8.0 QUALITY ASSURANCE PROGRAM

PURPOSE OF THIS SECTION

The purpose of this section is to describe the Quality Assurance Program for Phase 1 of the WVDP decommissioning, focusing on characterization, engineering data, calculations, dose modeling, and the final status surveys. The information in this section shows how the Quality Assurance Program will be managed and implemented. It is also intended to show NRC staff how accurate, high-quality information will be provided to support Phase 1 of the decommissioning.

INFORMATION IN THIS SECTION

The focus of this section is appropriate because the decommissioning is being conducted under the WVDP Act as explained in Section 1. The information provided is necessarily generic in nature because contractual arrangements for the decommissioning have not yet been made.

This section begins with a description of the quality assurance organization and the duties and responsibilities of the quality assurance and decommissioning organizations that are associated with the Quality Assurance Program. It continues with a description of the Quality Assurance Program, control of documents, measuring and test equipment, purchased materials, and subcontractor services. The section concludes with descriptions of corrective action, audits and surveillances, and management of quality assurance records.

Because some preliminary engineering work such as dose modeling and the engineered barrier design will be completed before decommissioning activities commence under this plan, this section refers to existing quality control assurance programs for those activities and briefly describes these programs.

RELATIONSHIP TO OTHER PLAN SECTIONS

To understand the scope of the Quality Assurance Program, one must consider the information in Section 1. Section 1 discusses the project background, the decommissioning activities, and project management and organization.

This section provides the quality assurance requirements for the programs and activities identified in Sections 5, which addresses dose modeling, and Section 9, which deals with radiation surveys. It also applies to engineering data and calculations related to designs described in Section 7 for the Canister Interim Storage Facility for the vitrified HLW canisters and the hydraulic barrier walls that will remain in place after Phase 1 is completed.

8.1 Quality Assurance Organization

The Quality Assurance (QA) Organization is shown in Figure 8-1. The QA Manager, who reports directly to the Decommissioning Contractor Senior Executive, manages the organization. The QA Manager provides central leadership, direction, and management to the decommissioning project.

