1976, as endorsed by Regulatory Guide 1.33, Revision 2. ANSI N18.7 provides two options for independent review: 1) a standing committee functioning as an independent review body, or 2) an organizational unit functioning as an independent review body. These requirements were established at a time when the nuclear industry was experiencing rapid growth and a dearth of highly experienced and qualified operating and technical staff. Since that time, nuclear plant staff has increased both in number and level of experience and in the ability to perform focused and 'independent' reviews of the nuclear facility activities. As noted above, CYAPCO does not intend to use the guidance of ANSI N18.7 (note that Regulatory Guide 1.33 that endorses ANSI N18.7 standard is not a commitment in the current version of the CYQAP) as a base standard, but has addressed these requirements in the proposed revision of the CYQAP. Those ANSI N18.7 requirements provide sufficient administrative controls to provide adequate control of the remaining decommissioning activities and continued ISFSI operational activities.

10 CFR 50, Appendix B, does not specifically require an independent review function as described in ANSI N18.7 as part of its quality assurance program requirements. 10 CFR 50, Appendix B, Criterion II states in part: the applicant shall regularly review the status and adequacy of the quality assurance program. The NRC, via regulatory Guide 1.33, 1978, provided the linkage from Appendix B to the N18.7-1976, stating "This Regulatory Guide describes a method acceptable to the staff for complying with the Commission's regulations with regard to overall quality assurance program requirements for the operating phase of nuclear power plants." Regulatory Guides 1.33 also stated "This guide reflects current practice." CYAPCO considers that the provisions contained in the proposed revision of the CYQAP satisfy the Appendix B, Criterion II requirements. These requirements are contained in Sections A.3, Responsibility, B.1, Methodology, and C, Audits.

Specifically, CYAPCO will perform planned and periodic performance based independent assessments to monitor overall performance and confirm that activities affecting quality comply with the CYQAP and the CYQAP is effectively implemented. The results of independent assessments are reported in an understandable form and in a timely fashion to the President.

This reduction in commitment is acceptable due to the advanced state of decommissioning at the HNP facility and the simple operational requirements for operating an ISFSI.

In conclusion, the proposed revision of the CYQAP will establish requirements that comply with 10 CFR 50, Appendix B Criterion II without a need for an independent review body such as the IRAC as contained in the current CYQAP Appendix E.

9. **Appendix E, CYAPCO Administrative Controls**

The content of Section 3.2, the Radiation Protection Manager is removed from this Appendix and is included in the proposed revision {Section A.5.d.2, (Personal Training and Qualification)}.

Determination of Impact

Since, there are no changes to the requirements for the Radiation Protection Manager; the proposed change is not a reduction in commitment. Therefore, the proposed change may be made without prior approval of the NRC.

10. **Appendix F, Position Cross Reference**

The content of this Appendix is removed and included in the proposed revision {e.g., Appendix C, Section 1.2, (Administrative Controls)}. In addition, the title, "Health Physics Manager", is changed to the "Radiation Protection Manager" (see the organization chart, Appendix D).

Determination of Impact

The proposed changes are administrative in nature and do not constitute a reduction in commitment. Therefore, the proposed changes may be made without prior approval of the NRC.

10CFR50 Appendix B Criteria		CYQAP		Reg Guide 7.10	CYQA Program Implementing Procedures	
		Rev 6	Rev 7	Rev 2	Number	Title
I.	Organization	Organization	A.2	Organization	AD-1	ISFSI Management Organization and Responsibilities and Independent Review
II.	Quality Assurance Program	QA Program	A.1, A.5	QA Program	QA-1	Quality Program Administration
III.	Design Control	Design Control	B.2,B.3	Design Control	EF-1	Engineering Evaluations and Design Control
IV.	Procurement Document Control	Procurement Document Control	B.4	Procurement Document Control	AD-13	Requisitioning Material, Equipment and Services
V.	Instructions, Procedures and Drawings	Instructions, Procedures and Drawings	A.1.d A.3.f	Instructions, Procedures and Drawings	AD-4	ISFSI Procedure Control Program
VI.	Document Control	Document Control	B.13	Document Control	EF-1	Engineering Evaluations and Design Control
					AD-3	ISFSI Document Control Program
					EF-2	ISFSI Drawing and Manual Control
VII.	Control of Purchased Material, Equipment and Services	Control of Purchased Material, Equipment and Services	B.5	Control of Purchased Material, Equipment and Services	AD-14	Receipt, Identification, Handling and Storage of Material, Equipment and Services
VIII.	Identification and Control of Materials, Parts and Components	Identification and Control of Materials, Parts and Components	B.6	Identification and Control of Materials, Parts and Components	AD-14	Receipt, Identification, Handling and Storage of Material, Equipment and Services
IX.	Control of Special Processes	Control of Special Processes	B.11	Control of Special Processes	AD-5	ISFSI Work Control Program
X.	Inspection	Inspection	B.12	Inspection	QA-3	Quality Inspections
XI.	Test Control	Test Control	B.8	Test Control	AD-5	ISFSI Work Control Program
XII.	Control of Measuring and Test Equipment	Control of Measuring and Test Equipment	B.9	Control of Measuring and Test Equipment	AD-5	ISFSI Work Control Program
XIII	Handling, Storage and Shipping	Handling, Storage and Shipping	B.7	Handling, Storage and Shipping	AD-14	Receipt, Identification, Handling and Storage of Material, Equipment and Services
XIV.	Inspection, Test and Operating Status	Inspection, Test and Operating Status	B.10	Inspection, Test and Operating Status	AD-22 AD-5	Equipment Operability Assessment ISFSI Lockout/Tagout for Equipment Control
XV.	Nonconforming Materials, Parts or Components	Nonconforming Materials, Parts or Components	A.6.d	Nonconforming Materials, Parts or Components	AD-23	Nonconformance Reporting
XVI.	Corrective Actions	Corrective Actions	A.6	Corrective Actions	AD-7	ISFSI Corrective Action Program
XVII.	Quality Assurance Records	QA Records	B.14	QA Records	AD-19	ISFSI Records Program
XVIII.	Audits	Audits	C	Audits	QA-2	Quality Assessments

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Attachment 2
Haddam Neck Plant
Proposed Revision 7 of the Connecticut Yankee
Quality Assurance Program (CYQAP)

