SUPPLEMENTAL QUALITY ASSURANCE REQUIREMENTS (SQAR)

These requirements shall be communicated to ALL appropriate personnel within the Seller's organization, upon receipt of the Purchase Order.

1. Purpose

The following Supplemental Quality Assurance Requirements (SQARs) clauses become requirement(s) *when specified by number* within the Purchase Order. If these clauses are referenced on a Request for Quotation (RFQ) they shall apply to any Purchase Order for the items placed as a result of the RFQ. The General Supplier Quality Assurance Requirements document also applies. In the event of conflict, these supplemental requirements supersede the General SQAR requirements. Any conflict or perceived conflict between the SQARs and any other Purchase Order requirements shall be resolved in writing through the Premier Precision Machining, LLC d.b.a Rand Machine ((PPM)) Buyer. **Flow down of appropriate SQARs to sub-tier suppliers is required to ensure final product compliance.**

2. Supplemental Requirements

SQAR-1 **Certification of Conformance – Material Traceability:** With each shipment of items covered by the Purchase Order, the Seller shall submit a Certificate of Conformance (C of C), signed by the responsible representative of the Seller, which shall as a minimum include (PPM) Purchase Order number, Line Item, Part Number, Drawing Revision, Description, Quantity, Lot/Serial Number (as applicable), certifying that:

a. Materials used are those that have been specified by the Buyer, and that the items delivered were produced from and traceable to materials certified IAW SQAR-5.
b. Processes used in the fabrication of items delivered were in compliance with applicable specifications forming a part of the Purchase Order.
c. The items delivered comply with all requirements of the Purchase Order including all imposed drawings and specifications. In case of "drop shipment", a copy of the above certificate shall be submitted to the Buyer at the time of shipment.

It must include reference to any applicable waivers, deviations, rejection documents (with approved disposition) that apply to the items on the C of C. Parts being resubmitted after previous rejection by (PPM) must also be identified.

SQAR-2 **Control of Special Processes and Certification:** The Seller shall not perform, or subcontract to perform any "Special Processes" without written approval from the Buyer.

Special Processes are defined as: A method controlled by a contractually required specification where:

- When a product undergoes a physical, chemical or metallurgical transformation or inspection, conformance to the specification cannot be readily verified by normal inspection methods

- or -

- The quality of the product depends on use of specific equipment operated in a specific manner, under controlled conditions, by trained personnel with instructions, procedures and standards.

Special Processes that require certification are: heat treating, plating, anodizing, chemical conversion coating (chem film), passivation, abrasive blasting, oxide coating, painting, nitriding, case hardening, casting, forging, welding, brazing, soldering and others as may be specified.

The Seller, or their subcontracted agent, must be certified to perform the specified Special Process through an Accredited Certification Body, A2LA, NADCAP, or specific (PPM) Customer. The Seller shall contact the (PPM) Buyer for a specific listing of Special Processors that are approved for use. Inspection may also be included as a Special Process if the Seller does not have the in-house capability, or resources, to perform inspections as specified on the Purchase Order. If the Seller is required to use

subcontracted inspection, the use of any subcontracted inspection must be approved by the Buyer with enough advanced notice so as to not delay the delivery schedule shown on the Purchase Order.

SQAR-3a **Quality System Certified to ISO-9001:** The Seller shall maintain a Quality Management System that is certified to ISO-9001 (latest revision). The Seller must provide adequate evidence that the Quality Management System has been successfully audited by a third party registrar. A copy of the third party certificate shall be forwarded to the (PPM) Buyer. In the event that the Seller's Quality Management System loses certification, the Seller must notify the (PPM) Buyer within 24 hours in writing of the Seller's plan to attain recertification.

SQAR-3b **Quality System Compliant to ISO-9001:** The Seller shall maintain a Quality Management System that is compliant to ISO-9001 (latest revision). The Seller's Quality Management System shall be subject to review and/or audit for compliance by the (PPM) Buyer or other designated representative.

SQAR-4 **Control of 3rd Party Independent Inspection / Testing:** When required on the drawing, other specification document, and/or Purchase Order, the Seller shall use only accredited laboratories with a scope of accreditation allowing the performance of such testing / inspection. Prior to the performance of any testing (or inspection) to be performed by an outside laboratory the Seller shall submit to the Buyer the name of the laboratory, the laboratory's certificate of accreditation, and the laboratory's scope of accreditation for approval. Accredited Certification Bodies recognized by (PPM) are, but may not be limited to, A2LA (American Association of Laboratory Accreditation) and NADCAP (National Aerospace and Defense Contractors Accreditation Program). Use of a laboratory not accredited by either A2LA or NADCAP shall require approval of the Buyer prior to use. Copies of the test / inspection report shall be provided to the Buyer, test / inspection reports shall include the specification (Drawing with Revision for items receiving dimensional inspection) that was applied, the individual requirements, actual measured results, and a Pass/Fail conclusion. The report must be signed by the testing / inspection facility. If the required NDT is for radiography, an adequate method of identifying and cross-referencing each x-ray film exposure shall be provided in report form. When parts are serialized, the serial numbers must appear on the report (and film if for x-ray) with the control number. NDT records shall be submitted with each shipment to the Buyer and shall include x-ray film when required by the Purchase Order.

SQAR-5 **Inspection Sampling Plan:**

5.2.1 Sampling inspection. When acceptance is to be accomplished using the sampling tables provided in this document, the following considerations apply.