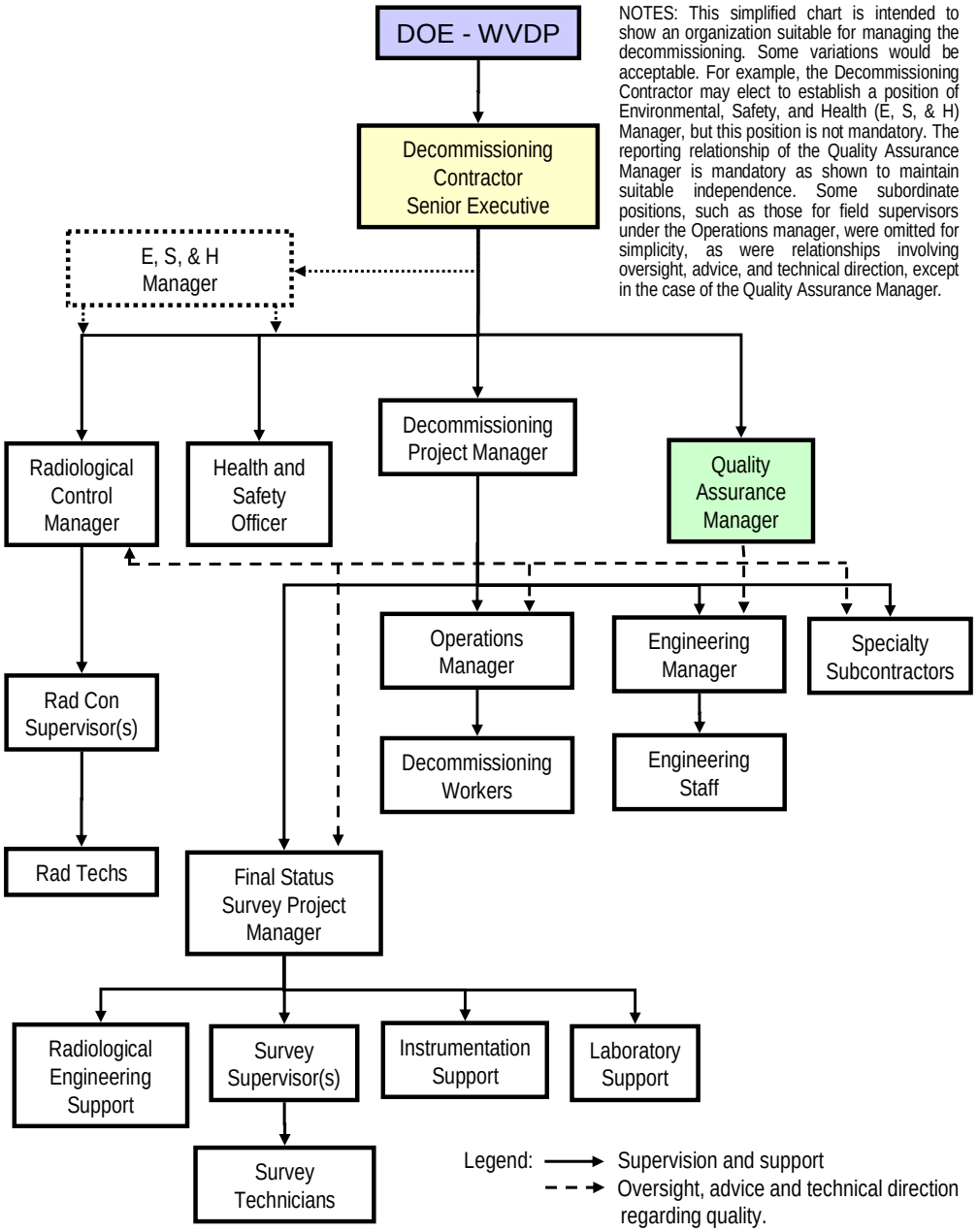

Figure 8-1. Decommissioning Organization Quality Assurance Relationships

Quality must be built into the decommissioning project by project personnel. Each person in the decommissioning organization is responsible for QA related to the tasks he or she performs. To help ensure that quality is built in, QA procedures implementing the QA Program will be developed by the decommissioning organization. QA will be provided through implementation of the QA Program and project implementing procedures as it relates to QA/quality control (QC) issues.

The QA duties and responsibilities of the QA organization and the decommissioning organization are listed below.

8.1.1 Quality Assurance Organization Duties and Responsibilities

The QA Manager is responsible to:

- Develop the project QA Program manual or plan as a formal document implementing the requirements of this section and maintain this document current;
- Provide central leadership, direction, and management of the decommissioning QA Program;
- Ensure that preparation and maintenance of the QA Program are responsive to DOE and NRC QA requirements and act as the primary QA interface with DOE and NRC;
- Implement DOE and WVDP quality policies and define the direction of the QA Program with respect to these policies;
- Perform as the certifying agency for the QA Program;
- Make final interpretations of established QA requirements;
- Determine when conditions during decommissioning are not in compliance with the QA Program;
- Provide input and direction for QA training;
- Provide oversight of subcontractor and vendor activities;
- Provide receipt inspection services for purchased materials;
- Evaluate the adequacy and effectiveness of the QA Program;
- Review and approve procedures implementing the requirements of the WVDP QA Program;
- Review and approve procurement documents as required;
- Perform and document independent audits, surveillances, inspections and tests as required;
- Stop unsatisfactory work and control processing and delivery of unsatisfactory materials; and
- Maintain required QA records.

8.1.2 Decommissioning Project Quality Assurance Duties and Responsibilities

Project personnel are responsible to:

- Provide the requisite level of quality in work performed;
- Develop organizational procedures implementing the requirements of the WVDP QA Program;
- Implement the policies and procedures established to support the QA Program;
- Ensure that activities affecting quality are prescribed by documented instructions, procedures, and drawings and that such activities are accomplished through implementation of these documents;
- Prepare QA Project Plans in support of characterization and the final status survey;
- Perform work safely and correctly the first time, and assure that reliability, performance, and customer satisfaction are maximized;
- Meet established requirements and recommend improvements in material and work process quality;
- Inform management of suspected unsafe or unacceptable quality conditions; and
- Stop work when it is known or suspected that work being performed could potentially result in an unsafe or unacceptable quality condition.

8.2 Assuring Quality in Preliminary Engineering Work

Some engineering work in support of the decommissioning has already been performed by DOE contractors and more will be performed before this plan is approved and placed into effect. Two especially important examples of this work are dose modeling and preliminary conceptual design of engineered barriers to be installed during Phase 1 of the WVDP decommissioning.

