Burning the Midnight Oil at UVM

Presented by
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"See the Need, Take the Lead"

THE UNIVERSITY of VERMONT
Physical Plant Department
UVM’s Used Oils!

- The “Environmental Disposal Charge” on your shop’s bill from the AMR Garage – what is it?
  - Transmission Fluid (ATF) Disposal
  - Engine Oil Disposal -- #2, #4 or #6 Oils
  - Hydraulic (Brake) Fluid Disposal
- UVM generates almost 1,000 gallons of these oils every year!
  - Shuttle Buses, PPD Trucks & Vans, and selected Research Machinery, etc.
Effects of Generating Oils

- Takes up prime storage space at AMR Shop
- UVM’s Risk Management Disposal, Labor, & Containment Fees – also, Liability issues.
- Transportation of these Oils brings up many Environmental and Liability Concerns for UVM.
- Cost Impact to both PPD and Risk Mgmt.
Project Goals

- Supplemental heat for the AMR Shop’s aging heating system (different location)
- Alleviate Risk Managements removal costs (approximately $1,500 / yr.)
- Recycle oils from our vehicles
- Overall simple payback for UVM of less than 5.0 years
Existing Shop Heating System

• FY 2002 Figures:
  – Burns 5,400 gallons of Oil per year (= $3,900)
  – Oil delivered several times a season from local oil vendor / service

• Existing unit:
  – 1,000,000 BTU output
  – 20 year old unit
  – Ducted air system
“Clean-Burn™” Supplemental Heating System

- Burns UVM’s used Oils
- **250** gallon storage capacity
- **1.7** gallon per hour burn rate
- **250,000** BTU output
  - Hot Air Blower
  - Fan Units for Circulation
  - 25% of existing system
  - EPA Approved
- **$9,500** installed by local contractor – *total* cost
The “Clean Burn™” #CB-2500

- Oil Fired Furnace
  - Motor, Burner, Fan, Louvered Vent / Grill

- Mounting Stand
  - Thermostat
  - Fuel Gauge

- “Clean Burn™” Recycling Center
  - Mobile / Locking Wheels
  - 250 Gallon Fuel Oil Capacity
“Clean-Burn™” Unit Features

- “Swing-Out” Style Burner / New Design
- Easier Routine Maintenance (to be serviced by PPD Shop)
- 10 year limited warranty
- Made in USA

Quick access to:
- Large Combustion Chamber,
- Nozzle and Firing Electrodes -- without disconnecting oil, air and/or the electrical wires.
“Clean-Burn™” Unit Features

- Fuel-Flow Control System -- Maintains proper fuel flow with all oils -- no fuel adjustments are required w/fuel switching.

- Temperature Control -- Thermostat attached directly to the unit. Simple and accurate.
**“Old” Process**

- Extract Oil from Vehicles
- Store in Barrels at AMR Shop
- UVM Risk Management Labor/Storage Equipment Fees
- Disposal Charges
- Transportation Fees

**“New” Process**

- Extract Oil from Vehicles
- Burn Oil in the "Clean-Burn" Furnace
Current Status

• This year’s (2002) Oils are all gone!

• Plans for an additional, remote, 500 gallon storage tank – to be installed by PPD staff.

• Cost-saving data will be collected at the end of 2002-2003 heating season by our Energy Management Office.
Other Local “Clean Burn \( ^\text{tm} \)” Users

- Burlington Hyundai/Subaru
  - 6 Units
- Foster Motors
  - 5 Units
- Heritage Ford/Toyota
  - 2 Units
- Burt Paquin Ford
  - 3 units
How’s it Working Mr. LeClair?

• **Ease-of-Use:**
  - *How easy is the unit to operate?*

• **Performance:**
  - *Does your AMR Shop benefit from this installation?*

• **Overall Impact:**
  - *Storage Space?*
  - *Comfort?*
  - *Shop Efficiency?*
Team/Resources/Kudos

- Richard LeClair - AMR Shop Supervisor
- Francis Churchill - UVM Risk Management Office
- Steve Legacy - Plumber II, HVAC Shop
- Mark Poulin - PM Mechanic, HVAC Shop
- Tim Potvin - Local Contractor, “Potvin Heating”
- Scott O’Brien - PPD Writer/Editor
- Rich Wolbach - PPD Energy Management Office