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Bell Laboratories
600 Mountain Avenue
Murray Hill, NJ 07974

MS16
Q-9

May 21, 2009

Stephen Hammann
Division of Nuclear Materials Safety
U. S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406-1415

03005224

Re: License #29-00170-03 Control No. 142518
#SMB-1260 142519

04008478

Dear Mr. Hammann:

With this letter we are responding to your letter of 4/6/09 that contained 3 issues.

1. Enclosed is the Quality Assurance Project Plan that you requested for review.
2. The areas originally submitted with the Plan as "non-impacted" will be considered Class 3 areas.
3. We confirm that the removal fraction is less than or equal to one percent.

We will await your approval before scheduling our contactor to commence the final stages of decontamination and surveys. Please contact me if you need additional information. I can be reached at the above address or at (908)-582-5907 or at rquick@alcatel-lucent.com.

Sincerely,

Richard Quick
Senior Manager – Radiation Safety Officer

Encl.: QAPP

Cc w/encl
Edward Truskowski, NJ-DEP
NJ-DEP Correspondence File
NRC File

142518/142519

MATERIALS-002

Alcatel-Lucent
Murray Hill Facility
Quality Assurance Project Plan

600 Mountain Avenue
Murray Hill, NJ 07974

NRC License Numbers:
29-00170-03, SMB-1260
NJ DEP License Number:
NJSL-10078/01/21

Rev. 0
April 2009

Prepared:	Dave Culp	Radiological Engineer	Date:	4/29/09
Technical Review:	Ken Gavlik	Project Manager	Date:	4/29/09
Approved:	Richard Quick	Senior Manager / RSO	Date:	5/1/09

Prepared by:

Chase Environmental Group
109 Flint Road
Oak Ridge, TN 37830

TABLE OF CONTENTS

ACRONYM LIST

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
$DCGL_W$	Derived Concentration Guideline Level – Wilcoxon Rank Sum
DP	Decommissioning Plan
DQA	Data Quality Assessment
DQO	Data Quality Objective
FSSR	Final Status Survey Report
HPS	Health Physics Supervisor
HPT	Health Physics Technician
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDC	Minimum Detectable Concentration
NRC	U.S. Nuclear Regulatory Commission
NIST	National Institute of Standards and Technology
PM	Project Manager
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
RSO	Radiation Safety Officer
TEDE	Total Effective Dose Equivalent

1.0 Introduction

Alcatel-Lucent (Lucent) has decided to cease licensed activities and terminate two of three US Nuclear Regulatory Commission (NRC) licenses[1] at their facility located at 600 Mountain Avenue, Murray Hill, NJ 07974. The facility will be decommissioned for unrestricted use (with the exception of irradiator operations) and maintained by Lucent. Lucent desires to terminate Byproduct Materials license number 29-00170-03 and Source Materials license number SMB-1260. Lucent will maintain the irradiator license number 29-00170-08.

Lucent has procured Chase Environmental Group (Chase) to perform all decommissioning activities. Decommissioning will be conducted under the provisions of the Lucent Byproduct radioactive materials license number 29-00170-03 and in accordance with an NRC-approved Decommissioning Plan (DP). This Plan is designed to support the DP. Many quality assurance (QA) elements are incorporated into the DP and are referenced in this Plan to minimize duplication. This plan will also be supported by the Chase corporate QA program.

Residual radioactivity at the site may consist of surface contaminated building structures and contaminated internal surfaces of building systems. The site has undergone several decommissioning projects in the past and is expected to meet release criteria without decontamination. However, minor decontamination is expected for ALARA purposes.

All project activities shall be conducted in accordance with this Quality Assurance Project Plan (QAPP) and in a manner consistent with selectively applied elements of the Chase Quality Assurance Program which addresses the quality assurance criteria of ASME NQA-1/10 CFR 830.120 for Nuclear Facilities. Quality assurance (QA) criteria are applied in a graded manner to achieve a balance between the rigor of application of quality assurance measures and the scale, cost, and complexity of the work involved. This project-specific QAPP was developed utilizing the guidelines of MARSSIM Section 9 and will be reviewed and approved by the NRC prior to commencing decommissioning operations.

