

May 1, 1975

U. S. Atomic Energy Commission
Washington, D.C. 20545

Gentlemen:

Enclosed is the reinstatement application and the \$50.00 license fee.

Nite-Site Inc. has been inactive and has distributed no sources for the last nine months. Also at this time, Nite-Site, Inc. has no radio active sources in their possession.

It is Nite-Site's Inc. hopes that our license be re-instated in order to resume our business.

Yours truly,


Elliel F. Knutsen
President, Nite-Site, Inc.

*materials
1969 01*

*check #104
5/1/75*

56567

Form AEC-313
(2-73)
10 CFR 30

UNITED STATES ATOMIC ENERGY COMMISSION
APPLICATION FOR BYPRODUCT MATERIAL LICENSE

Form approved
Budget Bureau No. 38-40077

INSTRUCTIONS.—Complete Items 1 through 16 if this is an initial application or an application for renewal of a license. Information contained in previous applications filed with the Commission with respect to Items 8 through 15 may be incorporated by reference provided references are clear and specific. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: U.S. Atomic Energy Commission, Washington, D.C., 20545, Attention: Materials Branch, Directorate of Licensing. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. An AEC Byproduct Material License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the Licensee is subject to Title 10, Code of Federal Regulations, Part 20, and the license fee provisions of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 16 and the appropriate fee enclosed. (See Note in Instruction Sheet)

1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital, person, etc. Include ZIP Code and telephone number.) Nite-Site Inc. P. O. Box 0 Rosemount, Minnesota 55068		(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1(a), include ZIP Code.) The by-product material will be used by any law enforcement department or personnel throughout the United States.	
2. DEPARTMENT TO USE BYPRODUCT MATERIAL General Licensee will be law enforcement officials.		3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.) Specific License No. 22-13585-01 General License No. 22-13585-2 G	
4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of byproduct material. Give training and experience in Items 8 and 9.) Elliel Knutsen - President Julio Santiago - Vice-President Charles Johnson - Sec. - Treas. Steven Knutsen - Consultant Richard N. Walz - Consultant		5. RADIATION PROTECTION OFFICER. (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Items 8 and 9.) Richard N. Walz (Resume - Note A)	
6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.) Promethium 147		(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLICURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME. (If sealed source(s), also state name of manufacturer, model number, number of sources and maximum activity per source.) Sealed sources from Minnesota Mining & Mfg. Co. Model #1ERX Radioluminescent Elements Isotope in form of Radiating Microspheres - 1E2X Elements again are sealed in Polycarbonate Lexan housings called Nite-Site Sighting Systems, the handgun front sight is 0.8 mCi Pm147, rear sight is 0.7 MC: Pm 147 to total 1.5 mCi Pm-147 per handgun set and 0.8 mCi Pm-147 per shotgun set. The total possession of sealed sources (1ERX elements) to be 50 handgun sets or a combination of handgun sets & shotgun sets not to exceed 75 mCi Pm-147.	
7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If byproduct material is for "human use," supplement A (Form AEC-313a) must be completed in lieu of this item. If byproduct material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.) The sealed sources will be for sighting purposes on handguns and shotguns used in law enforcement. Sources are 3M model 1ERX Radioluminescent Elements.			

JUN

2 1

56567

(Continued on reverse side)

EBS

NOTE A:

Resume of Richard N. Walz

Training:

B.Ch.E. and M.S. (Ch.E.) from University of Minnesota. Bachelors Degree granted in 1951, Masters Degree in 1955. Graduate work included courses in Radio Chemistry and Nuclear Reactor Design.

Experience:

1967 to present - Coordinator for Radioluminous Products in Nuclear Products Department of 3M Company. Responsible for development of Military and Commercial aspects of the Business. Also responsible for all contact and liaison work with customers and U. S. Atomic Energy Commission.

1965 to 1967 - Laboratory manager for Nuclear Products Department of 3 M Company. Responsible for all phases of technical development of laboratory personnel in a variety of applications having to do with the use of radioisotopes.

1963 to 1965 - Supervisor of Isotope Applications Laboratory, Nuclear Products Department, 3 M Company. Responsible for setting up Laboratory and Programs (including all aspects having to do with radiation source use and safety) for SNAP 15C, 21B and 23.

1959 to 1963 - Senior Chemical Engineer for 3M Company. Research on design, development and fabrication of radioisotope sources for use in industry. Emphasis was on new, higher levels of safety and integrity built into the source using new materials and techniques. Several patents issued or pending.

1955 to 1959 - Senior Chemical Engineer, E. I. DuPont Savannah River Plant. Research and development on chemical separation of irradiated reactor fuels into Fission Products and reuseable nuclear fuels. Responsible for operation of Pilot Plant using 15-20 people and handling kilocurie quantities of Fission Products and gram quantities of Special Nuclear Materials.

