Coded Note Number: **M1530**
Revision: **C004**
Date: **December 15, 2012**
Title: **ENGINEERING DATA PACKAGE**

The supplier shall furnish a manufacturer's engineering data package related to the equipment design. This engineering data shall be complete enough to allow Newport News Shipbuilding to write an accurate and thorough electronic technical manual/chapter. The supplier shall provide the following data, as applicable, from the equipment/component manufacturer:

1. Unique safety precautions necessary for the protection of the equipment and the personnel installing, operating, and maintaining it.
2. Manufacturer's model number of the equipment and reference data to include;

    a) Functional characteristics (i.e., power requirements (KW), horsepower (HP),
    b) Pressure ratings (normal and maximum),
    c) Capacity, modes of operation, power output (wattage, amperage, voltage (3-Phase or DC)),
    d) Frequency, pulse characteristics, sensitivity, selectivity, including tolerances, where applicable,
    e) Capabilities and limitations (i.e., pounds of thrust, knots, turning radius, minimum and maximum ranges, degree of coverage, resolution, accuracy),
    f) Rated outputs (i.e., wattages, voltages, horsepower, gallons per minute),
    g) Operating temperature (normal and maximum),
    h) Environmental characteristics (i.e., ambient temperatures, heat dissipation per unit (BTUs), humidity limits),
    i) Acceptable leakage rate.
3. Description, position and operating functions of all operating controls, indicators, protective devices and jacks.
4. Manufacturer's recommended normal and emergency operating instructions necessary to bring the equipment from off through standby condition to full operation.
5. Functional description of how the equipment operates (major subassemblies and interaction of major subassemblies with simplified electrical and electronic schematic diagrams).
6. Manufacturer's recommended lubricant quantity and commercial specifications.
7. Manufacturer's preventative maintenance requirements and recommended frequencies (daily, weekly, monthly, quarterly, semi-annually, annually, or situational) with emphasis on those service procedures and frequencies that are considered absolute (not just recommended) in order to maintain factory warranty.
8. Manufacturer's tailored troubleshooting procedures, including diagrams (fault

logic, mechanical schematic, wiring or signal tracing, piping, control, power distribution, or maintenance) as applicable. Procedures shall be directly related to and support the troubleshooting diagrams.

9. Manufacturer's guidance regarding diagnostic analysis of possible trouble situations wherein malfunction, fault, or failure of the equipment would render the equipment inoperative or unable to perform its intended function. Also to include observations of lights, gauges, meters, fuses, circuit breakers, valves and other available indicators which would indicate the presence of trouble.
10. Manufacturer's list of tools, parts, materials, test equipment required to perform troubleshooting or maintenance on the equipment.
11. Manufacturer's recommended repair parts.
12. Manufacturer's procedures to adjust and align the equipment, disassembly, clean, inspect, repair, reassembly, and align all repairable parts, modules, subassemblies, and assemblies. Disassembly and reassembly procedures keyed to part numbers (disassembly part numbers to be organized and broken down in the disassembly sequence, i.e., first item to be removed on figure 1 is 1-1, second item 2-1, etc.) And names on applicable system/component engineering drawings.
13. Manufacturer's detailed parts lists including part numbers, model number, quantity per assembly, and detailed drawing.
14. Manufacturer's recommended preventative maintenance before equipment is initially installed (if any).
15. Programming and/or reprogramming.
16. Manufacturer's detailed electrical schematic wiring diagrams including input power connections.

17. Manufacturer's specifications for installation, testing, overhaul, and repair, including but not limited to, the following, as applicable:
    a) Crated and uncrated dimensions, weights, volumes
    b) Lifting points
    c) Special support power requirements
    d) Critical clearances
    e) Critical dimensions and tolerances
    f) Insulation resistance values
    g) Alignments and adjustments that must be observed
    h) Performance curves
    i) Special environmental requirements such as temperature, shock and humidity
    j) List of special tools and support/test equipment required for installation
    k) Special storage or lay up requirements
    l) Enclosures
18. Manufacturer's service manuals for major subassemblies and components (if available)
19. Provide the following data if available (do not develop):
    a) MTBF (mean-time-between-failure) – include the source, i.e., prediction or actual use

b) MTTR (mean-time-to-repair) – include the source, i.e., prediction or actual use

The above data shall be provided in digital form on a Windows compatible CD using the file formats below. Multi-media files may be embedded in text files but must also be provided separately. No paper-based submittals will be accepted.

Text: Microsoft Word (97 or later) or rich text format

Video/animation: .mpg

Audio: .mp3

Images: .jpg & .png

Illustrations/schematics/drawings (2 dimension): both .dwg and .svg created via export from drafting software and/or conversion software

Illustrations/schematics/drawings (3 dimension): both .dwg and .x3d created via export from drafting software and/or conversion software

Submit engineering data package to Newport News Shipbuilding no later than 30 days after receipt of the purchase order.

Forward deliverables herein to:

Newport News Shipbuilding
4101 Washington Ave.
Newport News, VA 23607
Attn: E45 Software Coordinator
Bldg. **902-2**