Energy and Sustainability Committee Minutes
February 25, 2008
2:00 – 3:00 p.m.
210 Burruss Hall

Present: Sherwood Wilson, Melinda West for Dwight Shelton, Michael Coleman, Scott Hurst, Kim Briele, Bruce Ferguson, Ben Myers, Denny Cochrane, Rob Lowe, Jack Lesko, Sean McGinnis, Annie Pearce, Tom Tucker, Jeff Beeby for Mike Cutlip, Sue Ott Rowlands, Brian Perkins, Lauren Ashley Hamm, Natalya Hallanan, and Diliana Hirt

Guests: Larry Bechtel, Erik Olsen

Absent: John Randolph, Lisa Wilkes

1. Introduction of Mike Coleman and Natalya Hallanan

The chair, Sherwood Wilson, called the meeting to order and commented that he was encouraged with the energy initiatives on campus. He introduced Mike Coleman who is the new Associate Vice President for Facilities. Natalya Hallanan, President of Environmental Coalition, was introduced and asked to talk about the Environmental Coalition.

2. Adoption of Agenda

Sherwood Wilson recommended the second agenda item under New Business, Review Energy and Water Policy 5505, be moved to the first item. A motion was made and seconded to adopt the agenda as revised.

3. Approval of January 28, 2008 Minutes

A motion was made and seconded to approve the January 28, 2008 minutes. Tom Tucker suggested in the future that to be sustainable the Committee members print their own minutes. This was agreed upon.

4. Old Business

a) "Focus the Nation" was an educational initiative on global warming solutions for America that occurred at more than 1,000 colleges and universities on January 31, 2008. The Environmental Coalition at Virginia Tech hosted this event for Virginia Tech and did a marvelous job in the planning and execution. Natalya Hallanan provided an overview of the individual events.
b) Sherwood Wilson told the Committee that President Steger is still reviewing the President's Climate Commitment. He reminded the Committee that President Steger will not sign a document unless he is confident the university can commit to it. If President Steger decides he will not sign the President's Climate

Commitment, Sherwood Wilson said he would like for this Committee to draft a Virginia Tech Climate Commitment. He will discuss this further with President Steger prior to our next meeting.

5. New Business

a) The members were asked to introduce themselves for the benefit of those absent at the last meeting.
b) Sherwood Wilson announced that he would like for Denny Cochrane to become an ex officio member given his role as the Energy and Sustainability Coordinator.
c) Denny Cochrane has been informed by the President's Office that they are reviewing all university governance membership lists given the recent change with the Office of the Executive Vice President and Chief Operating Officer.
d) Bruce Ferguson, a former member of the Energy Committee, gave an overview of the Campus Energy and Water Policy 5505 (see Attachment A). The Energy Committee was an operational committee established several years ago by the then Vice President for Business Affairs. The Energy Committee produced Policy 5505 which was approved in September 2006. Bruce Ferguson suggested that some substantive and some housekeeping changes need to be made to Policy 5505. A motion was made and seconded to establish a sub-committee to review the policy. Those volunteering to serve on the sub-committee were Annie Pearce, Scott Hurst, Mike Coleman, Ben Myers, Tom Tucker, Brian Perkins, and Natalya Hallanan. Tom Tucker noted that since there are several Facilities Department individuals on the sub-committee he will approach Mike Cutlip to see if he could replace Tom on the sub-committee. The Committee received a copy of the Governor's Executive Order 48 (2007), "Energy Efficiency in State Government," (see Attachment B) as it has replaced Executive Order 54 (2003) cited in Policy 5505.
e) Larry Bechtel, the Virginia Tech Recycling Coordinator, was introduced and gave an update on the university recycling program, focusing on the reinstatement of the paper recycling program. For fiscal year 2007-2008, the university provided three FTEs, the salary, and sufficient operating funds to purchase a new recycling vehicle, recycling containers, and other associated equipment. To date, six of the eight colleges are fully participating, and work is underway to bring the remaining two on board. Larry Bechtel provided a handout summarizing his activities (see Attachment C). This is a real success story and Larry deserves tremendous credit. Sherwood Wilson provided some insight on Larry's background stating that in 1990 he hired Larry Bechtel, an English Professor at the time, to create the first university recycling program.
f) Planning is underway for Earth Week which is scheduled for April 21-25, 2008. The Environmental Coalition will be the primary host for Virginia Tech, and Natalya Hallanan gave a brief preview of events they are planning and agreed to provide a detailed update at the next meeting.
g) Denny Cochrane has prepared the Annual Report on University Sustainability Initiatives which will be presented to the Board of Visitors for the March 31, 2008 meeting. He will provide a copy to all committee members at the next meeting.

