

INVENTION

Safety System Invented For Nuclear Reactors

► A SAFETY SYSTEM has been invented that prevents a nuclear reactor from shutting down when the power source fails. The nuclear reactor is switched over to a stand-by power supply by a safety device patented.

Costly shutdowns of nuclear reactors due to power failure are unnecessary, inventor Anthony E. T. Nye of Clifton, England, claimed. His safety system supposedly discriminates between critical reactor faults, which definitely warrant a shutdown to prevent accidents, and a power supply fault.

The safety system consists of a shutdown relay and at least one control relay. Alternating current is sent through the shutdown relay to the nuclear reactor's control rods during normal operations. If anything critical happens, the relay would automatically cut off the power supply, shutting the reactor down.

The control relay acts similarly except that it has two relays instead of one. In case of power failure, one of the relay contacts would have a "delayed release time" long enough to permit a change of power supply.

The invention underlines the recent concern about the safety of nuclear reactors in the United States. Three persons were killed recently near Idaho Falls, Idaho, in a nuclear reactor accident.

The patent rights of the invention, patent No. 2,973,458, were assigned to the British Thomson-Houston Company Limited of London, England.

• Science News Letter, 79:191 March 25, 1961

INVENTION

Develop Control System For Space Vehicles

A control system for keeping space vehicles on course can be used to absorb any tendency of a space vehicle to stray off its course in space, Dr. Walter Haecussermann of the Marshall Space Flight Center at Huntsville, Ala., states.

A flywheel housed in the satellite controls the satellite's bearing by the speed it rotates. The flywheel is powered by a motor whose source of energy is solar cells.

Any change in the desired bearing is

Do You Know

The island of *Tasmania*, off the Australian coast, was named after its Dutch discoverer, Abel Tasman.

Fire losses in the United States totaled \$1,107,824,000 in 1960, an all time record.

One species of *weaverbirds* builds "apartment house" nests of matted grass that house as many as 100 bird families under the same roof.

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registered by a computer that sends a danger signal to the device controlling the current supplied to the motor. The speed of the flywheel is then changed to offset the outside force.

The invention is also equipped to stem flight deviations resulting when the space vehicle is blasted off its launching pad, according to patent No. 2,973,162.

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MEDICINE

Foot Clinics Advised For Diabetic Patients

► BECAUSE OF foot complications in diabetic cases, hospitals are beginning to put podiatrists on their staffs and open foot clinics.

Dr. Edward L. Tarara, podiatrist at the Mayo Clinic, Rochester, Minn., told physicians at the Georgetown Hospital diabetes symposium in Washington, D. C., that ulceration and gangrene occurrence can be reduced by knowledge of proper foot care.

"There is a definite reduction in amputations when podiatrists look after the diabetic patient's feet," Dr. Tarara said. "The complicating problems of neuropathies (nerve diseases), arteriosclerosis, etc., are manifested primarily in the lower extremity."

Neuritis is a common diabetic complication, he said, and certain lesions of the toes and feet of diabetics result from it. A podiatrist sees foot complications resulting from a simple irritation of a corn to a painful ulceration that, if untreated, may terminate with loss of all or part of the foot or leg, or even in death.

Basic rules for care of the feet of a diabetic are:

Keep the feet clean. Avoid bruises and cuts, giving proper attention to toenails, corns, calluses, shoes and stockings. Avoid burning or freezing the feet and avoid using strong antiseptics. Avoid constricting the circulation. Provide rest for injured feet. Make use of measures to improve the circulation.

Dr. Tarara said that if a diabetic keeps his feet as clean as his hands and face, gangrene and infections seldom occur.

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Questions

MEDICINE—What is sulfate salt of Vinblastine? p. 181.

PHYSICS—How many underground nuclear detonations with an explosive yield of one kiloton or more have been fired outside the USSR? p. 185.

ROCKETS AND MISSILES—How far into space is the P-14 space probe scheduled to travel? p. 179.

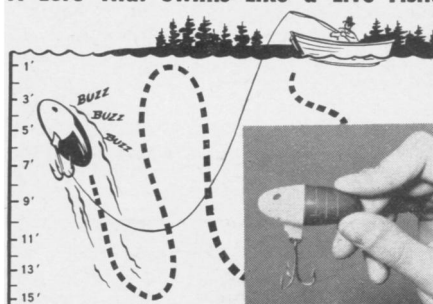
Photographs: Cover, Press Dept., USSR Embassy; p. 179, left, Hughes Aircraft Company, right U. S. Navy; p. 181, General Motors Research Laboratories; p. 183, Pollak and Skan, Inc.; p. 192, Bradford's.

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