immsa
INTERNATIONAL METALS DE MEXICO S A DE C V

Manual de Procedimientos generado a partir de la consultoría especializada contratada por IMMSA

Introducción

Como parte de los servicios de consultoría especializada contratados por IMMSA a la empresa canadiense DISHON LIMITED, se realizó la transferencia de conocimientos para el desarrollo del Manual de Procedimientos, bajo estándares exigidos en la industria aeroespacial.

En este reporte se presenta una relación de las políticas y procedimientos que fueron desarrollados gracias a la consultoría contratada.

Políticas y procedimientos desarrollados

La empresa canadiense DISHON LIMITED, a partir de un análisis del tipo de partes y componentes que se estarán produciendo, procedió a desarrollar e implementar, en coordinación con IMMSA, un Manual de Procedimientos que incluye los principales controles que se deben adoptar para operar bajo los estándares de la industria aeroespacial.

Así, en congruencia con el plan de actividades del proyecto "Transferencia de tecnología y know-how para incrementar el suministro nacional de partes y componentes maquinados en el sector aeroespacial", se procedió a desarrollar e implementar los siguientes elementos, que forman parte del Manual de Procedimientos.

i. Uso de los Centros de Maquinado CNC y control de los herramentales

1. **Procedimientos para la planeación y ejecución del proceso productivo**. Se anexa el documento "QOP-7-01 Product Realization Planning", el cual describe la manera en que se debe realizar la planeación del proceso, así cómo la forma en que se deben ejecutar los procesos de manufactura.
2. **Procedimientos para medir la capacidad de producción de los equipos**. Se anexa el documento "MGT-03 Capacity Analysis Assessment", que describen las políticas y procedimientos para cuantificar el grado de utilización de los equipos, en comparación con su capacidad.
3. **Procedimientos para controlar los herramentales y herramientas de fijación**. Se anexa el documento "ENG-10 Tools and Fixtures", mismo que describe la forma en que se debe controlar, inventariar y revisar el estado de los herramentales, antes de usarlos en el proceso productivo.
4. **Procedimientos para realizar mantenimiento preventivo a los equipos**. Se anexa el documento "ENG-07 Preventive Maintenance" que establece las políticas y procedimientos para realizar mantenimiento preventivo a cada uno de los equipos que forman parte del proceso productivo.

II. Manejo de materiales, fabricación y trazabilidad del producto terminado

5. **Procedimientos relacionados con el manejo de materiales.** Se anexa el documento "QOP-7-06 ReceivingInspection" que describe las políticas y procedimientos en materia de inspección de los materiales, partes y componentes adquiridos por IMMSA, y que son incorporados al proceso productivo.

6. **Procedimientos para realizar la identificación y trazabilidad del producto terminado.** Se anexa el documento "QOP-7-12 ProductIdentification and Traceability" que describe los requerimientos y establece responsabilidades en materia de identificación y trazabilidad de los productos terminados.

7. **Procedimientos en materia de manejo, empaque, almacenamiento, protección y envío del producto terminado.**Se anexa el documento "QOP-7-14 Handling, Packaging, Storage, Protection and Deliveries", que describe los procedimientos y responsabilidades en material de áreas de almacenamiento, manejo del producto, empacado y etiquetado, y envío de los productos terminados.

8. **Procedimientos para el control de productos no conformes.** Se anexa el documento "QOP-8-03 Control of NonconformingProduct" que establece los requerimientos y asigna responsabilidades para la identificación, documentación, disposición y almacenamiento de materiales y productos no conformes.

9. **Procedimientos relativos al establecimiento de registros de calidad.** Para la medición del desempeño y el seguimiento al nivel de cumplimiento de las metas de eficiencia, se desarrolló el documento "QOP-4-03 Control of Quality Records", mismo que se anexa, y establece las políticas y procedimientos para la medición y registro de los indicadores de resultados.

Se considera relevante mencionar que todos los procedimientos desarrollados, gracias a la consultoría especializada brindada por DISHON LIMITED, han sido implementados con éxito, y nuestro personal cuenta con los conocimientos necesarios para mantenerlos en operación.

Alcance de los servicios de consultoría

Gracias a los servicios de consultoría especializada brindados por DISHON LIMITED, se cuenta con los elementos necesarios para demostrar que la producción de partes y componentes maquinados se realiza con base en las políticas y procedimientos que establece la industria aeroespacial.

A continuación se presentan los documentos anexos en los que están plasmadas las políticas y procedimientos que está siguiendo la empresa, en materia de uso y mantenimiento de los centros de maquinado CNC, inspección de los materiales, así como en la producción y manejo del producto terminado.

I. I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities for Product Realization Planning. This procedure defines the general planning methodology for the process of Product Realization.

II. RESPONSIBILITY

It is the responsibility of all personnel at IMMSA/DQM to abide by this procedure herein. Specific assigned responsibilities are detailed in the procedure.

III. SCOPE

This procedure applies to Product Realization Planning for new or significantly modified products and processes. This procedure concerns all departments and functions involved in Product Realization Planning in particular Manufacturing and Quality Assurance.

IV. PROCEDURE

1 General

1.1 Product Realization Planning is divided in two steps: Process Planning and Manufacturing.

1.2 In the Process Planning stage, Product Realization Planning ensures that customer requirements are well understood and that the manufacturing process flow is planned and evaluated; that processes responsible for product characteristics are identified; that outsourced processes are identified; what resources are required in the operation; what verification, monitoring, inspection and test activities are required; and that adequate controls are developed to control process planning.

1.3 In the Manufacturing stage, Product Realization Planning ensures that key manufacturing processes are capable, that there is adequate inspection tell gates and instructions detailed in the Shop Routing Sheets and other manufacturing control measures; what records need to be generated to provide evidence that the resulting products meet customer requirements; what inspection and testing needs to be carried out (i.e. Inspection Quality Plan, as required); what documents are required by outsourced processes; and to ensure that manufacture planning satisfy's specified customer contract requirements.

V. PROCESS PLANNING STAGE FOR PRODUCT REALIZATION

1 Planning & Evaluating the Process Flow

1.1 Phase I of Product Realization Planning is the Process Planning Stage. This stage ensures that customer requirements are reviewed and well defined, understood, and that appropriate levels of planning are determined in advance and to further evaluate the process flow. In the event any ambiguities arise, the customer is contacted for

clarification in accordance with Procedure 7-02, Contract Review.

1.2 The review is conducted by the authority under the title "Originated By" and as needed, by other members of senior Management which may include the President, General Manager,

Purchasing Manager, Office Manager and the Quality Assurance Manager. The review involves a thorough analysis of the customer drawing, to detail tooling, equipment, resource needs such as material and external processing and infrastructure requirements.

1.3 The review also involves determining what characteristics need to be measured, and what measurement instruments will be used in accordance with QOP Procedure 7-09 In-Process Inspection and QOP Procedure 7-10, Final Inspection. For large and or complex parts, the Quality Assurance department is responsible for creating a "Master" inspection record as appropriate. Additionally, the review includes the identification of what material needs to be purchased in accordance with QOP Procedure 7-05, Purchasing.

1.4 After the review of the customer print, the process flow is planned and evaluated by the authority identified as the "Originator". The process flow plan and evaluation is recorded on the Shop Routing Sheet as per QOP Procedure 7-07, Shop Routing System. It is the responsibility of the authority identified as the "Originator" to plan and document the process flow evaluation.

1.5 The process flow plan and evaluation records the following information: Process Name; Part Name and Number; Purchase Order Number; assigned Job Number; Customer Name; Revision Level and sequence of operations including the use of external processing as applicable.

1.6 The sequence of operations details what resources and infrastructures are required to successfully manage the job. The sequenced operation details purchasing requirements, inspection of material, and processes or resources required for the job. The plan also details what inspections need to be carried out, and what records need to be established, what inspection plan is to be used; part marking, packaging and labelling requirements and so forth.

1.7 The review, evaluation and planning stage is considered official once the Shop Routing Sheet is completely documented and issued with the authorized approval. The President, General Manager or the Manufacturing Manager are authorized to issue the Shop Routing Sheet once the planning stage is completed and fully evaluated by the approving authority. The Shop Routing Sheet is then issued and forwarded to the Purchasing Manager for the mal stage of process planning and evaluation.

1.8 **Purchasing personnel** is responsible for ordering material as mandated in the Shop Routing Sheet per QOP Procedure 7-05, Purchasing. Once this action is completed, the activity is recorded by the Purchasing Manager signing-off the Shop Routing Sheet.

VI. MANUFACTURING STAGE OF PRODUCT REALIZATION

1 Purchased Material

1.1 Purchased material will be verified as being acceptable and thereby meeting customer requirements as mandated by QOP Procedure 7-06, Receiving Inspection. Acceptance is denoted by a sign-off in the Shop Routing Sheet.

1.2 Only suppliers found within the Approved Supplier List (ASL) in the computer system.

2 Manufacturing Controls

2.1 After having been successfully received and approved the material, the material is staged for processing. Processing may include several different operations, such as cutting the material, Programming and set-up, turning and milling etc. This stage is carried out in accordance with QOP Procedure 7-11, Manufacturing Process Controls. Manufacturing controls may be detailed prior to and or after other processes as required by the Shop Routing Sheet.

2.2 The manufacturing stages at IMMSA/DQM differ with each part and the complexity of the assigned job. Regardless of the job and complexity of the part, each Shop Routing Sheet fully details the manufacturing requirements as details in section V.

3 Quality Plan

3.1 The next step after staging and initial processing is In-process inspection. This operation may include Job Set-Up verification, First Article Inspection (FAI), Process performance monitoring, visual inspections and further In-Process inspections as required by the Shop Routing Sheet. This operation is governed by Product Realization & Quality Plans and the applicable Inspection and Testing Procedure.

4 Outsourced Processing.

4.1 Process controls are extended to all outsourced processing to ensure customer requirements are met and maintained by inserting QA Clauses on procurement documents and by evaluating the supplier's systems. External processing is controlled in accordance with QOP Procedure 7- 05, Purchasing and QOP Procedure 7-11, Manufacturing Controls.

4.2 **Materials Control Coordinator** is responsible for planning all external processing. External operations are considered acceptable once the responsible authority signs and date the Shop Routing Sheet under the applicable operation.

5 Final Inspection

5.1 Parts are subjected to final inspection prior to packaging and delivery. Final Inspection activity determines and authorizes the release of product; records for this activity are established. Refer to QOP Procedure 7-1 O, Final Inspection.

6 Identification of Material

6.1 Product Realization also considers the identification and inspection status of all materials within IMMSA/DQM. All materials, components and parts will be identified in accordance with QOP Procedure 7-12, Product Identification and Traceability.

7 Handling, Packaging, Storage, Protecting and Deliveries

7.1 Upon the acceptance and release of the customer parts, methods and controls have been implemented to ensure handling, packaging, and appropriate delivery methods to ensure that parts are shipped undamaged as required by all customers. Refer to QOP Procedure 7-14, Handling, Packaging, Storage, Protection and Deliveries.

VII. ASSOCIATED DOCUMENTS

QOP 7-02, Contract Review
QOP 7-04, Selecting & Evaluating Suppliers

QOP 7-05, Purchasing
QOP 7-06, Receiving Inspection
QOP 7-07, Shop Routing
System QOP 7-08, Preventive
Maintenance QOP 7-09, In-
Process Inspection QOP 7-10,
Final Inspection
QOP 7-11, Manufacturing Controls
QOP 7-12, Product Identification &
Traceability. QOP 7-13, Control of
Customer Property
QOP 7-14, Handling, Packaging, Storage, Protection & Deliveries.
QOP 7-15, Control of Monitoring and Measurement Equipment.

IMMSA/DQM WORK INSTRUCTIONS	Section	MGT 03		
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CAPACITY ANALYSIS ASSESSEMENT	Approved by	Alfonso Anciola Guajardo		

I. PURPOSE

The purpose of this work instruction is to define the general approach to be used in order to describe the overall manufacturing capacity or the organization. The objective is to have a standardized way to detect and quantify in very general terms the over-capacity or under-capacity of the company equipment.

II. RESPONSIBILITY

It is the responsibility of Top Management to define the general algorithm to be used in this manufacturing capacity calculation, and to ensure that the people involved in this type of exercise clearly follow the guidelines.

III. SCOPE

This work instruction applies to the Engineering and Production Departments whose personnel is usually in charge of the quantification and analysis of the manufacturing capacity of the organization.

IV. CAPACITY ANALYSIS

1. **Top Management** ensures that all production capacity analysis of IMMSA/QRO is based on the machining hours available at each one of the CNC machine centers (Mori Seiki, Hyundai, Integrex, etc...) as well as at each of the support operation stations (Deburring, Lapping, Inspection, etc...).

2. **Top Management** ensures that a graphic view (bar chart) of the production capacity analysis is posted based on either monthly data or quarterly data, and that it is updated regularly based on theproduction load measured on the production floor.

3. **Example** of a Map of Capacity Analysis is represented below by a spreadsheet that includes a 1 ST column with all CNC machine centers and operation stations; a 2nd and 3rd column of the monthly/quarterly total hours available and number of shifts. The availability can be graphically represented for each equipment with a bar indicating the total hours available overlapped by a bar indicating the hours being used at the present time.

1. **PURPOSE**
   The purpose of this work instruction is to define the type of identification that is used for Tools and Fixtures so these can be controlled, inventoried, stored and checked before use.

2. **RESPONSIBILITY**
   It is the responsibility of the Engineering Department to ensure that the identification of Tools and Fixtures is clearly defined upfront and that it is correctly transmitted to production for execution. Engineering Manager may assign his responsibility to any of his subordinates.

3. **SCOPE**
   This work instruction applies the all the tools and fixtures that are used on any manufacturing job in the production process, and in all areas where tools and fixtures are kept and stored.

4. **TOOLS AND FIXTURES**

A. **TOOLS**

1. **Engineering Manager** has defined the identification to be used on **Tools** (inserts, drills, end mills, face mills, reamers, thread and tap tools, boring heads, etc... also known as consumables) as to include at the minimum the following info:

   Tool Manufacture Code (code number given by manufacturer)
   3-letter Code for Tool Family (example DRI for indexable drill)

2. **Engineering Manager** will ensure that the Engineering staff refers to this Tool identification in all the documents issued to Production and all records kept in the computer database system. Typically the Tool 3-letter family code can be completed with more text information defining the individual characteristics of the tool.

B. **FIXTURES**

3. **Engineering Manager** has defined the identification to be used on **Fixtures** (holders, supports, brackets, etc... also known as in-house fixtures) as to include at the minimum the following info:

   Part Number (example AH336-08)
   Part Revision (example REV C01)
   Number/Total (example 2/5 which indicates the 2nd fixture of a group of 5 fixtures)

For the above example the Fixture should be engraved with < **AH336-08 REV C01 2/5** >

4. **Engineering Manager** will ensure that the Engineering staff refers to this Fixture identification in all documents issued to Production and all records kept in the computer database system. Typically the Fixture identification can be completed with more text information defining the individual characteristics of the fixture.

