FERMINEWS

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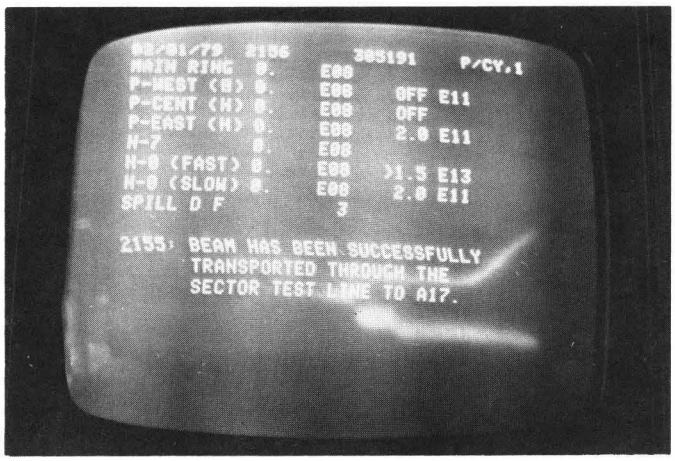


...Monitor in control room announces successful conclusion of sector run...

...Their faces show how the test run went. (l-r) G. Tool, M. Harrison, R. Orr...

PROTON BEAM SUCCESSFULLY SAILS THROUGH SUPERCONDUCTING MAGNETS!

For the first time in history -- the night of Feb. 1 -- scientists successfully guided a beam of high energy protons through a string of 25 superconducting magnets.

It was a crucial test of Fermilab's Energy Doubler, the accelerator that in tandem with the existing accelerator will push protons to 1,000 BeV (1 TeV). It also tested the knowhow and teamwork of a multi-disciplinary staff led by Rich Orr, assistant head of the Accelerator Division.

He and his team showed the world that the technology of superconducting magnets -- the heart of the Energy Doubler -- is feasible and within reach of Fermilab's experts. Now a new dimension in high energy physics has opened with greater certainty than ever before, and, looking ahead to the time when the project is finished, Orr said, "I have a hunch the high energy physics world will be beating at our doors to get in here to do experiments that require 1,000 BeV."

It was the long-awaited outcome of years of planning and a series of three tests in rapid succession that began on Dec. 21 when the first attempts were made to operate the string of 25 magnets in the main ring tunnel. Then on Jan. 11 came Roger Dixon's successful switchyard test, and finally on Feb. 1, the crucial breakthrough, again in the main ring tunnel.

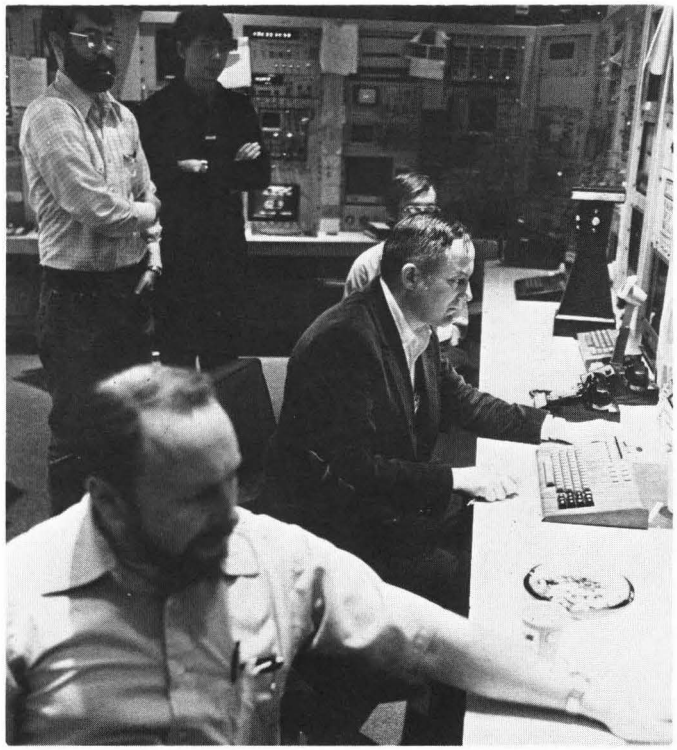
But that did not come easily. A problem with a traditional electromagnet becomes a super problem with a superconducting magnet, and Orr and his team had enough of those problems and others to keep their anxiety level high going into the final moments of the countdown. Yet with caution, and certainly with optimism, they injected a proton beam into the string of 20 dipoles and five quadrapoles that stand in an arc 500 feet long between the A-12 and A-17 stations of the main ring tunnel.

