FERMINEWS

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POWER MONITOR KEEPS A WATCHFUL EYE

The Laboratory is one of the largest users of power in Illinois. The power used by the Laboratory arrives at the site on thick power lines held aloft by those artistic white utility poles stretching northeast from Wilson Hall. Since power is expensive, it is practical for the Laboratory to monitor and carefully plan its use. And that's where this story begins.

Fermilab buys its electrical power from Commonwealth Edison under a complex price structure that depends on the time of the day and the month of the year. The Laboratory's energy consumption rate has to stay below strict limits that vary from day to night and from weekday to weekend, explained Rod Gerig and Howard Pfeffer, the two scientists with the Accelerator Division who are primarily responsible for designing the sophisticated system that keeps a close watch on how much power the Laboratory is using.

"At the same time, it is important to run as close to these limits as possible to derive the most benefit from the pricing structure," Gerig continued. "We developed a microprocessor system that compares site power with programmed limits, graphically displays relations and trends, informs Main Control Room operators of any corrections required and trips the major power load if a limit violation is eminent." (The display is on channel 10 as well as on channel 6 of the 8 GeV system.)

Gerig and Pfeffer presented a paper on their power monitor at the accelerator meeting held earlier this year in Washington, D. C.

Among the many major aspects of the system is the critical requirement of keeping accurate time. The power monitor uses a National Bureau of Standards clock. It is described on page 2 of this issue. The power monitor also is able to record the instantaneous site power, knowledge that scientists find useful in many circumstances.

The most important requirement of the system, according to Pfeffer, is to help "Fermilab stay within the power demand constraints placed upon it by the Commonwealth Edison price structure." He went on to explain what the pricing structure was at the time they prepared their technical paper for the conference. "It will give you a feel for the complexity," he added.

Rod Gerig (left) and Howard Pfeffer with graphic display on monitor.

During the working day between 9 a.m. and 10 p.m., Fermilab is limited by fiscal constraints to 30 megawatt hours in each half hour (that is, a 60 megawatt rate) when the accelerator is running, and to 6 MWHr during the summer. These half hours begin and end on the hour and half hour. This time period is referred to as PEAK hours, Pfeffer continued. OFF PEAK hours are from 10 p.m. to 9 a.m. the following morning, all day Saturday and Sunday and all day on certain holidays specified by the power utility.

"These constraints have generally determined the nature of the power monitor,"

(Continued on page 2)

POWER MONITOR (Continued from page 1)

Pfeffer said. "It must be aware of the day of the week and all holidays. The display it produces emphasizes the fact that energy used is critical only over each half hour period."

Gerig picked up the conversation by saying that "the primary function of the power monitor system is to free operations from the concern to keep the Laboratory under the appropriate half hour limit. The specifications in regard to this were twofold.

First it should be very easy to ascertain at a glance what the energy consumption has been with respect to the limit.

Second, the system must make sure the limit is not exceeded, even if there is no operator intervention."

As a final thought, and one that is another crucial responsibility of the monitor, is its alarming and tripping. "At anytime during the last 15 minutes of the half hour that the site energy is greater than the limit rate, a message will be posted on the Main Control Room annunciator system indicating that the power must be decreased," said Gerig.

The two men expressed their thanks to Hugh Christ for his support in building the hardware.

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TENNIS TIDBIT

Here's another call for tennis players to compete in team play against Bell Laboratories, Western Electric (Lisle facility) and Amoco Research Center. Play begins June 29. Give the Recreation Office a call at ext. 3126. Men and women will play in the A and B divisions. Each team will consist of five to seven players.

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CHEZ LEON MENUS

Wednesday, June 24, 12:30 p.m., $6: mandarin soup, chicken walnut, rice, oriental salad, pineapple ginger sorbet. Thursday, June 25, 7:00 p.m., $10: gazpacho, paella, avocado salad, pineapple flan. Friday, June 26, 7:00 p.m., $10: fresh fruit cocktail, caesar salad, surf and turf, rice pilaf, brandy ice. Call ext. 3082 for reservations.

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NBS CLOCK: LABORATORY MASTER TIMEPIECE

Care to know the time to the second? Well, turn the knob on your nearby monitor to channel 10 (channel 6 on the 8 GeV system) and look in the upper lefthand corner. You are seeing the master timepiece for the Laboratory--a National Bureau of Standards clock accurate to perhaps a few thousandths of a second.

No, the Laboratory is not that concerned that you have a reference against which you can accurately set your watches. The NBS clock has a much more important mission, as explained by the story on page 1 of this issue.

The Model 468-DC synchronized clock manufactured by True Time Instruments provides the Laboratory with a means of obtaining time traceable to the NBS with an accuracy of plus or minus 1.5 milliseconds. The signal the Laboratory receives comes from a satellite that is stationary over the western portion of the country. The satellite transmits on a frequency of 468 megahertz.

For stability, the time base is phase-locked to the satellite data rate. The time of year information broadcast by the National Oceanic and Atmospheric Administration through the GOES satellite is displayed in days, hours, minutes and seconds on a panel in the Main Control Room. The data also is made available to any computer via an RS-232C serial data link in the Control Room.

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EASE UP TO HARD TIMES PARTY

Loosen up to NALREC's annual hard times party.

This festive event will be held June 30 at the Village Barn from 5 to 9 p.m.

The Black Knights band will provide live music, food will be available, and for those many volleyball enthusiasts, you can try out for a team.

Committee members are Jesse Guerra and Edith Brown.

