FINAL SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

TOPICAL REPORT SWSQAP1-74A

"SHAW STANDARD NUCLEAR QUALITY ASSURANCE PROGRAM "

SHAW NUCLEAR SERVICES, INC.

PROJECT NO. 99900509

1.0 INTRODUCTION AND BACKGROUND

By letter dated November 4, 2009 (Reference 1), Shaw Nuclear Services, Inc. (Shaw) submitted Revision B to the quality assurance (QA) topical report, SWSQAP1-74A, Standard Nuclear Quality Assurance Program (hereafter referred to as the Quality Assurance Topical Report (QATR)) for NRC review and acceptance in accordance with the provisions of Section 50.4(b)(7)(ii) of Part 50 of Title 10 of the Code of Federal Regulations (10 CFR Part 50). Shaw's restructuring subsequent to acceptance of Revision A of the 2000 Edition of SWSQAP 1-74A in aletter dated June 8, 2004 (Reference 2) identified four Shaw Group Companies that can implement SWSQAP 1-74A, Shaw Nuclear Services Inc., Stone & Webster Construction, Inc., Shaw Constructors Inc., and Shaw Environmental & Infrastructure, Inc.

2.0 REGULATORY EVALUATION

The Commission's regulatory requirements related to QA programs for non-licensees are set forth in 10 CFR 50.4(b)(7)(ii). This regulation requires that a change to an NRC-accepted QATR from non-licensees (i.e., architect/engineers, nuclear steam system suppliers (NSSSs), fuel suppliers, constructors, etc.) must be submitted to the NRC. When requested, the NRC will review the proposed QATR for acceptability to ensure the applicable requirements of Appendix B to 10 CFR Part 50 will be satisfied.

Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50 establishes QA requirements for the design, construction and operation of structures, systems, and components (SSCs) of the facility. The pertinent requirements of Appendix B to 10 CFR Part 50 apply to all activities affecting the safety-related functions of those SSCs and include designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, refueling and modifying.

3.0 TECHNICAL EVALUATION

The proposed QATR is similar in many respects to previous submittals approved for licensees for the purpose of meeting NUREG-0800, "Standard Review Plan," Section 17.5, "Quality Assurance Program description – Design Certification, Early Site Permit and New License Applicants," (hereafter referred to as SRP 17.5).

ENCLOSURE

The proposed QATR is organized into nineteen basic sections with the first eighteen corresponding to the quality requirements delineated in Appendix B to 10 CFR 50 and is responsive to both Appendix B and the regulatory guidance set forth in NRC Regulatory Guides. Additionally, this QATR is responsive to the American Society of Mechanical Engineers (ASME) Nuclear Quality Assurance (NQA) Standard NQA-1-1994 and NQA-1-2008 "Quality Assurance Requirements for Nuclear Facilities Applications."

Shaw proposes an increase in scope of the program to address the requirements of the NRC's Standard Review Plan, NUREG-0800, Section 17.5. The review approach of SRP 17.5 has previously been used by the NRC staff for evaluating NQA-1-1994 as the basis for a QA program by a non-licensee.

Part I of NQA-1-1994 sets forth programmatic requirements for the establishment and execution of QA programs for the siting, design, construction, operation, and decommissioning of nuclear facilities. Part II of the standard sets forth non-programmatic QA requirements for the planning and execution of identified tasks during the fabrication, construction, modification, repair, maintenance and testing of SSCs for nuclear facilities. NQA-1-1994 provides guidance that is similar to that provided by the American National Standards Institute N45.2 series of standards, which were developed in the 1970s and early 1980s.

Shaw's QA program Revision B delineates four changes: 1) the establishment of a new company, Shaw Nuclear Services, Inc.; 2) addition of another Shaw Group subsidiary, Shaw Constructors, Inc.; 3) changes in quality control responsibilities; and 4) editorial changes.