December 2005

Connecticut Yankee Atomic Power Company

Quality Assurance Program

For The

Haddam Neck Plant

Revision 7

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A. MANAGEMENT

1. Methodology

a. The Quality Assurance Program (QAP) previously known as Connecticut Yankee Quality Assurance Program (CYQAP) provides a consolidated overview of the quality program controls which govern the decommissioning of the Connecticut Yankee Atomic Power Company (CYAPCO) Haddam Neck Plant and operation and maintenance of the Independent Spent Fuel Storage Installation (ISFSI). The QAP describes the quality assurance organizational structure, functional responsibilities, levels of authority and interfaces.

b. The requirements and commitments contained in the QAP are mandatory and must be implemented, enforced, and adhered to by all individuals and organizations. Employees are encouraged to actively participate in the continued development of the QAP as well as its implementation. Changes should be promptly communicated when identified.

c. The QAP applies to the decommissioning activities (10 CFR 50, Appendix B) and all activities associated with structures, systems, and components (SSCs) which are important to safety (10 CFR 72). The QAP also applies to transportation packages licensed by the NRC under 10 CFR 71. Implementation of the requirements of the QAP are done in a graded approach commensurate with an item or activities importance to safety. This graded approach is responsive to NRC Regulatory Guide 7.10. The applicability of the requirements of the QAP to other items and activities is determined on a case-by-case basis. The QAP satisfies the requirements of 10 CFR 50 Appendix B, 10 CFR 71 Subpart H, and 10 CFR 72 Subpart G.

d. The QAP is implemented through the use of approved procedures (i.e., policies, directives, procedures, manuals, instructions, or other documents) which provide written guidance for the control of important to safety items and activities and provides for the development of documentation to demonstrate objective evidence of compliance with stated requirements.

2. Organization

The organizational structure responsible for implementation of the QAP is described below, as well as in an organization chart provided in Appendix D. The specific organization titles for the quality assurance functions described in this QAP are identified in implementing procedures. The authority to accomplish the quality assurance functions described is delegated to the incumbent staff, as necessary, to fulfill the identified responsibility.

a. The Chief Executive Officer (CEO) reports to the CYAPCO Board of Directors and has ultimate responsibility for the decommissioning of the Haddam Neck Plant and operation of the ISFSI.

A.2 (continued)

b. The President reports to the CEO and has overall responsibility for the QAP, decommissioning of the Haddam Neck Plant and operation of the ISFSI. The President resolves all disputes related to the implementation of the QAP for which resolution is not achieved at the appropriate organizational levels within CYAPCO.

c. The individuals fulfilling the following management functions report to the President. These individuals may report through an additional layer of management, but shall maintain sufficient authority and organizational freedom to implement the assigned responsibilities. These individuals may fulfill more than one function described below unless prevented by the need to maintain independence as required elsewhere in the QAP.

1. Director of Nuclear Safety/Regulatory Affairs – Reports to the President and is responsible for Quality Assurance, Regulatory Affairs, ISFSI Operations and Records Management.

2. Director Site Closure and Radiation Protection – Reports to the President and is responsible for Site Closure and the Radiation Protection Program.

3. Decommissioning Director – Reports to the President and is responsible for decommissioning of the Haddam Neck Plant, Engineering and Waste Management.

4. Quality Assurance Representative(s) – Reports to the Director of Nuclear Safety/Regulatory Affairs and is responsible for the audit/survey and surveillance functions described in the QAP. The Quality Assurance Representative(s) is responsible for administering the non-conformance and Corrective Actions Programs. The Quality Assurance Representative(s) are designated by and have a direct line of communication with the President.

5. Regulatory Affairs Manager – Reports to the Director of Nuclear Safety/Regulatory Affairs and is responsible for the direction and administration of communications with regulatory agencies.

6. ISFSI Manager – Reports to the Director of Nuclear Safety/Regulatory Affairs and is responsible for the direction and administration of ISFSI Operations, Site Training, Security and Emergency Planning. The Independent Review Function (ISR), described in Section D, reports to the ISFSI Manager.

A.2 (continued)

7. Radiation Protection Manager (RPM) – Reports to the Director of Site Closure and Radiation Protection and is responsible for the Radiation Protection Program.

8. Executive Director of Business Operations – Reports to the President and is responsible for the procurement of material, items and services.

3. Responsibility

a. CYAPCO has the responsibility for the scope and implementation of an effective quality assurance program.

b. CYAPCO may delegate all or part of the activities of planning, establishing, and implementing the quality assurance program to others, but retains the responsibility for the program and its effectiveness.

c. The Independent Management Assessments are periodically performed to monitor overall performance and confirm that activities affecting quality comply with the QAP and that the QAP is effectively implemented. This Independent Management Assessment is performed by individual(s) designated by the President, independent of activities assessed and who provide the appropriate level of expertise in the activities assessed. The Independent Management Assessment results are communicated in an understandable form and in a timely fashion to a level of management having the authority to effect corrective action. In addition, these results are reported in a timely fashion to the President of CYAPCO.

d. CYAPCO is responsible for ensuring that the applicable portion(s) of the quality assurance program is properly documented, approved, and implemented (staff is trained, necessary materials and approved procedures are available) before an activity within the scope of the QAP is undertaken by CYAPCO or by others who have been delegated the responsibility. As such, implementing controls and procedures for some elements of the QAP are not expected to be needed under normal ISFSI operations and will only be developed if and when a need is identified.

e. Individual managers are responsible for ensuring that personnel working under their cognizance are provided with the necessary training and resources to accomplish assigned tasks that fall within the scope of the QAP.

f. Procedures that implement QAP requirements are approved by the management responsible for the function. These procedures shall reflect the requirements of the QAP and work is required to be accomplished in accordance with them.

4. Authority

a. When CYAPCO delegates responsibility for planning, establishing, or implementing any part of the QAP, sufficient authority to accomplish the assigned responsibilities is also delegated.

b. The Quality Assurance Representative(s) provide management with objective evidence of the performance of activities affecting quality, independent of the individual or group directly responsible for performing the specific activity. This individual(s) has the authority and organizational freedom to verify activities affecting quality and is independent of undue influences and responsibilities for schedules and costs. The Quality Assurance Representative(s) has the responsibility and authority to stop unsatisfactory work and control further processing, delivery, or installation of nonconforming materials. The individual(s) also has the responsibility and authority to identify quality problems, to recommend or provide solutions, and to verify their implementation.