C. **COLLECT INFORMATION**

5. **Engineering Manager** may issue at his discretion, for any job on the production shop floor, a Manufacture Tool Sheet Record using form DL-051 when collection of Tool and Fixture information is required. The CNC Operator(s) are required to fill out the form and returned to Engineering when the job is completed.

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PREVENTIVE MAINTENANCE	Approved by	Alfonso Anciola Guajardo		

I. PURPOSE

The purpose of this work instruction is to define the routine by which the Preventive Maintenance is done regularly on each piece of production equipment on the shop floor.

II. RESPONSIBILITY

It is the responsibility of the Engineering Department to ensure that the required equipment is under the Preventive Maintenance program and that proper records are kept of the routine maintenance checks. Engineering Manager may assign his responsibility to any of his subordinates.

III. SCOPE

This work instruction applies to all production equipment items directly involved in the production of parts, and that are referenced on the Master Equipment List kept by the Engineering Department.

IV. ISSUE PREVENTIVEMAINTENANCE SHEETS

1. Engineering Manager will ensure that a complete, detailed, current and updated Master List of Equipment is maintained using form DL-028.

2. Engineering Manager will ensure that a PM checklist form DL-029 is issued at the beginning of every calendar month for each piece of equipment, clearly indicating the weekly checks to be done on the equipment, and properly labelled with the equipment name and the month and year it refers to.

3. Engineering Manager will ensure these PM checklists are distributed to each machine and that are posted visibly on each machine, so they can be visually checked by any person passing near the machine operating station.

V. COLLECT PREVENTIVE MA INTENANCE SHEETS AND REPORT

1. Engineering Manager will ensure that, at the end of each calendar month, all he monthly PM checklists form DL-029 are retrieved from all the equipment stations.

2. Engineering Manager will ensure that all the retrieved PM checklists form DL-029 are reviewed for completion of the weekly (or other frequency) checks, for the signature and date either by the Maintenance Technician or by the CNC Operator(s), and also a review signature and date either by the Engineering Manager of the Production Manager.

3. Engineering Manager will ensure that the completed and signed PM checklists form DL-029 are filed in the computer server and ensure that they can be viewed via the computer database system.

4. Engineering Manager may file a report via email to the Production Manager whenever there are important maintenance issues on any piece of equipment that need immediate attention or action by the in-house Maintenance technician or by an outside technician or contractor.

VI. MAINTENANCE HISTORY

Engineering Manager will ensure that all the maintenance and repair interventions made on a piece of production equipment are referenced and filed on the equipment file by using the Machine History form DL-030. This record will include information on all preventive and corrective maintenance performed.

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities for performing and recording receiving inspections of product to ensure they meet specified requirements.

II. RESPONSIBILITY

It is the responsibility of all receiving personnel at IMMSA/QRO to abide by this procedure herein. Specific assigned responsibilities are detailed in the procedure.

III. SCOPE

This procedure applies to all purchased materials, parts, components and other products incorporated into the Product Realization process. This procedure directly concerns The Quality Assurance department, Manufacturing, and the Purchasing department.

IV. PROCEDURE

1. Scope of Receiving Inspection.

1.1 All received material is subject to a receiving inspection and shall be enter in the computer system. The receiving inspection is a 2 step process. In the first step, the receiver verifies the quantity and associated documents. In the second step, the material or product is inspected.

1.2 After receiving inspection, internal copies of the packing slips are signed and stamped, and the Shop Routing Sheet is signed as verification of these activities.

1.3 Receiving personnel shall be responsible to forward all delivered Quality supplier documentation accompany material/product to Quality Assurance dept for review and scanning into the computer system.

1.4 Note: Ali material is assigned to a specific job number and inspections and process controls are detailed in the Shop Routing Sheet.

2. First Stage Inspection

2.1 Receiving personnel shall be responsible to unload all incoming material/product. The Receiving personnel shall verifies the received material/product against the packing slip to ensure proper material type, grade, quantity, part markings if any, quality records etc. Where received material/product is not adequately identified with lot/heat number

2.2 After receiving the incoming material/product, the Receiving personnel are responsible for accepting the material/product by signing and dating the packing slip. The particulars of the received material/product are then logged in computer system and paperwork is passed to the Quality Assurance Department.

3. Second Step Inspection.

3.1 **Receiving personnel** also performs the second stage inspection. This process requires the Receiving personnel to visually inspect the received material for damage or other noticeable defects that may affect the Product Realization process.

3.2 At a minimum, the scope of the second stage inspection verifies that:

- Review of Material Certificates, or other quality documents received with the
- material;
- Visually Inspect to detect any damage or other visible problems
- Identify the material as having passed receiving inspection by stamping the packing slip "RECEIVED" andcomplete part marking of not adequately identified
- with heat/lot number. Received documents with maerial and co-signed by
- QA/QC.

Verification shipment received against purchase order QA Clauses
Documenting the Inspection activity in the Shop Routing Sheet (SRS) that correlates with the purchased material. This requires dating and initialling the document to provide evidence of inspection.

3.3 When materials or products pass inspection, they are moved to an appropriate staging area in the manufacturing environment. Parts may either be stored in a dedicated storage area, or directly staged for processing after successfully passing the stages of receiving inspection.

3.4 When a shelf life material is received, it is the responsibility of receiving personnel to affix a *"Shelf Life Control"* label to the material prior to processing the material to dedicated storage area, or directly staged for processing. Receiving information for the material is updated in the computer system, DORIS.

3.5 If products or material fail receiving inspection, it is the responsibility of the Receiving personnel to affix a red "Reject" or yellow "Hold" tag to the material. The rejected/suspect material is then put aside, and the Quality Assurance Manager is notified immediately. The disposition of rejected/suspect material will be in accordance with QOP Procedure 8-03, Control of Nonconforming Material.

3.6 At the discretion of the QA Manager, received part or material that fails receiving inspection stage may be placed on *"Positive Reca/1"*. The QA manager ensures the part or material is affixed a Yellow "Hold" tag. QA Manager shall place a note on the Shop Routing sheet (SRS) related to the positive recall part or material. Once the part or material has been identified, receiving personnel continues with the receiving process and directs the part or material to the dedicated storage area, or directly staged for processing.

4.0 Distribution of Quality Records

4.1 **Packing Slips:** Distributed to the Office Manager and a copywith the SRS package.

4.2 **Received Supplier Quality Records:** Distributed to Quality Assurancedepartment and copies are attached to the Shop Routing Sheet Package.

4.3 It is the responsibility of the Receiving personnel to distribute the above documents where required. These records are maintained in accordance with QOP Procedure 4-03, Control of Quality Records.

V. ASSOCIATED DOCUMENTS

- QOP 4-03, Control of Quality Records
- QOP 8-03, Control of Nonconforming Product
- RINSP 01, Receiving Inspection (work instruction)

5.0

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities for the identification of product inspection status, the release of conforming product, and product identification and traceability.

II. RESPONSIBILITY

It is the responsibility of all personal IMMSA/DQM to abide by this procedure here in. Specific assigned responsibilities are detailed in the procedure.

III. SCOPE

This procedure applies all materials, components, sub-assemblies and other products during the product the realization process. This procedure directly concerns the manufacturing department and the Quality assurance department and is relevant to the purchasing department.

IV. IDENTIFICATION & TRACEABILITY PROCEDURE

1 Identification of Purchased or Customer supplied Material/Parts

1.1 All purchased or customer supplied materials and / or parts are identified with a unique number. The identification is the same as used in drawings, specifications, bills of material ands of earth. Suppliers are required to identify materials they supply through markings and or the use of tags.

1.2 **Receiving personnel are** responsible to enter part/ material information in the computer system, and verify that purchased or customer supplied part and /or materials are identified appropriately. If the original identification is not appropriate or adequate, the Receiving personnel are responsible for marking they received material as appropriate. Material markings may be done with specialized inks, affixing tags, but engraving is the preferred method. At minimum, the heat/ lot number will be referenced on all purchased material.

1.3 Materials and /or parts may also be identified by the general are at hat is dedicated for storage or staging particular products. Products that are staged for processing must be identified with an accompanying Shop Routing Sheet by receiving personnel.

2 Identification of "Positive Re-call" part/material

Materials / parts than is not passed receiving inspection, and the non conformity is related to paperwork issue only, shall be processed through the system and identified with a yellow "HOLD" tag in accordance with QOP procedure7-06, receiving inspection.

3 Identification During Manufacturing

3.1 During all tag is of processing, manufactured parts and subassemblies are identified by their Shop routing sheet, In- process inspection record, control chart, first off tag, FAI form, DL-005-1,-2,-3 or specialized marking if required. With the exception of inspection Records, these records and documents are kept in the manufacturing area where the part is being processed, or staged for the next operation as detailed in the Shop Routing Sheet. Machine operators are responsible to ensure that first-off tags and associated documents are maintained with the products at all times.

4 Identification of Finished Products

4.1 Finished products are identified in accordance with customer and drawing requirements. for customers that do not specify identification requirements, the Manufacturing department in conjunction with the quality assurance department identifies parts generically by part name, number and part description as detailed in the shop routing Sheet. additionally, other records are maintained by the establishment of inspection records, a certificate of compliance and a quality check list where required by the shop routing sheet and or quality plan.

4.2 Customer requirements with regard to product identification and markings are specified in the shop routing sheets and are further specified in customer engineering documents.

4.3 The identification of finished products and the corresponding identification records are verified during final inspection. record this activity is denoted by an authorized signature and date under the applicable operation in the shop routing sheet and the corresponding quality records.

5 Traceability records.

5.1 Traceability is maintained when contractually required by customers, and or governmental regulations. The extent of traceability is defined in accordance with stated engineering documents. When required, purchased products will be traceable by their unique job number, and thereby to their original inspection, testing or lab analysis report or other such quality records supplied with the product. Lt will be the responsibility of the QA Manager to verify such traceability records as appropriate.

5.2 **Machine operators and Quality Assurance personnel** record serial and batch numbers of materials and parts used and other such information necessary to satisfy traceability requirements. This requirement is also extended to Final Inspection.

V. INSPECTION AND TEST STATUS PROCEDURE

1 General

1.1 Following every inspection and testing activity as specified in the Shop Routing Sheet, products are identified whether they have passed or failed inspection. The inspection status is generally identified either by a sign-off in the Shop Routing Sheet, an inspection Report, the use of a tag, coloured marking.

2 Conforming Products.

2.1 **Receiving personnel** are responsible for receiving inspection activity and after having

passing receiving inspection by verifying the heat / lot marking on the received material it is either stocked or assigned to shop routing sheet. additional methods of denoting appositive inspection status is established by stamping the Packing slip "RECEIVED", and finally by signing and dating the shop routing Sheet operation. It is the responsibility of the Receiving personnel to denote inspection status as detailed in QOP Procedure 7-06, Receiving inspection.

2.2 **Machine Operators** performing job-set verification make a record of positive acceptance by signing and dating the operation in the Shop Routing Sheet. Machine Operators are responsible for process monitoring also make record of acceptance by signing an dating the shop routing sheet, but also make an additional record of acceptance by signing and dating other quality records as appropriate.

2.3 **Quality Assurance personnel** make record of acceptance or In-process inspections and tests by signing and dating the shop routing sheet where the operation is called out. An additional record of acceptance is denoted by placing a "FIRST-OFF" tag on the product or part, and by establishing, recording and dating an inspection report or "FAI" on form DL-005-1,-2,-3.

2.4 **Quality Assurance personnel** are responsible for performing final inspection making record of acceptance by signing and dating the shop routing sheet where the operation is callout. additional records of acceptance are denoted by establishing, recording, signing and dating inspection reports, certificates of compliance and quality checklists.

3 Nonconforming Materials and Products.

3.1 Products that fail receiving, In-process and final inspections and where by the disposition is "Rejected", are tagged with a red "REJECT" tag in accordance with QOP Procedure 8-03,Control of Non-Conforming Products.

3.2 Products that are disposition as suspect during receiving, in-process and final inspections are identified with a yellow" HOLD" tag in accordance with QOP procedure 8-03,Control of Non-Conforming products.

4 Supplemental Verification

4.1 When contractually required, additional verification and identification measures shall be met and documented in quality planning by the QA manager.

5 Authority to Release

5.1 The QA Manager and or quality assurance personnel are authorized to release products in accordance with QOP procedure7-1O, final inspection.

VI. ASSOCIATED DOCUMENTS

- QOP706, receiving inspection
- QOP707, shop routing system
- QOP7-09,process inspection
- QOP7-10, final inspection
- QOP8-03, control of Nonconforming Product
- L-005-1,-2,-3, first article inspection (FAI) Form
- DL-006, inspection record

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities for the use and maintenance of storage areas; for product handling and safeguard activities; for packaging and labelling activities, and; for shipping finished goods to customers and monitoring on-time delivery.

II. RESPONSIBILITY

It is the responsibility of all personnel at IMMSA/DQM to abide by this procedure here in. Specific assigned responsibilities are detailed in the procedure.

III. SCOPE

This procedure applies to materials, components, subassemblies and finished products in the course of the product realization process for handling and safeguarding product; packaging and labeling; storage and handling of materials, and; shipping and customer deliveries. This procedure directly concerns the manufacturing department, and is relevant to all other departments.

IV. PRODUCT HANDLING & SAFEGUARDING

1 General

1.1 The Manufacturing Manager, in conjunction with the Materials Control Coordinator are ultimately responsible for ensuring that products are handled properly and are adequately safeguarded or protected of all material including hazardous materials in order to prevent their damage or deterioration.

2 Containers

2.1 Bins, containers, boxes, pallets, carts and shelving units are provided for holding components and products as appropriate. It is an internal policy that damaged and dirty containers are either repaired or cleaned as necessary, and when beyond repair, they are scrapped.

3 Equipment

3.1 Equipment used for internal transportation and handling of products consists of large blue carts, dollies, manual hand-jacks and forklifts.

3.2 Only authorized personnel may operate the fork-lift. Operators are either pre-qualified in operating this equipment or are provided with on the job training. It is the responsibility of the Manufacturing Manager to ensure all personnel are qualified as necessary.

4 Protecting and Safeguarding Material

4.1 Purchased and received products including customer supplied property, are held in designated storage areas, and are protected from damage and or deterioration. Whenever possible, all products will be kept in their original packaging while in storage

4.2 It is the responsibility of the Receiving Inspector in conjunction with the Purchasing Manager to ensure all purchased and received products are maintained as appropriate.

4.3 During the manufacturing phase, where this is a possibility of parts or products being damaged,
i.e. removal of foreign objects, such as dirty surfaces, and contact with abrasive surfaces, appropriate methods are employed and employees are adequately trained to ensure that the product is properly safeguarded.

4.4 Finished products are packaged after acceptance of all customer requirements and are stored in a protective packaging environment. **Materials Control Coordinator** or assigned designate is the responsible to ensure that all customer parts are packaged as appropriate, and to store the final goods in a designated holding area.

V. STORAGE AREAS PROCEDURE

1 General

1.1 There is one (1) main secured storage area, located in the receiving and shipping area, and there are other storage and holding areas that are located through-out IMMSA/DQM to adequately support the product realization process. There are dedicated areas for receiving; shipping; final inspection; material staging including packaging & labelling; in-process products; non- conforming and suspect products; areas for machine tooling and fixtures; rooms for small equipment, supplies and storage of quality records.

