

January 20, 1994
**Phone Interview with Edwin Kintner by Avner Cohen
and Marvin Miller**

Citation:

"Phone Interview with Edwin Kintner by Avner Cohen and Marvin Miller", January 20, 1994, Wilson Center Digital Archive, From the personal collection of Avner Cohen.
<https://wilson-center-digital-archive.dvincitest.com/document/116880>

Summary:

Transcript of a phone interview with Edwin Kintner by Avner Cohen and Marvin Miller. Edwin Kintner (1920-2010) was a distinguished nuclear engineer and senior staff member of the US Atomic Energy Commission (AEC) through the 1960s and 70s who participated in at least two US inspection teams sent to the Dimona nuclear facility. Kintner recounts how thoroughly he and his partners searched the Dimona site for evidence of plutonium reprocessing activities and expresses shock upon learning that he and his team had been fooled all along.

Credits:

This document was made possible with support from Carnegie Corporation of New York (CCNY)

Original Language:

English

Contents:

Transcript - English

Phone Interview with Edwin Kintner[1]

Interviewers: Dr. Avner Cohen and Dr. Marvin Miller

Dr. Marvin Miller: The book and uh the [Pierre] Péan book?[2],[3]

Edwin Kintner: No, I haven't seen them.

Miller: Oh, I see. Well especially the [Seymour] Hersh[4] book probably would be very interesting for you to look at because they do quote [Floyd] Culler [5] extensively and have some very interesting comments to make. But maybe I should begin by asking you . . . according to our information you were on the last two inspection teams. That is '68 and '69.

Kintner: I thought they were the first two. I mean I don't, I, we didn't know of any previous inspection having been made. Now, there may have been but if so it was covert and wasn't given to us, but I was on the two teams, yes, that . . . I don't remember the years but we thought we were the first to go in and then again next year we thought that was the second year.

Miller: I see . . . I see that's quite interesting because there were, I think six . . . six inspections in total. Which dated back . . . I think the first one was '62?

Dr. Avner Cohen: The first one was '61, but this one was more . . . political. It was with prominent, very prominent scientists like Eugene Wigner[6] and [Isador Isaac] Rabi.[7],[8]

Kintner: Oh yeah, well . . . You know, we were heavily briefed by the CIA and given every bit of information that anybody had from any previous information, and satellites and so forth and nothing of that was ever mentioned to us, so it would seem to me what you just said was true . . . that there were people over there who made in effect political visits, asked questions, looked around but not with the specific goal of examining technical capabilities.

Cohen: No, no, no [excised]. I think from 1964, under the leadership of Culler, there were visits every year, usually it was either [in] March or April, [excised]. Now what's interesting is that [excised] . . . there was someone who was with you in '68, that is to say George Pleat.[9]

Kintner: George Pleat. Yeah, but I was there with the first Culler visit. I am just telling you what I know and believe.

Miller: Right.

Kintner: There were only two such visits, and Culler, and I, and Pleat were on both of them.

Miller: I see, you were on . . . Culler was on the '69 team?

Kintner: Well, I don't know what years they were, it was earlier than that.

Miller: Uh huh.

Kintner: I can't even tell you what years it was. It was a long time ago.

Miller: Okay, but according to the cable traffic that we have, for example, the last inspection which took place in '69, there was a team which consisted of you and Pleat and Edward Nicholson[10] of Oak Ridge [National Laboratory][11].

Kintner: Yeah, now that one, I remember that. I remember with Pleat, we almost got killed that night with Pleat taking off from Dimona[12]. Pleat was an old Navy pilot. He used to fly off carrier decks.

Miller: Right.

Kintner: And then a single engine aircraft came down to take us out of Dimona, the air strip was sand; it was lighted with kerosene torches along the side. The plane was overloaded because there was a limousine was supposed to come down and take our baggage back and it didn't come, so all the baggage was on the plane as well as the passengers. Pleat was sitting up with the pilot. We didn't clear the end of the runway by more than two feet. I mean, that was really the thrilling part of the whole thing.

Miller: I see. But on that visit [1969] Floyd Culler was then not with you?

Kintner: That is not my remembrance and here you guys may be a lot further than I am. I remember two trips; Culler and Pleat were on both of them. The first trip was with Culler as the leader and it was my understanding that that was the first, at least [the first] technical trip that went into Israel. But there may have been other visits by covert agents or whatever. But that was the first trip, that as far as I knew, anybody every made to go into Israel.

