TPS FOR MARS ENTRY DESCENT AND LANDING
NNA10323994Q

QUESTIONS AND ANSWERS 1

1. Reference Paragraph 3.2.3, Rigid Ablator TPS Material Coupons for Structural Screening (Type C):
Will NASA be providing the AL 7075-T6 carrier GFE (3" x 18" x 0.25" thick)?

Answer: No, NASA expects the vendor to provide the aluminum.

2. Reference Paragraph 3.2.4 and 3.2.5, Deployable TPS Material Coupons for Thermal (Type D) and Mechanical Screening (Type E): Flexible application of cloth TPS will require the cloth to be under line loads to maintain the configuration and suppress flutter.

2a. Is it NASA'S intention to reproduce tensile cloth line loads during the tests?

Answer: No, the thermal test environment will not induce flutter so we will not introduce tensile cloth line loads.

2b. If so, who will be responsible for the fixturing?

Answer: No fixturing will be required.

3. The areal density specified for the Type A coupons in section 3.2.1 of the draft SOW (1.8 g/cm2) appears to be inconsistent with the total weight specified for the coupons (20.3 gms) and the coupon diameter (5.08 cm).

Answer: Yes, there is an error in the document. The areal density of 1.8 gm/cm2 is correct. The total weight of the rigid thermal Type A coupons should be 36-37 gms, not 20.3 gms.

4. Is the specified areal density of 1.8 grams/cm2 a minimum, a maximum, or a target value?

Answer: For these screening tests, 1.8 gm/cm2 is the target value (for the rigid materials only).

5. By what success criteria will the test results from each of the various coupons be evaluated?

Answer: The Type A coupons will be instrumented at the back face and interface (if applicable). The back face temperature response will be compared to the baseline 2.5-in (6.45 cm) thick PICA specimen. The structural specimen failure modes will also be evaluated and compared to PICA. The Type B thermal coupons will be used to investigate the differences in surface recession in air and CO2. Since we are at the very early developmental stages for the

deployable materials, those tests will be purely informational. We will try to ascertain the viability of the materials in the heat flux range of interest. We will also be evaluating the flexibility of the flexible deployable materials by performing fold tests. We are anticipating folding to a radius of somewhere between 4-6 inches.

6.a. What type of contract award instrument is anticipated?

Answer: For Phase 1 only, NASA will award multiple non-commercial, firm fixed price purchase orders issued under the authority of FAR Subpart 13 for acquisitions below the simplified acquisition threshold. Contract type for future phases has not been determined.

6b. Will the contract require, or allow, cost matching by the contractor?

Answer: The question about cost matching does not seem relevant, given that the Phase I awards will be fixed price.

End of Questions and Answers 1