2.0 Chase Quality Assurance Policy

Accountability for quality is everyone's responsibility, extending from the Corporate Quality Assurance Manager and Project Manager through established lines of authority to all project personnel, who are responsible for the requisite quality of their own work. Quality assurance will be implemented by personnel conducting their activities to meet requirements and expectations according to established plans and procedures that reflect the way business is to be conducted on the project

[1] Lucent also plans to terminate their NJ Department of Environmental Protection (NJDEP) license number NJSL-10078/01/21. Materials possessed under NRC licenses and under the NJ License are considered in aggregate in the Decommissioning Plan.

All project personnel are responsible for executing their work and ensuring that quality-affecting activities within their purview are performed in conformance with applicable plans and procedures. All personnel have the authority and responsibility to stop his/her own work and the responsibility to report such conditions when continuation will produce or conceal results that are not in accordance with prescribed requirements, and/or pose imminent radiological or safety hazard to employees, the environment, or the public. Project personnel have sufficient freedom, authority, access, and responsibility to:

- Identify quality problems, deficiencies, nonconformance, and noncompliance with regulatory and performance objectives.
- Initiate, recommend, and provide solutions through designated channels.
- Verify implementation of the solutions.
- Assure that deficient work is stopped or is proceeding under controlled conditions until proper disposition of the unsatisfactory condition is accomplished.
- Identify and report opportunities for continuous improvement.

3.0 Quality Assurance Goals

The following quality assurance goals have been established for the project:

- Safely perform the project on time and under budget with no quality defects.
- Perform all activities in full compliance with all applicable state, federal and local regulations.
- Ensure technically defensible data are generated to aid in determining whether or not the facility meets the release criteria for unrestricted use specified in 10 CFR 20 Subpart E and project ALARA goals.
- Demonstrate that removable residual radioactivity at the site is 1% or less of total activity.

4.0 Project Management

4.1 Chase Project Management Policy

All Chase projects shall be managed in a manner consistent with the agreement between Chase and the Customer; Chase principals, values and organizational philosophy; and approved Chase standard operating procedures and plans. Our project management policy embodies the basic principals listed below:

- Chase's first priority is cultivating worker and workplace safety.
- Our project team is key to our success.
- Quality is defined as meeting all requirements, including environmental, safety and health regulations.

- Project Managers must have a clear understanding of their responsibility, accountability and limits of authority.
- Project Managers have the responsibility and authority to achieve quality, meet schedules, and budget.
- Project Managers have the responsibility and authority for the technical, contractual and financial aspects of the project.

4.2 Project Organization

The organizational units comprising the Project are discussed in the DP. The organization includes personnel responsible for achieving quality and those responsible for verifying its achievement, normally those who did not perform the activities. Details regarding duties and responsibilities of each job title are presented below.

4.2.1 Responsibilities and Authorities

The quality-related responsibilities for the management positions of the Project's organizational units are briefly described in the paragraphs below. Where titles are used to designate responsibility, the named position has the authority to designate another qualified position within the organization to perform an assigned task. The incumbent, however, retains the responsibility (is accountable) for implementing the requirements. Due to the limited scope of this project, several positions may be filled by one individual or personnel may change positions during the project to accommodate work flow.

4.2.2 Project Manager

The Chase Project Manager will be selected by Chase management and approved by Lucent. The Project Manager (PM) is responsible for the overall safe, timely, and cost-effective completion of the project. This individual shall supervise the Project Health Physics Supervisor, the Administrative Assistant, the CAD Operator, and subcontractors; approve all project expenditures; provide interface between the client and company resources; and maintain project budget and schedules. In addition, the PM is responsible for ensuring the elements of this QAPP are successfully implemented.