h) Professor John Randolph, Urban Affairs and Planning Program, College of Architecture and Urban Studies, has had approximately 50 of his students involved in conducting an inventory of the Virginia Tech and the Town of Blacksburg energy use and green house gas (GHG) emissions. Denny Cochrane informed the Committee that Professor Randolph's goal is to provide the results in a presentation at the next meeting.

6) Future Meeting

The future meetings this semester are March 24 and April 28 at 2:00 p.m. in Room 210, Burruss Hall. Any agenda items should be emailed to Denny Cochrane at denniscc@vt.edu .

7) Adjourn

It was moved and seconded to adjourn.

Virginia Polytechnic Institute and State University **No. 5505 Rev.: 0**

Policy and Procedures **Date: September 26, 2006**

Subject: Campus Energy and Water Policy

1. Purpose

The purpose of this policy is to guide the operations of the university in order to achieve the highest standards in energy/water use with consideration of their impact on environmental quality and economic performance. To accomplish this goal, the university will establish procedures to consider energy/water use in the design and operations of university facilities in the most economical and environmentally friendly manner possible, educate the university community on the use of energy/water, and consider energy/water use in purchasing decisions and transportation.

2. Policy

University facilities should, to the extent possible, be designed, constructed, renovated, operated and maintained in accordance with the latest energy/water efficiency standards and in a manner consistent with the US Green Building Council's LEED™ Building Rating Systems.

2.1 Billing

- The university's records concerning energy/water usage should be consolidated and current.
- Utility billing and payment processes for Educational and General (E&G) centralized facilities and investments in utility conservation measures occur through a combination of external and internal systems and entities. The University's internal utility billing systems will continue to operate in the existing manner, and the Assistant Vice President for Facilities is assigned the responsibility for the payment of these utility charges, where appropriate using centrally managed funds for each utility (electricity, gas, steam, chilled water, potable water, domestic hot water and propane). In additional to these central systems, the University processes several utility bills from external parties for service to outlying parts of the campus as well as off-campus operations. These billings are processed in a decentralized environment by the operating units involved with the provision of utilities, and those billing processes and funding commitments will remain the responsibility of the decentralized operating units.

2.2 Conservation

- The university should comply with the Governor's Executive Order 54 requiring Virginia state agencies to reduce energy and water consumption.
- Through the coincident consideration and evaluation of current building technologies as well as the operation and use of building systems, cost effective strategies to reduce energy demand will be identified, evaluated and when practical, implemented.
- In a further effort to address the demand for energy, Virginia Tech will consider the development and implementation of strategies, such as information dissemination and incentive programs, to encourage full participation of building occupants in an energy cost avoidance program. The university will develop and promote energy conservation awareness strategies whenever possible and practical.

