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SIKORSKY AIRCRAFT CORPORATION ENGINEERING REQUIREMENTS

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1 Product Support Obligation

1.1 Supplier shall maintain the ability to provide, and shall provide, product support for the Goods, which shall include, without limitation, assuring that subcomponents and materials are available, maintaining tooling and other production capability and re-engineering components or systems to address obsolescence until the later of twenty five (25) years after the last Order is placed by Buyer for Goods or less than five (5) end products incorporating Goods are in operation anywhere in the world. Supplier shall offer the same pricing for Goods purchased under this Agreement, regardless of end-use.



2 Changes

All supplier design changes and manufacturing process changes for Sikorsky purchased parts shall not be made without an approved engineering Change Proposal.

- 2.1 Supplier shall not make any changes to Goods, including, without limitation, in form, fit, function, or classification, or to any component or software (collectively, "Engineering Changes") without: (i) submitting an Engineering Change Submission Questionnaire; (ii) submitting either an SA Form 1359 or 1360, as directed by Buyer; (iii) receiving from Buyer an acceptance of the Engineering Change; and (iv) submitting final Engineering Change data, which data shall be delivered to Buyer no later than thirty (30) days prior to the Delivery Date.
- 2.2 Buyer shall have absolute discretion in determining the classification of the Goods, and Buyer may reject any changed Goods which fail to comply with the applicable Change procedures.
- 2.3 This section is applicable to supplier manufactured parts if the product is qualified or requires qualification or if the Purchase Order, drawing, SES, or any other associated document requires that suppliers shall not revise their manufacturing processes without receiving prior Sikorsky approval.
 - 2.3.1 Suppliers shall not make any changes to their manufacturing processes or authorize their sub-tier suppliers to make changes to manufacturing processes without : (i) first verifying that the proposed manufacturing process changes are, or are not, required to be reviewed and dispositioned by Sikorsky based on the requirements within Sikorsky documentation; (ii) submitting a SA1951 form, associated process change description details, product test data, process change impact analysis data, and all other necessary documentation if a manufacturing process change proposal is required; (iii) receiving from Buyer an acceptance of the proposed Manufacturing Processing Change; and, (iv) submitting final Manufacturing Process Change data to Sikorsky, which data shall be delivered to Buyer no later than thirty (30) days prior to the product's Delivery Date.
 - 2.3.2 When a supplier is required to submit a manufacturing process change proposal for themselves or their sub-tier manufacturer, no supplier product shall be delivered to Sikorsky before the supplier receives a written Sikorsky acceptance of the supplier's proposed manufacturing change.
 - 2.3.3 Suppliers shall submit required manufacturing process change proposals using the directions found at <http://www.lockheedmartin.com/us/what-we-do/aerospace-defense/sikorsky/SikorskySuppliersAndLicensing.html>. No changes to a supplier's manufacturing process shall be implemented without the supplier completing the following steps:
 - 2.3.3.1 Suppliers shall review Sikorsky requirements such as drawing notes, Sikorsky Engineering Specification documents, and other technical requirement documents to determine if they are required to submit to Sikorsky a manufacturing process change proposal for qualified products that they or their sub-tier manufacturers make before changing any manufacturing process;
 - 2.3.3.2 If the supplier is required to create and submit to Sikorsky a proposal to change the supplier's, or a supplier's sub-tier, manufacturing process then the supplier shall submit a completed SA1951 form and all technical documentation that pertains to the proposed



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- manufacturing process change including a description of the proposed process revision and advantages and risks associated with the proposed process change; supporting documentation such as the impact of the proposed manufacturing process change, details of the proposed process change, and test documentation that supports their conclusions along with the manufacturing process change proposal;
- 2.3.3.3 Supplier submittals shall be submitted through the Sikorsky supplier portal and routed into Data Management for technical review routing and disposition;
 - 2.3.3.4 The supplier shall uniquely identify products by serial number if the manufacturing process is revised and submit this serialization data to Sikorsky;
 - 2.3.3.5 The supplier is responsible to maintain a history of their manufacturing process revisions and to retain objective evidence of the completion of Sikorsky evaluation and disposition of all supplier's manufacturing process change proposals or retain objective evidence that Sikorsky does not require the supplier to submit manufacturing process change proposals for Sikorsky evaluation and disposition for the affected product;
 - 2.3.3.6 No manufacturing process changes shall be implemented until written approval by Sikorsky is returned to and received by the supplier; manufacturing processes and manufacturing process documentation are auditable by Sikorsky.
- 2.3.4 In the instance where a Deviation or Waiver is required, the supplier shall submit a Request for Waiver or Deviation (SA1410) to the Buyer. The request shall be submitted to the Buyer at the earliest practicable time and always prior to Delivery Date with sufficient time for Sikorsky to analyze the non-conformity and formulate an appropriate disposition.



