Ms. Betsy Ulrich
Nuclear Materials Safety Branch
U.S. Nuclear Regulatory Commission, Region 1
475 Allendale Road
King of Prussia, Pa. 19406-1415

NMSB2

L 00030
03037115
03214
(37-00030-11)

January 9, 2006

Dear Ms. Ulrich:

Enclosed please find a license application for NEW COMPANY at a yet undefined facility. I am also enclosing a check for $3500.00 payable to the USNRC for the filing fee.

As noted throughout the license application, when this license is approved, we will embark on finding a suitable location. At that time we will describe the facility more in detail and also assess a need for an "Emergency Plan". It should be noted that I plan to use the module shown in the Decommissioning Funding Plan and build it into a suitable building.

Also, as noted in the license application, we are asking that the appropriate SSD's possessed by SLC along with the appropriate distribution licenses be transferred to the NEW COMPANY.

Very Truly Yours,

Larry Harmon
General Manager

138220
NRC FORM MATERIALS-002

NRC FORM 313 (4-2004) 10 CFR 30, 32, 33, 34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIAL LICENSE

APPROVED BY OMB: NO. 3150-0120 **EXPIRES: 10/31/2005**
Estimated burden per response to comply with this mandatory collection request: 7 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, MISSISSIPPI, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-4005

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(37-00030-11)

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S.NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*
   - [X] A. NEW LICENSE
   - [ ] B. AMENDMENT TO LICENSE NUMBER
   - [ ] C. RENEWAL OF LICENSE NUMBER

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include ZIP code)*
   LARRY HARMON
   M. SAFETY LIGHT CORP
   4150 A OLD BERWICK ROAD
   BLOOMSBURG, PA 17815

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED
   NOT ESTABLISHED YET

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION
   LARRY HARMON
   TELEPHONE NUMBER
   570-784-4344

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL
   a. Element and mass number; b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT. SEE 6.0.0 NEW COMPANY HEALTH & SAFETY PLAN

12. LICENSE FEES *(See 10 CFR 170 and Section 170.31)*
    FEE CATEGORY 3B AMOUNT ENCLOSED $3500.00

13. CERTIFICATION *(Must be completed by applicant)* THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTANED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION

CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE: LARRY HARMON
SIGNATURE: Larry Harmon
DATE: 1/9/06

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			$		

APPROVED BY | DATE

138220

PRINTED ON RECYCLED PAPER

FORM 313

ITEM 5 Radioactive Material (Nureg-1556 Volume 12; 8.5)

a. TRITIUM (H-3)

b. SEALED GLASS SOURCES

c. 125,000 CURIES

ITEM 5 Radioactive Material (Nureg-1556 Volume 12; 8.5.1)

a. Prior to the receipt and possession of sealed sources at the unidentified future site of operations, a request will be made to transfer the appropriate SSD's of Safety Light Corporation, all drawings for both the SPL and Safety Light Corporation parts listed on those SSD's, License Numbers 37-00030-09G, 37-00030-10G for distribution and XB001276 for export to the new company. The sealed sources and devices are registered on the above SSD's.

b. Since we would have quantities on hand over those listed in 10CFR 30.72 (Schedule C), after receiving license acceptance and we obtain a place in which licensed activities would be carried on, either an evaluation showing off site dose would not exceed 1 rem or an emergency response plan would be prepared.

ITEM 5 Radioactive Material (Nureg-1556 Volume 12; 8.5.2)

a. A Decommissioning Funding Plan is attached as Attachment 1.

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Item 6.

Radioisotope	Chemical/Physical Form	Maximum Possession Limit	Proposed Use
Hydrogen 3	Sealed Sources	125,000 curies	For possession incident to manufacture generally licensed devices & to dismantle generally licensed devices

All the devices under proposed use are listed in SSD NR-0579-D-101-G and NR-0579-D-112-G. The sealed sources are also listed in the above SSDs.

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Item 7 Larry Harmon RSO

See attached resume.

Larry Harmon

1964 – 1966 Pennsylvania State University – Associate Degree in Mechanical Engineering

Professional experience

October 1979 U.S. Radium Corp. (predecessor to Safety Light Corporation)

Production Manager

Responsibilities

Managing and scheduling of all production personnel including employees involved in operating tritium gas fill machinery; Inventory control, product improvement and trouble-shooting in all production areas; Training and evaluating tritium gas fill personnel – approximately 2,500,000 Curies of tritium was processed under my supervision.

March 1980 to Present – Member of Safety Light Corporation Radiation Safety Committee.

October 1982 to October 1984 – Performed all foil & target operations in addition to above duties.

January 1987 – Became **Plant Manager** responsible for management of all manufacturing departments.

January 1990 to June 1990 – Put the first 20,000 curies on rig at Shield Source Inc., Canada. Tested Fill rig. Wrote operating procedures for filling GTLS and trained operators.

January 1995 – Became **General Manager** responsible for all operations of Safety Light Corporation.

March 2005 – Assumed the duties of **RSO** along with being General Manager

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Item 7.2 Authorized users will be Jerry Slowick and Martha Rider. Both have handled large quantities of Tritium in gaseous form and also in sealed sources. Safety Light Corporation currently has a possession limit of 350,000 curies. Jerry and Martha are both listed on the current Safety Light Corporation license as authorized users. Their résumé's are attached.

