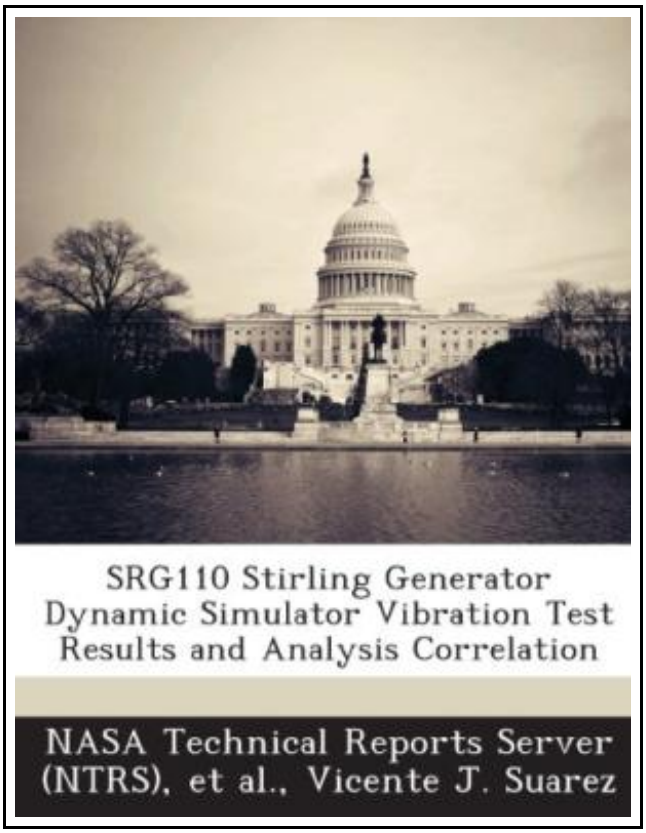
Srg110 Stirling Generator Dynamic Simulator Vibration Test Results and Analysis Correlation



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Reviews

An exceptional ebook along with the typeface utilized was fascinating to read through. I am quite late in start reading this one, but better then never. You are going to like the way the blogger write this publication.

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SRG110 STIRLING GENERATOR DYNAMIC SIMULATOR VIBRATION TEST RESULTS AND ANALYSIS CORRELATION

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 22 pages. Dimensions: 9.7in. x 7.4in. x 0.1in.The U. S. Department of Energy (DOE), Lockheed Martin (LM), and NASA Glenn Research Center (GRC) have been developing the Stirling Radioisotope Generator (SRG110) for use as a power system for space science missions. The launch environment enveloping potential missions results in a random input spectrum that is significantly higher than historical RPS launch levels and is a challenge for designers. Analysis presented in prior work predicted that tailoring the compliance at the generator-spacecraft interface reduced the dynamic response of the system thereby allowing higher launch load input levels and expanding the range of potential generator missions. To confirm analytical predictions, a dynamic simulator representing the generator structure, Stirling convertors and heat sources was designed and built for testing with and without a compliant interface. Finite element analysis was performed to guide the generator simulator and compliant interface design so that test modes and frequencies were representative of the SRG110 generator. This paper presents the dynamic simulator design, the test setup and methodology, test article modes and frequencies and dynamic responses, and post-test analysis results. With the compliant interface, component responses to an input environment exceeding the SRG110 qualification level spectrum were all within design allowables. Post-test analysis included finite element model tuning to match test frequencies and random response analysis using the test input spectrum. Analytical results were in good overall agreement with the test results and confirmed previous predictions that the SRG110 power system may be considered for a broad range of potential missions, including those with demanding launch environments. This item ships from La Vergne,TN. Paperback.

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