

CONTENTS

1. Purpose and Applicability.....	1
2. Principle and Summary of Test Procedure	1
3. Biases and Interferences	2
4. Sensitivity, Range and Precision.....	2
5. Test Equipment.....	2
6. Preliminary System Evaluation and Inspection	2
6.1 Evaluate Required Documentation of the ISD System (Certification Testing Only)	2
6.2 Verify Standardization of the System Interface.....	2
6.3 Evaluate Required Uptime Recording and Operational History of the ISD System.....	2
6.4 Evaluate Required Recorded ISD System Reports	2
6.5 Evaluate Tampering Protection	3
7. Determination of ISD System Measurement Accuracy and Precision.....	3
7.1 General Considerations.....	3
7.2 A/L Ratio Measurement (Assist Systems Only)	3
7.3 Vapor Flow Performance Measurement (Balance Systems Only)	4
7.4 UST Pressure Measurement (Phase I and II Operations)	4
7.5 Leak Rate Measurement	5
7.6 Central Vacuum System Measurements	5
7.7 Vapor Processor Measurements	5
8. Statistical Calculations	6
8.1 Calculation of Error and Normalized Error	6
8.2 Mathematical Characterization of Error Distributions.....	6
8.3 Determining the Number of Measurements “ n_{ACT} ” or “ n_{BORD} ” Upon which an ISD System Decision is Based	7
8.4 Calculation of 5%-probable Error Magnitude	7
8.5 Calculation of 1%-probable Error Magnitude	8
8.6 Calculation of Action Criterion Values V_{ACT} and Action Test Values V_T	8
8.7 Calculation of Borderline Operation Values V_{BORD} and Action Test Values V_T	9
9. Testing Proper ISD System Operation Including Generation of Automatic Alarms and Actions.....	11
9.1 General Considerations	11
9.2 Appropriateness of Generated Alarms	11
9.3 System Startup and Restart.....	11
9.4 Sensor Failure Detection	11
9.5 A/L Gross Failure Response (Assist Systems Only).....	12
9.6 A/L Degradation Response (Assist Systems Only).....	12
9.7 Reduced Vapor Collection Flow Performance (Balance Systems Only).....	12
9.8 Central Vacuum System Failure (Systems so equipped only)	13
9.9 UST Ullage Pressure - Gross Failure Response	13
9.10 UST Ullage Pressure - Degradation Response	14
9.11 UST Ullage Pressure - Pressure Integrity Failure (Leakage) Response.....	14
9.12 UST Ullage Pressure - Phase I Overpressure Response	15
9.13 <u>2</u> Vapor Processor Malfunction Response (Systems so equipped only)	15
10. Alternative Test Procedures	16