1.2 Manufacturing Manager is responsible for operating all storage and holding areas except those under the direction of Quality Assurance department (Final Inspection & secured Quarantine Cage) and Purchasing (Receiving Storage Racks).

1.3 Materials Control Coordinator is responsible to ensure adequate packaging on stored materials/parts is verified to preserve the conditions. Also the Material Control Coordinator shall be responsible to conduct regular checks during the monthly inventory cycling, and where required verify that the package moisture card indicator levels are satisfactory affixed to supplied part.

2 Inventory Management System y Job Tracker

2.1 Finished products that are put into storage are controlled using computer system,. The system controls the in and out movement of all stock put into inventory from an assigned job. When parts are dispatched from the storage, it is the responsibility of the Materials Control Coordinator to enter such data as appropriate.

2.2 Materials Control Coordinator is responsible to track all jobs assigned within IMMSA/DQM including those requiring outside processing. It is also this authorities' responsibility to track all shipped parts and finished products to customers as appropriate. Once an assigned job is completed and shipped, it is the responsibility of the Materials Control Coordinator to remove this job from the computer system.

3 Authorization to Rece1ve and Dispatch Products

3.1 Products are authorized to be received to, and dispatched from various storage, holding and quarantine areas, based on their manufacturing and inspection status. Non-Conforming materials or products, unidentified products, or products with unknown or uncertain inspection status are strictly forbidden to be staged for next operations and or dispatched to suppliers for external processing. Refer to QOP Procedure 7-12, Product Identification & Traceability.

3.2 Only products and parts that have passed receiving inspection activities may be forwarded to the manufacturing stage for processing or storage. It is the responsibility of the Receiving personnel to ensure such activities in conjunction with QOP Procedure 7-06, Receiving Inspection.

3.3 Only products and parts that have passed In-Process inspection and testing activities are authorized to be released to other processing stages or holding areas. It is the responsibility of both the machine operator and or the Quality Assurance Technician (The person responsible for the In-Process inspection activity) to ensure that all associated inspection activities are completed as detailed in QOP Procedure 7-09, In-Process inspection.

3.4 Only products and parts that have passed all specified Final inspection and testing activities are authorized to be moved to the packaging and shipping areas. It is the responsibility of the Quality Assurance Manager or assigned designates (Quality Assurance Technicians or release authorities) to ensure that parts/products are not staged unless requirements are satisfactory.

3.5 The Materials Control Coordinator is authorized to dispatch parts from storage. Authorization to dispatch products is denoted by a signature or initial and the date under the applicable operation per QOP Procedure 7-07, Shop Routing System.

3.6 Materials Control Coordinator or assigned designate is responsible to confirm the Shelf Life material expiry data in the computer system. prior to releasing the material to the Job Shop Routing Sheet.

4 Other Supplies

4.1 Small stockrooms and storage areas, containing supplies not intended for incorporation into the product realization process, are also used. Such supplies are not labelled with inspection or test status identification and their movement is not controlled by the Quality Management System

VI. PACKAGING ANO LABELLING PROCEDURE

1 General Packaging & Labelling

1.1 Primary packaging and labelling is considered to be a manufacturing operation and is performed in a dedicated area within the manufacturing department. All Quality Management System requirements related to manufacturing also apply to packaging and labelling operations.

1.2 Only products and parts having passed specified In-Process and Final Inspection activities as detailed in section V-3 can be moved to the packaging area.

1.3 Packaging, including labelling is defined in customer drawings and the Shop Routing Sheet. When not specified by a customer, generic packaging and labelling instructions will apply. Refer to Packaging Instructions WI-029 & Packaging Instruction WI-030.

1.4 All packaging and labelling activities are carried out by the Materials Control Coordinator or assigned designate in accordance with customer requirements or WI-029 & WI-030. Verification of this activity is denoted by a signed and dated Shop Routing Sheet and additionally by the use of the corresponding Quality Checklist Record located on form DL-032, when used.

VII. SHIPPING ANO CUSTOMER DELIVERIES

1 Shipping

1.1 Transportation modes, routings and containers are usually specified by customers. If a customer does not specify any shipping requirements, the Materials Control Coordinator shall confirm such arrangements with the General Manager or Manufacturing Manager as appropriate.

1.2 Only orders that have been released by a designated authority can be loaded for shipment.
Release orders for shipping are evident by a sign-off in the Shop Routing Sheet. It is the responsibility of the Materials Control Coordinator or assigned designate to sign and date the Shop Routing Sheet and enter the applicable data in the computer system, DORIS as necessary.

2 Loading and Safeguarding Products

2.1 The Materials Control Coordinator is responsible for overseeing loading and protection of products. As applicable, the Materials Control Coordinator visually verifies removal of foreign objects in containers or boxes that can contaminate the parts; that pallets or other packages are prevented from shifting or falling during transportation; and that the load is properly fastened and protected.

2.2 Once a product is loaded for transportation and the visual inspection is considered acceptable, it is the responsibility of the Materials Control Coordinator or assigned designate to record the shipping information in the computer system. At a minimum the responsible authority will record:

-Record the unique job number
-Quantity of pieces shipped and number of boxes

3 Delivery Performance Monitoring

3.1 The Materials Control Coordinator, in conjunction with the Manufacturing Manager and or General Manager, collects delivery performance data from the computer system.

3.2 The data is compiled monthly by the Materials Control Coordinator, which provides an overview and analysis of our monthly delivery performance, as required by the established and documented Quality Objectives requirements and regulated by QOP Procedure 5-01, Management Review.

3.3 The information is providing from the computer system. It is the responsibility of the Materials Control Coordinator to analyze the information and to measure the percentage of all on-time deliveries against the Quality Objectives.

3.4 If on-time delivery is less than the established targets, the General Manageror the President and or the Quality Assurance Manager may request corrective *1* preventive action to improve delivery performance.

VIII. ASSOCIATED DOCUMENTS

QOP 5-01, Management Review
QOP 7-06, Receiving Inspection
QOP 7-07, Shop Routing System

QOP 7-09, In-Process Inspections
QOP 7-12, Product Identification & Traceability
INV 01, Stock Management (work instruction)
INV 02, Stock Pull System (work instruction)
SHP 02, Bins for Parts (work instn..ction)
Form, DL-032, Certification Of Compliance

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities needed for the identification, storage, protection, retrieval, retention time and disposition of all quality records.

II. RESPONSIBILITY

It is the responsibility of all personnel at IMMSA/DQM, to abide by the procedure here in. Specific assigned responsibilities are detailed in the procedure.

III. SCOPE

This procedure applies to all records pertaining to the Quality Management System, and in particular the records listed in section IV-1 of this procedure. This procedure is relevant to and affects all departments.

IV. PROCEDURE

1. Records, retention periods, and archiving periods.

Note: Records are available for review by the customer and regulatory authorities in accordance with contract or regulatory requirements. All Quality records where applicable are scanned in to the IMMSA/DQM computer system.

1.1 Management review records: Established per QOP Procedure 5-01, Management Review. Retained by the QA manager retained in the computer system.

1.2 Contract Review Records: Offers, request for quotes, quotation work sheets and other documents established per QOP procedure 7-02, contract review. retained by the office manager retained in the computer system.

1.3 Customer Drawings: Customer drawings established per QOP Procedure 7-02, contract review. retained by the office manager in the computer system.

1.4 Supplier evaluation & performance records: established per QOP procedure 7-04, selecting and evaluating suppliers. Supplier evaluation and supplier profile information is retained by the QA Manager retained in the computer system.

1.5 Purchase Orders: Purchasing documents for the procurement of materials, components, products and services to be incorporated into the finished product per QOP Procedure7-05, Purchasing. Retained by the office manager retained in the computer system.

1.6 Shop routing sheets: established per QOP Procedure 7-07, shop routing system. retained in the computer system.

1.7 Product Quality records: control charts, inspection forms, certificates of compliance, audit checklists established per QOP Procedure 7-09, In-Process inspection and QOP

Procedure7-10, final inspection. Retained by the QA Manager retained in the computer system.

1.8 Supplier Product Quality Records: Certificates of conformance (CofC), inspection and testing results (Material Physical / chemical analysis) and bill of ladings from suppliers in accordance with QOP Procedure7-06, receiving inspection. CofC's retained by the QA Manager retained in the computer system.

1.9 Calibration Records: Calibration records and certificates established per QOP Procedure 7- 15, control of monitoring and measuring equipment. Retained by QA Manager for the life of the instrument from the date of creation. Records are kept in the computer system.

1.10 Non-Conformance Records: Non-conformance Reports established per QOP Procedure8-03,Control of Nonconforming Product. Retained by the QA Manager in the computer system.

1.11 Corrective and Preventive Action Reports: Corrective action requests, preventive action requests are established per QOP Procedure8-05, corrective & preventive action. Retained by the QA Manager in the computer system.

1.12 Customer Complaint Records: TOPS corrective actions are established per QOP procedure 7-03, customer feedback. Retained by the QA manager in the computer system.

1.13 Internal Quality Audit Reports: Audit Non-Compliance reports, audit summary reports and Audit Checklists established per QOP procedure 8-03, internal audit program. Retained by the Quality assurance manager retained in the computer system.

1.14 Training & Effectiveness Records: Training records, tuition aid requests and resumes or applications established per QOP Procedure 6-01, Competence, Awareness and training. retained by the general manager in the computer system.

1.15 Material Data Safety Sheets (MSDS): Retained by the purchasing manager for current use only. These records are not archived past the retention period.

1.16 Preventive Maintenance Records: The preventive maintenance record and the machine history y preventive maintenance Record established per QOP procedure 7-08, preventive maintenance. These records are retained by the manufacturing manager for the life of the machine while in use.

1.17 Manufacturing Records: The machine resource y scheduling record, manufacturing y employee Communication Record established per QOP Procedure 7-11, manufacturing controls. These records are retained in the computer system.

1.18 Shipping Records: Shipping Log established per QOP procedure 7-14, handling, packaging, storage and protection y deliveries. Retained by the materials control Coordinator and the office manager in the computer system.

2 identification of Quality Records

2.1 Quality Records are identifiable to the product, process, person or job number to which they apply. Records are dated, and identify the person who established the record. Records are indexed or grouped to facilitate their retrieval.

3 Storage and Disposal

3.1 Quality records are all stored in the computer system and are back-up every night on data tapes. The tapes are stored on-site, and one copy stored off-site in a safety vault.

3.2 Quality records are stored and archived electronically in the computer system, and kept available with no time limit. Records towage and archive will comply we than y extensive time limit required by customers.

V. ASSOCIATED DOCUMENTS

QOP 5-01, Management review
QOP 6-01, Competence, Awareness and Training
QOP 7-02, Contract review
QOP 7-03, Customer feedback
QOP 7-04, Selecting and evaluating suppliers
QOP 7-05, Purchasing
QOP 7-06, Receiving inspection
QOP 7-07, Shop routing system
QOP 7-08 Preventive maintenance
QOP 7-09, In-Process inspection
QOP 7-10, Final inspection
QOP 7-11, Manufacturing Controls
QOP 7-14, Handling, packaging, storage, preservation y deliveries
QOP 7-15, Control of Monitoring and measuring equipment
QOP 8-01, Statistical Techniques
QOP 8-02, Internal Audit Program
QOP 8-03, Control of nonconforming product
QOP 8-04, Corrective & preventive action

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities for the identification, documentation, and disposition & storage of nonconforming product and material.

II. RESPONSIBILITY

It is the responsibility of all IMMSA/DQM personnel to abide by this procedure. It is Quality Assurance and Quality Control responsibility to ensure that these requirements are implemented and followed.

III. SCOPE

This procedure applies to all materials, in-process parts, assemblies and finished products. This procedure directly concerns the Quality Control, Engineering, Production and Receiving functions, but is also relevant to sales, purchasing, stock and shipping processes.

IV. PROCEDURE

Identification and Documentation

1. **Receiving, Production and QC personnel** are responsible for identifying nonconforming and suspect products in the course of their assigned activities. In addition, all other personnel regard less of their function and responsibilities, are also expected to watch for and identify nonconforming and suspect materials and parts.

2. **Receiving, Production and QC personnel** are responsible for identifying nonconforming or suspected material or parts using tags DL-067, and affix a red tag for REJECT, or yellow tag for WARNING, the ensure it is segregated and notify QC personnel immediately. All other product quality issues are reported directly to the QC Manager.

3. **QC personnel** once assured that the non-conforming product is identified and segregated, shall record the Non-Conformance in the computer system using the NCR form DL-01O and if possible attach printed copy of the NCR to the product. NCRs are classified in to 3 major categories:

- **Material Defect** -all issues related to material
- **In-Process Parts** -all issues related to parts before delivery
- **Customer Complaint** -all issues related to parts alter delivery

Review and Disposition

4. **QC Manager** ensures that all nonconforming products are identified using tags DL-067 and segregated, that the NCR is clear and self-explanatory in its definition, that disposition and actions required are clear and understood. The QC Manager also tracks the open NCR (s) in the computer system.

5. **QC Manager** ensures that for Material Defect NCRs, in conjunction with Purchasing, the particular material situation is assessed, the supplier notified and provided with printed copy of the NCR, and that a clear disposition is taken and enacted.

6. **QC Manager** ensures that for In-Process Parts NCRs, in conjunction with Production, the particular manufacturing process is assessed for product quality impact including review of parts affected up- stream and / or down-stream and the containment of parts, and that a clear disposition is taken and enacted.

7. **QC Manager** ensures that for Customer Complaint NCRs, in conjunction with Sales and the Plantar or production manager, the particular customer situation is assessed for product quality and customer requirements, and that a clear disposition is taken and enacted.

8. **QC Manager** ensures that nonconforming products are disposed of as indicated in the NCR form. For example: Reworked or Repaired, Used – As –Is (under release by relevant Customer authority), Replace, Scrap (permanently marked, if kept far reference) or other.

9. **QC Manager** will call a meeting the Material Review Board, as defined by instruction QC-12, in order to discuss and to disposition one or several non – conformance situations that due to its complexity or criticality may require a formal and collective decision. The MRB group holds the final authority to decide on the disposition of any nonconforming product. This authority is enforced via the QC Manager, by him attributing the final disposition to the NCR(s) in the system.
The authority far the disposition of nonconforming product is attributed directly by Top Management to the MRB group based on the group expertise and know ledge of materials characteristics, manufacturing processes, and quality customer requirements.

Control of Rework Products

1O. **QC Manager** in coordination with engineering and production managers shall record on the NCR the required rework / repair to be done on the product to meet specified customer requirements. More complex jobs may be formally documented in written work instructions reference to the original Shop Routing Sheet. As a standard practice after rework / repair of apart, QC personnel will perform 100% inspection on the part(s) to verify compliance with specified requirements.

