

~~SECRET~~

UNITED STATES DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION

~~CONFIDENTIAL~~

~~SECRET~~

Copy to:

Report of:
Date:

Field Office File #:

Title:

Character:

Synopsis:

July 21, 1977

117-273

ZALMAN MORDECAI SHAPIRO

ATOMIC ENERGY ACT;
OBSTRUCTION OF JUSTICE

Office: Washington Field

Bureau File #: 117-2564

EXEMPTED FROM AUTOMATIC
DECLASSIFICATION
AUTHORITY DERIVED FROM:
FBI AUTOMATIC DECLASSIFICATION GUIDE
EXEMPTION CODE: 25X(1,6)
DATE 10-31-2008
FBI INFORMATION ONLY

Subject interviewed 6/27/77. SHAPIRO denied any knowledge of diversion of special nuclear material from NUMEC and termed the chance of diversion as minuscule. SHAPIRO provided detailed description of NUMEC processes and attendant problems and described losses of special nuclear material as inevitable due to inability to retrieve one hundred percent of the material from processing equipment being used. SHAPIRO also said he was never connected with the unauthorized release of restricted or classified information and to his knowledge never had any contact with any foreign intelligence officer or organization.

(u)
(S)

- C -

DETAILS: AT WASHINGTON, D. C.

~~100-20758~~ 8/21/83
~~60280 BCE/MLT/376~~
6 AMENDED
11/5

JP/GSK/RBG
3
7/21/97
6/16/82

~~SECRET~~

Classified by 9598
Exempt from GDS, Category 2
Date of Declassification Indefinite

~~CONFIDENTIAL~~

This document contains neither recommendations nor conclusions of the FBI. It is the property of the FBI and is loaned to your agency; it and its contents are not to be distributed outside your agency.

~~SECRET~~

b6
b7c

~~CONFIDENTIAL~~

~~SECRET~~

FEDERAL BUREAU OF INVESTIGATION

Date of transcription 7/1/77

1

On June 27, 1977, ZALMAN M. SHAPIRO, Manager of Fusion Power Systems, Nuclear Division, Westinghouse Corporation, Pittsburgh, Pennsylvania, since June, 1971, and a resident of 1045 Lyndhurst Drive, Pittsburgh consented to be interviewed by Special Agents (SAs) [redacted] and [redacted] after they had identified themselves as SAs of the Federal Bureau of Investigation (FBI), Washington, D. C. (S)(u)

b6
b7c

The interview began at about 10:08 a.m. at which time SA [redacted] displayed to Mr. SHAPIRO a standard "Waiver of Rights" form. After reading the form SHAPIRO voiced certain reservations relative to its purpose and was concerned that display of the form implied certain unlawful acts on his part. He was also concerned that affixing his signature to the form and submitting to interview would in some way indicate tacit agreement on his part that he had been guilty of illegal activity. The form and its purpose were discussed with SHAPIRO at great length. Finally, at approximately 10:55 a.m. SHAPIRO elected to discuss the subject of the form and the matter of the requested interview with his attorney. He then made a telephone call to an individual he identified as [redacted] (phonetic), his attorney. After a short discussion between SHAPIRO, his attorney and the above Agents using a telephone conference box, SHAPIRO's attorney suggested to him that he agree to be interviewed relative to the Nuclear Materials Equipment Corporation (NUMEC) and his tenure with NUMEC as its President. (S)(u)

The actual interview commenced at 11:11 a.m. SHAPIRO furnished the following in response to direct questions initiated by the interviewing Agents: (S)(u)

To SHAPIRO's knowledge there was never any diversion of enriched uranium from the NUMEC facility and he termed the chances of any individual or group of individuals successfully diverting such material as minuscule. He denied emphatically that he was in any way connected with or responsible for any diversion. (S)(u)

SHAPIRO noted that NUMEC, like any similar facility, government or commercial, experienced a certain amount of material (S)(u)

Interviewed on 6/27/77 at Pittsburgh, Pa. File # WFO 117-273
by SAs [redacted] and [redacted] AES:smv Date dictated 7/1/77

b6
b7c

This document contains neither recommendations nor conclusions of the FBI. It is the property of the FBI and is loaned to your agency; it and its contents are not to be distributed outside your agency.