Jerry L. Slowick

Responsibilities Production Manager at Safety Light Corporation since January 15, 1987. Train and supervise production coordinator and direct same in scheduling of orders through manufacturing departments. Responsible for supervision, interview and hiring of all hourly manufacturing employees.

Professional experience 1987 – Present Production Manager Hands on and/or supervised over 2 million curies of tritium production

1986 - 1987 Safety Light Corporation, Bloomsburg, PA

Production Coordinator

- Training and evaluating Foil & Target Specialist prior to assuming full-time duty of Production Coordinator. Under the direction of the Plant Manager (L. Harmon), responsible for purchasing of materials for production and scheduling of orders for shipment.
- Scheduling of Assembly & Machining, etc.
- Quality control of assembled parts and incoming material.
- Member of call list for off-hour fire, security, and equipment malfunction.

1984 – 1986

Foil & Target Specialist

- Responsible for manufacture of Titanium/Scandium tritide foils and targets.
- Operation of high vacuum metallizing system plus subsequent tritium impregnation of metalized material and ionization measurement of impregnated material.

1982 – 1984

Health & Safety/Quality Control Technician

- Performed duties as assigned by Radiation Safety Officer or designate as part of plant Radiation Protection Program which includes various on-site and personnel surveys.
- Training and evaluation of Radioactive Gas Systems operator(s) and system maintenance.

Jerry L. Slowick - continued

1973 – 1982

Radioactive Gas Systems Operator

Upon graduation from Bloomsburg State College, transferred from U.S. Radium Metals/Printing Division to U.S. Radium Nuclear Division (currently Safety Light Corporation) to assume position of Radioactive Gas Systems Operator.

- System maintenance and trouble-shooting
- Attachment and transfer of tritium gas from ORNL cylinders
- Fabrication and testing of typical and specialized radioactive gas containers.

Martha J. Rider

Education

Millville High School, Millville, PA

Professional experience

1984 to Present Safety Light Corporation, Bloomsburg, PA

Production Support Technician

- All responsibilities of Radioactive Gas Systems Operator.
- Train new Gas System Operators, troubleshoot systems problems and make recommendations, carry out and document Gas Systems Preventive Maintenance Program.
- Perform tritium gas transfers – all active systems including Foil & Target System.
- Responsible for manufacture of titanium/scandium tritide foils and targets through operation of Foil and Target Impregnation System.

1985 – 1988

Radioactive Gas Systems Operator

- Backfill glass self-luminous light sources with tritium gas by means of Static and Rotary Index Tritium Fill Systems.
- Perform inventories and handle incoming ORNL tritium supply uranium beds.
- Operate tritium monitors.
- Decontaminate sealed glass sources.

1984 – 1985

Miscellaneous Radiation Worker

- Coating tubes with phosphor, cut, fire polish and form glass tubes.
- Assemble self-luminous signs.

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Item 8. Although past history at Safety Light Corporation going back to 1999 indicates that no individual exceeded 15 mrem including those individuals that worked with unsealed tritium, NEW COMPANY thinks that individuals working with tritium even in sealed sources should have an understanding of what they are working with. A Radiation Safety Program is attached to the NEW COMPANY Health and Safety Plan described in Item 10.

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Item 10. See NEW COMPANY Health and Safety Plan attached.

NEW COMPANY
Health and Safety Plan

1.0.0 Radiation Monitoring (Nureg 1556 Volume 12; 8.10.2)

1.1.0 STACK EXHAUST MONITOR

1.1.1 Description – The stack exhaust air is sampled continuously at a controlled rate (24 hours/day, 7 days/week) for 3H(S) and 3H(SUB).

3H(S) Determination – A portion of the filtered stack air sample is passed at a reduced rate through a series-type sampling train consisting of five Midget impingers, each containing 20 milliliters of propylene glycol. The 3H(S) content of these impingers is determined by LSC methods.

3H(SUB) Determination – The stack exhaust air sample exiting from the above propylene glycol impinger train then passes through a silica gel drying column, and from thence through a heated catalytic converter unit (Palladium sponge). The gas then passes through four Midget impingers (20mL of propylene glycol each) in series which collect the tritiated water formed. The tritium content of these impingers is determined by LSC. For purposes of demonstrating compliance with 10 CFR Part 20, 3H(S) and 3H(SUB) are summed.

1.2.0 LIQUID SCINTILLATION COUNTER

1.2.1 Description – Packard Model 4530 Tri-Carb Programmable Liquid Scintillation System.

1.2.2 Uses – Determination of tritium concentrations in personnel urine, stack monitor, liquid effluents and etc.

1.2.3 Calibration – This instrument was calibrated initially at the manufacturer's (Packard Instrument Co.) plant prior to shipment. However, validation of the instrument's performance is done periodically on a routine basis, or as required if malfunction is suspected (for instrument validation procedures, etc. refer to the MC4530 Tri-Carb Operation Manual on file in the Health & Safety Office). Calibrated internal standard solutions (HTO) and a set of 10 sealed (quenched) 3H standard, purchased from Packard Instrument Co., are used in calibration and equipment performance validation. Equipment maintenance is performed, as required, by Packard service personnel.

1.3.0 SWAB MONITORING SYSTEM

1.3.1 Description – This system consists of a three-well gas flow internal proportional counter manufactured by Atomic Development and Machine Corp., and an Eberline Instrument Corp., Model MS-2, Mini Scaler.

