

British Physicist Explains Runaway Threat Of Atomic Furnace During Peacetime Use

Editor's note: A dread new word has entered the language of the atomic age—"runaway." It means an atomic power plant suddenly raising out of control, possibly blasting itself to deadly dust and hurling radioactive clouds into the air around it. Scientists faced up to this industrial peril of the future at the United Nations atoms-for-peace conference Wednesday. In the following dispatch a British physicist whose job is applying atomic power for peace explains the threat.

By DR. J. M. A. LENIHAN
Written for United Press
Geneva—(U.P.)—What is a "runaway" and what makes it run? The answer is terrifyingly simple. A runaway is an atomic furnace of peacetime trying to act like its parent of wartime, the A-bomb.

The perils of the runaway are, in some ways, at least, the perils of the bomb. Teams of scientists from the United States, Britain and Russia reported on the possibility of runaways at the atoms-for-peace conference Wednesday. Here are the conclusions of the theoretical and experimental data they presented:

To understand how a pile can blow up you must remember that a reactor is just an atomic bomb in slow motion.

This is not a natural state because the fission reaction that keeps a furnace going is nervous by nature. The activity of a pile must always be rising or falling.

If it falls too low the pile shuts down. If it rises too high the pile blows up.

The Possibility
The explosive reaction is restrained in the normal way by control rods and other safety devices but these, like any other machine, can go wrong and it is therefore possible for a pile to go out of control.

Dr. Edward Teller, who contributed much to America's H-bomb development, put the need

for guarding against this "going wrong" in these words: "With all the inherent safeguards that can be put into a reactor, there is still no fool-proof system. Any system can be defeated by a great enough fool. The real danger occurs when a false sense of security causes a relaxation of caution."

It can be predicted theoretically up to a point but practical experience is the best guide and the only way to gain this experience is to let a reactor explode.

This test was made by the Argonne National Laboratory. A small experimental reactor built in a remote location was deliberately sacrificed by ejecting a control rod, the job of which is to "cool" off the reactor by absorbing the excess radioactivity.

The Experiment
In less than one-fifth of a second the uranium fuel melted, the surrounding water vaporized and the whole structure blew up, scattering fragments and radioactive debris over a 350-foot circle.

From this experiment and other calculations another American group including Teller submitted a study suggesting what might happen if a big reactor blew its top. First there would be a loud explosion, destroying the reactor and killing or maiming the staff of the plant. Then a cloud of radioactive dirt would rise into the state of the wind, would drift over the surrounding landscape.

Communities in its track might have to be evacuated and water supplies might become unusable for days or weeks, until the radioactivity radiated itself away to a safe level.

"Perhaps it is important..." the Teller team reported, "to emphasize the degree of public hazard that might follow a reactor accident."

"Assuming that good luck prevails and no one is killed, it may nevertheless be necessary to evacuate a large city, to abandon a major watershed, and very probably it would be necessary to make the reactor site itself a forbidden area for some years to come."

Carpenters Needed At Klamath Air Base
Klamath Falls — (U.P.) — An urgent appeal for carpenters has been issued by C. D. Long, business agent for the local carpenters union.

Long said about 100 carpenters were needed for work on the Klamath Falls Air Force base. He said most of the city's 180 carpenters were employed by resident contractors, and only 20 had found jobs at the jet base.

The remaining 80 jobs at the base, he said, would have to be filled by carpenters from outside the Klamath Falls area.

BAD TO WORSE
Passaic, N. J. — (U.P.) — Frank Cimino reported Thursday that Magistrate H. Dick Cohen had ordered because it was a "menace" on the road. Then Cimino told Cohen he had bought a 1940 model to replace it.

Company spokesmen said mining and milling operations would resume as soon as local unions ratify the agreement. They reported the strike resulted in the loss of 130,000,000 pounds of copper that would have been mined since the strike began July 1.

This loss, coupled with other recently-settled labor disputes in western mines of two other American companies and strikes in copper mines in South Africa, has contributed to a world-wide shortage of the red metal, raised copper prices and forced some processors to substitute other metals and plastics.

Dead line Sunday Classified is at noon Saturday; 10 a.m. Monday for Monday; other days 3:30 previous day.



ELECTED AS president of Girls' Nation, sponsored by American Legion Auxiliary, Brenda Ann Russ, Trenton, Tenn., waves to girls at Washington convention. With her is Adelaide Titus, Ocean City, N. J., vice president. (International)

Kennecott Copper Reaches Agreement

Salt Lake City — (U.P.) — An agreement to end a 42-day strike that cut off production by Utah mines and mills that normally furnish one-third of America's domestic supply of vital copper was reached early today by Kennecott Copper Corp. and eight unions.

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Ex-Cuba President Returns From Exile

Havana, Cuba — (U.P.) — Former President Carlos Prío Socarras said on his return from self-imposed exile Thursday night that he is willing to meet with President Fulgencio Batista in an attempt to bring peace to Cuba.

Prío said he is not interested in politics personally but only in finding a solution to Cuba's political problems. The former president arrived from Miami, Fla., Thursday after more than three years in exile. He was deposed March 10, 1952, by an army coup d'etat headed by Batista, who later was proclaimed president.

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150 Sunset Stations Sold to Westway Firm

Portland — (U.P.) — Westway Petroleum Corporation has purchased from the Sunset Oil Company about 150 gasoline stations in the Pacific Northwest in a transaction said to involve about \$1,500,000, it was reported today. Purchase was financed by Union Oil Company for Westway, which is a subsidiary established under California law to operate the Northwest group. Included in the transaction were the Golden Eagle and United Petroleum names in Oregon and Eagle brand name in Washington. It does not affect the stations operated by Sunset Oil in California.

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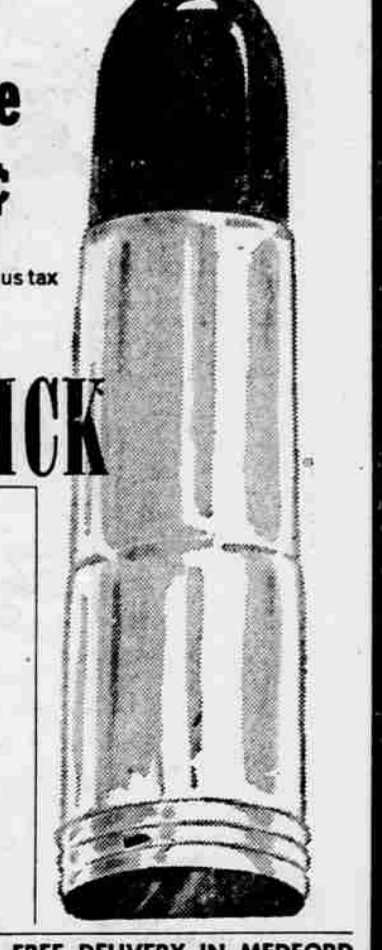
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