Customer Approval

11. **QC Manager** whenever required shall consult with the customer to request formal written authorization for any deviation to specified requirements. Either for Material Substitution, Use- As-Is acceptance of product dimensionally deviating from drawing, or any other deviation to specified requirements (partial shipment, part marking, outside process, etc). The QC Manager is responsible for establishing the contact with the customer and record their authorization in the computer system using the standard NCR formDL-010.

Customer Returns

12. **QCManager** shall issue a NCR number whenever as customer requires authorization to return product, also known as RMA. The QC Manager will record this authorization as a Non-Conformance in the computer system using the standard NCR form DL-010.

Quality Alert

13. **QC Manager** at his discretion, and after consideration of the importance and impact of the issue dealt in the NCR, may issue a Quality Alert as reported in the NCR farm. The Quality Alert is distributed, in the form of the copy of the NCR, to the whole Management Team, and also posted on the information boards on the shop floor. The Quality Alert serves as a forceful and visual reminder of the cause and problem on the NCR to the whole company.

Closing NCRs

14. **OC Manager** is responsible to verify that proper corrective actions were taken on the NCR and duly reported, as well as the required customer approvals and quality alerts have been issued, before closing the NCR. The computer system will be kept current and up dated with the full NCR information for later reference.

15. **OC Manager** holds the final authority to consider final closure of any nonconforming issue. This authority is attributed, communicated and enforced via the system. The QC manager being the only user that can finally close the NCR(s) on the system.

V. ASSOCIATEDDOCUMENTS

QOP4-03 Control of Quality Records
QOP 5-01 Management Review
QOP8-04 Corrective & Preventive action
WI QC – 12 Material Review Board
DL-010 Non- Conformance report
DL- 067 identification Tags

CONTRATO PARA ACTIVIDADES DE APOYO TÉCNICO Y DE SERVICIOS ENTRE INTERNATIONAL METALS DE MÉXICO, S.A. DE C.V. Y DISHON LIMITED PARA REALIZACIÓN DE LAS DIFERENTES ACTIVIDADES RELACIONADAS CON EL ARRANQUE DE LAS OPERACIONES DE LA PLANTA DE PRODUCCIÓN.

CONTRATO QUE CELEBRAN EL 15 DE DICIEMBRE DEL 2014, POR UNA PARTE **INTERNATIONAL METALS DE MÉXICO, S.A. DE C.V.** (EN ADELANTE IMMSA) CON DOMICILIO EN AV. ALFREDO DEL MAZO NO. 14, ZONA INDUSTRIAL 1 Y 2, ATIZAPÁN DE ZARAGOZA, ESTADO DE MÉXICO. C.P. 52968 A TRAVÉS DE SU REPRESENTANTE LEGAL EL SEÑOR **ALFONSO ANCIOLA GUAJARDO** Y POR LA OTRA **DISHON LIMITED** (EN ADELANTE DISHON), CON DOMICILIO EN 40 CITATION DRIVE VAUGHN, ONTARIO, CANADA L4K 2W9, A TRAVES DE SU REPRESENTANTE LEGAL EL SEÑOR **ILAN DISHY**, DE CONFORMIDAD CON LOS SIGUIENTES ANTECEDENTE Y CLAUSULAS.

A N T E C E D E N T E S

PRIMERO.- IMMSA está interesada en la contratación de una empresa que otorgue servicios de consultoría y transferencia de conocimientos para la realización de las diferentes actividades relacionadas con el arranque de las operaciones de una planta productiva, que estará fabricando partes y componentes maquinados para el sector aeroespacial.

SEGUNDO.- DISHON manifiesta estar en la mejor disposición de realizar los servicios de consultoría y transferencia de conocimiento requeridos en virtud de poseer la experiencia necesaria para tales fines.

Reconociéndose ambas partes plena capacidad para la celebración de este contrato, lo llevan a cabo conforme a las siguientes:

C L A U S U L A S

PRIMERA. OBJETO DEL CONTRATO

El objeto de este contrato es la realización por parte de DISHON de los servicios de consultoría y transferencia de conocimientos para la realización de las diferentes actividades relacionadas con el arranque de las operaciones de una planta productiva que estará fabricando partes y componentes maquinados para la industria aeroespacial.

SEGUNDA. ALCANCE DE LOS SERVICIOS Y ENTREGABLES

DISHON se compromete a realizar el trabajo solicitado por IMMSA con los siguientes alcances:

- Consultoría y transferencia de conocimientos para diseño óptimo de la planta productiva e implementación de los sistemas de control y aseguramiento de la calidad.
- Asesoría especializada para el manejo de materiales y operación de los Centros de Maquinado CNC.

Los documentos que DISHON deberá entregar a IMMSA producto de este contrato son:

- Reporte de resultados de consultoría relativo a la implementación de los sistemas de control y aseguramiento de la calidad.
- Manual de procedimientos relativo al manejo de materiales y operación de los Centros de Maquinado CNC.

TERCERA. PLAZO PARA LA REALIZACIÓN DEL CONTRATO

La duración prevista del contrato es de 10 meses, con fecha de comienzo 15 de diciembre de 2014 y fecha de finalización 14 de octubre del 2015, prorrogable por mutuo acuerdo de las partes.

CUARTA. EMISION DE INFORMES

Independientemente los entregables mencionados en este contrato, IMMSA podrá solicitar a DISHON informes preliminares relativos a los servicios objeto de este contrato.

QUINTA. IMPORTE, CONDICIONES Y FORMAS DE PAGO

El importe que se compromete a pagar IMMSA por la realización de los trabajos objeto de este contrato es de $ 6,794,320.50 (seis millones setecientos noventa y cuatro mil trescientos veinte pesos 50/100 m.n.), mismos que DISHON recibirá al inicio de los trabajos correspondientes y previa emisión de la factura respectiva en favor de IMMSA.

Los pagos deberán ser realizados vía orden de pago internacional o mecanismo similar para abono en la cuenta de DISHON No. 0003-0332-240-04131 del Banco Royal Bank Canadá, ABA: 026004093 y SWIFT: ROYCCAT2 a nombre de Dishon Limited.

SEXTA. CONFIDENCIALIDAD

Ambas partes se comprometen a no difundir de ninguna forma la información técnica, científica o comercial a la que hayan podido tener acceso durante el desarrollo del trabajo, sin que conste autorización expresa de la otra parte, mientras esas informaciones no sean de dominio público o su revelación sea requerida judicialmente.

SEPTIMA. MODIFICACIÓN O RESOLUCIÓN DEL CONTRATO

Las partes podrán modificar en cualquier momento el presente contrato, siempre que exista mutuo acuerdo.

El trabajo objeto del presente contrato podrá interrumpirse por mutuo acuerdo entre las partes.

El incumplimiento grave de las obligaciones específicas en este contrato, por cualquiera de las partes, facultará a la otra para reservarse el derecho de exigir el cumplimiento correspondiente por las vías legales conducentes.

OCTAVA. JURISDICCIÓN

Las partes firmantes de este contrato tratarán de solventar por mutuo acuerdo las divergencias que pudieran plantearse respecto al incumplimiento o interpretación del presente contrato. Si no fuese posible, someterán las discrepancias a los juzgados y tribunales del Estado de México.

Y para que conste con los efectos oportunos, en prueba de conformidad, las partes firman el presente contrato, por duplicado, en el lugar y fecha anteriormente indicados.

INTERNATIONAL METALS DE MÉXICO, S.A. DE C.V.

Alfonso Anciola Guajardo

DISHON LIMITED

Ilan Dishy

Reporte de resultados de la consultoría y transferencia de conocimientos para diseño óptimo de la planta productiva e implementación de los sistemas de control y aseguramiento de la calidad

Introducción

Como parte de los servicios de consultoría especializada contratados por International Metals de México, S.A. de C.V. a la empresa canadiense DISHON LIMITED, se realizó la transferencia de conocimientos relativa al diseño e implementación de los sistemas de control y aseguramiento de la calidad, bajo estándares exigidos en la industria aeroespacial.

En este reporte se presenta una relación de las políticas y procedimientos que fueron desarrollados gracias a la consultoría contratada, mismos que permitirán a la empresa elevar la proveeduría de partes y componentes maquinados demandados en la industria aeroespacial.

Políticas y procedimientos desarrollados

La empresa canadiense DISHON LIMITED, a partir de un análisis del tipo de partes y componentes que se estarán produciendo, procedió a desarrollar e implementar, en coordinación con International Metals de México, S.A. de C.V., las políticas y procedimientos que integran el sistema de aseguramiento de calidad, así como los principales controles que se deben adoptar para operar bajo los estándares de la industria aeroespacial.

Así, en congruencia con el plan de actividades del proyecto "Transferencia de tecnología y know-how para incrementar el suministro nacional de partes y componentes maquinados en el sector aeroespacial", se procedió a desarrollar e implementar los siguientes elementos, que forman parte del sistema de calidad.

1. **Manual del sistema de calidad**. Se anexa el documento QSM-01 que describe las políticas y procedimientos del "QualitySystem Manual".
2. **Procedimientos para la gestión de la cadena de suministro**. Se anexan los documentos "QOP-7-06 ReceivingInspection" y "QOP-7-04 Selecting and EvaluatingSuppliers", que describen las políticas y procedimientos de mayor importancia en el tema de la gestión de la cadena de suministro.
3. **Planes de control**. Se anexan los documentos "QOP-7-11 ManufacturingControls" y "QOP-7-10 Final Inspection", los cuales forman parte de las políticas y procedimientos desarrolladas para control todos los procesos de producción, y la inspección de los productos terminados, previo a su envío al cliente.

4. **Procedimientos para realizar acciones correctivas**. Se anexa el documento "QOP-8-04 Corrective and PreventiveActions" que describe las políticas y procedimientos para realizar acciones correctivas y preventivas.

5. **Establecimiento de metas de eficiencia y productividad, con enfoque de procesos y reducción de la variabilidad en las partes y componentes fabricados**. Se presenta la manera en que se realiza la medición y almacenamiento de los indicadores de resultados, mismos que se comparan permanentemente contra las metas establecidas. Esto, en el documento anexo "QOP-4-03 Control of Quality Records".

Se considera relevante mencionar que todos los procedimientos desarrollados, gracias a la consultoría especializada brindada por DISHON LIMITED, han sido implementados con éxito, y nuestro personal cuenta con los conocimientos necesarios para mantener el sistema de calidad.

Alcance de los servicios de consultoría

Gracias a los servicios de consultoría especializada brindados por DISHON LIMITED, se cuenta con los elementos necesarios para demostrar que la producción de partes y componentes maquinados se realiza con base en las políticas y procedimientos que establece la industria aeroespacial.

Esto permitirá alcanzar en el corto plazo los siguientes resultados:

1. Captación de nuevos proyectos de proveeduría de partes y componentes maquinados, por un monto de al menos 3 millones de dólares.
2. Mantener altos niveles de calidad en la proveeduría de partes y componentes maquinados, gracias a los controles implementados desde la compra de materias primas hasta el envío de los productos terminados.
3. Alcanzar mayores niveles de eficiencia y productividad, como resultado de un estricto control del proceso productivo.
4. Mantener e incrementar los niveles de satisfacción de nuestros clientes.

A continuación se presentan los documentos anexos en los que están plasmadas las políticas y procedimientos que está siguiendo la empresa, en la producción de partes y componentes maquinados dirigidos al sector aeroespacial.

I INTRODUCTION

IMMSA/DQM developed and implemented a Quality Management System to better satisfy the needs of its customers and to improve the management of the company. The Quality Management System complies with ISO 9001:2008 and AS9100 Rev C standard. The Quality Management System covers the business activities of manufacturing precision-machined components and sub-assemblies for the aerospace, nuclear, electronic, automotive and other high technical markets.

The purpose of the Quality System Manual is to define and describe the Quality Management System, to define the management authorities and to provide general policies procedures for all activities comprising the Quality Management System.

An additional purpose of this Quality System Manual is to present and to communicate our Quality Management System to our customers, to our certification authority, to all employees at IMMSA/DQM and to inform them what specific controls are implemented to assure product and continual improvements.

EXCLUSIONS

The Quality Management System of IMMSA/DQM is not applicable to the fallowing requirement:

- Clause 7.3 Design & Development- IMMSA/DQM as no design capability

APPLICABILITY

All the requirements of the standard are covered in the IMMSA/DQM Quality Management System with the exception of those stated and justified above as Exclusions.

II CORPORATE QUALITY POLICY

IMMSA/DQM WILL BE A LEADING MANUFACTURER OF PRECISION-MACHINED COMPONENTS AND SUB ASSEMBLIES FOR THE AEROSPACE, NUCLEAR, ELECTRONIC, AUTOMOTIVE AND OTHER HIGH-TECHNOLOGY MARKETS.

WE WILL PROVIDE PRODUCTS AND SERVICES, WHICH WILL MEET SPECIFIED CUSTOMER REQUIREMENTS THROUGH QUALIFIED PEOPLE, TEAMWORK AND CONTINUAL IMPROVEMENT OF OUR QUALITY MANAGEMENT SYSTEM.

THE FOUNDATION FOR ACHIEVING THESE GOALS IS ESTABLISHED THROUGH IMMSA/DQM MEASUREMENTS OF THE QUALITY MANANGEMENT SYSTEM.

IMMSA/DQM BELIEVES OUR STRIVE FOR CONTINUAL IMPROVEMENT SHOULD BENEFIT OUR EMPLOYEES, OUR VENDORS, THE COMMUNITY AND THE CUSTOMERS THAT PLACE THEIR TRUST WITH IMMSA/DQM.

III MISSION STATEMENT

IMMSA/DQM MISSION IS TO BE A WORLD CLASS SUPPLIER

WE WILL SUPPLY PRODUCTS WITH ZERO DEFECTS AND DELIVER THEM ON TIME. WE WILL STRIVE TO CONTINUALLY IMPROVE OUR BUSINESS AND PRODUCTS BY UPGRADING OUR TECHNOLOGY AND THROUGH EMPLOYEE TRAINING

IMMSA/DQM COMMITS TO THE FOLLOWING:

- TO ACCEPT RESPONSIBILITY AND TRACEABILITY FOR OUR MANUFACTURING STANDARDS AND TO MEET OUR CUSTOMER REQUIREMENTS;
- TO INVEST IN EMPLOYEE DEVELOPMENT AND TRAINING AND TO MAINTAIN A HIGH LEVEL OF REIMBURSEMENT IN BENEFITS AND MONETARY RETURN TO THEM;
- TO BE GOOD CORPORATE CITIZEN IN OUR COMMUNITY;
- TO GROW PROFITABLY WITH PLANNING AND MODERN UPDATED FACILITIES AND TECHNOLOGY;

IN SUMMARY, WE SHALL STRIVE FOR CONTINUAL IMPROVEMENTS IN EACH AND EVERY FACET OF OUR BUSINESS FOR THE BENEFIT OF OUR CUSTOMERS, EMPLOYEES AND THE COMMUNITY.

4 QUALITY MANAGEMENT SYSTEM

4.1 General Requirement

IMMSA/DQM, committed to establishing, documenting, implementing and maintaining a Quality Management System and to continually improve its effectiveness in accordance with the requirementsof ISO 9001:2008.