5.2.1.1 Verification level specification. The VL's are specified in the contract or product specifications. A VL may be specified for individual characteristics, for a group of characteristics, or for subgroups of characteristics within the group. The VL and code letter (CL) from Table I determine the sampling plan required to assess product compliance to contract and specification requirements. Contractors are expected to produce and submit product in full conformance to all requirements. Lots, batches, or production intervals of product that consistently meet or exceed all requirements will be accepted by the sampling plans of this standard and will result in qualifying for reduced sampling levels.

MIL-STD-1916

TABLE I. Code letters (CL) for entry into the sampling tables

Lot or production interval size	Verification levels						
	VII	VI	V	IV	III	II	I
2–170	A	A	A	A	A	A	A
171–288	A	A	A	A	A	A	B
289–544	A	A	A	A	A	B	C
545–960	A	A	A	A	B	C	D
961–1632	A	A	A	B	C	D	E
1633–3072	A	A	B	C	D	E	E
3073–5440	A	B	C	D	E	E	E
5441–9216	B	C	D	E	E	E	E
9217–17408	C	D	E	E	E	E	E
17409–30720	D	E	E	E	E	E	E
30721 and larger	E	E	E	E	E	E	E

5.2.1.2 Sampling procedures. Sampling is performed at one of three stages called normal, tightened, and reduced. Unless otherwise specified, the VL stated in the contract shall be considered the normal stage of inspection and shall be used at the start of inspection. The tightened and the reduced stages are then defined as the stages to the immediate left and right, respectively, of the initial stage. The sampling inspection stage in effect shall continue unchanged for each group of characteristics or individual characteristic except where the switching procedures given in paragraph 5.2.1.3 require change. The switching procedures shall be applied to each group of characteristics or to individual characteristics.

5.2.1.3 Switching procedures. The procedures for switching among normal, tightened, and reduced inspection are given as Note (2) in Tables II, III, and IV.

The switching procedures are independent of the results of any remedial action, such as screening, additional samples, etc., resulting from the occurrence of sample nonconformances and withholding of acceptance.

Some Table IV switching criteria depend upon a corresponding Table II entry. These entries have been denoted by na(N) and na(T) in the descriptions that follow. na(N) represents the Table II sample size used for normal sampling at the VL and CL currently in effect. Likewise, na(T) represents the tightened sample size.

5.2.1.3.1 Normal to tightened**.** When normal inspection is in effect, tightened inspection shall be instituted when one of the following conditions occurs, depending on the type of sampling plan being used:

Lot or batch sampling (Tables II and III):

2 lots or batches have been withheld from acceptance within the last 5 or fewer lots or batches.

Continuous sampling (Table IV):

2 nonconforming units are found within a period of inspections (whether on sampling or screening) totaling no more than 5 times na(N).

5.2.1.3.2 Tightened to normal. When tightened inspection is in effect, normal inspection may be instituted when the following conditions are both satisfied:

a. The cause for producing the nonconformances is corrected.

b. Lot or batch sampling (Tables II and III):

5 consecutive lots/batches are accepted.

Continuous sampling (Table IV):
No nonconforming units have been found within a period of inspections (whether on sampling or screening) totaling at least 5 times na(T) units.
5.2.1.3.3 Normal to reduced. When normal inspection is in effect, reduced inspection may be instituted when the following conditions are all satisfied:
a. Lot or batch sampling (Tables II and III):
10 consecutive lots/batches are accepted while on normal inspection.
Continuous sampling (Table IV):
No nonconforming units have been found within a period of inspections (whether on sampling or screening) totaling at least 10 times na(N) units .
b. Production is at a steady rate.
c. The contractor's quality system is considered satisfactory by the Government.
d. Reduced inspection is considered desirable by the Government.
5.2.1.3.4 Reduced to normal. When reduced inspection is in effect, normal inspection shall be instituted when one of the following conditions occur.
a. Lot or batch sampling (Tables II and III):
A lot/batch is withheld from acceptance.
Continuous sampling (Table IV):
A nonconforming unit is found.
b. Production becomes irregular or delayed.
c. The contractor's quality system is unsatisfactory.
d. Other conditions warrant that normal inspection be re-instituted.
5.2.1.4 Discontinuation of acceptance. If sampling inspection of lots or batches remains in tightened inspection due to discovery of nonconformances or when, on continuous sampling plans, there are long periods of screening due to discovery of nonconformances, the Government reserves the right to discontinue acceptance of the product until the causes of nonconformances are eliminated or other means acceptable to the procuring agency have been instituted. When sampling inspection is restarted after discontinuation of acceptance, it shall be at the tightened inspection stage.
5.2.2 Preferred sampling inspection tables. See the Appendix for methods of computing sampling results, using switching rules, and determining compliance with requirements using the attributes, variables, and continuous sampling plans contained in this section.
5.2.2.1 Attributes sampling plans for lot or batch inspection. The preferred attributes sampling plans for lots or batches are described in Table II for normal, tightened, and reduced inspection.
5.2.2.1.1 Acceptability criterion. The lot or batch shall be considered acceptable only if no nonconforming units are found upon inspection of the random sample of the size listed in Table II.

