FERMINEWS

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ENERGY DOUBLER BEGINS SECTOR TEST

The world's first attempt to operate a string of 25 superconducting magnets is underway in Fermilab's main accelerator tunnel.

On December 21, a cooldown of the 25-magnet string to superconducting temperature (-443°F.) was achieved, one of many firsts which the project is destined to deliver. The superconducting temperature was maintained for eight hours, when this first test was ended.

The new superconducting Energy Doubler Accelerator will bring important new capability to Fermilab. It will make possible acceleration of protons to 1,000 BeV and open up a new phase of experiments. It will also conserve energy.

The construction and operation of a superconducting accelerator is far more complex than that of a conventional accelerator. The addition of the liquid helium refrigeration system to cool the magnets to superconducting temperature requires extensive, complex design and installation. The magnets themselves are vastly more detailed than present magnets. Each magnet is essentially a giant thermos bottle; high vacuum must be achieved in order to reduce heat flow to the superconducting coils. Careful leak-checks are an important part of the magnet production and installation.

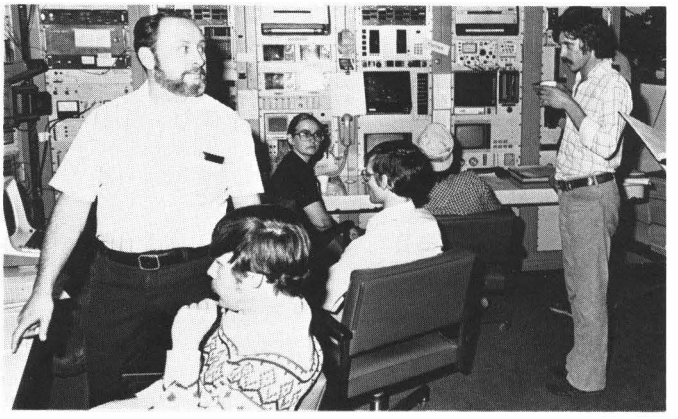
The Energy Doubler program is to be accomplished with a minimum of interference with the on-going research program. Doubler components must be installed and tested as the operating schedule permits, when the accelerator is off for maintenance and development periods.

Over the past six months, a satellite refrigerator has been built in the A-1

(Continued on Page 2)

...P.Koehler (L), G. Tool, during sector test, in main control room...

...C. Rode at A-1 refrigeration building during test...



...(L-R) G. Tool, S. Jachim, S. Lackey, E. Rosenwinkel, R. Oberholtzer, M.Harrison also in main control room...

ENERGY DOUBLER BEGINS SECTOR TEST, Cont'd.

service building, above the accelerator, to supply the liquid helium to the magnets. During the same months, the superconducting magnets, built in the Magnet Facility, were brought to the tunnel and installed as quickly and efficiently as possible. Each magnet must be set in its place, surveyed for alignment, connected to its neighbors, and then checked for vacuum leaks.

The string under test consists of 20 dipoles and 5 quadrupoles and spans an arc of 500 feet between the A-12 and A-17 stations of the accelerator. The doubler magnets are installed 25½ inches below the present magnets. In the completed superconducting accelerator, there will be 774 dipoles and 240 quadrupoles, forming another four-mile ring below the existing main accelerator ring.