The Quality Management System at IMMSA/DQM shall:

a) Identify the processes needed for the Quality Management System and its application throughout the organization;

b) Determine the sequence and interaction of processes;

c) Determine the criteria and methods to ensure that both the operation and control of these processes are effective.

d) Ensure the availability of resources and information necessary to support the operation and monitoring of these processes.

e) Monitor, measure and analyse these processes, and;

f) Implement actions necessary to achieve planned results and continual improvements of these processes

IMMSA/DQM is committed to managing these processes in accordance with the international standard. This Quality Management System also controls the outsourcing of processes that affects product conformity with requirements. The control of outsource processes is further identified and controlled within the Quality Management System.

4.2 Documentation Requirement

4.2.1 General

The Quality Management System documentation at IMMSA/DQM shall include the following:

a) A documented Corporate Quality Policy statement and quality objectives;
b) Quality System Manual (QSM)
c) Quality Operational Procedures (QOP)
d) Quality Documents needed by IMMSA/DQM to ensure the effective planning, operation and control of its processes, and;
e) Quality Records established and maintained to provide evidence of conformity to the requirements and of an effective operation of the Quality Management System.

4.2.2 Quality System Manual

IMMSA/DQM has established and maintained a Quality System Manual that includes the following:

a) **Scope of the Quality Management System including details andjustification for any exclusions to the ISO 9001:2008**
b) **Documented procedures established and maintained for the Quality Management System at IMMSA/DQM, and reference to these procedures, and;**
c) **Description of the interaction between processes of the Quality Management System, refer to fig A below.**

For greater details on how IMMSA/DQM documents the system, refer to QOP Procedure 4-01, Quality System Documentation.

4.2.3 Configuration and Data Management

It is a general policy that all documents required for the Quality Management System and Customer Engineering documents shall be controlled by planning, this also include electronic document media, and additionally, this requirement is extended to the use of Quality Records.

IMMSA/DQM shall establish and maintain a procedure defining the controls needed to:

a) Approve documents for adequacy prior to issue;
b) Review and update as necessary and re-approve documents;
c) Ensure that changes and the current part configuration status are identified and controlled through IMMSA/DQM.
d) Ensure that relevant revisions of applicable of applicable documents are available at point of use;
e) Prevent the unintended use of obsolete documents, and apply suitable identification to those documents if they are retained for any purpose.

For greater detail on how IMMSA/DQM controls documents.

4.2.4 Control of Quality Records

Quality records shall be established and maintained to provide evidence of conformity to requirements and of the effective operation of Quality Management System at IMMSA/DQM all quality records will be legible, readily identifiable and retrievable from IMMSA/DQM. Control of Quality Records has been established and maintained to define the controls needed for the identification, storage, protection, retrieval, retention times and disposition of Quality records.

5 MANAGEMENT RESPONSIBILITY

5.1 Management Commitment

The President and Senior Management are committed to the development and implementation of the Quality Management System and to continually improve its effectiveness by adhering and fostering the following general principies:

- Communicating the importance of meeting customer's statutory and regulatory requirements to all employees within the organization;
- Establishing and adhering to the Corporate Quality Policy;
- Establishing and focusing on the defined Quality Objectives;
- Conducting Management Reviews of the Quality Management System
- Ensuring the availability of resources to support the Quality Management System

5.2 Customer Focus

The President and Senior Management shall ensure that customer's requirements are determined and fulfilled with the objective of enhancing customer satisfaction.

5.3 Quality Policy

The President and Senior Management shall ensure that the Corporate Quality Policy will reflect thefollowing criteria:

- it is appropriate to the business of IMMSA/DQM
- it includes a clear commitment to comply with customer requirements and to continuallyimprove the effectiveness of the Quality Management System
- it provides the framework for establishing and reviewing the Quality Objectives
- it is communicated and understood by all employees within the organization
- it is routinely reviewed for continuing suitability

5.4 Planning

5.4.1 Quality Objectives

The President and Senior Management will ensure that Quality Objectives, including those needed to meet product requirements, are established at relevant functions within the organization. The Quality Objectives will be measurable and consistent with the Corporate Quality Policy.

5.4.2 Quality Management System Planning

The President and Senior Management shall ensure that the planning of the Quality Management System is carried out in order to meet the requirements of section 4.1 of this manual, as well as the setof Quality Objectives. In addition Management is also responsible for maintaining the integrity of theQuality Management System when changes are planned and implemented.

5.5 Responsibility, Authority, and Communication

IMMSA/DQM Organizational Chart has been defined, approved and is clearly posted for everyone's reference, it defines in general terms the communication in the organization and should be readtogether with the following list of functions.

5.5.1 Responsibility and Authority

The following are the sets of responsibilities, authorities and their interrelations as defined by Management and communicated throughout the organization:

President

- Reviewing, and approving Corporate Quality Policy and Management Review Report
- Aids in establishing Quality Objectives with Senior Management
- Ensuring Resource Management & Human Resources in conjunction with the Gen. Manager
- Communicates with customers and suppliers regarding Business and Quality issues

- Planning of the Quality Management System in conjunction with Senior Management
- Promoting the Quality Policy and Quality System throughout the organization
- Reviews and approves all policies and procedures including the QSM and QOP
- Contract Review Activities in conjunction with Sales and Marketing
- Performs Sales and other marketing responsibilities along with Sales and Marketing

Vice President

- Participates in reviewing Management Review Report
- Aids in establishing Quality Objectives with Senior Management
- Controls and reports on Accounting functions to Senior Management
- Ensures functions of Accounts Receivable, Accounts Payable and Payroll
- Responsible for all Office Management related functions

Plant Manager

- Participates in reviewing and approving the Management Review Report
- Aids in establishing Quality Objectives with Senior Management
- Ensuring Resource Management & Human Resources in conjunction with the President
- Communicates with customers and suppliers regarding Business and Quality issues
- Planning of the Quality Management System in conjunction with Senior Management
- Promoting the Quality Policy and Quality System throughout the organization
- Determines Training effectiveness along with members of Senior Management
- Promoting the Product Realization planning in conjunction with Senior Management and staff

Quality Assurance Manager

- Management representativa for the Quality Management System
- Aids in establishing Quality Objectives with Senior Management
- Issues the Quality Policy, Quality System Manual and Quality Operational Procedures
- Liaison with external and internal parties on matters relating to the Quality Management System
- Responsible for the Quality Management activities within Quality Assurance dept.
- Responsible for Corrective/Preventive Action in conjunction with Senior Management
- Monitoring, analysis & presenting of company performance data relatad to the Quality System
- Implementing, managing and reporting on Quality Management System Audits
- Aids in Training, determining effectiveness & competence of employees with Management
- Aids in Product Realization planning in conjunction with Senior Management and staff
- Aids in Continuous Improvement of the Quality Management System
- Aids in Performance Monitoring of Suppliers in conjunction with Purchasing

Sales and Marketing

- Implements and develops Sales Marketing Plans
- Issues Quotations and answers customers requests for information
- Monitoring and analysis of Contract Review performance data related to the Quality Objectives
- Performs Sales and Contract Review activity
- Monitors sales & marketing forecasts and data, reporting to Senior Management
- Aids in customer satisfaction and feedback activities in conjunction with Quality Assurance

Engineering Manager

- Monitoring and analysis of Product Planning performance data related to the Quality Objectives
- Aids in Product Realization planning in conjunction with Senior Management
- Responsible to communicate customer enquiries/amendments to respective departments
- Responsible for customer engineering documentation/drawing & data media control

Production Manager

- Monitoring and analysis of manufacturing performance data related to the Quality Objectives
- Aids in Product Realization planning in conjunction with Senior Management and staff
- Aids in training, determining effectiveness & competence of employees with Management
- Responsible for Preventiva Maintenance Activities
- Issues, approves and controls Quality Records in conjunction with Senior Management
- Aids in Contract Review activities in conjunction with Senior Management

Materials Manager

- Issues, reviews and approves all Purchase Orders
- Inserts Quality provisions to control IMMSA/DQM procurements
- Selection and approval of suppliers including audits in conjunction with Quality Assurance
- Aids in performance monitoring of suppliers in conjunction with Quality Assurance
- Monitoring and analysis of Procurement performance data related to the Quality Objectives
- Implements, monitors and controls all Stock activities for parts and materials
- Implements, monitors and controls all Packaging & Shipping functions and routines
- Implements, monitors and controls the Receiving function and routines

5.5.2 Management Representative

The President appoints the Quality Assurance Manager as the Quality Management Representative as per requirement of the IS09001standards, who has the defined authority that includes:

- ensure the Quality Management System is implemented, maintained, reviewed and measured;
- action Management on needs for improvement or change of the Quality Management System;
- ensure and promote awareness of customer requirements throughout the organization.

5.5.3 Internal Communications

The President with Senior Management ensures that appropriate communication processes are established within the organization, and that communication takes place regarding the effectiveness of the Quality Management System.

5.6 Management Review

5.6.1 General

The President with Senior Management shall review the Quality Management System, at least once a year, to ensure its continued suitability, adequacy and effectiveness. This documented Management Review of the Quality Management System will include assessing opportunities for improvement and the need for changes within the organization, including the Quality Policy and Quality Objectives.

5.6.2 Review Input

The Quality Management System information gathered for Management Review will include:

- Follow-up actions from previous Management Review meetings;
- Status of corrective and preventive actions;
- Assessment of Quality Objective's achievement
- Customer feedback information and complaints;
- Process performance and product conformity;
- Results of internal audits to the Quality Management System;
- Resource and Infrastructure requirements
- Planned changes that could affect the Quality Management System
- Recommendations for improvement of the Quality Management System

5.6.3 Review Output

Actions resulting from the Management Review will include decisions related to:

- Re-affirm of Mission Statement and Quality Policy
- Establishment of renewed Quality Objectives
- Improvements of Quality Management System effectiveness and its processes
- Improvements of product related to customer requirements
- Resources and Infrastructure needed to achieve the above actions

6 RESOURCE MANAGEMENT

6.2.1 General

Employees of IMMSA/DQM performing work affecting product quality shall be competent on the basis of appropriate education, training, skills, and experience.

6.2.2 Competence, Awareness and Training

The Senior Management of IMMSA/DQM shall ensure the following criteria:

a) Determine the necessary competence of personnel performing work affecting product quality;
b) Provide training or take other actions to satisfy these needs;
Evaluate the effectiveness of actions and training needed;
d) Ensure that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of quality objectives, and;
e) Maintain appropriate records of education, training, skills and experience
For greater detail, refer to QOP Procedure 6-01, Competence, Awareness and Training.

6.3 Infrastructure

IMMSA/DQM has determined, provided and maintained the infrastructure needed to achieve conformity to product requirements. This is achieved through allocation of resources, contract review activities and product realization planning.

6.4 Work Environment

IMMSA/DQM has determined and managed the work environment needed to achieve conformity to product requirements. Refer to Environmental Assessment Record.

7. PRODUCT REALIZATION

7.1 Planning of Product Realization

IMMSA/DQM shall plan and develop processes needed for product realization. The planning of product realization will be consistent with all other requirements of other processes of the Quality Management System. In the planning of product realization, IMMSA/DQM will define the following criteria as appropriate:

a) Quality objectives and requirements of the product;
b) The need to establish processes, documents, and provide resources specific to the product;
c) Required verification, validation, monitoring, inspection and test activities specific to the product and the criteria for product acceptance.
d) Records needed to provide evidence that realization processes and product fulfil requirements For greater detail, refer to QOP Procedure 7-01, Product Realization Planning.

7.2 Customer-Related Processes

7.2.1 Determination of Requirements related to the Product

Dishon Ud shall determine the following:

a) Requeriments specified by customer, including for delivery and post delivery activities;
b) Requeriments not stated by customer but necessary for the specified use of the product or for its known and intented use;
c) Statutory and regulatory requeriments related to the product, and
d) Any additional requeriments determined by IMMSA/DQM

7.2.2 Review of Requirements related to the Product

IMMSA/DQM is committed to reviewing customer requirements related to the product. This review shall be conducted prior to IMMSA/DQM committing to the supply a product to a customer. The review (submission of tender, acceptance of contract or order, acceptance of changes to contract or order) will ensure that the following criteria are met:

a) Product requirements are defined;
b) Contract or order requirements differing from those previously expressed are resolved, and;
c) IMMSA/DQM has the ability to meet the defined requirements.

IMMSA/DQM will maintain records of Contract Review and actions arising from these reviews. IMMSA/DQM will not accept orders without documented requirements. When product requirements are changed, IMMSA/DQM will ensure that the relevant documents are amended and that the relevant personnel is made aware of such changes. For greater detail, refer to QOP Procedure 7-02, Contract Review.

7.2.3 Customer Communications

IMMSA/DQM is committed to implementing an effective arrangement of communicating with customers in matters pertaining to the following:

a) Product information during Contract Review activities;
b) Enquiries, contracts or order handling, including their amendments, and;
c) Customer feedback, including customercomplaints.

7.3 Design and Development

This requirement is declared not applicable to IMMSA/DQM. Quality Management System

7.4 Purchasing

7.4.1 Purchasing Process

IMMSA/DQM will ensure that purchased products shall conform to specified purchasing requirements. The type and extent of applied controls to the supplier base is dependent upon the effect of the purchased product on subsequent product realization or the final product. IMMSA/DQM will evaluate and select suppliers based on their ability to supply product in accordance to quirements. The criteria for selecting, evaluating and re-evaluating suppliers are in accordance with QOP Procedure 7-04, Selecting and Evaluating Suppliers. IMMSA/DQM maintains records of evaluation and resulting actions arising from evaluation.

7.4.2 Purchasing Information

Purchasing information shall describe at a mínimum, the product to be purchased, including where appropriate:

a) Information related to product configuration and identification
b) Requirements for the approval of products, procedures, processes and equipment;
c) Flow down of IMMSA/DQM QA Clauses and/or customer requirements, and;
d) Quality Management System requirements

It is also a general policy that IMMSA/DQM shall ensure the adequacy of specified purchase requirements prior to their communication to suppliers. Refer to QOP Procedure 7-05, Purchasing.

7.4.3 Verification of Purchased Product

IMMSA/DQM has established and implemented a receiving inspection procedure necessary for ensuring that purchased products meet the specified purchasing requirements. Where IMMSA/DQM or its customers intend to perform verification of purchased products on our supplier's premisas, we will state the intended verification arrangements and methods of ralease within the purchasing information. For greater detail, refer to QOP Procedure 7-06, Receiving Inspection.

7.5 Production Provisions

7.5.1 Control of Production Provisions

IMMSA/DQM is committed to plan and carry out production provisions under controlled conditions. These controlled conditions include:

a) The accountability of all product during manufacturing;
b) Manufacturing documentation (i.e. Shop Routing Sheets) shall be carried out in accordance with approved instructions;
c) The availability of information that describes the characteristics of the product;
d) The availability of work instructions;
e) The provision for the prevention of foreign objects;
f) The use of suitable equipment and test measurement devices;
g) The availability and use of monitoring and measurement devices affecting product performance;
h) The implementation of monitoring and measurement, and;
i) The implementation of release and delivery activities.

