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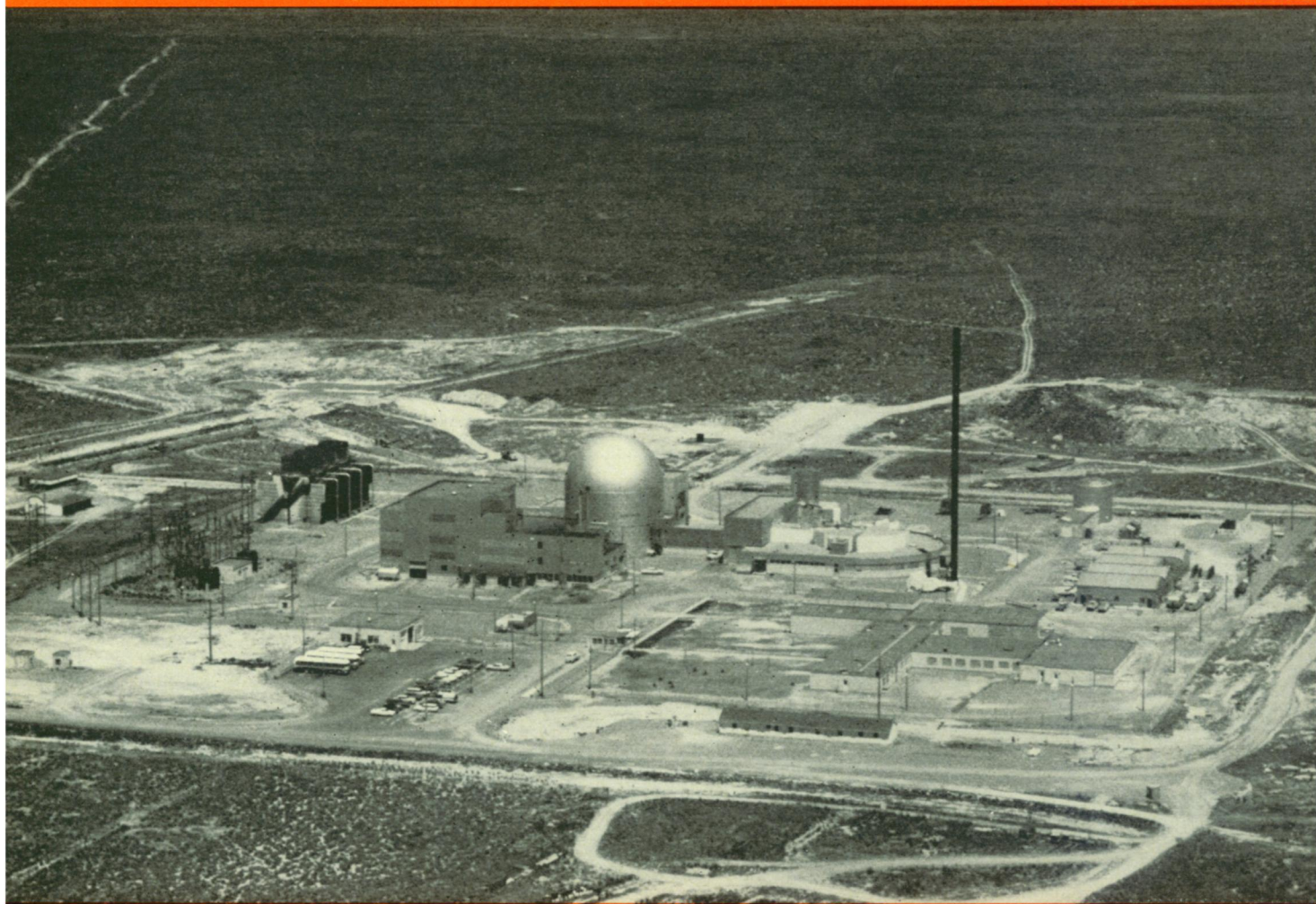
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SCIENCE NEWS LETTER

®

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Argonne National Laboratory

Breeder Reactor

See Page 150

A SCIENCE SERVICE PUBLICATION

The Magnetic Personality of MHD Bearings

We've been analyzing it at the Research Laboratories.

Frankly, we don't know what the practical applications of our MHD analysis will be. Not yet, anyway.

But we're nevertheless pleased that our engineers were the first to successfully demonstrate the much-investigated MHD bearing.

Recently, with the help of the University of Chicago's 32.5-inch cyclotron magnet, they proved experimentally a theory that has been described only by mathematical analysis; that is, when electrically conducting liquid metals are used as bearing lubricants, load carrying capacity can be dramatically increased by subjecting them to a magnetic field. The more powerful the magnetic field, the more viscous becomes the liquid-metal lubricant . . . and the greater the load the MHD bearing will support.

Even more important, our engineers found excellent agreement between their mathematical predictions and the measured performance of the experimental MHD bearing.

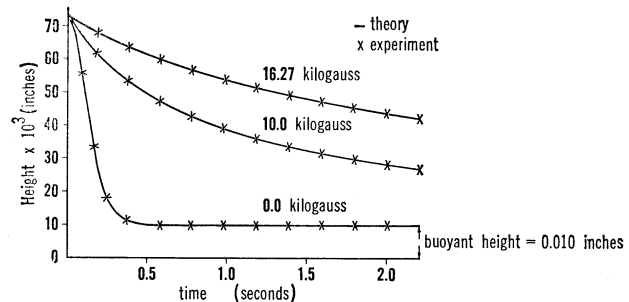
GM bearing designers are intrigued.

Consider the operating characteristics of the magnetohydrodynamic bearing: the possibility of zero frictional torque . . . high thermal conductivity . . . the ability to withstand high temperatures and nuclear radiations . . . and automatic electrical adjustment to compensate for transient loads.

From theoretical analysis through confirming experiment, the successful demonstration of the first experimental MHD bearing is typical of the full-circle research philosophy of General Motors.

General Motors Research Laboratories

Warren, Michigan



Predicted rate at which a film of mercury is squeezed from between two flat circular plates agrees closely with measured values.

Symbolized elements of MHD bearing.

