

“LIGHTS OUT” AN ACTION PLAN FOR NR 734 STEVENS POINT AREA SENIOR HIGH

1. SUMMARY

After discussions with building and grounds managers and viewing a recent Stevens Point Area School District (SPASD) electric bill, it became obvious that many tax payer dollars are paying for an expense that was out of control. The financial burden on SPASD does not begin to mention the burden on our environment. The nearly 200,000kwh of electricity the Stevens Point Area Senior High (SPASH) uses alone requires 1,000 tons of coal that must be mined, transported, and burned. (Green Mountain Power) In light of the enormity of the electric bills at SPASH, it seemed very logical to focus on the area of reducing electric usage due to lighting. It is a basic, good place to start: administration, staff, and students will be able to participate thus being part of the effort. This “Lights Out” initiative asks teachers to be mindful of lighting and asks all staff and students to turn off lights whenever possible. Helpful reminders such as an introduction (including rationale and imitative goals), weekly emails, and light switch stickers will be important reminders for staff and students alike. A study published in *Lighting Research & Technology* (1987) showed that light switch stickers were helpful reminders and in fact it took less than 10 weeks for stickers to be cost effective. In addition, “a questionnaire administered at the end of the study showed that people were generally receptive to the switch stickers as reminders for saving energy.”

In addition to the light switch stickers, the Lights Out committee would like to purchase a hand crank so students and teachers could physically distinguish the amount of power it takes to power an incandescent light bulb versus a CFL bulb. Because many people learn better using tactile, hands-on approaches, the hand crank may have more of an impact than email reminders and light switch stickers. Some staff may also need incentives to participate. The committee asked staff members at SPASH to guess how much the electrical bill at SPASH costs for 1 month. The top three guess will be presented with a gift of a CFL bulb. In addition, during the Lights Out campaign, the committee will randomly give away CFL bulbs to teachers they “catch” with their lights off (when the classroom is not in use). We anticipate the cost of this project to be \$200.

2. INTRODUCTION TO THE AUDIENCE

The District Buildings Manager, Al Hetzl has been very active in seeking out energy (and cost) saving measures within the Stevens Point Area Senior High at 1201 Northpoint Drive in Stevens Point, WI. One example of this is the new lighting in the field house. The old lighting consisted of outdated lights that used an excessive amount of energy (which gave off more heat than light) costing the school thousands of dollars every month. For the amount of energy consumed by the old lighting system, the brightness and color of light was quite poor. The new lighting consists of cost-saving fluorescent lights that produce a much higher quality light giving athletes and coaches a more pleasant environment.

The Lights Out plan strives to address energy usage by lighting in the other parts of the SPASH facility. Roughly 1700 students and over 100 teachers and staff will be asked to participate on a voluntary basis.

3. STATEMENT OF PROBLEM OR NEED

The committee has identified many problems regarding energy usage in the school to be problematic. Computers and LCD projectors are often left on in classrooms and computer labs when not in use. Additionally, staff and students unnecessarily leave lights on in classrooms, bathrooms, and hallways. Lighting costs are approximately 65% of a school's energy consumption. (Rickert 2008) The peak energy usage as recorded by Public Service is often set when high energy consuming classes such as cooking, ceramics, and welding are scheduled within the same period. Pools consume energy for heating and filtering water continuously as stated by the WI health code. Steps can be taken to reduce the amount of heat lost by consistently covering the pool when not in use.

Although the problems previously stated are important items to tackle, the committee feels that reducing the amount of electricity consumed by lighting will have the greatest impact not only on school energy cost, but also staff & student awareness. It is suspected that most teachers are not aware that the electricity bill for SPASH is over \$15,000 every month or how much energy is consumed when unnecessarily leaving lights turned on. This project will not only lower the energy cost for SPASH but help to create awareness in SPASH staff and students. It is the hope of the committee that upon becoming aware, SPASH staff and students will change their behavior and consciously make efforts to reduce energy consumption by turning off the lights of classrooms and restrooms not in use.

4. PROJECT GOALS AND OBJECTIVES

Goal 1: Increase energy education at SPASH

Goal 2: Save energy at SPASH

Objective 1: Make teachers aware of costs and savings of lighting at SPASH,

Objective 2: Make administration aware of costs and savings of lighting at SPASH.