Miller: I see, but was this fellow Edward Nicholson with you?

Kintner: I don't remember him at all. When I saw his name in that dispatch that was the first I ever knew about it.

Miller: I see.

Kintner: There was a man from Oak Ridge who went along who was an excellent translator. But I don't even remember his name.

Miller: I see. I see. So your recollection is that on both trips that you were on Floyd Culler was with you?

Kintner: Right.[13]

Miller: I see. I see. That's interesting too. Now on these trips you said you were briefed in advance. There must have been some ground rules about the inspection. In other words, was it sort of an arrangement where you went from place to place at the site and conducted measurements and read dials or such? Was all of this sort of agreed upon in advance, exactly what you would do?

Kintner: There was an agenda in advance. And first of all to the sites, for example we went to Hebrew University[14] and so forth as well as Dimona and the . . . and that . . . we were supposed to be there. As far as anyone knew, we were to be technical

experts, advising Israelis on their total scientific programs. That was the cover anyway. Nobody one ever raised any questions about it, although I think a few people, probably the director at Dimona, and a few others knew that that was not the case. But nevertheless . . .

Cohen: [excised]

Kintner: So we were walked through all the laboratories to ask question of the people as they worked there. Laboratory desk and tables . . . and learned more about biology and various other things than that we needed to know.

Miller: I see, so you went . . . so these both trips that you were on were not exclusively at Dimona?

Kintner: Oh no.

Miller: I see.

Kintner: Oh no. We went to . . . especially universities and a couple other laboratories. There is a laboratory near the seacoast and I've forgotten the name of it now.

Cohen: [Interrupting Kintner] Soreq? Soreq?

Kintner: What's that now?

Cohen: Soreq. Nachal Soreq?[\[15\]](#)

Kintner: Yes. And we went there too and spent a whole day wandering around in that laboratory. Two reasons, I guess, one being the idea of the cover, namely we were inspecting all the scientific program in order to give some advice, and second because there was some thought that some work associated with weapons could be going on at those major laboratories.[\[16\]](#)

Miller: I see, so how much time did you actually spend at Dimona?

Kintner: A full day.

Miller: I see, on both visits?

Kintner: Both visits, each time we spent a full day.

Miller: And who was your . . . did you have a sort of Israeli host or guide at Dimona?

Kintner: Yeah, the Israeli host at Dimona was the laboratory director.

Cohen: Do you recall his name?

Kintner: I'll never forget, he had a Peugeot which he was very proud which had a leveling device. I mean depending on how many passengers were in the . . . blow-up the springs in the rear of the car and level it out. He was very, very proud of that and he drove us around wherever we wanted to go.[\[17\]](#)

Miller: I see. In other words you would get in the car and say you'd like to go here and there and he'd just take you where you wanted you'd say you wanted to go?

Kintner: Right.

Miller: I see. But was the focus mainly on the reactor? I mean, did you know about other facilities that you could ask to go to?

Kintner: We did. We did all of that. We went to warehouses, we went to places where they were building sanitary systems, and as well as the reactor. George Pleat and I, as a matter of fact, one night just about dusk with flashlights we climbed down fifty or sixty feet down into a place, a tank, a storage area for radioactive liquid. Carried with us a counter and measured the activity there and we really, it's not that big a place. We really went into every aspect, every site, every building that we wanted to and I think covered it with a fine tooth comb.

Miller: I see.

Kintner: I'm talking about Dimona now.

Miller: Right.

Kintner: We went into the laboratory, into the reactor; we went into the laboratory . . . the reactor control room. The reactor was shut down when we were there so went out on the operating floor. We were shown the fuel pool and counted the elements in the fuel pool and made a seaman's eye estimate of the amount of radiation burn up that it had because we . . . you know, the blue color.

Miller: Right, the Cherenkov.

Kintner: The Cherenkov radiation.[\[18\]](#)

Miller: I see. And what, by the way, did you conclude about the burn up?

Kintner: Well, we concluded that it was burned up enough and made some calculations regarding the amount of plutonium had been in it and with that much radiation and that much fuel elements enough plutonium for one or two weapons.

Miller: I see. Because it's come out of course since the so called Vanunu . . . are you familiar with that business?