2.3 Design

- New buildings or significant renovations should be properly "commissioned" prior to substantial completion.
- This policy incorporates the Virginia Tech *Design Guidelines and Construction Standards* which, in turn, should incorporate the latest energy standards and codes.
- Unless otherwise referenced in this policy and whenever feasible, all energy consuming equipment should be Energy Star rated in efficiency or better.
- The university should review its numerous control systems with the objective of establishing the ability to communicate with each other and with the goal of reducing energy costs.
- Flat roofs should have as high a solar reflectivity as practical for the situation and application.
- Plans for construction, renovation, and maintenance of university owned facilities and the installation of equipment within those facilities should be submitted to and reviewed by the Campus Energy Manager at each stage of the design and prior to finalizing bid documents.
- Building lighting, heating and cooling systems will be designed, renovated, and operated to align space use and occupancy patterns with a goal of reducing energy use during unoccupied periods.
- Decisions concerning investments for renovations or new construction of all facilities at Virginia Tech should be made based on lifetime owning costs or life cycle cost analysis.

2.4 Operational

- The nominal temperature targets for occupied facilities should be 68°F in the winter and 74°F in the summer.
- Outside windows and doors should be closed when heating and cooling systems are in operation.
- It is strongly encouraged that all computers at the university should be Energy Star rated, have Liquid Crystal Display (LCD) monitors/screens set to default to sleep mode after a period of 30 minutes or less of disuse, except in those cases where specific research, instruction, or office mission requirements demand otherwise.
- A goal has been established to install occupancy sensors to de-energize room lighting after a period of 15 minutes or less of non use in all private offices, meeting rooms, classrooms and other spaces used sporadically. For all spaces not controlled by occupancy sensors (for reasons of practicability), the occupants should take responsibility for turning out the lights when the space is not in use.
- All portable electric space heaters and window air conditioners should be of a type approved by Environmental Health and Safety Services.

2.5 Renewables

Virginia Tech should evaluate and compare alternative energy sources for short and long-term costs while considering future projections for availability and price escalation of all energy sources. Virginia Tech should identify and attempt to implement those sources identified as being available and least costly.

2.6 Transportation

- The university should strive to achieve a passenger fleet vehicle average fuel efficiency of 30 miles per gallon.
- The university should continue to promote the use of carpooling and alternative modes of transportation, including, but not limited to, utilizing Blacksburg Transit, bicycles, walking and alternatively fueled vehicles.

3. Procedures

3.1 Point of Contact

- The Campus Energy Manager (reporting to the Director of Utilities) is the point of contact for this policy.

3.2 The University Energy Committee

- The University Energy Committee is an operational committee that has been established to assist the Campus Energy Manager, the Assistant Vice President for Facilities, and the Vice President for Business Affairs with the development and implementation of the Campus Energy and Water Policy.

3.3 University Departments and Regulatory Agency Contracts

The Campus Energy Manager's office should work with other university departments and outside regulatory agencies to develop and implement procedures to ensure full compliance of the design and execution of the work with applicable codes, standard permitting requirements and other university concerns. These contacts should include, but are not limited to:

- Office of the University Architect (OUA)
- Capital Design and Construction Department (CDCD)
- Physical Plant Operations
- Contracts and Campus Renovations Services (CRS)
- Utilities Department
- Virginia Tech Electric Service (VTES)
- Office of Transportation
- Environmental Health and Safety Services (EHSS)
- Student Programs
- Residential and Dining Programs (RDP)
- Athletics Department
- Recreational Sports
- University Unions and Student Activities (UUSA)
- Virginia Department of Environmental Quality (VADEQ)
- Virginia Department of Mines, Minerals and Energy (DMME)

3.4 Implementation and Compliance

Each department head or supervisor should take the following actions:

- Communicate this policy to everyone under his/her supervision by providing access to the policy and discussing with his/her employees.
- Designate an energy/water conservation representative to serve as liaison between the organization, unit or building and the Campus Energy Manager's office.
- Identify all training requirements in this area that may apply to those individuals working in the organization and inform supervisors of the need for appropriate training.

4. Definitions

ASHRAE: American Society of Heating, Refrigeration and Air Conditioning Engineers

Commissioned: (Known as commissioning) The process of ensuring that systems are designed, installed, functionally tested, and performing in conformity with the design intent. For existing buildings, retro-commissioning applies to a systematic process for improving and optimizing a building's operations and supporting those improvements with enhanced documentation and operator training.

