**Executive Order VR-204 IOM Section 4: ISD Alarm Troubleshooting Summary**

Due to the number of hanging hardware and vapor processor configurations available for use with the VST Phase II EVR Balance system, this section of the IOM consists of the following tables. The content of each table differs based on the type of processor and hanging hardware installed:

Table 1: Veeder-Root ISD Alarm Troubleshooting Summary for Facilities Equipped with VST ECS Membrane
Table 2: Veeder-Root ISD Alarm Troubleshooting Summary for Facilities Equipped with Veeder-Root Vapor Polisher
Table 3: Veeder-Root ISD Alarm Troubleshooting Summary for Facilities Equipped with FFS Healy Clean Air Separator
Table 4: Veeder-Root ISD Alarm Troubleshooting Summary for Facilities Equipped with Hirt VCS-100 Thermal Oxidizer
Table 5: Veeder-Root Alarms Associated with Veeder-Root Wireless ISD Components
Table 6: INCON ISD Alarm Troubleshooting Summary for Facilities Equipped with VST Phase II EVR System and FFS Healy Clean Air Separator
Table 7: Veeder-Root ISD Alarm Troubleshooting Summary for Facilities Equipped with VST Green Machine Processor
Table 8: INCON ISD Alarm Troubleshooting Summary for Facilities Equipped with EMCO Phase II EVR System and Hirt VCS-100 Vapor Processor

**Table 1: Veeder-Root ISD Alarm Troubleshooting Summary for Facilities Equipped with VST ECS Membrane**

| Displayed Message | ISD Monitoring Category | Light Indicator | Description | Suggested Troubleshooting[1] |
|---|---|---|---|---|
| ISD VAPOR LEAKAGE WARN | Containment | Yellow | Containment system leaks at 2 times the TP-201.3 standard. | • Exhibit 4<br>• TP-201.3 (or equivalent test procedure) |
| ISD VAPOR LEAKAGE FAIL[2] | Containment | Red | 8th Consecutive Failure of Pressure Integrity (Vapor Leak) Test | |
| ISD GROSS PRESSURE WARN | Containment | Yellow | 95th percentile of 7-days' ullage pressure exceeds 1.3 Inches Water Column (IWC). | • Exhibit 9<br>• Exhibit 10 |
| ISD GROSS PRESSURE FAIL[2] | Containment | Red | 8th Consecutive Failure of Gross Containment Pressure Test | |
| ISD DEGRD PRESSURE WARN | Containment | Yellow | 75th percentile of 30-days' ullage pressure exceeds 0.3 IWC. | |
| ISD DEGRD PRESSURE FAIL[2] | Containment | Red | 31st Consecutive Failure of Degradation Pressure Test | |
| FLOW COLLECT WARN | Collection | Yellow | Vapor collection flow performance is less than 50%. | • Exhibit 5<br>• Exhibit 6<br>• Exhibit 17<br>• TP-201.4 (or equivalent test procedure) |
| FLOW COLLECT FAIL[2] | Collection | Red | 2nd Consecutive Failure of Vapor Collection Flow Performance Monitoring Test | |
| VP EMISSION WARN[3,4] | Processor | Yellow | Mass emission exceeded the certified threshold. | • Exhibit 8<br>• Exhibit 9 |
| VP EMISSION FAIL[3,4] | Processor | Red | 2nd Consecutive Mass emission test failure. | |

| Displayed Message | ISD Monitoring Category | Light Indicator | Description | Suggested Troubleshooting[1] |
|---|---|---|---|---|
| VP DUTY CYCLE WARN[3] | Processor | Yellow | Duty cycle exceeds 18 hours per day or 75% of 24 hours. | • PMC Setup Procedure<br>• Exhibit 4<br>• Exhibit 9<br>• Exhibit 10<br>• TP-201.3 (or equivalent test procedure) |
| VP DUTY CYCLE FAIL | Processor | Red | 2nd Consecutive Duty Cycle Test Failure. | |
| ISD SENSOR OUT WARN | Self-Test | Yellow | Failure of Sensor Self-Test | • Confirm ISD sensor & module installation / communication per VR 204 IOM Section 12, Chapter 2 |
| ISD SENSOR OUT FAIL | Self-Test | Red | 8th Consecutive Failure of Sensor Self-Test | |
| ISD SETUP WARN | Self-Test | Yellow | Failure of Setup Test | • Confirm EVR/ISD programming per VR 204 IOM Section 12 |
| ISD SETUP FAIL[2] | Self-Test | Red | 8th Consecutive Failure of Setup Test | |
| PMC SETUP FAIL | N/A | Red | PMC is not configured or missing components. | • Troubleshooting Guide http://www.vsthose.com/carbs_components.aspx<br>• See ISD Troubleshooting Guide, P/N 577013-819.<br>• Exhibit 8<br>• Exhibit 9 |
| PMC SENSOR FAULT | N/A | Red | Component used by PMC has failed or reported an error condition. See Trouble shooting section for complete description of sensors and associated conditions that can cause a sensor fault. | • Check for Smart Sensor Device Alarm or Fault. |

