

STATEMENT OF WORK

FOR

B703 – Replace 20-Ton Crane
(CCR#459)

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Prepared by

Facilities Engineering & Asset Management Office (FEAMO)

NASA Dryden Flight Research Center
PO Box 273, Edwards AFB, CA 93523-0273

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Dryden-specific Division 1 Specifications

DCP-S-064 Lifting Operations, Devices, & Equipment

STATEMENT OF WORK

1. SCOPE

The purpose of this project is to replace one 20-ton overhead crane hoist in Building 703 at the Dryden Aircraft Operations Facility (DAOF) to meet NASA Critical Lift Standards. Contractor shall provide all labor, materials, equipment, and supervision to remove and replace the hoist and provide the additional features/upgrades described below. When work is complete, Contractor shall provide labor, equipment, and certified weights to perform load test to meet requirements of NASA standard for lifting devices.

2. APPLICABLE DOCUMENTS

2.1 Dryden-specific Division 1 Specifications

2.2 Dryden-specific guidance documents:

DCP-S-064 – Lifting Operations, Devices, & Equipment

NASA-STD-8719.9 – Standard for Lifting Devices and Equipment

DCP-O-001 – Aircraft Maintenance and Safety Manual (hangar limitations)

2.3 Industry Standards

American Society of Mechanical Engineers (ASME) B30.2 – Overhead and Gantry Cranes

ASME B30.11 – Monorails and Underhung Cranes

Crane Manufacturers Association of America (CMAA) Specification No. 70 – Specifications for Electric Overhead Traveling Cranes

NFPA 70 National Electrical Code

3. REQUIREMENTS

Administrative requirements are provided in Dryden-specific Division 1 Specifications (attached). Specific work tasks to accomplish the general scope in Section 1 are provided here. The actual sequence of work shall be defined by the Contractor. Ensure that modification or replacement of the hoists, pendants, wireless controllers, and all other equipment meets all applicable requirements of OSHA, CAL/OSHA, ASME, and CMAA. Except as noted, all references to standards below are to NASA-STD-8719.9 – Standard for Lifting Devices and Equipment.

3.1 Remove existing hoist and replace with a new model that meets Critical Lift standards; the new replacement must fit into existing Crane Maintenance Area repair bay without modification. If any work is necessary outside the repair bay, all nearby fire suppression lines and sprinkler heads of the fire deluge system piping will be marked and flagged and extreme care shall be taken to avoid actions that would cause any movement of the deluge system piping that could activate the system.

3.2 Provide a dedicated wireless controller for the Critical Lift 20-ton hoist.

3.3 Provide a hardwired pendant with adequate cable length for operating hoists from the hangar floor. The pendant shall contain an emergency stop pushbutton that operates the mainline contactor (Electrical 4.2.7.f). The pendant shall be capable of easily connecting and disconnecting without reprogramming (“plug-and-play”).

3.4 Provide a dedicated wireless remote emergency stop-only controller (Electrical 4.2.7.j).

3.5 Clearly label the pendant and hook block “Critical Lift Use Qualified” such that it is obvious to users of the crane hoist (Labeling/Tagging of Cranes, 4.2.2.b).

3.6 Provide an additional holding brake such that the hoist will have two holding brakes. The brakes shall be designed so that they can be tested independently (Mechanical, 4.2.6.b(5)).

3.7 Provide two upper limit switches, the final being of manual reset type (Electrical,4.2.7. k (1), (2), (3), (4)).

3.8 Provide a lower limit switch to prevent reverse winding of the wire rope (Electrical 4.2.7.l).

3.9 Provide directional labels on the underside of the crane (Labeling/Tagging of Cranes, 4.2.2.f).

3.10 Anchor the wire rope ends to the rope drum using bolted cleats (Mechanical, 4.2.6.b(11),(12)).

3.11 Provide a mainline contactor operated by red emergency stop on both RF and hardwired pendants (Electrical 4.2.7.f).

3.12 Provide a step-type controller such that crane is capable of operating at very low speed and motor control provides appropriate precision for aircraft critical lifts, and can also operate at higher speed for positioning (Mechanical 4.2.6(10)).

3.13 Install an anti-collision device or warning system that warns or prevents the crane from coming into contact with aircraft structure.

3.14 Transport removed hoist from B-703 laydown area. Government intends to maintain possession of the removed hoist, and will provide a designated storage location. Contractor shall provide small crane, if needed. A separate Lift Plan (per DCP-F-064) and AHA approved by the Contracting Officer are required.

3.15 Contractor shall provide labor, equipment, and certified weights to perform load test to meet NASA critical lift requirements and NDT of the hook after proof loading is completed (Testing, 4.3.1, 4.3.3).

3.16 Contractor shall test and certify all new features and controls installed as part of this work.

3.17 Contractor shall remove all construction debris and materials at conclusion of job and return work area to normal operational status for NASA missions.

4. DELIVERABLES

4.1 Written documentation of final load tests

4.2 Training for crane operators on use of new and upgraded features

4.3 As-Built drawings of hoist configuration in hard copy blueprint and electronic format

4.4 Warranty Documents/O&M Manuals including manufacturer's parts list

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