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A major project gets underway with six shovelfuls of earth flying through the air. What the groundbreaking gesture represents is the beginning of several construction projects in the Proton Area. Enclosure H is being lengthened to provide space for extra elements to improve the three-way split of the proton beam to P-East, P-Center and P-West. The P-1 and P-2 Service Buildings are being enlarged to accommodate liquid helium refrigerators for superconducting magnets. Finally, a new Proton Assembly Building is being constructed near the Tagged Photon Laboratory to provide laboratory and shop space for the Proton Department Support Groups.

Joining in the ceremony, from the left, are Ken Stanfield, head of the Proton Department; Peter Koehler, head of the Research Division; Phil Livdahl, acting deputy director of the Laboratory; Andy Mravca, area manager of the Batavia Area Office of the Department of Energy; Leon Lederman, Fermilab director; and Dan Steele of Steel & Craft Builders, Inc., Batavia, one of the contractors.

Other key people involved in the Proton Area work include Lou Kula, Fred Browning, Art Skraboly and Bob Shovan. The groundbreaking ceremony was held June 1 at 3:30 p.m. on top of Enclosure H.

WISHING FOR FISHING, WELL . . . .

NALREC will hold a family fishing derby June 27 for all Fermilab employees and users as well as their families.

The competition to see who can come up with the largest fish will begin at 6 a.m. and end at 7 p.m. The derby will be held at the accelerator ponds which will be well stocked for the event. Tickets will cost 50 cents each and may be obtained at the entrance gate or from Derby Committee members: Mary Fray, ext. 3711; Howard Casebolt, ext. 4437; or Kim Chans, ext. 3954.

Access to the fishing sites will be through the BO gate only. This is the entrance that is off Road D by the industrial buildings complex. All participants in the derby should have left the Main Ring by 8 p.m.

NALREC will award a trophy to the competitor who catches the largest fish (not counting carp). The committee requests that all small fish be returned to the pond where they can grow up to be prize-winning specimens.

Food will be available in Wilson Hall cafeteria during normal weekend hours. The derby is a one-day event only. Fishing will not be allowed in the ponds afterwards.

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A SAFETY MESSAGE FROM THE FERMILAB BICYCLE COMMITTEE

The Fermilab Bicycle Committee is recommending an alternate route south and west into Aurora and North Aurora--avoiding the highly hazardous Kirk Road altogether.

The committee suggests a bicyclist continue going west on Pine St.--being extra careful crossing Kirk Road--until coming to Raddant Road, about one-half mile west of Kirk Road. Take this road south to Route 56 (Butterfield Road), then turn east and ride for about one-fourth mile to Church Road.

Follow Church Road south. It runs into Sheffer Road, which connects with several routes into Aurora and beyond.

"While this route is not free of hazards to a bicyclist, it is in all likelihood safer than the Kirk Road route," the committee said. "Bicyclists should always take appropriate precautionary measures, particularly when visibility is diminished, such as at night, or in dusk, foul weather and sun glare."

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TRAFFIC ACCIDENT TAKES EMPLOYEE

Guy M. Paquin, 23, who died June 7 in a traffic accident, had been with the Laboratory since October 1980.

He was a maintenance electrician with Maintenance and Operations of Technical Services. According to Dick Graff, electrical supervisor for Maintenance and Operations, and Jim Hayes, Paquin's foreman, the young man was well liked and made a point of making friends.

A graduate of West Aurora High School, Paquin had served in the U. S. Navy for four years. He was an electrician's mate. He is survived by his mother and sister.

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BIRTH

Edgardo was born to Ramon and Migdalia Suarez May 28 at 8:30 a.m. in Mercy Center, Aurora. The child weighed 2½ pounds and was 12 inches long. Ramon is with Custodial Maintenance.

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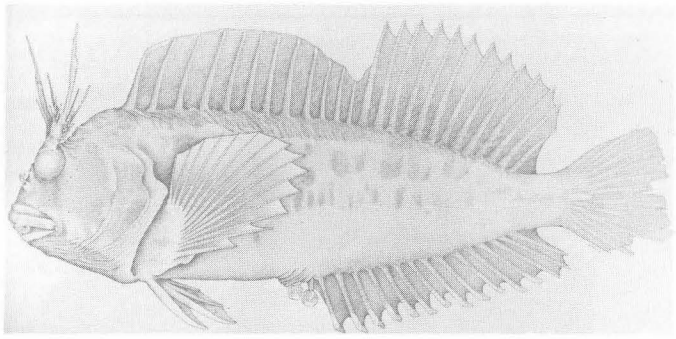

Hypleurochilus aequipinnus (illustration by Jastrzebski).

SCIENTIFIC ILLUSTRATIONS SUBJECT OF NEW EXHIBIT

Scientific illustrations by six of this country's most talented illustrators are being shown at Fermilab's next exhibit.

The works are on display in the exhibit area, WH2S, and cover some of the major scientific disciplines: zoology, botany, paleontology, human anatomy. The exhibit opened June 15 and will continue for two months.

Among the premier artists selected for this exhibit are Zbigniew T. Jastrzebski, senior science illustrator for the Field Museum in Chicago. His illustrations will cover zoology, botany and paleontology.

The selections from Florence Kabir of Charlottesville, Va., will primarily focus on human anatomy. The works of Nancy Hart, illustrator with the Morton Arboretum, and Yale Factor, Northern Illinois University at DeKalb, will emphasize botanical studies. Other illustrators who will exhibit include Zorica Davich, and Marlene Hill Werner.

The Exhibit Subcommittee of the Auditorium Committee has selected about 15 to 20 works by each illustrator. The subcommittee arranged for the exhibit.

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WHAT'S THIS, A WATERMELON RUN?

The Fermilab Running Club is planning--of all things, a watermelon run for June 23. The event will begin at 5:30 p.m. at the Village Barn. Participants will run from there to Wilson Hall and back to the starting point. Afterwards, watermelon will be available (for a fee) at the Barn.

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