**Note: The alarms listed in above table will also activate an audible alarm**

[1]See ISD Troubleshooting Manual P/N 577013-819 found at http://www.veeder.com/object/577013-819.html and the VST ISD Troubleshooting Guide 9513-003 found at http://www.vsthose.com/pdf/Troubleshooting_Guide_ECS_Membrane_Processor_Sept_2010.pdf

[2]ISD Shut Down Alarms – see Figure 48 of IOM Section 12

[3]This warning will result in an ISD VP Status Warn

[4]This failure will result in an ISD VP Status Fail

**Table 2: Veeder-Root ISD Alarm Troubleshooting Summary for Facilities Equipped with Veeder-Root Vapor Polisher**

| Displayed Message | ISD Monitoring Category | Light Indicator | Description | Suggested Troubleshooting[1] |
|---|---|---|---|---|
| ISD VAPOR LEAKAGE WARN | Containment | Yellow | Containment system leaks at 2 times the TP-201.3 standard. | • Exhibit 4<br>• Exhibit 11<br>• TP-201.3 (or equivalent test procedure) |
| ISD VAPOR LEAKAGE FAIL[2] | Containment | Red | 8th Consecutive Failure of Pressure Integrity (Vapor Leak) Test | |
| ISD GROSS PRESSURE WARN | Containment | Yellow | 95th percentile of 7-days' ullage pressure exceeds 1.3 IWC. | • Exhibit 10<br>• Exhibit 11 |
| ISD GROSS PRESSURE FAIL[2] | Containment | Red | 8th Consecutive Failure of Gross Containment Pressure Test | |
| ISD DEGRD PRESSURE WARN | Containment | Yellow | 75th percentile of 30-days' ullage pressure exceeds 0.3 IWC. | |
| ISD DEGRD PRESSURE FAIL[2] | Containment | Red | 31st Consecutive Failure of Degradation Pressure Test | |
| FLOW COLLECT WARN | Collection | Yellow | Vapor collection flow performance is less than 50%. | • Exhibit 5<br>• Exhibit 6<br>• Exhibit 17<br>• TP-201.4 (or equivalent test procedure) |
| FLOW COLLECT FAIL[2] | Collection | Red | 2nd Consecutive Failure of Vapor Collection Flow Performance Monitoring Test | |
| VP EMISSION WARN[3,4] | Processor | Yellow | Mass emission exceeded the certified threshold. | • Exhibit 11<br>• Exhibit 12 |
| VP EMISSION FAIL[3,4] | Processor | Red | 2nd Consecutive Mass emission test failure. | |

| Displayed Message | ISD Monitoring Category | Light Indicator | Description | Suggested Troubleshooting[1] |
|---|---|---|---|---|
| ISD SENSOR OUT WARN | Self-Test | Yellow | Failure of Sensor Self-Test | • Confirm ISD sensor & module installation / communication per VR 204 IOM Section 12, Chapter 2 |
| ISD SENSOR OUT FAIL | Self-Test | Red | 8th Consecutive Failure of Sensor Self-Test | |
| ISD SETUP WARN | Self-Test | Yellow | Failure of Setup Test | • Confirm EVR/ISD programming per VR 204 IOM Section 12 |
| ISD SETUP FAIL[2] | Self-Test | Red | 8th Consecutive Failure of Setup Test | |
| PMC SETUP FAIL | N/A | Red | PMC is not configured or missing components. | • Ensure that all required components are installed and operational. |
| PMC SENSOR FAULT | N/A | Red | Component used by PMC has failed or reported an error condition. See Troubleshooting section for complete description of sensors and associated conditions that can cause a sensor fault. | • Check for Smart Sensor Device Alarm or Fault. |