The Project Manager is in charge of all aspects of a project and is in direct contact with the designated client representative and Chase management. Responsibility and authority for the conduct of the project are limited only by the terms of the contract, company policies, and limitations specifically stated in this Plan. Specific aspects of project management include:

- Providing leadership to the project team
- Ensuring safety and quality performance
- Daily project coordination and direction
- Meeting client and Chase requirements
- Establishing project management control systems
- Meeting scope, schedule and budget requirements

- Keeping management informed of project progress
- Maintaining control of project equipment and inventories
- Establishing performance measures and reporting progress
- Defining the project organization and staffing the positions with qualified personnel utilizing Chase Human Resources
- Providing effective leadership in direction, coordination, planning cost control, schedules and resources through continuous communications with project team members and the client

The Project Manager's principal job is to accomplish the assigned tasks through the active support of others. The Project Manager is responsible for the success of the project. The ultimate goal is to achieve unrestricted release of the facility and leave behind a satisfied client by delivering a quality project on time and within budget.

4.2.3 Health Physics Supervisor

The Health Physics Supervisor reports directly to the Project Manager and is responsible for overall site radiological controls, industrial safety and industrial hygiene; supervises Count Room Technician and Health Physics Technicians; reviews all radiological surveys and sample results; maintains the survey database; ensures that health and safety programs are followed; performs pre-field activity safety walk downs; stops work as necessary when safety issues warrants; functions as the site project manager in the absence of the Project Manager.

4.2.4 Health Physics Technicians

Health Physics Technicians report to the Health Physics Supervisor; monitor all radiological work to ensure it is performed safely and in compliance with RWPs, the customers radioactive materials license, permits, plans, and procedures; perform and document all radiation surveys; maintain survey packages; and perform other duties as assigned by the Health Physics Supervisor.

4.2.5 Count Room Technician

The Count Room Technician reports to the Health Physics Supervisor; reports samples and analysis in the on-site laboratory, reports and ships samples for off-site analysis; maintains records of instrument calibration and sample results; performs instrument functional checks; analyzes smears and air samples, maintains results of all radiological surveys, and performs other duties as assigned by the Health Physics Supervisor.

4.2.6 Draftsman

The Draftsman reports to the Health Physics Supervisor; performs all survey mapping and layouts required for characterization and final surveys, and the FSSR.

4.2.7 Decontamination Technicians

Decontamination Technicians report to the Health Physics Supervisor; perform decontamination of materials and equipment; dismantle, transport, and store materials and equipment as required; operate and maintain construction and decontamination equipment; and perform other functions as directed by the Health Physics Supervisor.

4.2.8 Administrative Assistant

The Administrative Assistant reports to the Project Manager, maintains all appropriate project records including shop drawings, contract documents, accounting records, etc.; interfaces with the Count Room Technician to assist in record keeping; provides copies of project records; prepares, tracks and reports on project finances and schedules; attends all project meetings; takes and distributes minutes; and performs other duties as assigned by the Project Manager.

4.2.9 Chase Corporate Project Support

The project will be supported by corporate personnel that will provide input and oversight to project activities to ensure that operations are conducted in strict accordance with all health physics, industrial safety and health, industrial hygiene, quality assurance, human resources, accounting, and administrative requirements.

4.3 Project Planning

Project planning will be coordinated among participating personnel or organizations and will include, but need not be limited to the following elements:

- Defining program or task scope and objectives plus listing the primary requirements and activities involved in the work by developing Work Breakdown Structures (WBS) and project schedules outlining major milestones, resource loading, and critical path items.
- Identifying specific environmental data to be collected and analyzed, including those data that measure the success or failure of the project.
- Identifying applicable technical, regulatory, or program-specific quality standards, criteria, or objectives.
- Specifying Data Quality Objectives (DQO) and decision error limits.
- Identifying procedures for quality verification.
- Identifying personnel, equipment, and other resources needed to perform necessary activities.
- Determining necessary assessment tools (i.e., program technical review, peer reviews, surveillance, and technical audits) as needed or specified by this QAPP.

- Identifying methods or procedures for field and laboratory sampling, testing, and analysis activities, as well as the appropriate mechanism for making changes to the survey design.
- Defining necessary records.

4.4 Task Organization

An outline of the work breakdown structures (WBS) for the full scope of work activities anticipated for the project is presented in Table 4-1. These tasks, when completed, allow for submittal of the FSSR to the NRC as documentation to support approval of license termination. The Project Manager may assign subtasks under any WBS as necessary to properly track work items. A detailed description of the project is found in the Chase technical proposal, contract documents, and the DP.