Kintner: No.

Miller: Oh well...in 1986, the London Times published on the front page . . . Sunday Times . . . a story about these disclosures.[\[19\]](#) This guy [Mordechai] Vanunu was a technician at Dimona and he had been fired and he left Israel, went to Australia and eventually came to England. And he had taken . . . during the time . . . just before the time he left . . . sixty photographs of the activities inside the building, including the reprocessing plant, which had been of course had been long suspected but no one had any hard evidence apparently of it. And he took pictures of models of weapons and he told a very authoritative story. I mean, everyone really believes what he said was true so, that was our first detailed public information . . .

Kintner: What year was that?

Miller: October '86.

Kintner: That is, of course, a long time after we were there.

Miller: Right, right. But let me read you something Culler said in this book by Hersh. He said, "Culler was far more disturbed to learn that by 1960 the C.I.A.'s photo interpretation team had concluded that a site was being [excavated] at Dimona for a chemical reprocessing plant and had even attempted to measure the amount of dirt being scooped. Such intelligence had not been provided to him, he said, and should have been." So one gets the impression that not all the relevant information about what the [U.S.] government knew was being provided to the people on the team because apparently this reprocessing plant started operation in '66, so when you were onsite for your two visits this reprocessing plant was already operating.

Kintner: Bullshit.

Miller: Uh huh.

Kintner: Now, you know, I'm talking for myself.

Miller: Right.

Kintner: And I'm surprised at what Culler said . . . because we covered that site well enough to know . . . to see . . . unless there was really some unusual circumstance, like its buried a 1000 feet underground.

Miller: Well, that is just what happened. The reprocessing plant was deep underground.

Kintner: But then there had to be shafts and accesses to it.

Miller: Right.

Kintner: And there was no indication whatsoever that was taking place. What's more . . . there was . . . the second time we went the Israelis showed us a film . . . it too could presumably be fictitious . . . but the film showed the transportation, the large number of trucks, casks, and so forth, carrying the fuel to a port which was then loaded onto a French ship and carried back to France for reprocessing. Now, that we checked with our own C.I.A. "Did you detect? Were you knowledgeable that a ship was coming to France and was material so off loaded in France?" And the answer to that was yes.

Miller: I see, I see . . .

Kintner: Now . . . so in summary . . . let me say . . . my own reaction was that when they questioned if the Israelis could make a weapon once you got a reactor running as well as that one was, and how much fuel had burned in it, there was no question that you could make one. But there was no evidence that we saw of the actual separation. We looked at things like the Potash[\[20\]](#) plant over by the Red Sea[\[21\]](#).

Miller: Right.

Kintner: There was a large amount of satellite information sent to . . . shown to us.

And I was . . . This was my first real contact with satellite photography and I was absolutely flabbergasted at the detail . . . you could count the tiles on the roofs. And we went everywhere we wanted to go on that whole site. Wandered around, asked questions, walked in, go by a warehouse and we'd say "can we go in there?" and somebody would say "well, we got it locked up" but the Director would say "go get the key" and the other man say "take us into this warehouse." So if they . . . if what is being said in these books is true then I am really amazed. And I personally don't believe it. What I do believe is that there was the capability there to make weapons and eventually such weapons were made. There isn't any argument about that. But that we were so badly duped at that time that we didn't have the slightest idea that these things were going on were going on right under our noses. That is a hard thing to accept. Now I don't think I'm quite that dumb.

Miller: Well, well, let me say in your defense, if you will, that we have information from French and Israeli, as well as now American sources that the Israelis went to great lengths. I mean they constructed a reactor simulator so that what was shown in this control room did not reflect the operation of the actual reactor, but was just concocted to give you, so to speak, a false picture of what went on there.

Kintner: But you can't concoct false Cherenkov radiation.

Miller: Oh no, not the pool but I mean . . . apparently they made a control room which indicated, for example, that the reactor power was on the order of 25 megawatts, among other things, and the actual power was well in excess of that. And, they didn't want that to be known, so to speak. So apparently it is well documented, as I said, including we have it now from Israeli sources that the Israelis were . . . you see they were pressured by Kennedy to permit Americans to go in there.

Kintner: I know that.

