

R. W. Smith

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H. E. Book

ORIGINAL SIGNED BY  
H. E. BOOK

SEA DISPOSAL OPERATION BY ISOTOPE SPECIALTIES  
COMPANY, DIVISION OF NUCLEAR CORPORATION OF  
AMERICA, BURBANK, CALIFORNIA, LICENSE NO. 4-580-6

SYMBOL: CD:HEB

On December 15, 1960, SAN Compliance Division received written notice from Isotope Specialties Company that they intended to dispose of radioactive waste at sea, departing from the Los Angeles area on January 5, 1961. On January 3rd, Mr. John Vaden of Isotope Specialties Company telephoned SAN Compliance and notified us that the disposal trip had been postponed and would probably take place on January 10 or 11, 1961.

Examination of license 4-580-6, issued to Isotope Specialties Company, revealed that it did not require that each individual container be weighed to assure that the 10 pounds per gallon specification was met. Mr. Vaden said that a "representative sampling" of drums were weighed during processing and that any drums which were noted to be suspiciously light during movement or handling were weighed. In order to assure that there would be no floating containers, SAN Compliance made arrangements to have Isotope Specialties Company weigh approximately 10 percent of the containers to be disposed. It was arranged so that the weighing of these drums would be observed by an AEC representative. On January 5, 1961, Mr. Al Newmyer of the Los Angeles AEC Security Office observed the weighing of 81 fifty-five gallon drums and 4 thirty gallon drums, which were selected at random from the Isotope Specialties Company supply. Mr. Newmyer reported that one 55 gallon drum weighed 520 pounds and all other drums exceed 10 pounds per gallon. Isotope Specialties Company agreed to add more concrete to the underweight drum.

On January 9, 1961, a pre-loading conference regarding the planned disposal operation was held in the Captain of the Port Office, Long Beach, California. A list of personnel attending this conference is attached as Annex A. Mr. Harry S. North and Mr. Herbert E. Book, SAN Compliance Division, were the AEC representatives at this conference. This meeting was called by the U. S. Coast Guard, Captain of the Port, for the purpose of explaining to all interested persons how the operation would be conducted, and to air any objections and misunderstandings prior to the movement of any

radioactive material. The Captain of the Port issued a set of requirements for the conduct of the operation. A copy of these requirements was issued to all persons at the pre-loading conference, and is attached as Annex B. Captain W. F. Cass, USCG, was chairman of the meeting. Some of the significant points covered in the meeting were:

1. Mr. Vaden described the procedures to be followed during transportation and loading of the material and outlined the route to be followed by the truck between Burbank and Long Beach.
2. Mr. Henscock, State of California, Division of Industrial Safety, asked if the drums had been weighed. Mr. Vaden, Isotope Specialties Company, described the weighing during processing and the weighing on January 15, 1961 which the AEC observed.
3. Representatives said the tug used would be the "George Garvin", with George Garvin as master; the barge would be Graham Brothers #15 flat deck barge; and that the tug was equipped with Radio Direction Finder, radar, and standard navigational equipment to determine the location of the disposal.
4. Mr. Vaden stated that all stevedores loading the barge at the dock would be furnished film badges, and at harbor authorities request, said that film badge results would be furnished to the harbor authorities.
5. At harbor authorities request, Mr. Vaden agreed to furnish a certificate of non-contamination on the barge and dock after the disposal operation.
6. Mr. Vaden described a group of special packages containing liquid radioactive waste as liquid, which he planned to dispose of on this trip.

Up to this point, all persons attending the meeting appeared to be satisfied with the planned operations, and it appeared that no objections would arise from state, local, or harbor authorities. The AEC inspectors present recognized that the waste packages described by Mr. Vaden in Item 6 were not authorized by the subject license. This point was not raised in the meeting, because it was realized that such an objection might jeopardize the entire disposal operation. Historically:

local authorities in the Los Angeles area have been prone to become overexcited and take drastic and often unwarranted action in similar situations.

On January 10, 1961, Mr. Harry North and Mr. Herbert Book, S&N Compliance, met with Mr. Kenneth Newman, Mr. John Vaden, Mr. Alfred Moses, and Mr. Robert Bensell of Isotope Specialties Company. Mr. Vaden said that there were around 90 to 100 packages containing liquid as described in the pre-loading conference. He said that these packages were mixed in with the other waste packages and were not readily distinguishable from other packages. He said that the liquid was soluble oil used as coolant and lubricant during lathe turning operations and that the liquid contained small amounts of thorium and mixed fission products. He said that the inner containers were 30 gallon steel drums with a threaded bung closure which had been leak tested by the vendor, and that the drums were completely full of liquid. In the final package, these 30 gallon containers of liquid were embedded in concrete, centered in a 55 gallon steel drum. Isotope Specialties management was informed that this package was not authorized by their waste disposal license, and the AEC inspectors informed them that if they intended to dispose of these packages they should get an amendment to their license from DLR. At 11:00 a.m. on January 10, 1961, Isotope Specialties Management called J. R. Mason, DLR, and requested an emergency amendment to their license.