Table 4-1 Work Breakdown Structures

Number	Work Breakdown Structure
1.0	Premobilization
2.0	Mobilization
3.0	Characterization Surveys
4.0	Decontamination
5.0	Waste Packaging
6.0	Remedial Action Surveys
7.0	Final Status Surveys
8.0	QA Surveys
9.0	Restoration
10.0	Waste Shipment, Processing and Disposal
11.0	Demobilization
12.0	Final Status Report Preparation
13.0	Support for any Regulatory Confirmation Surveys
14.0	Support for License Termination

4.5 Training Requirements

Project personnel shall be indoctrinated and trained in accordance with the requirements of Chase procedures QAP 2.04 "QA Indoctrination and Training," this QAPP, project-specific documents, and if required, customer/facility procedures applicable to the scope of work.

- Indoctrination to the project scope of work shall be provided to all new hire project personnel.
- Project personnel shall be provided sufficient training prior to commencement of the individuals assigned task(s). The extent of training shall be determined by the Project Manager. The extent of training shall be based on the scope, complexity, and nature of the assigned task(s), education, experience, previous training, and proficiency of the individual.
- The training method employed may be one or all of the following:

- Classroom instruction;
- Reading assignments;
- On-the-job; and
- Practical demonstration

- Education and experience qualifications shall be documented by resume with relevant formal educational training certificates enclosed with the resume.
- All forms of personnel indoctrination and training, in addition to resumes and job descriptions, shall be documented and maintained in accordance with Chase procedure QAP 6.01, "Document Control" and QAP 17.01, "Quality Assurance Records".

5.0 Quality Objectives and Criteria for Data Measurement

5.1 Release Criteria

The radiological release criteria of NRC 10CFR20 Subpart E for unrestricted use are used for decommissioning this facility. Specifically, the facility will be surveyed in accordance with the guidance contained in MARSSIM to demonstrate compliance with the criteria of 10CFR20.1402, "Radiological Criteria for Unrestricted Use." The criteria is that residual radioactivity results in a TEDE to an average member of the critical group that does not exceed 25 mrem per year and that the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA)

5.2 ALARA Goal

An ALARA goal has been established to demonstrate compliance with the New Jersey release criterion of 15 mrem/year.

5.3 DCGLs

Site-specific gross alpha and gross beta DCGLs based on limiting nuclides have been established as described in the DP. These gross DCGLs are presented in Table 5-1.

Table 5-1 - Gross DCGLs

Type	DCGL ($dpm/100cm^2$)	
	Total	**Removable**
Gross Alpha	5,200	52
Gross Beta	18,000	180

Where both gross alpha and gross beta measurements are obtained, the unity rule will be applied.

5.4 Investigation Levels

Investigation levels are used to flag locations that require special attention and further investigation to ensure areas are properly classified and adequate surveys are performed. These locations are marked and receive additional investigations to determine the concentration, area, and extent of the contamination. The survey investigation level for each type of measurement is listed by classification in Table 5-2.

Table 5-2 - Survey Investigation Levels

Survey Unit Classification	Flag Direct Measurement Result When:	Flag Scanning Measurement Result When:	Flag Removable Measurement Result When:
1 or 2	>60% of DCGL	>MDC	>MDC
3	>MDC	>MDC	>MDC

5.5 Data Quality Objectives (DQO)

The Data Quality Objective process as described in MARSSIM is used throughout the design and implementation of final status surveys. The following is a list of the major DQOs for the survey design described in the DP:Static measurements will be taken to achieve an MDCstatic of less than 50% of the DCGL.

- Scanning will be conducted at a rate to achieve an MDCscan of less than 50% of the DCGL.
- Removable contamination measurements will be counted to an MDCsmear of less than 50% of the removable DCGL.
- Individual measurements will be made to a 95% confidence interval.
- Decision error probability rates will be set at 0.05 for both α and β.
- The null hypothesis (H0) and alternate null hypothesis (HA) are that of NUREG 1505 scenario A:
  - H_0 is that the survey unit does not meet the release criteria
  - HA is that the survey unit meets the release criteria
- A minimum of 5% duplication of final status surveys will be performed for Quality Assurance.
- Characterization and remedial action support surveys will be conducted under the same quality assurance criteria as final status surveys such that the data may be used as final status survey data to the maximum extent possible.