Miller: And on the other hand they didn't want anyone to know essentially what they were doing. So they worked very hard to make a very elaborate scheme to try to sort of, you know, fool knowledgeable people. They knew the Americans would send over people who were very savvy. I mean, they understood that and as I said it seems to me that they have gone to . . . not just to me . . . the evidence is that they have gone great lengths to deceive the people who were sent in. And as far as the reprocessing plant is concerned, we're fairly sure now on the basis of our own intelligence that actually did start operation in '66.

Kintner: Now where was it supposed to have been located?

Miller: Well, it was in a separate building. I can send you . . . I can fax you a lot of information, which I will, including the London Times story, which indicates that there was a map of the site, a drawing of the site, which indicates that there was a building maybe . . . I don't know . . . a 100 yards from the reactor and the reprocessing plant was underneath. In other words it was sort of a very innocuous looking building . . .

Cohen: Two stories.

Miller: But there was an 80 foot excavation underneath that thing in which they had the reprocessing plant and the plutonium machining and all sorts of other things. So apparently that was operating and according to Culler, again quoted in Hersh's book, they went in that building and Culler said they noted that a lot of the walls seemed to be freshly plastered and painted. And apparently that was, they were plastering and painting over the elevators that went from the level that Culler and company were on down to the reprocessing plant.

Kintner: Well, see I was with Culler all that time and I don't recall anything like that all.

Miller: Uh huh.

Kintner: You know what, it seems to me that there was a lot of super-spy kind of things being dreamed up here. Let me be . . . say again, I have no doubt that the Israelis had the intelligence and the capability and particularly the operation of the reactor to generate a lot of plutonium. I have no doubt they had the technology associated with separating that plutonium out into weapons grade material. But I have a very large difficulty in believing is that as carefully as we were able to go around that facility that processing wasn't done there. Now maybe it was done somewhere else, but once more let me tell you that the satellite photography which was shown us . . . and we spent several days at the C.I.A., it may be true that the C.I.A. was not giving us the whole story either. If that's the case then this country is in serious trouble.

Miller: I think that's . . . there is a strong feeling that that is the case.

Kintner: Why would they do that?

Miller: Well, we [the United States] were very uncomfortable with what the Israelis were up to but on the other hand there was a sort of . . . I don't know what you might want to call it, a gentleman's agreement that we wouldn't push them too hard on this.

Kintner: Let me just make one other point. The President of the United States gets an agreement that states such a study will be made and the C.I.A. on its own decides to not give what it knows to the people who are sent over there.

Miller: Well, it...

Kintner: Doesn't that sound strange?

Miller: It sounds strange but let me indulge you just for another minute and read you from the book. I'll send this all to you, by the way, by fax.

Kintner: Yeah, I'd appreciate it.

Miller: It says here "located a few hundred feet from the reactor, Dimona's chemical reprocessing plant looked, on the surface, very much like an ordinary administration building. A non-descript two story windowless facility, 80 by 200 feet, containing a workers canteen and shower rooms, a few offices, some warehouse space, and an air filtration plant. The building had thickly reinforced walls, not an unusual safety feature given its location. Once inside, there was no hint of what had been dug out below. Apparently to the same dimensions, to a depth of 80 feet, a six level highly automated chemical reprocessing plant. A bank of elevators on the top floor was routinely bricked over before foreign visitors, such as the American inspection teams headed by Floyd Culler, were permitted to enter the building. Culler noted in his official reports, during the 1960s, that his teams had seen evidence of freshly plastered and painted walls inside Dimona. No outsider is ever known to have entered the reprocessing plant, whose long suspected existence was not established until 1986 when the London Sunday Times published an extraordinary inside account based on extensive interviews with a 31 year old Moroccan Jew named Mordechai Vanunu." Well, I'll send you all that stuff.

Kintner: Okay, well because whatever Culler wrote in his official documents . . . we wrote it together. I mean we came back to the embassy in Rome and we were locked up in the room there with private, classified secretarial help and wrote this whole report together. I don't remember ever referring to any phraseology like that. Now that could be forgotten in all that time. But what you are telling me is a surprise and so . . . now it's not saying it couldn't be true, it's just that my own sense, and let me just tell you that we were not . . . looking for a . . . we were looking for every piece of evidence that we could find . . . about this sort of thing happening, being hidden or being camouflaged or whatever. And as I said the CIA had been taking photographs of that, overhead photographs, for years, week after week after week, looking at every bit of construction and you know watching how it was developed from one point to another. So the thing would have to been hidden from that as well even as it was being built. None of that says it couldn't have been done. All it says to me is that it is a miracle if it was.