**Note: The alarms listed in above table will also activate an audible alarm**
[1]See ISD Troubleshooting Manual P/N 577013-819 at http://www.veeder.com/object/577013-819.html
[2]ISD Shut Down Alarms - see Figure 48 of IOM Section 12
[3]This warning will result in an ISD VP Status Warn
[4]This failure will result in an ISD VP Status Fail

**Table 3: Veeder-Root ISD Alarm Troubleshooting Summary for Facilities Equipped with FFS Healy Clean Air Separator**

| Displayed Message | ISD Monitoring Category | Light Indicator | Description | Suggested Troubleshooting[1] |
|---|---|---|---|---|
| ISD VAPOR LEAKAGE WARN | Containment | Yellow | Containment system leaks at 2 times the TP-201.3 standard. | • Exhibit 4<br>• Exhibit 14<br>• TP-201.3 (or equivalent test procedure) |
| ISD VAPOR LEAKAGE FAIL[2] | Containment | Red | 8th Consecutive Failure of Pressure Integrity (Vapor Leak) Test | |
| ISD GROSS PRESSURE WARN | Containment | Yellow | 95th percentile of 7-days' ullage pressure exceeds 1.3 IWC. | • Are ball valves for the Clean Air Separator in the correct position per Exhibit 2?<br>• Exhibit 10 |
| ISD GROSS PRESSURE FAIL[2] | Containment | Red | 8th Consecutive Failure of Gross Containment Pressure Test | |
| ISD DEGRD PRESSURE WARN | Containment | Yellow | 75th percentile of 30-days' ullage pressure exceeds 0.3 IWC. | |
| ISD DEGRD PRESSURE FAIL[2] | Containment | Red | 31st Consecutive Failure of Degradation Pressure Test | |
| FLOW COLLECT WARN | Collection | Yellow | Vapor collection flow performance is less than 50%. | • Exhibit 5<br>• Exhibit 6<br>• Exhibit 17<br>• TP-201.4 (or equivalent test procedure) |
| FLOW COLLECT FAIL[2] | Collection | Red | 2nd Consecutive Failure of Vapor Collection Flow Performance Monitoring Test | |
| ISD SENSOR OUT WARN | Self-Test | Yellow | Failure of Sensor Self-Test | • Confirm ISD sensor & module installation / communication per VR 204 IOM Section 12, Chapter 2 |
| ISD SENSOR OUT FAIL | Self-Test | Red | 8th Consecutive Failure of Sensor Self-Test | |

| Displayed Message | ISD Monitoring Category | Light Indicator | Description | Suggested Troubleshooting[1] |
|---|---|---|---|---|
| ISD SETUP WARN | Self-Test | Yellow | Failure of Setup Test | • Confirm EVR/ISD programming per VR 204 IOM Section 12 |
| ISD SETUP FAIL[2] | Self-Test | Red | 8th Consecutive Failure of Setup Test | |

**Note: The alarms listed in above table will also activate an audible alarm**
[1]See ISD Troubleshooting Manual P/N 577013-819 at http://www.veeder.com/object/577013-819.html
[2]ISD Shut Down Alarms - see Figure 48 of IOM Section 12

