Met Ed officials meet with people at Maytown to discuss radioactive releases

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spokesmen have suggested that it might tend to settle in low-lying, windless areas, like people's basements.

The Met Ed people denied that this could happen. Scientific evidence, Met Ed operations chief Robert Arnold said, shows that krypton gas tends to diffuse, rather than to flow in a dense, amorphous mass.

FUTURE RELEASES

Met Ed may wish to make several future releases of radioactive material into the environment, as part of the continuing clean-up operation.

"We have a problem," Mr. Arnold said, "and it isn't going to go away."

One reason why Met Ed wants to vent the krypton gas, Arnold said, is "so that we can go into the containment building and find out what conditions are like inside. I can't say yes or no to more releases until we know what the situation is."

Another Met Ed spokesman said, "No reactor has ever been damaged the way this one has. We don't know what we're going to find (in the reactor). But the only way we can proceed is one step at a time."

A possible source of future krypton gas pollution is the reactor fuel pins, which may contain trapped gas. If the gas is in there, the company will want to vent it.

ONGOING CRISIS

Met Ed officials expressed some nervousness about the current state of affairs on Three Mile Island. Mr. Arnold mentioned two sources of possible danger: the "mobility of fission products" within the cooling system might lead to their eventual escape, he said. He also said that "we cannot keep the containment building at negative pressure forever," which means that, eventually, gases within the building might escape in an uncontrolled manner.

Controlled venting of the gases now was therefore "safer," Arnold said.

Another Met Ed spokesman privately told this reporter that the circulating system which now keeps the damaged reactor cool "won't last forever. We can't just seal the thing up and forget about it," he added. "The core needs constant attention. Otherwise, there's a possibility that part of it could go critical."

In effect, the Met Ed people were saying that a speedy clean up operation is necessary to insure that TMI will not misbehave again; but also that a speedy clean up will result in releases of small amounts of radiation into the environment.

"Right now," one Met Ed official said, "people want zero radiation from that plant. And that may be impossible."

Met Ed's case for venting the krypton

From Met Ed's point of view, the purpose of last week's public meeting between Met Ed officials and local citizens was twofold: The company wanted to reassure people about the health effects of TMI's March accident. They also wanted to gain public support for their plan to vent krypton gas into the air.

The gas cannot be vented without NRC approval, and it is possible that an environmental impact study will have to be completed before any venting is allowed. Any venting before next spring is considered highly improbable.

In the interim, the NRC and various anti-nuclear groups will probably issue criticisms of Met Ed's plan. We will try to report such criticism as it becomes available.

In the meantime, we are reprinting part of a paper by Keith Woodard, consultant to the Metropolitan Edison Company, defendin the plan to release the gas. The exerpt from Mr. Woodard's paper follows:

With one exception, most of the radioactive gases originally held up in the containment building have decayed in the eight months since the accident. The exception is krypton-85 [Kr-85] which is a noble gas with a long half-life; therefore, it disappears by decay very slowly. The remaining Kr-85 constitutes less than 1/1000 of the original inventory of all noble gases in the containment.

Since Kr-85 will not soon decay, various studies have been made to determine the most feasible method for its removal so that the recovery effort inside the reactor building can proceed. Our job in this effort has been to help compute the potential additional radiation dose if the krypton were to be released in a controlled manner to the atmosphere. In the course of our studies, we found that doses could be minimized if releases were controlled from hour-to-hour based on continuously updated information on the dilution potential of the atmosphere.

Many computer simulations of this controlled procedure were made using historical weather data. We determined that the additional doses due to this controlled release at the location of the highest exposure would be about 0.1 millirem whole body and 5 millirem skin dose. To put these doses in perspective, one should consider dose objectives required by the NRC for the normal operation of nuclear power plants. The 0.1 millirem whole body dose is 50 times lower than the 5 millirem NRC dose objective and the skin dose of 5 millirem is three times lower than the 15 millirem objective. The poulation dose would be less than one person-rem throughout the 50 mile radius around the site. Table 1 compares the doses due to controlled venting with other radiation exposures including those that most of us receive each year.