1.3.2 Uses – Loose surface contamination surveys and radioactive materials source leakage tests.

1.3.3 Detection – This instrument is used to detect beta (beta-gamma) and alpha contamination.

1.3.4 Instrument Checks – these are performed as follows:

a. Quarterly determination of alpha and beta operating 'plateaus' with the THRESHOLD control set a 2.5 and the WINDOW IN-OUT switch set at OUT:

1. With the appropriate alpha, beta or alpha/beta source in the counting CHAMBER, INCREASE THE HV ADJUST SETTING STEP-WISE OVER THE RANGE 4.0 – 9.0 (1200 – 2800v). Record HV adjust setting values and corresponding count rates.

2. Remove source from counting chamber.

3. Plot a curve of counts/min vs. corresponding HV adjust setting.

4. From curve, determine the appropriate respective operating voltages for the counting of alpha or of (Alpha + Beta) particles. Record these values.

5. Set operating voltage as required, based on above.

6. The instrument is now ready for operation.

1.3.5 Calibration Standards – the following calibrated reference source is available for use with this instrument:

SOURCE NO.	NUCLIDE	RADIATION	SUPPLIER
3504	Radium D+E	Beta/Alpha	NBS

1.4.0 TRITIUM AIR MONITORS

1.4.1 Description – The following tritium air monitors are to be used at the new company. These will only be used as qualitative devices only and therefore will not be calibrated.

The following are all Johnston Laboratories monitors: Triton 955B, Triton 1055B, and Triton 111.

1.5.0 NEW COMPANY reserves the right to upgrade our survey instruments as necessary and change calibration services to other authorized providers.

2.0.0 Material Receipt and Accountability (Nureg 1556 Volume 12; 8.10.3)

2.0.1 Receiving

All incoming shipments labeled as White 1 or damaged that contain radioactive material will be monitored within (3) hours of receipt and before unpacking by the Radiation Safety Officer or his delegate. The results will be documented in a permanent Receiving ledger kept in the Health & Safety Office. Any other packages received having radioactive materials in them will be monitored the same way as listed below and will generally try to be monitored within (3) hours of receipt. Should any leakage or contamination be found, appropriate precautions will be taken as directed by the Radiation Safety Officer. Notification (10 CFR Part 20.1906), if required, will be made by the Radiation Safety Officer or his designate immediately after the survey results are known.

All packages containing radioactive material must be opened in accordance with the procedures listed below.

2.0.2 Procedure For Opening Radioactive Materials Packages Safely

a. The first recipient of any package(s) suspected of containing radioactive materials, shall visually inspect the package(s) for damage and wetness or any other evidence that damage to the contents may have occurred, then contact the Radiation Safety Officer or his designate, who will determine the disposition and proper handling procedures of the package(s). Any Special instructions such as would be recorded on Returned Goods Authorizations (RGA) should be considered when handling returned product packages.

2.0.3 Handling Procedures

a. Wipe Testing – All incoming packages, known to contain radioactive material, will be wipe tested for tritium. Measurement of removable beta contamination will be performed by wiping an area of at least 100 square centimeters and counting the wiping material using the Eberline MS-2 Internal Proportional Counter, or other appropriate method.

b. If results are greater than 22,000 DPM per 100 cm^2, the final delivery carrier shall be notified immediately. Region I of the Nuclear Regulatory Commission must also be notified immediately by telephone (610-337-5000), by facsimile (610-346-5000) or by telegram or mailgram at:

R.S.O. or his designate, will coordinate reporting.

c. If results show 2200 to 22,000 DPM per 100 cm^2, package(s) may proceed to the next step of receipt with the suspicion that contents may be leaking or releasing radioactive material.

d. If results show 2200 or less DPM per 100 cm^2, package(s) may proceed to the next step of receipt.

2.0.4 Sniff Testing – All incoming packages known to contain radioactive material, will be sniff tested for tritium within the day received if possible, but no later than three (3) hours after the start of the next working day, using a Johnston Labs Triton III Tritium Monitor or equivalent. Packages showing responses significantly above background shall be immediately routed to an exhausted hood for special handling procedures by the Production Support Technician or someone under their direction.

Packages that show no evidence of leaking products or other release of radioactive material according to wipe and sniff tests, may be opened and processed by normal methods for handling incoming materials.

2.0.5 Packages Requiring Additional Procedures

a. Gaseous tritium light sources – must be subjected to additional sniff test of inner canister by Production Support Technician or someone under their direction previous to brightness testing and disposition.

Canisters showing responses significantly above background shall be immediately routed into an exhausted hood for additional handling procedures.

2.1.0 Procedure for Ensuring Material Accountability (Nureg 1556 Volume 12; 8.10.3)

a. A running inventory will be kept on a daily basis with date, incoming receipts minus product shipments minus material that is sent to waste awaiting waste disposal minus waste shipments which will be subtracted from the waste column.

b. Physical inventories will be conducted at intervals not to exceed 6 months, to account for all sealed sources and devices received and possessed under the license.

3.0.0 Occupational Dose (Nureg 1556 Volume 12; 8.10.4)

a. The work being done at NEW COMPANY is exactly identical to the work that is currently being done at Safety Light Corporation with the exception of handling gaseous tritium out side of sealed sources. Taking the last 5 years or recordkeeping via urinalysis on a biweekly basis, the most uptake anyone received in a year is 15 milirem.

