



Session 5
Hefner II

Discussion of:
**High Megawatt Fuel Cell Power Converter
Technology Impacts Study**

(NIST/DOE Interagency Agreement)

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NIST



Needed:

Inputs from High MW Community

- **Preferred High-Megawatt architectures and topologies**
- **Specifications for filter requirements**
 - Harmonics for power generation connectivity (e.g. IEEE1547)
 - EMI requirements
- **Other advanced component technologies**
 - Nano-crystalline magnetic materials for high-gain and voltage isolated converters
 - Packaging and advance cooling systems
 - Interconnects and modularity
 - Capacitors (Dry Q cap: low cost, low maintenance)

Consensus at High MW Meeting

- **Specifications for filter requirements**
 - Inverter Harmonics requirement: **IEEE519**
 - EMI requirements: **Mil STD 461 or equivalent**
- **Specifications FC DC regulator**
 - Ripple requirement:
<3% for frequencies < 1kHz
- **Year 2020 FC may be 2000 V (center-tap)**