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3 Technical Publications

3.1 Supplier shall keep and maintain all technical publications for the Goods (“Technical Publications”) so that they are: (i) technically accurate, (ii) adequate to enable Buyer and Buyer’s customers to perform the functions provided for therein, and (iii) fully compliant with the FAA, NAA, EASA, or military specification requirements. Supplier shall validate all Technical Publications prior to their issuance and use. Upon Buyer’s request, Supplier shall deliver Technical Publications at no cost. Supplier hereby grants Buyer the unlimited right to use, reproduce or incorporate into end products the contents of Technical Publications.



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4 Ground Support Equipment (GSE)

- 4.1 **Applicability:** Applicable only to Goods which require the use of GSE.
- 4.2 Upon request, Supplier shall deliver: (i) a list of all the GSE associated with the Goods, (ii) a proposal for all GSE required in maintaining the Goods and (iii) depending on contract requirements and GSE item type, a GSE illustrated tool and equipment manual consisting of an illustration, description and explanation of the function for each item of GSE (“GSE Manual”).



5 Reliability

Applicability: Applicable to Supplier-designed Goods.

- 5.1 Supplier shall, commencing on the date of Order effectivity and continuing: (i) for no less than twenty five (25) years after the last Order is placed by Buyer for Goods, and (ii) thereafter, until fewer than five (5) end products incorporating Goods are in operation anywhere in the world, compile all available real-time information and quantitative metrics for the reliability of the Goods including, where applicable, actual mean time between failure (“MTBF”) and actual mean time between unscheduled removal metrics (“MTBUR”); reliability program status; conformity of Goods produced; Goods support; maintenance; overhaul; removal data including unscheduled removals; consumption of Goods and sub-components; and other data related to the reliability of Goods and support activities (“Reliability Metrics”). Supplier shall maintain supporting data for the Reliability Metrics in a database and establish a continuous improvement process reasonably acceptable to Buyer which incorporates reliability improvements into the Goods.
- 5.2 Upon request, Supplier shall deliver to Buyer Reliability Metrics in a format acceptable to Buyer, review Reliability Metrics and develop such corrective action plans as may be required.
- 5.3 Supplier shall prepare detailed records documenting the repair and/or Overhaul of all returned Goods, including records relating to the disposition of any non-conforming or rejected parts associated with the returned Goods. These records shall be complete and made available to the Buyer upon request during the performance of this Order.
- 5.4 In addition to any other rights and remedies in this Order, in the event that the Buyer determines in its sole discretion that any goods, supplies or items are nonconforming to the requirements of this Order, the Buyer shall notify the Supplier of the same and the Supplier agrees to do the following:
 - 5.4.1 Investigate the root cause for the nonconformance and within thirty (30) days provide Buyer, the results of the Supplier's investigation in writing;
 - 5.4.2 Implement corrective action with the Buyer's concurrence for the parts and applicable processes (including any corrective action recommended by the Buyer) in the manufacturing and shipment cycle, and eliminate the root cause of the nonconformance within thirty (30) days after providing the Buyer the results of the Supplier's investigation.



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6 Obsolescence Management

- 6.1 Supplier shall maintain, at its own expense, an obsolescence management program that includes an on-going review, identification, analysis and implementation of actual and potential obsolescence issues, including but not limited to, obsolescence of components, assemblies, sub-assemblies, and material for the Goods and Software, Courseware and Trainers as applicable. ("Obsolescence Management Program"). The Obsolescence Management Program shall remedy all obsolescence issues arising for the Goods. Supplier shall perform all testing, qualification, non-recurring activities, and engineering services required for maintaining an Obsolescence Management Program. In no event shall remedying an obsolescence issue: (i) entitle Supplier to a price increase, (ii) entitle Supplier to make a claim for equitable adjustment, or (ii) waive, relieve or release Supplier from fulfilling all its duties under the Order including, without limitation, compliance with Specifications and Delivery Dates.
- 6.2 Supplier shall, at any time and after reasonable notice, grant unrestricted access to the Supplier premises (including without limitation to manufacturing and test locations) for an obsolescence process assessment.



