DATA ITEM DESCRIPTION

Title: CRITICAL CHARACTERISTICS CONTROL PLAN (CCCP)

Number: DI-MGMT-81986
AMSC Number: N9563
DTIC Applicable: No
Preparing Activity: SH
Applicable Forms: N/A

Approval Date: 20150714
Limitation:
GIDEP Applicable: No
Project Number: MGMT-2015-005

Use/relationship: The Critical Characteristics Control Plan (CCCP) forms a part of the Contractor's quality system and describes how the Contractor and all subcontractors will prevent the creation or occurrence of a critical non-conformance (defect), but in the event of its occurrence, assure its detection and control.

This Data Item Description (DID) contains format and content preparation instructions for the data product generated by the specific and discrete task requirement as delineated in the contract.

Requirements:

1. Reference documents. The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as cited in the current issue of the DODISS at the time of the solicitation; or, for non DODISS-listed documents, as stated herein.

2. Format. The plan shall be in the Contractor's format.

3. Content. The plan shall include a cover sheet specifying the following:

    a. Contractor's title

    b. Contract number.

    c. Revision and date.

    d. Nomenclature of the system/component/program/project, the security classification, and the distribution restrictions.

    e. Government activity issuing the controlling contract.

    3.1 Table of contents. The plan shall contain a table of contents.

    3.2 Index. The plan shall include an index.

    3.3 Descriptive material. The plan shall include any descriptive material needed to provide comprehensibility of the content such as sketches, drawings, photographs, tables, forms, graphs, worksheets, charts, etc.

3.4 Key manufacturing processes. The plan shall identify those aspects of the manufacturing process that can influence the creation of a critical non-conformance including the production process, work instructions/procedures, process controls, mistake proofing, inspection systems (Acceptance Inspection Equipment (AIE), Automated Acceptance Inspection Equipment (AAIE)), materials, material handling, personnel, training, and the quality management system (calibration, corrective/preventive action, control of non-conforming product, and supply chain management).

3.4.1 The plan shall list all of the critical characteristics, the location/facility which produces the material affected by each critical characteristic, and the associated document(s) identifying the requirement (specification and revision, quality assurance arovision (QAP) number, drawing and revision).

3.4.2 The plan shall contain the critical characteristics management structure and roles/responsibilities including:

a. An organization chart addressing the critical characteristics control structure.

b. Personnel performing Quality Assurance (QA) inspections and verification inspections.

c. Relevant QA inspection validation.

d. Material Review Board (MRB) authority.

e. Access/disposition to critical non-conformances, accountability, and traceability.

f. Work stop authority.

g. Restart authority.

h. Notification to Government authority.

3.4.3 The plan shall contain the program management structure and roles/responsibilities including:

a. An organization chart with supporting narrative describing the management office the Contractor establishes to manage the contractual commitments.

b. The direct lines of control, responsibilities, functional relationships, and authority between the management office and the Contractor’s other organizational elements.

c. All interfaces between the Contractor and the Government and between the Contractor and other Contractors which are necessary and pertinent to the accomplishment of contractual tasks, projects, and programs.

3.4.4 The plan shall identify all appropriate critical process documents including:

a. Manufacturing processes and procedures.

b. Work instructions/procedures.

c. Handling instructions.

d. Process controls.

e. Inspection systems and procedures.

f. Accountability/traceability of non-conforming materials documentation.

g. Quality records maintaining an audit trail.

3.4.5 The plan shall contain detailed information about preventing critical non-conformances in the production process and it shall describe how the process is robust with high capability and effective controls including:

a. Process description.

b. Detailed flow chart including Inputs, Outputs, and Key Process Parameters.

c. How key process parameters are identified, defined, and controlled.

d. Failure Modes analysis methodology.

e. Fail-safe methods, mistake proofing techniques, and assurance that the process is not bypassed.

f. Process control tools.

g. Feedback or in-process inspections.

h. Material handling.

i. Identification of Failure Modes and frequency of occurrence.

j. Method to assess that the system is robust, capable, and under control (process prove-out; recent, relevant production data, SPC, etc.).