Energy Star®: A program of the US Environmental Protection Agency including rating of appliances and equipment for energy/water efficiency.

Facility: Any portion of a building, structure or area, including the site on which the building, structure or area is located, wherein specific services are provided or activities are performed. This includes all utilities, systems and building service equipment associated with the facility.

HVAC: Heating Ventilating and Air Conditioning.

LEED™: Leadership in Energy and Environmental Design is the US Green Building Council's building rating system which is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. Three versions of rating systems may be considered for project design at Virginia Tech: LEED-NC (New Construction), LEED-EB (Existing Buildings), and LEED-CI (Commercial Interiors).

Maintenance: Work performed to a facility or the fixed systems and building service equipment therein, for the purpose of maintaining quality and function.

Portable: HVAC equipment used within a facility but without permanent connection to the building's utility services.

Renovation: Any work to a facility or the fixed systems and building service equipment therein which is done to improve the existing level of quality and function, or to accommodate a change in the nature of the use of a space within a building or facility.

Repair: The reconstruction of or renewal of any part of an existing facility for the purpose of maintenance or restoration of its state.

Utilities: Energy (electricity, steam, chilled water, domestic hot water, natural gas, and propane) and water (potable water/sewer).

5. References

ASHRAE 90.1 (Energy Standard for Buildings except Low-Rise Residential Buildings)

EPA Water Conservation Plan Guidelines, Safe Drinking Water Act, USC 42

National Energy Conservation Policy Act, Public Law 95-619

National Appliance Energy Conservation Act, Public Law 100-12

Virginia Tech "University, Design Guidelines and Construction Standards"

Governor's Executive Order 54, State of Virginia 2003

6. Approval and Revisions

Approved September 26, 2006 by Vice President for Business Affairs, Kurt J. Krause.

COMMONWEALTH OF VIRGINIA

OFFICE OF THE GOVERNOR

Executive Order 48 (2007)

ENERGY EFFICIENCY IN STATE GOVERNMENT

Importance of the Initiative

Commonwealth agencies and institutions spent over $290 million in fiscal year 2006 for facility and transportation energy. It is critical that the Commonwealth use energy in the most efficient manner possible to save taxpayer money and provide leadership to all Virginians in using our natural resources wisely. Improvements in energy efficiency and protection of our priceless natural resources are inseparable goals. Reducing the amount of energy we consume will reduce the emission of greenhouse gases that are largely responsible for global climate change. State government has the capacity and responsibility to save taxpayer money while protecting our climate and natural resources for future generations.

The Commonwealth's citizens, businesses, and governments are also faced with managing the effects of more costly and less reliable supplies of energy, as well as the environmental effects of energy production and consumption. In response, the General Assembly enacted into law in 2006 a state energy policy and directed the Department of Mines, Minerals and Energy to develop the Virginia Energy Plan. This requires coordination of energy activities among many private organizations and state agencies and institutions.

By the power vested in me by Article V of the Constitution of Virginia, and Section 2.2-103 of the *Code of Virginia*, and subject always to my continuing and ultimate authority and responsibility to act in such matters, I hereby direct the Governor's Secretaries and all executive branch agencies and institutions to reduce energy

consumption and costs in state government operations in the executive branch. I also set forth a process for coordinating energy policy development within the executive branch.

Agency Energy Management

All agencies and institutions shall provide adequate management support to their energy-savings activities. In order to ensure agencies have sufficient expertise in energy management, every Agency Energy Manager for an agency or institution with energy costs exceeding $1 million shall be certified as an energy manager by the Association of Energy Engineers by June 30, 2008.

State Agency and Institutions Energy Savings Goal

I hereby set a goal for executive branch agencies and institutions to reduce the annual cost of non-renewable energy purchases by at least 20 percent of fiscal year 2006 expenditures by fiscal year 2010. Any agency or institution that can demonstrate to the Senior Advisor for Energy Policy that they met the 10 percent energy savings goal established for 2006 in Executive Order 54 (2003) shall reduce costs of non-renewable energy purchase by an additional 15 percent of fiscal year 2006 expenditures by fiscal year 2010.