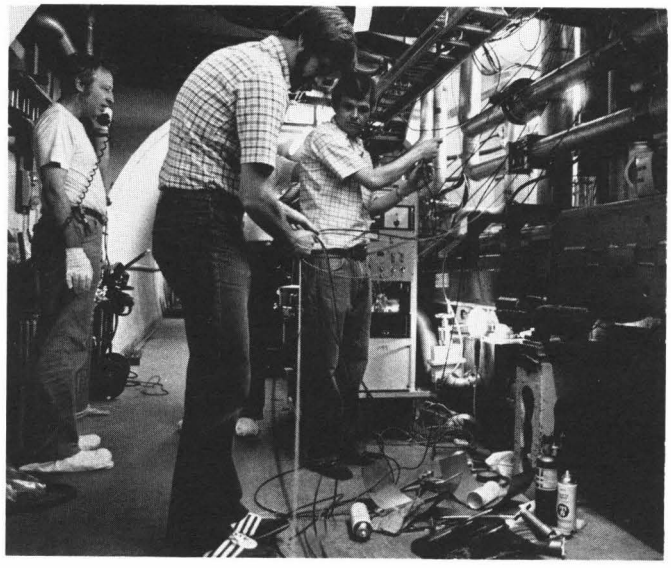
Twenty-four satellite refrigeration units will provide liquid helium for the new ring, and a central liquefying plant, the world's largest, will supply liquid helium to the satellite stations. The liquefying plant, located in the red building near the Magnet Facility, is under construction, expected to be completed in the spring of 1979.

In December, 1977, a successful test of an 8-magnet string was completed in the service building known as "The Awning," above the B-12 station of the accelerator. The current test is the first to be conducted in the accelerator tunnel.

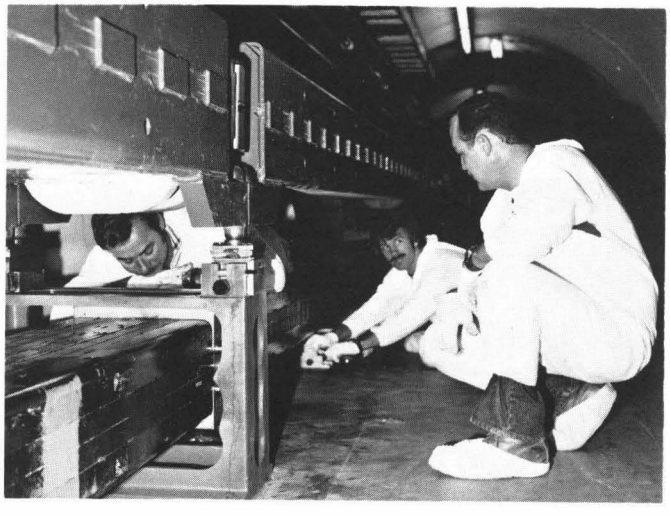
Comments Rich Orr, project leader, "Since no one has run a 25-magnet string before, we don't know quite what to expect. But when we look back, we see some things very clearly - what we did right, what is still wrong - and we'll just pitch in and keep going the next chance we have." The next phase of the tests will first re-establish the cryogenic temperature and then attempt to inject a particle beam of 100 BeV energy and transport it through the magnet string.

Participating in these tests, in addition to the Sector Test Group, are the Accelerator Division's Mechanical Support Group, Electrical and Electronic Support Group, Beam Instrumentation Group, Switchyard Group, the Accelerator Operators, and the Tevatron Cryogenic Systems Group.

...Builders of the satellite regrigeration: P.Brindza, N. Avgerenos, J.Johnson, M. Hentges, F. Walters, T. Rader, C. Vickers, R. Norton, R. Brazzale, P. Furio, R. Williams...



...R. Orr, W. Habrylewicz, D.Wendt installing superconducting magnets last summer...



...J. Smith, T. Peterson, D. Douglas connecting magnets in tunnel...

BIONIC WOMAN AT FERMILAB

Fermilab employees and visitors can now learn cardiopulmonary resuscitation (CPR) by use of a newly-developed recording mannequin, "Resusci-Annie." Annie provides the student with a strip chart recording progress in learning the CPR lifesaving technique. It also records the student's ability to provide external heart compression and mouth-to-mouth resuscitation measured against a time base of elapsing seconds.

Once these techniques are learned, the student will be able to provide artificial circulation and artificial ventilation necessary to maintain a heart attack victim's life until he is recovered or until additional advanced life support is available.

Since sudden death from heart attack is the most frequent form of medical emergency, everyone can benefit by having many persons at the Laboratory trained in this effective lifesaving technique.