3.4.6 The plan shall contain the schedule for routinely assessing reliability and effectiveness including:

a. Frequency of verification (SPC, process capability, and audit schedules).

b. Monitoring appropriate metrics and reactions to trends.

c. Identification of actions to ensure process is reliable and effective.

d. Frequency for assessing the reliability and effectiveness of the production processes.

3.4.7 The plan shall contain a description of the inspection/verification system, equipment, and detailed information about preventing critical non-conformance escapes including:

a. Contractor's process to verify that the design of the inspection/verification system is robust, capable, and effective to ensure that non-conformances are identified and correctly dispositioned.

b. Material handling and accountability of non-conforming material.

c. Methodology of inspection utilized (AIE, AAIE, visual, acceptance based on process control, etc.).

d. Identification of MIL-STD-1916 VL VII validation system or alternate proposed method.

e. Personnel involved in inspection and their required qualifications.

f. Throughput of inspections utilized (AIE, AAIE, visual inspections, etc.).

3.4.8 The plan shall identify any proposed referee gages and associated processes to include re-introduction of conforming material into the production process and maximum rates and quantities permitted for referee gages.

3.4.9 The plan shall include a detailed flow chart including Inputs, Outputs, and Key Process Parameters and the following:

a. Failure Modes of the inspection system.

b. Fail-safe methods, mistake proofing techniques and assurance that the inspection system is not bypassed.

3.4.10 The plan shall include calculations, documentation, and identification of the reliability and effectiveness of the inspection system including:

a. Formula, methodology, or industry standard used to determine the inspection system reliability.

b. The results of the demonstrated reliability based on the verification/validation for each inspection system.

3.4.11 The plan shall identify the schedule for routinely assessing reliability and effectiveness including:

a. Frequency and method of routine verification (when and how many times defect masters/salters are run through and/or audit schedules).

b. Quantification of inspection system error rates.

3.4.12 The plan shall address actions to be taken if the inspection system accepts a defect master/salter (constituting a failure of the inspection system) which would require the following actions:

a. Segregate all material since the last successful verification.

b. Investigate and implement corrective action to the inspection system.

c. Verify suspect material does not contain any critical non-conformances.

d. Update the inspection system's error rate and overall escape risk calculation.

3.4.13 The plan shall detail test procedure(s) designed to demonstrate the error rate (reliability) of the inspection system and they shall also include:

a. Identification of sufficient test quantities/samples sizes to assure minimum 90% statistical confidence.

b. A schedule to routinely monitor the non-conformance and inspection system error rates to assure they do not exceed maximum rates allowed.

3.5 Escape Risk Calculation. The plan shall contain non-conformance rates for each individual critical characteristic entering the inspection systems, the error rate of the inspection equipment associated with each characteristic, individual characteristic escape risks, and summative escape risk.

3.6 The plan shall contain procedures to address the necessary actions to be taken if a critical non-conformance is found anywhere in the production process and shall include:

a. How a non-conformance will be identified and segregated.

b. A list of all personnel/positions responsible for identifying, segregating, and maintaining accountability/traceability for the critical non-conformances.

c. Identification of all appropriate documentation, including records for disposition/accountability for tracking a critical non-conformance.

d. Identification of personnel/persons responsible for, and records documenting the immediate shutdown of the operation that produced the non-conforming component/assembly, and if applicable, any other operations incorporating suspect product.

3.7 The plan shall contain the process for immediately notifying the Government per the Contract Data Requirements List (CDRL) including the identification of personnel responsible for reporting critical non-conformances to the Government.

3.8 The plan shall describe the process by which suspect material is identified, segregated, and prevented from additional use or shipment to the Government.

3.9 The plan shall contain how and by whom an investigation will be conducted to determine the root cause of a non-conformance and required corrective actions.

3.10 The plan shall describe the restart request process and use of any suspect material, including objective evidence of the failure analysis investigation, which will be provided to the Government as part of the restart request.

3.11 The plan shall address what actions are taken, and by whom, for any critical non-conformance escape found beyond the designated inspection point prior to Government acceptance including:

a. Providing the results of the root cause analysis and corrective action on the inspection system that allowed the critical non-conformance to escape.

b. Providing updated inspection system reliability rates (error rates) and re-calculated total escape risk.

4. Media requirements. The plan shall be in Adobe® electronic Portable Document Format (pdf), version 2007-2010.

End of DI-MGMT-81986