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Letter of Addendum

TO: All Offerors

FROM: Lisa Majkowski, Director – Purchasing Services

DATE: 09/18/2025

RE: RFB Number: RFP 26090007 - Amendment No. 3
Commodity: Room Calorimeter

Questions (Q) and Answers (A)

Q1. Building Requirements and Configuration (Part 1, 6): The RFB specifies providing "building requirements and configuration for safe operations (room size, duct lengths and spacing, power, etc.)" and "locations and anchoring attachments of hood and pipe support/stands/pads/structures." Our services document outlines power requirements (e.g., [insert typical power specs, e.g., 400V, 3-phase, 50/60 Hz]) and hood details (e.g., eyelets for mounting, approximate weight/dimensions). However, detailed structural specifications (e.g., room size, anchoring design) require civil/structural engineering input based on your available space and intended use. Can you confirm if you expect only general guidance (e.g., minimum room size, power needs) without detailed civil engineering drawings, as these are typically provided post-order?

A1. Only general guidance. The general notion is for NMT to receive the requirements the building must have to fit the equipment. See also Question 15 response.

Q2. Site Construction/Modification (Part 1, 3a): Does NMT expect supplier to construct or modify the test site (e.g., room enclosure or structural supports), or is this solely your responsibility, with supplier providing only compatibility specifications (e.g., hood weight, duct supports) for your engineers to design the installation?

A2. NMT is interested in the compatibility specifications for NMT engineers to design/modify the test site.

Q3. Fan Curve for Efficiency (Part 1, 4): For the stainless steel centrifugal fan (3.5 m^3/s at 300°C, VFD-controlled, 100% duty cycle for 30 minutes), you request a "fan curve for efficiency (50% or better under room temperature conditions)." Can you provide a sample fan curve or specify the preferred format (e.g., graph of airflow vs. static pressure with efficiency data at 20–25°C)? Additionally, is an anemometer with positioning system (e.g., ±1% accuracy, traverse for velocity profiling) the intended method for real-time flow verification per ISO 9705, ASTM E603, and NFPA 286, or are simpler bidirectional probes acceptable? If an anemometer is preferred, will the specs be updated via addendum?

A3. The preferred format is a graph of airflow vs static pressure with efficiency data at 20–25°C

Airflow measurements require, "The volume flow rate in the exhaust duct shall be measured to an accuracy of at least ±5 %. The response time of the measurement system to a stepwise change of the duct flow rate shall be a maximum of 3 s at 90 % of the final value." in accordance with ISO 9705. NFPA 286 specifically calls out a bi-directional probe 7.3.2. Ideally the probe can meet both NFPA 286 and ISO 9705. ASTM E603 section 6.5.5 "Air velocity is normally determined by means of the bidirectional flow probe."

Q4. Heat Release Rate Specification (Part 1, 2a, 1a): The RFB references "200 kW/m^2 for 30 min" for the calorimeter's capacity. Did you intend 200 kW total heat release rate (typical for furniture/room tests per ISO 9705) or 200 kW/m^2, which would require a larger calorimeter depending on sample size? If 200 kW/m^2, could you specify the expected sample dimensions to ensure appropriate system sizing?

A4. Please see Addendum 2

Q5. NFPA 286 as Guidance (Part 1, 2a, 1b): The RFB cites NFPA 286 compliance. As this is a guidance document rather than a test standard, can you confirm if compliance with its test protocols (e.g., room corner test methods) is sufficient, or are specific NFPA 286 requirements expected?

A5. Compliance with NFPA 286 is required. In areas where ASTM E603, ISO 9705 and NFPA 286 differ, please submit questions for verification. In general the ASTM E603 is the preferred standard.

Q6. Air Monitoring Sensors (Part 1, 4a): Could you please clarify what is meant by "air monitoring sensors"? Does this refer to the integrated gas analysis sensors (O_2, CO_2, CO, humidity control) for HRR calculations, or additional environmental sensors (e.g., ambient air monitors)? Could you clarify the intended scope?

A6. Air monitoring is referring to the integrated gas analysis sensors (O_2, CO_2, CO) and the environmental humidity. That the sensors have a traceable (e.g. NIST or other) calibration.

Q7. Baseplate Clarification (Part 2, 1A-1): The RFB specifies a “stainless steel (304) baseplate/platform 0.6 m x 0.6 m.” Is this intended as the weighing platform (300 kg capacity) for test specimens, or a separate structural component? If separate, could you describe its purpose (e.g., equipment mounting)?

A7. Correct. The stainless steel plate is intended as the weighing platform.

