

TAILORED CONTRACT CONDITIONS, TECHNICAL, STANDARD FOR THE APPLICATION RENEWAL PROJECT

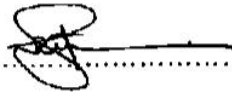
SUBTITLE : PART 3: NON-COMPLEX PROGRAMMES


**SUMMARY : ARMSCOR'S TECHNICAL CONTRACT
REQUIREMENTS FOR ACQUISITION,
MANAGEMENT OF ENGINEERING EFFORT
AND OTHER TECHNICAL WORK.**


**KEY WORDS : TECHNICAL CONTRACT CONDITIONS,
ENGINEERING EFFORT, PROGRAMME
ACQUISITION, PROCUREMENT, PRODUCT
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APPENDIX 1: CONTRACT CONDITIONS, TECHNICAL NON-COMPLEX PROGRAMMES

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1 SCOPE

1.1 PURPOSE

A-STD-61 formulates different sets of technical contract conditions from which Armscor's requirements for the management of the technical effort during the execution of a contract or order should be selected.

1.2 APPLICATION

These sets of requirements must be tailored to suit the acquisition / procurement of specific product systems, products, product sub-systems and components for the specific ORDER.

When these requirements are applied to an ORDER between the Prime CONTRACTOR and a Sub-contractor, the Prime CONTRACTOR may, at his discretion or as specified by Armscor, impose tailored requirements based on these requirements.

2 REFERENCE DOCUMENTS

MIL-STD-756	Reliability Modelling and Prediction
MIL-STD-1543	Reliability Program Requirements for Space and Launched Vehicles
RSA-MIL-STD-3	Acquisition Baseline, Standards for
RSA-MIL-STD-8	Minimum requirements for Software Development
RSA-MIL-STD-10	Manuals, Technical: General Style and Format Requirements
RSA-MIL-STD-122	Documentation, User System, General Requirements for (SA Army)
RSA-MIL-STD-128	Training, User System, General Requirements for (SA Army)

3 DEFINITIONS

3.1 ARMSCOR'S PROGRAMME MANAGER

The person, or his delegated representative, designated by ARMSCOR to assume the programme management responsibility for user and CONTRACTOR interfaces.

3.2 CERTIFICATION

Legal recognition by the certification authority that a product, service, organisation or person complies with the requirements. Such certification comprises the activity of technically checking the product, service, organization or person and the formal recognition of compliance with the applicable requirements by issue of a certificate, license, approval or other documents as required.



3.3 CERTIFICATION FOR SAFETY OF FLIGHT

The definition in §3.2 applies.

In addition certification of a product for safety of flight involves:

- i. The process of assessing the design of a product to ensure that it complies with a set of standards applicable to that type of product so as to demonstrate an acceptable level of safety;
- ii. The process of assessing an individual product to ensure that it conforms with the certified type design; and
- iii. The issuance of a certificate required by national laws to declare that compliance or conformity has been found with standards in accordance with items (i) or (ii) above.

3.4 CONCEPT PHASE

The period during which comprehensive system studies and experimental hardware efforts are accomplished. Activities that are included are:

- Feasibility assessment;
- Logistic support estimate;
- Trade-off studies; and
- Cost-effectiveness and utility studies.

The product of this phase is normally the Functional Baseline.

3.5 CONTRACTOR

The party with whom the order has been placed by ARMSCOR, and includes the CONTRACTOR's successors, legal representatives and permitted assignees.

3.6 CONTRACT BASELINE

A document or set of documents formally designated and fixed at a specific time during a configuration item's (CI's) life cycle forming the basis for contracting and control. Baselines, plus approved changes to those baselines, constitute the current basis for control.

RSA-MIL-STD-3 identifies and defines the following six baselines:

- Statement of Requirements Baseline (SRBL);
- Functional Baseline (FBL);
- Allocated Baseline (ABL);
- Product Baseline (PBL);
- Manufacturing Baseline (MBL); and
- Operational Support Baseline (OSBL).



3.7 DEFINITION PHASE

The objective of the Definition Phase is to identify and analyse major system alternatives, examine risky sub-systems and determine whether to proceed with development. The product of this phase is normally the Allocated Baseline.

