SAFETY LIGHT CORPORATION

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030-05982

September 15, 1994

Elizabeth Ulrich, Nuclear Materials Safety Branch
Division of Radiation Safety and Safeguards
U.S. NUCLEAR REGULATORY COMMISSION
REGION I, 475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406

RE: Submittal of Updated Radiological Contingency Plan
License No. 37-00030-08
Docket No. 30-05982
Mail Control 108081

Dear Ms. Ulrich:

We are submitting two (2) copies of our Radiological Contingency Plan. The format has been changed to comply with Draft Regulatory Guide DG-3005, per your request in your deficiency letter of February 15, 1994.

Be advised that the only change to Appendix C is a revision (#5) of Drawing No. 4004-80, which we are enclosing. Please, then, retain the other parts of Appendix C from the previous plan book and insert them in the new book (maps and drawings, etc.).

Should any further information be required, please advise.

Sincerely,
SAFETY LIGHT CORPORATION

Norman G. Fritz
Radiation Safety Officer

108081

OFFICIAL RECORD COPY ML 10 REC'D IN LAS SEP 29 1994

TABLE OF CONTENTS

1.0 FACILITY DESCRIPTION 1-1

1.1 LICENSED ACTIVITIES 1.1
1.2 OTHER ONSITE ACTIVITIES 1-1
1.3 PLANT LOCATION 1-1
1.4 WASTES GENERATED BY SLC OPERATIONS 1-2
1.5 SUMMARY OF RELATED LICENSED OPERATIONAL ACTIVITIES 1-3
1.6 PRINCIPAL CHARACTERISTICS OF SITE & MAP LOCATIONS 1-4
1.7 SITE PLAN & FACILITIES DESCRIPTION 1-6
1.8 ONSITE FIRE CONTROL SYSTEMS. 1-9
1.9 FIRE DETECTION-SAFETY LIGHT CORPORATION 1-12
1.10 PROCESSING BUILDING ZONE DEFINITIONS. 1-13
1.11 TRITIUM PROCESSING AREA & EQUIPMENT 1-14

2.0 TYPES OF ACCIDENTS. 2-1

2.1 RELEASE OF TRITIUM THROUGH LOSS OF INTEGRITY OF ISOLATED IMPREGNATION VESSEL. 2-1
2.2 RELEASE OF TRITIUM THROUGH LOSS OF INTEGRITY OF NON-ISOLATED IMPREGNATION VESSEL. 2-1
2.3 RELEASE OF TRITIUM THROUGH SYSTEMS HOOD EXHAUSTS DUE TO BREAKAGE OF ONE DAYS RUN OF ENCAPSULATED GLASS SOURCES 2-2
2.4 RELEASE OF TRITIUM THROUGH VACUUM SYSTEM(S) PUMPS AND SCRUBBING SYSTEM. 2-2
2.5 RELEASE OF TRITIUM THROUGH LOSS OF CONTENTS OF MOUND LABS TRITIUM SUPPLY BED 2-3
2.6 RELEASE OF TRITIUM THROUGH SYSTEM(S) HOOD EXHAUST DUE TO LOSS OF SYSTEM INTEGRITY 2-3
2.7 FIRE IN PROCESSING BUILDING 2-4
2.8 RELEASE OF TRITIUM THROUGH UNMITIGATED FIRE IN SOLID WASTE BUILDING. 2-5
2.9 RELEASE OF TRITIUM THROUGH UNMITIGATED FIRE IN PROCESSING BUILDING 2-6

3.0 CLASSIFICATION AND NOTIFICATION OF ACCIDENTS 3-1

3.1 CLASSIFICATION SYSTEM 3-1
3.2 NOTIFICATION AND COORDINATION 3-1
3.3 NOTIFICATION, COORDINATION AND COMMUNICATION 3-2

4.0 RESPONSIBILITIES 4-1

4.1 NORMAL FACILITY ORGANIZATION 4-1
4.2 ONSITE EMERGENCY RESPONSE ORGANIZATION 4-3
4.3 LOCAL OFFSITE ASSISTANCE TO FACILITY 4-7
4.4 COORDINATION WITH PARTICIPATING GOVERNMENT AGENCIES 4-8

5.0 EMERGENCY RESPONSE MEASURES 5-1

5.1 ACTIVATION OF EMERGENCY RESPONSE ORGANIZATION 5-1
5.2 ASSESSMENT ACTIONS 5-2
5.3 MITIGATION AND PROTECTIVE ACTIONS 5-7
5.4 PROTECTIVE EQUIPMENT AND SUPPLIES 5-15
5.5 EXPOSURE CONTROL 5-18

6.0 EMERGENCY RESPONSE EQUIPMENT AND FACILITIES 6-1

6.1 COMMAND CENTER 6-1
6.2 COMMUNICATIONS EQUIPMENT 6-1
6.3 ONSITE MEDICAL FACILITIES 6-1
6.4 EMERGENCY MONITORING EQUIPMENT 6-2

7.0 MAINTAINING EMERGENCY PREPAREDNESS CAPABILITY 7-1

7.1 WRITTEN PROCEDURES 7-1
7.2 DRILLS, EXERCISES AND TRAINING 7-1
7.3 MAINTENANCE OF EMERGENCY EQUIPMENT AND SUPPLIES 7-2

8.0 RECORDS AND REPORTS 8-1

8.1 RECORDS OF INCIDENTS. 8-1
8.2 RECORDS OF PREPAREDNESS ASSURANCE. 8-1

9.0 RECOVERY AND PLANT RESTORATION 9-1

9.1 PLANT RESTORATION 9-1
9.2 RESUMPTION OF OPERATIONS 9-1

10. COMPLIANCE WITH EPA AND LOCAL REQUIREMENTS 10-1

10.1 HAZARDOUS CHEMICALS. 10-1
10.2 RIGHT-TO-KNOW REPORTING 10-1
10.3 PENNSYLVANIA COMMUNITY RIGHT-TO-KNOW 10-2

TABLES AND FIGURES

TABLES:

TABLE 1 - SLC ACCIDENT TYPES AND CLASSIFICATION 2-8

TABLE 2 - EMERGENCY TELEPHONE NUMBERS. 4-10

TABLE 3 - SUMMARY OF RELEASE ASSESSMENT ACTIONS, METHODS & EQUIPMENT, ALERT . . . . . 5-3 & 5-4

TABLE 4 - SUMMARY OF RELEASE ASSESSMENT ACTIONS, METHODS & EQUIPMENT, SITE AREA EMERGENCY . . . . . 5-5 & 5-6

FIGURES:

FIGURE 1 - SLC ORGANIZATION CHART 4-2

FIGURE 2 - SLC ONSITE RADIOLOGICAL CONTINGENCY RESPONSE ORGANIZATION 4-4

FIGURE 3 - RADIOLOGICAL EMERGENCY NOTIFICATION SEQUENCE. 4-9

APPENDICES

APPENDIX A - DETERMINATION OF ESTIMATED OFFSITE WHOLE BODY DOSES

APPENDIX B - LETTERS OF AGREEMENT

APPENDIX C - MAPS AND DRAWINGS

1. FACILITY DESCRIPTION

1.1 LICENSED ACTIVITIES

Safety Light Corporation distributes a variety of products based on tritium (Hydrogen-3). The principal products include self-luminous safety devices for use in commercial/military aircraft, commercial buildings and marking of aircraft and helicopter landing areas; research and industrial applications; titanium tritide-coated rods and pins for use in military and industrial type electron tubes; and tritium targets for use in neutron generating devices. The Corporation is also active in research and development operations associated with a variety of military and industrial applications.

The various licenses, covering research and development, manufacture and distribution of tritium-based products, are summarized under Item 1.5.

1.2 OTHER ON-SITE ACTIVITIES

Two companies, USR Metals, Inc. and Multimetal Products Corporation lease portions of the Almedia plant site; and are located within the SLC restricted area, as defined on our Drawing No. 4003-80-C. USR Metals, Inc. conducts non-radioactive operations involving the manufacture of dials, nameplates and other specialty products used in a variety of industrial and military applications; Multimetal Products Corporation is involved in non-radioactive operations including anodizing of aluminum products, and application of specialty protective films to the surfaces of various metal items.

1.3 PLANT LOCATION

The Safety Light Corporation facility is located on a 10 acre site, situated in the township of South Centre, County of Columbia, State of Pennsylvania, beginning at a point in the southerly sideline of the former state highway (previously Route 11, but now identified as Old Berwick Road) leading from Bloomsburg to Berwick. The site is located approximately 6 miles east of Bloomsburg.

1.4 WASTES GENERATED BY SLC OPERATIONS

1.4.1 RADIOACTIVE WASTES

Gaseous Effluents:

The ventilation air exhausted from the facility contains tritium, principally in the form of elemental gas and tritium oxides, resulting from operations involving gas filling, foil and target preparation. The tritium oxide content is minimized through use of desiccant type scrubbing of forepump exhausts, etc. Monitoring of the gaseous effluents, for 3H(I), for 3H(S) and for 3H(SUB), is normally conducted continuously on a 24-hour per day, 7 days per week basis.

Liquid Effluents:

All liquid effluents from radioactive processing areas, and all wash-up sinks of the facility, are discharged to special holding tanks. After tritium assay and appropriate dilution, they are periodically discharged into the nearby North branch of the Susquehanna River. Low-level liquid wastes, consisting of scintillation counting samples from bioassay and environmental programs, are concentrated by evaporation and the dry residues are packaged and shipped ultimately to an approved low-level radwaste disposal site. Liquid discharges to the river are made in accordance with the conditions of EPA NPDES Permit No. 0111848.

Solid Wastes:

Solid wastes, such as tritium foil scraps, towels, gloves, etc., are accumulated and disposed of periodically at approved disposal sites.

Products Returned By Customers:

Periodically, used tritium products such as self-luminous safety devices, spent tritium foils, tritiated phosphor markers, etc., are returned by customers for disposal. These are accumulated and disposed of from time to time by approved methods.

1.4.2 NON-RADIOACTIVE WASTES

Wastes From Toilets & Urinals:

Located outside of radioactive processing areas, these wastes are discharged to an underground septic tank system located adjacent to the West end of the SLC Processing Building.

1.5 SUMMARY OF RELATED LICENSED OPERATIONAL ACTIVITIES

USNRC NO. 37-00030-08:

Authorizes use of the following by-product materials:

1) Hydrogen-3 in any form, for processing and distribution, research & development, with a possession limit of 350,000 Curies.

2) Any by-product material in a sealed source, for use as light source standards, with a possession limit of one (1) milliCurie.

3) Carbon-14 in sealed sources, for use as radioactive and light source standards, with a possession limit of 2 Curies.

4) Krypton-85 in sealed sources, for use as radioactivity and light source standards, with a possession limit of 5 Curies.

USNRC LICENSE NO. 37-00030-09G:

Authorizes the use of Hydrogen-3 in the form of sealed sources for use pursuant to Section 32.51, 10 CFR Part 32. The licensee is authorized to distribute luminous devices specified in Condition No. 10 of this license to persons generally licensed pursuant to Section 31.5, 10 CFR Part 31, or equivalent provisions of the regulations of any Agreement State.

USNRC LICENSE NO. 37-00030-10G:

Authorizes the use of Hydrogen-3 in any form for use pursuant to Section 32.53, 10 CFR Part 32. The licensee is authorized to distribute the sealed self-luminous sources listed in Condition 10 of this license to persons generally licensed pursuant to Section 31.7, 10 CFR Part 31, when such sources have been manufactured pursuant to the terms of this license and Section 32.53, 10 CFR Part 32.

NPDES PERMIT NO. 0111848:

This EPA permit authorizes the discharge of liquid effluents generated in the SLC Processing Building to the nearby North branch of the Susquehanna River. The permit specifies the required frequency of waste discharge samplings, types of analyses and maximum permissible concentrations of various pollutants. A report of analytical data obtained for discharges made during each month is submitted to the Pennsylvania DER and the EPA.

1.6 PRINCIPAL CHARACTERISTICS OF SITE & MAP LOCATIONS

Safety Light Corporation's facility is located on a 10 acre site along the Susquehanna Valley, a rural section of Northeast Pennsylvania in Columbia County. The plant site is situated topographically between two mountain ridges, North and South, of approximately 1400 to 1600 foot height. Six miles to the West is the town of Bloomsburg, and six miles to the East is the town of Berwick. The plant site is characterized by the Susquehanna River which is located immediately to the South. Across the river from the plant site is the southern mountain ridge covered by native grass and tree growth. Beyond the ridge to the South, is cultivated agricultural land. Land immediately to the East and West is residential housing with relatively low population density.

The general area of location of the plant site is shown as a 10-mile radius on a Commonwealth of Pennsylvania, Official Transportation Map, Copyright 1987. The plant site is also shown as a 1-mile radius on a U.S. Geological Survey Topographical Map, Columbia County, Pennsylvania, Map #N4046-W7612/ 38 X 27, 1979. Copies of these maps are submitted herewith in Appendix C.

For definition of near-site structures, roadways, etc., within a 1-mile radius of the plant site, an enlarged topographical map section (See Appendix D), is provided. The following is an itemized list, referenced by number designation on above map, of facilities, transportation routes and approximate populations within the 1-mile radius:

1. Agway, Inc. - Fertilizer Division
   3550 Lackawanna Ave.
   Fertilizer Processor - 3 part-time employees

2. T. Marr Brake & Alignment
   394 Bissets Lane
   Automobile Brake & Alignment Garage - 1 employee

3. Towne Marine
   396 Bissets Lane
   Boating & Marine Sales & Service - 4 employees

4. S & B Foundry Company
   R.D. #5, Route 11
   Manufacturer of gray-iron castings - 30 employees

5. Bloomsburg Carpet Industries, Inc.
   R.D. #5, Route 11
   Manufacturer of carpets - 200 employees

6. The Cannery Store
   R.D. #5, Route 11
   Canned food outlet - 30 employees

7. Central Columbia Middle School & High School
   Old Berwick Road
   1323 students as of Fall of 1988

8. Folk's Floral & Garden Center
   4640 Old Berwick Road
   Horticultural specialties - 5-20 employees

9. Bloomsburg Craftsmen
   4411 Old Berwick Road
   Book printing - 145 employees

10. Columbia County Farmers National Bank
    Old Berwick Road
    18 employees

11. USR Metals, Inc. & Multimetal Products Corp.
    4150-B Old Berwick Road
    Metal stamping and finishing - 23 employees

12. Safety Light Corporation
    4150-A Old Berwick Road
    Self-Luminous Safety Products - 30 employees

13. Route 11 - Primary route for access or evacuation.
    No impediments to traffic flow.

14. Old Berwick Road - Primary route for access or evacuation.
    No impediments to traffic flow.

Approximate commuter population of structures listed above is 1819 people. Approximate residential population within the 1-mile radius is 900 people.