Q8. Ducting Scope and Length (Part 2, 1A-2): The RFB requires stainless steel (304/316) ducting (Ø400 mm, with 2× 90° bends, discharge cowl, supports, expansion joints). Could you specify the total duct length needed for an accurate cost estimate?

A8. Pipe length is dependent on the sensors used and air flow conditioning of exhaust. Maximum lengths are dependent on the manufacturer's specific setup. Minimum lengths are stated in the referenced standards.

Q9. Humidity in Gas Analysis (Part 2, 1B-1): The RFB includes “humidity” in the gas analysis sensors. Is a dedicated humidity sensor (e.g., ±2% RH) required, or does moisture removal via a drying column (e.g., achieving <5% moisture for accurate O_2/CO_2/CO readings) as per ISO 9705 and NFPA 286 practices, meet the requirement? If a sensor is needed, will this be clarified in an addendum?

A9. Humidity is part of the ambient conditions per ASTM E603 section 8.2.2 and a sensor is required per RFB Part 2 b (1) and integrated into the Data Acquisition RFB Part 2 D (1). Please see Addendum 2 as well.

Q10. Bi-Directional Mass Flow Meter (Part 2, 1B-3): The RFB mentions a “bi-directional mass flow meter” for exhaust flow. We believe this refers to a bi-directional probe and K-type thermocouple for calculating flow rate per standard calorimetry equations (ISO 9705, ASTM E603, NFPA 286). Is this correct, or do you require a specific mass flow meter? Alternatively, would an anemometer with positioning system (e.g., ±1% accuracy, traverse profiling) be preferred for superior turbulence handling, and will the specs be updated to reflect this?

A10. Please see Addendum 2

Q11. Spark Arrest and Appurtenances (Part 2, 1B-5): The RFB specifies “spark arrest” and “appurtenances” in the duct system. Do these refer to a soot removal system (e.g., filters), water removal system (e.g., cold trap), flow meters, mass-flow controllers, and bypass valves, as standard in our extraction system? Could you clarify the intended components?

A11. Correct the intent is to include gas conditioning: the soot filtration, cold trap, pump, drying columns, waste regulator, and guide vanes.

Q12. Propane Fittings (Part 2, 1C-1): The RFB requires “standard propane fittings.” Our systems include a connection point (e.g., ¾ inch BSP thread) for customer-supplied propane lines. Are you expecting US-specific fittings (e.g., NPT threads) or connect to gas supplies, or is it your responsibility to arrange qualified tradespeople for connection?

A12. The Sand burner connection point is a standard propane fitting (e.g. ¾ inch NPT threads).

Q13. Heat Flux and Ignition Indication (Part 2, 1D-1): The RFB mentions “heat flux and ignition indication.” Does “heat flux” refer to the heat flux gauge readings (e.g., ±0.5°C via thermocouples), and does “ignition indication” mean a manual operator input (e.g., button press to note ignition) or an automated detection system? Given the large ignition source (propane burner), manual indication is typical—please confirm if this suffices.

A13. Correct the heat flux is referring to the gauge reading output of the heat flux sensor. Ignition indication means a time stamp on when the ignitor is activated is recorded in the data.

Q14. Smoke Density Options (Part 2, 2 – B & C): The RFB lists optional smoke density analyzer and white-light photometer. Are these distinct systems (e.g., B as white-light, C as laser-based), or do they describe interchangeable smoke measurement system? Could you clarify the preferred technology?

A14. The options B and C are intended to capture the two options available in ISO 9705 Section 8.4.1 “The optical density of the smoke is determined by measuring the light obscuration with a system consisting of a lamp, lenses, an aperture and a photocell (see Figure 2) or with a laser system as given in Annex H.”

Q15. Offset Distances and Cabling (Part 1, C): The RFB mentions “specify offset distances for equipment and provide cabling for configuration.” Does this refer to positioning the analysis rack (e.g., gas analyzers, DAQ) near the instrumented duct section (e.g., within 1–2 m), with standard cabling provided, or are specific offset distances and cabling layouts required based on your lab layout? Could you provide details on the lab configuration to guide our proposal?

A15. The intent is for the manufacturer to determine the ideal setup and lab configuration for their equipment and then provide these details to NMT and the cabling lengths etc. to meet that configuration.

ALL OFFERORS ARE REQUIRED TO CONFIRM THE RECEIPT OF THIS AMENDMENT IN THEIR RESPONSE.
ALL OTHER TERMS AND CONDITIONS OF THE RFP REMAIN UNCHANGED.