5. Personnel Training and Qualification

a. Each member of the facility staff (including audit/survey, surveillance and inspection personnel) shall have sufficient qualifications to perform their assigned duties. Regulatory Guide 1.8 – 1-R – 5/77 is used as a guide for determining and assessing appropriate staff qualifications.

b. Training programs are established and implemented to ensure that personnel achieve and maintain suitable proficiency.

c. Personnel training and qualification records are maintained in accordance with procedures.

d. In addition to the above, the following specific qualification requirements are required:

1. The position of the Quality Assurance Representative shall meet the following minimum qualifications:

a. Graduate of a four-year accredited engineering or science college or university, or the equivalent in practical experience plus five (5) or more years in positions of leadership, such as lead engineer, project engineer, audit team leader, etc.

b. At least two years of this experience should be associated with nuclear quality assurance activities, and at least one year of this experience shall be in a quality assurance organization. An additional two years of quality assurance program implementation may be substituted for the one year experience within a quality assurance organization.

c. A master's degree in engineering or business management is considered equivalent to two years of experience.

2. The position of Radiation Protection Manager shall meet the following minimum qualifications:

a. Academic degree in an engineering/science field or equivalent as provided for in paragraph c, below.

b. Minimum of five years professional experience in the area of radiological safety, three years of which shall be in applied radiation work in a nuclear facility.

c. Technical experience in the area of radiological safety beyond the five year minimum may be substituted on a one-for-one basis towards the academic degree requirement (four years of technical experience being equivalent to a four year academic degree).

d. Academic and technical experience must total a minimum of nine years.

3. The position of Independent Safety Reviewer (ISR), shall meet the following minimum qualifications:

a. Knowledgeable of the regulatory requirements and operational aspect of an ISFSI.

b. Bachelor's Degree in Engineering or the Physical Sciences.

c. Knowledge in the subject areas requiring review.

d. At least 5 years of professional experience.

The ISFSI Manager shall evaluate each potential reviewer's qualifications and document the appointment of a reviewer(s) based on their qualifications.

6. Corrective Action

a. Each individual working at CYAPCO is responsible for promptly identifying and reporting conditions adverse to quality. Management at all levels encourages the identification of conditions that are adverse to quality.

b. The corrective action program will ensure the prompt identification, documentation, and correction of conditions adverse to quality. Significant conditions adverse to quality shall require cause determination and a corrective action plan that should prevent or lessen the likelihood of recurrence.

A.6 (continued)

c. Specific responsibilities within the corrective action program may be delegated, but CYAPCO maintains responsibility for the program's effectiveness.

d. Non-conforming items are properly controlled to prevent their inadvertent installation, or use. They are reviewed and either accepted, rejected, repaired, or reworked.

e. Reports of conditions that are adverse to quality are analyzed to identify negative performance trends. Significant conditions adverse to quality and significant trends are reported to the appropriate levels of management.

7. Regulatory Commitments

Except when alternatives or exceptions are identified, the implementing procedures for the QAP shall comply with the quality assurance guidance documents listed in Appendix B. Additionally; the following clarifications apply to all guidance documents listed in Appendix B:

a. If the guidance in any of the listed documents is in conflict with the QAP, the guidance provided in the QAP is the controlling document.

b. Standards, guides, codes, etc., identified in any commitment document are not quality assurance program requirements unless that document is also listed in the Appendix.

c. Guidance applicable to safety related items and activities (10 CFR 50) is applicable to comparable items and activities (important to safety) required by 10 CFR 71 and 10 CFR 72.

B. PERFORMANCE/VERIFICATION

1. Methodology

a. Personnel performing work activities such as design, engineering, procurement, installation, maintenance, modification, operation, and decommissioning are responsible for achieving acceptable quality.

b. Personnel performing independent verification activities are responsible for verifying the achievement of acceptable quality and are different personnel than those who performed the work.

c. Work is accomplished and verified using instructions, procedures, or other appropriate means that are of a detail commensurate with the activity's complexity and importance to safety.

B.1 (continued)

d. Criteria that define acceptable quality are specified, and quality is verified against these criteria.

2. Design Control

a. The program will ensure that the activities associated with the design of structures, systems and components and modifications thereto, are executed in a planned, controlled, and orderly manner.

b. The program utilizes the guidance of NRUEG/CR-6407 to classify structures, systems and components such that appropriate quality requirements are identified and documented on drawings, component lists, or procurement documents, as applicable.

c. The program includes provisions to control design inputs, processes, outputs, changes, interfaces, records, and organizational interfaces.

d. Design inputs (e.g., performance, conditions of the facility license, quality, and quality verification requirements) shall be correctly translated into design outputs (e.g., specifications, drawings, procedures, and instructions).

e. The final design output shall relate to the design input in sufficient detail to permit verification.

f. The design process shall ensure that materials, parts, equipment and processes are selected and independently verified consistent with their importance to safety to ensure they are suitable for their intended application.

g. Changes to final designs (including field changes and modifications) and dispositions of non-conforming items to either use-as-is or repair shall be subjected to design control measures commensurate with those applied to the original design and approved by the organization that performed the original design or a qualified designee. The original design organizations for the CYAPCO ISFSI are identified in Appendix A.

h. Interface controls (internal and external between participating design organizations and across technical disciplines) for the purpose of developing, reviewing, approving, releasing, distributing, and revising design inputs and outputs shall be defined in procedures.

i. Design documentation and records, which provide evidence that the design and design verification process was performed in accordance with the QAP, shall be collected, stored, and maintained in accordance with documented procedures. This documentation includes final design documents, such as drawings, and specifications, and revisions thereto and documentation which identifies the important steps, including sources of design inputs that support the final design.