1.7 SITE PLAN & FACILITIES DESCRIPTION

The site plan, Dwg. No. 4003-80, Rev. C, entitled "Safety Light Corporation Building Site Drawing" shows that three companies are located within the property - USR Metals, Inc. and Multimetal Products Corp. (neither of which handles radioactive materials) and Safety Light Corp. (SLC) which is located on the eastern portion of the property and operating under USNRC License #37-00030-08. The SLC tritium manufacturing facility consists of seven (7) designated buildings and is contained within a six-foot high chain link fence with three entrances. One entrance is located on the southern boundary and is normally locked; two (2) entrances are located on the western boundary and are locked except one is left open during normal plant working hours. It may be noted that one other building is shown on the drawing, a concrete block building labeled VAULT. The vault was used in past operations as a radium storage vault. This building does not contain any inventory of radium. It is locked, sealed, posted and is not used in current operations. The seven designated buildings on the site are as follows: Three (3) storage buildings; one (1) machine shop; one (1) Liquid Waste Building; one (1) Solid Waste Building; and one (1) Processing Building. The fenced SLC tritium manufacturing facility is within the Safety Light Corp. fenced restricted area as are USR Metals, Inc., and Multimetal Products Corp.

STORAGE BUILDING #1 is a two-story wood frame building. This building is used for the storage of production equipment, both contaminated and uncontaminated. It is designated as a Magenta Zone with loose surface contamination areas so that:

1) The building is normally kept locked.
2) All entries must be authorized by the Health & Safety Dept.
3) Protective clothing is worn during all entries.
4) Any equipment that is removed is checked for contamination and appropriate precautions taken, if necessary.

STORAGE BUILDING #2 is a block building and Magenta Zone, which is used for the storage of both contaminated and uncontaminated production equipment. It is normally kept locked. All entries must be authorized by the Health & Safety Dept., and no items are removed before they are surveyed for contamination.

STORAGE BUILDING #3 is a block building which is used for the storage of uncontaminated equipment and supplies. It is kept unlocked during workdays and locked during off-hours.

MACHINE SHOP - A block building located on the northern boundary. Most work done in this area is non-radioactive and consists of machining items used later in the assembly of finished products, however, some minor machine of sealed, active products is conducted from time to time.

LIQUID WASTE BUILDING - A modular clear span steel building consisting to two (2) below-ground catch tanks which receive waste water, (excluding sanitary water from the Processing Building), and four above-ground steel tanks where the water is stored, treated, and subsequently released through a line extending from the liquid waste building to an out-fall box located in the bed of the Northern branch of the Susquehanna River. Before releasing to the Susquehanna River, a sample is taken and measured by liquid scintillation counting to assure that the tritium amounts released are not in excess of Federal or State regulations. This building is surveyed bi-monthly for surface contamination. The Liquid Waste Building is also used as a receiving area for incoming shipments of tritium gas received from Mound Laboratories. Here, the outside pack is monitored for surface contamination and the inner pack is removed to the Processing Building for distribution among the tritium has handling equipment contained therein. The purpose behind using this building as a receiving area for tritium gas, is that it is located within the site boundary, and that it is separated from the Processing Building until all incoming shipment monitoring can be completed. During the unpacking and inspection operations, a tritium gas monitor is utilized to ensure that there is no leakage from the inner container, and wipe tests are done to ensure that there is no significant surface contamination of the container. It should be noted that the containers received here are D.O.T. approved Type B shipping containers for tritium gas, and, until the tritium gas is required within the Processing Building, the tritium is stored within the original shipping container.

THE SOLID WASTE BUILDING is a block building used for processing, packing and storage of radioactive waste material. It is designated as a Magenta Zone with loose surface contamination, so that protective clothing is worn on all entries. Room air is monitored continuously for tritium using an impinger setup, and surface contamination levels are monitored bi-monthly by wipe test procedures. Solid waste material from the Processing Building is removed to this area for packing in D.O.T. approved containers. Contained within the building is a trash compactor used to reduce the volume to minimum for shipment to approved radioactive waste material disposal sites.

THE PROCESSING BUILDING is a modular clear span steel building set on a concrete slab with dimensions of 120 feet by 50 feet. The inner walls are non-load bearing with steel studs covered with standard one-half inch dry wall. There are four (4) emergency exits located around the outside perimeter. There are also five (5) other entrances to the plant as shown on Processing Building Floor Plan Drawing #4004-80, Revision 2. All services enter from the western end of the building. These are the main electrical power supply, the exhaust stack, the gas supply, an oxygen distribution system, a compressed air supply, and a compressed gas bottle storage rack.

AIR CONDITIONING: (Drawing 4002-80, Rev. 3)
Air conditioning is designed in two separate units, one for each of the zones of the buildings. In the Yellow Zone, an electric-powered air handling system, backed up by a gas heater, conditions and recirculates the air in a manner that is standard for well-ventilated work areas. During normal operation, a small volume of exhaust from the Yellow Zone is exhausted via the effluent stack. Air conditioning of the Magenta Zone is accomplished by an electric-powered system that conditions incoming air and passes it through the building without recirculation prior to discharge to the environment via the exhaust stack.

VENTILATION: (Drawing 4001-80, Rev. 3)
All ventilation exhaust ports have flow controls so that ventilation can be balanced between areas of the building, between individual rooms, and between exhaust ports, fume hoods, and/or glove boxes in the room. A pressure differential is maintained such that the Yellow Zone pressure is below outside pressure and the Magenta Zone pressure is below that of the Yellow Zone. All doors to the outside remain in normally-closed positions to maintain building air balance and to reduce air conditioning costs. Intake air is filtered to reduce dust load as required for product quality. Exhaust air is filtered, as necessary, at the source. No filter bank is provided for in the building exhaust, but space is provided for a filter bank upstream of the main exhaust, should it be desirable to install one. Exhaust air from the Processing Building passes through an 18.3 meter high stack of 0.61 meter diameter, at a flow rate of 9.68 meters per second. Located in the stack, at a point which will give a representative sample of the stack effluent, is a probe connected to the continuous stack monitoring system.

SURFACE CONTAMINATION CONTROL:

Various surfaces within the Processing Building are wipe tested routinely for surface contamination levels. Wipe test samples are normally assayed for activity levels using an internal proportional counter as described in the current SLC "Health and Safety Program" manual. Liquid scintillation counting is also used at times for assay of wipe test samples.

1.8 ON-SITE FIRE CONTROL SYSTEMS

1.8.1 PROCESSING BUILDING

Automatic Sprinkler System:

The Processing Building is protected by a wet pipe automatic sprinkler system with a sprinkler spacing of 100 square feet per sprinkler with ordinary hazard pipe sizing, as defined by the National Fire Protection Association. An alarm valve connected to a water meter alarm and gong is located on the northeast corner of the building. The water supply for this system is a 300,000 gallon, 40 1/2 foot diameter by 32 foot high steel water tank and pump house, containing a 1,000 gallon per minute pump. Both are located on the northeast corner of the site. In the event of interruption of off-site electric power, city water at 65 to 70 psi is automatically supplied to the system. Within the building, in a central point, in the main corridor, is a 75 foot long by 1 1/2 inch hose and fog nozzle on a hose rack mounted on the wall.

Work and apparatus detailed as follows, were furnished and installed by Automatic sprinkler Corporation of America.

a. Sprinklers: A wet pipe system of "Automatic" sprinklers were installed in the one-story, 50 ft. X 120 ft., metal laboratory building. Concealed piping is installed throughout the suspended ceiling area except for exposed piping in the blind space above wood catwalk. Rubber seals are installed where pendant sprinklers penetrate suspended ceiling.

b. Sprinklers - Special: Chrome-plated sprinklers are installed in suspended ceiling areas.

c. System Classification: The system specified herein is based upon sprinkler spacing of 100 square feet per sprinkler, with ordinary hazard pipe sizing, as defined by the National Fire Protection Association.

d. Ceiling Blind Spaces: The sprinkler system described above includes installation of sprinklers in ceiling blind spaces above the wood catwalk.

e. Pipe Materials: All pipe and hangers are black steel, and fittings are black cast iron of standards as required by the National Fire Protection Association.

f. Alarm Valve: One 4-inch variable pressure alarm valve and trip with alarm switch.

g. Water Motor Alarm: One water motor alarm furnished and connected to one alarm valve. Gong located on outside wall within ten feet of the valve served.

h. Drain Piping: Drain piping properly drains and test system run to open air, for discharge at point within ten feet of the drain valve or device served.

i. Supply Piping: Piping from point where underground supply enters building to connection with sprinkler system.

j. Method of Attachment to Building: There are necessary hangers in place for supporting the sprinkler piping.

k. Sprinkler Cabinet: Sprinkler cabinet with 6 "Automatic" sprinklers and sprinkler wrench for emergency use.

l. Hose Connections and Hose Equipment: One 1-inch connection to sprinkler system each equipped with one set of the following equipment: one hose rack with 75 ft. of 1 1/2 inch single jacket rubber lined hose coupled and fog nozzle. Hose rack mounted in corridor.

m. Pump and Controller: 1,000 gpm at 100 psi or 321 ft.

One Model KSIF, 6 inch X 5 inch Allis-Chalmers horizontal splitcase fire pump, mounted on a fabricated steel base driven by a 75 HP, 1800 rpm, 3 phase, 60 cycle, 440 voltage open drip-proof motor operating at 1760 rpm connected by a flexible coupling with the following accessories: casing relief valve, air release valve, suction reducer, suction and discharge gauges.

One Model LX-1023-F4 manufactured by Lexington Std. Corporation. Manual and/or automatic across the line controller designed for 75 HP, 440 voltage with an A.I.C. of 25,000 Amp circuit breaker.

One 8-inch X 5-inch increaser.

One 8-inch hose header.

One set of 2 1/2 inch hose valves with caps and chains (4).

Miscellaneous: Jockey pump, 22-25 -- 100 psi-3550 rpm. Roth model 1141 pump with base, coupling and 3 HP 230/460 3/60 open drip motor, 3/4 inch relief valve, DA-31 mercoid and 440 volt combination starter with fusible disconnect in NEMA I enclosure.

n. Pump Foundation: Concrete foundations for pump and driver, depth below floor level not exceeding six inches and height above floor not exceeding six inches.

o. Pump Suction-Discharge: Eight inch suction pipe from new 300,000 gallon on grade suction tank.

p. Pump House: One non-combustible concrete block pump house on foundations, with non-combustible roof and door. Electric strip heater to heat pump house.

q. Tanks: One ground suction tank located on east side of plant adjacent to Processing Building, as follows; one 300,000 gallon, 40 ft., 6 in. diameter X 32 ft., high steel storage water tank erected on grade.

r. Fittings: 1 24-inch shell manhole, 1 24-inch roof hatch, 1 8-inch shell with vortex plate, 1 12-inch roof vent, 1 8-inch stub overflow, 1 6-inch fill line, 1 liquid level indicator, 2 3-inch flange nozzle for heater, 1 4-inch circulating heater stand pipe, 1 inside ladder, 1 outside ladder.

s. Painting: Shop rotoblasted inside & outside, 1 ship coat red lead inside & outside, 1 field patch coat red lead inside & outside, 1 field coat red lead inside, and 1 field coat aluminum outside.

t. Tank Heater: One gas-fired circulating hot water heater connected to the tank heating standpipe.

u. Tank Foundation: Proper foundation in place to support tank at no less than 4000 pounds per square foot.

v. Underground Gate Valve: One 6-inch and one 8-inch post indicator valve located outside Processing Building at northeast corner.

w. Hydrant: Three 2-way without independent hose valves.

x. Hydrant House Foundations: One wall type and three grade type hydrant houses, complete with concrete foundations.

y. Hydrant House Equipment: Four sets of equipment each consisting of the following items: 200 ft. of 2 1/2-inch single jacket, cotton rubber-lined hose in 50 ft. lengths; 100 ft. of 1 1/2-inch single jacket cotton rubber-lined hose in 50 ft. lengths; two 2 1/2-inch playpipes, one 1/2 inch combination nozzle for 1 1/2-inch hose; two hydrant wrenches, 4 or 5 spanners for 2 1/2-inch hose; two spanners for 1 1/2-inch hose; spare hose washers for 2 1/2-inch wye; and two 2 1/2-inch to 1 1/2-inch adapter fittings.

Fire Extinguishers:

Type and location - Sixteen extinguisher are located within the site boundary. Type and location are as follows:

TYPE	FIRE CLASS	NUMBER	LOCATION
CO-2	BC	1	Solid Waste Building
CO-2	BC	1	Liquid Waste Building
CO-2	BC	1	Machine Shop
Dry Chemical	ABC	1	Machine Shop
Dry Chemical	ABC	9	Processing Building
Halon 1211	ABC	3	Processing Building
MET-L-X	D	1	Processing Building

1.9 FIRE DETECTION - SAFETY LIGHT CORPORATION

1.9.1 Twenty-four hours/day, seven days/week surveillance for fire is provided for in the Processing Building and the Solid Waste Building as described below.

Processing Building

The sprinkler system described previously is monitored continuously by an automatic system consisting of:

One water flow switch with retard
One gate valve switch
One post indicator valve switch

Additionally, the main water supply tank for the automatic sprinkler system is monitored for water level and temperature; all associated valves are monitored for deliberate or accidental tampering.

Solid Waste Building

A photoelectric type smoke/heat-type detector, equipped with a 135 degree F heat detector, installed and maintained by Triple A Security Systems, Inc. (30 North Franklin St., Wilkes-Barre, PA, 18701) is located within this building.

In the event of a fire alarm situation, the surveillance systems contractor (Triple A Security Systems) is immediately to notify the Columbia County Emergency Management Association (CEMA), who in turn, dispatches local fire companies to our site.

Immediately after notifying CEMA, Triple A Security Systems contacts one of the following SLC personnel, in order of priority, as follows:

1. Radiation Safety Officer
2. Production Manager
3. Plant Manager
4. Health & Safety Technician

1.10 PROCESSING BUILDING ZONE DEFINITIONS
(See also current "SLC Health & Safety Program" manual)

YELLOW ZONE

An area in which there exists a potential hazard of radiation or contamination due to materials in process, storage, or transit, and in which the contamination levels do not exceed the following limits:

1. Direct radiation to a major portion of the body not greater than 2 mrem/hour.

2. Airborne contamination not greater than the levels stated in Title 10, Code of Federal Regulations 10 CFR, Part 20, Appendix B, Table 2.

3. No removable tritium contamination above 5,000 DPM/100 sq.cm.

4. Fixed alpha contamination not greater than 1,000 DPM/100 sq.cm.

5. No removable alpha or beta gamma contamination, other than tritium, above background, unless otherwise given special approval by the RSO.