TABLE II. Attributes sampling plans

Code letter	Verification levels								
	T	VII	VI	V	IV	III	II	I	R
	Sample size (n_a)								
A	3072	1280	512	192	80	32	12	5	3
B	4096	1536	640	256	96	40	16	6	3
C	5120	2048	768	320	128	48	20	8	3
D	6144	2560	1024	384	160	64	24	10	4
E	8192	3072	1280	512	192	80	32	12	5

NOTES:

(1) When the lot size is less than or equal to the sample size, 100 percent attributes inspection is required.

(2) One verification level (VL) to the left/right of the specified normal VL is the respective tightened/reduced plan. Tightened inspection of VL-VII is T, reduced inspection of VL-I is R.

5.2.2.2 Variables sampling plans for lot or batch inspection. The preferred variables sampling plans for lots or batches are described in Table III for normal, tightened, and reduced inspection.
5.2.2.2.1 Limitations on use. Variables sampling is not to be used indiscriminately. Its use shall depend upon evidence, provided by graphical or statistical analyses, that the assumptions of independence and normality are being met. Attribute sampling shall be used whenever the evidence fails to warrant use of variables sampling.
5.2.2.2.2 Nonconforming unit. For the purposes of variables sampling, a unit of product shall be considered nonconforming if its variables measurement is outside the specified tolerance.
5.2.2.2.3 Acceptability criteria. The lot or batch shall be considered acceptable if its sample contains no nonconforming units and the applicable "k" and "F" criteria (see Table III) are met. If the sample contains any nonconforming unit, or if the sample does not meet the "k" criterion, or if the sample does not meet the "F" criterion (when applicable), the lot does not meet the acceptability criteria.

a. k criterion, single-sided specification. For a single-sided specification the quantity $\frac{|(\bar{x} - spec\ limit)|}{s}$ shall be greater than or equal to the k value specified in Table III in order to meet the "k" criterion.

b. k criterion, double-sided specification. For a double-sided specification, each of the quantities $\frac{(\bar{x} - L)}{s}$ and $\frac{(U - \bar{x})}{s}$ must be greater than or equal to the k value specified in Table III in order to meet the "k" criterion.

c. F criterion (only applicable in double-sided specifications). For a double-sided specification the quantity $\frac{s}{(U - L)}$ must be less than or equal to the specified F value in Table III in order to meet the "F" criterion.

Note: $\bar{x}$ = sample mean, s = sample standard deviation,
U = upper specification limit, L = lower specification limit.

TABLE III. Variables sampling plans

Code letter	T	Verification levels							R
		VII	VI	V	IV	III	II	I	
	Sample size (n_V)								
A	113	87	64	44	29	18	9	4	2
B	122	92	69	49	32	20	11	5	2
C	129	100	74	54	37	23	13	7	2
D	136	107	81	58	41	26	15	8	3
E	145	113	87	64	44	29	18	9	4
	k values (one- or two-sided)								
A	3.51	3.27	3.00	2.69	2.40	2.05	1.64	1.21	1.20
B	3.58	3.32	3.07	2.79	2.46	2.14	1.77	1.33	1.20
C	3.64	3.40	3.12	2.86	2.56	2.21	1.86	1.45	1.20
D	3.69	3.46	3.21	2.91	2.63	2.32	1.93	1.56	1.20
E	3.76	3.51	3.27	3.00	2.69	2.40	2.05	1.64	1.21
	F values (two-sided)								
A	.136	.145	.157	.174	.193	.222	.271	.370	.707
B	.134	.143	.154	.168	.188	.214	.253	.333	.707
C	.132	.140	.152	.165	.182	.208	.242	.301	.707
D	.130	.138	.148	.162	.177	.199	.233	.283	.435
E	.128	.136	.145	.157	.174	.193	.222	.271	.370

NOTES:

(3) When the lot size is less than or equal to the sample size, 100 percent attributes inspection is required.

(4) One verification level (VL) to the left/right of the specified normal VL is the respective tightened/reduced plan. Tightened inspection of VL-VII is T, reduced inspection of VL-I is R.

5.2.2.3 Continuous attributes sampling inspection plans. The preferred continuous sampling plans for inspection by attributes are described in Table IV for normal, tightened, and reduced inspection.

5.2.2.3.1 Conditions for continuous sampling procedures. The following conditions must exist before the continuous attributes sampling procedures of this section may be used for inspection.
a. Moving product.
b. Ample space, equipment, and manpower at or near the inspection station to permit 100 percent inspection when required.
c. A process that is producing or is capable of producing material whose quality is stable.
5.2.2.3.2 Continuous sampling inspection procedure. At the start of production, all units are inspected. Sampling inspection may be initiated at frequency "f" when the following conditions are satisfied:
a. All units of product are of the same configuration and produced under stable conditions.
b. At least "i" consecutive units inspected are free of nonconformances.
Sampling inspection shall be terminated and 100 percent inspection resumed if either of the following conditions occur:
a. The production process is interrupted for more than three operating days.
b. The requirement that all units of product are of the same configuration and produced under stable conditions is not satisfied.
c. A unit having any nonconformance is found during sampling.
5.2.2.3.3 Acceptability criterion. In continuous sampling, units of product are determined to be acceptable or not on essentially an individual basis. While 100 percent inspection is being performed, each unit is individually inspected and categorized as a conforming or a nonconforming unit and accepted or not accepted accordingly. While inspection is being performed on a sampling basis, each unit that is inspected is categorized as acceptable or not acceptable depending on whether it is found to be conforming or nonconforming and each unit not inspected is considered to be conforming and hence accepted. (See "Special reservation for critical nonconforming unit", paragraph 5.2.2.3.3.1.)
5.2.2.3.3.1 Special reservation for critical nonconforming unit. In addition to the provisions of paragraph 4.5, if a critical nonconforming unit is found while on sample inspection, all product since the last conforming unit was found shall be inspected.

