

FERMILAB NEWS

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LIFE TESTING OF SUPERCONDUCTING MAGNETS AND COOLING SYSTEM BEGINS

Testing on a superconducting accelerator ring in miniature has begun at B-12, more popularly known as "the awning."

The tests on 16 dipole superconducting magnets and four quadrupoles (one is a "dummy" in the line for special testing) will go on for about one year, said Karl Koepke, the physicist in charge of the testing. The system will probably continue to run beyond that time for life testing and training of personnel, he added.

The magnets and the satellite refrigeration system that are being tested are the ones that eventually will go into the main superconducting ring. The new ring will be built below the existing Main Ring in the same four-mile tunnel. It is considerably easier and more sensible to find and correct deficiencies during testing like this than to encounter them after components have been installed in the Main Ring, explained Koepke. "It's less expensive and embarrassing."

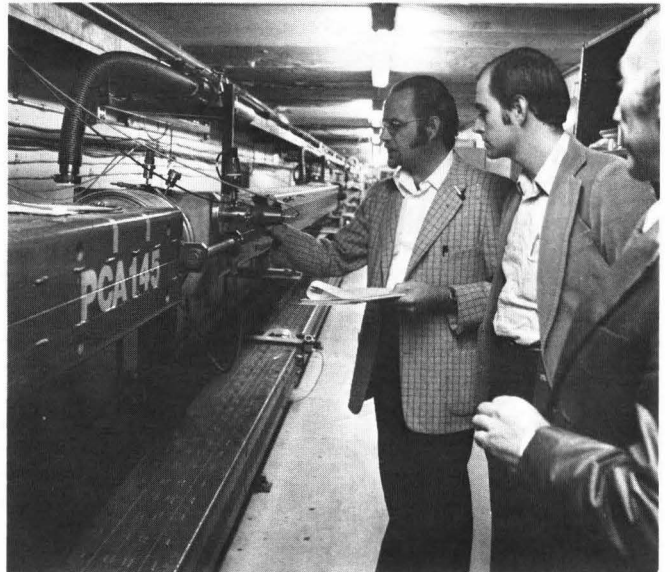
Also being watched closely are the control system and power supplies. The controls at the moment are prototypes that help the experimenters monitor what is happening. "We will continue to build and improve them until they work the way we want them to," said Koepke. Eventually, the controls in their final design will be compatible with the Fermilab computer. Likewise, power supplies, serving now to provide the power for this extensive testing, eventually will be designed to be compatible with the Main Ring systems.

The testing at B-12 is conducted so that the magnets and satellite refrigeration system behave the way they would if they were in the Main Ring, with the exception that no beam is coursing through the magnets. "We seek unknowns in this life test," said Koepke. The purpose of a life test is to confirm that the magnets and cooling system behave the way they were designed and for the period of time they're needed.

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...Karl Koepke examines the connection box to the helium transfer line that runs between the B-1 satellite refrigerator and the B-12 test area, the long building in the background...



...Claus Rode (center), chief engineer with the Doubler Cryogenics System, talks with Peter Mazur (left) and Hans Kautzky, members of the Cryogenics Safety Committee. The test string of superconducting magnets runs the length of the B-12 test area...

COMMENT BY THE DIRECTOR

You have read about what's happening in our Energy Doubler/Saver project in this issue of Ferminews.

We are now seriously into the construction program and things are going very well, as you can read.

The Doubler is the future of this Laboratory. Its success will affect every employee, every experimenter here -- indeed, it is safe to say it will affect the whole field of high energy physics. It must be done well, quickly, and economically.

The heart of the Doubler is the Magnet Facility. It is there that 1000 superconducting magnets must be produced and measured with meticulous attention to detail, with placement of windings accurate to one thousandth of an inch and measurements of magnetic field accurate to several parts in ten thousand.

The installation of these magnets involves similar challenges to skill, dedication and imagination not the least of which is the assembly of the world's largest cryogenics system.

Essentially, all the remaining activities of the Laboratory are designed to support this program - this includes the 400 GeV accelerator which must complete the physics program before we turn to Tevatron Physics and the Collider program which will supply anti-protons to the Doubler and, of course, the experimental areas.