MAGENTA ZONE

Area in which any of the contamination levels exceed those of the Yellow Zone, but in which the occupants will not normally be exposed to contamination levels exceeding any of the following limits:

1. Direct radiation to a major portion of the body not greater than 5 mrem/hour.

2. Airborne contamination not greater than the levels stated in 10 CFR, Part 20, Appendix B, Table 1.

3. Fixed alpha contamination not greater than 10,000 DPM/100 sq.cm.

4. Removable alpha contamination not greater than 2,000 DPM/100 sq.cm.

5. Removable tritium contamination: (a) General Processing Room areas, not greater than 200,000 DPM/100 sq.cm. and (b) interior surfaces or Process Box gloves, not greater than 1,000,000 DPM/100 sq.cm*.

*Insofar as clean rubber gloves are donned before using Process Box gloves, a higher limit is allowed. If, however, cleaning of gloves down to this limit is found impractical, the contaminated gloves should be disposed of and replaced with new ones.

RED ZONE

Area in which any contamination levels normally exceed those of a Magenta Zone. Entry to a Red Zone must first be authorized by the RSO or his designate.

EXCEEDED LIMITS

When the specified limits of any radioactive materials zone are exceeded, action will be taken, under the direction of the Health & Safety Dept., to correct the situation by not later than the end of the next working day. Should the situation be classified by the RSO as an extreme hazard, immediate action must be taken to correct the problem.

1.11 TRITIUM PROCESSING AREA & EQUIPMENT

The Tritium Processing Area is the only Magenta Zone within the Processing Building; the remaining areas are designated as Yellow Zones.

1.11.1 TRITIUM PROCESSING AREA

The manufacturing operations conducted in this area consist principally of (a) the filling of self-luminous sources or other items with gaseous tritium, and (b) the tritium impregnation of metallic substrates coated previously with thin films of titanium or scandium.

1.11.2 TRITIUM PROCESSING EQUIPMENTS

The following equipments are located within the Tritium Processing Area:

1. Rotary Fill System II
2. Tritium Foil Impregnation System

Rotary Fill System II. (Drawing #1009)

The Rotary Fill System II is divided into four subsystems:

SUBSYSTEM A - Vacuum System. This system consists of a low vacuum line, evacuated to approximately 5 X 10(-3) Torr by a mechanical pump whose exhaust is connected to the scrubbing system and a high vacuum line evacuated to approximately 1 X 10(-5) Torr by a diffusion pump that is exhausted by a mechanical pump whose exhaust is connected to the scrubbing system. Both low and high vacuum lines are connected by appropriate valving to the bulk storage and filling systems.

SUBSYSTEM B - Gas Handling System. This system consists of two reservoirs of depleted uranium, four calibrated volumes and appropriate valving to connect the uranium beds to the filling system and to a container of tritium.

SUBSYSTEM C - Filling System. This system consists of uranium beds, pressure gauges, thermostatically controlled heaters. automatic pressure regulators, a rotary valve, and other appropriate valving and connections which allow the connection of an internally phosphor-coated tube to the system. The tube is evacuated by the low and high vacuum systems and then back-filled with a measured quantity of tritium gas. This gas has been transferred from storage in uranium beds by heating the bed and collecting the gas in the system. The gas is then passed through a pressure controlling valve and into the evacuated tube, which is then sealed. The remaining tritium in the lines is removed to a uranium bed which re-adsorbs the gas. After the tritium has been removed from the lines, the tube stub is evacuated by the low vacuum system and the sealed tube is removed to an intermediate area for leak-testing and decontamination.

SUBSYSTEM D - Support Hoods. This system is comprised of a wash-up area consisting of a stainless steel sink enclosed in a Plexiglas hood. The wash-up area is exhausted to the main ventilation system, and serves as a washing and decontamination station for the filled product previous to removal to some other point.

Tritium Foil Impregnation System (Drawing #1010-81)

This system consists of four subsystems:

SUBSYSTEM A - Low Vacuum System. This system consists of a rotary pump, whose exhaust is connected to the scrubber system, a diffusion pump, and valving that allows bypassing of the diffusion pump for rough vacuum pumping. The pump components of this system are located in their own enclosure.

SUBSYSTEM B - High Vacuum System. This system consists of a Vac-Ion pump with valve connections to a port on the low vacuum system.

SUBSYSTEM C - Impregnation Chamber. This system consists of a fused quartz reaction vessel with a bolt-on high vacuum seal and electric heating mantle.

SUBSYSTEM D - Tritium Storage and Generation System. This system consists of two (2) depleted uranium beds with isolated valving and a pressure gauge.

The total system is used to impregnate foils by heating the foils under vacuum at elevated temperature. The foils are placed in a quartz pot and evacuated for a minimum period, then heated until vacuum conditions indicate that the foil is outgassed sufficiently. Pressure is then generated in Subsystem D by heating the uranium beds, after which the tritium is admitted to the quartz reaction chamber. The quartz chamber is the cooled to room temperature and the residual non-reacted tritium is drawn back onto the uranium bed. After a minimum period, any remaining non-reacted tritium is drawn back onto the uranium bed, and the quartz chamber is pressurized to slightly less than one atmosphere with an inert gas. It is allowed to remain thus for 24 hours, after which the chamber is evacuated, removing all the residual inert material and possible tritium oxide through the scrubbing system. The foils are then removed to a glove box where they are tested. They are then prepared for storage or shipment. After leaving the foil measurement hood, the foils are passed to the storage hood, where they are placed in a desiccation chamber for storage or placed in primary packaging for shipment and placed in the packing hood. In the packing hood the foils are placed into secondary packaging and prepared for exit from the room and eventual shipment. Certain foils are removed from the storage hood in sealed containers to the foil cutting hood, where they are cut into smaller sizes and then transferred to the packing hood for processing and shipment.

Vacuum Pump Exhaust Scrubbing System (Drawing #1006-81)

The scrubbing system for the Foil Impregnation System and Rotary II Filling System consists of absorbing type columns to remove any residual tritium oxides from the vacuum pump exhaust. The vacuum pump exhaust from the Rotary II Filling System and Foil Impregnation System are passed through system columns with 99% or better removal efficiency for tritium oxides.

As required the vacuum pump exhaust from a mass spectrometer type leak detector can pass through either scrubbing system depending on its area of use.

1.11.3 DESIGN CRITERIA OF EQUIPMENT & PROCESSES IN PROCESSING AREA

In order to reduce tritium emission levels to the environment resulting from normal or accidental operations, the following are essential in design and operation.

Materials - Stainless steel is used as much as possible as a primary containment for tritium gas. The reasons for this being that it has a low diffusion rate of tritium at room temperature, that it can be welded and brazed to form a strong and rigid system and it is readily available in raw form or component form. Bellows seal valves are used as they have greater reliability than packed valves. The bellows design eliminates sliding seals and can be obtained in stainless steel.

Isolation - Where possible, two or more valves are used as a separation between tritium usage and a vacuum source so that accidents and/or failure will not result in loss. Double containment is used as a secondary backup in areas where failure could result in a loss of tritium gas and/or where diffusion of gas through the primary containment vessel due to heating is expected. An example of this is the pyrophoric uranium beds. these are contained within a secondary stainless steel vessel to allow for recovery of tritium gas which diffuses through the wall of the primary vessel during heating. Mass spectrometer helium leak detection down to 1 X 10(-8) standard cubic centimeters per minute is utilized on all tritium gas and vacuum systems to ensure that no leaks are present in the system.

Safety - Presently only one shift is in operation and no others are planned currently in the future. At shift end, all tritium gas in the systems is recovered back onto the uranium beds. This means that a temperature of approximately 250 degrees C or greater has to be maintained on the uranium bed before any releases will occur on off-shift hours. Also the process is set up so that the amount of gas available for release in reduced at each stage of process, i.e., we receive gas in 25,000 Curie quantities or less, which is then adsorbed on Bulk Storage uranium pyros. It is then divided further by transfer to Tritium Fill pyros or Tritium Foil Impregnation System pyros.

1.11.4 DESCRIPTION OF PROCESS BUILDING YELLOW ZONES

Of the twelve rooms within the Tritium Processing Building, only three areas, other than the Magenta Zone, contain any inventory of radioactive material. These three are as follows:

Darkroom - The darkroom is the receiving area for GTLS tubes from the filling system, where they are checked for brightness against the standard then placed into steel storage cabinets that are connected to the building air evacuation system. Also stored within the darkroom are various prototype sources and sources on decay study program.

Assembly Area - Devices using GTLS tubes are assembled in this area. GTLS tubes are removed from storage cabinets in the tube storage darkroom or Assembly Area Storage Cabinet and then to the work area tables. The GTLS tubes are then installed in the device and the device is packaged. A tritium monitor labeled E-6, samples room air continuously during assembly and packaging. After packaging, the container is checked for surface contamination by wipe testing. If passed, the container is sent to the shipping department. If a tube should leak during assembly or if a package is contaminated, it is passed back to the Tritium Processing Area, where the leaking tube is sealed in a container and properly disposed. Any usable tubes are decontaminated and put back into storage.

Storage Room & Sign Disassembly Area - Completed, boxed signs are stored on shelves in this area, an extension of the Sign Assembly Area. One end of the room contains a ventillated hood under which self-luminous tubes are removed from signs returned at the end of their useful life. A portable tritium monitor is on hand when these operations are in progress.

Health & Safety Area - This area serves as the center from which all operations related to health and safety are normally controlled and conducted. The principal operations conducted routinely within this area consist of:

a. Preparation of liquid samples and measurement of same, using liquid scintillation counting techniques.*

*See Health & Safety Annex Page 1-20

b. Measurement of wipe test samples, using internal proportional and/or liquid scintillation counting methods.

c. Continuous monitoring of tritium activity levels in gaseous stack effluents.

d. Calibration of various equipment used in radiological monitoring and contamination surveys.

e. Preparation of documents related to outgoing or incoming radioactive materials, or waste disposal, etc.

f. Preparation of environmental samples and related paperwork for shipment to an independent measurement laboratory.*

g. Calculation and recording of various data related to health and safety operations.

Within the Health and Safety Area are located the following pieces of equipment:

a. Packard Model 4350 liquid scintillation spectrometer. This is used for counting water and urine samples for tritium analysis.*

b. An Eberline MS2 miniscaler and a three-position internal proportional counting chamber used for wipe surveys.

c. Two Cary 401 Vibrating Reed Electrometers with 14.8 liter Cary-Tolbert ionization chambers and Esterline Angus chart recorders. These are used to monitor gas emissions from the stack.

d. Six stack impinger trains in series set up to obtain 3H(S) and 3H(SUB) concentrations in stack exhausts.

e. A portable Triton Tritium Air Monitor (during working hours).

*See Health & Safety Annex Page 1-20

Also within the Health and Safety area is a locked and labeled cabinet for storage of low level calibration sources. Also located within the area are records of Health and Safety. These consist of the following:

Wipe survey sheets
Inter-office memos
Bore hole data book
Health Physics data log book
Health Physics purchase orders
H & S Program Manual
Bio-assay rem totals book
Daily and/or weekly urinalysis book
Unrestricted area radiation surveys
Miscellaneous surveys
Liquid waste discharges
Standard certificates, calibrations and counter plateau data
Radon air surveys
Stack traverse data
Equipment manuals, maintenance, and calibrations
Radioactive waste shipment records
D.O.T. file
Waste disposal file
Obsolete licenses
Liquid waste discharges, permits and applications
Personnel exposure records
Environmental discharges, weekly and monthly
Fire extinguisher file

Health & Safety Annex - Main Building - In addition to the Health and Safety laboratory in the Tritium Processing Building, certain procedures are undertaken in an 11' X 13' laboratory in the Main Office Building outside of the tritium compound. No radioactive manufacturing operations are carried out in this building.

The Packard Tri-Carb #4530 Scintillation Counter is kept in this lab as is the spare Eberline M5-2 mini-scaler. All low level environmental samples are prepared for tritium counting here and all scintillation counting is performed here. Sufficient supplies are stored in this lab and the adjacent area to carry out all testing required should a tritium incident or fire make entrance into the Tritium Processing Building impossible. The Triton III Portable tritium monitor is stationed in an adjacent area to this room in off-hours.

Also included is the Wm. B. Johnson & Assoc. PCS-1 Portable Counting Kit consisting of the following:

1. MSC-1	Manual Sample Changer
2. DIG-2	Scaler-Timer
3. GSM-5	Model Survey Meter
4. VP-2E	Varipulser
5. ASA-2	Portable Loud Speaker
6. ASP-2A	Alpha Detector
7. GP-200X50	High Range Alpha Beta Gamma Probe
8. Model PPA-2	Beta Hand Probe
9. GSP-2A	Gamma Scintillation Probe

The remaining Yellow Zone areas, which do not contain an inventory of radioactive materials, are as follows:

Glass Preparation Area - This area is used for the preparation to glass capsules for later use as GTLS. Here they are formed to the correct shape and size and are annealed to relieve stress. The ovens to anneal, bake the phosphor coating, and hold future GTLS, are in this area.

Tube Coating Areas - These areas are used to apply the phosphor coating to the internal surface of the GTLS. First an adhesive solution, is applied to the inner diameter and the required phosphor is then vibrated through the tube, forming the required thickness of phosphor film on the inner diameter. The tubes are then passed back to the glass preparation area for vacuum baking which hardens the binder and removes moisture and all volatiles.

Foil and Target Preparation Area - In this area the metal film is applied to the required base material to be used later on the foil and target impregnation system.

Offices - The two rooms labeled "Offices" are used for administrative and management purposes.

Lunch Room

Storage Rooms (2)

The following areas contain very limited quantities of flammable solvents:

a. Health and Safety Area
b. Tube Coating Area
c. Assembly Area
d. Miscellaneous Work Area

2. TYPES OF ACCIDENTS

2.1 RELEASE OF TRITIUM THROUGH LOSS OF INTEGRITY OF ISOLATED IMPREGNATION VESSEL

Example - Fracture of quartz impregnation vessel containing tritium gas at the impregnation temperature of 496 degrees C. Assume release to stack via vented hood.

Estimated Maximum Loss - 600 Curies

2.1.1 Detection

1. Upscale or off-scale response, audio and visual, of room air tritium monitor in Rotary II area.

2. Visual observation of condition of quartz impregnation vessel.

3. Upscale response, audio and visual, of Cary Electrometer and Cary-Tolbert Ion chamber system for exhaust stack sampling of tritium.

2.2 RELEASE OF TRITIUM THROUGH LOSS OF INTEGRITY OF NON-ISOLATED IMPREGNATION VESSEL

Example - Fracture of quartz impregnation vessel containing tritium gas at impregnation temperature of 496 degrees C, also releasing contents of system lines and expansion volume. Assume release to stack via vented hood.