~~CONFIDENTIAL~~

~~SECRET~~

~~CONFIDENTIAL~~

~~SECRET~~

WFO 117-273

2

unaccounted for (MUF) during its routine operations. SHAPIRO described a very complex manufacturing process in which the uranium processed by NUMEC, particularly in the production of Nuclear Engine for Rocket Vehicle Application (NERVA) fuel, was put through a multitude of processes during which the material was alternately heated to fantastic temperatures, formed into solids, pounded and crushed to dust, and reformed into dust like spheroids of almost microscopic size. The spheroids were then sized and those not meeting specifications were salvaged and the entire process started over again until the maximum yield of proper sized spheroids was achieved. He noted that all work was done using equipment such as glove boxes, electric arc furnaces, vast mazes of pipes, pumps and valves and hundreds of filters. Losses of material were inevitable due to the inability to retrieve one hundred percent of the dust like material from the equipment being used. Material clung even to the clothing and shoes of the workers. In many instances it was impossible, impractical or uneconomic to even to attempt recovery of material. (S)(u)

Uranium was processed by NUMEC in batches varying in size from a few grams to many kilograms. Again because it was impractical and uneconomical to clean up and recover material after each batch, a continuous production process was used by NUMEC similar to that used at the government facility at Oak Ridge. It was likewise impractical and uneconomic to attempt recovery of material from waste and scrap on a batch by batch basis, a process which required all equipment used to be dismantled, so it was the practice of NUMEC to blend its scrap and waste and then insofar as possible recover uranium at the conclusion of "campaigns," a term used generally to signify contract periods. (S)(u)

SHAPIRO emphasized that the matter of significant diversion of special nuclear material at NUMEC was out of the question and added that Atomic Energy Commission (AEC) officials had, in fact, assured him personally that NUMEC MUF compared favorably with MUF experienced throughout the rest of the industry. (S)(u)

~~CONFIDENTIAL~~

~~SECRET~~

~~CONFIDENTIAL~~

~~SECRET~~

WFO 117-273

3

During November, 1965, NUMEC MUF continued to be a major concern and accountability was a focal point of AEC interest in and criticism of NUMEC. In addition to the MUF occasioned by the production process other subjective factors entered into MUF such as problems in instrumentation, assaying and weighing of material and even differences of opinion between shipper and receiver as to the weight of the material involved. The AEC was insisting that NUMEC's accountability procedures be improved and NUMEC had been looking high and low for a recognized expert in the field. NUMEC approached the AEC for recommendations of individuals who might assist the company with its accountability problems. Among a few individuals suggested by AEC was [redacted] an AEC employee who had participated in an extensive inspection of the NUMEC facility during November, 1965. At that time it was the understanding of SHAPIRO and other officials at NUMEC that the AEC inspection as well as all paper work attendant to the inspection, including a final report, had been completed. It was particularly the understanding of NUMEC officials that [redacted] had completed his input into the final report. [redacted] was made an offer of employment by NUMEC, an offer he later accepted. NUMEC's offer of employment to [redacted] was solely a follow-up of AEC's suggestion of his name as a recognized accountability expert and an effort to improve NUMEC accountability procedures. It was in no way an effort to influence [redacted] findings with respect to the inspection of NUMEC by AEC nor an effort to mute the AEC report of the inspection. (S) (u)

b6
b7c

SHAPIRO was never responsible for nor in any way connected with the unauthorized release of restricted or classified material to any individual not authorized or cleared to receive the same. (S) (u)

[At no time was SHAPIRO aware of being in contact with foreign intelligence officers or organization. However, (u) at one time NUMEC formed a partnership with the Israeli government which resulted in the formation of a company known as Israel-NUMEC Isotopes and Radiation Enterprises (ISORAD). At that time there were ongoing projects in many areas looking toward the use of irradiation for the purpose of preserving food and sterilizing medical supplies. Such methods were already in use in Europe but in the United States the Food and Drug Administration (FDA) was opposed to such practices. SHAPIRO viewed it as a reasonable business opportunity and by joining with the Israelis in the ISORAD effort regarded it also as an opportunity to proceed with the venture without interference from the FDA. (S) (u)