Therefore, "We have done a 5 year actual evaluation and determined that unmonitored individuals are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits in 10 CFR Part 20".

4.0.0 Operating and Emergency Procedures (Nureg 1556 Volume 12; 8.10.6)

a. Operating and emergency procedures will be developed and documented before receipt of licensed material. "Procedures will be revised only if: (1) the changes are reviewed and approved by the RSO in writing; (2) the licensee staff is provided training in the revised procedures prior to implementation; (3) the changes are in compliance with NRC regulations and the license; and (4) the changes do not degrade the effectiveness of the program.

b. An "Emergency Response Plan" if needed will also be prepared and included with the "operating and emergency procedures before receipt of licensed material".

5.0.0 Surveys and Leak Tests (Nureg 1556 Volume 12; 8.10.7)

5.1.0 Airborne Contamination

a. Room Air Samples:

The air in each area where tritium sources are processed either into or out of signs will be monitored continuously for tritium using an alarm equipped monitor.

5.2.0 Surface Contamination

a. Smear Surveys

At the discretion of the RSO, areas will be surveyed for removable tritium contamination. Frequency, location and areas surveyed will be dictated by operations taking place in these areas.

5.2.1 Quarterly Smear Surveys:

a. A survey of all areas of operations will be surveyed at least once each calendar quarter.

5.3.0 Personnel Smear Surveys:

a. Unannounced smear surveys of hand and foot contamination levels will be made at random times. These surveys will be made on all production personnel at such times as they are not working in an active area, e.g. at breaks or lunch time, etc.

5.4.0 Airborne Effluent

a. The stack exhaust air will be monitored continuously for tritium oxide, and elemental gaseous tritium by methods currently acceptable to the Nuclear Regulatory Commission.

b. The exhaust air sampling equipment and procedures used will be as described under Section 1.1.0.

6.0.0 Waste Management (Nureg 1556 Volume 12; 8.11)

6.1.0 Liquid Effluent

a. All potentially contaminated liquid effluent from NEW COMPANY operations will be collected in a catch tank, assayed to determine the level of radioactivity. Depending on building location, the effluent will either be released to the sewer or pumped into a tanker for disposal to sewer.

6.2.0 Other Waste

a. All other waste will be sent using a waste disposal service company.

6.3.0 Packaging and Transportation

a. All radioactive material (newly assembled products or waste) will be packaged for transportation so as to comply with the regulations of the U.S. Dept. of Transportation and the Nuclear Regulatory Commission.

b. Prior to shipment, all NEW COMPANY outgoing packages containing radioactive material will be monitored for surface contamination. The results will be kept in a permanent shipping ledger kept in the lab.

All outgoing shipments containing radioactive material will have no significant removable radioactive surface contamination as defined by 49 CFR, Part 173.443.

c. All outgoing shipments of radioactive materials will be properly classified, described, packaged, marked, and labeled, and be in proper condition for transportation according to the applicable regulations of the U.S. Dept. of Transportation (DOT) and of the International Civil Aviation Organization (ICAO).

RADIATION SAFETY TRAINING PROGRAM

NEW COMPANY

1. PURPOSE:

To provide employees, contractors, and/or visitors who frequent the restricted area at the NEW COMPANY facility an initial and periodic review of fundamental subjects important to radiological safety and to apprise them of job-related physical plant and procedural changes that could affect radiological safety to assure that safe operations are maintained, and that radiation exposures are as low as is reasonably achievable.

2. REQUIREMENTS

2.1 Regulations

2.1.1 Title 10, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers: Inspections"

2.1.2 Title 10, Code of Federal Regulations, Part 20, "Standards for Protection Against Radiation"

2.2 Guidelines

2.2.1 USNRC Regulatory Guide 8.7, "Occupational Radiation Exposure Records Systems"

2.2.2 USNRC Regulatory Guide 8.13, "Instruction concerning Prenatal Radiation Exposure"

3. RESPONSIBILITIES

3.1 NEW COMPANY RSO – Responsible for providing basic radiological safety training to personnel designated by regulations and policy; ensuring training requirements are current; and for preparing, presenting, and monitoring success of all general employee radiation safety training either through in-house resources or elsewhere.

4. POLICY

Access to the restricted area of the site shall be issued only to those individuals who have successfully completed General Employee Training in radiological protection or to those persons who are accompanied by an individual who has had the training.

4.1 General Employee Training in radiological protection shall be provided to all personnel employed by NEW CORPORATION at the beginning of their employment and annually thereafter.

4.2 General Employee Training in radiological protection shall include one session of classroom instruction and written examinations to measure knowledge and practical skills in the following radiological protection topics and functions:

4.2.1 The radiological conditions to which employees could be exposed in NEW COMPANY Restricted Areas.

4.2.2 Employees' responsibility to minimize their exposure to radiation.

4.2.3 The actions to be taken in the event of a radiation incident.

4.2.4 Employees' responsibilities for adhering to the NEW COMPANY Health & Safety Policy and for using good radiological protection work practices.

4.2.5 Employees' responsibilities not to enter radiologically controlled areas or to cross radiological boundaries.

4.2.6 Brief indoctrination in radioactivity, radiation-producing machines, the effects of radiation exposure, and the health risks associated with exposure.