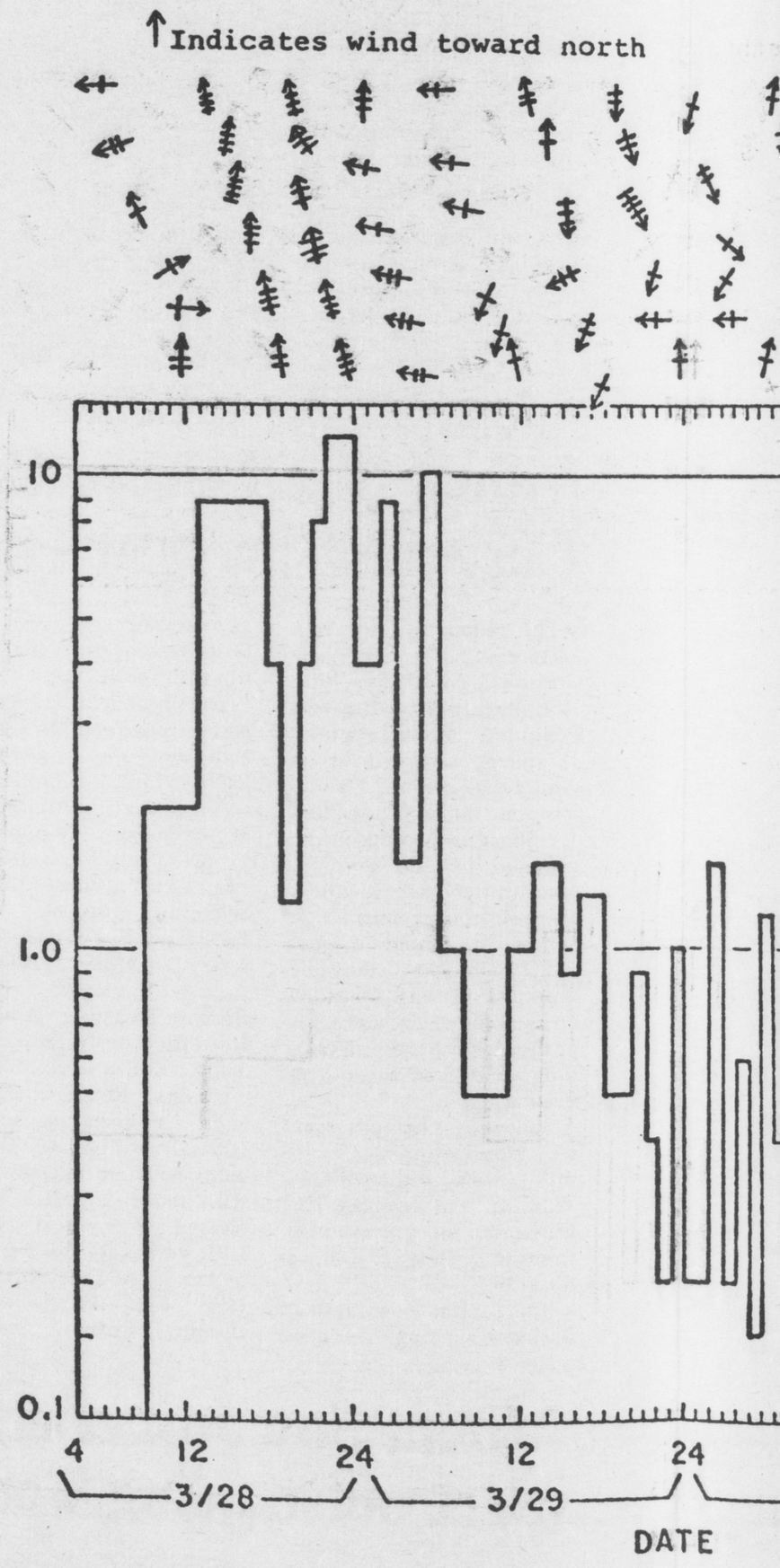
Alternatives to venting the krypton gas have been considered including cyrogenically removing the krypton or compressing it in pressurized bottles. These other methods require that the Kr-85 be stored on site, therefore, there is a potential for sudden release with associated large doses. We calculated that doses for such an accidental release could be as high as 4090 millirem beta skin dose and 49 millirem whole body dose.

I would like to describe briefly how the venting would take place. First of all, we have good samples of what is inside the reactor building. The venting system will carefully meter the proper amount to be vented via the purge system which has a maximum flow rate of 1000 cubic feet per minute. At this flow rate only a very small fraction of the 2 million cubic feet of volume inside the building is released each hour. One to two months will be required to slowly release the gases.

On the way out the gas will pass through a series of filters to assure that only the Kr-85 noble gas is released. Radioactive content will be monitored by two independent sensors. A high radiation signal will automatically close the dampers.

The operators will use readouts from a computer to determine the proper release rate. The computer updates this information automatically each hour based on automatic sampling of measurements from the meteorological tower. All releases will be made from the plant vent stack that can be seen on the east side of the reactor building.

Releases from this elevated point help to minimize doses because of the higher elevation of the release. Finally, radiation monitors around the plant will be used to confirm that very low doses are indeed being maintained in the environment.



This chart shows the relationship between time, wind direction, and amount of radiation released from TMI last March.

Date and time of day are indicated across the bottom of the chart.

The arrows represent wind speed and direction. An arrow pointing up indicates wind blowing toward the north. South is down, left is east, and right is west, as in a conventional map. Each bar on an arrow indicates 3 miles per hour of wind speed.

Births

LARRY, (Bonita Ober), R3 Mount Joy, a son, at General Hospital.

HAMMILL, Mrs. and Mrs. James, (Nadine Shirk), 36 S. Chestnut St., Marietta, a daughter at Columbia Hospital.

MATIAS, Mr. and Mrs. Jorge (Karin Berkheiser), Mount Joy R3, a son at General Hospital.

ZURIN, Mr. and Mrs. Kenneth (Bernice Miller), Mount Joy R3, a son at St. Joseph Hospital.

Wittell Poem

THE MEANING OF CHRISTMAS

Born of the fear of man and his concern;
Blind to a law he could not understand,
Lest from the south his sun-god would not turn
To smile again upon the darkened land;

By dint of heathen prayer and rites unknown,
Intent some spirit power to invoke,
He culled the greenliest of all things grown
From stands of cedar, hemlock, pine and oak.

If, haply, of his wont ye doubt, then say
What mean the colored balls on Christmas trees
If not fruit glorified?—a hint to lay
At the door of this most eld of mysteries.

What if by faith involved in later creed
Our ritual it sublimate today?
Leastwise intransigence to peace we cede
And cark and care are cleansed and washed away;

While grudge and bitterness—if such there be—
Rub bleary eyes to pause and look upon
The countenance of man who smiles to see
The miracle of a redeeming sun.

Chester Wittell