

# **Return to Service of a Liquid Hydrogen Storage Sphere**

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## **ABSTRACT:**

One, of two, 850,000 gallon liquid hydrogen storage spheres, at NASA's Kennedy Space Center, was decommissioned in 2010. This tank had an abnormally high heat leak that was investigated and determined to be the result of a large void in the perlite insulation. The insulation void was subsequently filled, and the tank was refurbished for its planned use in the Space Launch Systems (SLS) program. Return to service of this tank began in December of 2017 with a partial liquid hydrogen fill. Since that time, routine measurement of the liquid level have been recorded in order to establish a new boiloff rate and associated heat leak. This data shows the perlite top off activities have resulted in a much reduced, and within design specification, heat leak.

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