DOE ensures that QA programs used for such work meet applicable requirements, such as DOE Order 414.1C and the quality assurance requirements of Code of Federal Regulations 10 CFR 830.120. How this was accomplished for the two examples cited is as follows.

8.2.1 Dose Modeling

The dose modeling was performed by Science Applications International Corporation (SAIC) under contract to DOE.

SAIC Quality Assurance Plan and Supporting Procedures

SAIC prepared and followed a QA Project Plan that applied to the modeling work (SAIC 2009a), along with four supporting QA procedures (SAIC 2008a, 2008b, 2009b, and 2009c) that relate to the dose modeling. This plan was based on the SAIC Business Unit QA Program that was developed to meet customer requirements including those in DOE Order

414.1C, 10 CFR 830.120, and ASME NQA-1 (ASME 2000). Elements of the QA Project Plan and the supporting procedures included:

- Project organization and responsibilities,
- Personnel qualification and certification,
- Document preparation,
- Preparation of code development and verification packages,
- Performing calculations and analyses,
- Independent technical reviews by a qualified person(s),
- Documented comment resolution with formal revisions for significant changes,
- Management and independent assessment, and
- Project records.

Oversight and Review

In addition to the oversight and review provided by SAIC, DOE provided QA oversight and review of this effort, including peer review of the modeling process.

8.2.2 Engineered Barrier Design

Conceptual engineering work related to engineered barriers was performed by Washington Safety Management Solutions (WSMS) under the requirements of the WSMS QA Plan (WSMS 2009a)[1].

WSMS Quality Assurance Program

The WSMS QA program embodies the QA criteria of 10 CFR 830.122 and DOE Order 414.1A (the earlier version of DOE Order 414.1C) and applicable DOE technical standards. The programs also use ASME NQA-1 (ASME 2000) as a basis with program enhancements from other consensus standards to ensure that the requisite level of quality for all key activities is maintained. Elements of the programs include:

- Line management responsibility for quality;
- Individual responsibility for quality at all levels;
- QA management providing planning, direction, control, and support to achieve quality objectives;
- Formal personnel training and qualification;
- A formal quality improvement process;
- Design controls, with formal design and verification processes;

[1] WSMS is now part of the Washington Division of URS Corporation.

- Work process controls;
- Procurement controls;
- Inspection and acceptance testing;
- Management assessment; and
- Independent assessment.

Contractual arrangements between WSMS and SAIC required WSMS to comply with applicable requirements of:

- The SAIC QA Project Plan that applies to decommissioning preparations (SAIC 2008a), and
- The WSMS procedure for preparing technical documents and performing engineering calculations for the EIS and this plan (WSMS 2009b).

Oversight and Review

WSMS review of subcontracted work related to this plan is carried out in accordance with the WSMS QA Plan (WSMS 2009a) and the related procedure (WSMS 2009b). In addition, DOE provides independent oversight of the work performed by site contractors.

8.2.3 Other Engineering Work

DOE will ensure that other engineering data and engineering work, calculations, and modeling provided by DOE contractors in support of Phase 1 of the decommissioning conforms to applicable QA requirements. For example, if another contractor(s) were to complete engineered barrier designs begun by URS and WSMS, then DOE will ensure that the QA program of the new contractor(s) is equivalent to applicable requirements in the WSMS QA Plan and the WVDP supporting procedure (WSMS 2009b).

8.3 Decommissioning Quality Assurance Program

The Decommissioning QA Program identifies and describes the integral elements of the QA activities that apply to a broad spectrum of decommissioning work performed at the WVDP. The QA Program provides the framework and criteria for implementing a QA program to control activities that affect the quality of the WVDP Phase 1 decommissioning.

Specifically, the QA Program will be used to plan, perform, and assess the effectiveness of project activities such as data acquisition and evaluation. It also provides the framework for the development of new or revised engineering data, calculations, and modeling associated with engineered barrier design and any revisions to the dose modeling. Activities affecting quality of the WVDP decommissioning will be subject to the applicable controls of the QA Program and activities covered by the QA Program will be identified in program-defining documents.

The Decommissioning QA Program will meet the intent of 10 CFR 830.120, Subpart A, QA Requirements and the requirements of DOE Order 414.1C.