And it worked...beautifully. Much to the surprise of nearly everyone, who had expected to be resolving difficulties for many hours into the night before the run was successful.

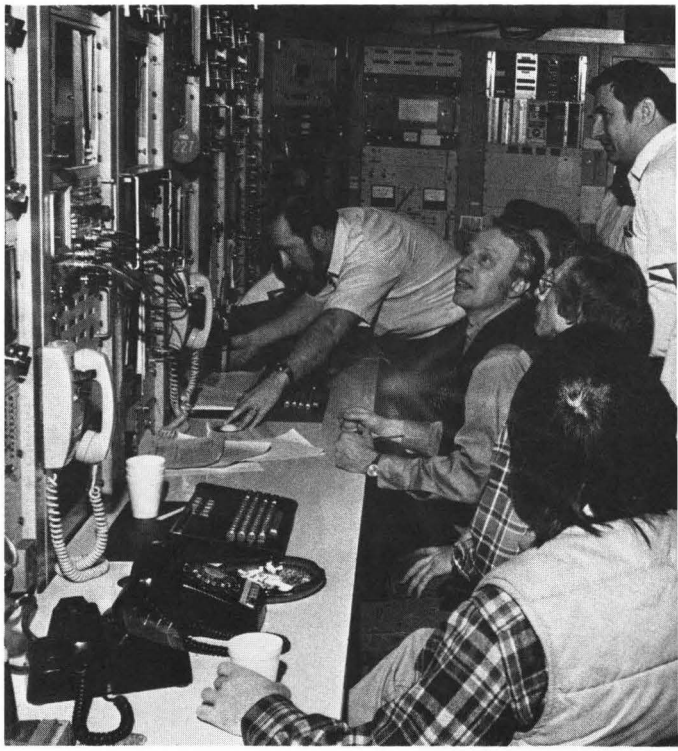
Looking back on their unexpected ease of success, Orr said, "We had experienced accelerator people. Everybody knew what to do and they did it -- and it worked."

Extremely critical to the success of this run through the 25 magnets was the knowledge Roger Dixon and his group gained when they were experimenting with two

(Continued on Page 2)



...Watching results of experimental run: R. Hively, J. Gannon, R. Huson and G. Tool...



...G. Tool makes delicate adjustments in t before it announced success are R. Orr

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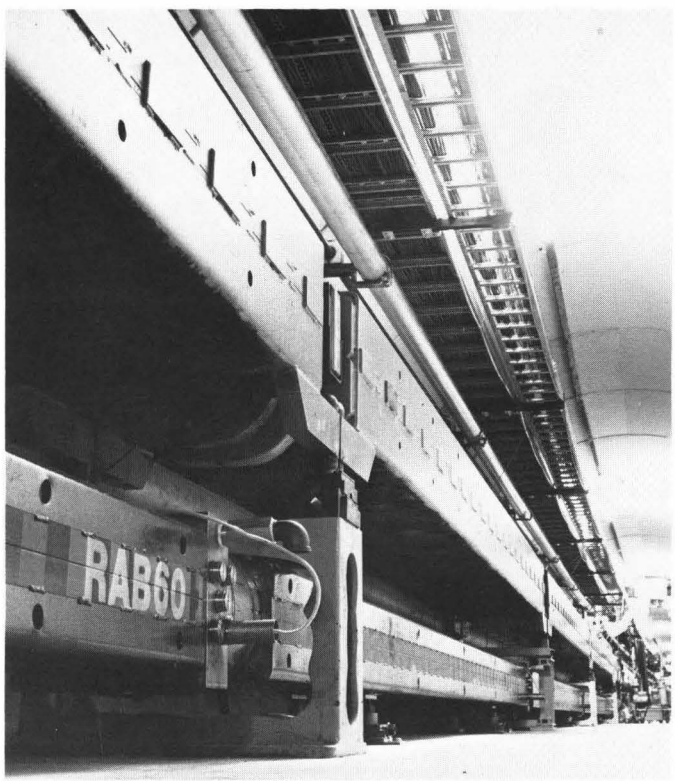

...The 25 superconducting magnets extend for 500 feet below the main accelerator magnets...

superconducting magnets in the switchyard beam line on Jan. 11. They found the magnets worked better when the cooling coils about them are as full as possible of liquid helium--the coolant. Orr credits this observation as one of the major reasons for the success of the Feb. 1 test.