3.1 Evaluation

The staff evaluated the adequacy of the QATR in describing how the requirements of Appendix B to 10 CFR Part 50 will be satisfied. The format and content of the QATR were evaluated in accordance with the guidance of SRP 17.5, which provides a basis for NRC staff review of QA programs based on NQA-1-1994. The acceptability of the level of detail provided by the QATR is determined, in part, by its adequacy in addressing the acceptance criteria of SRP 17.5. The staff also reviewed alternatives from NQA-1-1994 and NQA-1-2008, considered not to be reductions in QA program commitments, for conformance with the provisions established in Shaw's previously accepted QATR dated June 2004 (Reference 2).

3.1.1 Format and Content of the QATR

The format used for the following evaluation follows the sequence of the 18 criteria of Appendix B and corresponding provisions of NQA-1-1994. The content of the QATR provides guidance for establishing a top-level policy document that defines the quality requirements and assigns major functional responsibilities. The Shaw QATR can be used for professional engineering, design, procurement, construction, maintenance, modification, repair replacement and decommissioning services for nuclear projects affecting the quality and performance of safety-related SSCs. In addition, the QATR applies a graded approach to the extent commensurate with the SSC's importance to safety when delineated in procurement requirements. It is incumbent upon the applicant to identify the specific QA requirements that must be met for the scope of activities.

3.1.1.1.1 Organization

The QATR is the top-level policy document that delineates the requirements and tasks assigned to the various organizational elements to achieve Shaw's stated objectives. Implementing documents provide more detailed responsibilities and requirements and define the organizational interfaces involved in conducting activities within the scope of the QATR. Compliance with the QATR and implementing documents is mandatory for all personnel performing activities related to safety.

The QATR describes the organizational structure, levels of authority, lines of communication, and functional responsibilities for the control of nuclear project activities affecting quality. Shaw identifies four Shaw Group Companies that can implement SWSQAP 1-74A, Shaw Nuclear Services, Inc.; Stone & Webster Construction, Inc.; Shaw Constructors, Inc.; and Shaw Environmental & Infrastructure, Inc. Shaw Nuclear Services, Inc. retains the responsibility for implementing the requirements of the program for nuclear power projects regulated by the NRC. The Quality Control (QC) responsibilities shifted from the Construction Companies to the QA Department within Shaw Nuclear Services, which is now called the Nuclear QA/QC Department. The Nuclear QA/QC Department will now be responsible for all Nuclear QA and QC activities at new construction sites.

The changes included in this revision are designed to continue to maintain full compliance with Appendix B to 10 CFR Part 50, as well as being responsive to the QA criteria of ASME NQA-1; standardize nuclear QA and QC practices within Shaw Group companies executing work for Shaw Nuclear Services and to continue the practice of an integrated approach to the execution of work regulated by the USNRC.

In establishing its organizational structure, Shaw commits to compliance with NQA-1-1994, Basic Requirement 1 and Supplement 1S-1.

3.1.1.2 Quality Assurance Program

Shaw's QATR communicates the QA policy and commitments to Shaw Nuclear organizations that develop the implementing procedures under this program. Shaw has established the necessary measures and governing procedures to implement the QA program described in the QATR. Training is scheduled, conducted and documented on applicable quality policies, manuals, and procedures as determined by the responsible organization. A scheduled audit program assures that they are implemented. Activities affecting quality are documented, as appropriate, in drawings, specifications, instructions and procedures and are conducted under controlled conditions.

Procedures used to implement Shaw's QA program are consistent with the commitments of the QA program. The QA/QC Organization reviews and concurs with the quality related procedures and documentation of this review and concurrence is maintained. Additionally, QA/QC establishes and maintains qualification and certification programs for the qualification of QC inspection personnel, equipment and test methods. The status, adequacy, and effectiveness of the overall QA Program, as described herein, are assessed on an annual basis.

In establishing qualification and training programs, Shaw commits to compliance with NQA-1-1994, Basic Requirement 2 and Supplements 2S-1, 2S-2, 2S-3, and 2S-4, with the proposed clarifications, exceptions or alternatives.

Evaluation of Shaw's QA Program Proposed Clarifications, Exceptions or Alternatives

Shaw proposed that a general grace period of 90 days may be applied to provisions that are required to be performed on a periodic basis unless otherwise noted. Annual evaluations and audits that must be performed on a triennial basis are examples where the 90-day general grace period could be applied. The grace period does not allow the "clock" for a particular activity to be reset forward. The "clock" for an activity is reset backwards by performing the activity early.