4.2.7 Access program and procedures.

4.2.8 The outline for General Employee Training in Radiological Protection is contained in Attachment 1.

4.3 All persons employed at NEW COMPANY tritium operation shall be trained in the following areas commensurate with their job duties:

4.3.1 General description of NEW COMPANY and its facilities.

4.3.2 Job related policies, procedures and instruction.

4.4 Annual re-training in radiological protection as required ensuring that job-related knowledge and practical abilities are maintained current in the following areas:

4.4.1 Basic radiation protection subjects.

4.4.2 Pertinent changes in radiation protection procedures and policies.

4.4.3 Radiation protection problems identified during the previous year.

4.4.3 Changes in location or activity of radioactive materials.

4.5 Demonstration of Proficiency in radiological protection.

4.5.1 Proficiency in radiological protection shall be by successful completion of a written examination.

4.5.2 Passing criteria is 70% correct answers.

4.5.3 Failure to achieve the minimum testing criteria can result in denial of access to the restricted area at the Bloomsburg site until successful demonstration of proficiency is attained through re-training and re-testing.

4.6 Contractor personnel or visitors who are permitted unescorted access to the restricted area at the Bloomsburg facility shall have the same knowledge and qualifications as Safety Light Corporation employees performing the same duties.

4.7 Approval for contractor personnel or visitors with only short-term tasks to enter radiologically controlled areas without completing the General Employee Training program shall be reviewed by the NEW CORPORATION RSO.

4.8 The main entrance to Safety Light Corporation, and within other common areas of the NEW COMPANY facility as designated by the RSO, shall be posted with the following:

4.8.1 A notice describing USNRC-issued license documentation which affects operations at NEW COMPANY and their location within the administrative office.

4.8.2 Form NRC-2, "Notice to Employees".

4.9 Safety Light Corporation shall maintain current and complete copies of the following documents in the main offices:

4.9.1 The regulations contained in 10 CFR 19 and 10 CFR 20.

4.9.2 The Licenses, license conditions, and documents incorporated into licenses issued to NEW COMPANY by the NRC, including amendments.

4.9.3 Any notice of violation involving radiological working conditions, proposed imposition of civil penalty, including NEW COMPANY response to the notices.

5. RECORDS

5.1 Records of employee training shall be maintained in the NEW COMPANY offices as follows:

5.1.1 Training materials such as outlines, video tapes, texts, and training handouts.

5.1.2 The name(s) of instructor(s) and their title(s).

5.1.3 The completed and scored written employee examinations.

5.1.4 Signed and dated acknowledgement of training received.

ATTACHMENT 1

TRAINING PACKAGE OUTLINE

I. TRAINING PACKAGE SPECIFICATIONS

A. Instructor's name and title.

B. Training frequency.

1. Initial training provided at beginning of employment to permit continuing access to restricted area.

2. Re-training provided annually, or as required.

C. Course materials

3. Safety Light Corporation videotape "Working Around Radiation - Some Things To Know".

4. NEW COMPANY Radiation Safety Manual.

5. Proficiency examination.

6 Acknowledgement of training sign-off sheets.

D. Training records

7. Individual training files are maintained in the NEW COMPANY offices.

8. Training files contain signature sheets and other information deemed appropriate by the Radiation Safety Committee.

II. General Training Topics (18 min. videotape)

A. Why General Employee Training in Radiation Protection is given to personnel working at the NEW CORPORATION site.

B. What is radiation.
C. Types of radiation.

D. Radiation exposure limits.

E. Natural radioactivity.

F. Signs, symbols and protective devices.

G. Radiation exposure reduction.

9. External exposure reduction.

10. Contamination control.

11. Personnel monitoring.

12. Radiation accidents.

H. Radiation-related health effects.

I. Radiation quantities and units.

III Site-specific Training Topics (15 min. instructor lecture)

A. Radiation hazards at the Safety Light Corporation site.

B. Location of hazards and restricted areas.

C. NEW COMPANY signs and labels.

D. Location and contents of the NEW COMPANY emergency plan if needed.

E. Workers' rights.

13. Instruction concerning risks from occupational radiation exposure.

14. Instruction concerning prenatal radiation exposure.

15. Sources of additional information.

a. Your employer.

b. Your Radiation Safety Officer.

c. Regulatory Agencies.

16. USNRC licenses, license correspondence, license conditions, amendments, notices of violation are available in the Safety Light Corporation offices.

17. Radiation monitoring and exposure reports.

IV. Proficiency Examination (30 min.)

A. Exam consists of 20 True/False questions.

B. Exam will be self-graded.

C. Employees must achieve a score of greater than or equal to 70% correct answers in order to demonstrate proficiency in radiological protection.

D. Failure to achieve the minimum criteria can result in denial of access to the restricted area at the new company site until successful demonstration of proficiency is attained.

E. Signed sheets will be maintained in each employee's training file.

NEW COMPANY
AUDIT PROGRAM

1.0.0 Audit Overview

a. NEW COMPANY will do a formal audit once a year. I envision 10 to 15 employees in a 10,000 square foot building including salary positions. The manager of the operations will also be the RSO. With the type of work, number of workers and the small footprint of the building, it will lend itself to looking at the way that we are doing things on a daily basis to be ALARA.

b. We will look at each item in the Health and Safety Plan once a year to make sure the equipment is the same, that the radiation training is being done on a yearly basis, that the Hazmat training is being done every three years and that the emergency numbers are correct. Anything in the Health and Safety Plan that changes will be annotated in a Revision to the original so that a history of the revisions will be available.