7.5.2 Validation of Processes for Production (Special Processes)

IMMSA/DQM is further committed to validating any processes far production and service provisions where the resulting input cannot be verified by subsequent monitoring or measurement. This will include any and all processes where deficiencias become apparent only after the product is in use or the service has been delivered. Validation will demonstrate the ability of these processes to achieve planned results. IMMSA/DQM has established far the arrangements of these processes including as applicable:

a) defined criteria for review and approval of processes;
b) approval of equipment and approval of processes;
c) use of specific methods and procedures;
d) requirements for quality records
e) revalidation when required

7.5.3 Identification and Traceability

Where appropriate, it is a general policy that IMMSA/DQM will identify its products by a suitable means in conjunction with the product realization process. This requirement is also applied to identify product status with respect to monitoring and measurement requirements. Where traceability is a contractual requirement, IMMSA/DQM shall control and record the unique identification of the customer's product according to the level of traceability required by contract.

7.5.4 Customer Property

IMMSA/DQM shall exercise care with customer property while it is under control or being used by this facility. We will identify, protect and safeguard all customer property provided far use and or incorporation into the product. In the event that customer property is lost, damaged or otherwise found to be unsuitable for use, it is a general policy that this will be reported to the customer and appropriate records will be maintained.

7.5.5 Preservation of Product

IMMSA/DQM shall preserve the confarmity of products during the internal processing and delivery to the intended customer. This requirement shall include the identification, handling, packaging, storage and protection as appropriate. Preservation of product shall also be applied to the constituent parts of a product.

7.6 Control of Monitoring and Measuring Devices

IMMSA/DQM shall determine the monitoring and measurements to be taken and the monitoring and measuring devices needed to provide evidence of product conformity. A process has been established and implementad to ensure that monitoring and measurements can be carried out and are carried out in a manner consistent with the monitoring and measuring requirements. Where necessary to ensure valid results, the measuring equipment will at a minimum:

a) Be calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; and where no such standards exist, the basis for calibration and or verification will be recorded;

b) Measurement Equipment is to be adjusted, or re-adjusted as necesary;

c) Measurement Equipment is to be identified with the calibration status;

d) Measurement Equipment is to be safeguarded from adjustments that would invalidate the measuring results;

e) To be protected from damage and deterioration during handling, maintenance and storage.

In addition, the Quality Assurance department shall assess and record the validity of previous measuring results when the equipment is found not to conform to set requirements. Quality Assurance personnel will then take appropriate actions on equipment and subsequent products that may be affected. All calibration and verification results are recorded and maintained as appropriate in accordance

When used in monitoring and measurement of specified requirements, the ability of computer software to satisfy the intended application will also be confirmed. This requirement will be taken prior to the initial use and reconfirmed as appropriate.

8. MEASUREMENTS, ANALYSIS ANO IMPROVEMENT

8.1 General

IMMSA/DQM is committed to plan and implement the monitoring, measurement, analysis and improvement of processes for the following:

a) To demonstrate product conformity;
b) To ensure conformity of the Quality Management System, and;
c) To continually improve the effectiveness of the Quality Management System

This shall include the determination of applicable methods, including the use of statistical techniques, and the extent of their use.

8.2 Monitoring and Measurement

8.2.1 Customer Satisfaction

In accordance with the Corporate Quality Policy and this international standard, IMMSA/DQM values the analysis and measurement of Customer Satisfaction data. We are committed to monitor information relating to customer perception as to whether the company has fulfilled its customer requirements.

8.2.2 Internal Audit Program

IMMSA/DQM shall conduct audits at planned intervals to determine whether the Quality Management System meets the following criteria:

a) Conforms to the planned arrangements, to the requirements of ISO 9001:2008 to the Quality Management System (QMS) Procedures, and;
b) Is the QMS effectively implemented and maintained.

The Internal Audit Program is carefully planned, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods are defined in QOP Procedure 8-02, Internal Audit Program. The selected auditors shall conduct audits to ensure complete objectivity and impartiality of the audit process. It is a general policy that auditors will not audit their own work.

The responsibilities and requirements for planning and conducting audits, and for reporting audit results and maintaining records are in accordance with the above procedure. The department managers responsible for their areas being audited will ensure that Corrective Actions are taken without undue delay to eliminate the detected nonconformities and their causes. Follow-up activities will include the verification of the Corrective Actions taken and the reporting of verification results.

8.2.3 Monitoring and Measurement Process

IMMSA/DQM shall apply suitable methods for monitoring, and where applicable, measurements of the Quality Management System processes. These methods will demonstrate the ability of the processes to achieve planned results. If planned results are not achieved, Corrective Action will be taken to ensure product conformity.

8.2.4 Monitoring and Measurement of Products

IMMSA/DQM shall monitor and measure characteristics of the products to verify that product characteristics are fulfilled as required. This is accomplished through the various stages of the Product Realization process in accordance with QOP Procedure 7-01, Product Realization Planning. Evidence of product conformity with the acceptance criteria is maintained as appropriate. Records will indicate the personnel responsible for product release. Releasing product for delivery is strictly prohibited until all planned arrangements have been met, unless otherwise approved by relevant authorities, and where applicable, by our customer. To ensure these characteristics are validated, will implement at a minimum:

a) Control and identification of all key characteristics;
b) Implement Sampling Inspections plans as per contract requirements;
c) Inspection status of product shall be shown on Manufacturing documents (I.e. Shop Routing Sheet);
d) Test/Inspection reports shall show product acceptance status, and;
e) First Article Inspection report shall be deployed as per contract.

8.3 Control of Nonconforming Product

IMMSA/DQM shall ensure that product that which does not conform to product requirements are identified and controlled to prevent its unintended use or delivery. The controls and related responsibilities and authorities for dealing with nonconforming product are defined in QOP Procedure 8-03, Control of Nonconforming Product. As detailed in this procedure, IMMSA/DQM shall address nonconforming product by one or more of the following ways:

a) By implementing a close-loop system for capturing, identifying and disposition of nonconforming product;
b) By identifying and segregating nonconforming product, where possible from manufacturing areas;
e) By taking Corrective Action to eliminate the detected nonconformity;

d) By authorizing its use, release or acceptance under concession by a relevant authority and, where applicable, by thecustomer;

e) By permanently marking any "Scrap" nonconforming product, and;

f) By taking action to preclude its original intended use or application.

Records of the nonconformity and any subsequent Correctiva Actions taken, including concessions obtained, will be maintained. It is a general policy of this company that when nonconforming products are corrected that the product will be subjected to re-verification to demonstrate conformity to the original requirements. In the event that nonconforming products are identified after delivery or use has started, IMMSA/DQM will take action appropriate to the effects, or potential effects of the nonconformity.

8.4 Analysis of Data

IMMSA/DQM shall determine, collect and analyse appropriate data to demonstrate the suitability and effectiveness of the Quality Management System and to evaluate where continual improvement of the Quality Management System can be made. The analysis of data will include information generated as a result of monitoring and measurement and from other relevant sources. The analysis of data will provide at minimum, information relating to the following:

a) Internal process Audit information;

b) Customer satisfaction information;

c) Conformance to product requirements (NCRs, CAR/PAR, etc)

d) Characteristics and trends of processes/products including preventiva action opportunities, and;

e) Supplier performance on delivered material/parts.

8.5 Improvements

8.5.1 Continual Improvement

IMMSA/DQM is committed to continually improving the effectiveness of the Quality Management System through the use of the Corporate Quality Policy, stated quality objectives, audit results, analysis of data, correctiva and preventiva actions and the management review process.

8.5.2 Corrective Action

IMMSA/DQM shall take action to eliminate the cause of nonconformities in order to prevent recurrence. Correctiva Actions will be appropriate to the effects of the nonconformities encountered.

a) Reviewing nonconformities, including customer complaints;

b) Determining the causes of the nonconformities;

c) Evaluating the need for action to ensure that nonconformities do not recur;

d) Determining and implementing the actions needed;

e) IMMSA/DQM to flow down of corrective actions to responsible suppliers, where needed;

f) Specific actions where timely and/or effective correction actions are not achieved;

g) Record the resulting actions, and;

h) Reviewing the Correctiva Actions taken.

8.5.3 Preventive Action

IMMSA/DQM shall determine actions to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventiva Actions will be appropriate to the effects of the potential problems. QOP Procedure, 8-04, Corrective and Preventiva Action, defines the following requirements:

a) Determining potential nonconformities, their causes and evaluating the need for action;
Determining and implementing the actions needed, and recording the results, and;
e)) Reviewing the preventiva actions taken as appropriate.

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SELECTING AND EVALUATING SUPPLIERS	Approved by:	Alfonso Anciola Guajardo		

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities for selecting, monitoring and evaluating IMMSA/DQM. suppliers and their performance.

11. RESPONSIBITY

It is the responsibility of Purchasing Department to abide by this procedure as well as specific assigned responsibilities are detailed in the procedure.

111. SCOPE

This procedure applies to all IMMSA/DQM. Suppliers of materials, processes, parts and any services that are incorporated in to the production process. This procedure directly concerns the Purchasing process but is also relevant to other areas.

IV. PROCEDURE

V. Supplier

Evaluation

1. **Purchasing** ensures that the quality capability of all suppliers is initially evaluated, and that every new supplier is required to provide the fallowing documents as applicable:
   - Certificate of Registration of their Quality Management System
   - Supplier Update & Audit Record using farmDL-027
   - Quality Manual if their QMS is not registered
   - Other certifications or approvals by relevant authorities or customers

2. **Purchasing** evaluates the documentation submitted by the supplier and, if desirable,mayrequestavisittoauditthesupplier'squalitysystemandproductionprocess.Upan completionofa successful evaluation it records the supplier information in the AVL in the computer system and classifies the supplier into one of fallowing categories:
   - Level 1 (suppliers of materials, processing, or manufactured parts)
   - Level 2 (suppliers of tools, equipment, accessories, laboratories, etc)
   - Level3 (suppliers of transportation, packaging, hardware and general supplies)

3. **Purchasing** is fully responsible for any supplier re-evaluation as it may become required by status of delivered material/product performance. Purchasing ensures that the supplier records of the evaluations andre-evaluations are kept in the computer system and complying with procedure QOP 4-03 Control of Quality Records.

Supplier selection - Approved Vendor List

4. **Purchasing** department controls and maintains an Approved Vendar List (AVL) in the computer system that is available to any personnel preparing, reviewing and authorizing

purchasing documents. Only suppliers marked approved in the AVL shall be used to provide materials, processes, components and services incorporated into the Production process.

5. **Purchasing** ensures suppliers are selected based on criteria of quality, delivery, price, response to sales issues, or other requirements deemed necessary to the specific job.

6. **Purchasing** ensures that any case of customer approved supplier is included in the AVL, documented and controlled as normal direct supplier of IMMSA/DQM, and ensures that the customer approved suppliers are used for the required orders.

7. **Purchasing** at its discretion may "Suspend" suppliers from the AVL due to issue of quality, delivery, price or any other relevant concern, or by instructions received from its direct their archly.

Supplier Performance

8. **Purchasing** ensures that all AVL Level 1 and 2 suppliers are continuously monitored for quality and delivery performance, by means of a consistent recording of PO sand Receiving data in the computer system, and also by documenting any delivery or quality problem using procedure QOP 8-03 Control of Non-Conforming Product.

9. **Purchasing** ensures that supplier performance is reviewed once a year to assess trends in quality and delivery, and also that suppliers who fail to deliver satisfactory products and materials, and show no improvement actions taken, are recommended far "Suspension".

1O. **Purchasing** shall is séance year the AVL supplier performance ratings in conjunction with the Quality Department, and ensures records are maintained in the supplier's record in the computer system as per procedure QOP 4.03 Control of Quality Records.

Suppliers Grand-Fathered

11. **Purchasing** agrees that have suppliers that have been supplying to IMMSA/DQM starting be fare year 2005, and whose performance is considered acceptable, are exempt from the initial evaluation and documentation requirements.

Suppliers Designated by Customers

12. **Purchasing** mustarding customer designated supplier to the AVL in the computers system with note relating to the specific customer approval. Any customer designated supplier will be evaluated and monitored exactly as the rest of suppliers in the AVL.

Supplier Material Validation

13. **Purchasing** shall, once a year, randomly pick from stock two samples from two distinct materials and send them for mechanical and chemical testing. Results will be sub mitted to QA for validation of the information reported on the material test reports on file from suppliers.

V. ASSOCIATEDDOCUMENTS

QOP-7-05 Purchasing
PUR-01, PUR-02, PUR-03 Purchasing work instructions
DL-019 SupplierPerformanceRating
DL-025 Temporary Approval of supplier
DL-027 Supplier Update Audit y record

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RECEIVING INSPECTION	Approved by:	Alfonso Anciola Guajardo		

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities for performing and recording receiving inspections of product to ensure they meet specified requirements.

11. RESPONSIBILITY

It is the responsibility of all receiving personnel at IMMSA/DQM to abide by this procedure here in. Specific assigned responsibilities are detailed in the procedure.

111. SCOPE

This procedure applies to all purchased materials, parts, components and other products incorporated into the Product Realization process. This procedure directly concerns The Quality Assurance department, Manufacturing, and the Purchasing department.

IV. PROCEDURE

1 Scope of receiving inspection.

1.1 All received material is subject to a receiving inspection and shall be nter in the computer system, the receiving inspections a 2 step process. In the first step, the receiver verifies the quantity and associated documents. In the seconds step, the material or product is inspected.

1.2 After receiving inspection, internal copies of the packing slips are signed and stamped, and the Shop Routing Sheet is signed as verification of these activities.

1.3 Receiving personnel shall be responsible to forward all delivered Quality supplier documentation accompany material/product to Quality Assurance dept for review and scanning into the computer system.

1.4 Note: All material is assigned to a specific job number and inspections and process controls are detailed in the Shop Routing Sheet.

2 First Stage inspection

2.1 Receiving personnel shall be responsible to unload all incoming material/product. The Receiving personnel shall verifies the received material/product against the packing slip to ensure proper material type, grade, quantity, part markings if any, quality records etc. Where received material/product is not adequately identified with lot/heat number

2.2 After receiving the incoming material / product, the Receiving personnel are responsible for accepting the material/product by signing and dating the packing slip. The particulars of the received material/product are then logged in computer system, and paper work is passed to the Quality Assurance Department.

RECEIVINGINSPECTION

3 Second Step Inspection.

3.1 **Receiving personnel** also performs the second stage inspection. This process requires the Receiving personnel to visually inspect the received material for damage or other noticeable defects that may affect the Product Realization process.

3.2 At a minimum, the scope of the second stage inspection verifies that:

- Review of Material Certificates, or other quality documents received with the
- material;
- Visually inspect to detect any damage or other visible problems
  Identify the materials having passed receiving inspection by stamping the
- packing slip "RECEIVED" and complete part marking of not adequately identified
- with heat /lot number. Received documents with material and co-signed by
- QA/QC.
  Verification shipment received against purchase order QA Clauses
  Documenting the inspection activity in the shop routing sheet (SRS) that correlates with the purchased material. This requires dating and initialing the document to provide evidence of inspection.