8.3.1 General Description of the Program

The WVDP Phase 1 Decommissioning QA Program will include the following elements:

- It will be established by the WVDP to govern those activities that may affect quality of the project, including the health and safety of the general public as well as project personnel.
- It will be described in a formal document that incorporates the requirements of this section.
- It shall be implemented by written procedures and carried out throughout Phase 1 of the WVDP decommissioning in accordance with those procedures. The QA procedures will be consistent with regulatory and QA Program requirements.
- Activities affecting quality shall be accomplished under suitable controlled conditions. Controlled conditions include the use of appropriate equipment; suitable environmental conditions for accomplishing the activity, such as adequate cleanliness; and assurance that all prerequisites for the given activity have been satisfied.
- The program shall take into account the need for special controls, processes, test equipment, tools, and skills to attain the required quality, and the need for verification of satisfactory implementation.
- Management of organizations participating in the program shall regularly review and assess the status, adequacy, and compliance of the parts of the program that they will be implementing.
- It shall utilize this plan and appropriate implementing QA procedures to meet its objectives.
- It will require training and qualification of workers and quality verification personnel in accordance with DOE Order 414.1C, with instruction on implementing quality assurance in decommissioning activities and documentation of the objectives and content of the training or qualification, attendees, and dates of attendance.
- NRC will be notified when there are changes to the QA Program or organizational elements as approved in this plan before the revised QA Program is implemented.

8.3.2 Characterization and Final Status Survey Data

The portion of the QA Program that sets the requirements for characterization and survey data will ensure that the data sets are of the type and quality needed to demonstrate with sufficient confidence that decommissioning activities can be carried out in accordance with applicable requirements. The objective will be met through the use of the data quality control processes for data collection design, analysis, and evaluation.

The data quality control processes will ensure that: (1) the elements of the facility characterization and Phase 1 final status survey plans will be implemented in accordance with the approved procedures; (2) surveys will be conducted by trained personnel using

calibrated instrumentation; (3) the quality of the data collected will be adequate; (4) all phases of facility characterization and final survey data acquisition and evaluation will be properly reviewed, and oversight provided; and (5) corrective actions, when identified, will be implemented in a timely manner and determined to be effective. This portion of the QA Program will be applied to all aspects of final facility characterization and Phase 1 final status survey activities. Basic elements of the QA Program as they will be applied to characterization and survey data are discussed below.

As explained in Section 4, the underground waste tanks have previously been characterized for residual radioactivity and bounding source term estimates have been developed for other areas considered in dose modeling evaluations. Reports identified in Section 4 describe QA associated with obtaining characterization data for making source term estimates in these areas; the QA processes used were similar to those summarized below.

Training and Qualification

Personnel performing facility characterization and Phase 1 final status survey measurements will be trained and qualified in accordance with DOE Order 414.1C. Training will include procedures governing the performance of measurements, operation of field and laboratory instrumentation, and control of measurements and samples.

The extent of training and qualification will be commensurate with the education, experience and proficiency of the individual and the scope, complexity and nature of the activity. Records of training will be maintained in accordance with the approved course description for initial and continuing training for decommissioning.

Measurement Documentation Control

Date, instrument, location, type of measurement, and mode of operation will identify each measurement. Generation, handling, and storage of the original Phase 1 final status survey and facility characterization plans and data packages will be controlled. Records will be designated as quality documents and they will be maintained as such in accordance with WVDP procedures.

Survey and Sampling Methods

Areas or facilities to be characterized or surveyed will be designated as separate characterization or survey areas. Depending on its size, each area may be divided into smaller areas. The methods for determining the type and number of measurements required for each area are discussed in Section 9.

Written Procedures

Sampling and measurement tasks must be performed properly and consistently in order to assure the quality of the final results. The measurements will be performed in accordance with approved, written procedures that describe the methods and techniques used for the facility characterization or Phase 1 final status survey measurements and acceptance criteria to ensure that sampling and measurements are performed satisfactorily.

Control of Samples

Responsibility for the control of samples from the point of collection through the determination of the final results will be established by procedure. When control is to be transferred, chain of custody forms will accompany the sample for tracking purposes. Secure storage will be provided for archived samples.

