

Employing Software for Efficient Retrieval of Reliability Data

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At the SNS, the accelerator reliability goal has been set at 90%. To reach and maintain this high reliability level instrumentation that helps predict equipment lifetime is necessary. One of the major downtime contributors is the High Voltage Converter Modulators (HVCM). The HVCMs are the power supply for the RF systems. In one instance there was a catastrophic failure of an HVCM tank due to trapped gas in the insulating oil. The downtime for this example was >24 hours. To prevent this type of downtime a Dissolved Gas Analyzer (DGA) was installed in one of the HVCMs. The DGA acts to identify concentrations of certain gases present in the insulating oil of the modulator tank. These gases have a strong correlation to the breakdown of components in the tank. However, difficulty arose with collection and analysis times of these data. Each import into a spreadsheet for analysis took approximately one hour. Recently software was written to automate the process which reduced collection time to minutes. The following paper will describe the automation software. In addition, the Excel spreadsheet is exported to html format for remote viewing, allowing for ease of sharing and collaborating and eliminating the need for multiple server logins. Software like this is being deployed around the site, assisting with data collection and characterization which can be used by engineers to predict breakdown and eventually administer an appropriate design change to eliminate the equipment specific downtime, altogether.