In order to meet this goal, agencies and institutions shall aggressively pursue (i) all energy-savings activities whose costs are recoverable in one fiscal year, such as use of screw-in fluorescent and other high-efficiency lighting in place of incandescent bulbs and other less efficient lights; (ii) energy-savings performance contracts that are in compliance with Section 4-4.01v of the Appropriations Act; (iii) other funded capital energy-savings improvements; (iv) alternate procurement techniques for energy; (v) renovations of existing buildings consistent with LEED (including the use of Virginia forest products with alternate certifications) or Energy Star requirements as provided for in this executive order; (vi) the transportation energy use requirements provided for in this executive order; or (vii) purchases of renewable energy. Further, after having complied with requirements regarding roof repair or replacement and deferred maintenance projects in accordance with Section 4-4.01c of the Appropriations Act, agencies shall aggressively pursue maintenance reserve projects leading to energy conservation.

Agencies shall report their progress towards the energy-savings goals as part of the Governor's Management Scorecard, Resource Stewardship objective. Such progress shall also be reported to the public on the Department of Mines, Minerals and Energy's website.

New and Renovated State-Owned Facilities

All agencies and institutions constructing state-owned facilities over 5,000 gross square feet in size, and renovations of such buildings valued at more than 50% of the assessed building value which have not advertised for architectural and engineering services by the effective date of this order shall be designed and constructed consistent with the energy performance standards at least as stringent as the U.S. Green Building Council's LEED rating system (including the use of Virginia forest products with alternate certifications) or the United States Environmental Protection Agency/Department of Energy's "Energy Star" rating.

The Senior Advisor for Energy Policy shall periodically assess the cost effectiveness of incorporating a photovoltaic power system or a green roof in any roof renovation for buildings over 5,000 gross square feet in size. If the Senior Advisor for Energy Policy finds that the projected energy savings over a 15-year period can pay for the additional cost of installing a photovoltaic or green roof system, then the Department of General Services shall require that any roof replacement design address that option. Agencies and institutions shall incorporate the option if it meets the 15-year payback limit for that replacement.

Leased Facilities

When a Commonwealth agency or institution is to lease space in a metropolitan area where public transit is available, it shall seek to lease space within a quarter mile of a bus, trolley, Metro, or commuter rail stop. The Commonwealth shall encourage the private sector to adopt energy-efficient building standards by giving preference when leasing facilities for state use to facilities meeting the U.S. Green Building Council's LEED rating system (including the use of Virginia forest products with alternate certifications) or the United States Environmental Protection Agency/Department of Energy's "Energy Star" rating. The Commonwealth shall also provide a preference when leasing facilities for state use to facilities that are pedestrian and bicycle accessible. The Division of Real Estate Services of the Department of General Services shall consider these preferences in approving new leases or extensions of current leases.

Transportation Energy Use

The Department of General Services, by Executive Order 89 (2005), is responsible for developing a consistent, efficient, and cost-effective fleet management program for all vehicles owned by the Commonwealth. Therefore, the Department of General Services shall include in its policies and procedures requirements for the purchase of fuel-efficient, low-emission state-owned vehicles. In addition, the Department of General Services

shall include in its policies and procedures for leasing vehicles requirements that give a preference to compact, fuel-efficient, and low-emission vehicles.

All agencies and institutions shall maximize biodiesel and ethanol use in state fleet vehicles except where use of biodiesel will void warranties or incur unreasonable additional costs to the agencies. The Department of General Services shall make available, at selected sites based upon the locations of state-owned flex-fuel and diesel vehicles, E85 and B20 fuels for agencies. Agencies and institutions that independently purchase fuel shall use E85 and B20 fuel sites to the maximum extent reasonably possible.