3. **Design Verification**

a. The program will verify the acceptability of design activities and documents for the design of items. The selection and incorporation of design inputs and processes, outputs and changes are verified.

b. Verification methods include, but are not limited to, design reviews, alternative calculations, and qualification testing. The extent of this verification will be a function of the importance to safety of the item, the complexity of the design, the degree of standardization, the state of the art, and the similarity with previously proven designs. Standardized or previously proven designs will be reviewed for applicability prior to use.

c. When a test program is used to verify the acceptability of a specific design feature, the test program will demonstrate acceptable performance under conditions that simulate the most adverse design conditions that are expected to be encountered.

d. Independent design verification is to be completed before design outputs are used by other organizations for design work and before they are used to support other activities such as procurement, manufacture, or construction. When this timing cannot be achieved, the unverified portion of the design is to be identified and controlled. In all cases, the design verification is to be completed before relying on the item to perform its Important to safety function.

e. Individuals or groups responsible for design reviews or other verification activities shall be identified in procedures and their authority and responsibility shall be defined and controlled. Design verification shall be performed by any competent individuals or groups other than those who performed the original design but who may be from the same organization. The designer's immediate supervisor or manager may perform the design verification provided:

1. The supervisor or manager is the only technically qualified individual capable of performing the verification.

2. The need is individually documented and approved in advance by the supervisor's or managers management, and

3. The frequency and effectiveness of the supervisors or managers use as a design verifier is independently verified to guard against abuse.

f. Design verification procedures are to be established and implemented to ensure that an appropriate verification method is used, the appropriate design parameters to be verified are chosen, the acceptance criteria is identified, the verification is satisfactorily accomplished and the results are properly recorded.

4. Procurement Control

a. The program will ensure that purchased items and services are of acceptable quality.

b. The program includes provisions for evaluating prospective suppliers and selecting only appropriate suppliers.

c. The program includes provisions for taking corrective action with suppliers (qualified or otherwise) whose products and services are not considered acceptable.

d. The program includes provisions for source verification (inspection, audit, etc.) for accepting purchased items and services identified as important to safety when determined necessary.

e. The program includes provisions for involving applicable technical, regulatory, administrative, and reporting requirements (e.g., specification, codes, standards, tests, inspections, special processes, records, certifications, 10 CFR 21) for procurement documents for items and services identified as important to safety.

f. The program includes provisions for ensuring that documented evidence of an item's conformance to procurement requirements is available at the site before the item is placed in service or used unless otherwise specified in procedures.

g. The program includes provisions for ensuring that procurement, inspection, and test requirements have been satisfied before an item is placed in service or used unless otherwise specified in procedures.

h. The program includes provisions for the identification of critical characteristics and methods of acceptance for the dedication of a commercial grade item or service for its use in an important to safety function(s).

5. Procurement Verification

a. The program will verify the quality of purchased items and services at intervals and to a depth consistent with the item's or service's importance to safety, complexity and quantity and the frequency of procurement.

b. The program is executed in all phases of procurement. As necessary, this may require verification of activities of suppliers below the first tier.

c. Controls for the audits or surveys of suppliers providing important to safety items and services are provided for in Section C.

B.5 (continued)

d. Controls for the inspection (source verification/surveillance/inspection) of suppliers providing important to safety items and services are provided for in Section B.12

6. Identification and Control of Items

a. The program will identify and control important to safety items to prevent the use of incorrect or defective items.

b. Identification of each item is maintained throughout fabrication, erection, installation, and use so that the item can be traced to its documentation. Traceability is maintained to an extent consistent with the item's importance to safety.

7. Handling, Storage, and Shipping

a. The program will control the handling, storage, shipping, cleaning, and preserving of items to ensure the items maintain acceptable quality.

b. Special protective measures (e.g., containers, shock absorbers, accelerometers, inert gas atmospheres, specific moisture content levels and temperature levels, etc.) are specified and provided when required to maintain acceptable quality.

c. Specific procedures shall be developed and used for cleaning, handling, storage, packaging, shipping and preserving items when required to maintain acceptable quality.

d. Items are marked and labeled during packaging, shipping, handling, and storage to identify, maintain, and preserve the item's integrity and identify the need for any special controls.

8. Test Control

a. The program will demonstrate that items will perform satisfactorily in service.

b. The test control program includes, as appropriate, proof tests before installation, pre-operational tests, post-maintenance tests, post-modification tests, and operational tests.

B.8 (continued)

c. Test procedures shall be developed which include:

1. Instructions and prerequisites to perform the test.

2. Use of proper test equipment.

3. Acceptance criteria, and

4. Mandatory inspections as required.

d. Test results are evaluated to assure that test objectives and inspection requirements have been satisfied.

e. Unacceptable test results shall be evaluated for impact on safety and reportability.

9. Control of Measuring And Test Equipment

a. The program will control the calibration, maintenance, and use of measuring and test equipment consistent with an activities importance to safety. Measuring and test equipment does not include permanently installed operating equipment or test equipment used for preliminary checks where data obtained will not be used to determine acceptability or be the basis for design or engineering evaluation. Additionally, calibration and control measures are not required for rulers, tape measures, levels and other such devices if normal commercial manufacturing practices provide adequate accuracy.

b. The types of equipment covered by the program (e.g., instruments, tools, gages, and reference and transfer standards) are defined in procedures.

c. Measuring and test equipment is calibrated at specified intervals or immediately before use on the basis of the item's required accuracy, intended use, frequency of use, stability characteristics and other conditions affecting its performance.

d. Measuring and test equipment is labeled, tagged, or otherwise controlled to indicate its traceability to calibration test data.

e. Measuring and test equipment is calibrated against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated or, when this is not possible, have an accuracy that ensures the equipment being calibrated will be within the required tolerance.

B.9 (continued)

f. If nationally recognized standards exist, calibration standards are to be traceable to them.

g. Measuring and test equipment found damaged or out of calibration is tagged or segregated. The acceptability shall be determined of items measured, inspected, or tested with a damaged or out-of-calibration device.

10. Inspection, Test, and Operating Status

a. The program will ensure that required inspections and tests and the operating status of items important to safety is verified before release, fabrication, receipt, installation, test, and use, as applicable. This verification is to preclude inadvertent bypassing of inspections and tests and to prevent inadvertent operation of controlled equipment.

b. Items whose required inspections and tests are incomplete or inconclusive may be released for further processing. Controls are provided in procedures for establishing limitations on the release, applying status indications and documenting the basis for the conditional release of the item and any limitations.

c. The application and removal of inspection, test, and operating status indicators are controlled in accordance with procedures

11. Special Process Control

a. This program will ensure that special processes identified as important to safety are properly controlled.

b. The criteria that establish which processes are special are described in procedures. The following are examples of special processes:

1. Welding,

2. Heat treating,

3. NDE (Non-Destructive Examination),

4. Chemical cleaning, and

5. Unique fabricating or test processes which require in-process controls.

c. Special processes are accomplished by qualified personnel, using appropriate equipment, and procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements.

