

PUBLIC SAFETY

Nuclear Safety Questioned

GOVERNMENT AGENCIES, labor leaders and specialists in nuclear medicine appear headed for a major conflict over industrial nuclear installations as a potential public hazard.

The Atomic Energy Commission, the agency of Government responsible for the industrial development of nuclear energy, has taken the position that "the probability of reactor accidents having major effects on the public ranged from a chance of one in 100,000 to one in one billion per year for every large reactor."

Labor's position, that of the AFL-CIO, is that the AEC tends to "minimize" the danger and thus weakens efforts to prevent accidents.

In testimony before the Joint Committee on Atomic Energy, a spokesman for the AFL-CIO said, "AEC, in our judgment, has not taken adequate steps to meet the radiation hazard problems which we know continue to be serious."

The AFL-CIO charged the AEC with neglect in this area and accused the Commission of withholding "the full truth" of the dangers resulting from accidents that have occurred.

Referring to a serious radiation accident at Oak Ridge which AEC officials had described as "small," Walter Reuther, president, United Automobile Workers, AFL-CIO, wrote Arthur Flemming, Secretary, Health, Education and Welfare, and Chairman of the Federal Radiation Council. In his letter he stated that "efforts to seek full information in order to help develop policy to prevent the repetition of this type of accident revealed the fact that neither the Congress nor the agencies affiliated to the

Federal Radiation Council had been advised of the seriousness of this accident nor of the steps necessary to prevent its repetition."

And Capt. E. R. King, director, Department of Nuclear Medicine, National Naval Medical Center, Bethesda, Md., has stated, "It is doubtful if it is theoretically possible for a radiation disaster to occur of the magnitude described in the novel 'On the Beach'."

"However, it is probable that small-scale disasters will continue to occur . . . with increasing frequency as more and more power reactors . . . are assembled." Capt. King predicted that every major city in the United States will have "in its vicinity a potential source of radiation that could expose a large portion of the population to detrimental doses of ionizing radiation." His prediction was contained in a paper delivered in London, June 20-24, at a symposium on Total Body Radiation, Clinical and Investigative Problems.

Forty American communities, from 1945 to 1959, already have been exposed to the danger resulting from substantial radiation released by a nuclear accident, according to the AFL-CIO. The 40 accidents do not include those involving only single individuals or those which are military in nature.

In April this year, there was an accident at the Oak Ridge National Laboratory. According to the most recent AEC report, more than 100 persons were involved and exposed to radiation from the incident. The radioactive material was spread through the installation by the air-conditioning system.

Decontamination is not yet complete and costs of cleaning work are estimated at about \$39,500.

PUBLIC HEALTH

Fallout Nearly All Gone

THE 1960 spring rains, besides bringing out the flowers, brought down from the high atmosphere considerably less radioactive strontium-90 than in 1959.

The 1959 spring rains held the greatest amount of strontium-90 on record, Dr. Lester Machta of the U. S. Weather Bureau told the American Meteorological Society meeting in Washington, D. C. He believes the maximum exposure to whatever hazards strontium-90 presents has already occurred.

The radioactivity from this fallout product is now disappearing (decaying) at almost the same rate as it is being precipitated on the earth's surface as rain or snow.

Fifteen percent of the total world-wide fallout still is in the stratosphere or upper atmosphere. Within five years, effectively all of this will be down. In the absence of further atomic testing, fallout now on earth or in its atmosphere will decay. As it decays, the hazard it presents to public health will decline.

Authorities from the U. S. Public Health Service division of radiology and biology

recently stated that the levels of strontium-90 resulting from nuclear testing are not sufficiently high to cause alarm.

Meteorological research has determined that strontium-90 levels are as much as 40% higher in the United States, particularly on the East Coast, than anywhere else in the world. Dr. Machta said this may be attributed to weather patterns and proximity to the Nevada test sites.

Meteorologists will welcome the absence of fallout from the upper and lower atmospheres since it will enable them to use naturally radioactive substances to trace weather patterns.

"Fallout debris presents an undesirable background for natural radioactive tracers that enable us to achieve a better basic understanding of the atmosphere," explained Dr. Machta. "The radioactive debris now in our way is like the interference of static on a radio. You may be able to hear your program, but not as clearly as you might if the static was absent." (See story opposite page.)

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As a result of another accident two years ago, suit has been filed by eight workers, who suffered higher and more direct exposure to the released radiation, for a total amount of close to a million dollars for health damages including sterility, sexual impotence, and general physical deterioration. The effects of the lower level of radiation on the other workers cannot be immediately determined.

Labor's position is that accidents like this might have been prevented if the AEC had adequately and openly analyzed the facts and factors involved in previous accidents rather than minimizing their extent and number.

Scientific medical opinion is that since such accidents are inherent in the development of atomic energy and weapons, there should be more and better training and planning among doctors and nurses to enable them to cope with such disasters, as well as a program aimed at prevention.

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MEDICINE

Irregular Heart Action Can Cause Many Troubles

THE ACTION of an irregular heart may cause all kinds of trouble—including blood starvation and perhaps severe damage to brain, kidneys, stomach and intestines.

Using a "space age" electromagnetic flowmeter, Drs. Eliot Corday and David W. Irving of the University of California Medical School and Cedars of Lebanon Institute for Medical Research have demonstrated that irregular heart action can reduce blood flow to these organs by as much as 75%.

Irregular heart action includes premature beats, or systoles, and racing heart, or tachycardia. Such irregular action may be caused by coronary heart disease, an overactive thyroid, or other factors.

When such action occurs, the heart chambers do not fill up enough. The heart pumps virtually empty, failing to send sufficient blood supply to other organs. Even after heart action has been turned to normal by medication, the blood flow to other organs may remain reduced for as long as two hours.

Such a reduction in the brain may bring on a stroke with attendant paralysis or mental disturbance. In the stomach, impaired blood flow will cause distention or ulceration. In the kidneys decreased function will follow.

The investigators urged that physicians make every effort to prevent irregular heart action by use of proper drugs now available.

The flowmeter used in the study is based on the principle developed by Dr. Alexander Kolin, UCLA biophysicist. It is connected to computers, of the kind used to guide space rockets, which help to figure the complex mathematics of flow problems.

The research was supported in part by the Ventura and Santa Barbara County Heart Associations.

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