3.8 DEVELOPMENT PHASE

The purpose of the Development Phase is to provide the design documentation necessary for production and the integrated logistic support documentation necessary to fully support the system. This is done by completing detailed design and demonstrating that reliability, producibility, supportability and performance requirements have been met. The product of this phase is normally the Product Baseline.

3.9 PRODUCTION PHASE

The primary objective of the Production Phase is to produce and deliver an effective, fully supported system at an optimal cost within the timescales.

3.10 QUALIFICATION

The process of objectively demonstrating whether an entity is capable of fulfilling specified requirements.

3.11 QUALITY RECORD

A quality record provides objective evidence of the extent of the fulfilment of the requirements for quality or the effectiveness of the operation of a quality system element. The following are examples of quality records:

- Test data;
- Qualification reports;
- Calibration data; and
- Inspection reports.

3.12 SEGMENT PLAN

A Segment Plan is an engineering management plan which covers all the phases in the acquisition process of a specific sub-programme (see **Error! Reference source not found.** on page **Error! Bookmark not defined.** for the relative position of segment plans in the plan tree).

Such a plan, agreed upon between the contracting parties, constitutes a memorandum of agreement between the parties and cover aspects such as:

- Major acquisition milestones and schedules;
- Key milestone schedule;
- Interface milestone schedule;
- High level Work Breakdown Structure (WBS);
- High level Contract WBS (CWBS);



- Deliverables;
- Client-furnished equipment (CFE);
- Mandates, policies, values;
- Technical conditions;
- Resource requirements and cash flow;
- Contract phasing; and
- Security.

3.13 USER

The delegated representative of the end user of the system(s)/equipment.

3.14 VALIDATION

Confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use are fulfilled.

3.15 VALUE SYSTEM

A collection of elements, including goals, limitations, evaluation factors and criteria for decision-making, which provides a basis for rational decision-making.

3.16 VERIFICATION

Confirmation by examination and provision of objective evidence that specified requirements have been fulfilled.

4 GENERAL REQUIREMENTS

4.1 DOCUMENT BREAKDOWN

Part 1 : Contract Conditions, Technical, Standard for Highly complex programmes

Part 2 : Contract Conditions, Technical, Standard for Medium complex programmes

Part 3 : Contract Conditions, Technical, Standard for Non-complex programmes

Part 4 : Contract Conditions, Technical, Standard for Production programmes

Part 5 : Contract Conditions, Technical, Standard for Commercial Off-the-shelf (COTS) procurement

Part 6 : Contract Conditions, Technical, Standard for Maintenance programmes

Part 7: Contract Conditions, Technical, Standard for Refining an Operating Baseline for Existing Systems.



4.2 SELECTION GUIDELINES

When these requirements are used for contracting, the following selection guidelines should be considered in order to select the most applicable contracting base (Parts 1 to 7) for compiling specific CONTRACT conditions (see Parts 1 to 7):

4.2.1 Part 1 should be used when:

- The programme's technical complexity is high, i.e. many complex interfaces, multi-discipline, unknown/untried technologies, etc;
- Technical and financial risks are medium to high;
- System complexity and/or system CONTRACTOR maturity requires a well-structured engineering process and detailed Armscor management;
- System level 5 or higher is involved.

4.2.2 Part 2 should be used when:

- The programme's technical complexity is high, i.e. many complex interfaces, multi-discipline, unknown/untried technologies, etc;
- Technical and financial risks are medium to high;
- System level 5 or higher is involved;
- Management of the system engineering process is delegated to the CONTRACTOR because his maturity does not require in-depth Armscor management;

OR

- The technical complexity is medium;
- Technical and financial risks are low to medium;
- System level 5 or lower is involved;
- The system complexity does not require in-depth Armscor management.

4.2.3 Part 3 should be used when:

- The technical complexity and risks are low, i.e. single-discipline, known technologies, simple or well-defined interfaces;
- There are well-defined and developed components for complex items;
- The system engineering process requires minimal Armscor involvement.

4.2.4 Part 4 should be used when:

- The scope of the ORDER is limited to production.

4.2.5 Part 5 should be used when:

- The scope of the ORDER is limited to procurement of commercial off-the-shelf items (COTS).



4.2.6 Part 6 should be used when:

- The scope of the ORDER is limited to maintenance.