Quality Assurance Project Plans

Quality assurance for each major task associated with characterization and the Phase 1 final status survey will be described in a QA Project Plan that provides a blueprint for how the quality system of this section will be applied to the particular task. Such plans will be consistent with guidance contained in the *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)* (NRC 2000). The applicable guidance in the *Uniform Federal Policy for Implementing Environmental Quality Systems: Evaluating, Assessing, and Documenting Environmental Data Collection/Use and Technology Programs* (DOE 2005) will also be considered.

Quality Control

Procedures will establish built-in QC verification in the processes for both field and laboratory measurements. The QC verifications will duplicate the original measurements where possible. Acceptance criteria will be established to ensure data are within appropriate bounding conditions. Laboratory analysis verification testing will make use of blank, spiked duplicate and replicate samples and measurements in addition to duplicates. If the acceptance criteria are not met, an investigation will be conducted to determine the cause and corrective action.

Selection, Calibration and Operation of Instrumentation

Proper selection and use of instrumentation will ensure that sensitivities are sufficient to detect radionuclides at the minimum detection capabilities as well as assure the validity of the data. Instrument calibration will be performed with traceable sources using approved procedures. Issuance, control and operation of instruments will be conducted in accordance with WVDP procedures. Instrument operability will be verified using background and check sources as specified in Section 9.

Control of Tools and Sample Containers

New sample containers will be used for each individual sample taken. This practice will ensure the data obtained from each sample will meet QA requirements. Tools will be decontaminated after each sample and surveyed for contamination prior to taking new or additional samples.

Control of Vendor-Supplied Services

Vendor-supplied services, such as instrument calibration and laboratory sample analysis, will be procured from appropriate vendors in accordance with approved quality and procurement procedures.

8.3.3 Engineering Design and Data, Calculations, and Modeling

Engineering designs and data, calculations, and modeling of engineered barrier modifications will be developed within the framework of applicable engineering requirements. The adequacy of these engineering products will be verified or validated by individuals or groups other than those who performed the work. Verification and validation work will be completed before approval and implementation.

A control process that meets the intent of the appropriate requirements of ASME NQA-1 (ASME 2000) will be implemented. Controls will be determined through a controlled process that considers environmental and quality impact.

Basic elements of the QA Program as they will be applied to engineering design modifications, engineering data, calculations, and system, structure, and component modeling are discussed below.

Design Control

The formal design process defines the control of design inputs, processes, outputs, changes, lines of communication, interfaces, and records. This process provides for timely and correct translation of design inputs into design outputs, effective coordination and interfacing of organizations participating in the design process, and acceptable and verified design outputs. Design and design modifications shall provide for the intended end use, including (but not limited to) inspection, acceptance criteria, and hazard mitigation.

Design inputs (such as engineering data) will be correctly translated into design outputs (such as specifications, drawings, procedures, and instructions). Calculations and associated design decisions will be checked for correctness during the design process. Design outputs will be verified to confirm that they will be suitable for their intended use.

Changes to final designs (including field changes and modifications and nonconforming items that will be dispositioned "use as is" or "repair") will be subjected to design control measures commensurate with those applied to the original design. These design control measures may include review of the relevant design analyses to verify their continued validity.

The acceptability of design activities and documents – including design inputs, processes, outputs, and changes – will be verified as appropriate. Computer programs will be proven through previous use, or verified through testing or simulation prior to use.

Control of Models and Calculations

Revisions to analytical and computer models that support decommissioning activities will be verified to ensure they satisfy design requirements and solve the right problem (e.g., correctly model physical laws and implements system, structure, or component design rules).

Calculations that support decommissioning activities will be completed, checked, reviewed, and approved prior to using their results. The process for developing calculations that support decommissioning activities will require that calculations define the input data,

assumptions, analytical methods, results, and conclusions. An independent reviewer will perform the verification of the correctness of the calculations including the validity of the input data and assumptions. The reviewer also will verify that any modeling of engineering barriers correctly models the design as described in the design documents. As stated above, computer programs will be proven through previous use, or verified through testing or simulation prior to use.

Written Procedures

The collection of engineering data and design, calculations, and modeling tasks must be performed properly and consistently in order to assure the quality of the final results. These tasks shall be performed in accordance with approved, written procedures. Such procedures will describe acceptable methods used for engineering tasks associated with decommissioning and contain acceptance criteria to ensure that these tasks will be performed satisfactorily.