12. Inspection

a. The program will ensure the performance of inspections of important to safety activities in order to verify conformance with documented instructions, procedures and drawings for accomplishing the activity. The inspection program may be implemented by or for the organization performing the activity to be inspected.

b. Provisions to ensure inspection planning is properly accomplished are to be established. Planning activities shall identify the characteristics and activities to be inspected, the inspection techniques, the acceptance criteria, and the organization responsible for performing the inspections.

c. Provisions to identify inspection hold points, beyond which work is not to proceed without the consent of the inspection organization are to be defined.

d. Inspection results are to be documented by the inspector and reviewed by qualified personnel.

e. Unacceptable inspection results shall be evaluated and resolved in accordance with procedures.

f. Inspections are performed by qualified personnel other than those who performed or directly supervised the work being inspected. While performing the inspection activity, inspectors functionally report to the Quality Assurance Representative.

13. Document Control

a. The program will control the development, review, approval, issue, use, and revision of documents.

b. The scope of the document control program includes, but is not limited to:

1. Safety Analysis Report(s),
2. NRC License Documents, including Technical Specifications,
3. Design Documents,
4. Procurement Documents,
5. Procedures, Manuals, Plans, Directives, Policies, Instructions, etc.,
6. Corrective Action Documents, and
7. other documents as defined in procedures.

B.13 (continued)

c. Revisions of controlled documents are reviewed for adequacy and approved for release by the same organization that originally reviewed and approved the documents or by a designated organization that is qualified and knowledgeable.

d. Copies of controlled documents are distributed to and used by the person performing the activity.

e. The distribution of new and revised controlled documents is in accordance with procedures. Superseded documents are controlled to prevent inadvertent use.

14. Records

a. The program will ensure that sufficient records of decommissioning activities and important to safety items and activities are generated and maintained to reflect the completed work.

b. Controls for the administration, identification, receipt, storage, preservation, safekeeping, retrieval, and disposition of records are provided in procedures.

c. The scope of the records program includes but is not limited to:

1. Records required by 10 CFR 20

2. Records required by 10 CFR 50, except as permitted by the NRC granted exemption dated September 9, 2005

3. Records required by 10 CFR 71

4. Records required by 10 CFR 72

5. Records of Review and Audit

d. Controls for the retention of records are provided for in procedures. These controls include applicable record retention requirements of Title 10, Code of Federal Regulations and the following additional requirements:

1. The following records, except as permitted by NRC granted exemption dated September 9, 2005, shall be retained for at least 5 years:

a. Records and logs of ISFSI operations;

b. Records and logs of principal maintenance activities, inspections, repair, and replacement of principal items of equipment related to nuclear safety;

B.14 (continued)

c. ALL REPORTABLE EVENTS;

d. Records of surveillance activities, inspections, and calibrations required by the NAC MPC Certificate of Compliance or the NAC STC Certificate of compliance;

e. Records of tests and experiments;

f. Records of changes made to the procedures required by the NAC MPC Certificate of Compliance or the NAC STC Certificate of Compliance;

g. Record of changes made to programs and procedures required by Appendix C;

h. Records of radioactive shipments;

i. Records of annual physical inventory of all sealed source material of records.

2. The following records, except as permitted by the NRC granted exemption dated September 9, 2005, shall be retained for the duration of the facility Operating License:

a. Record and drawing changes reflecting facility design modifications made to systems and equipment described in the current FSAR;

b. Records of irradiated fuel inventory, fuel transfers, and assembly burnup histories;

c. Records of facility radiation and contamination surveys;

d. Records of radiation exposure for all individuals entering radiation control areas;

e. Records of gaseous and liquid radioactive material released to the environs;

f. Records of training and qualification for current members of the facility staff;

B.14 (continued)

g. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59 or 10 CFR 72.48;

h. Records of Independent Safety Reviews (ISR) and Independent Management Assessments;

i. Records of reviews performed for changes to the Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM) and the Process Control Program;

C. AUDIT

1. Methodology

a. A program of planned and periodic audits will ensure that activities affecting quality comply with the QAP and that the QAP is being implemented effectively. Audit frequencies will be implemented as required by the applicable Code of Federal Regulations, Facility License, Final Safety Analysis Report and other commitments to the NRC.

b. Organizations performing audits shall be technically and performance oriented commensurate with the activity being reviewed.

c. Personnel performing audits shall have no direct responsibilities in the area they are assessing.

d. Audits shall be accomplished using instructions, procedures, or other appropriate means that are of a detail commensurate with the activity's complexity and importance to safety.

2. Performance

a. Audit schedules assure that the following areas are audited at the indicated frequencies or more frequently as performance dictates.

1. The conformance of ISFSI operation to provisions contained within the Technical Specifications and applicable license conditions is audited at least once every 24 months. The audit shall include elements such as:

- Training and qualifications of the staff
- Actions taken to correct deficiencies occurring with equipment, structure, systems, or method of operation that affect nuclear safety.

C.2 (continued)

- Performance of activities required by the QAP to meet the criteria of 10 CFR 50, Appendix B, 10 CFR 71, Subpart H and 10 CFR 72, Subpart G.
- Implementation of Programs required by Appendix C, A.1.

2. Other activities and documents as requested by the President.

b. External audits or surveys of suppliers providing important to safety materials, parts, equipment or services are performed at the indicated frequency or more frequently as performance dictates.

Suppliers providing commercial grade calibration services who are accredited by a nationally recognized accrediting body, using procedures consistent with those found in ANSI/ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories", do not have to be periodically surveyed if the conditions of the NRC Safety Evaluation dated September 28, 2005 (see Appendix B) are met. Controls shall be established in applicable procedures to ensure the requirements of the NRC Safety Evaluation are satisfied.

c. Implementing procedures for the audit/survey program include controls to ensure that the following are met:

1. Audit/surveys shall provide an objective evaluation of quality related practices, procedures, instructions, activities, and items and a review of documents and records as applicable.