4.2.7 Part 7 should be used when:

- The scope of the order is limited to the refining of an Operating Baseline for existing systems.

4.3 TAILORING

Since it is seldom possible to apply such a detailed set of conditions as is, tailoring normally becomes necessary. To assist with tailoring the separate parts of A-STD-61 are available in electronic format.

The basic procedure for tailoring these sets of requirements is as follows:

- i. Select the part (i.e. Parts 1 to 7) of these sets of requirements that is most applicable to the programme and use it as a basis for tailoring.
- ii. Select those individual requirements that need to be upgraded/downgraded and replace them with the relevant requirements from the remaining parts (without change).
- iii. Update general or unique specifications, reporting frequencies and/or people responsible, if required (example : MIL-STD-756 for general components or MIL-STD-1543 for space systems, changing from monthly to two-monthly; replacing programme manager with quality assurance representative, etc.).
- iv. Update those requirements which need to be adapted for use in the specific CONTRACT.
- v. Add special requirements which are not included in the standard set of requirements.

5 DETAILED REQUIREMENTS

See Appendix 1 of Parts 1 to 7 for the detailed sets of standard CONTRACT conditions.

6 NOTES

6.1 Documents applicable only to certain Arms of the Service e.g. RSA-MIL-STD-122 and RSA-MIL-STD-128 for the SA Army or RSA-MIL-STD-10 for the SA Air Force, are not referred to in parts 1 to 7 of the standard contract conditions.

6.2 MINIMUM REQUIREMENTS FOR SOFTWARE DEVELOPMENT

When tailoring contractual requirements for software development, minimum requirements as described in RSA-MIL-STD-8 must be adhered to.

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- 6.3 Guidelines for tailoring of A-STD-61 for technology development are provided in the form of Annexures to Part 1, Part 2 and Part 3. Programme managers must select the part most relevant for the specific technology programme.
- 6.4 When a CONTRACTOR subcontracts, using the technical contract conditions of A-STD-61, the name ARMSCOR must be replaced by the CONTRACTOR's own name.

**APPENDIX 1:
CONTRACT CONDITIONS, TECHNICAL
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1 GENERAL

1.1 APPLICABILITY OF DOCUMENTS

This document forms ARMSCOR's standard for technical contract conditions.

Where any of these conditions are in conflict with any special terms, conditions, stipulations or provisions incorporated in any documents in the ORDER, the following order of precedence of documentation shall prevail:

- i. Special terms and conditions of the ORDER;
- ii. ARMSCOR's general conditions of CONTRACT (e.g. K-STD-0020);
- iii. ARMSCOR's standard technical contract conditions;
- iv. RSA Military standards and directives;
- v. DOD Military standards and directives;
- vi. Other interpretive documents.

1.2 DOCUMENTS

The following documents, of the issue in effect on the date of request for proposal or as stated in the ORDER, form part of these conditions of the ORDER to the following extent:

1.2.1 Applicable Documents

NA

1.2.2 Reference Documents

NA

1.3 DEFINITIONS

The definitions in paragraph 3 of the main part of A-STD-61 are applicable.

1.4 GENERAL NOTES

- 1.4.1 Where practical, different deliverable documents may be consolidated into one document for cost-effective reasons. This note does not allow for any changes to contractual requirements with regard to content or authorisation.
- 1.4.2 The CONTRACTOR can obtain contracted technical documentation from ARMSCOR where copyright is vested in ARMSCOR.
- 1.4.3 In subcontracting, the CONTRACTOR shall make the relevant technical contract conditions applicable. (Refer to paragraph 6.4 in the main part of A-STD-61).



2 ENGINEERING MANAGEMENT

2.1 ORGANISATION

2.1.1 Programme / Project Management Organisation

The CONTRACTOR shall establish and maintain a programme / project management infrastructure, prior to commencement of work.

2.1.2 List of Major Sub-contractors

Not applicable.

2.1.3 Appointment of Personnel to Committees, Boards and Work Groups

Not applicable.

2.2 PLANNING

2.2.1 NA

NA

2.2.2 Contract Work Breakdown Structure (CWBS)

Not applicable.

2.2.3 Work Breakdown Structure (WBS) Dictionary and Statement of Work (SOW)

Not applicable.