8.4 Document Control

Documents that come under the oversight of the QA Program include, but are not limited to, the QA Manual or Plan, technical and QA procedures, engineering data documents, engineering drawings, calculations, instrument calibration records, survey and characterization documents, contractor and subcontractor quality control records, and personnel training and qualification records.

Measures shall be established to control the issuance of documents that prescribe activities affecting quality, such as procedures and drawings and changes thereto. These measures shall address development of the documents by the responsible party. This will assure that documents, including changes, will be reviewed for adequacy and approved for release by authorized personnel, and will be distributed to and used at the location where the prescribed activity is to be performed. Changes to documents shall be reviewed and approved by the same organization that performed the original review and approval or by another designated responsible organization.

All QA documents will be developed, issued, revised, and retired according to the QA procedures developed for handling these documents. These QA procedures shall be controlled to assure that current copies will be made available to personnel performing the prescribed activities. Required procedures shall be reviewed by a technically competent person other than the author, and shall be approved by a management member of the organization responsible for the prescribed activity. Significant changes to required procedures shall be reviewed and approved in the same manner as the original.

Documents affecting quality will be formally retired after their use has ended or after they are superceded by another project document. The QA Program will specify details of how this will be done.

8.5 Control of Measuring and Test Equipment

Measures shall be established to assure that tools, gauges, instruments, and other measuring and testing devices used in decommissioning activities important to health and safety will be properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits. See Section 9 for a description of survey test and measuring equipment, maintenance and calibration requirements, calibration documentation, and daily check source measurements. Only properly calibrated and maintained equipment will be used for decommissioning surveys and measurements. Documentation will be maintained to demonstrate that only properly calibrated and maintained equipment will be used; details of how this will be accomplished will appear in the QA Program.

8.6 Control of Purchased Material and Subcontractor Services

Measures shall be established to assure that purchased material, equipment, and services conform to the procurement documents. These measures shall include provisions, as appropriate, for vendor evaluation and selection, objective evidence of quality furnished by the vendor, inspection at the vendor source and inspection of products upon delivery.

The effectiveness of the control of contractor services shall be assessed at intervals consistent with the importance of the service. The adequacy of a vendor's QA program specified in procurement documentation shall be verified prior to use when appropriate. Vendors' adherence to their QA program shall also be verified as appropriate.

Commensurate with potential adverse impacts on quality or health and safety, material and equipment shall be inspected upon receipt at the WVDP site prior to use or storage to determine that the procurement requirements will be satisfied.

Materials, parts, or components that will be utilized for shipment of radioactive material shall be inspected upon receipt to assure that associated procurement document provisions have been satisfied. Measures shall be established for identifying nonconforming material, parts and components.

8.7 Corrective Action

Measures shall be established to assure that conditions adverse to quality such as failures, malfunctions, discrepancies, deviations, defective material and equipment, and non-conformances will be promptly identified and corrected. The identification of the condition adverse to quality, the cause of the condition and the corrective action taken shall be documented and reported to appropriate levels of management. All corrective actions shall be reviewed and approved by the decommissioning organization line management and concurred with by the QA Manager.

8.8 Audits and Surveillances

The WVDP will perform assessments of decommissioning work processes and operations through the WVDP decommissioning project organization self-assessments, audits, and surveillances. These may include, but will not be limited to, inspections/surveillances, tests, and QA audits.

The assessments will be provided by designated decommissioning project or qualified QA personnel who have sufficient authority and organizational independence to perform these assessments. These personnel will not have direct responsibilities in the areas they will be assessing. The assessments will provide (but not be limited to) the following:

- Methods to identify quality issues and problems;
- Recommendations for resolving quality issues and problems;
- Independent confirmation of resolutions and implementation of audit and surveillance findings by designated project or QA personnel;
- Tracking information on audit and surveillance findings and resolutions to trend quality issues and problems;
- Identification of improvements to decommissioning project work processes, operations, procedures, and the QA Program from trending information;
- Audit and surveillance reports which document the items identified above, that will be managed and controlled by decommissioning project procedures and designated project personnel;
- Information to line management and the QA Manager to ensure that further collection, analysis, or use of data will be controlled until the issue or problem is suitably resolved; and
- Information to line management and the QA Manager to ensure that further design, fabrication, construction, or operation of engineered features will be controlled until nonconforming, deficient, or unsatisfactory conditions have been suitably resolved.

