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Power Quality and Generator Monitoring

The loss of power to station equipment is one of the major causes of station downtime, but it is a difficult issue to troubleshoot without data. To address this issue, General Dynamics Mission Systems investigated the use of commercially available products to monitor power quality and generator state-of-health. Two monitoring devices were procured, installed, and tested. The first is a generator monitor currently installed at IMS radionuclide monitoring station RN75. The device monitors the generator's state-of-health and sends real-time alerts and data which allows GDMS to ensure the generator is mission capable at all times. The second is a power quality meter installed in the GDMS testbed. The device provides enhanced functions for monitoring power consumption and quality. This device quantifies the power quality using industry standard metrics, and can perform sub-cycle transient waveform capture in the event of voltage spikes or harmonics. GDMS can receive alerts remotely or view events of interest through the device's web interface. These improvements seek to increase visibility into power quality trends and events which may affect station health and premature equipment failure.

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