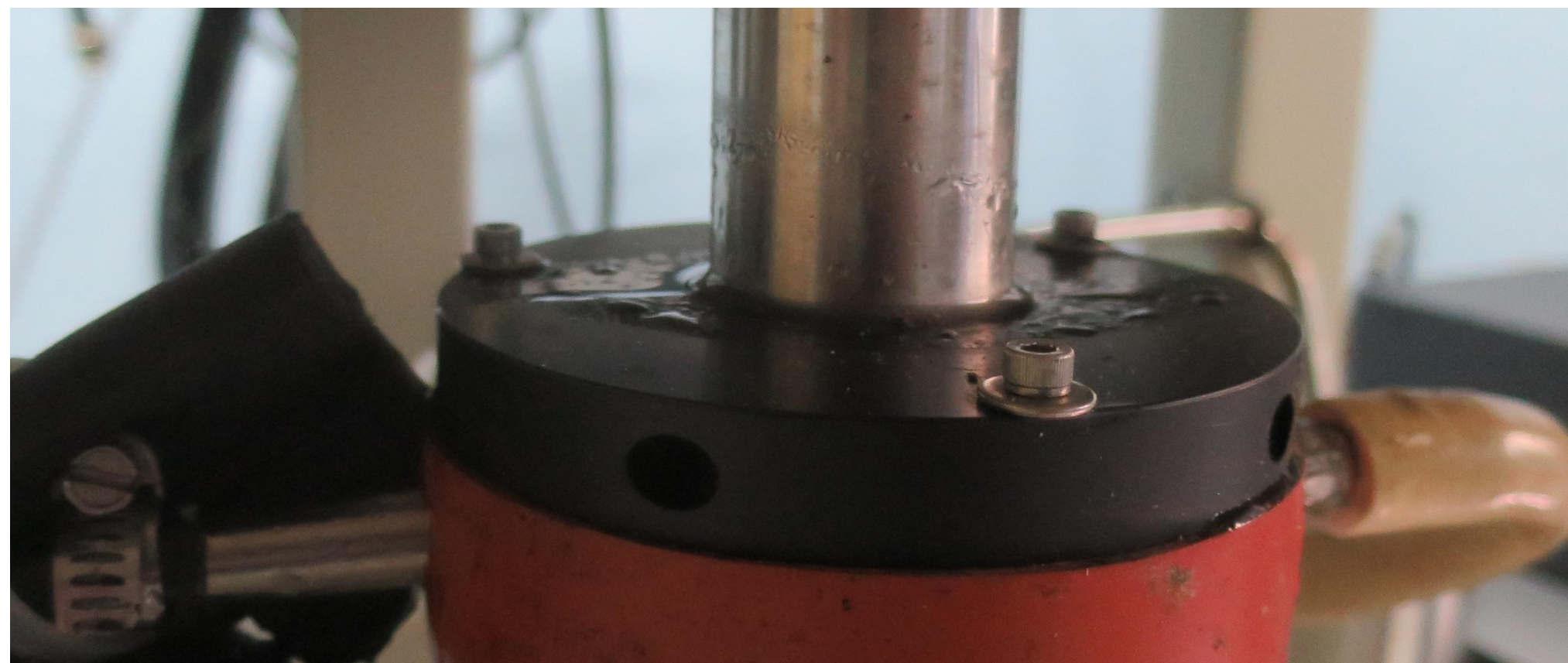




1 Station FJP26 located in Nadi, Fiji. The station experienced multiple detector related problems since the ELAN generator was installed. The resolution was poor, unstable and exceeded the minimum IMS requirement of 2.5keV FWHM at the 1332.5 keV Co60 peak. The detector showed clear signs of loss of vacuum with water condensing on detector head. At the same time, electronic noise or leakage currents made the spectra unstable and sometimes unsuitable for analysis. The detector was a liquid nitrogen (LN) cooled detector with LN supplied by an ELAN LN generator. The ELAN LN generator had frequent problems supplying sufficient amounts of LN to cool the detector.



3 Together with the Station Operator and Local Operators, other operational problems were addressed, including the implementation of data authentication. The local operators were trained on electrical cooled detector technology and operation, as well as general troubleshooting on station elements. The visit was a fast and successful method to recover a faulty detector and restore station performance, as well as improve future sustainable operation of the station.



2 An urgent USM was conducted. PTS staff visited the station to restore detector vacuum and address the long standing detector issues. Both the detector vacuum and detector performance were restored by a pumping/bake operation on the detector using a turbomolecular pump. Electronics and cabling were cleaned. Detector performance was stable after the pump/bake operation. The ELAN LN system has an electrical balance used to regulate the LN production. It had a very unstable output which led to unstable LN production. During the visit, it was found that supply of LN in Fiji had been permanently discontinued. It was also found that the power was stable and commercial back-up power had significantly improved since the ELAN generator was installed. Due to these reasons, the detector/cooling system was replaced with an electrically cooled detector which was a more sustainable solution for future operation. The UPS capacity was increased with an extra battery pack to extend battery run-time, for 2 hours.



4 The AS031/MSVF station is an Incorporated Research Institutions for Seismology (IRIS) and International Deployment of Accelerometers (IDA) configured seismic station where a Standard Station Interface (SSI) acquisition computer from CTBTO authenticates and forwards the data from the IRIS/IDA equipment to CTBTO. The SSI computer was down for a long period of time for unknown reasons and could not be restored remotely or locally by the Station Operator. At the same time, the IRIS/IDA network was receiving data and did not show any problems. In conjunction with the urgent USM visit to the radionuclide station FJP26, a visit to the AS031/MSVF station was planned to troubleshoot the problems and replace the SSI computer.



6 Due to sufficient supply of on-site spares, including a spare battery charger, cables etc. as well as availability of the correct tools, cables and lugs., the power system was repaired, reconfigured and tested during the visit to the station.

The dataflow from the station was restored. The station operator was involved during the on-site visit and helped with the repair of the power problem. After the visit, the Station Operator participated in several CTBTO trainings and conferences in Vienna.



5 The AS031/MSVF station is located near the Monasavu hydro plant in the middle of the Viti Levu Island. The travel to the AS031/MSVF station is a time consuming drive through mountainous regions. Upon arrival, it was found that the reason for failure was to lack of power to the CTBTO equipment, although power to the rest of the facility was intact and stable. Further troubleshooting showed problems with the power configuration that arose after a battery change. A 24Vdc system was accidentally configured to 48Vdc. This configuration had damaged the battery charger, the low voltage disconnect unit and power supply to the computer monitor.

