

What Was the Cause?

Speculation Rife In Nuclear Mishap

By Bill McAda
Sentinel Reporter

GERMANTOWN — What caused the prototype of a nuclear reactor to suddenly explode on the night of Jan. 3, 1961, in Idaho Falls, Ida., taking the lives of three military men who were doing a routine reassembly job on the experimental unit?

Officials at the Atomic Energy Commission here frankly admit they don't know beyond speculations, though a committee of experts probed the accident for months.

But there are strong indications that a moment of deadly horseplay atop a reactor, apparently known by the AEC to

be faulty might have brought the blast and deaths, the first fatalities in the history of U.S. reactor operations.

There was fear in the AEC that repercussions might jeopardize the future of the experimental program, one official said this week.

Word of the accident spread fear of radioactive dangers to the 37,000 citizens of Idaho Falls though the town is 40 miles away from the isolated scene of the National Reactor Testing Station.

Repercussions still are occurring, though they are not stimulated by the awesome power of the unleashed atom. They are born of a brief letter to the editor of employes' newspaper published at the Germantown installation.

The accident occurred about 9 p.m. in a small building which housed one of the 53 experimental reactors under test on the big NRT Station. It was 9 p.m., less than three hours be-

(Continued on Page A-7)

● AEC Mishap

(Continued from Page 1)

fore the regular night operating crew was scheduled to take over operation of the reactor.

The direct cause of the accident "clearly appears to have been manual withdrawal by one or more of the maintenance crew of the central control rod blade from the SL-1 (the reactor) core considerably beyond the limit specified in the maintenance procedure."

These are the words of Curtis A. Nelson, director of the AEC's Division of Inspection and chairman of the fact-finding team. A news release of the team's finding was released in late September, but it apparently was overlooked by larger newspaper in the area.

Nelson's statement means

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simply that the carbon rod which controls the number of atoms which can be split by the reactor was moved far enough to allow generation of a chain reaction.

But what caused it? Why did a military maintenance crew thoroughly trained and experienced in maintaining the reactor make a mistake which they undoubtedly knew would bring death?

"There is insufficient evidence to establish the actual reason or motive for such abnormal withdrawal (of the rod)," Nelson said.

Nelson's report offers two possible alternatives, then immediately rules out one. This leaves a second which is couched in vague words which have given rise to speculation by AEC sources that an instant of horseplay was the devil.

The discarded theory suggests inadequate training of the three enlisted men. But, in the same sentence of the report, the same fact-finders said that it "has no reason to change its previous conclusion that the training of the military personnel for this maintenance operation was adequate."

The second theory is called human error and here comes the mumbo-jumbo.

The report defines human error as "involuntary performance resulting from unusual or unexpected stimulus and mal-performance motivated by emotional stress."

What does that mean? E. B. Johnson, a member of the investigating team was asked. Could it be that one of the men poked another in the ribs causing a deadly reflex action?

"We don't think so," Johnson said. But he admitted there was this possibility, though remote.

Johnson explains the confusing theory this way:

"We haven't the faintest idea of what caused the rod to be removed so rapidly," he said.

"We (the investigators) stretched like the devil to postulate every conceivable thing that might have happened to, bring about this explosion."

An intriguing aspect of the investigation indicates that the reactor, a small portable device the Army was developing as a power supply in remote areas, may have been faulty, a fact apparently known to the AEC before the blast.

According to a memorandum from Nelson to A. R. Luedecke, general manager, "It is known that certain undersirable conditions had developed with respect to the reactor and its operation. . . ."

The memorandum states the undefined "conditions" had their origin "in the design of the reactor and others in the cumulative effects of reactor operation, which do not now appear to have had a direct relation to the immediate cause of the incident."

"The board observes, however, that the over-all effect of these conditions produced an environment in which the possibility of an incident may have been increased beyond that necessary," Nelson said.

Two of the men reassembling the unit were killed instantly. The third died about two hours later of head injuries, the Associated Press reported on Jan. 4, 1961.

According to the AP report, "crews found high levels of radiation and were able to recover only one body immediately."

The fact-finders studied the medical evidence of injury to the three men and recreated their apparent positions when

the explosion occurred. It indicates that the men were within touching distance of each other.

"It appears quite plausible that the shift supervisor and the other regular member of the crew were located on top of the reactor vessel at the time of the explosion. The third member of the crew, a trainee, might have been partially over the reactor top or close to the edge of the reactor top," the report says.

The report offers the hypotheses "that the supervisor was in a crouched or squatting position which would be normal for manipulating" the equipment.

Repercussions still are being felt locally because of the publication of a letter in a non-official publication printed for AEC personnel at the Germantown installation.

Nobody would comment on it officially, but one AEC source said the editor of the publica-

tion has been criticized by AEC authorities for printing the letter thought to be in poor taste.

James Cannon, deputy chief of the AEC's News Service Branch, declined to comment on this aspect of the incident, but did say he thought the letter tended to put the accident in the category of a joke.

The editor could not be contacted to discuss the matter.

Killed in the unique explosion were two Army enlisted men and one military man not immediately given rank or branch of service. It is believed he was an enlisted man in the Air Force.

They were John A. Byrnes, Utica, N.Y.; Richard Leroy McKinney, Kenton, Ohio; and Richard C. Legg, Rescommon, Mich. Byrnes and McKinney had wives living in Idaho Falls.