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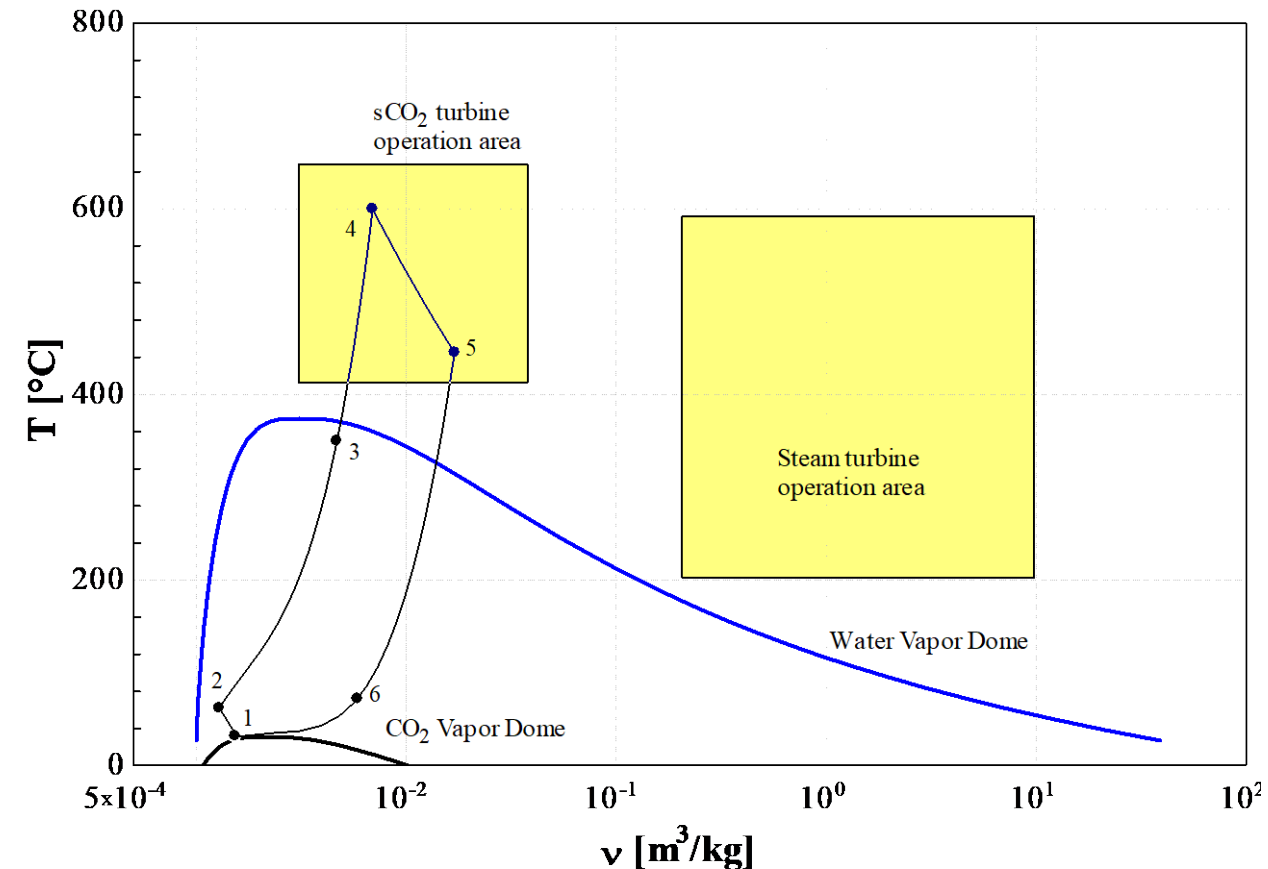
Project: Additive Manufactured Supercritical CO₂ Heat to Power Solution

Advisors: Dr. Greg Nellis, Dr. Mark Anderson
Sponsor: US DOE Advanced Manufacturing Office



Background

- The expansion of Combined Heat and Power (CHP) requires the development of conversion systems that provide a higher ratio of electrical to thermal output while maintaining high efficiency
- The Supercritical CO₂ power cycle is an enabling technology in this regard due to its potential for extremely high efficiency at low cost
- Preliminary analysis has shown a need for a turbine inlet temperature of approximately 1300°C, prompting the need for turbine-generator cooling system development and additively manufactured turbine material development





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