Miller: I see. So when you were finished with your visits you had some confidence, which I guess was reflected in the team's report, that the Israelis were not, as far as you could tell from your inspections, making weapons at that site.

Kintner: That's correct. That site . . . we were very certain to make clear that the operation of the reactor and the burn ups and so forth were such . . . and here again it doesn't matter what the power level was, there was enough power level that we could see and enough radiation we could see in the pool, to generate a couple of bombs so that wasn't an issue. The issue was reprocessing and where and how that was done. And that's what we looked for, evidence of that wherever we could. And found none of it. Specific evidence and that again doesn't say . . . they knew the processes. I mean if they wanted to separate it they could. I mean the chemistry of it, by this time, wasn't secret at all. But the facilities to do it, which requires, you know, not just a building, it requires a lot of shielding, a lot of tankage, it requires a lot of outside chemical storage to be used with it and so forth. A PUREX plant^[22] is not a simple device, even if you're going to make a small one. As you know the one out by Hanford is a what? 1000 feet by 300 feet by 200 feet? It's not something that is easily hidden nor is its construction easily hidden when it's being looked and surveyed from overhead for a long period of time. So I . . . I'm telling you what I remember and what I think. It may not be correct.

Miller: Well, we'll send you some stuff. I think we'll be interested, once you look at it, to react to it. Let me ask you one more question and then I think Avner has a question. You mentioned you, on your own initiative, you measured some nuclear waste.

Kintner: Yeah.

Miller: Was part of the ground rules then that you were able to bring some equipment with you? Some counters or whatever?

Kintner: Yeah.

Miller: I see. So that was permitted?

Kintner: Yeah. Simple Geiger counter, we didn't need very much. And we went down with flashlights. As I say it was a long way down it was a hard thing to do because it was just a ladder and way below ground level. There was activity there but not very much. It wasn't the kind of activity that would come out of the residue from processing nuclear fuel.

Miller: Okay, so it was sort of low level waste. Okay, Avner do you have questions?

Cohen: Yeah I have a number of questions I'd like to ask you. Do you recall . . . who was the director when you visited there? Do you recall his name?

Kintner: I don't. He was a very impressive guy. A short stubby person, quite enthusiastic, quite energetic I was really impressed with him like him a great deal. If you've got some a couple of names there I might be able to tell you.

Cohen: Manes Pratt[23]?

Kintner: What's that?

Cohen: Manes Pratt? P-R-A-T-[T]?

Kintner: No.

Cohen: In this case it may have been . . . in a moment I'll tell you . . . it was . . . the name will come to me a in a second but I think I know who you're talking about . . . So it was after that . . . It was . . . the name will come to me in a second . . . the other question I'd like to ask you...actually I think I have the name right here . . . anyways the other question is about the visit itself. Was it only Saturday, the day you were allowed to visit?

Kintner: Was it what?

Cohen: Saturday?

Kintner: No, no. We visited the site . . . it was in full operation when we were there. People were working in the laboratories and so forth and I guess I assume Saturday being the Sabbath it wouldn't be the case.

Cohen: Because according to what we see in the documents in the State Department, during the last visit in '69 there were all kinds of issues and the visit was postponed, but it was insisted on by the Israelis that it would be only on Saturday.

Kintner: No, well that was not the case. I think that . . . what . . . from reading your documents as near as I can think, '66 and '68, or there about, were the two that I was on. And there were so many restrictions placed on the ones after that that the United States either decided not to send anybody or they would do it on such a small scale as to not be meaningful. Maybe that's one of the restrictions that was placed it has to be Saturday. But the site was in full operation when we were there.

Cohen: I thought you were in the last one. The last one was in '69 and I thought you were the team leader. Do you recall that?

Kintner: No. I was never the team leader.

Cohen: The other question is . . . there was a big debate in the documents about . . . again about the ground rules . . . whether it's going to be only one day or two days . . . whether it would be annual or semi-annual. Do you recall if there was US insistence to have semi-annual visits and claim it was very difficult to get reassured only by once a year?

