Using the VP-SaT™ Telemetry Dosimetry System for Area Monitoring

Tank Farm Plant Operating Procedure

USQ # GCX-2

CHANGE HISTORY (≤ LAST 5 REV-MODS)

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-0</td>
<td>08/19/2015</td>
<td>Periodic Review</td>
<td>No Changes Found During the Review</td>
</tr>
<tr>
<td>B-0</td>
<td>10/07/2013</td>
<td>Periodic Review.</td>
<td>Updated course number and removed vague phrases.</td>
</tr>
<tr>
<td>A-1</td>
<td>05/17/2012</td>
<td>RadCon request.</td>
<td>Modified wording in fourth bullet for Step 5.3.7.</td>
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1.0 PURPOSE AND SCOPE

1.1 Purpose
This procedure provides specific information regarding the use of the VP-SaT™ for Telemetry Dosimetry System for use in area monitoring applications.

1.2 Scope
This procedure provides instruction for setup of the VP-SaT™ Telemetry Dosimetry System using Mk2+ Series Electronic Personal Dosimeters (EPDs), and EPD Mk2 Teleadapter Personal Transmitter for use in equipment area monitoring.

Scope does not include use for personnel monitoring applications.

2.0 INFORMATION

2.1 Terms and Definitions
- EPD – Electronic Personal Dosimeter
- Ir – Infrared
- OJT – On-the-Job Training.

3.0 PRECAUTIONS AND LIMITATIONS

NONE
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following supplies may be needed to perform this procedure:
- VP-SaT™ Console (running the ViewPoint™ software)
- Thermo Mk2+ Series Dosimeter
- EPD Mk2+ Transmitter
- AA Lithium Thionyl Chloride (LTC) 1.5-volt batteries
- AAA Lithium Thionyl Chloride (LTC) 1.5-volt batteries.

4.2 Performance Documents

The following documents may be needed to perform this procedure:
- Course Number 356446, OJT Card for Using VP-Sat Telemetry Dosimetry System (or equivalent)
- Course Number 356434, OJT Card for Thermo Mk2+ Electronic Dosimeter – Detached (or equivalent)
- Thermo Scientific ViewPoint™ User Handbook, P/N SYS/HB/700000/000
- Thermo Electronic Personal Dosimeter (EPD Mk2) Technical Manual, EPD/HB/40521/000
- Thermo Electron Corporation EASYEPD2 EPD Mk2 Configuration Software, P/N EPD/HB/40572/000
5.0 PROCEDURE

5.1 Setup the VP-SaT™ Console for Use

5.1.1 OPEN VP-SaT™ lid (cover) AND CONNECT internal antenna.

5.1.2 IF not already plugged in, PLUG power cable into laptop.

5.1.3 IF not using battery power, PLUG-IN VP-SaT™ power cable into a suitable A/C power receptacle.

5.1.4 TURN-ON Power Switch on back of case (above power cord inlet).

5.1.5 IF not already attached, ATTACH USB connector to the laptop.

5.1.6 TURN ON (I) the VP_SaT™ power switch.

5.1.7 ENSURE the laptop is powered up.

5.1.8 TURN ON (I) the internal radio (switch will light up when on).

5.1.9 TURN OFF (O) the external radio that is not being used.

5.1.10 START UP ViewPoint.

5.1.11 LOG IN using the user name “admin” and password “is blank” provided.
5.2 Create Telemetry Group in ViewPoint

5.2.1 FROM the ViewPoint main window, CLICK on “Computer Groups.”

5.2.2 RIGHT CLICK AND SELECT “Create Group.”

5.2.3 ENTER name of group that you are creating in accordance with project specific documents, technical work document, or Radiological Work Permit (RWP).

5.2.4 SELECT TeleTrak EPD2 from the list of “Available Devices” AND CLICK ADD to insert this instrument type in the “Displayed Devices” column.

5.2.5 DOUBLE CLICK on TeleTrak EPD 2,

OR

CLICK on “Options” button.

5.2.6 REMOVE the following from the “Fields Displayed” column:

- Wearer ID
- IN Date
- RWP ID
- WO
- Cell Phone
- D Dose
- S Dose
- Clock
- Resets
- D Dose Thresh
- S Dose Thresh
- Time Left.
5.2 Create Telemetry Group in ViewPoint (Cont.)

5.2.7 **ENSURE** the following at the “Fields Displayed” column:
- Device ID
- Name
- D Rate
- D Rate Thresh
- S Rate
- S Rate Thresh
- Lost Contact
- Status
- Report Time.

5.2.8 **SELECT** the “Popup Alarms” tab **AND**

**MOVE** the “Lost Contact” list from the “Available Alarms” column to the “Alarms that generate a Popup” column by selecting an item and clicking “Add”.

5.2.9 **CLICK** “OK” to accept the Group Device parameters.

5.2.10 **CLICK** “OK” to establish the Group.
5.3 Setup EPDs using Easy EPD

5.3.1 **OBTAIN** the number of EPDs and EPD Transmitters required for the Telemetry Dosimetry System.

5.3.2 **ENSURE** batteries are fresh.

5.3.3 **CONFIRM** the EPD’s calibration is current, by examining the attached calibration sticker.

5.3.4 **IF** EPD is not connected to the transmitters, **CONNECT** the EPDs to the transmitters.

5.3.5 **SET UP** the EPD(s) using the Easy EPD2 software and IrDA reader (contained in the VP-SaT™ unit or other locations) as follows:

5.3.5.1 **START UP** Easy EPD by double-clicking the Easy EPD icon on the computer.

5.3.5.2 **INSERT** an EPD into the IrDA reader, (the “Dose and Alarms” window will be displayed).

5.3.5.3 **SET UP** the EPD Alarms as outlined in the following table.

