



21st Century Locomotive Technology: Quarterly Technical Status Report 21 DOE/AL68284-TSR21

This is the quarterly status report for the 21st Century Locomotive Technology project, DOE Award DE-FC04-2002AL68284. This report covers activities performed January 2008 to March 2008.

Task 3: Hybrid Energy Storage

Development of thermal analysis capabilities for a sodium metal halide battery system was initiated. This is the technology that will be utilized for the hybrid locomotive demonstration in this project. The thermal analysis will contribute to the design of robust battery module packaging that will integrate with heating and cooling provided by the locomotive. The high-level requirements for sodium metal halide battery analysis were laid out, and the implementation was planned. Relevant existing analyses were reviewed, the analysis architecture was defined and software validation methodology was laid out. Upfront definition of requirements, implementation and validation plan, and architecture will help minimize and facilitate debugging during implementation, and future maintenance.