Kintner: We were never . . . as far I was told . . . never told that. We went the first

time and then I was a little bit surprised we were asked to go the second time. We went the second time and then nobody ever asked again. And I asked why weren't we asked or allowed to go back again? I was told the Israeli government objected. The way it was put to me was that they felt our probing and what we had, the way we had handled ourselves in the second time, having smartened up from the first time, was such that they just didn't want us back again.

Cohen: What was that? What were they referring to?

Kintner: Referring to that by this time we were too smart.

Cohen: Meaning? What did you do that you were...

Kintner: Well, they felt we had . . . were asking questions and probing into areas and so forth that they didn't want us probing into anymore. Nor did we need to. And my own sense of the matter was that that was the case. There was no need for another trip.

Miller: Were there three people on the team?

Kintner: I never remember a three person team. I mean I was amazed when I read that in the cable. I think, I always thought there were five or six in total.

Miller: You mean technical people?

Kintner: Yeah, the ones that actually made up the team.

Miller: I see. Did you remember anyone aside from Pleat and Culler?

Kintner: No. If you mentioned it to me, I would. I don't remember this other man you mentioned from Oak Ridge.

Cohen: Nicholson and Perry?[\[24\]](#) Do you recall those names?

Kintner: What?

Cohen: Perry and Nicholson?

Kintner: No.

Miller: Yeah.

Kintner: But you see each one of these persons had some particular background that was pertinent. Pleat's came out of the production division in AC, mine came out of the breeder reactor operations, reactor operations in total. Culler, obviously, from Oak Ridge Laboratory. But he was fundamentally a chemist. So the team had different so called experts. I don't know how expert we were but nevertheless they were different disciplines.

Miller: Do you recall the name Amos de-Shalit?[\[25\]](#)

Kintner: No. It sounds familiar but why should I remember?

Miller: Well, he was the [scientific] head of the Weizmann Institute^[26] and apparently...

Kintner: Is he the man who died shortly after the...

Miller: That's right.

Kintner: I do remember that. And let me tell you one of the things I remember from the trips was we were invited to the Weizmann Institute, the whole group, his home for dinner and his department heads and wives were there. It was just a delightful dinner. I mean the intellectual capability . . . because the wives were all professionals, PhDs. One of them I remember particularly was a child psychologist who impressed me a great deal. It was just a delightful dinner. And then I was . . . he was another one of the persons I met there. I was quite impressed, liked a great deal as a human being, and I was quite distressed when he died rather suddenly not too long afterwards.

Miller: Right, right.

Cohen: Did he actually go with you to Dimona?

Kintner: Oh no. But he showed us around and his people showed us around Weizmann.

Cohen: Now in the report you confirmed the fact that there was no evidence . . . do you recall whether the language was that there was no evidence of weapons related activities or if there is no evidence...

Kintner: No, no, no. I'd rather not tell you what the report said. If the Government of the United States wants to tell you that's okay but I don't feel at will to do that.

Cohen: Let me tell you what the press said. The press said that the US tentatively concluded-- and they used the word tentatively--that there is no weapons related activity at this time. This was a quote in the press, actually in New York Times, and it was written always in a double negative language. That is to say it was never confirmed that the whole thing is peaceful oriented but at the present time there was no evidence of weapons related activity. At least that is what appears in...

Kintner: That's not quite the way I would characterize what we wrote [laughter from Kintner].

Miller: Okay look it's been very good talking with you. I think what we would like to do is send you the material that we feel shows things you find hard to believe and then get your reaction to that.

Kintner: Okay. I'd very much like to have that.

Miller: Okay

Kintner: One of the things that came out of this discussion is that repetition is something I already knew is how hard it is to reconstruct history.

Miller: Right.

Kintner: "What is Truth?" said Jesting Pilate and would not wait for an answer.^[27]
[Discussion of a source excised] [Cohen and Miller hang up the phone]

^[1] This transcript has been edited lightly for readability and annotated for convenience. Small sections may have been excised to protect confidential sources and personal information. These excisions are explicitly marked in the text.

^[2] This interview began before the tape was recording.

^[3] Pierre Péan (1936-) is a noted French investigative journalist who has researched the French-Israel nuclear collaboration. Pierre Péan, *Les Deux Bombes*, (Paris: Fayard, 1981).

^[4] Seymour Hersh (1937-) is a Pulitzer Prize winning investigative journalist who has covered the development of the Israeli nuclear program. Seymour M. Hersh, *The Samson Option: Israel's Nuclear Arsenal and American Foreign Policy*, (New York: Random House, 1991).