SQAR-6 **Inspection Report – (PPM) Format:** The Seller shall submit with each shipment a report, in (PPM) format (supplied by the Buyer). The Seller shall address each item called out and provide inspection/test data with actual values where possible. If Go/No-Go test methods are utilized, the gage or set-up must be identified. In case of a drop shipment, a copy of the report shall be submitted to the (PPM) Buyer prior to the time of shipment. All items inspected shall be identified/marked (serial number if available) so as to be traceable to the inspection report data. If items were inspected using a sampling plan, the marked samples shall be segregated from the balance of the lot. An explanation of the disposition of any items/characteristics showing nonconformance/rejection on the reports shall be included with the report. Data is to be provided in units of measure (U.S. Customary or Metric) used on the drawing, unless otherwise noted on the P.O.

SQAR-7 **Inspection and/or Test Plan Required:** The Seller shall prepare an inspection and/or test plan for the items to be delivered under the Purchase Order. A copy of the plan shall be submitted to the (PPM) Buyer for approval within thirty (30) days after purchase order award. The plan shall include:

a. Part Number
b. Drawing Number with Revision
c. Type of Inspection (dimensional, functional, test, NDT, etc.)

d. Characteristics/Features to be inspected or tested
e. Measuring or Test Equipment to be used (if unique, manufacturer and model number should be included)
f. Method of Inspection (visual, test equipment, gage, etc.)

When in-process inspection is necessary or appropriate due to item complexity, multiple set-ups, or outside processing, the plan shall contain inspection/test points related to the operational sequence. Any changes to the approved plan shall require approval, by the (PPM) Buyer, prior to implementation. The level of accuracy shall be of a ratio of at least 10 to 1 greater than the tolerance of the characteristic to be measured. Once the inspection/test plan is approved by (PPM), the Seller shall only utilize what has been defined in the plan.

SQAR-8 **Approved Quality System:** The Seller shall maintain the Quality Management System approved by (PPM) upon which the Seller's current Approved Supplier status is based. The Seller's Quality Management System shall be subject to review and/or audit for continued approval by the (PPM) Buyer or other designated representative. No waiver or deviation from the Quality Management System requirements shall be permitted without written approval from the (PPM) Buyer.

SQAR-9 **First Article Inspection Required:** The items to be delivered under the Purchase Order are subject to First Article Inspection and shall be produced using materials, tooling, processes, facilities/equipment, and procedures identical to those that will be used during regular, normal, production. Unless otherwise specified in the Purchase Order, the Seller shall perform inspections/tests on one (1) part of the first items produced. The Seller shall perform 100% inspection and tests of all features and notes shown on drawings and specification documents on at least one item. The only exception shall be for inspection/tests contained in material specifications provided that the required inspection and tests have been performed and certified results are submitted with the First Article Data Package. The Seller shall notify the (PPM) Quality Engineer fifteen (15) calendar days prior to the presentation of the First Article Data Package and associated hardware. The typical First Article Data Package contains: Items that were inspected/tested (if available)

a. Ballooned Drawing correlated to recorded data
b. Dimensional Inspection Sheet (matching the numbering scheme of the ballooned drawing)
c. Deviations and/or Waivers (as applicable, must be approved by (PPM) prior to FAI presentation)
d. Certificate of Conformance
e. Material Certifications (for subcontracted raw materials)
f. Certificates of Conformance for purchased items and services (all materials and processes/services must have an appropriate Certificate of Conformance)
g. Copy of the Purchase Order
h. Test Report (for any NDT performed, including Laboratory Accreditation and Scope for laboratory performing the NDT)
i. Work Instructions (manufacturing)
j. Process Flow of manufacturing

The Dimensional Inspection Sheet shall contain the drawing/specification callout and tolerance, method of inspection (and tool I.D. if possible) and must show actual measured readings unless a Go/No-Go gage (attribute data) is used. Data is to be provided in units of measure (U.S. Customary or Metric) used on the drawing, unless otherwise noted on the P.O.

The Seller shall produce the First Article items and the production items at the same facility and shall certify to that effect.

The First Article Data Package shall be neat and organized. Individual documents must be complete and legible. (Unreadable copies of documentation will not be acceptable as evidence of compliance.)

A new, or updated (delta), First Article shall be required if any of the following events occur:

a. Change to Facility or Processing Equipment
b. Change to Procedures
c. Change in Location
d. Change in Source or Processing
e. Change in Design
f. Interruption of Production greater than 1 year
g. Replacement of Special Tooling (i.e. Injection molds)

If the Seller fails to deliver/present any First Article or First Article Data Package by the date shown on the Purchase Order, or if the (PPM) Buyer disapproves any First Article or First Article Data Package due to nonconformance to requirements, the Seller shall be deemed to have failed to make delivery within the meaning of the Default clause of the Purchase Order.