3.3 When materials or products pass inspection, they are moved to an appropriate staging area in the manufacturing environment. Parts may either be stored in a dedicated storage area, or directly staged for processing after successfully passing the stages of receiving inspection.

3.4 When a shelf life material is received, it is the responsibility of receiving personnel to affix a" *Shelf Life Control*" label to the material prior to processing the material to dedicated storage area, or directly staged for processing. Receiving information for the material is updated in the computer system.

3.5 If products or material fail receiving inspection, it is the responsibility of the Receiving personnel to affix a red "Reject" or yellow" Hold" tag to the material. The rejected / suspect material is then put aside, and the Quality Assurance Manager is notified immediately. The disposition of rejected/suspect material will be in accordance with QOP Procedure8-03, Control of Nonconforming Material.

3.6 At the discretion of the QA Manager, received part or material that fails receiving inspection stage may be placed on" *Positive Reca/1*". The QA manager ensures the part or material is affixed Yellow "Hold" tag. QA Manager shall place a note on the Shop Routing sheet (SRS) related to the positive recall part or material. Once the part or material has been identified, receiving personnel continues with the receiving process and directs the part or material to the dedicated storage area, or directly staged for processing.

4 Distribution of Quality Records

4.1 **Packing Slips:** Distributed to the Office Manager and a copy with the SRS package.

4.2 **Received Supplier Quality Records:** Distributed to Quality Assurance department and copies are attached to the Shop Routing Sheet Package.

4.3 Lt is the responsibility of the Receiving personnel to distribute the above documents where required. These records are maintained in accordance with QOP

Procedure 4-03, Control of Quality Records.

V. ASSOCIATEDDOCUMENTS

QOP4-03, Control of Quality Records
QOP 8-03, Control of Non conforming Product
RINSP01, Receiving Inspection (work instruction)

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities for performing manufacturing activities and process control activities.

11. RESPONSIBILITY

It is the responsibility of all personnel at IMMSA/DQM Ltd to abide by this procedure here in.Specific assigned responsibilities are detailed in the procedure.

.1. SCOPE

This procedure applies to all operations and processes used in the manufacturing of IMMSA/DQM Ltd products. This procedure applies to all personnel, who perform work in accordance with the policies and procedures defined and referenced in this procedure.

IV. PROCEDURE

1 Manufacturing Process Control Elements

1.1 Manufacturing processes are controlled through a variety of approaches, activities and techniques. The Quality Management System is designed to control information, material and machine operator in put in to processes; the technology, tools and equipment used; the process performance; and the process output. Where appropriate, the environment in the manufacturing areas is also controlled.

1.2 The information in put is controlled though product realization planning; through review and approval of the Shop Routing Sheet, defining products and the manner of manufacturing; and through controlled distribute on of these documents.

1.3 The material input is controlled through material specifications; external processing controls of our suppliers; material testing and inspection; material identification and traceability; and receiving/in process / final inspections verifying the results of preceding processes.

1.4 The machine operator in put is controlled through qualification requirements (competency); training and general workmanship standards.

1.5 The technology, tools and equipment are controlled through equipment testing; jobset-up verification; machine operator qualifications; tooling control measures; and preventive maintenance.

1.6 The process performance is controlled through measuring and monitoring and recording product characteristics; and controlling process and equipment parameters, including using SPC where applicable.

1.7 The process out put is controlled through In-process Inspections, final inspection and Testing.

1.8 The environment in the manufacturing areas and the Quality Assurance areas are controlled through maintaining general cleanliness in the respective areas through had equate ventilation, heating and air condition.

2 Control Methods and Techniques

2.1 **Shop Routing Sheet (SRS):** This is the primary document of the Quality Management System. It details information input and output from the product realization process. It identifies part numbers, names, descriptions, sequential manufacturing steps, inspection activities and so forth. This document is also the primary means of identifying inspection status, and provides a platform for establishing a quality record, the SRS is the computer system. Refer to QOP Procedure 7-07, Shop Routing System

2.2 **Customer Drawings:** For all jobs with critical processes, machine operators are provided with information that describes product characteristics through the distribution and use of customer drawings. The drawings identify the customer name, part number, part revision, and part description. These drawing are attached with the Shop Routing Sheet and are also accessible by the computer system.

2.3 **Work instructions:** Specific functions are provided with work instructions, detailing how to Performa job and be aware of foreign objects that have impact to product quality.

2.4 **Statistical Process Control:** Where appropriate, statistical process control (SPC) techniques are used to monitor performance of certain manufacturing processes. The Quality Assurance Manager is responsible for identifying processes where SPC is to be implemented. QOP Procedure 8-01, Statistical Techniques, provides instruction show to implement data collection, charting and other associated activities.

2.5 **Preventive Maintenance:** Key process equipment, machines and systems are regularly checked and serviced in accordance with QOP Procedure7-08, Preventive Maintenance. The objective of the program is to maintain continuing process capability and minimize risk of equipment break down which could adversely impact product quality.

2.6 **Machine Operator Competency and Qualifications:** All machine operators and associated personnel are qualified based on experience and training. Personnel performing specificassignedactivitieshaveanappropriatecombinationofeducation, experience and training. Forfur ther details, refert o QOP Procedure 6-01, Competence, Awareness & Training.

2.7 **Inspection & Testing Records:** This is the primary means for providing evidence of process out put. Inspection records also provide a platform for establish a quality record and identifying products and their inspection status. Refer to QOP Procedure 7-09, In-Process Inspection and QOP Procedure 7-1O, Final inspection for fur there details.

2.8 **Product Realization Planning:** This is the 2 step process as defined in QOP Procedure7-01, Product Realization Planning. The defined stages are the Planning Stage, and the Manufacturing Stage.

3 Controlling External Processing

3.1 IMMSA/DQM fully controls those external processes in the product realization process. Special processe sare those processeswhose results cannotbefully verified by subsequentnon-destructiveinspectionsandtests. Theses hould not be confused with processes responsible for special characteristics. Examples of special processes are:

- Joining of materials by welding, soldering, gluing.
- Coatings with paints, epoxies, special lubricants.
- Heat, radiation or chemical treatments of materials.

3.2 All external processing and those special processes subcontracted to our suppliers arefully controlled through QOP Procedures 7-05, Purchasing in conjunction with this procedure. Lt is the responsibility of the Receiving Personneltoensurethatallapplicable product requirements are explicitly detailed in the purchase order. This is extended to the availability of quality records.

3.3 **Receiving Personnel** is the responsible to ensure that all associated quality documentsarereceived from the supplier providing externa! processing associated with the Product Realization Process. Quality records are usually in the form of process verification and validation records such as Certificates of Conformance etc. Once material or parts are received, the quality records are verified, and if acceptable, denotes acceptance by signing anddating the Shop Routing Sheet where the operation is called outand/or packingslip.

4 Cleanliness of Premises

4.1 IMMSA/DQM has defined acceptable states of orderliness, cleanliness and repair appropriate to the nature of the products we manufacture. Cleanliness is maintained by the manufacturing department, and is the responsibility of the Manufacturing Manager to ensure the areas are cleaned as required.

5 Manufacturing Records

5.1 **Manufacturing & Employee Communication Record:** This record is used to document information pertaining to a specific job, or relay information from shift to shift. This record is established as a" As need" basis. This record is collected and reviewed at the discretion of the Manufacturing Manager. This record is not considered a Quality Record and is not maintained past original intended use. Refer to form DL-050

5.2 **Manufacturing Tool Sheet Record:** When required, machine operators are to map the process parameters using the Manufacturing Tool Sheet Record, form DL-051. At a minimum, the machine operator is required to record the customers name; part number; date the record was established; who established the record; tooling description and the offset data, (Height and Diameter). This document is maintained in the Shop Routing Sieetpackage.

5.3 **Tool and Test Equipment Order Records:** Any jobs requiring specialty tooling or test |equipment, the operator is required to record the ID number on the Shop Routing Sheet.

5.4 **Shop Routing Sheet Records:** The Manufacturing Process Sheets accompany the Shop Routing Sheet for difficult and complex jobs. Every job is issued at Shop Routing Sheet to detail infrastructure requirements. Manufacturing Process Sheets are issued at the discretion of the product realization planner, also referred to as the" originator" in the Shop Routing Sheet enter in the computer system.

V. ASSOCIATED DOCUMENTS

- QOP Procedure 6-01, Competence, Awareness and Training
- QOP Procedure 7-01, Product Realization Planning
- QOP Procedure 7-05,Purchasing
- QOPProcedure706,Receiving Inspection
- QOPProcedure7-07,Shop Routing System
- QOP Procedure 7-08 Preventive Maintenance
- QOPProcedure7-09,In-Process Inspection
- QOP Procedure 7-1O, Final Inspection.
- QOP Procedure 8-01, Statistical Techniques.
- FormDL-050,Manufacturing & Employee Communication Record
- Form DL-051, Manufacturing Tool Sheet Record

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FINAL INSPECTION	Approved by	Alfonso Anciola Guajardo		

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities for performing and recording the final inspections on product.

II. RESPONSIBILITY

It is the responsibility of all personnel at IMMSA/DQM to abide by this procedure herein. Specific assigned responsibilities are detailed in the procedure.

III. SCOPE

This procedure applies to all finished products manufactured by IMMSA/DQM. This procedure directly concerns the Quality Assurance department, and the Manufacturing department.

IV. PROCEDURE

1 General

1.1 **The Quality Assurance** department is responsible for Final Inspection and for the release of product to packaging and shipping department. Inspections are performed by Quality Assurance personnel as mandated on the Shop Routing Sheet and or Quality Plan.

1.2 It is a policy of IMMSA/DQM to concentrate resources and attention on defect prevention rather than defect detection. The verification effort is focused on the control of the processes. Normally, by the time products are completed they have been completely verified through the programs QOP Procedure 7-06, Receiving Inspection. The purpose of Final Inspection is <u>not</u> re-inspect the products, but to ascertainthat all verification activities prescribed by the Shop Routing Sheet have been carried out with satisfactory results and /or customer requirements related to packaging or delivery. However, should there be remaining inspection; it shall be performed at the time of final inspection to complete the evidence of product conformance.

2 Scope of Final Inspection

2.1 At a minimum, the scope of final inspection comprises:
Visual Inspection of the product and a review of applicable quality records, to ascertain that all specified operations and requirements are completed and to detect any visible quality problems including those operations performed by external processes.

Taking measurements and testing to complete evidence of product conformance as specified in the Shop Rooting Sheet and or Quality Plan.
Recording the actual measure and test results as required in form DL-006, Inspection Report. Verifying that all "Positive Re-call" parts/materials have been accepted prior to final inspection sign-off on the Shop Routing Sheet.

3 Carrying out Final Inspection

3.1 For products requiring Final Inspection, Quality Assurance personnel are provided with Final Inspection documents and the appropriate tools and measuring equipment to carry out the final inspection.

3.2 Products or batches of products, that pass all reviews, inspections and tests, make record of acceptance by signing and dating the activity in the Shop Routing Sheet. An additional record is established by recording the measurement results in the Inspection Record, form DL-006. It is the responsibility of the inspecting authority to sign and date the inspection record and the Shop Routing Sheet. The inspection status is also maintained by signing and dating the Shop Routing Sheet that identifies the releasing authority.

3.3 The Quality Assurance personnel/Manager may be required to establish 2 additional quality records. The Quality Assurance personnel are responsible for establishing and recording an Inspection Report, form DL-006. The establishment of these additional documents is mandated by the Shop Routing Sheet and or Quality Plan.

3.4 The purpose of the Certificate of Compliance (DL-032) is to officially demonstrate product compliance; this record is also forwarded to the customer with the product as appropriate. The purpose of the Final Inspection is to review all applicable quality documents and products that are being shipped to the customer. It is the responsibility of the Final Inspection authority to ensure all quality documents are established, and placed in the Shop Routing System package. *Note: The specific Quality Records forwarded to the customer differ from job to job, and customer to customer. See Shop Routing Sheet/ Quality Plan for customer specific document requirements.*

3.5 As some products are serialized, or otherwise uniquely identified, the identification is applied, or checked at this stage. Following successful inspection and testing activities, products are moved to the packaging and shipping area with the customer deliverable Quality documentation.

4 Non-Conforming Product

4.1 **Quality Assurance personnel** are the responsible to affix red "REJECT" tag when a non- conforming (rejected) product is identified and inform the Quality Assurance Manager immediately without delay. The Quality Assurance Manager is responsible fOJ disposition the part in accordance with QOP Procedure &03, Control of Non-Conforming Product.

4.2 **Quality Assurance personnel** are responsible to affix a yellow "HOLD" tag to identify a nonconforming (Suspect) product or a "Positive re-call" part/material, and shall inform the Quality Assurance Manager immediately without delay. The Quality Assurance Manager is responsible for disposition the part in accordance with QOP Procedure8-03, Control of Non- Conforming Product.

5 Release of Product

5.1 Only the Quality Assurance Manager and Quality Assurance personnel have the authority to release product. Note: the Shop Routing Sheets that have not identified the release of product, the products shall not be released.

6 Quality Records

6.1 To establish Final inspection, the inspecting authority is required to initial and date the Shop Routing Sheet, the Final Inspection Record, and other applicable quality records as detailed by the Quality Plan and or Shop Routing Sheet.

6.2 Quality records are maintained in filing cabinets and other protective environments in accordance with QOP Procedure 4-03, Control of Quality Records.

V. ASSOCIATED DOCUMENTS

QOP 4-03, Control of Quality Records
QOP 7-06, Receiving Inspection
QOP 7-09, In-Process Inspection
QOP 8-03, Control of Non-Conforming Product
Form DL-006, Inspection Report
Form DL-032, Certificate of Compliance

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities for requesting, initiating, implementing and checking the effectiveness of the corrective and preventive actions.

II. RESPONSIBILITY

It is the responsibility of the Quality Assurance (QA) Manager to abide by this procedure, and to ensure these requirements are followed and implemented.

III. SCOPE

This procedure applies to correcting and preventing non-conformances related to the Quality Management System and to its processes, audits and also materials and parts. This procedure is relevant to the Management Team and to all departments and functions.

IV. PROCEDURE

1. **QA Manager** generates the entire Corrective or Preventive Actions in the computer system DORIS using the standard CAR form DL-043, as the problems arise, and are detected and documented from a variety of sources. A Corrective or Preventive Action can be originated by

   NCR information – the NCRs address specific process issue, issues of Material Defect or Non-Compliance, Parts Defect or Customer Complaints or Returns. At the QA Manager discretion a CAR shall be required to implement the changes to practices and/or processes derived from the observed facts and NCR records.

   Audits – based on the results of internal or external audits a CAR at the QA Manager discretion shall be required to document and control the implementation of specific corrective action(s) required or improvement action(s) reported.

   Management Review – based on the analysis and decision making during the Management Review process a CAR at the QA Manager discretion shall be required to document and control the implementation of specific preventive and improvement action(s) planned and directed.

   QA Manager or Senior Management- based on the discretion of Senior Management or the QA Manager and their data analysis of current process and operation of the Quality Management System, a CAR shall be required to document and control the implementation of any specific action(s) intended.