Estimated Maximum Loss - 3000 Curies

2.2.1 Detection

1. Extreme response of Wallace and Tiernan gauge indicating that predetermined volume and pressure of tritium gas expanded not only into impregnation vessel, upon opening of valve, but into vast additional volume created by fracture of such vessel.

2. Upscale or off-scale response, audio and visual, of room air tritium monitor in Rotary II area.

3. Visual observation of condition of quartz impregnation vessel.

4. Extreme upscale response, audio and visual, of Cary Electrometer and Cary-Tolbert Ion chamber system for exhaust stack sampling of tritium.

2.3 RELEASE OF TRITIUM THROUGH SYSTEMS HOOD EXHAUSTS DUE TO BREAKAGE OF ONE DAYS RUN OF ENCAPSULATED GLASS SOURCES (All sources fractured releasing all contained tritium gas) - ROTARY INDEX II AREA (This accident could develop as a consequence of accident 4.7).

Examples:

a. 500 pcs. 7mm sign tubes @ 5 Curies each

Estimated Maximum Loss - 2500 Curies

b. 75 pcs. 11" Double Wall Dewars @ 166 Curies each

Estimated Maximum Loss - 12,500 Curies

2.3.1 Detection

1. Visual observation by tritium fill operator(s) either involved in the accident directly or becoming aware of incident by noticing unusual sounds, etc.

2. Upscale or off-scale response, audio and visual, of room air tritium monitor(s).

3. Upscale or off-scale response, audio and visual, of hood air tritium monitor.

4. Extreme upscale response, audio and visual, of Cary Electrometer and Cary-Tolbert Ion Chamber System for exhaust stack sampling of tritium.

2.4 RELEASE OF TRITIUM THROUGH VACUUM SYSTEM(S) PUMPS AND SCRUBBING SYSTEM - ROTARY INDEX II

Example - Entire volume of metal bellows and lines (2174.5 cc) and volume of four one-liter cylinders and lines (4056.16 cc) at 760 Torr inadvertently pumped through vacuum system.

Estimated Maximum Loss - 15,000 Curies

2.4.1 Detection

1. Reduction of pressure reading on MKS Gauge from 760 Torr to 0 Torr indicating loss of gas from four one-liter cylinders and associated lines.

2. Reduction of pressure reading on Setra Pressure Gauge for metal bellows, and Wallace and Tiernan Gauge, from 760 Torr to 0 Torr indicating loss of tritium gas from metal bellows volume and associated lines.

3. Upscale or off-scale response, audio and visual, of Cary Electrometer and Cary-Tolbert Ion Chamber system for exhaust stack sampling of tritium.

2.5 RELEASE OF TRITIUM THROUGH LOSS OF CONTENTS OF MOUND LABS TRITIUM SUPPLY BED

Example - Inadvertent opening of tritium bed during physical attachment to system piping in hood. Physical hook-up not completed. Air enters, raises temperature, tritium released.

Estimated Maximum Loss - 20,000 Curies

2.5.1 Detection

1. Upscale or off-scale response, audio and visual, of hood tritium monitor, Rotary Index II.

2. Perceptible increase in temperature of tritium bed body.

   a. Noticeable manually and visibly if bed is not yet connected to heating equipment with thermocouple.

   b. Noticeable manually, visibly and by temperature indicating device if bed is connected to heating equipment with thermocouple.

3. Upscale or off-scale response, audio and visual, of room air tritium monitors in Rotary Index II room.

4. Extreme upscale response, audio and visual, of Cary Electrometer and Cary-Tolbert Ion Chamber system for exhaust stack sampling of tritium.

2.6 RELEASE OF TRITIUM THROUGH SYSTEM(S) HOOD EXHAUST DUE TO LOSS OF SYSTEM INTEGRITY - ROTARY INDEX II

Example - Generation of tritium from Mound Lab tritium supply bed containing 20,000 Curies. Loose system fitting downstream of supply bed, allowing release of entire contents before being discovered.

Estimated Maximum Loss - 20,000 Curies

2.6.1 Detection

1. Upscale or off-scale response, audio and visual, of hood air tritium monitor.

2. Upscale or off-scale response, audio and visual, of room air tritium monitor(s).

3. Extreme upscale response, audio and visual, of Cary Electrometer and Cary-Tolbert Ion chamber System for exhaust stack sampling of tritium.

4. Slow pressure rise or lack of indicated pressure rise in lines and volumes receiving generated tritium gas as indicated by visual observation of pressure gauges.

2.7 FIRE IN PROCESSING BUILDING

Example - Fire in any area of Processing Building, mitigated initially by fire extinguishers and finally by activation of sprinkler system, which checks the progress of the fire and eventually extinguishes it.

Estimated Loss - No loss of radioactive material, or releases to the environment.[1]

2.7.1 Detection

During Regular Working Hours -

1. Observation by Safety Light Corp. personnel.

2. Activation of sprinkler system causes Fire Alarm #25 - Flow Processing Building, to transmit signal to Triple A Security Agency, who in turn, notifies Safety Light Corp. and Columbia County Emergency Management Agency (CEMA), who dispatches the fire company and police.

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[1]This accident could, by collapse of water soaked ceiling materials, contribute to the development of accident 2.3.

Should sprinkler system fail, or prove inoperable, a fire in the Processing Building could escalate to the accident in Section 2.9.

During Off-Hours and Week Ends -

1. Activation of sprinkler system causes Fire Alarm #25 - Flow Processing Building, to transmit signal to Triple A Security Agency and reported by them to Safety Light Corp. call-in personnel:

a. Radiation Safety Officer
b. Production Manager
c. Plant Manager
d. Health & Safety Technician

and to CEMA, who in turn, dispatches the fire company and police.

2. Observation by residents adjacent to plant area, and consequent report of fire to local authorities can be assumed to be likely, though possibly not immediate. Local fire and police and CEMA would then contact Safety Light Corp. call-in personnel who would in turn activate contingency measures.

2.8 RELEASE OF TRITIUM THROUGH UNMITIGATED FIRE IN SOLID WASTE BUILDING

Example - Entire contents of Solid Waste building, containing maximum permissible amount of waste, burned and released.

Estimated Maximum Loss - 35,000 Curies

2.8.1 Detection

During Regular Working Hours -

1. Observation by Safety Light Corp. Health/Safety personnel during performance of scheduled duties outside of Processing Building.

2. Fire Alarm Zone (Smoke Detector, Solid Waste Building) detected by Triple A Security Agency and reported by them to Safety Light Corp. offices and CEMA, who in turn dispatches fire companies and police.

During Off-Hours and Week Ends -

1. Fire Alarm Zone 8 (Smoke Detector, Solid Waste Building) detected by Triple A Security Agency and reported by them to Safety Light Corp. call-in personnel:

a. Radiation Safety Officer
b. Production Manager
c. Plant Manager
d. Health & Safety Technician

and to CEMA, who in turn dispatches fire companies and police.

2.9 RELEASE OF TRITIUM THROUGH UNMITIGATED FIRE IN PROCESSING BUILDING

Example - Violent fire destroys entire Processing Building with sprinkler system inoperable. Temperatures generated sufficient to melt doubly encapsulated uranium beds containing tritium absorbed on uranium. Complete conversion to oxide form of maximum quantity of tritium possible to be in Processing Building at one time, is assumed.

Estimated Maximum Loss - 215,000 Curies[2]

2.9.1 Detection

During Regular Working Hours -

1. Observation by Safety Light Corp. personnel.

During Off-Hours and Week Ends -

1. Fire protection and sprinklers assumed inoperable. Dependance upon Fire Alarm #25, Flow Processing Building, is questionable. However, it is reasonable to assume that other alarms would be activated in a fire, although not specifically fire detection alarms and would be detected and reported by Triple A Security Agency to Safety Light Corp. call-in personnel, as follows:

a. Room air tritium monitor - Fill Room
b. Room air tritium monitor - Sign Assembly
c. Main stack alarm
d. Processing Building beam (Burglar Alarm)

a. Radiation Safety Officer
b. Production Manager
c. Plant Manager
d. Health & Safety Technician

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[2]This assumes that in this scenario, in addition to normal production operations, an order involving 850 self-luminous aircraft runway marker tubes @ 166 Curies each is being processed.

2. Observation by residents adjacent to plant area, and consequent report of fire to local authorities can be assumed to be likely, though possibly not immediate. Local fire and police and CEMA would then contact Safety Light Corp. call-in personnel, who would in turn activate contingency measures.

TABLE 1
SLC ACCIDENT TYPES & CORRESPONDING CLASSIFICATION

CLASSIFICATION(1)	ACCIDENT TYPE (2)	RELEASE TYPE	ESTIMATED QUANTITY H3 RELEASED (Ci)	ESTIMATED MAX. OFF-SITE WHOLE BODY DOSE		APPROX. DISTANCE DOWNWIND (m)
				REMS (3)	MREMS TOTAL	
ALERTS	2.1	ELEVATED (SLC STACK)	600	5.60E-03	5.6	850
	2.2	ELEVATED (SLC STACK)	3,000	2.80E-02	28	850
SITE AREA EMERGENCIES:	2.3	ELEVATED (SLC STACK)	(1) 2,500 (2) 12,500	2.30E-02 1.17E-01	23 117	850 850
	2.4	ELEVATED (SLC STACK)	15,000	1.400E-01	140	850
	2.5	ELEVATED (SLC STACK)	20,000	1.90E-01	190	850
	2.6	ELEVATED (SLC STACK)	20,000	1.90E-01	190	850
	2.7	----------	----------	NO H3 RELEASED	----------	----------
	2.8	GROUND LEVEL	35,000	3.6	3600	100
	2.9	GROUND LEVEL	215,000	22.2	22,200	100

(1) Refer to Section 3.0 for Classification Information
(2) Refer to Section 2.0 for Accident Descriptions
(3) Refer to Appendix A for calculation details

3. CLASSIFICATION AND NOTIFICATION OF ACCIDENTS

3.1 CLASSIFICATION SYSTEM

ALERT - An incident that has lead to an abnormal release to the environment of radioactive material, but the release is not expected to require a response by an offsite response organization to protect persons offsite.

SITE AREA EMERGENCY - An incident that has led or could lead to a release to the environment of radioactive material that could require a response by an offsite organization to protect persons offsite. A site area emergency requires mobilization of the emergency response organization and may result in requests for offsite organizations to respond to the site.

3.2 NOTIFICATION AND COORDINATION

3.2.1 Alert

An Alert involves an abnormal release of radioactive material to the environment, i.e., a release other than those historically incidental to normal licensed operations, and minor unplanned releases. No offsite contacts or response are anticipated unless reporting under 10CFR Parts 20.2202 or 20.2203 are required.

Persons competent in mitigating and evaluating the situation will be enlisted to do so. This could include Health & Safety and Gas Fill personnel as well as the Radiation Safety Officer and other management personnel. Investigations and written reports to the Radiation Safety Committee may be required.

3.2.2 Site Area Emergency

An emergency of this category will be declared when any of the postulated accidents in Section 2 (except 4.1 and 4.2) occur or when accidents of similar quantitative severity occur.

If it is anticipated that the situation will progress to the postulated severity, onsite and offsite emergency procedures will be initiated immediately. Local authorities will be contacted within 15 minutes of this decision and communication with USNRC will follow in less than one hour.

3.3 NOTIFICATION, COORDINATION AND COMMUNICATION

ALERT -

No offsite communication anticipated. Onsite communication as follows, to:

a. Health and Safety Personnel
b. Radiation Safety Officer
c. Production Support Technician
d. Plant Manager/RSO Alternate

Information -

a. Description of accident, location and anticipated severity.
b. Time of occurrence.
c. Persons involved.
d. Anticipated release amount.
e. Mitigation steps already taken, and persons already involved in mitigation.

SITE AREA EMERGENCY -

1. Notify and activate onsite emergency organization. Inform members of all items listed under Alert - Information.

2. Notify local response organization, C.E.M.A. @ 784-6300 and clearly and concisely describe accident. Request specific assistance required (police, fire companies, ambulance, etc.). Notification must be within 15 minutes.

3. Notify P.E.M.A. @ 1-263-1611. Describe accident as in (2) above. Request assistance as required. Notification must be within 15 minutes.

4. Notify USNRC 24-Hour Emergency Center @ 301/816-5100 and describe accident.

5. Notify USNRC, Region I (if possible, relating to hour of occurrence) @ 610/337-5000 and describe accident. (Request assistance from USNRC as required.)

4.0 RESPONSIBILITIES

4.1 NORMAL FACILITY ORGANIZATION

SEE ORGANIZATIONAL CHART ON FOLLOWING PAGE.

The Emergency Director (Plant Manager) or anyone he designates has the responsibility to declare an Alert or Site Area Emergency and to initiate the appropriate response.