BRIGHT FUTURE FOR FAST GROWING MAGNET FACILITY

To the 150 people who now work at the Magnet Facility, they hold the future of the Laboratory in their hands.

And literally, that's true. For it is there the superconducting magnets that will be used in the Energy Saver/Doubler are being produced. "The whole world is looking at that facility," said Dick Lundy, manager of the Magnet Facility. "It's a unique one. There's no other like it in the world. We are pushing the limits of technology in the best tradition of Fermilab and high energy physics."

At the present time, the facility is producing 20 magnets each month. "We anticipate that by early spring of next year, we'll increase our production to 40 each month," said Lundy. Each magnet is a marvel of precision, costing about \$35,000 and weighing approximately four tons.

The facility itself is located on a newly landscaped site on Road D about one mile northeast of the Central Laboratory. It consists of Industrial Buildings 1 and 3 and several other buildings that house physicists, engineers and draftsmen as well as the machine shop, tooling group and areas for inspection and storage.

Dozens of outside manufacturers from New England to Southern California produce the many precision parts that are required to assemble superconducting magnets. They are hand-assembled into the final product in a carefully controlled environment. Each critical step in the process is inspected. And at specific times, the sub-assemblies are tested to make sure they have been fabricated correctly up to that point.

Lundy takes pride in what the Magnet Facility is becoming. "We haven't stopped improving it. We are dispelling the old, incorrect image that the facility resembles an old-time boiler shop. Some of Fermilab's finest talent has been gathered here, and we expect the increase in production will provide opportunities for more talented people to design, supervise and assemble the magnets."

Lundy added that employees who would like to know more about the opportunities at the Magnet Facility can contact him at Ext. 4069.

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...Jo Gordon (left) and Bill Brudi, both inspectors, conduct a suspension measurement test on part of a cryostat...

.....SPECIAL NOTICE.....

Because of the Thanksgiving Holiday, FERMINews will not be published Nov. 22. The next issue will come out Nov. 29.

The Central Laboratory cafeteria will be closed Thursday and Friday, Nov. 22 and 23.

ANNUAL THANKSGIVING DANCE

For an uplift in mood, NALREC's traditional Thanksgiving dance tomorrow (Nov. 16) is the place to come.

The dance--with live music by the Mill Street Depot--will be held at the Village Barn from 5:15 to 10:30 p.m. Admission is free. Food and a variety of beverages will be available.

Additional events will include a turkey calling contest, with a free turkey going to the best voice. Also, 12 turkeys will be raffled. Raffle tickets will be sold by NALREC representatives at five for \$1 or for 25 cents each.

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FERMILAB SITE PATROL
ASSISTS BATAVIA POLICE

The Fermilab Site Patrol recently assisted the Batavia police apprehend a driver who later was charged with leaving the scene of an accident and driving with a suspended license.

The call for assistance came in to the Site Patrol at 7:55 a.m. Ten minutes later the Site Patrol duty supervisor had apprehended the driver on Laboratory property at Wilson St. and McChesney Road. The driver - an Aurora resident who is not a Fermilab employee - had fled the scene after colliding earlier with a car at Kirk Road and Wilson St.

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WANTED: BRIDGE PLAYERS

Are you a bridge buff?

Then the Fermilab Duplicate Bridge Club has an opening for you. The club will meet on Tuesdays at 7 p.m. at the Users Center in the Village. Marv Warner hopes to get the club rolling in early November. He suggests players call him at Ext. 4430 or send him a note at Mail Station 214.

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NEWS COVERAGE TOPIC
OF FERMILAB LECTURE

John Callaway of WTTW in Chicago will open the 1979-80 Science and Human Values Lecture Series at Fermilab Nov. 30.



Director of news and current affairs at WTTW, Chicago's public television station, Callaway will speak on "News Objectivity--

...Callaway...

Myth or Reality." His lecture at 8:30 p.m. in the Central Laboratory auditorium, is free and open to the public. However, admission is by ticket because seating capacity is limited. Tickets may be obtained by contacting the Guest Office, Ext. 3124.