6.0 Measurement/Data Acquisition

6.1 Sample Handling and Custody Requirements

All samples are radiological in nature and do not need preservatives or special handling procedures except routine radiological controls sufficient to prevent cross-contamination.

The sample chain-of-custody maintains the integrity of the sample; that is, there is an accurate record of sample collection, transport, analysis, and disposal. This ensures that samples are neither lost nor tampered with, and that the sample analyzed in the laboratory is actually and verifiably the sample taken from a specific location in the field. Samples sent off-site for analysis will use an approved Chain of Custody Procedure.

6.2 Analytical Methods Requirements

Final status surveys are performed to demonstrate that residual radioactivity in each survey unit satisfies the predetermined criteria for release for unrestricted use. The final status surveys will be conducted using the Data Quality Objective (DQO) process. Characterization and remedial action survey data will be used as final status survey data to the maximum extent possible in order to minimize overall project costs.

Final status surveys will be conducted by performing required scan surveys, total surface activity measurements and removable activity measurements as discussed further in this section. All survey data shall be documented on survey maps and associated data information sheets.

6.2.1 Data Collection

The data collection process will be defined, controlled, verified, and documented. The general survey approach and methodology is outlined in the DP. The following activities shall be addressed in the procedures:

- Scanning and direct measurements
- Field sampling methods
- Sample handling and custody
- Analytical operations for bench top laboratory equipment

The procedures shall be reviewed and approved. Procedures shall be of a design which assures data are traceable to the survey and analytical procedures, performance standards, data collectors, analysts and measuring and test equipment.

6.2.2 Scans

Scanning is used to identify locations within the survey unit that exceed the investigation level. These locations are marked and receive additional investigations to determine the extent and magnitude of the contamination. The percentage of surfaces scanned depends on the area classification and surface type. Scan percentages are provided in the DP.

6.2.3 Samples (Static Measurements)

Static measurements will be taken on building surfaces and system internals to the extent practical in impacted areas utilizing instrumentation of the best geometry based on the surface at the survey location. Additionally, locations of elevated activity identified and marked during the scan survey will require direct survey measurements. The number of

direct measurements to be performed during a survey is calculated using the methods specified in the DP. Essentially, the guidelines specified in MARSSIM are being used to determine that number. MARSSIM specifies the statistical considerations for acceptance of the number of samples and the sample results.

6.2.4 Smears

Removable contamination measurements (smears) will be collected on building structural surfaces at each static measurement sample location. Additionally, removable contamination measurements will be collected for building system internals. An area of approximately $100cm^2$ will be wiped if possible. Swabs may be used when system or component access points are not large enough to allow for a $100cm^2$ wipe.

6.3 Quality Control Requirements

6.3.1 QA Surveys

To check data reproducibility, a small subset of sample locations (5%) will be independently monitored by different technicians using different instruments to verify the reproducibility of results recorded during Final Status Surveys. QA surveys will be considered satisfactory if the conclusions drawn from the QA surveys are the same as those drawn from the final status surveys. However, the reviewer shall note any anomalies or inconsistencies that may require investigation.

6.3.2 Survey Documentation

A survey package will be developed and approved by the Project Manager for each survey unit containing the following:

- Survey Instruction Sheets
- General survey requirements
- Instrument requirements with associated MDCs, count times and scan rates
- Survey Maps
- Overview maps detailing survey locations and placement methodology
- Survey Data Sheets
- Signature of Preparer, Surveyor and Reviewer

6.4 Instrument/Equipment Testing, Inspection, and Maintenance Requirements

Measuring and Test Equipment (M&TE) shall be controlled in accordance with Chase procedure QAP 12.01, "Acquisition and Calibration of Measuring and Testing Equipment" and equipment specific procedures. M&TE shall be calibrated or adjusted in accordance with manufacturer's instructions or by subcontracted licensed calibration facilities. The selection of M&TE shall be controlled to ensure that the items are of the proper type, range, accuracy and tolerance to accomplish conformance with specified requirements.