**Table 4: Veeder-Root ISD Alarm Troubleshooting Summary for Facilities Equipped with Hirt VCS-100 Thermal Oxidizer**

| Displayed Message | ISD Monitoring Category | Light Indicator | Description | Suggested Troubleshooting[1] |
|---|---|---|---|---|
| ISD VAPOR LEAKAGE WARN | Containment | Yellow | Containment system leaks at 2 times the TP-201.3 standard. | • Exhibit 4<br>• TP-201.3 (or equivalent test procedure) |
| ISD VAPOR LEAKAGE FAIL[2] | Containment | Red | 8th Consecutive Failure of Pressure Integrity (Vapor Leak) Test | |
| ISD GROSS PRESSURE WARN | Containment | Yellow | 95th percentile of 7-days' ullage pressure exceeds 1.3 IWC. | • Exhibit 10<br>• Exhibit 13 |
| ISD GROSS PRESSURE FAIL[2] | Containment | Red | 8th Consecutive Failure of Gross Containment Pressure Test | |
| ISD DEGRD PRESSURE WARN | Containment | Yellow | 75th percentile of 30-days' ullage pressure exceeds 0.3 IWC. | |
| ISD DEGRD PRESSURE FAIL[2] | Containment | Red | 31st Consecutive Failure of Degradation Pressure Test | |
| FLOW COLLECT WARN | Collection | Yellow | Vapor collection flow performance is less than 50%. | • Exhibit 5<br>• Exhibit 6<br>• Exhibit 17<br>• TP-201.4 (or equivalent test procedure) |
| FLOW COLLECT FAIL[2] | Collection | Red | 2nd Consecutive Failure of Vapor Collection Flow Performance Monitoring Test | |
| ISD VP PRESSURE WARN | Processor | Yellow | 90th percentile of 1-day ullage pressure exceeds 2.3 IWC. | • Exhibit 13 |
| ISD VP PRESSURE FAIL[2] | Processor | Red | 2nd Consecutive Failure of Vapor Processor Overpressure Test | |

| Displayed Message | ISD Monitoring Category | Light Indicator | Description | Suggested Troubleshooting[1] |
|---|---|---|---|---|
| ISD VP STATUS WARN | Processor | Yellow | Triggered by an active "Extern Input Alarm" due to power loss, communication loss, or processor run time > 62 consecutive minutes | • Exhibit 4<br>• TP-201.3 (or equivalent test procedure)<br>• Confirm proper installation of Hirt VCS 100 per VR 204 IOM Section 12, Chapter 2 |
| ISD SENSOR OUT WARN | Self-Test | Yellow | Failure of Sensor Self-Test | • Confirm ISD sensor & module installation / communication per VR 204 IOM Section 12, Chapter 2 |
| ISD SENSOR OUT FAIL | Self-Test | Red | 8th Consecutive Failure of Sensor Self-Test | |
| ISD SETUP WARN | Self-Test | Yellow | Failure of Setup Test | • Confirm EVR/ISD programming per VR 204 IOM Section 12 |
| ISD SETUP FAIL[2] | Self-Test | Red | 8th Consecutive Failure of Setup Test | |

**Note: The alarms listed in above table will also activate an audible alarm**
[1]See ISD Troubleshooting Manual P/N 577013-819 at http://www.veeder.com/object/577013-819.html
[2]ISD Shut Down Alarms - see figure 48 of IOM Section 12

**Table 5: Alarms Associated with Veeder-Root Wireless Components**

| Displayed Message | Device | Light Indicator | Description | Suggested Troubleshooting |
|---|---|---|---|---|
| Battery Warning | Vapor Valve, Vapor Flow Meter | Yellow | Device transmitter reports battery status as “Replace” for 24 hours. | Remove and replace battery. |

**Note: The alarm listed in above table will also activate an audible alarm**

## Table 6: INCON ISD Alarm Troubleshooting Summary for Facilities Equipped with VST Phase II EVR System and FFS Healy Clean Air Separator