If the First Article or the First Article Data Package is disapproved for nonconformance to requirements, the Seller shall, upon the Buyer's request, repeat any or all First Article inspections or tests. Prior to such additional inspections or tests, the Seller shall make any necessary changes, modifications, or repairs to the First Article, or select/manufacture another First Article for such inspections or tests. All costs related to any additional inspections or tests following disapproval shall be borne by the Seller. The (PPM) Buyer, at his/her discretion, may elect to have the Seller bear the costs of any additional travel, labor, delivery schedule extensions, and material expenses resulting from the disapproval of the First Article or First Article Data Package. After conducting the additional inspections or tests, the Seller shall notify the Buyer as to the expected date for resubmission of the First Article and First Article Data Package. The Seller shall have the First Article and the First Article Data Package ready for presentation by the agreed extended date. No change of delivery dates is to be assumed based on a change in the completion date of the first article.

Unless otherwise specified in the Purchase Order, and if the approved First Article is not consumed or destroyed due to testing, the Seller may deliver the item as part of the Purchase Order quantity provided it meets all requirements for acceptance.

SQAR-10 **Seller Retained Documents 15 years:** The Seller shall maintain adequate records of all required inspections and tests, including such records or certifications provided to the Seller by its subcontractors, for at least 15 years after final payment.

SQAR-11 **Source Inspection Required:** The items supplied by the Seller under the Purchase Order are subject to Source Inspection by the (PPM) Quality Engineer (QE) or other designated representative. The Seller shall notify the QE or other designated representative at least 7 business days prior to the expected Source Inspection. The Seller must have available, at the time of presentation a complete Source Inspection package. A typical Source Inspection package includes:

a. Ballooned drawing
b. Inspection data
c. Certificate of Conformance from the Seller
d. Certificates of Conformance for subcontracted items
e. Material Certifications
f. Copy of the Purchase Order
g. Ammo Data Card (if applicable)
h. Test Source information (AALA or NADCAP Certificate and Scope of Accreditation)
i. List of Serial Numbers for items presented (may appear on a C of C or a separate sheet traceable to the C of C)
j. Any approved deviations and/or waivers if applicable
k. Other documents as required by the program Quality Engineer

The Seller shall provide the QE or other designated representative with reasonable facilities and

equipment and free access to all areas and records essential to the proper conduct of source inspection of the procured items. The performance of a source inspection, whether on-site or not, does not relieve the Seller of any responsibility for the determination of conformance of the items to the contracted requirements.

SQAR-12 **Source Surveillance Required:** The items supplied by the Seller under the Purchase Order are subject to Source Surveillance by the (PPM) Quality Engineer (QE) or other designated representative. The Seller shall notify the QE or other designated representative prior to the commencement of manufacturing with enough advance notice so that the QE or other designated representative may make arrangements to conduct on-site surveillance of the Seller's Quality Management System, procedures, records, procurement documents, facilities, and manufacturing processes, and in-process and final inspection/test to verify that the requirements of the Purchase Order are being satisfied if so elected. The Seller shall provide the QE or other designated representative with reasonable facilities and equipment, and free access to all areas and records, essential to the proper conduct of (as applicable) design, development, manufacture, inspection, testing, and packaging and shipping of the procured items. The QE or other designated representative may specify mandatory in-process source inspection hold points. If such are required, the Seller shall provide the QE or other designated representative with notification at least 7 business days in advance to allow the QE or other designated representative to schedule the required inspections.

SQAR-13 **Ensuring that persons are aware of:** Ensuring persons are aware of: Their contribution to product or service conformity; their contribution to product safety; the importance of ethical behavior.

SQAR-14 **Approved Inspection System:** The Seller shall maintain an inspection system approved by (PPM) that includes at a minimum calibration of acceptance equipment, material traceability, and records of inspection. The Seller's system shall be subject to review and/or audit for compliance by the (PPM) Buyer or other designated representative.

SQAR-15 **Certification of Conformance:** The Seller shall provide with each shipment of items covered by the Purchase Order a Certificate of Conformance (C of C), signed by the responsible representative of the Seller, which shall as a minimum include the (PPM) Purchase Order number, Line Item, Part Number, Drawing Revision, Description, Quantity, and Lot/Serial Numbers (as applicable) certifying that the items delivered comply with all requirements of the Purchase Order, including all imposed drawings and specifications.

SQAR-16 **Raw Material Certification:** The Seller shall submit a test report or certification based on a test report or test data with each lot of material shipped. In the case of a "drop shipment" to other than the Buyer's facility, a copy of the report of certification shall also be submitted to the (PPM) Buyer, along with a copy of the packing slip, at time of shipment. The certification or report shall list, depending upon the data available, actual values or a range of values determined through chemical analysis or physical testing (as required by specification) with which the properties of material used to complete the Purchase Order fall. The certification or report shall be traceable to the (PPM) Purchase Order number, list heat, melt, or lot numbers of the material provided, indicate the origin of manufacture, and shall be signed by a representative of the Seller or the organization or laboratory performing the testing. If the testing is not performed by the Seller, the name and address of the company, agency, or organization doing the actual testing shall be included on the certification, along with all identification provided by the testing organization (Lab Accreditation, Scope, etc.). If the Purchase Order is for other than raw material and the

Seller is procuring multiple items of material for processing to satisfy the Purchase Order, this type of test report shall be provided for each item of material unless otherwise specified on the Purchase Order.