2. Audit/surveys shall be performed in accordance with approved written procedures or checklists. Deficiencies from previous audits shall be reviewed and reaudited, as appropriate. The checklists are used as guides to the auditor.

3. Scheduling and resource allocation are based on the status and safety importance of the activity, program or process being assessed.

4. Audit/survey reports are written and distributed to the appropriate levels of management for review. Follow-up action, including re-audit/survey of deficient areas, is initiated as deemed appropriate.

5. Implementation of any delegated elements of the quality assurance program are assessed.

6. Audit/surveys are conducted using predetermined acceptance criteria.

7. Audit/surveys are performed by appropriately trained and qualified personnel.

D. INDEPENDENT SAFETY REVIEW

1. An Independent Safety Review shall be a thorough review conducted by one or more qualified Independent Safety Reviewers. Persons performing these reviews shall be knowledgeable in the subject area being reviewed. Independent Safety Reviews must be completed prior to implementation of the proposed activity requiring the review.

   a. Independent Safety Reviewers shall be individuals without direct responsibility for the performance of these activities under review. These reviews may be from the same functionally cognizant organization as the individual or group performing the original work.

   b. The following subjects shall be independently reviewed by a qualified Independent Safety Reviewer:

      1. Review of proposed changes to the HNP Technical Specifications, and review of those changes submitted to CYAPCO by the NRC Certificate Holder for the NAC-MPC System or the NAC-STC System for implementation consideration.

      2. Review of proposed tests and experiments not described in the UFSAR, NAC-MPC SAR or the NAC-STC SAR.

      3. Review of proposed changes or modifications to plant or ISFSI systems or equipment that affect nuclear safety.

      4. Review of all procedures and programs required by Appendix C and changes thereto that require an evaluation in accordance with 10CFR50.59 or 10CFR72.48.

      5. Render determination in writing to the ISFSI Manager if any items considered under 1 through 4, above, as appropriate and as provided for in 10CFR50.59, 10CFR50.90 or 10CFR72.48 as requiring prior NRC approval, a license amendment or requires a significant hazards consideration determination.

APPENDIX A

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IMPORTANT-TO-SAFETY STRUCTURES, SYSTEMS AND COMPONENTS

The pertinent quality assurance requirements of 10CFR50, Appendix B, 10CFR 71 Subpart H and 10 CFR 72 Subpart G will be applied, as a minimum, to all quality activities affecting the Important-to-Safety Structures, Systems and Components (SSCs) associated with spent fuel storage and transportation package.

NOTE

The safety classification of systems, structures and components (SSCs) of the HNP and ISFSI Facility may be revised based on engineering evaluations and a revision to the CY UFSAR during the decommissioning process. These modifications are controlled in accordance with the CY Design Control process and are not considered a reduction in the commitments to the CYQAP.

The quality classification of NRC Licensed ISFSI Dry Fuel Storage Components and Transportation Packages may not be revised using the CYAPCO Design Control process. These modifications must be made by the NRC Certificate Holder. The Certificate Holder is responsible for design and licensing controls for these components under their NRC approved Quality Assurance Program. CYAPCO utilizes these types of components and packages under the provisions of a NRC General License for Radioactive Material Transportation Packages (10 CFR 71) and Spent Fuel Storage (10 CFR 72).

In addition to these SSCs, items and services associated with Radioactive material Transport Packages as described in 10 CFR 71, and spent Fuel Storage as described in 10 CFR 72 will also fall under the requirements of the CYQAP.

Important-to-Safety SSCs associated with spent fuel storage and radioactive material transportation packages are defined below:

IMPORTANT-TO-SAFTY AS DEFINED BY 10 CFR 71 AND 10 CFR 72

A. Dry Spent Fuel Storage (10 CFR 72)

SSC	Quality Category	Design/License Responsible
Transportable Storage Canister and Fuel Basket Assembly	A	NAC Intl.
Vertical Concrete Cask	B	NAC Intl.
Transfer Cask and Adapter Plate	B	NAC Intl.
ISFSI Pad	C	CYAPCO
Lifting Yoke	B	NAC Intl.
Damaged Fuel Can	A	NAC Intl.
Reconfigured Fuel Assembly	A	NAC Intl.

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IMPORTANT-TO-SAFETY, STRUCTURES, SYSTEMS AND COMPONENTS

B. Transport of Spent Fuel and GTCC Waste (10 CFR 71)

SSC	Quality Category	Design/License Responsible
Transportable Storage Canisters and Fuel Basket Assembly	A	NAC Intl.
Damaged Fuel Can	A	NAC Intl.
Reconfigured Fuel Assembly	A	NAC Intl.
Transportable Storage Canister and Basket Assembly For GTCC Waste Containers	A	NAC Intl.
Storage Transport Cask (STC)	A	NAC Intl.

C. Radioactive Material Transport Packages (10 CFR 71)

Radioactive Material Transport Packages subject to the provisions of 10 CFR 71, Subpart C, "General Licenses" are "Important-to-Safety" and subject to the applicable requirements of the QAP.

NOTES:

1. See NAC-MPC Safety Analysis Report (SAR) and associated NAC specifications for additional classification information.

2. See NAC Storage Transport Cask (STC) Safety Analysis Report and associated NAC specifications for additional classification information.

3. For the definition of Quality Categories A, B, and C, refer to NUREG/CR-6407.

APPENDIX B

REGULATORY COMMITMENTS, ALTERNATIVES AND EXCEPTIONS

REGULATORY COMMITMENTS

Regulatory Guide 1.8 – 1-R-5/77 – Personnel Selection and Training – Endorses ANSI N18.1-1971.

Regulatory Guide 1.70 – "A Guide for the Organization and Content of Safety Analysis Reports" Revision 2, September, 1975 was utilized for CY, however, certain revised section of the CY UFSAR are written to the Revision 3 format. No new analyses have been performed which could be required by Revision 3.

Regulatory Guide 7.10, Revision 2 (3/05), "Establishing Quality Assurance Programs for Packaging Used in the Transportation of Radioactive Material".

NUREG/CR-6407, "Classification of Transportation Packaging and Dry Fuel Storage System Components According to Important to Safety (2/96)".