<table>
<thead>
<tr>
<th>Dose Alarm Thresholds mrem</th>
<th>Rate Alarm OFF mrem/hr</th>
<th>Thresholds ON mrem/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hp 10 (1) 99999</td>
<td>99998</td>
<td>99999</td>
</tr>
<tr>
<td>Hp 10 (2) 99999</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Hp 07 99999</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

* Setpoints are to be set to the levels required in Radiological Work Permit (RWP).

5.3.5.4 **OPTIONAL** > **ENTER** field location in “Wearer Name” block.

5.3.5.5 **CLICK** “Write to EPD” icon on the tool bar.

5.3.5.6 **ENSURE** EPD is turned “ON”
5.3 Setup EPDs using Easy EPD (Cont.)

NOTE - If the Min Tx interval is set to a large value, the alarm notifications will be delayed. Ten seconds is the manufacturer’s recommended optimum value for this setting.

5.3.6 CLICK “Set-Up” AND
SELECT Comms.

5.3.7 SET the following:
- Teledosimetry - On- Regular Tx
- Baud Rate - 9600
- Regular Transmit Set Up/Randolmise Tx Time - 80 Ms
- Regular Transmit Set Up/Min Tx Interval - 10 Secs/or other per RADCON FLS
- Regular Transmit Set Up/Dose Tx Increment - 0.1 mrem
- Regular Transmit Set Up/Max Tx Intervals - 1.

5.3.7.1 CLICK “Write to EPD”.

5.3.7.2 CLICK “Close” on the “Comms Setup”.

5.3.7.3 REPEAT Steps 5.3.5 thru 5.3.7.2 for each EPD needed for the project.

5.3.7.4 EXIT Easy EPD.
5.4 Setup ViewPoint Configuration of EPDs

5.4.1 SELECT Admin Tab Port Set Up AND

SELECT the com port for the Cirronet Base Radio from the ViewPoint main window.

5.4.2 CLICK “OK”.

5.4.3 CLICK on the “Measurements” tab.

5.4.4 INSTALL battery in transmitter.

5.4.5 VERIFY required EPDs are communicating with the VP_SaT™ console by observing Report Time changes and Status = “Teledose”.

5.4.6 USING the VP SaT™ console, SET the EPD Alarm Set-Points to the appropriate values in accordance with Radiological Work Permit (RWP).

5.4.6.1 CLICK on the EPD being configured.

5.4.6.2 RIGHT CLICK the mouse to open the TeleTrak EPD2 (S/N) window.

5.4.6.3 SELECT “Set Alarm Thresholds”.

5.4.6.4 SET the alarms as shown in table below:

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>SET POINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>D Dose Alarm 1</td>
<td>99999</td>
</tr>
<tr>
<td>D Dose Alarm 2</td>
<td>99999</td>
</tr>
<tr>
<td>S Dose Alarm</td>
<td>99999</td>
</tr>
<tr>
<td>D Rate Alarm 1 On</td>
<td>99999</td>
</tr>
<tr>
<td>D Rate Alarm 2 On</td>
<td>*</td>
</tr>
<tr>
<td>S Rate Alarm On</td>
<td>*</td>
</tr>
<tr>
<td>D Rate Alarm 1 Off</td>
<td>99998</td>
</tr>
<tr>
<td>D Rate Alarm 2 Off</td>
<td>*</td>
</tr>
<tr>
<td>S Rate Alarm Off</td>
<td>*</td>
</tr>
</tbody>
</table>

* Setpoints are to be set to the levels required in Radiological Work Permit (RWP).
5.4 Setup ViewPoint Configuration of EPDs (Cont.)

5.4.6.5 CLICK “OK”.

5.4.6.6 CONFIRM set-points have been transmitted by clicking “OK” when the Information popup showing “Operation succeeded” is displayed.

5.4.6.7 IF “Operation Failed” is displayed, CLICK “OK” AND REPEAT Steps 5.4.6.1 thru 5.4.6.6 as necessary until an “Operation Succeeded” is displayed.

5.4.6.8 CLICK “OK”.

5.4.7 IF status shows “Not Logged On”, RIGHT CLICK AND SELECT “Logon” from the TeleTrak EPD2.

5.4.8 WHEN the “Logon” table is displayed, INPUT the settings as shown below.

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>SETTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wearer ID</td>
<td>Space Bar (sp)</td>
</tr>
<tr>
<td>RWP</td>
<td>Sp</td>
</tr>
<tr>
<td>Name</td>
<td>Replaced EPD Location Name</td>
</tr>
<tr>
<td>Work Order</td>
<td>Sp</td>
</tr>
<tr>
<td>Cell Phone</td>
<td>Sp</td>
</tr>
<tr>
<td>D Rate Thresh</td>
<td>*</td>
</tr>
<tr>
<td>S Rate Thresh</td>
<td>*</td>
</tr>
<tr>
<td>D Dose Thresh</td>
<td>99999</td>
</tr>
<tr>
<td>S Dose Thresh</td>
<td>99999</td>
</tr>
<tr>
<td>Lost Contact</td>
<td>30</td>
</tr>
</tbody>
</table>

* Setpoints are to be set to the levels required in Radiological Work Permit (RWP).

5.4.9 CLICK “OK”.
5.4 Setup ViewPoint Configuration of EPDs (Cont.)

5.4.10 CONFIRM setpoints have been transmitted by clicking “OK” when the information popup showing “Operation succeeded” is displayed,

OR

IF “Operation Failed” is displayed, CLICK “OK” AND

REPEAT Steps 5.4.7 through 5.4.9 until “Operation Succeeded” is displayed.

5.4.11 CLICK “OK” AND

CONFIRM status has changed to “TeleDose”.

5.5 Records

NOTE – No records are generated during the performance of this procedure.