Receiving high praise for their contribution were John Paulk and his Site Services crew, who during some of this area's most severe weather, helped Claus Rode's cryogenic systems group replace two helium reciprocating compressors with a two-stage screw compressor of the type that will go into the final Doubler.

So out of all of this comes "a whole new breed of cat," said Orr. "A super-conducting magnet accelerator that nobody

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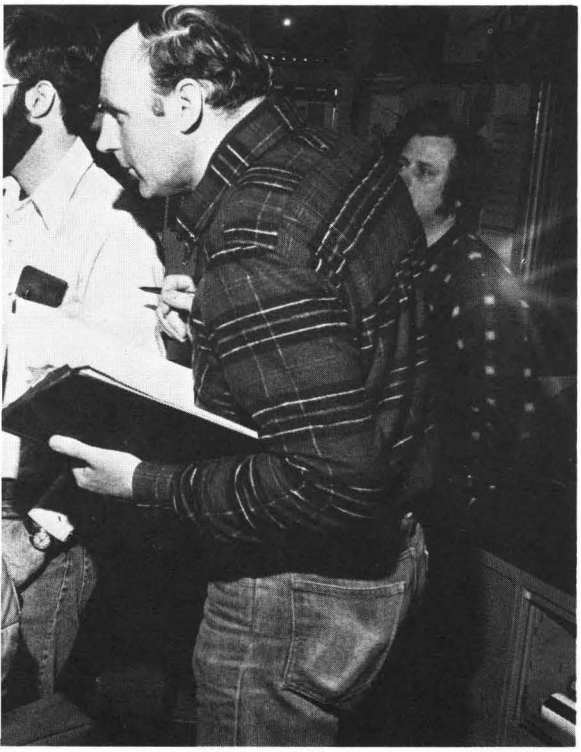
"Superconductivity is a magic potion, an e new vistas for the future."



urrent. Watching monitor movements
oepke, R. Hively and P. Koehler...

...Installing shielding around beam position monitor are, from left, R. Bennett, J. Smith and T. Peterson...

has ever built before. Yet this is only an intermediate step which will help us solve many more anticipated problems. What we have really is a research and development project."

From this experiment over the past eight months, the team learned:

1--How to install superconducting magnets in the main ring tunnel.
2--How to make a leak-tight system 500 feet long ("No one's done that before," said Orr.)
3--How to cool down a string of magnets and maintain them at the temperature of liquid helium (-443°F).
4--How to tune the beam into the magnets without any disasters happening.

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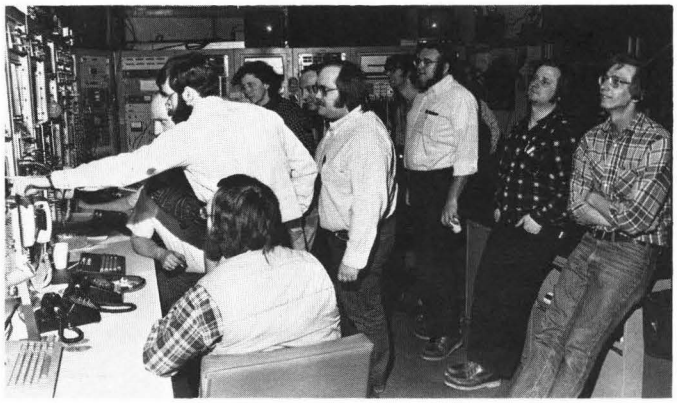

...Watching second by second results are R. Hively, H. Edwards, A. Thomas, B.Miller, B. Mau, D. Kindelberger, E. Blum and M.Olson.