The staff determined that the wording was equivalent to the guidance in SRP 17.5, paragraph II.B.1. Therefore, the staff finds the alternative equivalent to the staff's guidance.

3.1.1.3 Design Control

Shaw has established an engineering and design control system to document the method of accomplishing and controlling engineering and design tasks. Design activities, documents, and interfaces shall be controlled to assure that applicable inputs such as design bases, regulatory requirements, codes, and standards are correctly translated to the final design. Design documents such as diagrams, specifications, and drawings shall specify the quality characteristics including the materials, parts, equipment, or processes that are essential to the functions of the structures, systems, and components. Design documents shall also include, as appropriate, acceptance criteria for inspections and tests.

Design verification shall be performed on design documents prior to releasing them for use, including use by another design organization. Accuracy of the design is verified through review of design documents by competent persons other than those who designed the item. The extent of the design verification shall be a function of the importance to safety, the complexity of the design, the degree of standardization, the state of the art, and the similarity with previously approved designs. Design changes are controlled in a manner commensurate with the control imposed on the original design.

In establishing its program for design control and verification, Shaw commits to compliance with NQA-1-1994, Basic Requirement 3 and Supplement 3S-1.

3.1.1.4 Procurement Document Control

Shaw has established a process to ensure that procurement documents include the requirements necessary for establishing the quality of the procured material, equipment, and services. Design criteria, including applicable specifications, codes, standards, and regulatory requirements, shall be translated into procurement documents in accordance with approved procedures.

Shaw procurement documents include information and requirements such as: 1) statement of scope of work; 2) technical requirements, and where necessary, references to specific drawings, specifications, codes, standards, regulations, procedures, special processes or instructions, including revisions that describe the terms or services furnished; 3) QA program requirements; 4) identification of test, inspection, and acceptance requirements for monitoring and evaluating the supplier's performance; 5) access to the supplier's plant facilities and records for inspection or audit by the purchaser, the designated representative and/or other authorized

parties; 6) identification of the documentation and the date of submission for documentation required to be submitted for information, review, or approval; 7) requirements for the supplier's reporting of non-conformances; and 8) requirements that invoke 10 CFR Part 21, "Reporting of Defects and Noncompliance" for QA safety-related work on NRC licensed facilities. Procurement documents for commercial-grade items/services that will be procured for use in safety-related applications shall contain technical and quality requirements such that the procured item can be appropriately dedicated.

Changes to procurement documents shall be subjected to the same degree of control as utilized in the preparation of the original documents. Review and approval of procurement documents by QA/QC verifies that quality requirements are understandable, inspectable, and controllable; that acceptance and rejection criteria are provided; and, that sufficient information exists pertaining to codes, standards, methods of testing, inspection, and documentation, so that QA and QC activities can be performed.

In establishing controls for procurement, Shaw commits to compliance with NQA-1-1994, Basic Requirement 4 and Supplement 4S-1, with the proposed clarifications, exceptions, or alternatives.

Evaluation of Shaw's QA Program Proposed Clarifications, Exceptions or Alternatives

Section 2.3 of Supplement 4S-1 specifies that procurement documents require suppliers to have a documented QA program that implements NQA-1-1994, Part 1. Shaw proposed that in lieu of this requirement, the suppliers who perform safety-related or important to safety work have a QA program consistent with the applicable provisions of the governing QA criterion document (e.g., 10 CFR Part 50, Appendix B, ANSI/ASME NQA-1, 10 CFR 830 Subpart A, 10 CFR 70.22 Subpart D, 10 CFR 71 Subpart H, 10 CFR 72 Subpart G, etc.). These provisions are imposed on Shaw's sub-tier suppliers, as appropriate. For services, a supplier may work under the provisions of SWSQAP 1-74A, including implementing procedures, in lieu of the supplier having its own QA program approved by Shaw Nuclear.

Paragraph II.D.2.d states in part that, the supplier's documented QA program will be determined to meet the applicable requirements of Appendix B to 10 CFR Part 50, as appropriate to the circumstances of procurement (or the supplier may work under the applicant's approved QA program).