2. **QA Manager** ensures the CAR is clear and self explanatory in its definition of the current situation and observation of the process, in the actions required to be done, and also that the expected dates of completion are reasonable and agreed by the interested parties.

3. **QA Manager** ensures that copy of the CAR is issued to the department Manager, responsible for the area or to the Supplier in question for immediate action and that Senior Management receives copy for information and follow-up.

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CONTROL OF QUALITY RECORDS	Approved by	Alfonso Anciola Guajardo		

I. PURPOSE

The purpose of this procedure is to provide requirements and to assign responsibilities needed for the identification, storage, protection, retrieval, retention time and disposition of all quality records.

II. RESPONSIBILITY

It is the responsibility of all personnel at IMMSA/DQM, to abide by the procedure herein. Specific assigned responsibilities are detailed in the procedure.

III. SCOPE

This procedure applies to all records pertaining to the Quality Management System, and in particular the records listed in section IV-1 of this procedure. This procedure is relevant to and affects all departments.

IV. PROCEDURE

1 Records, Retention Periods, and Archiving Periods.

Note: Records are available for review by the Customer and Regulatory authorities in accordance with contract or regulatory requirements. All Quality records where applicable are scanned into the IMMSA/DQM.

1.1 Management Review Records: Established per QOP Procedure 5-01, Management Review.

1.2 Contract Review Records: Offers, Request far Quotes, Quotation Work Sheets and other documents established per QOP Procedure 7-02, Contract Review.

1.3 Customer Drawings: Customer drawings established per QOP Procedure 7-02, Contract Review.

1.4 Supplier Evaluation & Performance Records: Established per QOP Procedure 7-04, Selecting and Evaluating Suppliers.

1.5 Purchase Orders: Purchasing documents for the procurement of materials, components, products and services to be incorporated into the finished product per QOP Procedure 7-05, Purchasing.

1.6 Shop Routing Sheets: Established per QOP Procedure 7- 07, Shop Routing System.

1.7 Product Quality Records: Control Charts, Inspection forms, Certificates of Compliance, Audit Checklists established per QOP Procedure 7-09, In-Process Inspection and QOP Procedure 7- 10, Final Inspection.

1.8 **Supplier Product Quality Records:** Certificates of Conformance (C of C), Inspection and Testing Results (Material Physical / Chemical Analysis) and Bill of Ladings from suppliers in accordance with QOP Procedure 7-06, Receiving Inspection. C of C's retained by the QA Manager.

1.9 **Calibration Records:** Calibration Records and Certificates established per QOP Procedure 7- 15, Control of Monitoring and Measuring Equipment. Retained by QA Manager for the life of the Instrument from the date of creation.

1.1O **Non-Conformance Records:** Non-conformance Reports established per QOP Procedure 8-03, Control of Nonconforming Product.

1.11 **Corrective and Preventive Action Reports:** Corrective Action Requests, Preventive Action Requests are established per QOP Procedure 8-05, Corrective & Preventive Action.

1.12 **Customer Complaint Records:** TOPS Corrective Actions are established per QOP Procedure 7-03, Customer Feedback.

1.13 **Internal Quality Audit Reports:** Audit Non-Compliance Reports, Audit Summary Reports and Audit Checklists established per QOP Procedure 8-03, Internal Audit Program.

1.14 **Training & Effectiveness Records:** Training records, Tuition Aid Requests and resumes or applications established per QOP Procedure 6-01, Competence, Awareness and Training.

1.15 **Material Data Safety Sheets (MSDS):** Retained by the Purchasing Manager for current use only. These records are not archived past the retention period.

1.16 **Preventive Maintenance Records:** The Preventive Maintenance Record and the Machine History & Preventive Maintenance Record established per QOP Procedure 7-08, Preventive Maintenance. These records are retained by the Manufacturing Manager for the life of the machine while in use.

1.17 **Manufacturing Records:** The Machine Resource & Scheduling Record, Manufacturing & Employee Communication Record established per QOP Procedure 7-11, Manufacturing Controls.

1.18 **Shipping Records:** Shipping Log established per QOP Procedure 7-14, Handling, Packaging, Storage and Protection & Deliveries.

2 Identification of Quality Records

2.1 Quality Records are identifiable to the product, process, person or job number to which they apply. Records are dated, and identify the person who established the record. Records are indexed or grouped to facilitate their retrieval.

3 Storage and Disposal

3.1 Quality records are all stored are back-up every night on data tapes. The tapes are stored on-site, and one copy stored off-site in a safety vault.

3.2 Quality records are stored and archived electronically, and kept available with no time limit. Record storage and archive will comply with any extensive time limit required by customers.

V. ASSOCIATED DOCUMENTS

QOP 5-01, Management Review
QOP 6-01, Competence, Awareness and
Training QOP 7-02, Contract Review
QOP 7-03, Customer Feedback
QOP 7-04, Selecting and Evaluating
Suppliers QOP 7-05, Purchasing
QOP 7-06, Receiving Inspection
QOP 7-07, Shop Routing System
QOP 7-08, Preventive
Maintenance QOP 7-09, In-
Process Inspection QOP 7-10,
Final Inspection
QOP 7-11, Manufacturing Controls
QOP 7-14, Handling, Packaging, Storage, Preservation &
Deliveries QOP 7-15, Control of Monitoring and Measuring
Equipment
QOP 8-01, Statistical Techniques
QOP 8-02, Interna! Audit
Program
QOP 8-03, Control of Nonconforming Product
QOP 8-04, Corrective & Preventive Action

INTERNATIONAL METALS DE MEXICO

S.A. DE C.V.

REPORTE FINAL DE CONSULTORIA

Diciembre 4, 2015

Ver.: 1.0

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Diagnóstico de la Situación Previa

Dentro de la estrategia de crecimiento de International Metals de México, S.A. de C.V. (IMMSA), está el participar en nuevos sectores de la actividad económica industrial, que le permitan expandir su operación y diversificar los mercados que atiende. Esta estrategia fue planteada a inicios del año 2012 e IMMSA se ha concentrado en su ejecución.

En 2014 establece un programa de consultoría y transferencia de tecnología, para que conjuntamente con Dishon Limited, se establezca el layout de una planta para producción de piezas maquinadas para la industria aeroespacial, así como la documentación necesaria para que la empresa opere bajo los estándares que establece dicha industria.

Motivos de la Transferencia Tecnológica

El objetivo primordial de la transferencia tecnológica, fue generar el conocimiento suficiente para estar en capacidad de producir piezas maquinadas para la industria aeroespacial, de conformidad con los altos estándares que dicha industria impone a sus proveedores.

Estas capacidades instaladas permitirán atender una demanda claramente identificada que podrá ser atendida desde México, con las ventajas competitivas que ello implica.

México se ha venido posicionando como un país clave para el desarrollo de la industria aeroespacial y cada vez más empresas del sector han volteado al país como la mejor alternativa para la instrumentación de sus planes de expansión y manufactura.

Así mismo, el desarrollo de proveeduría local se ha vuelto crucial y la presente consultoría tiene como objetivo fundamental la puesta en marcha de esas capacidades en México, a través de su alianza con IMMSA.

Consideraciones Generales

Dado que a lo largo de 2015 se han generado diversos informes de avance, los anexos a los que hace mención el presente informe, solamente se referencian y no se anexan, ya que en su momento fueron anexados a los reportes parciales.

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Elementos de la Consultoría

La consultoría originalmente planteada incluía 3 componentes principales:

1. Diseño del layout de la planta productiva.
2. Transferencia de tecnología y modelos numéricos para la fabricación de partes y componentes maquinados de la industria aeroespacial.
3. Asesoría especializada para la configuración y operación de los Centros de Maquinado CNC.

Actualmente y como resultado de la consultoría y la transferencia tecnológica, la empresa cuenta con los conocimientos y controles necesarios para operar su división de manufactura de partes y componentes maquinados destinados a la industria aeroespacial, lo que permitirá elevar la proveeduría nacional de partes y componentes maquinados destinados a dicha industria. Asimismo, estará en posibilidad de concretar exportaciones recurrentes mediante encadenamientos con empresas ubicadas en Canadá y Estados Unidos.

Avances y Resultados

Al respecto, se considera relevante mencionar que el proyecto constaba de tres etapas, siendo una de las más importantes la correspondiente a la "Transferencia de tecnología y modelos numéricos para la fabricación de partes y componentes maquinados de la industria aeroespacial" (Etapa 2). Dicha etapa consistía en adquirir la tecnología para la fabricación de una serie de productos, para los cuales la empresa canadiense aliada de IMMSA, DISHON LIMITED, ya cuenta con clientes y pedidos por parte de empresas de nivel Tier 1 de la industria aeroespacial de Estados Unidos y Canadá. Dado que no se contó con los recursos necesarios para realizar al 100% esta etapa, la empresa se preparó para fabricar un número menor de partes y componentes destinados a la industria aeroespacial.

Es por esta razón que se estará alcanzando un 50% de cumplimiento en la meta de ventas originalmente planteada, durante el periodo comprendido entre noviembre de 2015 y octubre de 2016. Asimismo, se tiene programada la generación de 6 nuevos empleos, en dicho periodo, con lo cual se alcanzará un nivel de cumplimiento de 54.5% con respecto a la meta originalmente planteada.

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Como resultado de los servicios de consultoría y transferencia de conocimientos para el diseño óptimo de la planta productiva y el desarrollo de un manual de procedimientos relacionado con el uso y mantenimiento de los centros de maquinado CNC, controles de calidad, la inspección de los materiales utilizados, así como en lo relativo a la producción y manejo del producto terminado. Se cuenta con el Manual de procedimientos que cubre los siguientes aspectos:

Con respecto a la Etapa 1 "Diseño del layout de la planta productiva", se informa que se logró un avance del 100% cubriendo los siguientes aspectos:

a. Diseño de "Layout" de la planta productiva, que permitió un desarrollo óptimo de la misma. Al respecto, se entregó evidencia en el primer reporte de avance trimestral.
b. Desarrollo del sistema de aseguramiento de calidad y mejora contínua. Se presentó evidencia en el "Reporte de resultados de la consultoría", mismo que se adjunta al presente documento.
c. Desarrollo de los procedimientos para la gestión de la cadena de suministro. Se presentó evidencia en el "Reporte de resultados de la consultoría", mediante los documentos anexos "QOP-7-06 Receiving Inspection" y "QOP-7-04 Selecting and Evaluating Suppliers".
d. Desarrollo de planes de control. Se presentó evidencia en el "Reporte de resultados de la consultoría", mediante los documentos anexos "QOP-7-11 Manufacturing Controls" y "QOP-7-10 Final Inspection".
e. Desarrollo de los procedimientos para realizar acciones correctivas. Se presentó evidencia en el "Reporte de resultados de la consultoría", mediante el documento anexo "QOP-8-04 Corrective and Preventive Actions"
f. Establecimiento de metas de eficiencia y productividad, con enfoque de procesos y reducción de la variabilidad en las partes y componentes fabricados. Se presentó evidencia relativa a la medición y almacenamiento de los indicadores de resultados, mismos que se comparan permanentemente contra las metas establecidas. Dicha evidencia se presenta en el "Reporte de resultados de la consultoría", mediante el documento anexo "QOP-4-03 Control of Quality Records".

Como resultado de la Etapa 3, se cuenta con un manual de procedimientos relacionado con el uso y mantenimiento de los centros de maquinado CNC, controles de calidad, la inspección de los materiales utilizados, así como en lo relativo a la producción y manejo del producto terminado, que incluye los siguientes aspectos:

I. Uso de los Centros de Maquinado CNC y control de los herramentales

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a. Procedimientos para la planeación y ejecución del proceso productivo. Se anexa el documento "QOP-7-01 Product Realization Planning", el cual describe la manera en que se debe realizar la planeación del proceso, así como la forma en que se deben ejecutar los procesos de manufactura.
b. Procedimientos para medir la capacidad de producción de los equipos. Se anexa el documento "MGT-03 Capacity Analysis Assessment", que describen las políticas y procedimientos para cuantificar el grado de utilización de los equipos, en comparación con su capacidad.
c. Procedimientos para controlar los herramentales y herramientas de fijación. Se anexa el documento "ENG-10 Tools and Fixtures", mismo que describe la forma en que se debe controlar, inventariar y revisar el estado de los herramentales, antes de usarlos en el proceso productivo.
d. Procedimientos para realizar mantenimiento preventivo a los equipos. Se anexa el documento "ENG-07 Preventive Maintenance" que establece las políticas y procedimientos para realizar mantenimiento preventivo a cada uno de los equipos que forman parte del proceso productivo.

II. Manejo de materiales, fabricación y trazabilidad del producto terminado
a. Procedimientos relacionados con el manejo de materiales. Se anexa el documento "QOP-7-06 Receiving Inspection" que describe las políticas y procedimientos en materia de inspección de los materiales, partes y componentes adquiridos por IMMSA, y que son incorporados al proceso productivo.
b. Procedimientos para realizar la identificación y trazabilidad del producto terminado. Se anexa el documento "QOP-7-12 Product Identification and Traceability" que describe los requerimientos y establece responsabilidades en materia de identificación y trazabilidad de los productos terminados.
c. Procedimientos en materia de manejo, empaque, almacenamiento, protección y envío del producto terminado. Se anexa el documento "QOP-7-14 Handling, Packaging, Storage, Protection and Deliveries", que describe los procedimientos y responsabilidades en material de áreas de almacenamiento, manejo del producto, empacado y etiquetado, y envío de los productos terminados.
d. Procedimientos para el control de productos no conformes. Se anexa el documento "QOP-8-03 Control of Nonconforming

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Product" que establece los requerimientos y asigna responsabilidad para la identificación, documentación, disposición y almacenamiento de materiales y productos no conformes.

e. Procedimientos relativos al establecimiento de registros de calidad. Para la medición del desempeño y el seguimiento al nivel de cumplimiento de las metas de eficiencia, se desarrolló el documento "QOP-4-03 Control of Quality Records", mismo que se anexa, y establece las políticas y procedimientos para la medición y registro de los indicadores de resultados.

Todos los procedimientos desarrollados gracias a la consultoría especializada han sido implementados con éxito, y el personal cuenta con los conocimientos necesarios para mantenerlos en operación.

Estos procedimientos, junto con los presentados en el "Reporte de resultados de la consultoría" (los cuales formaron parte del tercer reporte de avance) constituyen el Manual de Políticas y Procedimientos que está permitiendo a la empresa operar bajo los estándares que establece la industria aeroespacial.

Se informa también que se logró corregir al 100% la falla de mercado que impedía asignar un monto de recursos óptimo para las labores planteadas. Dicha falla de mercado, que consistía en la presencia de "costos hundidos", fue superada y ahora la empresa cuenta con un Manual de Procedimientos que establece las políticas y procedimientos en materia de manejo de materiales, uso y mantenimiento de los centros de maquinado CNC, así como en la producción, trazabilidad y manejo del producto terminado. Asimismo, el staff cuenta con los conocimientos necesarios para mantener dichas políticas, procedimientos y controles en operación.

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