2.2.4 Plan Tree and Contract Data Requirements List (CDRL)

Not applicable.

2.2.5 Programme Master Plan

Not applicable.

2.2.6 Programme Report

Not applicable.

2.2.7 Cost and Schedule Planning and Control

Not applicable.

2.3 CONTROL

2.3.1 Establishment of Resource Management Control Systems

Not applicable.

2.3.2 Resource Management Systems Demonstration and Audit

Not applicable.

2.3.3 Reporting

The CONTRACTOR shall establish a monthly reporting system, which meets the requirements laid down in the ORDER.

2.3.4 Monthly Progress Meetings

Not applicable.

2.3.5 ARMSCOR's Representatives Facilities

NA

3 SYSTEM ENGINEERING PROCESS

Not applicable.

4 CONFIGURATION DEFINITION AND MANAGEMENT

4.1 GENERATION OF SPECIFICATIONS

Specifications for computer software elements shall be specified in accordance with MIL-STD-498. Software source listings shall form part of these specifications.

4.2 CONFIGURATION MANAGEMENT REQUIREMENTS

4.2.1 General

The Contractor shall use the Armscor Configuration Management System

4.2.2 Configuration Management Plan

Not applicable.

4.2.3 Baseline Audits

The CONTRACTOR shall use the initial contracted baseline as the point of departure for configuration and change management.

4.2.4 Configuration Identification

4.2.4.1 Configuration Items

NA



4.2.4.2 Numbering System

NA

4.2.4.3 Specification Tree

NA

4.2.4.4 Documentation Plan

Not applicable.

4.2.5 Configuration Management Records and Reports

The CONTRACTOR shall maintain the following configuration records and reports:

- A configuration change status report, which contains full details of approval and implementation on all engineering changes, deviations and concessions (waivers);

4.2.6 Configuration Control

NA

4.2.6.1 Engineering Changes

NA

4.2.6.2 Deviations

The CONTRACTOR shall classify all deviations as critical, major or minor.

The CONTRACTOR shall submit to ARMSCOR, on form K228, or an agreed upon alternative, critical, major or minor deviations for consideration and decision-making, unless otherwise delegated.

4.2.6.3 Concessions (Waivers)

NA

4.2.6.4 Configuration Control Board (CCB)

The CONTRACTOR shall establish a CCB qualified to advise the CONTRACTOR's programme manager. ARMSCOR's programme manager shall be entitled to attend these board meetings.

The CONTRACTOR's CCB shall be responsible for:

- Reviewing and determining a need for change (unless the change originated from ARMSCOR);
- Determining total change impact;
- Approving submission of a change proposal to ARMSCOR, including specification Change Notices (SCN's) and Interface Revision Notices (IRN's); and
- Approving changes to sub-contractors' controlled baselines and documents.

Minutes of the CCB shall accompany all proposed changes.



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4.2.6.5 Material Review Board (MRB)

NA

4.2.7 Configuration Verification

NA

4.2.8 Security of Data

4.2.8.1 Archive

NA

4.2.8.2 Physical Security

NA

4.2.9 Handover of Documentation to ARMSCOR

NA

5 TECHNICAL PERFORMANCE ACHIEVEMENT

5.1 RISK MANAGEMENT

Not applicable.

5.2 TECHNICAL PERFORMANCE MEASUREMENT (TPM)

Not applicable.

5.3 FORMAL REVIEWS

The CONTRACTOR shall plan and conduct formal technical reviews.

ARMSCOR's programme manager reserves the right to include additional members of his choice on the Technical Review Board.

5.3.1 Technical Review Agenda

Technical Review Agendas shall be prepared and containing at least the item identification, date, location, time of review and individual topics being reviewed.

5.3.2 Technical Review Data Package

The CONTRACTOR shall submit, together with the agenda, to all the members of the Technical Review Board, the relevant documentation.

5.3.3 Technical Review Meeting Minutes

The CONTRACTOR shall prepare and distribute minutes of technical review meetings, to all members of the Design Review Board and other persons as may be deemed necessary.

5.4 VERIFICATION AND VALIDATION OF DESIGN

5.4.1 Qualification Principles

NA

5.4.2 Test and Evaluation

The CONTRACTOR shall plan to demonstrate conformance to design and qualification requirements.