Officers Invent Night Gun Sight

By Rouben Chanco, Staff Writer

Continued from Page 1

A POLICEMAN, his gun, the armed criminal and the innocent bystander, all thrown together at the worst possible time — at night.

This is the kind of encounter two Twin Cities area law enforcement officers could only complain about two years ago over a cup of coffee during a break on night patrol.

"We were in critical situations at night, without gun out. The need never came to fire without the handicap when light conditions were bad or was nonexistent," said deputy sheriff John Santiago, a 16-year veteran with the Dakota County Sheriff's Office.

"THERE HAVE BEEN incidents in many states where the public has criticized the decision by an officer to fire his weapon," he said.

Now Santiago and Apple Valley Patrolman Miller Knutsen believe they have invented a special night sighting device that will help eliminate criticism and enable police officers to better protect the public.

The result of hundreds of hours of spare time work the past two years is a patented "Nite-Site" which the two officers say will enable a policeman to fire accurately at night without the need of additional light.

"It eliminates random firing and stops

sporadic shooting. Best of all, it greatly reduces the possibility of innocent bystanders being hit by gunfire," Santiago said.

"And because an officer can fire accurately with the sight, he can shoot to wound, not to kill."

KNUTSEN AND SANTIAGO explain that their sighting system uses a special glass lens in a small housing containing radio-luminescent material (a radioactive, atomic byproduct).

The housing can be mounted on the front sights of a pistol or shotgun. The radioactive material glows in the dark as a sharp dot. On pistols, a luminescent bar also is mounted on the rear sight.

"All you have to do is get this dot aligned with the bar and place the dot on the target. It's that simple," Santiago said.

But perfecting the invention in their basement shops was not all that easy, the officers point out.

"We first tried a flashlight adaptor for a handgun. It worked, but it had limited range and revealed your position. It was like standing in a spotlight," Santiago said.

The two inventors have on record night-

Turn to Page 6, Col. 1

time tests the past year on their Nite-Site by law enforcement officers, including members of Ramsey, Washington, and Dakota County sheriff offices, Minnesota Highway Patrol and Minnesota Bureau of Criminal Apprehension.

THE SIGHT also has been tested by the Federal Bureau of Investigation, the U.S. Secret Service and the U.S. Army.

"The results have all been favorable," Santiago said.

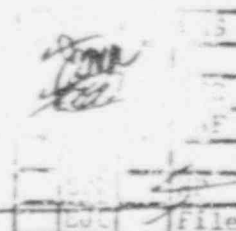
The officers are still waiting for their license

from the Atomic Energy Commission in order to start production of the sights.

Nite-Site housings will be made by E. J. Manufacturing Co., St. Paul, and the Company will all through with the radioactive material. Caswell Equipment Company in St. Paul, Pa. will distribute the product.

The sighting system will be sold to law enforcement agencies only, Santiago points out.

"It would be dangerous in the hands of anyone else," he said.



Dear Mr. Ahlberg
I think you may find this of interest. I look forward in seeing you again. -- our last meeting was very enlightening.
With warm personal regards
John Santiago

St. Paul Pioneer Press

MINNESOTA

SUNDAY, NOVEMBER 15, 1970

NOV 14 1970

THE END OF AN ERA

Two events in our area this week herald the end of another era. Last night the Delta Queen left St. Paul for New Orleans on its final excursion. After 46 years, its steam powered stern paddlewheel will cease to turn as new safety laws dictate it is no longer safe to carry passengers. Man's concern for his fellow man is commendable but it seems a shame some way couldn't have been found to make the old queen safe so it could continue to add its romance to our river heritage.

And man's concern for his brothers has resulted in a new technical advance which will materially aid law enforcement officers in their around-the-clock efforts to protect residents from the criminal element. A problem which has confronted marksmen since the first weapon was invented, that of being able to aim accurately in the dark, has been solved by two young law officers of Dakota County.

Julio Santiago, a 10-year veteran of the Dakota County Sheriff's office, and Apple Valley patrolman Elliel Knutsen, an expert with guns since he was 11 years old, have come up with a breakthrough which will begin a new era in law enforcement—that of effective use of weapons after dark.

After two years of intensive experimentation, Santiago and Knutsen have perfected a sighting system which is self illuminating and which could well mean the difference between life and death for policemen who find themselves forced into a gun fight with a felon after dark.

The two officers claim that their sighting system also makes a mediocre daylight shooter an expert marksman in the dark. And they proved this on the Stillwater State Prison's rifle range one night this week during a demonstration for valley law officers. Perhaps the most telling test of all was the score tallied by the editor of the Stillwater Gazette. He had not fired a handgun since shortly after World War II. Completely "cold" and in the dark, he hit the target 60 feet away with four slugs out of six.

