RF TECHNICAL NOTE

USE OF THE
RF RADIATION MONITOR
VALIDATION SOURCE

The RF Radiation Monitor Validation Source is a portable rf power source that is used to radiate a 351.90 MHz rf field in the vicinity of an rf radiation monitor that will result in a radiated rf field power density greater than 0.1mw/sq-cm and cause the rf radiation monitor to trip to the alarm state.

Note: This validation is an end-to-end test of the rf radiation monitor system. This validation must be performed any time an rf radiation monitor has been replaced with a spare, or if any other part of the RF Radiation Monitor System is tampered with.

This validation is NOT intended to measure or test the absolute sensitivity of the rf monitor in terms of it's factory-calibrated alarm point.

1. Assemble the Validation Source as shown in Figure 1.

   NOTE: Make sure the antenna is connected to the source rf output connector, the antenna elements are fully extended, and the antenna is at least 36" away from any object.

2. Connect the unit to a 120vac power source and turn it on by the ac power switch located at the ac power

input connector. Press the “power on” pushbutton on the frequency counter. With the unit on, note that the front-panel frequency counter indicates an output frequency of 351.90 MHz, +/- 50 kHz, and that the rf power output meter reads 350mW, +/- 150mW forward rf power, and less than 50mW reflected rf power (see Figure 1).

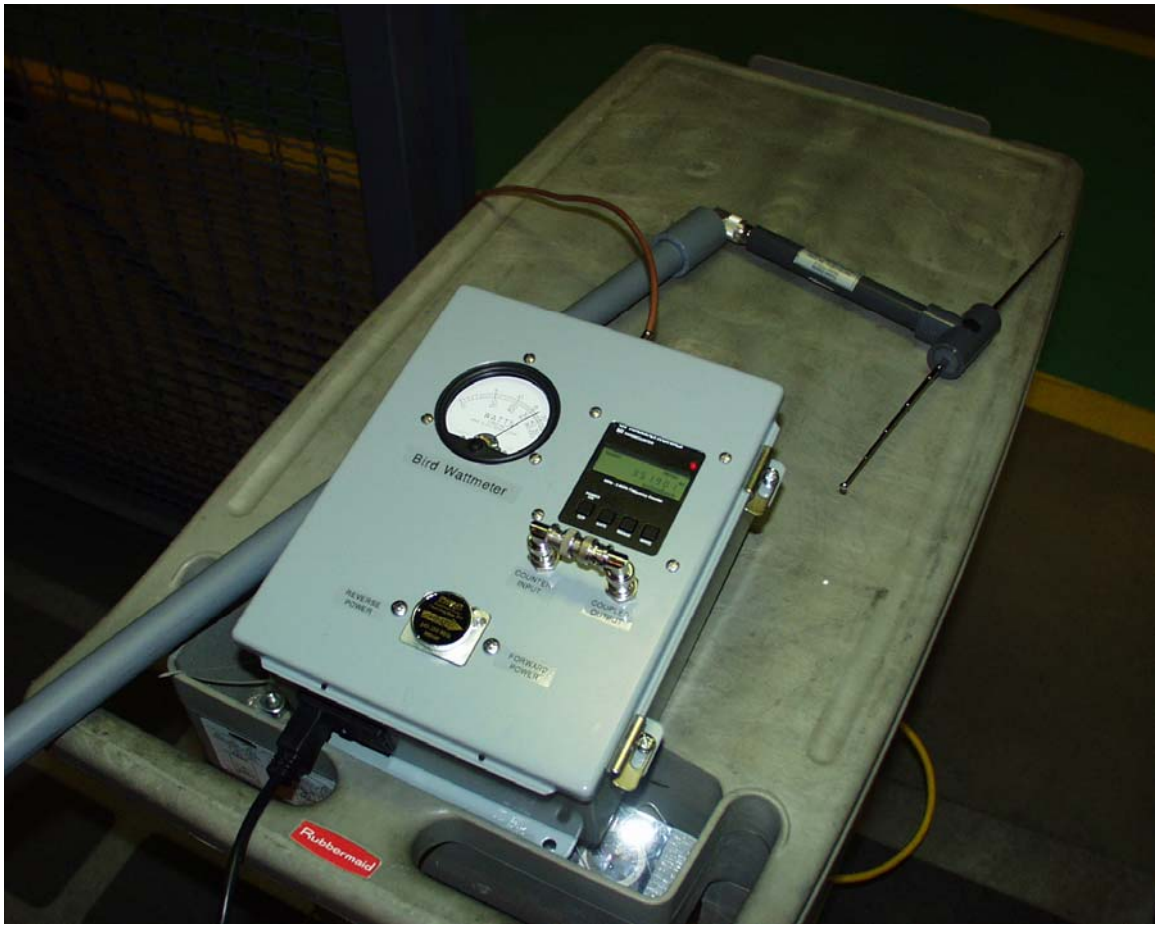

Figure 1 – The RF Radiation Monitor Validation Source

NOTE: The forward/reflected power readings are obtained by rotating the directional coupler slug located on the front of the Validation Source box. The arrow on the slug indicates the direction of the power being measured.

NOTE: Do not operate the Validation Source into the antenna for any longer than absolutely necessary to verify it's correct operation and to perform the system validation!

3. Position the Validation Source antenna as shown in Figure 2. The rf radiation monitor should trip to the alarm state when the antenna is within approximately 6 inches of the rf radiation monitor. This should also result in subsequent trips of the RF Radiation Monitor Interface Chassis at RF6, and the RF Personnel Safety Systems at RF1-RF5.

Figure 2 – Using the Validation Source to validate and rf radiation monitor.

4. If the rf radiation monitor fails this validation test, it must be removed from service and replaced with another monitor.

   NOTE: This validation test must then be repeated on the replacement monitor.

   NOTE: If any other component of the RF Radiation Monitor System fails this validation by not causing a trip of all 350MHz rf stations (RF1-RF5), the cause of the malfunction must be determined and corrected.

   A successful validation of the entire system is required to certify that the entire system operates correctly.

5. Log all details of rf radiation monitor system validations in the RF Personnel Safety Logbook, located at RF6.