When M&TE is found to be out of calibration or not functioning as expected, evaluations shall be made to assess the validity of the data obtained since the last performance test. This evaluation shall be documented and, if required, processed as a nonconforming condition.

M&TE documentation shall be processed and maintained as records in accordance with Chase procedure QAP 17.01, "Quality Assurance Records." Documentation may include but is not limited to the following:

- Calibration Procedures
- Calibration Certificates
- Calibration Schedules
- M&TE Inventory Lists
- Source Response Checks (Functional Checks)
- Nonconformance and Corrective Action Reports

6.4.1 Instrument Functional Checks

Functional checks will be performed at least daily when in use. The background, source check, and field measurement count times for radiation detection instrumentation will be specified by procedure to ensure measurements are statistically valid. Background readings will be taken as part of the daily instrument check and compared with the acceptance range for instrument and site conditions. If an instrument fails a functional check, all data obtained with the instrument since the last satisfactory check will be evaluated for usability by the Project Manager.

6.4.2 Instrument Calibration and Frequency

Laboratory and portable field instruments will be calibrated at least annually with National Institute of Standards and Technology (NIST) traceable sources, where feasible, and to radiation emission types and energies that will provide detection capabilities similar to the nuclides of concern.

6.4.3 Determination of Counting Times and Minimum Detectable Concentrations

Minimum counting times for background determinations and measurement of total and removable contamination will be chosen to provide a minimum detectable concentration (MDC) that meets the criteria specified in the DQOs. Equations used to determine MDCs and a priori estimates of MDCs for each instrument and analysis are provided in the DP. Alternate or additional instrumentation with similar detection capabilities may be utilized as needed for survey requirements with CRSO approval as long as Data Quality Objectives (DQOs) are met.

6.4.4 Inspection / Acceptance Requirements for Supplies and Consumables

There are no quality related supplies or consumables.

7.0 Assessment / Oversight

7.1.1 Quality Assurance Audits and Surveillances

The Quality Assurance Manager shall be responsible for the performance of planned and periodic audits of project activities. These audits shall be scheduled in a manner that will provide sufficient coverage and coordination of activities throughout the duration of the project. These audits will verify compliance with the requirements specified in this QAPP, related procedures, plans, and regulatory requirements. These audit activities also provide a mechanism to identify opportunities for continuous improvement. Quality Assurance Project audits shall be performed and documented in accordance with Chase procedure QAP 18.01, "Internal Audits."

In addition, the Project Manager shall perform periodic surveillances to monitor and document compliance with this QAPP and standard radiological and safety practices. Identified departures from specified requirements shall be treated as non-conformances.

Audit and surveillance reports and associated documentation shall be processed and maintained in accordance with Chase procedure QAP 17.01, "Quality Assurance Records."

7.1.2 Reports to Management

The Project Manager will prepare reports on a regular basis and submit to Chase management. Reports will include comparison-to-estimates for costs, schedule and productivity. Additionally, the Project Manager will provide reports to Chase management and Lucent representatives on any condition adverse to safety or quality, out of scope conditions or deviations from plans or procedures. NRC notification is required if emergent conditions arise that would cause the scope of work or schedule to significantly change or if deviations from the approved DP are necessary.

8.0 Data Validation and Usability

All final status data shall be verified and validated. Verification personnel, whether in the line or organizationally independent, have sufficient freedom, authority, access, and responsibility to:

- Identify quality problems, deficiencies in hardware and documentation, and noncompliance with performance objectives.
- Initiate, recommend, or provide solutions through designated channels.
- Verify implementation of the solutions.
- Assure that deficient work is stopped or is proceeding under controlled conditions until proper disposition of the unsatisfactory condition is accomplished.

8.1.1 Preliminary Data Review

A preliminary data review will be performed for each survey unit to identify any patterns, relationships or potential anomalies. The following preliminary data reviews will be performed for each survey unit:

- Calculations of the survey unit mean, median, maximum, minimum, and standard deviation for each type of reading.
- Comparison of the actual standard deviation to the assumed standard deviation used for calculating the number of measurements. If the actual standard deviation is greater than estimated, the minimum number of samples shall be calculated using the actual standard deviation to ensure a sufficient number of samples have been obtained.
- Comparison of survey data with applicable investigation levels.

