

Title

On orbit ISS Oxygen Generation System operation status.

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Abstract

The International Space Station (ISS) United States Orbital Segment (USOS) Oxygen Generation System (OGS) has accumulated almost a year of operation at varied oxygen production rates within the US Laboratory Module (LAB) since it was first activated in July 2007. It was operated intermittently through 2009 and 2010, due to filter clogging and acid accumulation in the recirculation loop. Since the installation of a deionizing bed in the recirculation loop in May of 2011 the OGA has been operated continuously. Filters in the recirculation loop have clogged and have been replaced. Hydrogen sensors have drifted apart, and a power failure may have condensed water on a hydrogen sensor. A pump delta pressure sensor failed, and a replacement new spare pump failed to start. Finally, the voltage across the cell stack increased out of tolerance due to cation contamination, and the cell stack was replaced. This paper will discuss the operating experience and characteristics of the OGS, as well as operational issues and their resolution.