At 7:00 a.m. on January 11, 1961, Isotope Specialties received a telephone call from J. R. Mason, DLR. H. E. Book, S&N Compliance, was also on the line during this call. Mr. Mason said that he had approvals for the special containers and that it was permissible to dispose of them. Mr. Mason also said that he had approval for several members of Isotope Specialties management to supervise loading operations at Burbank while Mr. Vaden was at the dock. Following this portion of the conversation, Mr. Mason and Mr. Ken Newman discussed the sale and transfer of Isotope Specialties Company to the U. S. Nuclear Corporation, Burbank, California.

The first empty truck arrived at Isotope Specialties Company, Burbank, California, at about 6:30 on January 11, 1961, and loading was begun. All trucks used in transporting waste from Burbank to Long Beach were operated by ROD Transportation of Wilmington, California. A total of five trucks were involved. The first two trucks were loaded and left the Burbank facility at 9:40 a.m. on January 11, 1961.

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A truck from the Serna Truck Lines, San Leandro, arrived at about 9:00 a.m. As soon as the two trucks mentioned in the proceeding paragraph were completely loaded, ten 55 gallon drums, 2 "master drum" containers and one concrete block were loaded on the Serna truck. These containers were to be taken to Port Hueneme, California, for inclusion in the AEC tests of sea disposal packages. This Serna truck left the Burbank facility about 11:00 a.m. on January 11, 1961.

All waste containers at Isotope Specialties Company were stenciled with paint, purple on a yellow background. These labels contained the following information:

- (1) The information "NUCOR-ISC, 170 W. Providencia."
- (2) The words, "Caution - Radioactive Material"
- (3) The prescribed radiation symbol
- (4) Isotope
- (5) Amount
- (6) Date
- (7) Surface dose rate
- (8) Dose rate at one meter
- (9) Serial number

The drums were stacked in the Burbank waste yard on wooden pallets, four drums to a pallet. During loading, these pallets were picked up with a fork lift and placed on the trucks. A normal truck load consisted of 14 pallets, each pallet holding 4 drums. After loading, the load was lashed in place by the driver of the truck. All personnel associated with the loading operation at Burbank were issued film badges by Isotope Specialties Company. Placards reading "Dangerous Radioactive Material" were placed on each side and the back of each load. The lettering on these placards was 3 inches high and was magenta on a yellow background.

H. E. Book, SAN Compliance, was present at the Burbank facility during all movement of waste and loading of trucks. Independent measurements were made by this inspector using a Jordan Radestor Model AGB 500-SR, Serial No. 1775. This instrument was the property of Isotope Specialties Company. According to the internal calibration source, this instrument was in calibration. All containers were checked by the inspector before they were loaded on the trucks. Additional surveys were made of the outer drums and the truck cabs after each truck was loaded. The maximum dose rate detected on any one container was 150 mr/hr at surface and 7 mr/hr at one meter on "master drum" container D-1 which was labeled as containing 1 curie of Cobalt-60. Radiation dose rates in all truck cabs were less than 1 mr/hr.



Loading operations at the Burbank facility were supervised by Mr. John Vaden, Mr. Kenneth Newman, Mr. R. E. Selff, Mr. Alfred Moses, or Mr. A. (Ous) Ruggeri. One of these persons was present at all times, and in addition one of these persons escorted each group of trucks from Burbank to Long Beach. These persons were also noted to make periodic spot surveys of drums, ground areas, and shoes during the loading operations.

The loading of trucks at Burbank started at about 6:30 a.m. on January 11, 1961. Loading and hauling continued on a more or less continuous basis until 7:00 a.m. on January 12, 1961, when the last loaded truck left the Burbank facility. During this period one drum was punctured by a fork lift at the dock in Long Beach and one drum was discovered to be leaking liquid at the dock. Both of these drums were returned to the Burbank Facility. In addition, one drum fell off a truck between Burbank and Long Beach. All of these situations are described in detail in the report written by H. S. North, SAN Compliance, who was present at the dock in Long Beach during loading of the barge.

No reporters or photographers appeared at the Burbank facility during the operation and no mention of the operation was noticed in the local papers or heard on local news broadcasts. Burbank city police stopped at the waste yard during the early morning hours of January 12, 1961. Mr. Newman of Isotope Specialties spoke to them. He said they were merely checking on the unusual activity at the yard and that they requested he keep noise at a minimum.

No significant radiation hazard to the public or to employees was observed during the operation at Burbank. However, the industrial safety aspects of the operation were sometimes questionable. Overloading of fork lifts, moving fork lifts with loads high in the air, and inadequate lighting were all observed during loading of the trucks. Harbor authorities required that once loading started, it had to continue to completion. This resulted in about 24 hours of continuous effort by the truck drivers and fork lift operators, with only "eat naps" and coffee to sustain them. Such an extended operation can increase the probability of an accident.

On January 23, 1961, SAN Compliance received the final official notice of the number of containers, amounts of radioactive material, and disposal location from Isotope Specialties Company. A copy of this correspondence is included as Annex C.

At the end of this disposal operation some radioactive waste remained at Isotope Specialties Company, Burbank, California. This consisted of the two defective drums returned from the dock; approximately 85 drums of waste, all having dose rates greater than 200 mr/hr at the surface; and a large amount of magnesium-beryllium alloy turnings and chips, packed in wooden boxes. Mr. Newman said that their plans were to dispose of this material by land burial at the Idaho site as soon as the necessary approvals could be obtained.