SQAR-17 **Item Serialization:** The Seller shall identify each item shipped by serial number. The shipping documents and any required inspection reports shall show serial number of items in each shipment. Numbers assigned shall be at the Seller's option unless otherwise specified on the Purchase Order, but must be unique and non-repeating.

SQAR-18 **Lot Control and Traceability – Material:** Raw materials used must be identified on traceability records by lot number, material type, specification (including applicable change number), heat number, etc. and traceable to items supplied under the Purchase Order where this clause is specified. Numbers assigned shall be at the Seller's option unless otherwise specified on the Purchase Order, but must be unique and non-repeating. Traceability records shall be available for review by the Buyer or other designated representative.

SQAR-19 **Lot Control and Traceability – Items:** Items supplied under the Purchase Order, the packing list, certifications, and/or other applicable documents, must be identified by manufacturing lot or batch number. Numbers assigned shall be at the Seller's option unless otherwise specified on the Purchase Order, but must be unique and non-repeating. Where impractical to stamp individual items due to size or shape, the lot or batch number shall be stamped on the identifying tag or the smallest unit package.

SQAR-20 **Container Lot Numbering:** Materials/items shall be packed in final shipping containers such that only one lot of material/items is in each container, and the containers shall be marked with the lot number of their contents. Lot numbers shall be legible, in a conspicuous location on the container, and large enough to be readable from a distance of 10 feet. The Seller's name and if applicable, the facility shall also be prominently displayed on the container. The Seller shall also comply with any additional marking requirements dictated on the Purchase Order.

SQAR-21 **Calibration System/Report:** The Seller shall maintain a calibration system using the guidelines of ISO-10012 (latest revision). The Seller shall provide a certified calibration report identifying NIST traceable standards used and showing actual values measured where appropriate, for tools, devices, and equipment used to determine the acceptance of items under the Purchase Order.

SQAR-22 **Government Source Inspection Required:** Government Source Inspection is required for the items covered under the Purchase Order prior to shipment from the Seller's facility. Upon receipt of the Purchase Order, the Seller is directed to promptly notify the Government representative that normally services the Seller's facility so that appropriate planning for Government Inspection can be scheduled. A copy of the Purchase Order must be made available upon request to the Government representative. In the event that the Seller cannot locate the Government representative, the Seller shall notify the (PPM) Buyer.

SQAR-23 **Copy of Purchase Order to be Provided to the Government:** Upon receipt of the Purchase Order, the Seller shall promptly provide a copy to the Government representative that normally services the Seller's facility. If the Seller does not have an assigned Government representative, a copy of the Purchase Order shall be provided to the nearest Army, Navy, Air Force, or Defense Supply Agency inspection office. If the Government representative is unknown, the Seller shall notify the (PPM) Buyer.

SQAR-24 **Government Source Surveillance:** During performance of the Purchase Order, the Seller's Quality Management System, Inspection System, and Manufacturing Processes are subject to review, analysis, and verification by authorized Government representatives and/or other (PPM) customers when approved by (PPM).

Government mandatory product inspections, process buy-offs, release of product prior to shipment, or final inspections are not required, but may be imposed, when deemed necessary by the Government representative or when directed by the delegating authority.

Immediately upon receipt of the Purchase Order, the Seller shall contact the Government representative that normally services their facility. Government surveillance does not constitute product acceptance or certification of systems or processes by either the (PPM) Buyer or Government, and does not relieve the Seller of any Purchase Order requirements.

SQAR-25 **Inspection Report – Seller's Format:** The Seller shall submit with each shipment a report, in the Seller's format, for the delivered items with the following information included as a minimum: Part Number, Revision Letter, Part Name (nomenclature), Purchase Order Number, Lot Number, Lot Quantity, Inspection Sample Size, Characteristics/parameters inspected and/or tested, Measurement Method,

Inspection/test Data with actual values where possible, Quantity Accepted/Rejected, Date of Inspection/test, and Signature/stamp of the Seller's representative. If Go/No-Go test methods are utilized, the gage or set-up must be identified. In case of a drop shipment, a copy of the report shall be submitted to the (PPM) Buyer prior to the time of shipment. All items inspected shall be identified/marked (serial number if available) so as to be traceable to the inspection report data. If items were inspected using a sampling plan, the marked samples shall be segregated from the balance of the lot. An explanation of the disposition of any items/characteristics showing nonconformance/rejection on the reports shall be included with the report. Data is to be provided in units of measure (U.S. Customary or Metric) used on the drawing, unless otherwise noted on the P.O.

SQAR-26 **First Article Inspection Plan Required:** The Seller shall prepare a First Article Inspection (FAI) plan for the items to be delivered under the Purchase Order. A copy of the plan shall be submitted to the (PPM) Buyer for approval within thirty (30) days after purchase order award. The FAI plan shall include as a minimum:

a. Identification of Item(s)
b. First Article Schedule (dates, location, etc)
c. Inspection/Test to be performed (if not specified by PPM)
d. Accreditation documents for independent 3rd party laboratories performing NDT.
e. Characteristics/Features to be inspected or tested (if not specified by PPM)
f. Method of Inspection (visual, test equipment, gage, etc)
g. Measuring or Test Equipment to be used

The Seller shall take into account that all inspection is to be performed on the item(s) that have been produced using materials, tooling, processes, facilities/equipment, and procedures identical to what will be used during regular, normal, production.

