Year Three Work Plan

Long-Term Performance of Materials Used For High-Level Waste Packaging

U.S. Nuclear Regulatory Commission

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7. QUALITY ASSURANCE

The NRC Waste Form Program will be responsive to the 18 criteria of a Quality Assurance Program as identified in 10 CFR 50 Appendix B. Each of the 18 criteria are discussed below as to how they interact with the overall program.

7.1 Organization

The BCL organizational chart for the program is shown in Figure 7.1. Note that quality assurance is independent of the organization performing the work.

7.2 Quality Assurance Program

The quality assurance program for this project has been established to help ensure reliability and quality of the research program. This includes both the experimental and analytical portions of the program. Provisions will be made to ensure proper implementation of the program through systematic surveillance and audits. Existing QA procedures will be modified or expanded and new procedures will be generated where needed to meet the program requirements. Personnel verifying activities affecting quality will be indoctrinated and trained in the principles, techniques, and requirements of the activity being performed. Training and certification of personnel will be documented as required by the BCL-QA HL-1 manual.

7.3 Design Control

The design phase of the program has been defined and the design interface with other tasks has been identified. Design control encompasses the issuance of control and adherence to such things as scope of work, task definitions, plans and procedures. Important aspects include review by the Design Review Board which has membership as shown in Figure 7.1. Activities will be carried out in a planned, controlled and orderly manner. Provisions will also be made to check the technical adequacy of design documents.

