

Glenn Research Center Organization Procedure	Title: IMTE 7610,7620,7630,7640,7660	
	Document No.: GRC-W7600.005	Rev: G

Work Instruction

IMTE for 7610/7620/7630/7640/7660

Approved by:

Chief, Research Testing Division/7600

This document identified the correct steps to accomplish this process. I acknowledge that by my signature, I am the document owner for purposes of its maintenance and update.

**NASA – Glenn Research Center
Cleveland, OH 44135**

Glenn Research Center Organization Procedure	Title: IMTE 7610,7620,7630,7640,7660	
	Document No.: GRC-W7600.005	Rev: G

Document Owner: 7545/Aero Electronic Test Engineering Branch
Point of Contact: Bob Freedman, 216-433-2038

Change Record

Rev.	Effective Date	Description
Basic	04/09/1999	Initial issue of document
A	06/21/1999	Response to audit see change form for details, FCR1999-1038
B	04/25/2000	Correct records list, FCR2000-1189
C	08/24/2000	See FCR2000-1222 for details
D	03/23/2001	General Revisions, FCR2001-1312
E	05/18/2001	Annual Review, FCR2001-1330
F	11/04/2003	Document Number Changed from 7500.027 to 7600.005 General numbering and reference changes related to directorate re-organization and document re-numbering. FCR2003-1654
G	01/14/2004	Annual Review. Modified Paragraph 6.1 Bullet 2. FCR2003-1681

Glenn Research Center Organization Procedure	Title: IMTE 7610,7620,7630,7640,7660	
	Document No.: GRC-W7600.005	Rev: G

1.0 PURPOSE

Provide policies and guidelines to the Aero and Space Test Engineering Branches in 7600 Division to assure compliance with CLP GRC-P3.11.1 Control of Inspection, Measuring, and Test Equipment.

2.0 REFERENCES

Document Number	Document Title
GRC-P3.11.1	Control of Inspection, Measuring, and Test Equipment
GRC-P7600.003	Aero Test Engineering
GRC-P7600.004	Space Test Engineering

2.1 RECORDS AND FORMS

F7600.006 Quality and Safety List – Form (or equal)
F7600.007 Calibration Data Sheet – Form (or equal)
Response to Notice of “Out of Tolerance Condition”

3.0 SAFETY PRECAUTIONS

Assure when shipping measurement devices to the calibration lab they are properly protected from damage

3.1 DEFINITIONS

- **Instrument:** Any device used to measure a physical phenomenon such as pressure, temperature, or dimension.
- **Quality Measurements:** One that affects the reportable results. A measurement, which is critical to the testing.
Example:
Measurement -- pipe flow
Measurement Device -- a flow venturi
Quality measurements -- All the pressures and temperatures needed to calculate the desired pipe flow.
Non-Quality measurements -- Hydraulic pressure controlling the valve used to set the flow, the valve position.
- **Safety Measurements:** The devices used on a system to ensure personnel and equipment hardware are not placed in unnecessary danger of injury or damage.
Facility systems are handled by the Alarms and shutdown lists which already exists.

Glenn Research Center Organization Procedure	Title: IMTE 7610,7620,7630,7640,7660	
	Document No.: GRC-W7600.005	Rev: G

4.0 TOOLS, EQUIPMENT AND MATERIALS

“Not Applicable”

5.0 PERSONNEL TRAINING AND/OR CERTIFICATION

“Not Applicable”.

