Title: PACCAR Hybrid Trucks and Energy-Saving Technologies on Kenworth Trucks

Speakers:

Thomas H. Sloane, Senior Technologist-Advanced Concepts, PACCAR Technical Center

John D. Duffy, Manager-Advanced Technology, Kenworth Truck Company

Location: Room 125, EE Building, UW campus

Time and Date: 4:30 pm – 5:20 pm, Wednesday, October 31, 2007

Abstract:

PACCAR is deeply involved in hybrid vehicle technology specific to commercial vehicles. Additionally, Kenworth has developed vehicle architectures and systems which offer significant reductions in vehicle energy consumption during “hotel” operation. System architectures for these hybrid vehicles are discussed, along with field trial experience, approaches to modeling, and upcoming opportunities and challenges.

The Kenworth Clean Power is an anti-idling system for Class 8 trucks. Results from an Argonne National Labs study show that a Class 8 truck idles, on average, 1850 hrs a year, burning roughly 1 gallon of diesel per hour. The vast majority of this idling occurs when the driver is resting in the sleeper and is used to run the air conditioning system or heater, and 110 Vac loads. The Clean Power System charges a thermal storage cooler while running over the road. When the truck is parked, a thermostat regulates the desired temperature and a variable speed fan circulates chilled air through a duct located near the bunk. Testing shows that in outside temperatures as high as 95 degrees, Kenworth Clean Power is able to keep the sleeper cool and provide accessory power for up to 10 hours. The system also supplies 110Vac electric power during this time. The presentation provides an overview of the Kenworth Clean Power system and a discussion of how requirements lead the design of this particular type of system.

Tom Sloane was professor of Electrical Engineering at UW and Bucknell University, Chief Technology Officer at Alpha Technologies, and has worked for the last three years at the PACCAR Technical Center in Mount Vernon on development of advanced vehicle technologies. John Duffy holds a Ph.D. in Mechanical Engineering from the University of Florida with a focus on system and controls. For the last six years, John has worked at Kenworth leading and implementing advanced technologies. Presently, he is Manager of Advanced Technology at Kenworth.