Part of the new era, today, is the mounting extraordinary concern over the "rights" of everyone including those of a person actively engaged in committing a crime. This sighting system, its inventors claim, has a secondary effect of impressing upon the officer using the gun an awareness of the accuracy of his weapon at night as he aims at his target. There have been incidents throughout the U.S. where officers have been criticized for firing their guns. This new system, with its deadly accuracy, should enable the law man to stop a thug with a well placed shot rather than mortally wounding him, and also markedly reduce the chances of innocent bystanders being caught in a hail of bullets as well.

But each new era has its incongruities. This week man has shown his mastery over dark through his knowledge of atomic science—and yet the honest efforts of many others have failed to come up with an idea of how to keep a romantic old riverboat floating on our historic waterways.

NITE-SITE, INC.

P. O. BOX 0
ROSEMOUNT, MINNESOTA 55065

December 8, 1970

Mr. Robert F. Brinkman
United States
Atomic Energy Commission
Washington, D.C. 20545

Dear Mr. Brinkman:

Enclosed you will find the results of radiation wipe tests performed on Nite-Site units, which were used in the field for approximately one year.

My warmest personal seasons greetings.

J. A. J. Cappiaco
Vice President

Enc.
Wipe test results

JAS/ra

DEC 21 1970

e/37

December 4, 1970

ALUMINITE, INC.
SANDWICH
MINNESOTA 55068

$$u = \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix}, \quad v = \begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix}, \quad w = \begin{pmatrix} 0 \\ 0 \\ 1 \end{pmatrix}.$$

The ripe fruits you submitted have been checked for Promethium-147 radioactivity. The results are as follows:

[illegible]

Mercedes
2. 7 07 11

70H-51 (70H-Front)
 70H-52 (70H-Rear)
 70H-53 (70H-Front)
 70H-54 (70H-Rear)
 70H-55 (70H-Front)
 70H-56 (70H-Rear)
 70H-57 (70H-Front)
 70H-58 (70H-Rear)
 70H-59 (70H-Front)
 70H-60 (70H-Rear)
 70H-61 (70H-Front)
 70H-62 (70H-Rear)
 70H-63 (70H-Front)
 70H-64 (70H-Rear)
 70H-65 (70H-Front)
 70H-66 (70H-Rear)
 70H-67 (70H-Front)
 70H-68 (70H-Rear)
 70H-69 (70H-Front)
 70H-70 (70H-Rear)
 70H-71 (70H-Front)
 70H-72 (70H-Rear)
 70H-73 (70H-Front)
 70H-74 (70H-Rear)
 70H-75 (70H-Front)
 70H-76 (70H-Rear)
 70H-77 (70H-Front)
 70H-78 (70H-Rear)
 70H-79 (70H-Front)
 70H-80 (70H-Rear)
 70H-81 (70H-Front)
 70H-82 (70H-Rear)
 70H-83 (70H-Front)
 70H-84 (70H-Rear)
 70H-85 (70H-Front)
 70H-86 (70H-Rear)
 70H-87 (70H-Front)
 70H-88 (70H-Rear)
 70H-89 (70H-Front)
 70H-90 (70H-Rear)
 70H-91 (70H-Front)
 70H-92 (70H-Rear)
 70H-93 (70H-Front)
 70H-94 (70H-Rear)
 70H-95 (70H-Front)
 70H-96 (70H-Rear)
 70H-97 (70H-Front)
 70H-98 (70H-Rear)
 70H-99 (70H-Front)
 70H-100 (70H-Rear)

The counting system used had a minimum detectable limit of 1.5×10^{-4} disintegrations of Promethium-147.

Very true

R. N. WALKER, INC.
RADIOLUMINOUS PRODUCTS

[illegible]

DEC 21 1970

4 February, 1972

U.S. Atomic Energy Commission
Washington, D.C. 20545

Gentlemen:

We are involved in marketing a product that is licensed by the AEC. One of the provisions of the license requires us to provide each general licensee with a copy of the following:

Section 31.9, 10 CFR 31; Sections 30.34 and 30.51 through 30.65, 10 CFR 30; Sections 20.402 and 20.403, 10 CFR 20; and Appendix D, 10 CFR 20.

Would you be kind enough to forward to us a copy of the above so that we may comply with the requirements?

Thank you.

Sincerely,

C. G. Shaw
President

CC:kjh

E/38

1. I am a _____ (state duty)
and authorized to carry the designated weapon.
2. The weapon is _____ owned by me personally,
issued by my department. (check one).
- 3 (Omit if weapon is personally owned) I have
received department permission to have the sight
3. (Omit if weapon is personally owned) I have
received department permission to have the sight
affixed to the weapon designated. (initial)
4. I have received a copy of the U.S. Atomic
Energy Commission regulations that pertain to
the Bardot Sighting System. These require:
(1) That only the Bardot Division may remove
or alter the sights. (2) That anyone to whom
I transfer the weapon with the sights must be
approved for their possession by the Bardot
Division. (3) That I may be required by the
AEC to send the weapon with sights to the Bar-
dot Division for testing in approximately three
years. (If the latter is required, there will be
no charge other than transportation and insurance.)