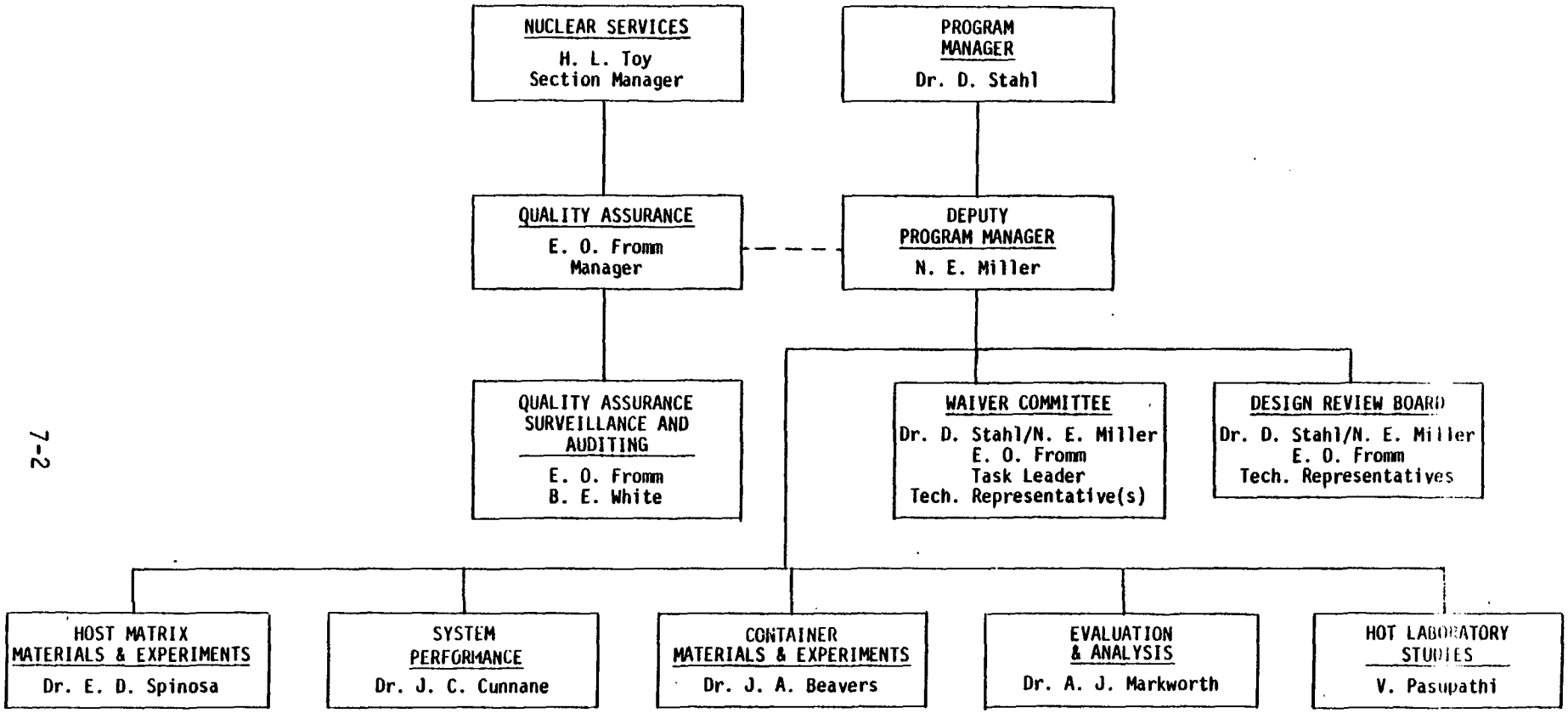

FIGURE 7.1 ORGANIZATION CHART

7.4 Procurement Document Control

All program procurement requisitions for quality related items for the programs are reviewed by QA personnel to ensure that appropriate requirements are initiated upon the supplier. All suppliers of quality related items will be qualified in accordance with Paragraph 4 of Section HL-E-1 of the BCL-QA manual. QA Purchase Requisition Control Form HL-BC-1 and QA Receiving Control Form HL-BC-2 are the applicable documents related to procurement document control.

7.5 Instructions, Procedures, and Drawings

Existing instructions and procedures will be modified, and when required, new instructions and procedures will be generated for these tasks where activities affecting quality are prescribed.

7.6 Document Control

Procedures for the review, approval, and issuance of experimental and analytical documents, and changes thereto, are established to assure technical adequacy and inclusion of appropriate quality requirements prior to implementation. Procedures are established to ensure that the required documents are available at the work locations where the activity will be performed. Procedures are established to ensure that all obsolete or superseded documents are removed and replaced by applicable revisions in the work areas in a timely manner. A master list is established to identify the latest revisions of instructions and procedures and procurement documents.

7.7 Control of Purchased Material, Equipment, and Services

Surveillance, and where needed, audits or inspections, will be performed to ensure that the supplier complies with the quality requirements as stated on the purchase requisition. Qualification of suppliers for quality related equipment and services is documented.

Receiving inspection of materials, [illegible] equipment is carried out to ensure that proper identification is ma[illegible] for traceability. Certificates of conformance, attesting that the material or component conforms to specified requirements, will be maintained and made available for inspection at BCL for the contract period.

7.8 Identification and Control of Materials, Parts, and Components

Procedures are established at BCL to ensure that identification of quality items is maintained (either on the item or on records traceable to the item) to preclude the use of incorrect or defective items.

7.9 Control of Special Processes

Procedures, equipment, and personnel associated with special processes will be qualified in conformance with applicable codes, standards, and QA procedures and specifications. The QA organization will be involved in qualification activities to ensure satisfactory performance.

Qualification records of procedures, equipment, and personnel associated with special processes will be established, filed, and kept current.

7.10 Inspection

Inspection procedures will be generated, specifying the inspection method, equipment, documented checklists, or data forms to verify conformance of an item or activity to specific requirements of the program. In any inspection, the inspector is independent of the program worker performing the machining, fabrication or assembly and his direct supervisor.

7.11 Test Control

Test procedures specifying the test method and equipment and documented check lists of data forms will be prepared to verify conformance.

7.12 Control of Measuring and Test Equipment

Only tools, gages, instruments, and other quality related data-generating equipment will be used on this program. Equipment will be calibrated where possible to a standard traceable to NBS on a regular basis.

7.13 Handling, Storage, and Shipping

The handling of all quality related items will be performed under controlled conditions predetermined to prevent damage, loss, minimize deterioration, and assure safety.

7.14 Inspection, Test, and Operating Status

The status of inspection and test activities will be documented in records traceable to the item. The item will be tagged or identified where possible to ensure that the tests or inspections are performed. All items not meeting the inspection or test specification will be marked and separated from the approved items to prevent their inadvertant use.

7.15 Control of Nonconforming Items

All items or operations not meeting specifications or performed without approved procedures will be documented using a non-conformance report (NCR). The NCR can be initiated by anyone associated with the task or project. All NCR's are processed as outlined by Section N of the BCL-QA Manual.

7.16 Corrective Actions

All proposed corrective actions will be submitted to the Waiver Committee for approval of the adequacy and time schedule of the action. The cause of the nonconformance will be determined, if possible, and corrective action taken to preclude its recurrence. Corrective action will conform to Section Z of the BCL-QA Manual.

Followup actions will be taken by QA to verify implementation of the corrective action and to close out the corrective action in a timely manner.

7.17 Quality Assurance Records

Records which furnish documentary evidence of quality will be specified, prepared, and maintained. The records will be made legible, identifiable, and retrievable and will be identified as to retention time. Quality assurance personnel will be responsible for maintaining the record system.

7.18 Audits

An audit is an evaluation of objective evidence to determine the degree of compliance with established controls.

Audits will be planned and implemented in accordance with Section A of the BCL-QA Manual. They will be performed in accordance with pre-established written procedures or checklists and conducted by trained personnel having no direct responsibility in the areas being audited.