6.0 INSTRUCTIONS

- 6.1 Identify instruments or instrument systems used to make a quality or safety measurement.
- Every facility shall maintain a Quality and Safety list (F7600.006) or equivalent for all items that effect quality and safety for the current testing activity. The list shall identify the facility, the project name with its start and end date, the person who filled out the information and when it was filled out. It shall also contain Instrument or measurement system name, Manufacturer, Tag No., Calibration Due Date, X if Being Used on this test program, the type of calibration performed (cal lab or in-situ) and the calibration status, and comments. It shall be retained as a Record.
 - When ordering new equipment, notify the calibration lab by e-mail or phone. Tell them what you are ordering. Either have the instrument system delivered directly to the calibration lab or, upon receipt of the instrument, have it picked up by the calibration lab. Request the calibration lab to perform an acceptance test on the instrument or instrument system.
- 6.2 Calibration Precautions:
- When returning equipment for calibration the user must ensure it is properly protected to prevent damage to the equipment during transit.
 - No equipment received from the Calibration Lab will be used until it has been installed in its environment long enough to reach equilibrium.
 - Special calibrations will be requested from the Calibration lab if IMTE Quality and Safety equipment is to be used outside its stated environmental limits.
 - Call the Calibration lab to ensure your needs can be met and document your request using the C 55 form.
 - The process to be used for calibration must be signed and dated
 - Assure all instruments used for in situ calibrations are listed on form F7600.006 Document calibration results use form F7600.007 or equivalent which shall provide the following: This shall be retained as a Record
 - Who performed calibration?
 - Date when calibration performed.
 - Date when next calibration is required.
 - Tag/serial number of device being calibrated
 - Tag/serial number and calibration due date of the transfer standard(s) used
 - Expected result verses actual.

Glenn Research Center Organization Procedure	Title: IMTE 7610,7620,7630,7640,7660	
	Document No.: GRC-W7600.005	Rev: G

- Acceptable measurement tolerance or accuracy required,
 - Environmental conditions under which calibration was performed (area temperature)
- 6.3 Assure all IMTE is maintained within calibration limit at all times
- Respond to Recall notices in a timely fashion.
 - Notify the calibration lab using Form C 57 if an identified IMTE device's time interval needs to be extended. Extended calibration authorization can be no more than 20% of calibration time without concurrence of OSAT. (Office of Safety and Assurance Technology)
 - Tag equipment appropriately.
 - Notify Calibration Lab using Form NASA C-56 or CAB-14-D-0500 if IMTE device should be removed from Notification System. This should be done if calibration is not needed at this time and could be postponed until device is required for a measurement on the test article or facility. Remove Calibration label or move to a designated area for non-calibrated equipment.
- 6.4 Out of Tolerance Notice – Note the calibration lab should be requested to perform a precheck on all quality and safety instruments received to verify if the device is still within calibration limits. If you receive notice the instrument or equipment is not within specifications you must take the following Actions:
- Assess the impact of out of tolerance condition.
 - Does this out of tolerance exceed the measurement uncertainty required by this measurement?
 - If no document and save as a record.
 - If yes write a response to the customer(s) who could have been affected by the device being out of tolerance. Relate what test(s) were involved, what measurement(s) could have been effected, what the tolerance was versus what they required, etc. Then state what preventive and corrective action you took to prevent reoccurrence. Document and save as a record.
 - Save in project file your response to out-of-tolerance notice and the notice itself.
- 6.5 All IMTE quality and safety equipment and devices calibrated through outside calibration services shall be documented and traceable to NIST (National Institute of Standards and Technology).
- 6.6 Labeling -- Only 2 stickers will appear on Glenn Calibrated Equipment
- Calibrated
 - Limited Calibration
- They can be various colors. They can come from the Calibration Lab, the user or an outside vendor calibration lab
- They must contain as a minimum the following
- Unique Identifying number (NASA tag Number), or cal lab tag number
 - Date calibrated
 - Date when next calibration is due
 - Who did the calibration (Initials or stamp).
 - And if it is a limited calibration what the limits are

Glenn Research Center Organization Procedure	Title: IMTE 7610,7620,7630,7640,7660	
	Document No.: GRC-W7600.005	Rev: G

Forms referenced in this document can be found under the BMS Library organizational procedures 7600 division.

7.0 FLOW DIAGRAMS

No Flow diagram provided