SAFETY LIGHT CORPORATION ORGANIZATIONAL CHART

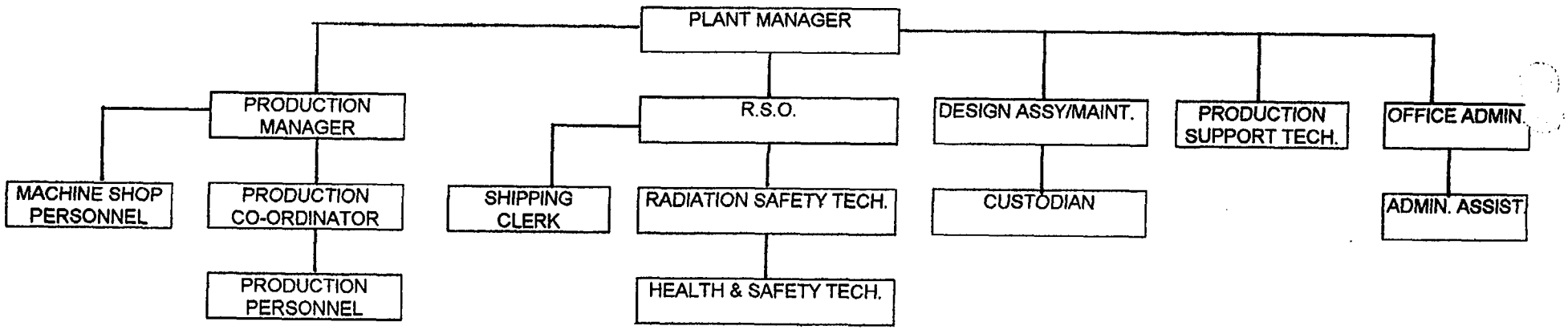


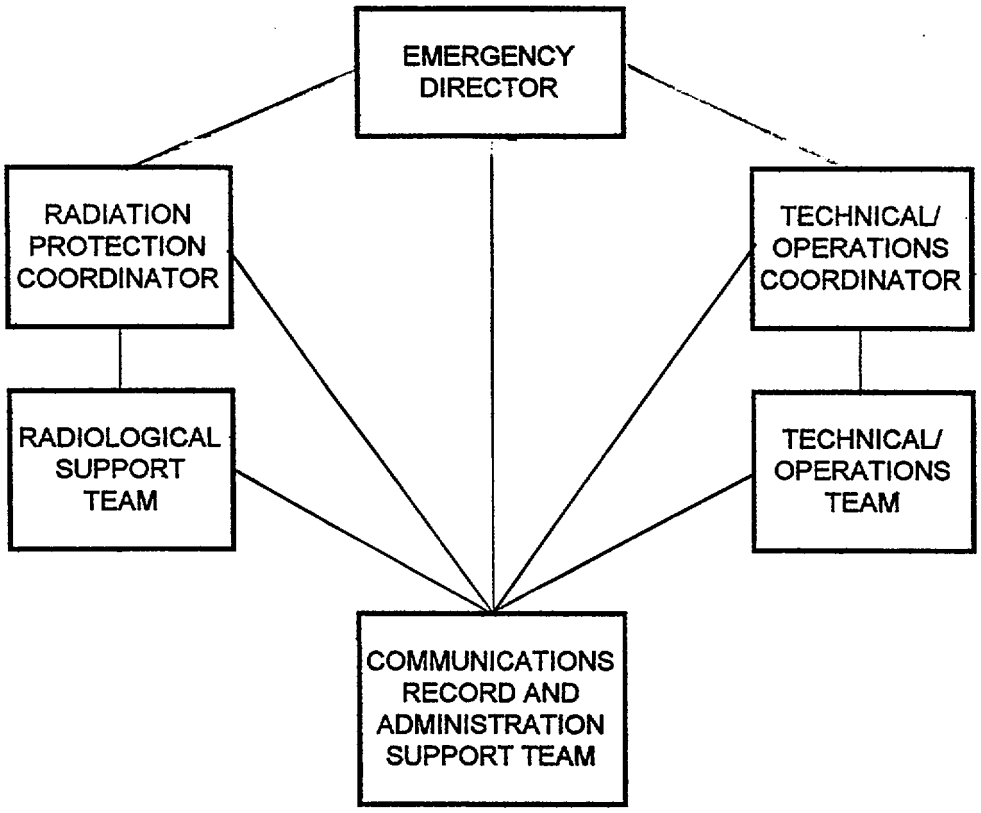
FIGURE I

4.2 ONSITE EMERGENCY RESPONSE ORGANIZATION

SEE RESPONSE CHART ON FOLLOWING PAGE.

SAFETY LIGHT CORPORATION

ONSITE RADIOLOGICAL CONTINGENCY
RESPONSE ORGANIZATION



ORGANIZATION IS THE SAME ON ALL SHIFTS, AT ALL TIMES

FIGURE 2

4.2.1 Direction, Coordination and Emergency Assignments of Onsite Staff

ONSITE RADIOLOGICAL CONTINGENCY RESPONSE ORGANIZATION

EMERGENCY DIRECTOR - PLANT MANAGER (Alternate - Radiation Safety Officer)

The Emergency Director shall assume full responsibility for coordination and implementation of radiological contingency measures.

Responsibilities of Emergency Director

1. Immediately upon notification of an existing or potential emergency, report to the site and initiate assessment activities, including classification of the emergency and dose projections if appropriate.

2. Unilaterally implement the immediate on-site corrective and protective actions to bring the incident under control and mitigate its effects.

3. Assure that, if required, appropriate notifications and recommendations to offsite organizations are made.

4. Augment the onsite emergency organization with other available personnel as dictated by the emergency conditions.

5. Continue reassessment of emergency status and make appropriate recommendations including protective actions to offsite organizations.

6. Ensure that information released is accurate and released through the proper channels.

7. Ensure that sufficient Communications, Record & Administration Support Team members are available.

RADIATION PROTECTION COORDINATOR - Radiation Safety Officer (Alternate - Radiation Safety Technician, Plant Manager)

Responsibilities of the Radiation Protection Coordinator

1. Provide technical advice to the Emergency Director and the Technical/Operations Coordinator on radiological aspects of onsite emergency activities.

2. Perform initial dose projections and offsite environmental assessment.

3. Provide technical advice to the Emergency Director concerning recommendations for offsite protective actions.

4. Evaluate the magnitude and effects of actual or potential radioactive releases from the plant.

5. Provide onsite radiation monitoring personnel for effluent release assessment.

6. Recommend, if necessary, appropriate offsite protective measures.

7. Assign offsite monitor teams if necessary.

8. Provide radiation monitoring personnel for emergency team efforts.

9. Assist in personnel decontamination efforts, if required.

10. Account for personnel.

11. Ensure that sufficient Radiological Support Team members are available.

TECHNICAL OPERATIONS COORDINATOR - Production Manager
(Alternate - Production Support Technician)

Responsibilities of the Technical/Operations Coordinator

1. Advise the Emergency Director on matters concerning plant operations.

2. Assist in the development of emergency procedures, operating procedures, etc., as necessary for conducting emergency operations.

3. Analyze conditions and develop guidance for the Emergency Director and operations personnel.

4. Analyze mechanical, electrical, and instrument and control problems, determine alternate solutions, design and coordinate the installation of short-term modifications.

5. Direct the activities of the in-plant emergency teams such as damage control, fire control and first aid, and rescue.

6. Plan for and direct re-entry and restoration of operations.

7. Ensure that sufficient Technical Operations Team members are available.

Radiological Support Team -

Assist Radiation Protection Coordinator in implementing radiation safety measures.

Radiation Safety Technician
Production Manager
Health & Safety Technician

Technical Operations Team -

Assist Radiation Protection Coordinator in assessment and mitigation of emergency situation.

Production Support Technician
Gas Fill Operator
Design, Assembly, Maintenance Person

Communications Record and Administration Support Team -

Assist Emergency Director, Radiation Protection Coordinator and/or Technical Operations Coordinator in communications, record keeping and procurement relating to emergency situation.

Office Administrator
Data Processing Assistant

4.3 LOCAL OFFSITE ASSISTANCE TO FACILITY

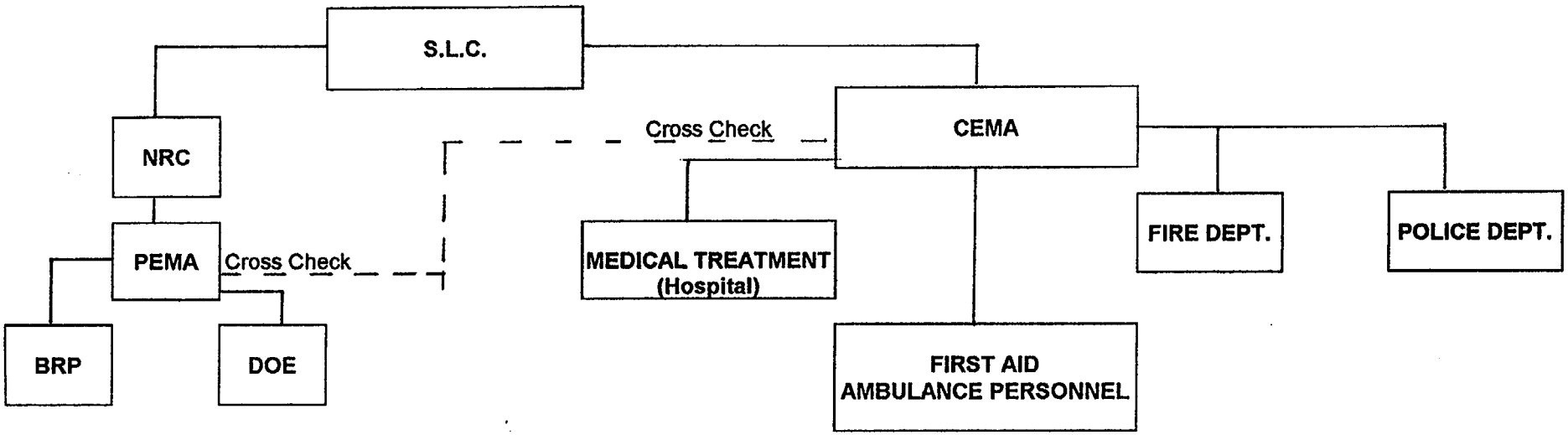
Some or all of the following offsite agencies may be required to respond to a Site Area Emergency. Upon arrival at the site, no action is anticipated to be taken by any of these organizations without members of the Onsite Emergency Response Organization being available to provide access to the site and consultation on appropriate remedial measures and emergency actions to be taken.

Lime Ridge Fire Department	784-7911
Bloomsburg Ambulance Service	784-7911
Berwick Hospital	759-5000
Bloomsburg Hospital (Back-up medical support)	387-2100
Pennsylvania State Police	387-4261
Susquehanna Steam Electric Station (Personnel & Equipment Support)	542-3233
South Centre Township Police	784-7911

4.4 COORDINATION WITH PARTICIPATING GOVERNMENT AGENCIES

In the event of a Site Area Emergency, government agencies as well as local response organizations will be contacted as in Figure 3. Telephone numbers are shown on Table 2, CEMA and NRC being the most important. CEMA would enlist response organizations based on the initial evaluation by SLC Emergency Response Organization, and would handle responses and inquires by local residents. NRC would furnish consultation and also technical assistance teams, if deemed necessary.

RADIOLOGICAL EMERGENCY NOTIFICATION SEQUENCE
FIGURE 3



S.L.C. - Safety Light Corporation
CEMA - Columbia County Emergency Management Agency
NRC - Nuclear Regulatory Commission
PEMA - Pennsylvania Emergency Management Agency
DOE - Department of Energy
BRP - Bureau of Radiation Protection

TABLE 2

EMERGENCY TELEPHONE NUMBERS

USNRC - KING OF PRUSSIA.	610/337-5000
USNRC - BETHESDA, MD - 24 HOUR CENTER . . .	301/816-5100
BACK-UP NUMBER	301/951-0550
FIRE	784-7911
LOCAL POLICE	784-7911
STATE POLICE	387-4261
BLOOMSBURG AMBULANCE.	784-7911
BERWICK HOSPITAL	759-5000
CEMA	784-6300
OR	784-7911
PEMA	1-263-1611
BRP	1-787-2480
TRIPLE A SECURITY.	800/222-6565
LARRY HARMON - PLANT MANAGER	1-788-3506
NORMAN FRITZ - R.S.O., PROD. ENGINEER	356-2559
JOHN G. MacHUTCHIN, RADIATION SAFETY CONSULTANT. .	752-4929
JERRY SLOWICK - PRODUCTION MANAGER	752-6005
CHARLES BERLIN - RADIATION SAFETY TECH.	759-8873
LESTER BURGESS - H & S TECH.	652-2433
MARTHA LAUBACH - PRODUCTION SUPPORT TECH.. . . .	389-1360
DOLLY GRIFFIN - GAS FILL OPERATOR	387-8277
CINDY LITTERER - OFFICE ADMINISTRATOR	784-5983
JEAN DRUMM - DATA PROCESSING ASSISTANT.	784-3915

5.0 EMERGENCY RESPONSE MEASURES

5.1 ACTIVATION OF EMERGENCY RESPONSE ORGANIZATION

During normal working hours, emergency actions are initiated primarily in response to the sounding of instrumentation alarms and/or upon receipt of notification from operating personnel that an apparent emergency situation has occurred. During off-shift hours or holidays, notification of any unusual occurrence is made by security personnel, via telephone, to the Radiation Safety Technician, the Radiation Safety Officer, the Production Manager or the Plant Manager.

If assessment by one or more of the last four designated individuals indicates that an emergency situation exists or is developing, the Emergency Director will be alerted immediately by telephone. In either case, if initial assessment of the situation indicates that a significant release of radioactivity is occurring, or if a potential for such a release exists, the Emergency Director (Plant Manager) or his designated alternate (Radiation Safety Officer) initiates the appropriate corrective and protective actions and ensures activation of the necessary segments of the total emergency organization.

5.1.5 Onsite Emergency Organization

Upon being informed of an emergency event, the Emergency Director (or his designated alternate) will assess the condition. He will ensure that appropriate actions have been initiated to maintain safe and proper operation of the plant. If the event requires implementation of the Emergency Plan, the Emergency Director (or his designated alternate) will:

1. Classify the condition as an Alert or Site Area Emergency, as appropriate.

2. Implement immediate actions in accordance with 4.2.1.

3. Ensure that onsite Emergency Response Personnel are notified immediately. For emergency situations occurring in off-shift hours, the Emergency Director (or designate) will institute call-in procedures to ensure that the necessary Emergency Response Personnel will be present onsite as promptly as possible. Other off-duty personnel will be called in as required.

5.1.2 Offsite Emergency Organization

Emergency Support Groups

If the situation has been classified as a Site Area Emergency, the Emergency Director shall notify CEMA, who in turn shall ensure that the appropriate offsite emergency support groups are contacted to provide the assistance which may be necessary to deal with the existing emergency. One or more of the organizations listed below may be contacted for assistance, depending on the nature of the emergency:

Lime Ridge Fire Department 784-7911
Bloomsburg Ambulance Service 784-7911
Berwick Hospital 759-5000
Bloomsburg Hospital (Back-up medical support) 387-2100
Pennsylvania State Police 387-4261
Susquehanna Steam Electric Station (Personnel & Equipment Support) 542-3233
South Centre Township Police 784-7911

5.2 ASSESSMENT ACTIONS

Assessment of tritium releases and of the consequences of same must be made as promptly as possible after an accident has occurred. Because of the nature of Safety Light Corporation's operations, it is most likely that the release will have occurred before most assessment actions can be initiated and/or completed. Onsite assessments would be initiated first and any offsite assessments necessary would be conducted thereafter when personnel and equipment become available.

A summary of the assessment actions to be taken, as well as the method and equipment to be used, is presented in Tables 3 and 4 as follows:

TABLE 3
SUMMARY OF RELEASE ASSESSMENT ACTIONS
METHODS & EQUIPMENT
ALERT

ASSESSMENTS REQUIRED			METHODS & EQUIPMENT
1. ONSITE ASSESSMENTS:			
A. Airborne Activity Levels	and	1. Within Processing Area 2. Remainder of Building	Air Sampling: Triton 3H Monitors
B. Operator(s) Body Surface Contamination Levels		----------	Wipe Test body Surfaces & Clothing; Internal Proportional Counter
C. Building Area Surfaces	and	1. Within Processing Area 2. Remainder of Building	Wipe Test Selected Areas; Internal Proportional Counter
D. Stack Exhaust Levels			Stack Monitor Impinger Assays; Liquid Scintillation Counter
E. Existing Meteorological Conditions		----------	Wind Direction, Wind Speed & Weather Class; SLC Weather Station
F. Operator(s) 3H Uptake & Projected Whole Body Dose		----------	Bioassays & Calculation; Liquid Scintillation Counter
G. Property Damage & Loss of Work Time*		----------	Visual Observation, etc.