Additionally, measurement data are reviewed and compared with the DCGLs and investigation levels to identify areas of elevated activity and confirm the correct classification of survey units. If an area is misclassified with a less restrictive classification, the area will be upgraded and surveyed accordingly. Field data will be reviewed and validated to ensure:

- Completeness of forms
- The correct type of survey has been assigned to the survey unit
- The MDCs for measurements meet the established data quality objectives; independent calculations will be performed for a representative sample of data sheets and survey areas.
- Instrument calibrations and daily functional checks have been performed accurately and at the required frequency.

8.1.2 External Laboratory Data Validation

External analytical laboratories, if used, will be required to provide their own data validation package for review. The HPS will review the sample data to ensure chain of custody has been preserved, all samples taken having corresponding sample results provided, and limits of detection are at or below criteria specified in DP.

8.1.3 Determining Compliance

For Class 1 areas, if it is determined that all total activity results are less than the applicable DCGL, then no further statistical tests are required. If any of the total activity measurements are greater than the $DCGL_W$, then the survey unit fails and the null hypothesis is not rejected.

The Sign test is used to determine the minimum number of sample locations. However, the Sign test is not performed in this survey design because the total activity DCGL is used as a maximum. If all measurements are less than the DCGL, performance of the Sign test is not necessary because the survey unit will pass the Sign test.

For Class 2 and Class 3 areas, data results are initially compared to the investigation levels. These investigation levels are provided to help ensure that survey units have been properly classified. If all data results in Class 2 or 3 areas are less than the investigation levels, then the survey unit is determined to meet the release criterion. If these investigation levels are exceeded, then an investigation is performed to verify the initial assumptions for classification and determine the appropriate resolution (e.g., additional scans , reclassification, or no action if significantly below the DCGL).

Removable contamination measurements will be compared directly to the applicable DCGL. No contingency is established for elevated removable contamination. Therefore, if any removable contamination is detected which exceeds the removable contamination DCGL, then the survey unit is determined not to meet the release criterion. However, if all removable contamination measurements are less than the removable contamination DCGL, then compliance shall be determined based on total activity measurements.

9.0 Nonconformance Control and Corrective Action

All project personnel shall be responsible for notifying their supervisor, the Project Manager, or the Quality Assurance Manager of conditions or items that do not meet specified requirements. Chase policies define the controls, which addresses the following measures:

- Identification or segregation of the nonconformance
- Documentation of the nonconformance
- Evaluation of the nonconformance
- Disposition and justification provisions
- Notification to affected personnel or organizations
- Verification of disposition implementation

All project personnel are encouraged to identify any activity, process, or procedure that could lead to a potential non-conformances or a condition adverse to quality. Chase procedure QAP 16.01, "Corrective Action Administration" also provides the reporting and evaluation requirements for preventative actions resulting in the elimination of potential quality problems. All non-conformances, corrective actions, and preventative actions shall be documented and maintained in accordance with Chase procedures QAP 6.01 "Document Control" and QAP 17.01 "Quality Assurance Records".

10.0 Document Control and Quality Assurance Records

Project documents and revisions shall be controlled in accordance with Chase "Document Control" procedure QAP 6.01. These documents include but are not limited to the following:

- This Quality Assurance Project Plan

- Supporting Quality Assurance Procedures
- Work Instructions
- Decommissioning and Decontamination Plans
- Survey Plans and Data
- Project-Specific Procedures
- Data Validation and Data Verification
- Measuring and Test Equipment Calibration Data
- Nonconformance and Corrective Action Reports
- Surveillances and Audit Reports

Project documents shall be reviewed for adequacy and approved by authorized personnel prior to issuance. The document control measures employed shall insure that only the most current documents are in use during the performance of project activities.

Project documents that have been identified as Quality Assurance Records shall be maintained in accordance with Chase procedure QAP, 17.01, "Quality Assurance Records." Project-specific and supporting Quality Assurance procedures, work instructions, quality plans and other documents which specify quality requirements or prescribe activities affecting quality shall define the required documents or data to be maintained as Quality Assurance Records. Records shall be protected against damage, deterioration or loss.