

**From:** Edward Greisch [edwardgreisch@qconline.com]  
**Sent:** Monday, July 11, 2011 11:58 PM  
**To:** Rulemaking Comments  
**Subject:** Recycling nuclear fuel Good idea

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OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

We don't recycle nuclear fuel because it is valuable and people steal it. The place it went that it wasn't supposed to go to is Israel. This happened in a small town near Pittsburgh, PA circa 1970. A company called Numec was in the business of reprocessing nuclear fuel.

[I almost took a job there in 1968, designing a nuclear battery for a heart pacemaker. [A nuclear battery would have the advantage of lasting many times as long as any other battery, eliminating many surgeries to replace batteries.]]

Numec did not have a reactor. Numec "lost" some nuclear fuel. It wound up in Israel. The Israelis fueled their nuclear short cycle plutonium-239 plant to make their nuclear weapons by stealing nuclear "waste." It could work for any other country, such as Iran or the United States.

It is only when you don't have access to nuclear "waste" that you have to do the difficult process of enriching uranium. Numec is no longer in business. Terrorists can't compete with Mossad and Israeli dual citizens who are CEOs of companies like Numec. Israeli nuclear weapons are exact duplicates of American nuclear weapons. Since the US can't and shouldn't discriminate, the reprocessing of nuclear fuel in the US stopped. That was the only politically possible solution at that time, given that private corporations did the reprocessing.

My solution would be to reprocess the fuel at a Government Owned Government Operated [GOGO] facility. At a GOGO plant, bureaucracy and the multiplicity of ethnicity and religion would disable the transportation of uranium to Israel or to any unauthorized place. Nothing heavier than a secret would get out.

The problem is political: The Republicans think GOGO plants are socialist/communist, which is nonsense. If a COCO [Contractor Owned Contractor Operated] plant is the low bidder, it is inevitably a front for Israel or some other country. We could send our spent fuel to France to be recycled.

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Government agencies investigated missing uranium, NUMEC

By Mary Ann Thomas and Ramesh Santanam

VALLEY NEWS DISPATCH

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Editor's note: This the first of three parts on the history of the Nuclear Materials and Equipment Corp. Part II will appear Monday and Part III will appear Tuesday.

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The colorful history of the former Nuclear Materials and Equipment Corp. is rich with intrigue and mystery and unwinds like the plot of a Tom Clancy novel.

There are stories of missing uranium, allegations of illegal shipments to Israel, FBI sleuthing, meetings with possible Israeli spies, talk of special "encoded" telephones the FBI could not tap, concern by the CIA, congressional inquiries and interest from the White House.

The reason for all the cloak-and-dagger actions was an innocuous acronym - MUF.

MUF stands for "Materials Unaccounted For," and, in the case of NUMEC, referred to large quantities of weapons-grade uranium that went missing from the Apollo plant in the 1960s. *[Wrong. It couldn't be weapons grade uranium. The US uses only plutonium to make bombs. A uranium bomb is primitive, lacking in sophistication, overweight and inefficient. Uranium bombs are for countries that are new to the club.]*

The unaccounted for uranium piqued the curiosity of the FBI, the CIA, Congress, the Atomic Energy Commission (AEC) and its successor, the Nuclear Regulatory Commission (NRC), and the Johnson, Nixon, Ford and Carter presidential administrations.

"Each White House took this and treated it like a hot potato," said Henry Myers, a former aide to the late U.S. Rep. Morris Udall, D-Ariz., who led a congressional probe into the affair in the late 1970s.

"I suppose there were too many 'maybes' because it happened and maybe because it was too hard to prove," Myers said.

NUMEC paid almost \$930,000 in fines to the AEC for the lost uranium.

What actually happened to the uranium still isn't known - at least not to the public. But it certainly caused much speculation.

Diversion theory

The most popular theory, at least among federal investigators: that then-NUMEC President Zalman M. Shapiro, a staunch supporter of Israel, secretly diverted special nuclear material (uranium) to Israel so that nation could have "the bomb."

In a recent interview with the Valley News Dispatch, Shapiro, 82, refused to talk about the allegations or the numerous federal investigations of himself and his upstart nuclear fuels company.

But in previous statements to federal officials, Shapiro adamantly denied he or anyone else at NUMEC gave Israel nuclear material.

"Let me state emphatically that I have never participated in any theft or diversion of special nuclear material," Shapiro told Udall and Interior Committee aides in December 1978. "I have no knowledge or information concerning any such diversion. Furthermore, I am not aware of any factual basis for the repeated allegations that 'material unaccounted for' at NUMEC was caused by an illegal diversion."

The FBI and its director at the time, J. Edgar Hoover, were suspicious nonetheless.

The diversion theory held by federal investigators prompted:

- \* Repeated FBI investigations, including wiretaps of Shapiro's home and work telephones, and the shadowing of Shapiro by federal agents;
- \* A Hoover request to the AEC to revoke Shapiro's top-secret security clearance;
- \* A clash between the AEC and the Nixon administration over Shapiro's attempt to obtain an even higher security clearance;
- \* An inquiry by Udall's House Committee on Interior and Insular Affairs;
- \* Claims by Carl Duckett, then-CIA deputy director for science and technology, that President Lyndon Johnson ordered administration officials to keep the entire issue quiet.

Investigations aplenty

Many investigations were launched to find out whether Shapiro illegally diverted uranium to the Israelis. Although several federal officials had their suspicions, nothing could be proven.

Recently declassified FBI documents reveal the extent to which the bureau went - meticulously tracking Shapiro's movements, seeking informants, interviewing NUMEC workers and checking the backgrounds of various people associated with Shapiro or NUMEC.