8.9 Quality Assurance Records

Quality assurance records shall conform to the following requirements:

- Sufficient records shall be maintained to furnish evidence of activities affecting quality.
- Records shall be identifiable and retrievable.
- Measures shall be established which assure that qualification records of personnel performing special process activities, such as welding, nondestructive evaluation, inspection, etc., will be retained.
- Measures shall be established which assure that quality-related procurement documents will be retained.
- Measures shall be established which assure that appropriate records pertaining to audits will be retained.
- Measures shall be established which assure that records associated with radioactive material and personnel exposure controls will be retained.

- Requirements shall be established concerning record retention, such as duration, location, and assigned responsibility. Such requirements shall be consistent with the potential impact on quality, health and safety of the public, safety of project personnel, and applicable regulations.
- The QA Program will specify in particular where QA records will be stored during the decommissioning and after the decommissioning for the required retention period.
- QA records shall be periodically audited by the Decommissioning QA organization and stored in a designated QA records facility to be identified prior to implementation of this plan.

8.10 References

Code of Federal Regulations and Federal Register Notices

10 CFR 830.120, *Quality Assurance Requirements*.

DOE Orders, Policies, Manuals, and Standards

DOE Order 414.1C *Quality Assurance*. DOE, Washington, D. C., June 17, 2005.

Other References

ASME 2000, *Quality Assurance Program Requirements for Nuclear Facility Applications*, ASME NQA-1-2000. American Society of Mechanical Engineers, New York, 2000.

DOE 2005, *Uniform Federal Policy for Implementing Environmental Quality Systems: Evaluating, Assessing, and Documenting Environmental Data Collection/Use and Technology Programs*, DOE/EH-0667, Final Version 2. Intergovernmental Data Quality Task Force, Washington, D.C. March 2005.

NRC 2000, *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)*, NUREG-1575, Rev 1. NRC, Washington D.C., August 2000.

SAIC 2008a, *Technical Procedure No. 1, Internal Code Development, Verification and Maintenance for (1) Decommissioning and/or Long-term Stewardship EIS for the WVDP and the Western New York Nuclear Services Center, (2) WVDP Decommissioning Plan Project*, WV EIS/DP TP1, Revision 1. SAIC, Germantown, Maryland, January 30, 2008.

SAIC 2008b, *Technical Procedure No. 3, Code Modification, Verification, and Maintenance for Externally Acquired Software for (1) Decommissioning and/or Long-term Stewardship EIS for the WVDP and the Western New York Nuclear Services Center, (2) WVDP Decommissioning Plan Project*, WV EIS/DP TP3, Revision 1. SAIC, Germantown, Maryland, January 30, 2008.

SAIC 2009a, *Quality Assurance Project Plan for Preparation of (1) Decommissioning and/or Long-term Stewardship EIS for the WVDP and the Western New York Nuclear Services Center, (2) WVDP Decommissioning Plan Project*, WV EIS/DP QAPP, Revision 2. SAIC, Germantown, Maryland, June 29, 2009.

SAIC 2009b, *Technical Procedure No. 2, Calculations and Analyses for (1) Decommissioning and/or Long-term Stewardship EIS for the WVDP and the Western New York Nuclear Services Center, (2) WVDP Decommissioning Plan Project*, WV EIS/DP TP2, Revision 2. SAIC, Germantown, Maryland, June 29, 2009.

SAIC 2009c, *Technical Procedure No. 4, Software Configuration Management for (1) Decommissioning and/or Long-term Stewardship EIS for the WVDP and the Western New York Nuclear Services Center, (2) WVDP Decommissioning Plan Project, WV EIS/DP TP4*, Revision 2. SAIC, Germantown, Maryland, June 29, 2009.

WSMS 2009a, *Washington Safety Management Solutions LLC Quality Assurance Plan*, WSMS QA 100, Revision 1. Washington Safety Management Solutions, Aiken, South Carolina, August 10, 2009.

WSMS 2009b, *Preparation of WSMS Technical Documents for the West Valley Integrated Decommissioning and/or Long-Term Stewardship EIS and WVDP Decommissioning Plan Project*, WSMS-OPS-05-0004, Revision 2. Washington Safety Management Solutions, West Valley, New York, September 29, 2009.