All agencies and institutions shall take necessary actions to minimize vehicle miles traveled related to state operations. All agencies and institutions shall implement transit and ridesharing incentive programs within the parameters of the Department of Human Resource Management's guidelines, and shall maximize the use of telecommuting consistent with the policies of the Office of Telework Promotion and Broadband Assistance.

State vehicles used for law enforcement and emergency response shall be exempt from the provisions of this section. Public safety agencies are expected to make all reasonable efforts to reduce transportation energy use when possible in ways that do not adversely impact their missions and ultimately the safety of our citizens.

State Government Equipment and Supplies

Commonwealth agencies and institutions shall purchase or lease Energy Star rated appliances and equipment for all classifications for which an Energy Star designation is available. All new copiers, faxes, printers, and other such office equipment purchased or leased by the Commonwealth that uses paper shall be recycled paper-compatible. The Commonwealth shall purchase only recycled paper except where equipment limitations preclude the use of recycled paper.

Senior Advisor for Energy Policy and Energy Policy Advisory Council

There is hereby established the position of Senior Advisor to the Governor for Energy Policy and the Governor's Energy Policy Advisory Council to provide expertise and advice to the Commonwealth on the Virginia Energy Plan and other energy matters. The Senior Advisor will serve as the Governor's principal advisor on energy-related issues, and is directed to coordinate energy policy across state agencies and institutions, including advising state institutions of higher education on coordinating energy research efforts.

The Senior Advisor shall develop and update the Virginia Energy Plan in conjunction with the Division of Energy of the Department of Mines, Minerals, and Energy, as provided for in Chapter 2 of Title 67 of the Code of Virginia, drawing upon expertise of other agencies and institutions and Virginia businesses as appropriate.

The Governor's Energy Policy Advisory Council shall be chaired by the Senior Advisor for Energy Policy. The Council shall consist of 15 members appointed by the Governor, to serve at his pleasure. Appointees shall include representatives of Virginia's energy providers and producers, residential, commercial and industrial energy consumers, Virginia's conservation community, and the Secretaries of Natural Resources, Commerce and Trade, and Technology. The Advisory Council shall make a report of its activities by December 1 of each year.

The Advisory Council's responsibilities shall include the following:

1. Review the recommendations set forth in the Virginia Energy Plan as well as other relevant reports and studies.
2. Evaluate strategies for implementing recommendations of the Virginia Energy Plan, including prioritization, approach, and timeline.
3. Monitor implementation of the Virginia Energy Plan.
4. Identify additional energy policy options for the Commonwealth to address energy issues.
5. Make other recommendations as may be appropriate.

Responsibilities of the Department of Mines, Minerals and Energy

The Department of Mines, Minerals and Energy shall be responsible for providing technical assistance to state agencies and institutions in achieving energy savings. Specifically, the Department of Mines, Minerals and Energy shall:

1. Assist state agencies in their efforts to conserve energy to the maximum extent feasible;
2. Assist agencies and institutions with implementation of this Executive Order;
3. In cooperation with the Department of Environmental Quality, assist agencies with calculating the extent to which their energy savings result in a reduction in greenhouse gas emissions; and
4. Maintain a system to monitor and report on progress made by state agencies toward reducing from its 2006 baseline energy costs and consumption for state-owned facilities, and provide a report at least annually on its website.

This Executive Order shall become effective upon its signing and shall remain in full force and effect until June 30, 2011, unless amended or rescinded by further executive order.

Given under my hand and under the Seal of the Commonwealth of Virginia this Fifth day of April, 2007.