| Device | Description | Category | Type | Definition | Possible Cause and Solution |
|---|---|---|---|---|---|
| **Fueling Point [n]** | Daily Vapor Collection [1] | VRM | Warning or Alarm | This Vapor Recovery alarm occurs when the vapors being return to the UST are blocked. The alarm will occur at the assessment time that was set in the VRM Programming. | May be caused by leaking hanging hardware, blocked hoses or vapor recovery lines, jammed flow meter. Check for leaks by viewing the vanes through the site glass on the VFM, conduct Exhibit 6, or conduct Exhibit 19 of VR-204 to verify a blockage. |
| | Weekly or Monthly Ullage Pressure [1] | VRM | Warning or Alarm | This vapor recovery alarm occurs when the UST ullage pressure exceeds the alarm threshold for the time period specified in the alarm. | Check if ball valves for the Clean Air Separator in the correct position per Exhibit 2, or conduct Exhibit 20 (vapor pressure sensor), |
| | Weekly Ullage Pressure Leak Test [1] | VRM | Warning or Alarm | This vapor recovery alarm occurs when the Vapor Recovery Monitor determines a leak greater than the allowable. | May occur when there is an excessive leak in the vapor recovery containment area. Perform a pressure decay test per TP-201.3. |
| **Channel [n]** | Missing | VRM | Alarm | A flow meter is not connected or there is an open circuit in the wiring. This will only occur for a flow meter channel that is programmed to have a flow meter. | Check the connection. Measure the voltage of the terminals, which should be approximately 18Vdc. |
| **Channel [n]** | Error | VRM | Alarm | The Vapor Recovery Monitor does not understand the data transmission. | This may happen when a channel is programmed for a magnetostrictive (intake) probe but has a vapor flow meter connected instead. |
| | Pressure Sensor Open Circuit | VRM | Alarm | The pressure sensor is not connected to the Vapor Recovery Monitor. | Usually due to a bad connection or a broken wire. In some cases the sensor may not be working. First check the connections inside the dispenser junction box then at the Console terminal block. Second, measure the voltage at the terminal blocks and verify the voltage. |
| **DIM Module** | Module number mismatch | System | Alarm | DIM module detected does not match the number programmed | Check that the number of DIM modules installed matches the number programmed under System Configuration > Modules Expected. If problem persists, contact FFS Technical Services for support. |

| Device | Description | Category | Type | Definition | Possible Cause and Solution |
|---|---|---|---|---|---|
| **TS-DIM** | Connection Down | VRM | Alarm | The TS-DIMB is not receiving communications from the dispensers | Refer to the Vapor Recovery Monitoring Alarm and Troubleshooting identification guide 000-0529 for troubleshooting help. |
| | External ATG Connection Down | VRM | Alarm | No communication or bad communication between the ATG and the Console. | Check the comm. Port settings in both the ATG and the Console. These comm. Port settings should match. Make sure there is a straight serial cable between the ATG and the Console. |
| **Slot [n]** | [i] Module is offline, where i is the module number | System | Alarm | Occurs when a module is not communicating with the controller. | If RED LED is on or Green LED is blinking try cycling power. |
| | [i] Module number mismatch, where i is the module number | System | Alarm | Occurs when the number of modules does not match the programmed number of modules. | Check the setup at System Configuration» Modules Expected to see if the correct numbers are programmed. |
| | System Bus Error | System | Alarm | The communication bus is not working properly. | Check to see if a particular module has a red Error LED. If so try to trouble shoot the bad module. Also try removing the bad module and see if the alarm goes away. |
| **TS-DTUn** | Remote DTU is Offline | System | Alarm | A remote DTU is not communicating to the console DTU. | Wrong ID Number<br>Dispenser Powered Off<br>Not installed correctly<br>Not on same phase voltage as console DTU |
| | Console DTU number mismatch | System | Alarm | The console DTU is not communicating with the console. | Bad bus connection<br>Not powered |
| | DTU FFS Interference | System | Alarm | Two networks have the same Network ID | Change Network ID |
| **Printer** | Check Thermal Printer | System | Warning | Printer is out of paper, or the printer door is open. | Make sure the printer has paper, and the printer door is closed completely. |
| | Printer Head Temperature | System | Warning | Print head high temperature (65 ºC) persists for at least 2 minutes. | Printer will resume printing and the alarm will clear after a short cool-down period. Keep the console area cool and ventilated. If the alarm does not clear, contact FFS Technical Support. |
| | Printer Paper Jam | System | Warning | Indicates that paper is jammed in the printer | Carefully lift printer cover to inspect and remove jammed paper. |