Design Qualification

NA

5.4.3 Simulation Model

Not applicable.

5.4.4 Specification Validation

NA

6 OPERATIONAL FEASIBILITY AND OPTIMISATION

6.1 ENGINEERING SPECIALITY INTEGRATION

6.1.1 Reliability Engineering

NA

6.1.2 Maintainability Engineering

NA

6.1.3 System Safety

Not applicable.

6.1.4 Standardisation and Parts Control

Not applicable.

6.1.5 Human Engineering

Not applicable.

6.1.6 Electro-magnetic Compatibility (EMC) and Electro-magnetic Interference (EMI)

NA

6.1.7 Value Engineering

Not applicable.

6.1.8 Nuclear, Biological and Chemical Protection

Not applicable.

6.1.9 Thermal Analysis / Design

Not applicable.

6.1.10 Classification of Characteristics and Failures

NA

6.2 SYSTEM AND COST EFFECTIVENESS

Not applicable.

6.3 LOGISTIC ENGINEERING

6.3.1 Logistic Support Analysis (LSA)

Not applicable.

6.3.2 Interchangeability and Compatibility

NA

6.3.3 Codification

NA

6.3.4 Logistic Support Analysis Report

Not applicable.

6.4 PRODUCTION ENGINEERING

NA

6.4.1 Production Engineering Analysis

Not applicable.

6.4.2 Production Processes

NA

6.4.3 Production Plan

NA

6.4.4 Production Readiness Review (PRR)

NA



6.5 SOFTWARE ENGINEERING

The CONTRACTOR shall have a software Development Management System which conforms to principles in MIL-STD-498 with the necessary controls to ensure that the software product meets the contractual requirements. The Management System shall address software from the product and system point of view during the Software Development Life Cycle (SDLC).

6.5.1 Establishing a Software Development Environment

Arm Scor ICT to provide on own infrastructure network

6.5.2 System Requirements Analysis

Unless specifically otherwise required in the CDRL, requirements concerning system interfaces may be included in the SSS or in Interface Requirements Specifications (IRSs). One specification document is required as a minimum, either a SSS or a Software Requirements Specification (SRS).

The SSS, if generated, shall be formally reviewed (refer paragraph 5.3 on Formal Reviews) and presented to ARMSCOR for approval.

6.5.3 System Design

The CONTRACTOR shall conduct the system's design, defining the system-wide design decisions (that is, decisions about the system's behaviour design and identifying the different Computer Software Configuration Items (CSCIs)) and the system's architectural design. The result should be documented in a System/Subsystem Design Description (SSDD),

Unless specifically otherwise required in the CDRL, no separate document needs to be generated and the contents can be included into the SSS. Design pertaining to interfaces may be included in the SSDD/SSS or in Interface Design Descriptions (IDDs), The CONTRACTOR's system engineer responsible for the overall system shall approve the SSDD. The SSDD shall be reviewed internally by the CONTRACTOR.

6.5.4 Software Requirements Analysis

NA

6.5.5 Software Design

6.5.5.1 Preliminary Design

The CONTRACTOR should conduct a top-level design for each of the SRSs, defining the CSCI-wide design decisions (that is, decisions about the CSCIs behaviour design and other decisions affecting the selection and design of the software units comprising the CSCI) and the CSCIs architectural design. The result shall be recorded in the SDF as design notes.

The CONTRACTOR shall compile a test philosophy and record it in the SDF.

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6.5.5.2 Detail Design

The CONTRACTOR shall develop a detailed design from the SSS/SRS and top-level design and include the design notes in the SDF. Design pertaining to interfaces shall also be included into the SDF.

The CONTRACTOR shall conduct a Critical Design Review for all CSCIs identified with minutes of all relevant comments and action items outstanding.

6.5.6 Coding and Unit Testing

The CONTRACTOR shall develop the code from the design and perform informal structural and functional tests.

The CONTRACTOR shall compile a Software Test Description (STD) (or Acceptance Test Plan (ATP) Document) for system testing and acceptance.

The CONTRACTOR shall conduct code reviews, addressing at least the adherence to maintainability coding standards (indents, comments, headers, etc). Track shall be kept of issues raised at these reviews and it shall be recorded for reference and included in the SDF.