Objective 3: Encourage administration, staff, and students to voluntarily participate in shutting off lights whenever possible.

Objective 4: Provide general facts on energy use to staff via a weekly email.

Objective 5: Electrical bills will reflect a decrease in energy usage and corresponding cost savings.

5. METHODS AND TIMELINE

There are several steps that the committee will take to achieve this action plan. The date in which each step will be achieved is in parentheses that follow.

- Development of action plan (7 November 2008)
- Conduct a 5-minute informational presentation at the November full faculty meeting. This presentation will introduce the SPASH staff to the Lights Out plan and ask for their participation. Information about SPASH electrical consumption and costs will be disseminated in addition to the project outline. (12 November 2008)
- Staff will be asked a trivia question at the full faculty meeting: Guess how much the electrical bill at SPASH costs for 1 month. Prizes for the top 3 guesses will be awarded at a later date. Prizes will consist of CFL bulbs or LED Christmas lights. (12 November 2008)

- Flyers will be put around SPASH with factoids and other energy cost/savings information. The flyers could be similar in size & style to the Social Norms posters and information SPASH currently promotes.
- Glow-in-the-dark stickers will be printed with the Lights Out logo and factoid or statistic regarding energy usage at SPASH. See the example below: (12 November 2008)



- E-mail the SPASH staff weekly updating on the energy savings project, informing of energy statistics and factoids, and providing encouragement to stay with the Lights Out plan. (19 & 26 November 2008 and 3 & 10 December 2008)
- At the December full faculty meeting, ask teachers to participate in a short survey inquiring about their efforts and actions during the Lights Out plan. (10 December 2008)
- Send staff a follow-up email providing information regarding the impact (energy usage and cost savings) and potential impact for the year ahead. (5 January 2009)
- For the future, we would also like to purchase a hand crank to show how much less energy is used by the CFL bulb vs. an incandescent bulb. This tactile, hands-on approach to teaching people about energy usage and conservation will be a great addition to this campaign.

6. EVALUATION CRITERIA AND PROCESS

The committee will measure the success of the program in several ways. The Lights Out plan will only be achieved by successfully completing all of the steps outlined in #5. The methods serve as a checklist for the committee. Secondly, the survey on 10 December 2008 will help determine if SPASH staff became aware of energy consumption at the school and changed their behavior to help in the efforts to reduce electrical costs. The following survey questions will be asked at the full faculty meeting in December.

- a. Do you feel that you became more aware of the cost of electricity at SPASH following as a result of the Lights Out plan?
- b. How much effort did you put into the Lights Out plan (turning off lights in classrooms and restrooms).
- c. How likely are you to continue using energy saving strategies regarding lighting in your classroom?

Staff will use a short paper survey to record their answers. Survey results will be tallied by this committee. The same questions could be asked of students at SPASH in an attempt to gauge participation and effort by students.

Lastly, the committee will contact the Buildings Manager and obtain a record of the schools energy usage from 12 October through 12 November 2008 and compare it to the energy usage during the time when the Lights Out plan takes place: 13 November – 10 December 2008.

7. BUDGET

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| Mailing labels 2" x 4" Box of 250 | \$15.00 |
| Mailing labels 1" x 2 5/8" Box of 750 | \$15.00 |
| Color printing of all | \$30.00 |
| Double-sided glue dots | \$10.00 |
| Paper for flyers & surveys | \$10.00 |
| 4-Pack of CFL light bulbs x 5 | \$40.00 |
| LED Christmas lights x 5 | \$30.00 |
| Hand Crank Generator | \$50.00???? |
| (to be purchased from Creative Designs Associates in Waunakee) | |
| Total | <hr/> \$200.00 |

ADDITIONAL RESOURCES:

Watt Watchers <http://wattwatchers.org/pages/lightswitchstickers.htm>

"The effectiveness of light switch reminders in reducing light usage." Lighting, Research & Technology. 1987
<http://wattwatchers.org/Assets/lightswitchtemplates/lightswitchreminder%20study.pdf>

Green Mountain Power
<http://www.greenmountainpower.com/energy/power-school/fuels.html>

KEEP website www.uwsp.edu/wcee/keep