SQAR-27 **Supplying Controlled Shelf Life Material:** The Seller shall have and maintain an effective system for controlling items that have limited acceptability due to shelf life constraints and provide for the rotation of stock (FIFO). The Seller shall show on each container of materials having a limited or specified shelf life (both the Seller's in-house containers and containers used for delivery to the Buyer) the cure, manufacture or start of life control date, expiration date, lot number, and any special storage and handling conditions applicable. This information shall be in addition to the normal identification requirements of; name, part or code number, specification number, type, size, quantity, etc. Special handling requirements shall be recorded on any certifications and shipping documents covering the material as delivered to the Buyer. Time lapse between date of scheduled delivery to the Buyer and expiration date shall not exceed one third of the shelf life for the material without written approval of the Buyer prior to shipment.

SQAR-28 **Tooling and Tool Proofing:** Tooling required for items produced under the Purchase Order are subject to acceptance by the Buyer. The Seller shall notify the Buyer when tooling is ready for inspection. Acceptance will be contingent upon a quantity of resultant dimensional samples inspected under surveillance of the Buyer's delegated representative. In the case of multiple cavity tooling, the resultant samples must be from each cavity. Samples used for dimensional verification shall be identified with the tool number (and cavity number if applicable) used to produce them.

The Seller shall notify the Buyer prior to any rework, refurbishment, or replacement of any portion of the tooling used to produce items on the Purchase Order. Upon notification, the Buyer shall advise the Seller if there is a need for an updated (delta) First Article Data Package, or to perform a new mold, die, or tooling analysis.

SQAR-29 **Inspection Equipment – Seller Furnished:** The Seller shall provide all acceptance inspection equipment necessary to assure conformance of items to the requirements of the Purchase Order (except for any equipment provided by the Buyer or U.S. Government). All such equipment shall be subject to review by the Buyer (and possibly the Government) and shall be available for use at the time of First

Article submission, or on-site Source Inspections. The Seller shall maintain the acceptance inspection equipment within a controlled calibration system that requires established intervals for calibration against certified standards traceable to the National Institute of Standards and Technology (NIST). The accuracy of acceptance equipment shall be of a ratio of at least 10 to 1 greater than the tolerance of the characteristic or feature to be measured unless written approval is obtained from the Buyer.

SQAR-30 **Inspection Equipment – Buyer Designated:** The Seller shall only use the equipment (or designs) mandated by the Purchase Order for the designated characteristics specified on the Purchase Order.

SQAR-31 **Buyer Material – Direct Shipped:** The Seller shall verify that an acceptable material certification has been received in accordance with SQAR-5 for any Buyer furnished materials that are direct shipped from any (PPM) supplier to the Seller's facility. The Seller shall notify the Buyer upon receipt of material and shall not begin processing the material until authorized by the Buyer.

SQAR-32 **Statistical Process Control:** The Seller is required to validate the quality of their product, whether produced at the Seller's facility or at a subcontracted facility, using Statistical Process Control (SPC) techniques as defined within ISO 11462 (current revision). Application of SPC techniques shall be considered for characteristics identified as Key, Critical, Major, and Special in the technical data package. The Seller shall provide written justification for all such characteristics where SPC is determined to be inappropriate.

A plan for the implementation of SPC shall be submitted by the Seller for review and approval by the Buyer prior to the initiation of production. Where First Article is contractually required, the SPC plan shall be submitted to and approved by the Buyer prior to First Article inspection by the Buyer.

The SPC plan shall detail the process capability studies to be performed, the SPC methods to be applied and a time-phased schedule for total implementation. The SPC plan shall also identify the operations where SPC will be implemented; the sample size and frequency of measurements; the criteria to be used for modifying the sample size and frequency; the Quality Assurance procedures to be used to validate the accuracy, adequacy, and interpretation of the data: the training program and qualification of personnel in SPC techniques; criteria to be used for determining an out of control condition; identification of the responsibility for performing measurements and corrective actions; and the corrective action procedures to be used and actions to be taken upon statistical signal or detection of an out of tolerance item.

Statistical evidence of item quality in the form of control charts shall be prepared and maintained for each characteristic identified in the plan. The recording of data and plotting of charts shall be updated at each sampling interval. The charts shall identify all corrective actions to be taken upon statistical indication that an item is moving toward an out of control condition. All charts shall be considered quality records to be retained by the Seller in accordance with requirements as stated in the Purchase Order, and shall be made available for review upon the request of the Buyer. When SPC has been implemented and the processes have demonstrated a state of statistical control and the item(s) conform to final acceptance specifications, the Seller may request that sampling in accordance with the specification be reduced for acceptance purposes on those controlled characteristics. Upon approval by the Buyer, acceptance shall then be based upon the reduced sampling, the control charts, and the SPC plan approved by the Buyer. The Buyer shall not unreasonably withhold approval. At the discretion of the Buyer, should the process warrant; the authorization for reduced inspection may be withdrawn.

SQAR-33 **Special Quality Requirements:** The imposition of this SQAR is to alert the Seller that there are additional Quality Requirements on the face of the Purchase Order listed under heading "SQAR 33 Special Quality Requirements".

SQAR-34 **Non-Production Part Marking:** With each shipment of items covered by the Purchase Order, items and container(s) are to be marked "Not For Production".

