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PUBLIC SAFETY

Safety Claim Challenged

► THE ATOMIC ENERGY Commission's claim of perfect safety record in "regularly operating reactors" has been challenged. The AEC safety claim was made in a Government petition to the Supreme Court to approve its procedures for the licensing of developmental nuclear reactors.

The AEC petition was filed in an effort to get the Supreme Court to overrule a finding by the U. S. Court of Appeals that AEC procedures in licensing the construction of a nuclear power plant at Lagoona Beach, Mich., about 30 miles southwest of Detroit, did not give sufficient consideration to the question of safety in the operation of such a reactor so close to a large population center.

The successful challenge to the AEC licensing at Lagoona had been initiated in the Appeals Court by the International Industrial Division of the AFL-CIO (IUD-AFL-CIO). The AFL-CIO had until the end of October to file an answer to the AEC petition to the Supreme Court.

The Atomic Energy Technical Committee (AETC) of the IUD-AFL-CIO has released a study entitled "A Few Atomic Reactor Accidents."

The list, prepared by Leo Goodman, secretary of the AETC, was prompted by an AEC report issued to the Congressional Joint Committee on Atomic Energy on

March 22, 1957, entitled the Brookhaven (Wash. 740) report. This document contained the claim that the chances of an accident in an atomic reactor having major effects on the public ranged from a chance of one in 100,000 to one in a billion per year for each large reactor.

Seven accidents had occurred in "regularly operating reactors" here in the United States up to the time the Brookhaven report was issued. The up-dated AETC list reveals 32 reactor accidents both here, in Canada, and in Europe from 1947 to July of 1960.

On the basis of these findings, Mr. Goodman has charged that "both the authors of the Brookhaven report and the Atomic Energy Commission failed to tell the Joint Committee the full story regarding the hazards of atomic reactors when they filed the Brookhaven report."

He told SCIENCE SERVICE, "Since the report has been filed, the number of atomic accidents which have occurred requires, in my judgment, a Congressional review of the procedures for choosing sites for atomic reactors."

These accidents are recorded in technical literature, including reports of the Joint Atomic Energy Committee and AEC reports.

• Science News Letter, 78:294 November 5, 1960

ASTRONAUTICS

"Bumpers" for Space Ships

► SOUND-PROOFED "meteor bumpers" for space ships are needed to provide important psychological and physical protection for astronauts traveling through fast moving concentrations of space dust as they leave the earth, Dr. Fred L. Whipple, director, Smithsonian Astrophysical Observatory and a professor of astronomy at Harvard University, reported.

The sound of the tiny "cosmic puff balls" as they hit the space vehicles may give the occupying astronaut "the sense of being under military siege," he warned scientists attending the symposium on the Medical and Biological Aspects of the Energies of Space, held by Southwest Research Institute at the Air Force School of Aviation Medicine in San Antonio, Tex.

The concentration of space dust close to the earth is 100 to 10,000 times as high as that encountered some 80,000 miles in space, Dr. Whipple said. His estimates are based on information received from rocket and satellite "near-earth" probes for meteoritic dust content.

Although the high concentration "does not greatly endanger space vehicles," the astrophysicist believes that the psychological effect of their bombardment would be a hazard.

He pointed out that "some small holes certainly will be shot through the skins of the space vehicles by the small particles in space."

Protection both for the ships and their

occupants from the "barrage of natural projectiles" could be given if the "meteor bumper" suggested by him many years ago, consisting of a thin outer shell beyond the major walls of space vehicles, were "acoustically insulated."

The effect of the space dust concentration is completely absent at one-third the moon's distance, Dr. Whipple said. The concentration so great close to earth cannot be explained adequately.

The scientist suggested that possibly the small particles are highly charged to hundreds of volts as they enter the Van Allen belts of dangerous radiation near the earth.

This charge may burst the small particles that are suspected of being very weak structures: what he described as "a popping of tiny cosmic puff balls."

"The earth's gravitational attraction can produce some concentration of dust if one postulates that the dust is moving in nearly circular orbits close to the plane of the earth's motion," he said.

In spite of the increased concentration of dust near the earth, Dr. Whipple finds that at moderate distances optical surfaces will not be etched appreciably by interplanetary material for many years.

Consequently, astronomical telescopes or observatories may be maintained safely in space. Such observatories and telescopes are planned for orbit in the near future.

• Science News Letter, 78:294 November 5, 1960