...H. Edwards ponders next step in the night's test...

r to rejuvenate old accelerators and open

R. R. Wilson

HAZARDOUS INTERSECTION GETS TRAFFIC CONTROL EQUIPMENT

The intersection at Batavia and Eola Roads now has a new and safer look. During the past weekend, a crew installed stop signs on Batavia Road to supplement single signs already on Eola, plus an overhead four-way flashing red signal.

"Because of its inherently hazardous nature, the crossing now has been converted into a four-way stop intersection," said John A. McCook, associate director for administration. "Stop signs have been erected on all four corners, together with a four-way overhead red flashing light. Speed reduction signs also were appropriately placed on roads leading to the intersection. The Site Patrol will monitor this intersection during rush hour traffic."

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CREDIT UNION PAYS BONUS DIVIDENDS

The Argonne Credit Union paid savers and borrowers bonus dividends amounting to $22,000 on Dec. 31.

John Chonko, manager for the Board of Directors, said the credit union took the action because of higher than average earnings. For the first time in its history, the credit union has grossed more than $1 million in income in a 12-month period, he added.

"Our fourth quarter share dividend was paid at the bonus rate of 6.4 per cent per annum, and most borrowers and members received an interest rebate of 2 per cent of interest paid on loans during 1978," he also said.

* * * * *

MENTAL HEALTH CENTER TO PRESENT EDUCATIONAL SERIES ON ALCOHOLISM

Three free educational programs on alcoholism will be presented later this month by the Kane-Kendall County Mental Health Center.

Each program will be held Tuesday evening from 7 to 8:30 at the Mental Health Center, 400 Mercy Lane, Aurora. The series will examine the disease of alcoholism and its many ramifications.

The agenda:

Feb. 13 - "Alcoholism and the Family" by Robert McGann, senior alcoholism counselor at the health center.

Feb. 20 - "Physiology of Alcoholism and the Fetal Alcohol Syndrome" by Sandra Rossell, clinical services director of the outpatient alcoholism program.

Feb. 27 - "Alcohol and Industry" by Richard McClaren, consultant in special health services to the Caterpillar Tractor Co.

Additional information about the series may be obtained from Elaine Hegy, director of planning and development at the health center, (312) 897-0584.

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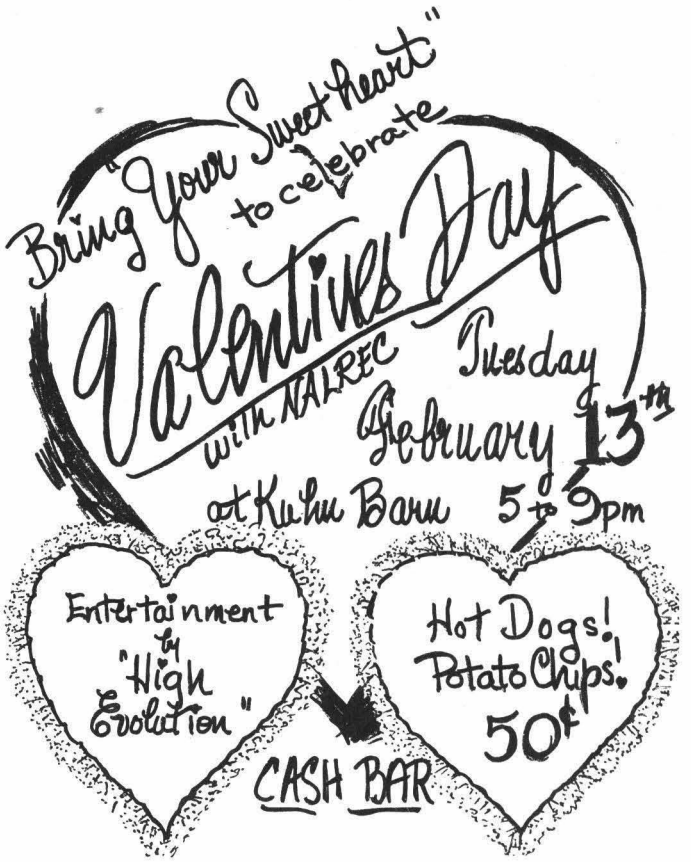

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