

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



OFFICE OF  
AIR AND RADIATION

April 22, 2016,

Dear ENERGY STAR® Data Center Storage Partner, Certification Body, or Recognized Laboratory,

The U.S. Environmental Protection Agency (EPA) would like to share two minor updates to the Version 1.0 ENERGY STAR Storage Specification, involving a new version of the Storage Networking Industry Association (SNIA) Emerald™ Power Efficiency Measurement Specification, and a change to the storage device replacement requirements.

EPA has recently been made aware of an update to Emerald, to Version 2.1.1. For purposes of ENERGY STAR certification, storage products should be tested using Emerald Version 2.1.1 moving forward. As has been the case with previous Emerald updates during the life of Version 1.0, test results already submitted through the certification process using a previous EPA accepted version of Emerald are not affected by this update. Any internal validation testing should use the same version of Emerald used in original testing for comparison purposes. Unlike certification related testing, this internal testing is not subject to ISO 17025 laboratory requirements. A summary of changes in Version 2.1.1 can be found in SNIA's [What Has Changed?](#) document. Additional information on the update can be found in SNIA's [Emerald V2.1.1 Overview](#).

Additionally, in the interest of enabling the integration of newer storage technology into ENERGY STAR Storage products, EPA re-examined the list of characteristics that must be validated when new devices are integrated into currently certified storage products and reduced it to a subset that can negatively impact energy use. EPA has maintained the family variation provision that requires changes to a storage product not result in more than a 20% change in overall system performance per watt, thereby maintaining savings while enabling this greater flexibility.

The revised section, 3.6.2, is highlighted here.

Replacement Storage Devices in As-Shipped Configurations: In order to reduce testing burden, manufacturers may replace storage devices that were used during qualification with storage devices that have similar energy efficiency (performance/watt) compared to the device being replaced after qualification. Storage product manufacturers must submit specification sheets for the original and replacement devices to validate the following:

- i. No change in the following area:

- (a) Interface type
- ii. No reduction in the following features:
  - (a) Data capabilities (e.g. Self-encryption);
  - (b) Power management-related features and capabilities (e.g. Power Down Modes).
- iii. Reported values within  $\pm 10\%$  for the following categories:
  - (a) Reported average power consumption in like modes of operation;
  - (b) Rotational speed;
    - (i) Not applicable to Non-Rotational storage devices;
    - (ii) If the storage device is capable of multiple spindle speeds, the discreet speeds must be within 5%, and the criteria for entering each of those speeds must be the same.

If you have questions or concerns about these changes, please contact me at [Hanson.Steven@epa.gov](mailto:Hanson.Steven@epa.gov) or 202-343-9836 or John Clinger at [John.Clinger@icfi.com](mailto:John.Clinger@icfi.com) or 215-967-9407 by May 9, 2016. For any other storage related questions, please contact [storage@energystar.gov](mailto:storage@energystar.gov). Thank you for your continued support of the ENERGY STAR program.

Sincerely,



Steven Hanson  
Manager, ENERGY STAR for Data Center Products