The staff determined that the wording was essentially equivalent to the guidance in Paragraph II.D.2.d of SRP 17.5. Therefore, the staff finds the alternative equivalent to the staff's guidance.

3.1.1.5 Instructions, Procedures, and Drawings

Shaw has established the necessary measures to ensure that quality activities are based on specifications, drawings, procedures, and instructions, as appropriate. These documents indicate any necessary special process controls, the applicable codes and standards, and qualitative and quantitative acceptance criteria. Furthermore, some of these documents prepared by suppliers must be submitted for Shaw's review before use. Quality activities are conducted in accordance with QA and QC procedures that identify the individuals or groups responsible for performing specific tasks and indicated quality record requirements. Shaw's procedures will include sufficient definition to ensure that activities affecting quality have been

satisfactorily performed in accordance with the specified requirements and shall not degrade or conflict with any higher level procedure. Acceptance criteria for specific tasks are included in procedures.

In establishing procedural controls, Shaw commits to compliance with NQA-1-1994, Basic Requirement 5.

3.1.1.6 Document Control

Shaw has established a process to control the review, approval, and distribution of documents, including changes thereto, which prescribe activities affecting quality. The program and implementing procedures establish the requirements to maintain master indexes of instructions, procedures, drawings, procurement, and subcontracting documents and to publish updated indexes in a scheduled manner. The distribution of documents is controlled to ensure that only documents with the prescribed approvals are in use at the locations where the prescribed activity is performed.

In establishing provisions for document control, Shaw commits to compliance with NQA-1-1994, Basic Requirement 6 and Supplement 6S-1.

3.1.1.7 Control of Purchased Material, Equipment, and Services

Shaw has established the necessary measures and procedures to ensure that purchased material, equipment, and services conform to procurement documents. These measures include supplier evaluation and selection including quality evaluations and rating, periodic source assessments and inspections, audits, and site receiving inspection as applicable. Prior to supplier selection, the supplier's capabilities to provide items or services in accordance with the requirements of the procurement documents shall be evaluated and unacceptable technical and QA conditions shall be resolved. Shaw has established measures to interface with the supplier and to evaluate supplier performance.

The extent of Shaw Nuclear verification activities, including planning, shall be a function of the relative importance, complexity, and quantity of the item or services procured and the supplier's quality performance. Verification activities shall be accomplished by qualified personnel assigned to check, inspect, audit, or witness the activities of suppliers. Shaw's receipt inspection includes verification that all required documentation has been received, reviewed, and accepted and that the items conform to the procurement documents.

In establishing procurement verification controls, Shaw commits to compliance with NQA-1-1994, Basic Requirement 7 and Supplement 7S-1.

3.1.1.8 Identification and Control of Materials, Parts, and Components

Shaw has established the necessary identification and control measures to prevent the uncontrolled use of nonconforming materials, parts, and components, including partially fabricated assemblies. Safety related and important to safety materials, parts, and components shall be identified by heat number, serial number, part number or other appropriate means. The identification may be on the item (physical markings are preferred), may be by electronic means such as Radio Frequency Identification (RFID) technology, or on records directly and readily

traceable to the item. The type of identification is established by specifications, drawings, instructions, or procedures. Site QC will ensure that the required identification and traceability of materials, parts, and components is maintained from receipt through completion of construction.

In establishing provisions for identification and control of items, Shaw commits to compliance with NQA-1-1994, Basic Requirement 8 and Supplement 8S-1.

3.1.1.9 Control of Special Processes

Shaw has established the necessary measures to ensure that approved special process procedures are used by qualified personnel in accordance with specified codes, standards, and any additional project requirements. The requirements for special process control, including personnel qualification are invoked by specifications, procedures, instructions, or other applicable documents.

The engineering department defines in engineering specifications, procedures or other appropriate documents the necessary requirements for qualification of procedures, personnel, and equipment for special process work including the codes and standards they are to be qualified to and any additional requirements for special processes when it is desired that an item's quality requirements exceed those in codes or standards. Records are maintained for the currently qualified personnel, processes, and equipment for each special process as applicable.