1.1.0 Responsibility

a. The RSO will have sole responsibility for assuring the Health and Safety Plan is adhered to.

DECOMMISSIONING FUNDING PLAN
for a New Tritium Products Assembly Facility
for a Generic Location in Pennsylvania

November, 2005

Contacts:

Applicant: Mr. Larry Harmon, Bloomsburg, Pa. (570-784-4344)

Consultant: Theodore Rahon, Ph.D., CHP, CoPhysics Corporation (845-783-4402)

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1 INTRODUCTION

This decommissioning funding plan (DFP) is part of the license application per NUREG – 1556; Volume 12; 8.5.2.

The cost estimate in this draft DFP was derived from information gathered by Theodore E. Rahon of CoPhysics Corporation during interviews with Mr. Harmon and from his experience performing the decommissioning of two related Self Powered Lighting, Inc. facilities in New York. Discussions covering the scope of operations at the new, proposed facility were also held with Mr. Harmon.

This Plan is based on the U.S. Nuclear Regulatory Commission "Consolidated NMSS Decommissioning Guidance" (NUREG-1757, Vol. 1, Rev. 1, Vol. 2 & Vol. 3) and Regulatory Guide 3.66, "Standard Format and Content of Financial Assurance Mechanisms Required For Decommissioning Under 10CFR Parts 30, 40, 70, and 72".

2 SITE ASPECTS

Because the new location for the facility has not yet been chosen, this DFP is written for a generic tritium-handling controlled area within a standard industrial building. The building is assumed to consist of a single level, on a concrete slab. The proposed controlled area would have a total floor area of approximately 2200 ft^2 and would be sealed-off from the rest of the building by metal stud / sheetrock walls, a drop ceiling, self-closing doors, and a dedicated exhaust system.

Aspects of tritium operations in the controlled area will include:

- receipt and inspection of gaseous tritium light sources (GTLS) from various suppliers;
- assembly of the light sources into products such as commercial EXIT signs and aircraft placards;
- disassembly of light sources from used products returned from customers;
- use of sealed GTLS only (Tritium will not be brought into the facility on uranium traps.);
- contamination control features including an exhaust system with fume hoods and ventilated cabinets, a washing sink with holding tank for sampling, and a waste storage room.

A floor plan of the area is shown in Figure 1.

The quantity of contaminated fixtures and floor areas that may be created during future operations was estimated from the items shown on the floor plan and from lists of items removed or decontaminated from the SPL facilities in New York. The sizes and quantities of fume hoods,

ductwork, bench tops, equipment and other miscellaneous items were considered. The labor and equipment necessary to clean and/or package items for disposal were also estimated.

The specific items assessed are listed in Appendix A.

3 DECONTAMINATION COST ESTIMATE

These site-associated data and other expected costs based on the author's experience were used to perform the cost estimate as follows:

3.1 Planning and Preparation

When eventual decommissioning of the facility is to occur, the following preliminary steps would be performed:

1.) Historical Site Assessment: A records review and walk-through of the facility will be performed to determine if significant changes have occurred since the last update of this DFP. Changes to note include expansion or reconfiguration of radiologically-controlled area, the addition of significant quantities of new and contaminated equipment, and the occurrence of significant contamination incidents which may cause the need for decontamination of additional items or areas.

2.) A Characterization Survey may be performed to identify potential contaminated areas not identified by routine surveys.

2.) A detailed Decommissioning Plan (DP) would be written that describes the actions to be taken to dismantle and clean the facility so that it may be released for unrestricted use by the general public. Included in the plan would be specifications of items to be disposed or decontaminated, development of DCGL's, assessment of any impacts beyond the controlled area, and final status survey specifications.

The costs for Planning and Preparation are estimated to be $ 15,700 (see Table 1).

3.2 Dismantling, Decontamination and Disposal of Facility Components

The potentially contaminated areas and objects at the facility would consist of:

- ductwork
- hoods
- floor and wall surfaces
- equipment

These items are to be decontaminated or disposed of as radioactive waste. Items that cannot be decontaminated are expected to be disposed through licensed radioactive waste processors via metal melt recycling (steel items), incineration (paper, plastic, fiberglass), and land burial. Costs for these disposal options have become similar and it may be simpler to use land disposal for all of these waste types. The costs for these methods and the labor necessary to dismantle, decontaminate and/or package these items are estimated to be $ 73,557 (see Table 1).

3.3 Final Status Survey and Report

A final status survey (FSS) of the facility will be performed after dismantling and decontamination activities have been completed. The survey will be based on methodologies outlined in MARSSIM (Multi-Agency Radiation Survey and Site Investigation Manual, NUREG-1575, EPA402-R-97-016) which includes measurements to prove, within a pre-specified statistical level of certainty, that the remaining facility and equipment have residual levels of radioactivity that would result in doses to future occupants and workers that are within regulatory limits and are as low as reasonably achievable.

The costs for the final status survey and report are estimated to be $ 23,380 (see Table 1).

3.4 Total Cost Estimate

The total cost for the decommissioning project is estimated to be $ 112,637, or rounded: $113,000.