^[5] Floyd Culler (1923-) was a chemical engineer and acting director of Oak Ridge National Laboratory. He was a member of the Dimona inspection team in 1965 and the team leader from 1966 to 1968.

^[6] Eugene Wigner (1902-1995) was a Nobel Prize winning physicist. Winger made notable contributions to the foundations of quantum physics, the structure of the atomic nucleus and XE-135 poisoning.

^[7] Isador Isaac Rabin (1898-1988) was a Nobel laureate physicist who discovered nuclear magnetic resonance.

^[8] According to *The Samson Option* by Seymour Hersh, this is not accurate; Though Wigner and Rabi may have been allowed to visit, they were never on an official US visit of Dimona. The team was comprised of Ulysses Staebler of the US Atomic Energy Commission and Jesse Croach of DuPont.

^[9] George Pleat (1922-) was the deputy director of the U.S. Atomic Energy Commission (AEC) Division of Intelligence from 1960 to 1965. With a background in chemical and industrial engineering Pleat was a member of three Dimona inspection teams from 1967 to 1969 and as team leader in 1969.

^[10] Edward Nicholson, Jr. (1921-2012) worked in the chemical technology division at Oak Ridge National Laboratory.

^[11] The Oak Ridge located in Oak Ridge Tennessee National Laboratory is a scientific-technological research laboratory managed by the US department of Energy.

^[12] Dimona is a desert town located in southern Israel. It is the location of Israel's nuclear reactor, KAMAG.

^[13] State Department documentation indicates that Culler was not present on the 1969 inspection trip. He was replaced by Edward Nicholson of Oak Ridge. 16 June 1969, Telegram from the State Department to the American Embassy in Tel Aviv. 33A, The U.S. National Archives and Records Administration, Retrieved by Avner Cohen.

^[14] The Hebrew University is Israel's second oldest university, located in Jerusalem.

^[15] Nachal Soreq is one of two Israeli nuclear reactors. The Soreq reactor was provided by the United States during the 1950s as part of the Atoms for Peace program and is inspected by the IAEA twice a year. Other sources commonly use the spelling Nahal Sorek.

^[16] Israel agreed to the arrangements only insofar as they were "scientific visits" that included all sorts of scientific exchanges, not simply "nuclear inspections."

^[17] He is likely referring to Yosef Tulipman, the second director general of Dimona (KAMAG).

^[18] Cherenkov radiation is the blue light typically seen in pool-type nuclear reactors and spent nuclear fuel storage pods. Measuring its intensity can provide information on the radioactivity of the fuel being observed.

^[19] Sunday Times Insight Team. "Revealed: The Secrets of Israel's Nuclear Arsenal"

(London) Sunday Times No. 8,461, 5 October 1986, 1, 4-5.

[20] Potash is common term for mined and manufactured salts that contain potassium in water soluble form.

[21] The Red Sea is a body of water located at the southern tip of Israel.

[22] A PUREX (Plutonium Uranium Exchange) plant extracts uranium and plutonium from used nuclear fuel so that it can be used to manufacture new nuclear fuel elements or nuclear weapons.

[23] Emmanuelle "Manes" Pratt (1911-) was an engineer and colonel in the Israeli Defense Forces (IDF) from 1957 until 1966. Many consider Colonel Manes Pratt to be Israel's General Leslie Groves. He was also in charge of the construction of the Dimona reactor.

[24] Alfred Perry was originally intended to be part of the 1969 inspection team, increasing the size of traditional three member team to four. However, according to State Department documents, Israeli objections to an enlarged team size caused the United States to drop Perry from the team. 26 June 1969, Telegram from the State Department to the American Embassy in Tel Aviv. 38B, The U.S. National Archives and Records Administration, Retrieved by Avner Cohen.

[25] Amos de-Shalit (1926-1969) was a prominent Israeli physicist who founded and headed the Department of Nuclear Physics at the Weizmann Institute, one of Israel's leading scientific research institutes. He commonly served as Israel's official escort for the American inspection teams.

[26] The Weizmann Institute, named after Israel's first president Haim Weizmann, is an Israeli academic research center located in the town of Rehovot focusing mainly on the natural sciences.

[27] Kintner makes a reference here to Francis' Bacon's famous piece Essays.