CPR training is a joint project of the Medical Department and the Safety Section. The training is offered by Bob Scherr, Charlie Bonham, or Ed Brezina of the Safety Section.

Also included in the program is a newly-developed technique for providing aid to choking victims - nearly as useful as CPR since choking ranks seventh as a cause of accidental death.

Bob Scherr points out, "Neither of these lifesaving techniques require special equipment -- only the hands and the exhaled breath of the rescuer."

Anyone interested in obtaining this training can enroll through his/her supervisor.

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CHANGES AT THE DEPARTMENT OF ENERGY

His friends at Fermilab will miss Claude Dickens, manager of the Batavia Area Office of the Department of Energy, who will retire this week. Dickens has been employed by the Department of Energy (and its predecessor agencies) since 1952. He moved to Fermilab from the Chicago Operations Office in 1974 as assistant manager. He was named manager in August, 1978, succeeding Don Bray.

Succeeding Dickens is James A. Miller who came to Fermilab from an assignment as Administrative Officer at the DOE Pacific Area Support Office in Honolulu, Hawaii.

Miller started his career as an accounting intern in the Las Vegas Operations Office of the AEC in 1966 after having completed his education at Montana State University. He served as accountant, administrative assistant, program analyst, property management specialist and administrative officer for DOE.

...James A. Miller (L) will succeed Claude Dickens (R) as manager of DOE's office at Fermilab...

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Inter/National Film Society Presents

"STAVISKY"

Friday, January 12 8:00 p.m. Fermilab Auditorium

"Stavisky" is a French film, made in 1974. It is directed by Alain Resnais, written by Jorge Semprun and stars Jean-Paul Belmondo, Charles Boyer, and Anny Duperey.

"Stavisky" is a story of a con man turned international financier. His ruin resulted in a political scandal and his own mysterious death. It is called a commentary on the social climate of the 1930's. Rated PG.

Adults $1.50 Children 50¢

DIRECTORY ASSISTANCE HALTED

Now in effect is a restriction on dialing 411 for directory assistance on the telephone. The plan is on a trial basis and comes about because of a new charge being made by Illinois Bell for directory assistance calls.

Fermilab is allowed two "no charge" assistance calls per terminal number per month. Calls over this allowance will be billed to the Laboratory at 20 cents each.

"Use a commercial telephone directory to find your party's number," advises Caroline Hines, communications supervisor. "Directories are available from the Fermilab Mail Room," she advises.

The Mail Room is located at CL-Catacombs W, Ext. 3210.

There is no cost for long distance directory assistance.

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HARRIS LECTURE TICKETS AVAILABLE

Neil Harris, University of Chicago historian, will discuss the changes in U.S. sociology surrounding the development and use of shopping malls in the last generation.

"From the Emporium to the Shopping Mall," is the title of his lecture, sponsored by Fermilab, the Illinois Humanities Council, and the National Endowment for the Humanities. It will be given in the Fermilab Auditorium at 8:30 p.m. on Friday, January 18.

Free tickets may be obtained from the Guest Office, CL-1W.

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OTHER ACTIVITIES

....Sign up before January 15 for the Pocket Billiards tournaments. Registration and rules from Helen Ecker, CL-1W, Ext. 3126. No charge.

....SKATING PARTY for adults and children. Saturday, January 13. Noon to 3 p.m. Village basketball court. No charge.

....BARN DANCE - Saturday, January 20. Village Barn - 8:30 p.m. Admission $1.50

....COMING JANUARY 27 - 3rd Annual Chili Bake Off. Users Center, 7 p.m. $2.00 admission in advance; $2.50 at the door.

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SCULPTURE ADDED TO EXHIBIT HERE

Sculptures from West Rhodesia are now on exhibit in the second floor lounge of the Central Laboratory. They are on loan through the courtesy of the General Services Administration, Chicago.

The exhibit of photography by physicist Marcel Bardon will continue through January.

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