4 RECORD KEEPING

The applicant will maintain a file located in the health physics office under the responsibility of the radiation safety officer which will contain records of contamination incidents and other unusual occurrences which will have direct consequences for the decommissioning of the facilities described in this DFP. These records will be kept in sufficient detail to identify quantities of radioactive materials involved and their chemical/physical form(s). These records will be accompanied by drawings of the incident area, wipe test results and other descriptive information explaining the incident and the disposition of the radioactivity.

This DFP will be reviewed by the RSO every 3 years to assure that the radiological situation at the facility has not significantly changed and that decommissioning costs accurately reflect the expected increases in radioactive waste transportation, regional surcharges and the effects of inflation. The results of the review shall be documented and kept in the decommissioning file.

5 FINANCIAL ASSURANCE MECHANISM

Applicant proposes to maintain funds in an escrow account mutually agreeable to applicant and the NRC for the purpose of funding the decommissioning of the facility. The account will be initially funded by payments of $ 9500.00 per month until the total of $113,000 is reached. Interest will accrue in the account and will not be withdrawn except as stated below.

The fund balance will be adjusted every three (3) years to match the estimated decommissioning costs as adjusted by the RSO upon his review at that time. The USNRC must be informed in writing 30 days prior to any adjustment of the fund.

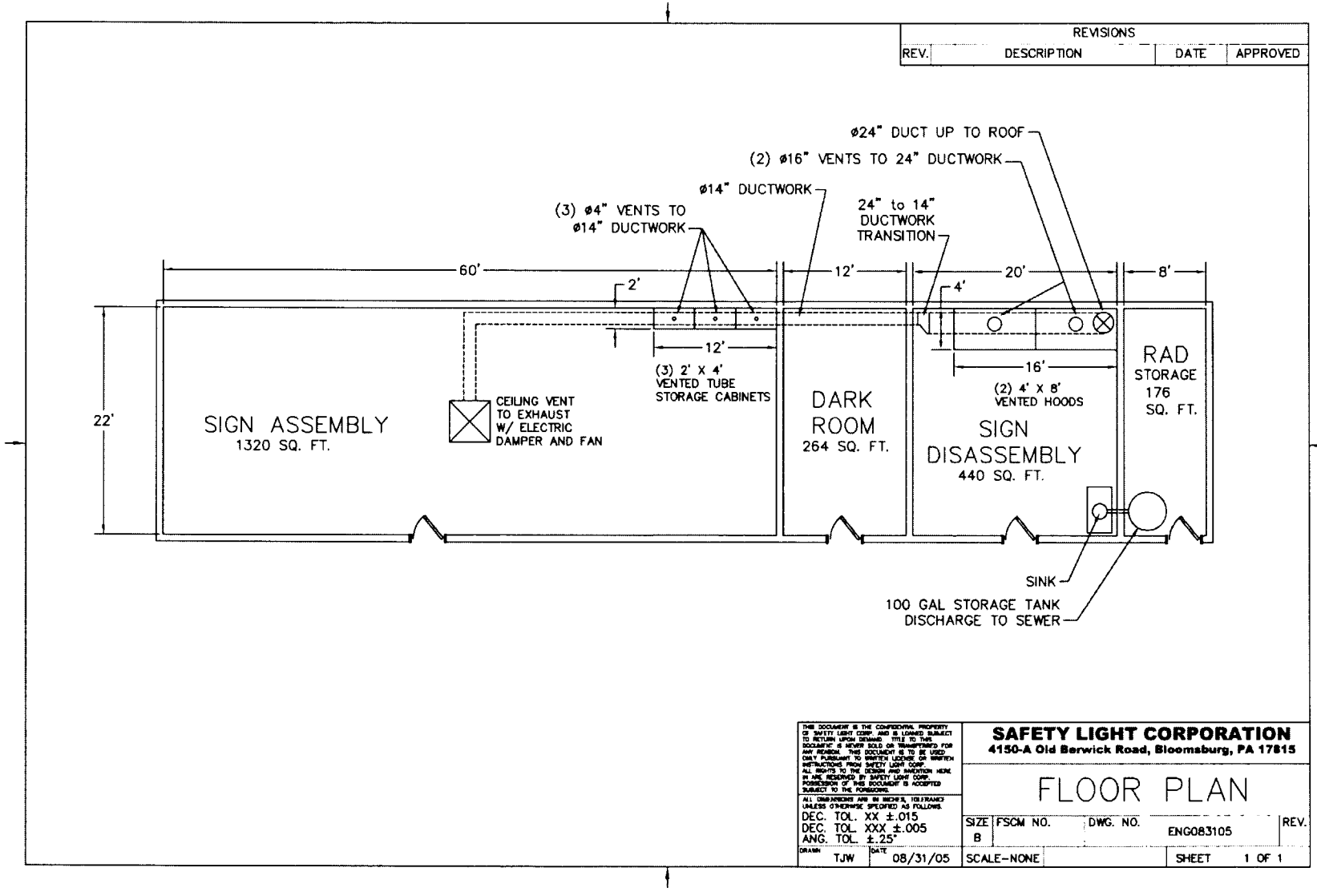

Figure 1 – Floor Plan of Radiologically Controlled Area

Appendix A - Major Items Assessed for Potential Decommissioning

Hoods/Cabinets:

2 - Sign Disassembly Hoods: 8' wide x 4' deep x 5' high;
(~ 200 lbs steel, ~ 200 lbs fiberglass & acrylic, ~ 100 lbs glass)
3 - 2' x 4' x 6' steel cabinets (150 lbs steel total)

Ductwork: (all ducts 26 ga sheet metal)

Main duct (large section): 24" diameter x ~ 40' length (~ 300 lbs)
Trunk lines to hoods: 2 units x 18" diam x 6' long, 3 units x 4" diam x 6' long (~ 100 lbs)
Main duct (small section): 14" diameter x 60'length (~ 200 lbs)

Blower: roof-mounted fan 5000 cfm, 2 HP nominal (~ 300 lbs, exclusive of motor)
with a intake plenum & stack (~ 200 lbs)

Floor: Epoxy-coated concrete or vinyl tile; Area of Assembly, Testing, Disassembly and waste rooms ~ 22' x 100' = 2200 sq ft.; Assume 20% is contaminated and 2 lbs/sq.ft is scarrified -> ~880 lbs for disposal.