In establishing measures for the control of special processes, Shaw commits to compliance with NQA-1-1994, Basic Requirement 9 and Supplement 9S-1.

3.2.1.10 Inspection

Shaw conducts inspections to ensure that material, equipment, and work conforms to quality requirements. Acceptance and inspection activities are performed by individuals or groups that are independent of those performing the activity and who have not performed the activity being inspected or who report directly to the immediate supervisors who are responsible for performing the work being inspected. Shaw translates technical and QA requirements to inspection procedures, plans, and reports to provide documentation of the work.

Inspection records clearly identify: 1) the item inspected; 2) date of inspection; 3) inspector's identity; 4) type of observation, results or acceptability; and, 5) reference to information on action taken in connection with nonconformances. Personnel performing inspection activities shall be qualified and certified to perform the applicable inspection task.

In establishing inspection requirements, Shaw commits to compliance with NQA-1-1994, Basic Requirement 10 and Supplement 10S-1.

3.2.1.11 Test Control

Shaw has established the necessary measures and implementing procedures to demonstrate that structures, systems, and components will perform satisfactorily in service. Testing is accomplished by qualified personnel in accordance with written controlled test procedures. Shaw's test control program includes, as appropriate, proof tests before installation,

preoperational tests, post maintenance tests, and operational tests. Test results, as a minimum, identify the items tested, date of the test, identity of the tester or data recorder, type of observation, results and acceptability, and action taken in connection with any deviation noted. In addition, these results are evaluated by qualified personnel to assure that test requirements have been satisfied.

In establishing provisions for testing, Shaw commits to compliance with NQA-1-1994, Basic Requirement 11 and Supplement 11S-1.

3.2.1.12 Control of Measuring and Test Equipment

Shaw controls the calibration, maintenance, and use of tools, gages, instruments, and other measuring and testing equipment (M&TE) used for measurements, inspections, and tests performed to document compliance with specified requirements.

Shaw's control program of M&TE includes the following: 1) positive identification of the equipment and its calibration status, including due date of next calibration; 2) frequency of calibration schedule, purpose, recognized industry standards, manufacturer's recommendations, usage factor and other condition affecting the measurement; 3) written procedures describing the calibration control system; 4) record system to indicate calibration dates, capability of M&TE to perform intended function satisfactorily, and identification of personnel performing the calibrations; 5) recall system to prevent use of equipment beyond calibration due date; and, 6) system for corrective action when out-of-calibration or damaged measuring and test equipment has been used.

In establishing provisions for control of measuring and test equipment, Shaw commits to compliance with NQA-1-1994, Basic Requirement 12 and Supplement 12S-1 with the proposed clarifications, exceptions or alternatives.

Evaluation of Shaw's QA Program Proposed Clarifications, Exceptions or Alternatives

Shaw proposed an alternative to survey and audit of a calibration facility for calibration services associated with an NRC licensed facility, Shaw Nuclear may accept accreditation by the National Voluntary Laboratory Accreditation Program (NVLAP), the American Association for Laboratory Accreditation (A2LA), or other accrediting body recognized by NVLAP though the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) provided that mentioned conditions are met.

The NRC staff determined that the wording was essentially equivalent to the guidance in Paragraph II.L.8 of SRP 17.5. Therefore, the NRC staff finds the alternative equivalent to the staff's guidance.

3.2.1.13 Handling, Storage, and Shipping

Shaw has established the necessary measures and implementing procedures to control the handling, storage, shipping, cleaning, and preservation of materials and equipment to prevent damage, deterioration or release of radioactive or hazardous material. The above mentioned work is accomplished by qualified individuals in accordance with applicable procedures. Shaw applies a preventive maintenance program to materials and equipment in storage and work areas, and after installation up to the time of acceptance by the client. Operators of special handling and lifting equipment are trained in the use of the equipment.

In establishing provisions for handling, storage and shipping, Shaw commits to compliance with NQA-1-1994, Basic Requirement 13 and Supplement 13S-1 with the proposed clarifications, exceptions or alternatives.