[1] ISD Shutdown Alarm

## Table 7: Veeder-Root ISD Alarm Troubleshooting Summary for Facilities Equipped with VST Green Machine Processor

| Displayed Message | ISD Monitoring Category | Light Indicator | Description | Suggested Troubleshooting[1] |
|---|---|---|---|---|
| ISD VAPOR LEAKAGE WARN | Containment | Yellow | Containment system leaks at 2 times the TP-201.3 standard. | • Exhibit 4<br>• TP-201.3 (or equivalent test procedure) |
| ISD VAPOR LEAKAGE FAIL[2] | Containment | Red | 8th Consecutive Failure of Pressure Integrity (Vapor Leak) Test | |
| ISD GROSS PRESSURE WARN | Containment | Yellow | 95th percentile of 7-days' ullage pressure exceeds 1.3 IWC. | • Exhibit 9<br>• Exhibit 10 |
| ISD GROSS PRESSURE FAIL[2] | Containment | Red | 8th Consecutive Failure of Gross Containment Pressure Test | |
| ISD DEGRD PRESSURE WARN | Containment | Yellow | 75th percentile of 30-days' ullage pressure exceeds 0.3IWC. | |
| ISD DEGRD PRESSURE FAIL[2] | Containment | Red | 31st Consecutive Failure of Degradation Pressure Test | |
| FLOW COLLECT WARN | Collection | Yellow | Vapor collection flow performance is less than 50%. | • Exhibit 5<br>• Exhibit 6<br>• Exhibit 17<br>• TP-201.4 (or equivalent test procedure) |
| FLOW COLLECT FAIL[2] | Collection | Red | 2nd Consecutive Failure of Vapor Collection Flow Performance Monitoring Test | |
| VP EMISSION WARN[3,4] | Processor | Yellow | Mass emission exceeded the certified threshold. | • Troubleshooting Manual www.vsthose.com.<br>• Exhibit 9 |
| VP EMISSION FAIL[3,4] | Processor | Red | 2nd Consecutive Mass emission test failure. | |

| Displayed Message | ISD Monitoring Category | Light Indicator | Description | Suggested Troubleshooting[1] |
|---|---|---|---|---|
| ISD SENSOR OUT WARN | Self-Test | Yellow | Failure of Sensor Self-Test | • Confirm ISD sensor & module installation / communication per VR 204 IOM Section 12, Chapter 2 |
| ISD SENSOR OUT FAIL | Self-Test | Red | 8th Consecutive Failure of Sensor Self-Test | |
| ISD SETUP WARN | Self-Test | Yellow | Failure of Setup Test | • Confirm EVR/ISD programming per VR 204 IOM Section 12 |
| ISD SETUP FAIL[2] | Self-Test | Red | 8th Consecutive Failure of Setup Test | |
| PMC SETUP FAIL | N/A | Red | PMC is not configured or missing components | • See ISD Troubleshooting Manual |
| PMC SENSOR FAULT | N/A | Red | Component used by PMC has failed or reported an error condition. See Troubleshooting section for complete description of sensors and associated conditions that can cause a sensor fault. | • Troubleshooting Manual www.vsthose.com<br>• Exhibit 9 |

Note: The alarms listed in above table will also activate an audible alarm

[1]See ISD Troubleshooting Manual P/N 577013-819 found at http://www.veeder.com/object/577013-819.html and the VST ISD Troubleshooting Manual found at http://www.vsthose.com/pdf/Troubleshooting_Manual_Green Machine.pdf

[2]ISD Shut Down Alarms – see Figure 48 of IOM Section 12

[3]This warning will result in an ISD VP Status Warn

[4]This failure will result in an ISD VP Status Fail

# Table 8: INCON ISD Alarm Trouble Shooting Summary for Facilities Equipped with EMCO Phase II EVR System and Hirt VCS-100 Vapor Processor

| Hirt VCS 100 Troubleshooting Summary | | | | |
|---|---|---|---|---|
| VCS 100 Indicator Panel | Category | Light | Cause | Recommended Troubleshooting |
| MALFUNCTION LIGHT | VCS 100 Processor or System | Red | UST ullage pressure is positive for at least 1 continuous hour. | GDF Owner/Operator Responsibilities:<br>• "Weekly Inspections" of Hanging Hardware as specified in section 2 of Installation, Operation, and Maintenance Manual.<br>• "Drive-Offs and Other Customer Abuse" as specified in section 5 of Installation, Operation, and Maintenance Manual.<br>• Exhibit 7 of Executive Order VR-204<br>• Record findings in GDF Owner/Operator Maintenance Log.<br><br>Certified Contractor Responsibilities:<br>• Follow VCS 100 Troubleshooting Guide (Contact Hirt by either Phone: (562) 692-6970 or by email: HirtVCS@aol.com to get Guide)<br>• TP-201.3 and Exhibit 4 of Executive Order VR-204<br>• Exhibit 7 of Executive Order VR-204<br>• Exhibit 13 of Executive Order VR-204<br>Record findings in GDF Owner/Operator Maintenance Log. |