*As in case of 'contained fire', i.e., Accident Type 2.7 (Table 1)

TABLE 3 - CONTINUED
SUMMARY OF RELEASE ASSESSMENT ACTIONS
METHODS & EQUIPMENT
ALERT

ASSESSMENTS REQUIRED	METHODS & EQUIPMENT
2. OFFSITE ASSESSMENTS:	
A. Projected Maximum Downwind 3H Concentrations (HT and HTO) & Location of Same	By Calculation, Using Data from SLC Weather Station, REG. GUIDE 3.35 and NUREG-1140; Release Calculations and Notification Book
B. Projected Maximum Offsite Whole Body Dose	By Calculation, Using Data from 2A. above, NUREG-1140 & NUREG-0938, Release Calculations & Notification Book
C. Airborne HTO Concentrations at Property Boundary and Offsite	Assay of Boundary & Offsite Air Sampling Impinger Solutions;Liquid Scintillation Counter
D. Surface Contamination Levels (Vegetation, Soil, Surface Water, Food Supplies, etc.)	Assay of Selected Samples for HTO Content, Using Appropriate Processing Methods, Liquid Scintillation Counter
E. Sub-surface Water Contamination Levels	Assay of Offsite Well Water Samples; Liquid Scintillation Counter
F. Offsite Person(s) Body Surface Contamination Levels**	Wipe Test; Internal Proportional Counter
G. Offsite Person(s) Projected Whole Body Dose Commitment**	Bioassays & Calculation; Liquid Scintillation

**Items 2F and 2G would apply only if preceding assessments 2A thru 2E indicate these should be undertaken.

TABLE 4
SUMMARY OF RELEASE ASSESSMENT ACTIONS
METHODS & EQUIPMENT
SITE AREA EMERGENCY

ASSESSMENTS REQUIRED			METHODS & EQUIPMENT
1. ONSITE ASSESSMENTS:			
A. Airborne Activity Levels	and	1. Within Processing Area 2. Remainder of Building	Air Sampling: Triton 3H Monitors
B. Operator(s) Body Surface Contamination Levels		----------	Wipe Test body Surfaces & Clothing; Internal Proportional Counter
C. Building Area Surfaces	and	1. Within Processing Area 2. Remainder of Building	Wipe Test Selected Areas; Internal Proportional Counter
D. Stack Exhaust Levels			Stack Monitor Impinger Assays; Liquid Scintillation Counter
E. Existing Meteorological Conditions		----------	Wind Direction, Wind Speed & Weather Class; SLC Weather Station
F. Operator(s) 3H Uptake & Projected Whole Body Dose		----------	Bioassays & Calculation; Liquid Scintillation Counter
G. Property Damage & Loss of Work Time*		----------	Visual Observation, etc.

*As in case of 'contained fire', i.e., Accident Type 2.7 (Table 1)

TABLE 4 - CONTINUED
SUMMARY OF RELEASE ASSESSMENT ACTIONS
METHODS & EQUIPMENT
SITE AREA EMERGENCY

ASSESSMENTS REQUIRED	METHODS & EQUIPMENT
2. OFFSITE ASSESSMENTS:	
A. Projected Maximum Downwind 3H Concentrations (HT and HTO) & Location of Same	By Calculation, Using Data from SLC Weather Station, REG. GUIDE 3.35 and NUREG-1140; Release Calculations and Notification Book
B. Projected Maximum Offsite Whole Body Dose	By Calculation, Using Data from 2A. above, NUREG-1140 & NUREG-0938, Release Calculations & Notification Book
C. Airborne HTO Concentrations at Property Boundary and Offsite	Assay of Boundary & Offsite Air Sampling Impinger Solutions;Liquid Scintillation Counter
D. Surface Contamination Levels (Vegetation, Soil, Surface Water, Food Supplies, etc.)	Assay of Selected Samples for HTO Content, Using Appropriate Processing Methods, Liquid Scintillation Counter
E. Sub-surface Water Contamination Levels	Assay of Offsite Well Water Samples; Liquid Scintillation Counter
F. Offsite Person(s) Body Surface Contamination Levels	Wipe Test; Internal Proportional Counter
G. Offsite Person(s) Projected Whole Body Dose Commitment	Bioassays & Calculation; Liquid Scintillation

5.3 MITIGATION AND PROTECTIVE ACTIONS

ACCIDENT 2.1
RELEASE OF TRITIUM THROUGH LOSS OF INTEGRITY OF ISOLATED IMPREGNATION VESSEL

1. If room air tritium monitors, described in Section 2, show high activity in Fill Room area due to inability of hoods to exhaust tritium gas as quickly as it is being generated, evacuate room, open room doors and outside doors to reduce building negative pressure and hasten movement of air to hood areas and to SLC stack.

2. If portable room air tritium monitor, described in Section 2, shows high activity levels in other areas of Processing Building, evacuate building or sections of building involved through any of nine (9) exits. See Section 1.7.

3. Obtain urine specimen from any person suspected of uptake and determine concentration by LSC.

4. Perform wipe test surveys on exposed areas of person(s) in immediate area of accident and decontaminate as required.

5. Perform downwind calculations based on estimated loss of tritium to determine if any person(s) are at risk of overexposure.

ACCIDENT 2.2
RELEASE OF TRITIUM THROUGH LOSS OF INTEGRITY OF NON-ISOLATED IMPREGNATION VESSEL

1. Close all system valves. Isolate fractured vessel.

2. If room air tritium monitors, described in Section 2, show high activity in Fill Room area due to inability of hoods to exhaust tritium gas as quickly as it is being generated, evacuate room, open room doors and outside doors to reduce building negative pressure and hasten movement of air to hood areas and to SLC stack.

3. If portable room air tritium monitor, described in Section 2, shows high activity levels in other areas of Processing Building, evacuate building or sections of building involved through any of nine (9) exits. See Section 1.7.

4. Obtain urine specimen from any person suspected of uptake and determine concentration by LSC.

5. Perform wipe test surveys on exposed areas of person(s) in immediate area of accident and decontaminate as required.

6. Perform downwind calculations based on estimated loss of tritium to determine if any person(s) are at risk of overexposure.

ACCIDENT 2.3
RELEASE OF TRITIUM GAS THROUGH SYSTEMS HOOD EXHAUSTS
DUE TO BREAKAGE OF ONE DAYS' RUN OF ENCAPSULATED GLASS SOURCES
(All sources fractured releasing all contained tritium gas)
ROTARY INDEX II AREA
(This accident could develop as a consequence of Accident 2.7)

1. Evacuate Fill Room immediately.

2. If portable room air tritium monitor, described in Section 2, shows high activity levels in other areas of Processing Building, evacuate building or sections of building involved through any of nine (9) exits. See Section 1.7.

3. Obtain urine specimen from any person suspected of uptake and determine concentration by LSC.

4. Perform downwind calculations based on estimated loss of tritium to determine if any person(s) are at risk of overexposure.

5. Upon safe re-entry, collect and dispose of broken, contaminated glass as radioactive waste, decontaminate work tables, floors, etc.

ACCIDENT 2.4
RELEASE OF TRITIUM THROUGH VACUUM SYSTEM(S)
PUMPS AND SCRUBBING SYSTEM - ROTARY INDEX II

1. Close valves improperly left open, or leaking through, immediately.

2. Scrubbing system, Section 1.11.2, removes tritium oxide from pumps exhaust to SLC stack.

3. If room air tritium monitors described in Section 2, show high activity levels present in room due to overflow from pumps or scrubbing system, evacuate room, open room doors to reduce building negative pressure and hasten movement of air toward hood areas and to SLC stack.

4. Obtain urine specimen from any person suspected of uptake and determine concentration by LSC.

5. Perform downwind calculations based on estimated loss of tritium to determine if any person(s) are at risk of overexposure.

ACCIDENT 2.5
RELEASE OF TRITIUM THROUGH PARTIAL OXIDATION
OF CONTENTS OF MOUND LABS TRITIUM SUPPLY BED

1. Close tritium bed valve, isolate bed.

2. Cool tritium bed using CO_2.

3. If bed can be or is removed from system, cover with dry sand.

4. If room air tritium monitors, described in Section 2, show high activity in Fill Room area due to inability of hoods to exhaust tritium gas as quickly as it is being generated, evacuate room, open room doors and outside doors to reduce building negative pressure and hasten movement of air to hood areas and to SLC stack.

5. If portable room air tritium monitor, described in Section 2, shows high activity levels in other areas of Processing Building, evacuate building or sections of building involved through any of nine (9) exits. See Section 1.7.

6. Obtain urine specimen from any person suspected of uptake and determine concentration by LSC.

7. Perform wipe test surveys on exposed areas of person(s) in immediate area of accident and decontaminate as required.

8. Perform downwind calculations based on estimated loss of tritium to determine if any person(s) are at risk of overexposure.

ACCIDENT 2.6
RELEASE OF TRITIUM THROUGH SYSTEM(S) HOOD EXHAUST DUE TO LOSS OF SYSTEM INTEGRITY - ROTARY INDEX II

1. Operator close any valves between source of tritium gas and suspected area of leak, particularly tritium supply bed valve. Close any open hood ports, turn off heat to tritium supply bed. Close valves to receiving bed or vessel.

2. If room air tritium monitors, described in Section 2, show high activity in Fill Room area due to inability of hoods to exhaust tritium gas as quickly as it is being generated, evacuate room, open room doors and outside doors to reduce building negative pressure and hasten movement of air to hood areas and to SLC stack.

3. If portable room air tritium monitor, described in Section 2, shows high activity levels in other areas of Processing Building, evacuate building or sections of building involved through any of nine (9) exits. See Section 1.7.

4. Obtain urine specimen from any person suspected of uptake and determine concentration by LSC.

5. Perform downwind calculations based on estimated loss of tritium to determine if any person(s) are at risk of overexposure.

ACCIDENT 2.7
FIRE IN PROCESSING BUILDING

Example - Fire in any area of Processing Building, mitigated initially by fire extinguishers and finally by activation of sprinkler system, which checks the progress of the fire and eventually extinguishes it.

During Regular Working Hours -

1. Fire extinguishers. See Section 1.

2. Put systems in shutdown mode.

3. Activate Radiological Contingency Response Organization.

4. Evacuation of Processing Building personnel through any of nine (9) exits. See Section 1.7.

5. Activation of sprinkler system. See Section 1.

6. Response by fire companies. See Section 1.9.

During Off-Hours and Week Ends -

1. Activation of sprinkler system and initiate contact to call-in personnel, fire company(s) and police.

2. Activate Radiological Contingency Response Organization.

ACCIDENT 2.8
RELEASE OF TRITIUM THROUGH UNMITIGATED FIRE
IN SOLID WASTE BUILDING

During Regular Working Hours -

1. Smoke detector. See Section 1.9.

2. Fire extinguisher. See Section 1.8.

3. Activate Radiological Contingency Response Organization who notifies CEMA, who in turn dispatches fire companies and police.

4. Isolate area affected. Do not allow unauthorized persons inside Safety Light Corp. fenced compound.

5. Evacuate Processing Building and Plastics Machine Shop, if necessary.

6. Institute tight controls, as follows; covering both proper entry into and exit from contaminated areas and work being conducted therein:

   a. Provide protective clothing, footwear, gloves, face masks, etc., to personnel authorized to enter the area.

   b. Set up clothing change station for use by personnel exiting from the area.

   c. Provide plastic bags, etc., for use in disposal of contaminated clothing or other articles.

   d. Establish wipe test routines for checking for contamination of exposed body surfaces, clothing, footwear, or other articles.

   e. Provide facilities nearby for personnel decontamination by washup and/or shower. NOTE: Subject to prior approval by medical authorities, attempts will be made as required to transfer to an ambulance.

f. Conduct special bioassays as required, on personnel assigned to work in a contaminated area.

7. Notify USNRC.

8. Offsite Operation (at earliest opportunity)

a. From meteorological data, project areas of maximum HTO concentration during release.

b. In these areas, assay activity levels in available surface water, vegetation and well water. Continue well water assays over long-term period.

During Off-Hours and Week Ends -

1. Smoke alarm sends signal to Triple A Security, who notifies CEMA, who in turn:

a. Dispatches fire companies and police.

b. Notifies Safety Light Corp. call-in personnel, who contacts Radiological Contingency Response Organization.

2. Activate Radiological Contingency Organization.

3. Isolate area affected. Do not allow unauthorized persons inside Safety Light Corp. fenced compound.

4. Institute tight controls, as follows; covering both proper entry into and exit from contaminated areas and work being conducted therein:

a. Provide protective clothing, footwear, gloves, face masks, etc., to personnel authorized to enter the area.

b. Set up clothing change station for use by personnel exiting from the area.

c. Provide plastic bags, etc., for use in disposal of contaminated clothing or other articles.

d. Establish wipe test routines for checking for contamination of exposed body surfaces, clothing, footwear, or other articles.

e. Provide facilities nearby for personnel decontamination by washup and/or shower. NOTE: Subject to prior approval by medical authorities, attempts will be made as required to transfer to an ambulance.

f. Conduct special bioassays as required, on personnel assigned to work in a contaminated area.

5. Notify USNRC.

6. Offsite Operation (at earliest opportunity)

a. From meteorological data, project areas of maximum HTO concentration during release.

b. In these areas, assay activity levels in available surface water, vegetation and well water. Continue well water assays over long-term period.

ACCIDENT 2.9
RELEASE OF TRITIUM THROUGH UNMITIGATED FIRE
IN PROCESSING BUILDING

During Regular Working Hours -

1. Activate Radiological Contingency Organization.

2. Evacuation of Processing Building personnel through any of nine (9) exits. See Section 1.7.

3. Notify CEMA, who dispatches fire companies and police.

4. Evacuate personnel in Plastics Machine Shop. See Section 1.7 and Dwg. 4003-80.

5. Isolate area affected. Do not allow unauthorized persons inside Safety Light Corp. fenced compound.

6. Institute tight controls, as follows; covering both proper entry into and exit from contaminated areas and work being conducted therein:

a. Provide protective clothing, footwear, gloves, face masks, etc., to personnel authorized to enter the area.

b. Set up clothing change station for use by personnel exiting from the area.

c. Provide plastic bags, etc., for use in disposal of contaminated clothing or other articles.

d. Establish wipe test routines for checking for contamination of exposed body surfaces, clothing, footwear, or other articles.

e. Provide facilities nearby for personnel decontamination by washup and/or shower. NOTE: Subject to prior approval by medical authorities, attempts will be made as required to transfer to an ambulance.

f. Conduct special bioassays as required, on personnel assigned to work in a contaminated area.