Evaluation of Shaw's QA Program Proposed Clarifications, Exceptions or Alternatives

Shaw proposed to perform specified verification source inspection activities, when required, at the supplier's facility relative to the handling, cleaning, and preparation of items for shipment as required by the procurement documents and shall perform verification activities of the maintenance program for items in long term storage at the supplier's facility on a case-by-case basis as required by specific requests from clients.
Shaw proposed compliance with applicable hoisting, rigging, and transportation regulations and codes in conjunction with the alternatives identified in Appendix VII of SWSQAP 1-74A.

The NRC staff determined that the wording was equivalent to the guidance in Paragraphs II.M.6 and II.M.7 of SRP 17.5. Therefore, the NRC staff finds the alternative equivalent to the staff's guidance.

3.2.1.14 Inspection, Test and Operating Status

Shaw has established the necessary measures and implementing procedures to identify the status of inspections and test operations during manufacturing, fabrication, construction, installation, testing, maintenance, repair, replacement, and decommissioning. The status of inspections and test operations is indicated by tags, markings, shop travelers, stamps, route cards, inspection records, checklists, or other suitable means provided that the method used ensures that only accepted items are used, installed, or operated. Removal of tags, shop travelers, route cards, checklists, etc., is only performed by Shaw's authorized personnel.

In establishing measures for control of inspection, test and operating status, Shaw commits to compliance with NQA-1-1994, Basic Requirement 14 with the proposed clarifications, exceptions or alternatives.

Evaluation of Shaw's QA Program Proposed Clarifications, Exceptions or Alternatives

Shaw proposed that for temporary design changes (temporary modifications), such as temporary by-pass lines, electrical jumpers and lifted wires, and temporary trip points settings, shall be controlled by approved procedures that include requirements for appropriate installation and removal, independent/concurrent verifications and status tracking.

The NRC staff determined that the wording was equivalent to the guidance in Paragraphs II.N.5. Therefore, the NRC staff finds the alternative equivalent to the staff's guidance.

3.2.1.15 Nonconforming Materials, Parts or Components

Shaw has established the necessary measures and implementing procedures to control nonconforming and unsatisfactory (unsat) items to prevent their inadvertent use or installation until the unsat or nonconforming conditions are corrected either by rework to return it to the specified condition or by a change in the specified requirements by engineering. These controls include measures for identification, documentation, segregation (as appropriate), disposition,

and notification to affected organizations. Physical segregation and marking are Shaw's preferred method for identification; however, other means of identification (e.g., marking, tagging, etc.) are acceptable when physical segregation is impractical.

Nonconformances to design requirements that are dispositioned as repairs or accept-as-is, are subject to design control measures commensurate with those applied to the original design. Shaw documents the technical justification for the acceptability of a nonconforming item. Shaw's Site QC and QA Source Inspection re-inspect nonconforming items, reported on a Nonconformance and Disposition (N&D) Report, in accordance with the accept/reject criteria contained in the engineering disposition/specification/procedure and document the results of the re-inspection of the N&D.

Shaw has established a system for reporting potential defects and failures to comply in accordance with 10 CFR 21, "Reporting of Defects and Noncompliance" and 10 CFR 830 Appendix A.

In establishing measures for nonconforming materials, parts, or components, Shaw commits to compliance with NQA-1-1994, Basic Requirement 15 and Supplement 15S-1.

3.2.1.16 Corrective Action

Shaw has established the necessary measures and implementing procedures to determine the cause(s) and take corrective and preventive action to preclude repetition when major and recurring conditions adverse to quality, such as failures, malfunctions, deficiencies, defective material and equipment, unsats, and nonconformances are identified. These conditions include failures of the QA program. Shaw's corrective action program provides for prompt identification, documentation, classification, and correction of the conditions. Provision has been established to ensure that corrective actions are not inadvertently nullified by subsequent actions. For conditions adverse to quality and significant conditions adverse to quality, the corrective action process, including the resulting action to resolve the deficiency shall be documented and reported to the responsible manager. In addition, significant conditions adverse to quality require processing through the Problem Report System, determining whether the client should be notified of a potentially reportable deficiency under 10 CFR 50.55(e), determining whether the condition should be processed as a potentially reportable condition under 10 CFR part 21, determining if a Stop Work Action/Order is needed, performing a Root Cause Analysis to determine the cause of the condition, and performing a detailed evaluation to determine the extent of condition.

