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'Credibility Gap' In U.S. Nuclear Materials Controls

The explosion of an atomic bomb by the Chinese Communists in 1964 triggered a secret re-examination of U.S. nuclear policies that exposed a serious "credibility gap" in the way the nation kept track of bomb-grade nuclear materials in the hands of private companies.

The "gap," as described in a series of documents released yesterday by the Energy Research and Development Administration, was that there was "no method" to detect a U.S. company which shipped more than a contracted amount of nuclear material out of the country in "collusion" with a foreign customer.

The Chinese explosion, named "Chicom I" in the ERDA documents, led to a re-evaluation of U.S. practices which relied heavily on the honesty of U.S. companies and the feeling that since highly enriched uranium was worth \$10 a gram, the losses would be minimal.

One year later, a U.S. company with close ties to two foreign governments reported that it had "lost" enough uranium to make at least 10 nuclear weapons. At that point, the CIA, the FBI and ERDA's predecessor, the Atomic Energy Commission, launched investigations to see whether the "gap" had been used. The question has never been completely answered.

ACCORDING TO the memos, which were released upon request by The Washington Star and by several other news agencies, the AEC investigators had suspected since 1960 that there were serious losses of highly enriched uranium that was being processed at a company called the Nuclear Materials and Equipment Corp. (NUMEC) at Apollo, Pa., located 30 miles northeast of Pittsburgh.

However, according to memos from the files of Howard C. Brown Jr., then the AEC assistant general manager, the agency did not begin to press NUMEC about its losses until one year after the Chinese explosion.

The bomb had raised the specter of what Brown referred to as the "Nth country problem," or the possibility that a number of countries would be willing to take substantial risks to join the nuclear club (The United States initially feared that the metal in the Chinese bomb came from U.S. sources, until aerial reconnaissance revealed that the Chinese had completed their own uranium enrichment plant).

Officials worried about a number of NUMEC's foreign business ties, including dealings with approved French firms and NUMEC's position as "sales agent for the government of Israel" working through Israel's

The company's export records, compiled in the case, showed that no quantities of highly enriched uranium were shipped to Israel. However, several shipments were made during the period to NUMEC's French affiliates.

During the mid-1960s, the French were known to have a number of secret nuclear agreements with Israel, including the joint operation of a plutonium-producing nuclear reactor in Israel.

During September 1965, according to the documents, Brown and other AEC officials pressured NUMEC's owner, Zalman M. Shapiro, to dig up a burial pit at the plant site.

FOR SEVERAL months, Shapiro had assured the AEC that most, if not all of the lost material, had been mistakenly buried as wastes in 1963.

At one point in the meeting, according to one AEC memo, "Dr. Shapiro became emotionally overcome" and the meeting was adjourned for 10 minutes to allow NUMEC's owner to "collect his thoughts." Afterwards, Shapiro admitted he was worried about suffering financial losses if his major customer, Adm. Hyman Rickover, head of the Navy's nuclear submarine program, took his business elsewhere.

The memo adds that Shapiro then described the dilemma he was in: "He (Shapiro) reported that he felt confident that the 1963 pit contained the missing material, he was reluctant to gamble that it might not be there. We (the AEC) pointed out that he was asking the commission to gamble that it might not be there, thus placing the commission in an intolerable position."

Finally, the AEC prevailed and Shapiro was forced to dig up the pit. In the fall of 1965, according to AEC files, Shapiro was only able to locate about 10 percent of the highly enriched uranium that he had hoped to find in the pit.

In November of that year, a special AEC survey team scoured the plant and concluded that 382 pounds of highly enriched uranium was

real plant operations could not account for 206 pounds of the loss, the team reported.

In a letter accompanying the survey team's report, the AEC blamed the loss on an "apparent lack of supervisory awareness" of proper control techniques.

"ALTHOUGH IT cannot be stated with certainty that theft or diversion did not take place, the survey team found no evidence to suggest those possibilities," the report added.

NUMEC eventually paid the AEC a total of \$1,344,000 for the bomb-grade uranium that was never recovered. According to one AEC calculation, to accumulate that amount of loss through normal plant operations, NUMEC would have had to run for 60 years. NUMEC was founded in 1957.

"Collusion" between NUMEC and any of its overseas customers was never proven, although the CIA has told congressional investigators that it has "strong opinions" that someone at Apollo may have somehow diverted materials to Israel.

The FBI investigated Shapiro's ties with Israel and decided he was not a foreign agent.

One of the questions raised by the new documents is why, if the AEC had information as early as 1960 of the losses at NUMEC, did the agency wait until 1965 to investigate.

In a memo to his files, Brown asserted that, "It appears that responsible personnel apparently believed that they had less authority and power to force improvement than, in retrospect it appears, they actually did."

Prior to the Chinese explosion, the memo notes, there was widespread opinion within the AEC that "The commission's involvement in the protection of these strategic materials did not extend beyond the contract licenses' ability to pay for the losses."