5. Notify USNRC.

6. Offsite Operation (at earliest opportunity)

a. From meteorological data, project areas of maximum HTO concentration during release.

b. In these areas, assay activity levels in available surface water, vegetation and well water. Continue well water assays over long-term period.

During Off-Hours and Week Ends -

1. Activate Radiological Contingency Response Organization.

2. Notify CEMA, who dispatches fire companies and police.

3. Isolate area affected Do not allow unauthorized persons inside Safety Light Corp. fenced compound.

4. Institute tight controls, as follows; covering both proper entry into and exit from contaminated areas and work being conducted therein:

a. Provide protective clothing, footwear, gloves, face masks, etc., to personnel authorized to enter the area.

b. Set up clothing change station for use by personnel exiting from the area.

c. Provide plastic bags, etc., for use in disposal of contaminated clothing or other articles.

d. Establish wipe test routines for checking for contamination of exposed body surfaces, clothing, footwear, or other articles.

e. Provide facilities nearby for personnel decontamination by washup and/or shower. NOTE: Subject to prior approval by medical authorities, attempts will be made as required to transfer to an ambulance.

f. Conduct special bioassays as required, on personnel assigned to work in a contaminated area.

5. Notify USNRC.

6. Offsite Operation (at earliest opportunity)

a. From meteorological data, project areas of maximum HTO concentration during release.

b. In these areas, assay activity levels in available surface water, vegetation and well water. Continue well water assays over long-term period.

5.4 PROTECTIVE EQUIPMENT AND SUPPLIES

HEALTH & SAFETY ANNEX - MAIN BUILDING - In addition to the Health and Safety Laboratory in the Tritium Processing Building, certain procedures are undertaken in an 11' X 13' laboratory in the Main Office Building outside of the tritium compound. No radioactive manufacturing operations are carried out in this building.

The Packard Tri-Carb #4530 Scintillation counter is kept in this lab as is the spare Eberline M5-2 mini-scaler. All low level environmental samples are prepared for tritium counting here and all scintillation counting is performed here. Sufficient supplies are stored in this lab and the adjacent area to carry out all testing required should a tritium incident or fire make entrance into the Tritium Processing building impossible. The Triton III Portable tritium monitor is stationed in an adjacent area to this room in off-hours.

Also included is the Wm. B. Johnson & Assoc. PCS-1 Portable Counting Kit consisting of the following:

Portable suitcase kit containing the following survey instruments and accessories:

MSC1 - Manual sample counting well
DIG-2 - Scaler-Timer
GSM-5 - Survey Meter
VP-2E - Varipulser
ASA-2 - Portable Loud Speaker
ASP-2A - Alpha Scintillation Probe
GP-200X50 - Alpha, Beta, Gamma Probe
PPA-2 - Hand Probe (Beta)
GSP-2A - Gamma Scintillation Probe

Uses - Provides additional survey capability should instruments in Processing Building be damaged or destroyed.

Kit is located in Health & Safety Annex, Main Building.

Meteorological Measurement System

Description:

Heath ID 400L Digital Weather Computer

Uses - To provide periodic recordings of wind speed, direction, barometric pressure, time/date and temperature.

The system is located within the E.O.C. area and the data collection point for wind speed and direction is located on a mast on the highest point on the Main Building roof. A visual display continuously indicates the time/date, inside and outside temperature, barometric pressure, wind speed and direction. Direction is divided into 16 points of the compass.

Manual recordings every two (2) hours during regular working hours, provide sufficient data for downwind calculations should a release occur. In the event of an off-hour release, a recording of data would be made manually by Technical/Operations Coordinator or his designate as soon as he reaches the plant site and would continue recordings at regular intervals at his discretion.

Equipment and Supplies for Assessment Teams

The equipment and supplies available to the Assessment Team are located in the Command Center/Health & Safety Annex and are as follows:

1. Communication Systems
2. Technical Library
3. Site and Facility Drawings

4. Engineering Drawings
5. Emergency Plan and Procedure Manuals
6. Desk Top Computer System
7. Weather Station
8. Radiological-Health Handbook
9. Two-man Emergency Kit consisting of the following:

    a. Marawipes (1 box)
    b. Tape: Masking & Radioactive Marked
    c. Shoe Covers, Rubber (2 pair)
    d. Face Masks with Cartridges (2)
    e. Urine Specimen Containers
    f. Swabs and Envelopes
    g. Paper Hats (4)
    h. Shoe Covers, Paper (4)
    i. Rubber Gloves (2 pair)
    j. Lab Coats, Paper (2)
    k. Red Zone Postings
    l. Two "Caution, Radioactive Materials" Signs
    m. Coveralls, Paper (2 pair)

10. Portable Triton
11. MSA Portable Pump & Mini Impinger Air Sampler
12. Hard Hats
13. Plastic Suit
14. MSA Face Mask & Air Supply
15. Hydrocount Scintillation Fluid, Scinti Verse E
16. Scintillation Vials & Cups
17. Disposable Pipettes & Pipet Filler
18. Tygon Tubing
19. Jumpsuits
20. Paper Hats (6)
21. Box of Plastic Gloves
22. Protective Footwear, Rubber & Paper (6 pair)
23. Paper Test Wipes & Envelopes
24. Barrier Rope, Magenta & Yellow
25. Fire Extinguisher
26. Paper Bags, Large & Small plus Large Plastic Bags for Waste Disposal
27. Bio-assay Bottle and Caps
28. "Caution - Radioactive Materials" Signs
29. Ring Stand, Clamps, Large Impinger and Pump
30. Aerial Map of Site
31. Wipe Test Monitor
32. Flashlights and Spare Batteries
33. Notebook and Pens
34. Industrial First Aid Kit
35. Johnston PCS-1 Portable Counting Kit

5.5 EXPOSURE CONTROL

5.5.1 Radiation Protection Program

An onsite Radiation Protection Program to be implemented during emergencies would follow the principles of Safety Light Corporation's existing Health and Safety Program.

When conditions occur that give evidence of unusual levels of tritium contamination or airborne tritium, personnel are evacuated from the affected areas, the nature and extent of contamination evaluated, mitigated and surveyed. Not until safe or background levels are reached are personnel allowed to re-enter affected areas and resume activities. Any uptakes will be evaluated, where necessary, by bioassay.

5.5.2 Exposure Guidelines

It is unlikely that, even in serious accident situations, that any employee would be asked to risk overexposure. Re-entry into an affected area during or immediately following an accident will only be done to save lives or to limit the release of radioactive materials. The individual responsible for ordering such a re-entry will be the Emergency Director and these orders will only be issued after discussions with the Radiation Protection Coordinator and the Technical/Operations coordinator as to the merits of such a re-entry. The radiation exposures and alarm systems for such re-entry operations are discussed.

5.5.3 Protective Action Guidelines for Whole Body Exposures

(Maximum allowable projected whole body dose in REMS)

Type of Protective or Corrective Actions:

1. Removal of Injured Persons -

   a. Emergency Work < 25 REMS
   b. Lifesaving Activities < 75 REMS

2. Undertaking Corrective Actions - Emergency Worker < 25 REMS

3. Performing Assessment Actions - Emergency Worker < 25 REMS

4. Providing First Aid - Emergency Worker < 25 REMS

5. Performing Personnel Decontamination - Emergency Worker < 25 REMS

6. Providing Ambulance Service - Emergency Worker < 25 REMS

7. Providing Medical Treatment Services - Emergency Worker < 25 REMS

NOTE: In no case should the REM values shown above be exceeded in determining the need for protective or corrective action.

5.5.4 Decontamination of Personnel

The release limit of 1000 DPM/100 cm^2 would be used. Washing with soap and water for body parts or attire has been shown to be most effective.

5.5.5 Medical Transportation

Contaminated personnel in need of attention at a hospital would be transported with protective garb, if possible, enroute to a facility prepared to treat injured persons who are contaminated with radioactive material in addition to having sustained injuries.

6. EMERGENCY RESPONSE EQUIPMENT AND FACILITIES

6.1 COMMAND CENTER

The Command Center for accidents involving the tritium operation is located in the Safety Light Corporation Main Office Area. This area is in a building divorced from the tritium operation and which houses the emergency equipment documented in 5.4.

6.2 COMMUNICATIONS EQUIPMENT

Building Evacuation Alarm System

A building evacuation alarm connected to a manual switch in the Health & Safety Office will be sounded if an immediate evacuation of the entire Processing Building is necessary. In the event an evacuation alarm is sounded, all personnel will leave the building through the nearest exit and assemble for roll-call in the Main Building Annex (See additional information in SLC Health & Safety Program manual).

In the event of an evacuation of the Processing Building, a Command Center is provided for in the adjacent building (See Dwg. #4003-80) and is located in the Northeast corner of the Main Building on the ground floor. Access to the command Center is via an emergency door located as shown on the drawing, or the main entrance doors located in the front of the Main Building.

Comdial Telephone System

Location of extensions are situated throughout the Command Center/Health & Safety Annex building and the Processing Building.

Paging System

Located within the Command Center/Health & Safety Annex Building is a telephone paging system, audible throughout the Processing Building area.

6.3 ON-SITE MEDICAL FACILITIES

A first aid treatment center is provided for use in the Health & Safety Area at the Eastern end of the Processing building (Dwg. #4004-80). An industrial first aid kit is located in the Health & Safety area, and a stretcher is stored in the Ladies Room, both adjacent to the Lunch Room.

In the event of inability to use the Processing Building, a first aid area is provided in the Command Center/Health & Safety Annex as described in Section 5.4.

6.4 EMERGENCY MONITORING EQUIPMENT

The location of the equipment is within the Command Center/Health & Safety Annex. In any event making unavailable the liquid scintillation spectrometer, an arrangement has been made with the Susquehanna Steam Electric Station (SES) to provide necessary liquid scintillation spectrometer analysis (See letter of Mutual Aid). Additional descriptions of equipment available to the Emergency monitoring Team are listed in Section 5.4.

Portable Air Samples

General Description:

The basic principle of the Safety Light Corp. environmental air sampling equipment used in routine or emergency situations consists of pulling air, at a controlled flow rate and for a known period of time through one or more water or ethylene glycol impingers. the source of vacuum consists of a suitable vacuum pump, and the air flow rate is controlled through the use of valves and flow meters; line vacuum is monitored by means of diaphragm type vacuum gauges. The 3H(S) and 3H(I) forms of tritium present in the sampled air are effectively collected in the impinger train. The activity levels in the impinger solutions are determined subsequently by liquid scintillation counting techniques.

Types of Air Sampler system Used:

A.C. Line Operated:

This type is normally employed for routine off-site or on-site monitoring operations in locations where a source of A.C. power is available, but would be used, as required, for emergency situations.

A typical system consists of a Gast model 1531-V107-330 oil-less vacuum pump, or equivalent; one or more 500 milliliter capacity Greensburg-Smith impingers, each containing 250-300 milliliters of water or 150 milliliters of ethylene glycol; a Fisher Scientific Model 11-282B diaphragm-type vacuum gauge, or equivalent; and valves, flowmeters, plastic tubing and connecting lines as required.

Flow rates used range from 1-8 liters per minute, depending on the nature of the evaluation being conducted at the time.

Liquid Scintillation Spectrometer

General Description:

Packard Instruments, Model 4350, Liquid Scintillation Spectrometer.

Uses - Bioassays, assays of stack discharges, assays of liquid discharges, assays of various environmental samples.

Detection - This instrument was calibrated by the manufacturer at assembly. However, a validation of instrument performance is done on a routine basis. The procedures used to check the instrument performance are as outlined in the SLC Health & Safety Program submitted previously with our renewal application for License 37-00030-08.

Calibration Standards - All tritium standards for liquid scintillation counting are purchased from Packard Instrument Company. Packard's standards are prepared from stock solutions which are calibrated against National Bureau of Standards reference material #4947. The Maximum uncertainty is +/- 1.4%.

Tritium Gas Monitor

General Description:

Johnston Laboratories, Inc., Triton 111 Air Monitor. Portable self-contained with up to 6 hour operational life on batteries with adjustable set-point alarm.

Detection - Measures tritium gas concentration in air through Beta detection. Tritium ranges are 0-50 and 0-500 μCuries/cubic meter (linear) and 1×10^1 to 1×10^4 and 1×10^3 to 1×10^6 μCuries/cubic meter (logarithmic).

Calibration of Tritium Monitor

Calibration procedures utilized are as outlined in the SLC Health & Safety Program (submitted previously with our renewal application for License #37-00030-08.

Wipe Test Monitoring System

Description:

This system consists of a three-well gas flow counting chamber manufactured by Atomic Development and Machine Corporation and an Eberline Instrument Corporation, Model MS-2, Mini-Scaler.

Uses - Loose surface contamination surveys.

Detection - This instrument is used to detect Alpha, Beta and Gamma contamination. It has a tritium sensitivity of 600 DPM.

Calibration - Checks of instrument performance are done as outlined in the SLC Health & Safety Program manual.

7. MAINTAINING EMERGENCY PREPAREDNESS CAPABILITY

7.1 WRITTEN PROCEDURES

Procedures of accidents and mitigation are shown in Section 5. The Radiological Contingency Plan will be reviewed periodically by the Radiation Safety Committee and revised as necessary.

7.2 DRILLS, EXERCISES AND TRAINING

Drills - An accident in the tritium compound which involves release of tritium could require an evacuation of personnel from all work areas. Such a drill will be held at least annually, announced by sounding of the alarm bell and by verbal communication.

Accident Response Training - On an annual basis, members of internal response teams will meet to profile a postulate emergency. A review of the responsibilities of the teams will be conducted during the meeting.

Communications Checks - A semi-annual communications check will be made with local offsite response organizations.

Biennial Exercise - One of the evacuation drills (held at least annually) will be expanded into an exercise, as follows:

(1) The tritium compound will be evacuated and personnel accounted for.

(2) One of the postulated accidents in the Radiological Contingency Plan, or a similar accident scenario, will be declared "in progress" as an exercise.

(3) Emergency Response Teams will assemble and perform appropriate tasks in simulation.

(4) Communications checks will be made with offsite response organizations.

(5) Appropriateness of the simulated response to the exercise scenario will be observed and evaluated by the Emergency Director and two other persons of his choosing who are not actively participating in the exercise.

(6) When deemed appropriate by the Emergency Director, the exercise will be declared "over".

(7) The exercise will be reviewed by the Radiation Safety Committee (including comments from the two non-participating observers). A written record will be completed.

7.3 MAINTENANCE OF EMERGENCY EQUIPMENT AND SUPPLIES

Periodic inventories are taken of the equipment and supplies in the Command Center/Health & Safety Annex.