6.5.7 Unit Integration and CSCI Testing

The CONTRACTOR shall integrate the units and perform informal functional testing design and requirements. Prove of these tests shall be kept for future reference (typically in the SDF). The CONTRACTOR shall inform ARMSCOR about the test results and status thereof.

6.5.8 CSCI/HWCI Integration and Testing

The CONTRACTOR shall integrate the CSCI/HWCIs and perform functional testing against system requirements against an approved ATP.

The CONTRACTOR shall conduct a TRR before formal testing commences to ensure readiness for formal testing/acceptance.

The CONTRACTOR shall generate a test report which must be included or referred to in the SDF. ARMSCOR shall approve the format beforehand otherwise must be used as a guideline. The CONTRACTOR shall present the test results to ARMSCOR for acceptance.

6.5.9 Software Version Description (SVD)

Project-, Make- or Build Files used to compile/link the software shall be required as substitute to the SVD. This shall be included in the SDF. If this cannot be provided, the CONTRACTOR shall ensure that each formal build shall be accompanied by a SVD.

6.5.10 Software Development File (SDF)

The contractor shall maintain SDF's as described in MIL-STD-498, which shall be under formal configuration management.



7 QUALITY MANAGEMENT

7.1 CONTRACTOR'S QUALITY MANAGEMENT SYSTEM

The CONTRACTOR shall maintain a Quality Management System and demonstrate its conformance to ISO 9001 before commencement of CONTRACT.

ARMSCOR shall have the right to carry out periodic audits of the CONTRACTOR's management of quality, as well as specific product and CONTRACT audits.

7.2 QUALITY PLAN

Not applicable.

7.3 QUALITY REPORTS

The CONTRACTOR shall submit to ARMSCOR, in an agreed upon format, at intervals agreed upon with ARMSCOR's programme manager a report, containing:

- Management summary;
- Product / System quality conformance;
- Process quality conformance;
- Level of conformance to ISO 9001;
- Outstanding corrective actions; and
- Summary of latest internal audit reports.

7.4 RIGHT OF ACCESS

ARMSCOR or persons designated by him shall have free access to all relevant sections of the place or places where work is performed to fulfil the requirements of the ORDER, for the purpose of conducting / witnessing any audits, inspections or tests.

7.5 ACCEPTANCE AUTHORITY

ARMSCOR shall be the acceptance authority in terms of the ORDER.

7.6 QUALITY OF SUPPLIES

The CONTRACTOR shall be responsible for all controls, reviews, audits, inspection and tests necessary to demonstrate the acceptability of all MATERIAL / WORK covered by the ORDER.

7.7 CONTROL OF INSPECTION, MEASURING AND TEST EQUIPMENT

NA

7.8 ACCEPTANCE / FORMAL TEST AND EVALUATION

Acceptance / Formal test and evaluation shall be undertaken at Armscor with ARMSCOR's programme manager. The CONTRACTOR shall notify ARMSCOR of such acceptance / formal test and evaluation dates at least five (5) working days or such periods agreed prior to the date of such acceptance / formal test and/or evaluation.

UNCLASSIFIED



7.9 ACCEPTANCE

MATERIEL shall be accepted by ARMSCOR's programme manager or his representative by means of an Inspection Release Certificate (form K225) or an agreed upon alternative, once the following conditions have been met:

- Certificate of Conformance / Analysis has been issued, providing objective evidence that the MATERIEL conforms to the requirements of the ORDER and has been controlled in terms of the quality plans agreed upon. The certificates shall be issued and signed by an authorized representative of the CONTRACTOR agreed upon with ARMSCOR's programme manager, and shall include all concessions (waivers) and deviations from the ORDER; and
- ARMSCOR's programme manager or his representative has satisfied himself that the MATERIEL conforms to the ORDER.

MATERIEL which is found not to conform to specified requirements shall be rejected by means of an Inspection Rejection Note (form K226). The reasons for rejection and the requirements necessary for re-submission will be stated on the Inspection Rejection Note.

7.10 SOFTWARE QUALITY ASSURANCE

NA

7.11 QUARANTINE SYSTEM

NA

7.12 CORRECTIVE AND PREVENTIVE ACTION SYSTEM

NA

7.13 CONTROL OF QUALITY RECORDS

NA