~~CONFIDENTIAL~~

4

~~CONFIDENTIAL~~

~~SECRET~~

~~CONFIDENTIAL~~

~~SECRET~~

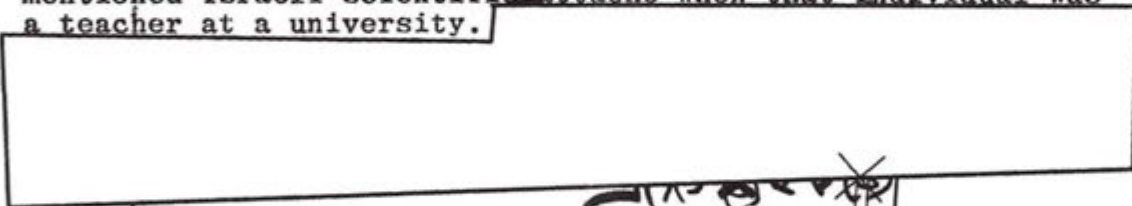
WFO 117-273

4

The Israelis sold considerable quantities of citrus fruit to West Germany. Fruit flies infesting the fruit had been combatted by dipping the fruit in biphenyl but the West Germans had determined that biphenyl collected in the system and was also regarded as possibly carcinogenic and for this reason informed Israel that fruit dipped in biphenyl would no longer be accepted. (S) (u)

ISORAD was a fifty-fifty partnership between NUMEC and the Israeli government in the person of the Israeli Atomic Energy Commission. Business between the Israelis was generally conducted by board meetings or in meetings between SHAPIRO and the scientific attache at the Israeli Embassy. SHAPIRO could not recall this individual's name. When NUMEC merged with Atlantic Richfield Company, Atlantic Richfield became nervous over the ISORAD connection with Israel because Atlantic Richfield also owned Sinclair Oil Company which was doing business with Algeria. They decided to give up ISORAD and SHAPIRO is under the impression that Atlantic Richfield gave its ISORAD stock back to the Israelis. (S) (u)

SHAPIRO continued that he had met the previously mentioned Israeli scientific attache when that individual was a teacher at a university.



(C)

b1

According to SHAPIRO all work done at NUMEC was unclassified. Foreign born scientists worked at NUMEC and for a period of time NUMEC had an agreement with a Japanese firm, name unrecalled, to train some of its personnel. Also, a large number of foreign scientists from Great Britain, France, Germany and Israel visited the NUMEC on tour. All foreign scientists working at NUMEC and all who visited in any capacity were cleared through the AEC. (S) (u)

SHAPIRO noted that NUMEC was operated under both AEC and U.S. Navy security requirements and the facility was afforded frequent inspections by both the AEC and the Navy. SHAPIRO recognized certain deficiencies in the operation of NUMEC and continually sought guidance from the AEC but the requested guidance was never forthcoming. AEC was always quick to criticize NUMEC for its deficiencies, which in most instances were brought to the agency's attention by NUMEC itself, but AEC never did provide guidance or standards so frequently requested by NUMEC. (S) (u)

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

~~SECRET~~

~~CONFIDENTIAL~~

~~SECRET~~

WFO 117-273

5

At the conclusion of the interview SHAPIRO wondered when the matter of NUMEC would finally be laid to rest. He recalled that the AEC and the United States General Accounting Office had made in depth studies of the situation at NUMEC and he personally had been interviewed at great length by AEC officials. This all occurred at a time when records and memories were fresh. SHAPIRO questioned first, the reason for additional inquiry into the matter of NUMEC and second, the ability of anybody to reconstruct, in detail, the situation at NUMEC ten years ago. (S) (u)

6*

~~CONFIDENTIAL~~

~~SECRET~~