# Table 8: INCON ISD Alarm Trouble Shooting Summary for Facilities Equipped with EMCO Phase II EVR System and Hirt VCS-100 Vapor Processor

| INCON ISD Troubleshooting Summary | | | | |
|---|---|---|---|---|
| INCON Vapor Recovery Monitor (VRM) | Category | Type | Definition | Recommended Troubleshooting |
| Daily Vapor Collection, Fueling Point (n)* | VRM | Warning or Failure | This vapor recovery alarm occurs when the vapors being returned to the UST are blocked or a reduction in flow has been determined. | May be caused by leaking hanging hardware, blocked hoses or vapor recovery lines, jammed flow meter. Run Exhibit 19 of VR-204 to verify a blockage. Check for leaks by viewing the vanes through the sight glass on the VRM. |
| Weekly or Monthly Ullage Pressure* | VRM | Warning or Failure | This vapor recovery alarm occurs when the UST ullage pressure exceeds the alarm threshold for the time period specified in the alarm. | May be caused by a malfunction in the Hirt VCS 100. Perform a check on the processor and make sure it is turned on and processing vapors. |
| Weekly Ullage Pressure Leak Test* | VRM | Warning or Failure | This vapor recovery alarm occurs when the VRM determines a leak greater than the allowable | May occur when there is an excessive leak in the vapor recovery containment area. Perform a static pressure decay test per TP-201.3. |
| Vapor Processor Input | VRM | Warning Only | Occurs when processor run time exceeds 62 continuous minutes, or processor is shutoff, or input to ISD console is disconnected | Hirt VCS 100 is not running or operating properly. Leak in the vapor recovery containment area. Perform Exhibit 13 of VR-204. Perform a static pressure decay test per TP-201.3 to verify system integrity and identify leak(s) |
| Vapor Processor Warning* | VRM | Warning or Failure | Occurs when the ullage pressure exceeds 2.00 inches water column gauge (WCG) for 144 minutes in one day ($90^{th}$ percentile > 2.00" WCG) | Hirt VCS 100 is not running or operating properly. Leak in the vapor recovery containment area. Perform Exhibit 13 of VR-204. Perform a static pressure decay test per TP-201.3 to verify system integrity and identify leak(s) |
| Channel (n), missing | VRM | Alarm | A flow meter is not connected or there is an open in the wiring. This will only occur for a flow meter channel that is programmed to have a flow meter. | Check the connection. Measure the voltage of the terminals, which should be approximately 18VDC |
| Channel (n), error | VRM | Alarm | The VRM does not understand the data transmission. | This may happen when a channel is programmed for a magnostrictive probe but has a vapor flow meter connected instead. |

# Table 8: INCON ISD Alarm Trouble Shooting Summary for Facilities Equipped with EMCO Phase II EVR System and Hirt VCS-100 Vapor Processor

| INCON ISD Troubleshooting Summary | | | | |
|---|---|---|---|---|
| INCON Vapor Recovery Monitor (VRM) | Category | Type | Definition | Recommended Troubleshooting |
| External TS-DIM Connection Down | VRM | Alarm | No communication between the TS-DIM and the Console. | Occurs with bad connection, TS-DIM does not have power, TS-DIM is not working. Check the wiring between the TS-DIM and the Console. Check the jumper settings in the TS-DIM, see Section 21 of this IOM |
| TS-DIM Read Data Error | VRM | Alarm | Bad communication to the Console. | Most likely a baud rate problem. Check the baud rate in the Console as well as the jumper settings in the TS-DIM. |
| External Automatic Tank Gauge (ATG) Connection Down | VRM | Alarm | No communication or bad communication between the ATG and the Console | Check the Communication Port settings in both the ATG and the Console. These settings should match. Make sure there is a straight serial cable between the ATG and the Console. |
| (i) Module is offline, *where i is the module number* | System | Alarm | Occurs when a module is not communicating with the controller. | If RED LED is on or Green LED is blinking, try cycling power. |
| (i) Module number mismatch, *where i is the module number* | System | Alarm | Occurs when the number of modules does not match the programmed number of modules | Check the setup at ***System Configuration >>Modules Expected*** to see if the correct numbers are programmed. |

* If they progress to failure, these ISD alarms will result in shutdown.