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7 Solder

7.1 Seller, and Seller's sub-tier suppliers, shall not use lead-free solder in Goods. For the purposes of this Section, solder shall be considered lead-free if it has a lead content of less than three percent (3%). Seller may request a waiver of this duty by applying in writing to Buyer's Standards Department.



8 Wire and Cable Use and Handling

Applicability: If Seller uses silver-plated copper wire in any application in Goods, Seller shall comply with the following requirements.

- 8.1 At no time during handling shall the wire/cable (collectively "Wire") ends be exposed to moisture or water. A controlled environment shall be maintained throughout the harness/assembly (collectively "Harness") process to eliminate the necessity of end sealing the Wire. No Wire ends shall be terminated that show any signs or other visual evidence of corrosion (ex: "Red Plague"). Once the packaging has been removed in an uncontrolled environment, all manufacturers, distributors, sub-contractors and partners shall follow the end-seals requirements. Any Wire that has been processed and not terminated for modification, re-work or replacement, that is susceptible to an uncontrolled environment shall be put into a sealed bag with a desiccant. Any Wire that is in an uncontrolled environment and not terminated shall be inspected for evidence of corrosion (ex: "Red Plague"). The Wire bending radius shall not be violated at any time during spooling, manufacturing, modification or re-work. The removal/stripping of Wire shall only be accomplished with approved tools, calibrated to assure that the center conductors and plating are not nicked or damaged.
- 8.2 Storage of Wire shall be in a controlled environment, which is defined as a temperature not to exceed 84 degrees Fahrenheit and humidity not to exceed 70%.
- 8.3 Packaging for Wire shall be as follows:
 - 8.3.1 AWG sizes 10 and smaller
 - 8.3.1.1 Cut and splice all lengths together (i.e., WECO splice)
 - 8.3.1.2 Seal unplaced ends with heat-shrinkable end caps
 - 8.3.1.3 Use plastic spools only
 - 8.3.1.4 Bag each spool in clear plastic with desiccant, then individually box
 - 8.3.1.5 All spools and box labels to include the following statement: "WARNING: MOISTURE DAMAGE WIRE (CABLE) – KEEP ENDS SEALED"
 - 8.3.2 AWG sizes 8 and larger
 - 8.3.1.1 Cut and splice all lengths together (i.e., WECO splice); then cover all splices with heat-shrinkable tubing
 - 8.3.1.2 Seal un-spliced ends with heat-shrinkable end caps
 - 8.3.1.3 Use 24" wood reels, with plastic wrap extending beyond the flanges and covering the spooled wire with a desiccant
 - 8.3.1.4 All reels labeled to include the following statement: "WARNING: MOISTURE DAMAGE WIRE (CABLE) – KEEP ENDS SEALED"
 - 8.3.1.5 The acceptance standards shall be per the SS7505.



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9 Design and Process Specification Efforts

Applicability: The following provision is applicable when (i) Seller is designing new Goods for Buyer, (ii) Seller is developing new specifications for Buyer, or (iii) Seller is creating new work instructions, assembly instructions, repair instructions or required processes for Buyer.

- 9.1 Seller shall submit to Buyer's procurement representative a written report of materials of concern ("MOC Report") (as defined by Buyer's design requirements, Specifications, or similar requirements supplied by Buyer) that are used in the production of, or are in, products that are the subject of the design, development or processing efforts.
- 9.2 The MOC Report shall be submitted in the format specified by Buyer prior to Buyer's Preliminary Design Review and again prior to Buyer's critical design review (or, if there are no such reviews, concurrently with Seller's submission of the applicable drawings, specifications and/or instructions).
- 9.3 The MOC Report shall give full details regarding the intended use of any materials of concern.
- 9.4 Seller shall cooperate with Buyer to consider other alternative materials as discussed at design reviews.