ALTERNATIVES

Letter from NRC to Arizona Public Service Company titled "Palo Verde Nuclear Generating Station, Units 1, 2 and 3 – Approval of Change to Quality Assurance Program (Commercial-Grade Calibration Services) TAC Nos. MC4402, MC4403, and MC4404)" and associated NRC Safety Evaluation dated September 28, 2005.

EXCEPTIONS

None

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These Administrative Controls were developed to support the Operation of the Haddam Neck Plant. These requirements were previously included in the Technical Specifications and were relocated to the Quality Assurance Program during decommissioning. Some of these requirements are only needed to support decommissioning activities and will be deleted as decommissioning of the Haddam Neck Plant progresses. The remaining Administrative Controls will be only applicable to the ISFSI.

1.0 Procedures and Programs

1.1 Written procedures shall be established, implemented, and maintained covering the activities referenced below:

a. The procedures applicable to the safe storage of spent fuel.

b. All programs specified in Section 2 of this Appendix.

c. Fire Protection Program implementation.

d. Quality controls for effluent monitoring.

e. The use or operation of Radwaste Treatment Systems utilizing the guidance provided in the REMODCM.

f. Procedure for controlling temporary changes.

1.2 Each procedure required by Section 1.1 above and programs listed in Section 2.0, and any changes thereto, shall be independently reviewed in accordance with Section D and approved by the designated manager (i.e., ISFSI Manager) or designee prior to implementation.

2.0 Programs and Manuals

2.1 Radiation Protection Program

A program for personnel radiation protection shall be prepared consistent with the requirement of 10 CFR 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure.

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ADMINISTRATIVE CONTROLS

2.2 Process Control Program (PCP)

The PCP shall contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive wastes will be accomplished to ensure compliance with 10 CFR Parts 20, 61, and 71; state regulations; burial ground requirements; and other requirements governing the disposal of solid radioactive waste.

Changes to the PCP:

Shall be documented and records of reviews shall be retained. This documentation shall contain:

1. sufficient information to support each change, together with the appropriate analyses or evaluations to justify the change; and

2. a determination that each change maintains the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations; and

2.3 Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM)

The REMODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting form radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the Radiological Environmental Monitoring Program.

The REMODCM shall also contain the Radioactive Effluent Controls and Radiological Environmental Monitoring Program required by Sections 2.4 and 2.5., respectively, and descriptions of the information that should be included in the Annual Radiological Environmental Operating and Radioactive Effluent Release Reports required under Section 2.6.

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Changes to the REMODCM:

a) Shall be documented and records of review shall be retained. This documentation shall contain:

1. sufficient information to support each change, together with the appropriate analyses or evaluations to justify the change; and

2. a determination that each change maintains the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I and that the change will not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;

b) Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that as changed, and shall indicate the date (i.e., month and year) the change was implemented.

c) Shall be submitted to the NRC in the form of a complete legible copy of the entire REMODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change was made to the REMODCM. A summary of each change shall be included.

2.4 Radioactive Effluent Controls Program

This program conforms to 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program shall be contained in the REMODCM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

a) Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation, including surveillance tests and setpoint determinations, in accordance with the methodology described in the REMODCM;

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b) Limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to the pre-1994 concentration values in 10 CFR Part 20, Appendix B (to 20.1 to 20.602), Table II, Column 2;

c) Monitoring, sampling and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters described in the REMODCM.

d) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from the facility to unrestricted areas, conforming to 10 CFR Part 50, Appendix I;

e) Determination of cumulative dose contributions from radioactive effluents for the current calendar year in accordance with the methodology and parameters described in the REMODCM performed at least every 92 days. A determination of projected dose contributions from radioactive effluents in accordance with the methodology in the REMODCM performed at least every 92 days.

f) Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of 31 days would exceed 2% of the guidelines for the annual dose or dose commitment, conforming to 10 CFR 50 Appendix I;

g) Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the SITE BOUNDARY shall be as follows:

1. for noble gases: $\leq$ a dose rate of 500 mrem/yr to the total body and $\leq$ a dose of 3000 mrem/yr to the skin; and

2. for tritium and all radionuclides in particulate form with half-lives $\geq$ 7 days; $\leq$ to a dose rate of 1500 mrem/yr to any organ;

h) Limitations on the annual and quarterly air doses from noble gases released in gaseous effluents from the unit to areas beyond the SITE BOUNDARY, conforming to 10 CFR Part 50, Appendix I;

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i) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from tritium and all radionuclides in particulate form with half-lives > 8 days in gaseous effluents released from each facility to areas beyond the SITE BOUNDARY, conforming to 10 CFR Part 50, Appendix I; and

j) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC at points beyond the SITE BOUNDARY due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR Part 190.

2.5 Radiological Environmental Monitoring Program

This program monitors the radiation and radionuclides in the environs of the facility. The program shall provide representative measurements of radioactive materials in the highest potential exposure pathways, verification of the accuracy of the effluent monitoring program, and modeling of environmental exposure pathways. The program shall be contained in the REMODCM and shall include the following:

a. Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters described in the REMODCM: and

b. Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental monitoring.

2.6 Reporting Requirements

2.6.1 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the activities of the facility during the previous calendar year shall be submitted prior to May 1 of each year. The Report shall include summaries, interpretations, and analyses of the trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODCM).

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The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the tables and figures in the REMODCM, as well as summarized and tabulated results of these analyses and measurements. In the event that some individual results are not available for inclusion with the report, the submitted report shall note and explain the reasons for the missing results. The missing data shall be submitted in a supplementary report.

2.6.2 Annual Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the facility shall be submitted in accordance with 10 CFR 50.36a. The Report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the facility. The material provided shall be consistent with the objectives outlined in the REMODCM and Process Control Program.

The Radioactive Effluent Release Report covering the activities during the previous calendar year shall be submitted by May 1 of each year.

The Annual Radioactive Effluent Release Report shall include licensee-initiated changes to the REMODCM during the period of the report as described in Section 2.4.

2.7 High Radiation Area

2.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation

a) Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.

b) Access to, and activities in, each such area shall be controlled by means of Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

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c) Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

d) Each individual or group entering such an area shall possess:

1. A radiation monitoring device that continuously displays radiation dose rates in the area; or

2. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint; or

3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area; or

4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,

   (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or

   (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.

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e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

2.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 meter from the Radiation Source or from any Surface Penetrated by the Radiation.

a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:

1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or his or her designee.