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Timothy M. Kaine, Governor

Attest:

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Secretary of the Commonwealth

Energy and Sustainability Committee, February 25, 2008

Review of Virginia Tech Recycling (Larry Bechtel, VTR Coordinator)

BOV approves monies for "reinstatement" of paper recycling, (July '08): $173,000

- $ 83,000 (salaries, 3 CS positions)
  - 1 vehicle operator/crew chief (Recycling Route #2, paper)
  - 1 Groundsworker (paper route)
  - 1 Groundsworker ("utility " position, all VTR crews/as needed recycling)
- $32,000 Dedicated Recycling Truck (16' Ford diesel box truck w/aluminum lift gate)
- $58,000 for supplies/equipment
  - 1300 stackable paper bins
  - 400 can/bottle bins
  - 80 Custodial Carts (built by Carpenter Shop)
  - 100 bins for CC
- 3 part-time student positions (spring semester '07)
  - Education &outreach
  - Database & reports
  - Website blog/Facebook & CRC Liaison

By mid-October, the truck was ready, the employees had been hired, bins had arrived, Custodial Carts had been built, and we had the cooperation of Housekeeping Services. One missing element: *clear and unambiguous university endorsement*. Dean Sorensen, of Pamplin College of Business, was upfront about this. If the program was cut once, will be cut again? He was very supportive of recycling he said, wanted the paper recycling back, but only if the university was committed, long-term. I couldn't address that, but Energy and Sustainability Coordinator Denny Cochrane, could. So we have worked effectively as a team, when working with the colleges, he speaking to the matter of commitment, and I to the "nuts and bolts" of the collection system.

As of 2/25, VTR is operational in 5 colleges

- CALS
- Pamplin College of Business
- CAUS
- CE
- CNR

We are getting close on the last three: CS should be complete by February 28; a meeting with VMRCVM Dean Schurig and his department heads took place this morning: CLAHS installation should be underway in 2-3 weeks. The goal is to have all eight colleges 'online' by the next BOV meeting, March 31.

Meanwhile, the Environmental Collection, with VTR support, continues to operate its paper collection route. As VTR re-establishes paper recycling in the major buildings, EC is 'transitioning' into an "Auxiliary Route," handling smaller or outlying facilities (i.e., Career Services, PACK bldg) and Residence Halls.

Items:

- *Custodians.* VTR is an ally of Housekeepers, not an enemy. This isn't mere talk. For example, just last week, my staff, at the request of the Housekeeping supervisor in Derring, took care of 20 boxes of paper recycling up on the 5th floor. *Her staff never had to touch this material.* Such interventions over time save Custodians hours of back-breaking work.
- *Principle of Shared Responsibility.* Everybody is asked to do their part. The last user of a piece of paper has the first responsibility to get it recycled. From there, the university collection system takes over. The more people participate, the more effective the program can be.
- *Student Interest.* I've been the recycling Coordinator here at Virginia Tech for about 18 years, with 2-3 years as a volunteer before that. I've worked with a lot of student groups and individuals in that time. But I have never seen the interest level so high as it has been over the past two years—for recycling and a broad array of other sustainability issues.

Results (snapshots):

- For Calendar Year 2007, we recycled about 100 tons more paper than we did in 2006, due to the reinstated paper recycling. That's about 1 ton of paper per day, October-December.
- Also for Calendar Year 2007, we disposed of 200 more tons of solid waste than in 2006, going up from 5300 tons to 5500 tons.
- Due to collection of old copper cabling by CNS, and steel pipe from the stream lines upgrade, our total recycling of scrap metals went way up in 2007—by almost 100 tons.

Our overall university recycling percentage should improve from 23% (2006) to approx. 32% (2007)

Conclusion:

About 1990, Paul Lancaster of Media Services produced a video on the then fledging Virginia Tech Recycling. At the conclusion of the video, I impulsively announced that I wanted the program to do twice the state recycling mandate figure of 25%. I wanted VTR to reach 50%.

For more than a few times since then, I have been embarrassed by the memory of those audacious words. But I have never quite lost the hope that someday that Virginia Tech might indeed reach that number. That *someday* may be dawning. I do think that we can reach a 50% recycling rate in four years, if we as a university and as individuals sustain our commitment. If we honestly achieve that rate, we will have tipped the balance. And I hope that tipping the balance will bring a threefold success: we will have helped the environment; we will have brought distinction to Virginia Tech; and we will have realized a financial advantage, through recycling.