Shaw has taken the necessary measures to keep appropriate Shaw Nuclear personnel informed of potential problems by a feedback system of reports on significant and recurring problems encountered on other Shaw Nuclear projects and by review of selected government and industry documents. Shaw complies with 10 CFR 21 and 10 CFR 50.55(e) as part of its Corrective Action Program.

In establishing provisions for corrective action, Shaw commits to compliance with NQA-1-1994, Basic Requirement 16.

3.2.1.17 Quality Assurance Records

Shaw has established the necessary measures to ensure sufficient records of completed items and activities affecting quality are collected, maintained, and appropriately stored. Shaw's record system is defined, implemented, and enforced in accordance with written procedures, instructions, or other documentation.

Shaw's records program provides for all acceptable media on which electronic records are created and stored and include provisions to verify that the media is appropriate, suitable for the capture or storage of records, and error/defect free. In addition, Shaw's program implements Generic Letter 88-18, "Plant Record Storage on Optical Disks."

Shaw's applicable specifications, procurement documents, procedures or other documents specify the receipt, storage, preservation, safekeeping, retrieval, types of records to be generated, the record media type (hard copy or electronics), retention period, and their disposition. Shaw required training for individuals or organizations in charge of electronic records generation, data/media storage, and implementation of security measures, mitigation/regeneration, and recovery. Shaw has established the necessary measures to ensure that records are legible, identifiable, retrievable and traceable to the item or activity to which it applies.

In establishing provisions for records, Shaw commits to compliance with NQA-1-1994, Basic Requirement 17 and Supplement 17S-1.

3.2.1.18 Audits

Shaw has established an audit and surveillance program to ensure that quality activities are in compliance with the requirements of this manual and related procedures, to determine the effectiveness of the QA program, and that the program has been implemented effectively. Shaw's audit program provides a planned and scheduled system of audits of internal operations, supplier's operations, and areas of identified concern.

Shaw's audit schedule starts at the time Shaw Nuclear is awarded the work and runs until the project is completed. Additional audits, relating to specific areas of interest, are conducted as determined by the appropriate management. Periodic audits of systems, software applications, and media are performed to ensure electronic records retrievability, integrity, and retention period. Shaw's audit program includes provisions for reporting nonconforming conditions to the responsible level of management for any necessary corrective action.

Shaw's audits are performed in accordance with written procedures, audit plans, or checklists by appropriately trained personnel having no direct responsibility in the activity being audited and are performed under the direction of a qualified lead auditor and the cognizance of the Director of Nuclear Quality. Shaw's audit team leader signs the audit report that contains the following: 1) description of the scope of audit; 2) identification of the auditors and any technical representatives; 3) identification of persons contacted during the audit; 4) summary of audit results; and, 5) description of each reported adverse audit finding in sufficient detail to enable corrective action to be taken by the audited organization.

In establishing the independent audit program, Shaw commits to compliance with NQA-1-1994, Basic Requirement 18 and Supplement 18S-1.

4.0 CONCLUSION

The NRC staff evaluated Shaw's QATR (Reference 3) submittal and the supplemental correspondence. The NRC staff concluded that Shaw's QA program description, including alternatives, adequately addresses the requirements of Appendix B to 10 CFR Part 50, and is therefore acceptable.

5.0 REFERENCES

1. Shaw Nuclear Services Inc. letter from Richard R. Stevenson to NRC, "Proposed Revision B to the 2000 Edition of the Shaw "Standard Nuclear Quality Assurance Program", SWSQAP1-74A," dated November 4, 2009

2. NRC letter from Theodore R. Quay to Michael I. Gilman, "Change to the Stone & Webster Nuclear Quality Assurance Program," dated June 8, 2004

3. "Shaw Standard Nuclear Quality Assurance Program SWSQAP1-74A," Revision B, 2000 Edition, dated November 4, 2009

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