SQAR-35 **Ammunition Data Cards:** The Seller shall supply to the Buyer and with each shipment of ammunition/explosive load lots (live or inert), an Ammunition Data Card (DD Form 1650 or equivalent). Each ammunition/explosive load lot within a shipment requires a separate Ammunition Data Card. All

Ammunition Data Cards shall comply with the requirements of MIL-STD-1168 (current revision).

SQAR-36 **100% Inspection:** The Seller shall provide 100% inspection data of all features shown on drawings, specification documents, or contained in the Purchase Order for 100% of the items supplied under the Purchase Order. This shall include all applicable notes shown on the drawing. The Seller shall identify each item individually so that the item can be traced to the inspection data. Where 100% inspection is inappropriate (i.e. destructive testing, plating compliance, painting, etc) the Seller shall coordinate with the Buyer the means utilized to provide the required test/inspection data such as using surrogate items (coupons) in lieu of the actual item.

SQAR-37 **Process Procedures and Documentation:** The Seller shall fully document the processes utilized to manufacture, produce, and/or assemble the items supplied under the Purchase Order. The documentation shall be created in the Seller's format, and shall be made available to the Buyer as part of the First Article Data Package. If Supplier's process is Proprietary, a summary of the process is to be provided including unique process numbering, revision control with correlation to the Part number, description, and drawing revision which it represents.

The Seller shall maintain the documentation under sufficient configuration control through the use of revision levels to ensure that the correct version of the documented procedure is being used.

The Seller shall not incorporate any changes to the controlled documentation (except those changes for grammatical errors, typographical errors, etc.) without prior submission and subsequent approval in writing from the Buyer.

Additionally, the Seller shall exercise sufficient control of item specific software programs for the items supplied under the Purchase Order in a manner to ensure that the correct version is used for manufacture. This applies to only the programmable portion of, but does not include, the parent software package.

SQAR-38 **Foreign Object Damage or Debris Prevention:** The Seller shall integrate within their internal procedures specific practices to prevent the occurrence of foreign object damage or debris. The Seller is encouraged to utilize any applicable techniques found within NAS 412 as a guideline.

SQAR-39 **Plated Components, Assemblies and Mechanical Items:** The Seller shall ensure that items delivered under the Purchase Order do not contain any pure tin finishes, or any tin-lead (SnPb) plating shall result in a finish of no less than 3% lead.

This does not apply to any MIL-SPEC items or any Buyer supplied drawings, specifications, and/or other applicable documents that allow the use of tin (Sn) with less than 3% lead (Pb).

The Seller shall provide a Certificate of Conformance with each shipment stating that the Seller has verified that the delivered items meet the above listed composition requirements.

SQAR-40 **Purchase Order Review:** Upon receipt of the Purchase Order, the Seller shall contact the Buyer and set up a review of the Purchase Order to assess the quality requirements and other pertinent details with Premier Precision Machining, LLC d.b.a. Rand Machine.

SQAR-41 **Electrostatic Discharge Protection:** The items to be delivered under the Purchase Order may be sensitive to electrostatic discharge (ESD). The Seller shall ensure that ESD protection criteria are in accordance with approved common practices.

SQAR-42 **Material Safety Data Sheet (MSDS):** A copy of the Material Safety Data Sheet (per ANSI Z400.1-2004) is to be provided to the (PPM)Buyer upon receipt of the order. A copy of the MSDS must also accompany the shipment.

SQAR-43 **Seller Retained Documents 20 years:** The Seller shall maintain adequate records of all required inspections and tests, including such records or certifications provided to the Seller by its subcontractors, for at least 20 years after final payment.

SQAR-44 **Certification of Conformance:** The Seller shall provide with each shipment of items covered by the Purchase Order a Certificate of Conformance (C of C), signed by the responsible representative of the Seller, which shall as a minimum include the (PPM) Purchase Order number, Prime Contract Number, DPAS Rating, Line Item, Part Number, Drawing Revision, Description, Quantity, and Lot/Serial Numbers (as applicable) certifying that the items delivered comply with all requirements of the Purchase Order, including all imposed drawings and specifications.

3. Configuration Management

As applicable the SQAR's in the below table "Figure A" shall be identified for each category. These SQAR's shall be identified in the material and part template in JOBboss in accordance with RM-WI-50 and RM-WI-98. For any additional applicable SQAR's a review will be performed by Quality Assurance in accordance with RM-WI-69

Figure A

Categories:	General (All PO's)	Raw Material	Sub-Vendor	Tooling	Finished Goods
In Effect - SQAR's	SQAR-1	SQAR-1	SQAR-1	SQAR-1	SQAR-1
	SQAR-2	SQAR-2	SQAR-2	SQAR-2	SQAR-2
	SQAR-3A/3B	SQAR-3A/3B	SQAR-3A/3B	SQAR-3A/3B	SQAR-3A/3B
	SQAR-10	SQAR-10	SQAR-10	SQAR-10	SQAR-5
	SQAR-13	SQAR-13	SQAR-13	SQAR-13	SQAR-10
	SQAR-27	SQAR-15	SQAR-15	SQAR-27	SQAR-13
	SQAR-37	SQAR-16	SQAR-19		SQAR-15
		SQAR-17	SQAR-27		SQAR-17
		SQAR-18	SQAR-38		SQAR-18
		SQAR-19	SQAR-39		SQAR-19
		SQAR-27	SQAR-42		SQAR-25
		SQAR-38			SQAR-27
		SQAR-40			