Instruments are calibrated by approved methods periodically. Records are kept of the calibrations.

8.0 RECORDS AND REPORTS

8.1 RECORDS OF INCIDENTS

All incidents starting with a tritium uptake, resulting in a urine count of 20 μCi/L ^{3}H or a release of 100 Curies or more as a stack emission requires at least the following:

- An investigation of the occurrences leading to the incident.
- A review of the report and the incident by the Radiation Safety Committee including consideration of steps to be taken to prevent a future occurrence.

In addition, reports as required by 10 CFR Parts 20.2202 and 22.2203 will be made in a timely manner should conditions warrant such action.

All records will be kept in Safety Light Corporation until the termination of operating licenses.

Normally, the Radiation Safety Officer or his designate would be responsible for the generation of these reports.

8.2 RECORDS OF PREPAREDNESS ASSURANCE

The following records will be kept:

- Training and retraining
- Drills, exercises, and related critiques
- Inventory and locations of emergency equipment and supplies
- Maintenance, surveillance, calibration, and testing of emergency equipment and supplies
- Agreements with offsite support organizations
- Reviews and updates of the emergency plan
- Notification of all personnel and offsite agencies affected by an update of the plan or its implementing procedures

9. RECOVERY AND PLANT RESTORATION

9.1 PLANT RESTORATION

Plant restoration will be accomplished in a safe and orderly manner. All re-entry and assessment operations will be accomplished to achieve maximum input of information so as to reduce the number of such entries and will be planned in advance and completed by orders issued by the Emergency Director. The radiation exposures during all restoration and recovery operations will be maintained in accordance with 10 CFR Part 20 and ALARA.

The order in which recovery and restoration operations will be completed is as follows:

1. Survey of contamination levels in and around the scene of the accident.

2. Assessment to determine if radioactive materials on-site are contained. If not, a damage assessment will be completed, and necessary steps taken to contain radioactive material.

3. Assessment of alarm systems within the area will be completed, and necessary action taken to restore to normal working order.

4. Assessment of damage to facility will be completed and a plan will then be instituted to decontaminate and restore the facility to its normal condition.

5. Completion of approved restoration plan.

The Emergency Director or his designate shall be the person responsible for declaring that the plant is safety restored. The inventory and restocking of emergency equipment will be completed before normal operations are resumed.

9.2 RESUMPTION OF OPERATIONS

Radiation/contamination surveys will be conducted. The procedures necessary to achieve acceptable levels will be completed before normal operations are resumed. All systems involved in the accident will be thoroughly checked and examined for indications of cause of the accident, and to ensure that all parameters are met for restart.

A complete investigation of the accident will be conducted before operations are resumed in order to ensure the cause of the accident is clearly defined, and that all necessary corrective actions have been taken. The results and conclusions of this investigation will be documented in the form of an accident report.

10. COMPLIANCE WITH EPA AND LOCAL REQUIREMENTS

10.1 HAZARDOUS CHEMICALS

10.1.1 Emergency Planning and Release Notification

SARA Title III - Sections 301-305 & 10 CFR Part 355

Emergency Planning - Part 355.30

No extremely hazardous chemicals in threshold planning quantity.

Emergency Release Notification - Part 355.40

Have had no releases of a Reportable Quantity of and Extremely Hazardous Substance or CERCLA hazardous substance.

10.2 RIGHT-TO-KNOW REPORTING

SARA Title III - Sections 311-312 & 40 CFR part 370.

MSDS or List Submission - Part 370.21

Have no Hazardous Chemicals or Extremely Hazardous Substance in quantities equal to or greater than threshold levels.

Chemical Inventory Reporting and Forms - Part 370.25

Tier I Form - Part 370.40

Have no Hazardous Chemicals in quantities equal to or greater than threshold levels.

Tier II Form

Have had no request for a Tier II Form from local Emergency Planning Committee

10.3 PENNSYLVANIA COMMUNITY RIGHT-TO-KNOW

Hazardous Substance Survey Form prepared by April 1 of each year and kept on file in work place. Submit to PA Dept. of Labor and Industry if requested, in writing, to do so.

APPENDIX A
DETERMINATION OF ESTIMATED OFFSITE WHOLE BODY DOSES

Assumptions:

1. Quantity of H^3 Released: As Indicated.
2. Release Duration: 30 Min. Each
3. Atmospheric Conditions: Pasquill Type F, Windspeed 1 m/sec., uniform direction
4. Whole Body Dose (D) = (DCF) (B) (x/Q)(A) REM ..... NUREG-1140.

where: DCF = Dose Conversion Factor = 9.4×10^{-5} REMS/inhaled μCi of HTO* ..... 10 CFR 20, APPENDIX B TO 10.1001 - 20.2401.

B = Breathing Rate = 3.33×10^{-4} m^3/sec ..... 10 CFR 20, APPENDIX B TO 10.1001 - 20.240

x/Q = Diffusion Factor = 3×10^{-4} sec/m^3 for Elevated (SLC Stack) releases ..... REG. GUIDE 3.35

or = 3.3×10^{-3} sec/m^3 for 'Ground Level' releases NUREG-1140

A = Quantity of H^3 Released in μCi*

Accident Type		CALCULATIONS	MREMS	Estimated Total Dose (REMS)
2.1		$D_{HTO} = (9.4 \times 10^{-5})(3.33 \times 10^{-4})(3 \times 10^{-4})(600\ Ci \times 10^{6}\ \mu Ci/Ci) = 5.6 \times 10^{-3}$ REMS	5.6	5.6×10^{-3}
2.2		$D_{HTO} = (9.4 \times 10^{-5})(3.33 \times 10^{-4})(3 \times 10^{-4})(3{,}000\ Ci \times 10^{6}\ \mu Ci/Ci) = 2.8 \times 10^{-2}$ REMS	28	2.8×10^{-2}
2.3	(1)	$D_{HTO} = (9.4 \times 10^{-5})(3.33 \times 10^{-4})(3 \times 10^{-4})(2{,}500\ Ci \times 10^{6}\ \mu Ci/Ci) = 2.3 \times 10^{-2}$ REMS	23	2.3×10^{-2}
	(2)	$D_{HTO} = (9.4 \times 10^{-5})(3.33 \times 10^{-4})(3 \times 10^{-4})(12{,}500\ Ci \times 10^{6}\ \mu Ci/Ci) = 1.17 \times 10^{-1}$ REMS	117	1.17×10^{-1}
2.4		$D_{HTO} = (9.4 \times 10^{-5})(3.33 \times 10^{-4})(3 \times 10^{-4})(15{,}000\ Ci \times 10^{6}\ \mu Ci/Ci) = 1.4 \times 10^{-1}$ REMS	140	1.4×10^{-1}
2.5		$D_{HTO} = (9.4 \times 10^{-5})(3.33 \times 10^{-4})(3 \times 10^{-4})(20{,}000\ Ci \times 10^{6}\ \mu Ci/Ci) = 1.9 \times 10^{-1}$ REMS	190	1.9×10^{-1}

*In accordance with 10 CFR 20 Regulations, effective 1/1/94, it is assumed that 100% of the HT present in the released gas is oxidized rapidly to HTO, both in air and in the body.

APPENDIX A (Continued)
DETERMINATION OF ESTIMATED OFFSITE WHOLE BODY DOSES

Accident Type	CALCULATIONS	MREMS	Estimated Total Dose (REMS)
2.6	$D_{HTO} = (9.4 \times 10^{-5})(3.33 \times 10^{-4})(3 \times 10^{-4})(20{,}000\ Ci \times 10^{6}\ \mu Ci/Ci) = 1.9 \times 10^{-1}$ REMS	190	1.9×10^{-1}
2.7	NO H^3 RELEASED		
2.8	$D_{HTO} = (9.4 \times 10^{-5})(3.33 \times 10^{-4})(3.3 \times 10^{-3})(35{,}000\ Ci \times 10^{6}\ \mu Ci/Ci) = 3.6$ REMS	3600	3.6
2.9	$D_{HTO} = (9.4 \times 10^{-5})(3.33 \times 10^{-4})(3.3 \times 10^{-3})(215{,}000\ Ci \times 10^{6}\ \mu Ci/Ci) = 22.2$ REMS	22,200	22.2

REMARKS: Above estimated whole body doses are considered to be extremely conservative because:

1. Pasquill Type F category is a 'most stable' meteorological condition generally resulting in minimal dilution of plume.
2. One m/sec. windspeed occurs with very low frequency in our area.
3. No allowance is made for shift in wind direction during releases.
4. For Elevated (SLC Stack) releases, no allowance is made for increase in plume height due to relatively high exit velocity of exhaust air from stack. (Approx. 10 m/sec.)
5. For Ground Level releases (fires), no allowance is made for buoyancy effect due to intense heat.
6. For Ground Level releases (fires), no allowance is made for automatic sprinkler system in Processing Building.

SAFETY LIGHT CORPORATION
4150-A OLD BERWICK ROAD, BLOOMSBURG, PA 17815
717/784-4344 FAX 717/784-1402

RECEIVED
AUG 02 1994
SAFETY LIGHT CORPORATION

July 28, 1994

Columbia County Emergency Management Agency
Columbia County Courthouse
Bloomsburg, PA 17815

ATTN: Ms. Irene Miller, Director

Dear Ms. Miller:

In order to update our files, we would appreciate written responses to this letter, which was sent originally in 1989 by Jack Miller, President of Safety Light Corporation.

Safety Light Corporation, according to the U.S. Nuclear Regulatory Commission Rules and Regulations, Title 10, Part 2 & Part 30, Code of Federal Regulations, is required to maintain a written Radiological Contingency Plan to provide a guide for measures to be taken in the event of a radiological emergency. Safety Light Corporation is required to solicit cooperation from local offsite emergency organizations and to document the arrangements made with these organizations.

The involvement of CEMA, in the event of an emergency at our site, may involve communications and coordination of local fire, police and ambulance organizations as described in the Columbia County Radiological Emergency Response Plan as well as notifications of PEMA, BRP and DOE.

In order to reaffirm and update the agreement entered into by Safety Light Corporation and CEMA on December 6, 1982, to cooperate in the case of an emergency at our plant site, would you please take the following actions:

1. Advise proper fire, police, ambulance, etc. agencies that Safety Light Corporation may require their services in the event of an emergency, and inform us by letter, in each case, that this has been carried out.

2. Signify acceptance of the provisions of this letter by executing the agreement below and returning the original copy to me, keeping a copy for your files.

Regards,
SAFETY LIGHT CORPORATION

Norman G. Fritz
Radiation Safety Officer

I, Irene M. Miller (name) Coordinator (title), an authorized representative of the Columbia County Emergency Management Agency, on this 1st day of August, 1994, agree to the provisions contained herein.

911 Communications
(717) 784-6300

COLUMBIA COUNTY
Department of Public Safety
P O Box 380
Bloomsburg, PA 17815

Emergency Management
(717) 389-5720

TO: Berwick Ambulance Association

FROM: Irene M. Miller

SUBJECT: Response to Safety Light Corp.

DATE: September 14, 1994

Mr. Norman Fritz of Safety Light Corporation has asked me to advise you that in case of an emergency at the Corporation you would may be required to respond.

The type of response would be determined, of course, by the type of emergency and would fall within your purview as emergency responders.

If you require any site information, please call Mr. Fritz at the Safety Light Corporation, 784-4344.

911 Communications
(717) 784-6300

COLUMBIA COUNTY
Department of Public Safety
P O Box 380
Bloomsburg, PA 17815

Emergency Management
(717) 389-5720

TO: Bloomsburg Ambulance Association

FROM: Irene M. Miller

SUBJECT: Response to Safety Light Corp.

DATE: September 14, 1994

Mr. Norman Fritz of Safety Light Corporation has asked me to advise you that in case of an emergency at the Corporation you would may be required to respond.

The type of response would be determined, of course, by the type of emergency and would fall within your purview as emergency responders.

If you require any site information, please call Mr. Fritz at the Safety Light Corporation, 784-4344.

911 Communications
(717) 784-6300

COLUMBIA COUNTY
Department of Public Safety
P O Box 380
Bloomsburg, PA 17815

Emergency Management
(717) 389-5720

TO: South Centre Township EMA

FROM: Irene M. Miller

SUBJECT: Response to Safety Light Corp.

DATE: September 14, 1994

Mr. Norman Fritz of Safety Light Corporation has asked me to advise you that in case of an emergency at the Corporation you would may be required to respond.

The type of response would be determined, of course, by the type of emergency and would fall within your purview as emergency responders.

If you require any site information, please call Mr. Fritz at the Safety Light Corporation, 784-4344.

911 Communications
(717) 784-6300

COLUMBIA COUNTY
Department of Public Safety
P O Box 380
Bloomsburg, PA 17815

Emergency Management
(717) 389-5720

TO: South Centre Township Police Dept.

FROM: Irene M. Miller

SUBJECT: Response to Safety Light Corp.

DATE: September 14, 1994

Mr. Norman Fritz of Safety Light Corporation has asked me to advise you that in case of an emergency at the Corporation you would may be required to respond.

The type of response would be determined, of course, by the type of emergency and would fall within your purview as emergency responders.

If you require any site information, please call Mr. Fritz at the Safety Light Corporation, 784-4344.

911 Communications
(717) 784-8300

COLUMBIA COUNTY
Department of Public Safety
P O Box 380
Bloomsburg, PA 17815

Emergency Management
(717) 389-5720

TO: Lime Ridge Fire Company

FROM: Irene M. Miller

SUBJECT: Response to Safety Light Corp.

DATE: September 14, 1994

Mr. Norman Fritz of Safety Light Corporation has asked me to advise you that in case of an emergency at the Corporation you would may be required to respond.

The type of response would be determined, of course, by the type of emergency and would fall within your purview as emergency responders.

If you require any site information, please call Mr. Fritz at the Safety Light Corporation, 784-4344.

APPENDIX C - MAPS AND DRAWINGS

- ENLARGED SECTION OF USGS TOPOGRAPHICAL MAP, COLUMBIA COUNTY, PA
- OFFICIAL PENNSYLVANIA TRANSPORTATION MAP
- DWG. 4003-80; SAFETY LIGHT CORPORATION BUILDING SITE
- DWG. 4004-80, REV. 5; PROCESSING BUILDING FLOOR PLAN
- DWG. 4002-80; PROCESSING BUILDING SUPPLY DUCTS
- DWG. 4001-80; PROCESSING BUILDING EXHAUST DUCTS
- DWG. 1009; ROTARY FILL SYSTEM II
- DWG. 1010-81; TRITIUM FOILS IMPREGNATION SYSTEM
- DWG. 1006-81; SCRUBBING SYSTEM

OFFICIAL RECORD COPY ML 10 108081