Because tickets are going fast, the Guest Office recommends Fermilab employees and users get theirs now.

The lecture series enters its fifth season supported by a grant from the Illinois Humanities Council. The purpose of these lectures is to bring together science and the humanities in a way that will make their interrelationship more understandable.

Callaway also is the host of his show, "John Callaway Interviews." He has been in electronic journalism for 17 years. As a documentary producer, he quickly established a reputation for the quality of his interviews, and then went on to win seven national awards for his "The House Divided," a series that examined the American civil rights movement. The Chicago Tribune tagged him as "the master of the television interview."

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CALLING ALL RACQUETBALL ENTHUSIASTS

Devotees of racquetball have the opportunity to join the Naperville and Oak Brook racquetball clubs through Fermilab.

This approach is considerably more economical than joining those clubs directly, said T. J. Sarlina, leader of the move to sign up Fermilab players. Interested players should contact him at Ext. 3299 no later than Nov. 21.

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DEFENSIVE DRIVING COURSE OFFERED

The Fermilab Safety Section will offer the National Safety Council defensive driving course next month (December).

The course will be held the mornings of Dec. 11 and 12 in the conference room in the northeast sector of the Central Laboratory's eighth floor.

"This course teaches the techniques of driving defensively," said Marilyn Kasules of the Safety Section. "It comes at a particularly appropriate time as we start another Chicagoland winter. There is no hands-on training, just mental attitude and skill development."

Enrollment will be limited to 15 persons. Those interested in taking the course should contact Kasules at Ext. 3607.

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CHRISTMAS DINNER AND DANCE

The night of Dec. 22 is particularly special.

That's when Fermilab will hold its Christmas dinner and dance. The event will be at St. Andrews Country Club and will open with a social hour, 6:30 to 7:30 p.m. Then dinner will be served from 7:30 to 9 p.m., with dancing afterwards until 1 a.m. the next morning.

Tickets at \$10 for each person will go on sale Nov. 30 and may be obtained from any NALREC member. Jazmin, a band, will play.

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SLIMNASTICS PROGRAM TO START

A second Slimnastics program will begin Nov. 27.

It will be held in the exercise room, 16 Potawatomi in the Village, from 5:15 to 6:15 p.m. on Tuesdays and Thursdays. Led by Mrs. Rita Dijack, the program will continue through Jan. 31, 1980. If enough people are interested, an additional class will be offered in the morning of those days.

To register, contact Helen McCulloch, Ext. 3126.

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REMEMBER ANNUAL CHARITY FUND DRIVE

The annual charity fund drive at Fermilab is now half over.

Pledge forms have been distributed to employees, who were asked to return them by Nov. 30 to the Payroll Office. Through the payroll deduction plan, employees may set aside money for up to three charitable organizations. The first deductions will be made with the January 1980 payroll. At the end of the year, the accumulated amounts will be sent to the designated charities.

Janet Gregory of the Personnel Office is coordinating the 1979 drive. She may be reached at Ext. 4362 for questions.

Contributions are tax deductible. However, no pledge below a total of \$12 for the year will be accepted. Charities selected must be among those approved by the Internal Revenue Service. Pledges made for this year will be discontinued at the end of the year if they are not renewed.

BARNSTORMERS PREPARE FOR NEW SEASON

The Fermilab Barnstormers--a radio controlled model airplane club--will hold its first meeting of the 1979-80 season Nov. 21.

The group will meet at 5:15 p.m. in the conference room on the west side of the Central Laboratory atrium. The purpose of this meeting will be to work out plans for future activities and the best way to go about preparing the flying field for next spring. The field occupies the northeast area at the intersection of Eola Road with Route 56.

Persons who have questions may call Tony Frelø, president, Ext. 3349, or Rich Mahler, treasurer, Ext. 4074.

The group also would like persons who are active in radio controlled cars and boats to attend. By bringing together these different interests, hobbyists can develop better frequency control and reduce interference, Frelø explained.

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