As Hoover pointed out in a September 1969 memo to AEC Security Director William T. Riley, there was "substantial surveillance coverage" of Shapiro.

The FBI documents show that not only did the bureau essentially shadow Shapiro's every move but agents were concerned when he did not show up at scheduled venues.

Memos from special agents-in-charge, detailing their surveillance, showed agents staked out hotels where they expected Shapiro to show up and kept several FBI offices abreast of the case.

One memo, dated Oct. 22, 1968, from a Pittsburgh-based FBI agent states: "The Pittsburgh Office ... presently plans to afford subject's residence discreet photographic coverage on 1.../68."

Two days later, there was an urgent message sent to the New York office from Pittsburgh: "Subject departing Pittsburgh via United Airlines Flight 452, 3:35 p.m., scheduled to arrive Newark 4:36 p.m., this date. No return reservation made and purpose of trip to New York City unknown. New York telephonically requested to afford subject discreet surveillance."

Agents even kept an eye on Shapiro's movements at NUMEC.

"According to reliable sources," a Jan. 30, 1969, FBI memo states, "subject, since the inception of this case, has maintained late hours in his office at NUMEC, Apollo, Pa."

### Suspect loyalties

What fueled the FBI's suspicions were Shapiro's close ties with Israel, which continue to this day. He currently is president of the Zionist Organization of America in Pittsburgh.

FBI documents listed NUMEC as a "sales agent" in the United States for Israel's defense ministry. NUMEC served as a technical consultant and training and procurement agency for Israel in the United States, according to documents in the Morris K. Udall Collection at the University of Arizona library in Tucson.

Federal authorities also had other concerns:

- \* NUMEC and Shapiro, through a connection with the Israeli Atomic Energy Commission, were equal partners with the Israeli government on Isotopes and Radiation Enterprises (ISORAD), which did experimental and commercial work in food irradiation.
- \* NUMEC employed an Israeli citizen, Bernard Cinai (or, Baruch Cinai, according to FBI documents), as a metallurgist.
- \* NUMEC did business with at least a dozen nations, including Japan, Belgium, France, Germany, Spain, England and Israel.
- \* Ephraim Lahav, then-counselor on scientific matters at the Israeli Embassy in Washington, D.C., took numerous visits to NUMEC in the early to mid-1960s.
- \* Four other Israelis visited NUMEC on Sept. 10, 1968, and met with Shapiro to "discuss thermoelectric devices (unclassified)," according to a Sept. 12, 1968, letter from Bruce D. Rice, NUMEC security manager, to Harry R. Walsh, director of AEC security and property management, seeking AEC approval for the visit.

The AEC gave approval for the Israelis to visit NUMEC, according to a Sept. 20, 1968, memo from Walsh to Rice.

The four visitors were: Avraham Hermoni, Ephraim Beigon, Abraham Bendor and Raphael (or, Rafael) Eitan.

FBI and NUMEC documents listed Hermoni as a scientific counselor with the Israeli Embassy; Beigon, group leader of the electronics department in the Israeli defense ministry; Bendor, also in the electronics department; and Eitan, a chemist in the defense ministry.

Hermoni, a Palestinian-born chemist and scientific counselor at the Israeli Embassy from 1968 to 1972, became a senior official at RAFAEL, Israel's armament development authority that, since 1948, has "researched, developed, produced and marketed advanced weapon systems," according to its Web site.

In a nationally syndicated column in September 1987, William Safire called Bendor and Eitan "legendary figures in the world of espionage."

From 1981 to 1986, Bendor, also known as Avraham Shalom, headed Shin Bet, Israel's counter-intelligence and internal security service, according to "Spy Book: The Encyclopedia of Espionage," by Norman Polmar and Thomas B. Allen.

He was removed from that post following controversy stemming from the beating deaths of two Palestinian suspects in custody for hijacking an Israeli bus in 1984. The Israeli president later pardoned Bendor.

Eitan's exploits are legendary.

\* He was a paratrooper in the Sinai Campaign in 1956 and the Six Days War 11 years later, and a commander in the Golan Heights during the Yom Kippur War of 1973.

\* He directed operations at Mossad, the Israeli intelligence service.

\* Along with Bendor, he took part in the 1960 operation that snatched from the streets of suburban Buenos Aires Nazi war criminal Adolf Eichmann, one of the architects of Hitler's Final Solution, and brought the German to stand trial in Israel.

\* He was involved in the case of American Jonathan Pollard. Arrested in 1985, Pollard is serving a life prison sentence for selling classified material to Israel while he was a U.S. naval intelligence analyst.

The Israelis said Pollard worked for neither Israeli military intelligence nor Mossad; he was recruited and run by a government outfit called the Scientific Liaison Unit, headed by Eitan, who was forced to resign when the scandal broke, "but was rewarded with a top state-owned industry job," Safire wrote.

\* Eitan was elected to the Knesset, the Israeli parliament, and served as deputy prime minister and minister of agriculture and environment under then-Prime Minister Benjamin Netanyahu from mid-1996 to mid-1999. He later lost his re-election bid.

News reports stated that, at the time of Eitan's visit to Apollo, he was part of an intelligence unit associated with then-Israeli Defense Minister Ariel Sharon, who now is prime minister.

In their 1991 book, "Dangerous Liaison," Andrew and Leslie Cockburn wrote, "At the time of his visit to Apollo in 1968, Eitan was acting as an agent for Mossad on special assignment to LAKAM ... a shadowy intelligence agency ... born in the 1950s with the express purpose of acquiring nuclear technology by any means."

Soon after the men's visit, 587 pounds of weapons-grade uranium reportedly went missing from NUMEC, according to Udall's papers.

The actual amount is a matter of some debate. Scholars have put the amount between Udall's high of 587 pounds to as little as 132 pounds.