2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

d. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

e. Each individual or group entering such an area shall possess:

1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint or;

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2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area, or

3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,

   (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or

   (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area.

4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.

f. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel area knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

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g. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clear visible flashing light, shall be activated t the areas as a warning device.

NOTE

Each of the inspections and/or tests shall be performed within the specified FREQUENCY with a maximum allowable extension not to exceed 25% of the specified FREQUENCY.

2.8 Sealed Source Contamination

2.8.1 Limiting Condition for Operation

Each sealed source containing radioactive material either in excess of 100 micro Curies of beta and/or gamma emitting material or 5 microCuries of alpha emitting material shall be free of greater than or equal to 0.005 microCurie of removable contamination.

Applicability

At all times

Action

Each sealed source with removable contamination in excess of the above limits shall be immediately withdrawn from use and either:

1. Decontaminate and repair the sealed source, or

2. Dispose of the sealed source in accordance with Commission Regulations.

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2.8.2 Inspection and Testing Requirements

1. Test Requirements – Each sealed source shall be tested for leakage and/or contamination by:

   a. The licensee, or

   b. Other persons specially authorized by the Commission or an Agreement State.

2. Test frequencies – Each category of sealed sources (excluding startup sources and fission detectors previously subjected to core flux) shall be tested at the frequency described below.

   a. Sources in use – At least once per 6 months (184 days) for all sealed sources containing radioactive materials:

      1) With a half-life greater than 30 days (excluding Hydrogen 3), and

      2) In any form other than gas.

   b. Stored sources not in use – Each sealed source and fission detector shall be tested prior to use or transfer to another licensee unless tested within the previous 6 months (184 days). Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to being placed into use; and

   c. Startup sources and fission detectors – Each sealed startup source and fission detector shall be tested following repair of maintenance to the source.

3. Reports – A report shall be prepared and submitted to the Commission on an annual basis if sealed source or fission detector leakage tests reveal the presence of greater than 0.005 microCurie of removable contamination.

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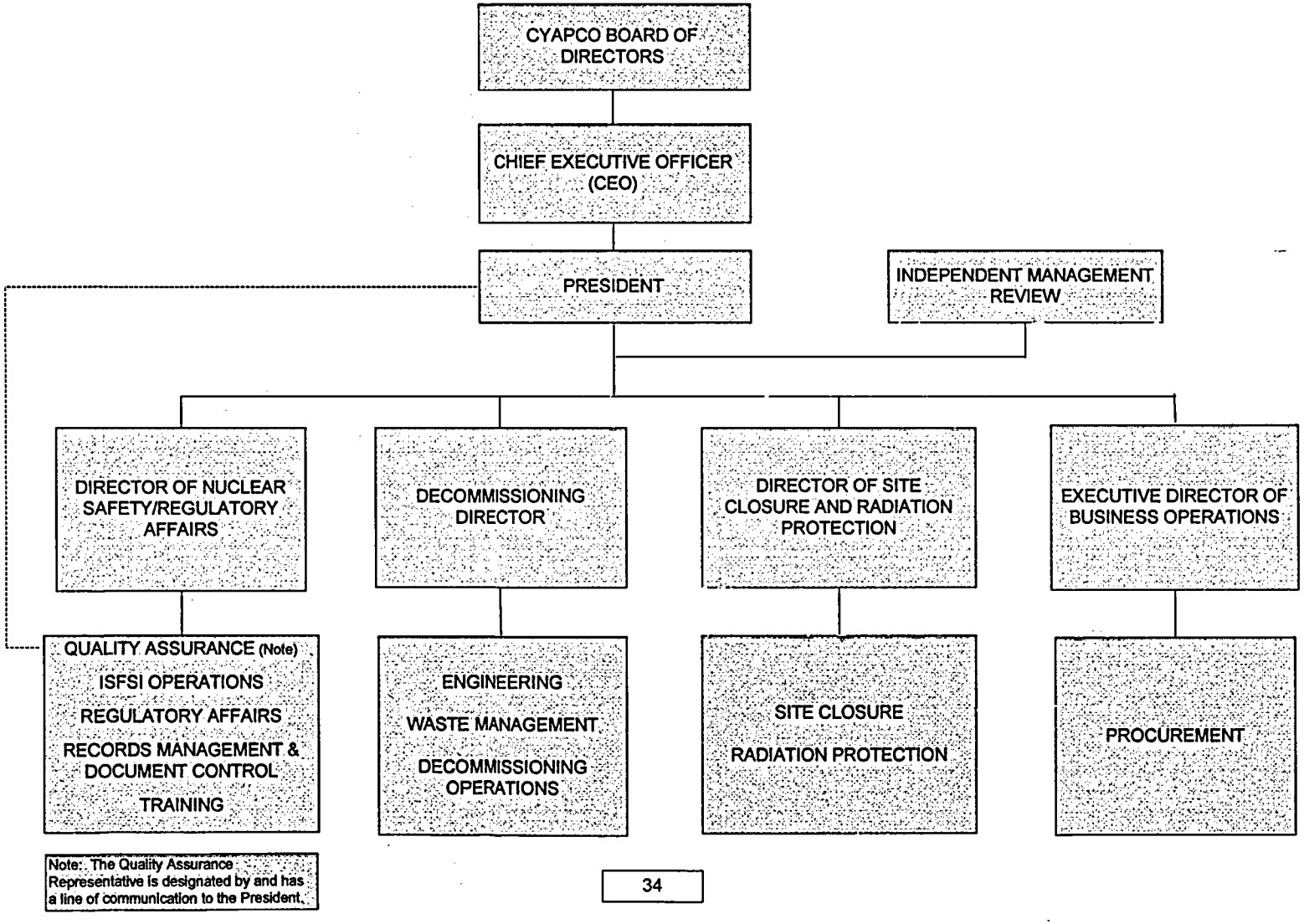
2.8.3 Bases

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(a)(3) limits for plutonium. This limitation will ensure that leakage from Byproduct, Source, and Special Nuclear Material sources will not exceed allowable intake values.

Sealed sources are classified into three groups according to their use, with Surveillance Requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

APPENDIX D
ORGANIZATION CHART



Note: The Quality Assurance Representative is designated by and has a line of communication to the President.