Sink, Plumbing & Storage Tank: 50 lbs metal, 150 lbs plastic - assume all is contaminated

Counter Tops: 100 lbs

Ceiling Tiles: no high airborne tritium levels expected - tiles expected to be surveyed & released

Walls - no wall contamination expected

D&D COST ESTIMATE FOR A GENERIC TRITIUM PRODUCTS ASSEMBLY FACILITY

(USING DISPOSAL AT BARNWELL, SC OR CLIVE, UT AND PROCESSING AT DURATEK IN OAK RIDGE TN)

TASK/SUB-TASK:	LABOR					WASTE DISPOSAL							MISC * SUPPLIES ANALYSIS	TRAVEL	TOTAL COST
	Project Mngr hrs	Sr. Tech hrs	HP Tech hrs	Decon Tech hrs	Labor Cost $	Total Weight lbs	Frac. Clean %	Radwaste Metal lbs	Radwaste Paper, Plas lbs	Radwaste Other cu.ft.	Clean Trash lbs	Disposal Cost $	$	$	$
Planning, Preparation:															
Records Review	4				600										
Characterization Survey	12	16	16		4,280								2400	500	
D&D Plan	40	8			6,720										
Permits, Regulatory Corres.	8				1,200										
Sub-Totals:	64	24	16	0	$12,800								$2,400	$500	$15,700
Decontamination/Remedial Action Surveys/Disposal															
Fume Hoods, Cabinets				12	660	1300	50	350	200	100	650	7235			
Duct Work				12	660	600	0	600	0		0	6600			
Rooftop Blowers, Stacks				8	440	500	0	500	0		0	5500			
Annealing Ovens (2)				2	110	400	0	0	0	0	400	52			
Shop Equip., Shelves				12	660	2000	90		0	200	1800	2434			
Ceiling Tiles				2	110	0	100					0			
Light Fixtures, Ceiling Hrdwr				2	110	0	100					0			
Sinks & Plumbing				2	110	200	0	50	150		0	2200			
Carpets, Mats				2	110	100	50		50		50	557			
Misc.Desks/Furniture				6	330	1000	100					0			
Walls				4	220	0	100			0		0			
Floor				16	880	0				880		9680			
Surveys, Supervision, Decon	80	40	80		20,800								7400	6700	
Sub-Totals:	80	40	80	80	$25,200	6100	590	1500	400	1180	2900	$34,257	$7,400	$6,700	$73,557
Final Surveys, Reports:															
Final Status Survey	32	32	32	0	9,760							900	2400	2300	
Final Report / Follow-up	48	8			7,920								100		
Sub-Totals:	80	40	32	0	$17,680							$900	$2,500	$2,300	$23,380
														TOTAL ESTIMATE FOR SCOPE OF WORK:	$112,637

* includes cleaning/demolition equipment, consumables, protective equipment, bioassay, LSC supplies, survey equipment

Unit Price Schedule*

ITEM	COST $	UNITS	
Project Manager / Health Physicist	150	per hr	
HP or Sr. HP Technician	90	per hr	
HP Technician	65	per hr	
Decon Technician	55	per hr	
Dry Radioactive Waste**	$11.00	per lb	(includes containers & transportation)
General Refuse (~ $ 250/ton)	0.13	per lb	(includes containers & transportation)
LSC Vials	$900	per 55-gal	(includes containers & transportation)

* These prices are valid for the calender year 2005.
** Limit 25 mCi/container; $9/mCi over 25

This is to acknowledge the receipt of your letter/application dated

1/9/2006, and to inform you that the initial processing which includes an administrative review has been performed.

NEW LICENSE APPLICATION (03037115)

☑ There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

_____.

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 138220.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.

NRC FORM 532 (RI)
(6-96)

Sincerely,
Licensing Assistance Team Leader

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

(FOR LFMS USE)
INFORMATION FROM LTS

Program Code: 03214
Status Code: 3
Fee Category: _____
Exp. Date: 0
Fee Comments: _____
Decom Fin Assur Reqd: _

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED
   Applicant/Licensee: SAFETY LIGHT CORPORATION
   Received Date: 20060111
   Docket No: 3037115
   Control No.: 138220
   License No.: 37-00030-11
   Action Type: New License

2. FEE ATTACHED
   Amount: $3,500.00
   Check No.: 27144

3. COMMENTS

Signed M. A. Parbin
Date 1/11/2006

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /__/)

1. Fee Category and Amount: _____

2. Correct Fee Paid. Application may be processed for:
   Amendment _____
   Renewal _____
   License _____

3. OTHER _____
   _____

Signed _____
Date _____