

EC 02.02.01 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

The Hospital manages risks related to hazardous materials and waste.

1 *The Hospital and its offsites develop and maintain written management plans describing the processes it implements to effectively manage hazardous materials and waste.*

The Hospital's Hazardous Materials and Waste Management Plan is developed and implemented by the Department of Environmental Health & Safety (EH&S) and monitored by the EOC Committee through the Hazardous Materials and Waste Management Subcommittee and Stony Brook University Hospital (SBUH) Radiation Safety Committee. Environmental Health and Safety developed this document to identify and educate staff on the processes utilized to provide a safe, secure environmentally friendly work area. The Hazardous Materials and Waste Management Plan describes how the Hospital establishes and maintains a program to safely control hazardous materials and wastes. The Plan is a comprehensive plan that meets or exceeds all Federal, State and local regulations and accrediting agency requirements. The plan is designed, communicated, implemented, measured, assessed and changed when improvements are needed and as regulations require. The Hospital Safety Officer and the subcommittee review the Hazardous Materials and Waste Management Plan at least annually and it is updated as needed.

The Hospital off sites policy and procedures are included in the EH&S Policy and Procedures. Staff in these facilities receives training in hazardous materials and wastes in Recertification and Orientation training. Regulated medical waste is collected from hospital off sites by an authorized regulated medical waste contractor. Site specific handling and disposal as well as emergency procedures including response to spills, leaks or odors are identified in these EH&S policies. Radiation Protection Services provides oversight and monitoring for all off site facilities using radioactive materials.

2 *The Hospital creates and maintains an inventory that identifies hazardous materials and waste used, stored, or generated using criteria consistent with applicable laws and regulations.*

- a. Inventory of New Products. The Hospital creates and maintains chemical inventories of hazardous materials by department. These inventories are used to prepare department specific Material Safety Data Sheet (MSDS) books. MSDS's are also available to employees online through the MSDSpro database. Items in the warehouse are bar-coded and an inventory is maintained in the Hospital's Lawson system.
- b. Ionizing, Non-Ionizing Radiation Producing Equipment and Radiation Materials. The Stony Brook University (SBU) Radiation Safety Officer (RSO) keeps records of the receipt, storage, use, transfer, and ultimate disposal of all ionizing radiation producing equipment, nonionizing radiation producing equipment and radioactive material.

The Radiation Protection Services(RPS) approves all ionizing /non-ionizing devices along with radioactive material orders and inspects all authorized radiation control areas on a quarterly basis. All items of noncompliance have to be corrected within ten days of the reported finding along with the submission of a corrective action plan that will prevent recurrence. The RSO reports to the UH Radiation Safety Committee Chair on a weekly basis regarding all key Stony Brook University Medical Center (SBUMC) programmatic area indicators and meets with the SBUH Radiation Safety Committee on a quarterly basis. In addition, the RSO reports bimonthly to the Presidential University Radiological Protection Committee (URPC) on both the academic and the medical side activities associated with our broad scope radioactive materials license. New this year the RSO has been added to the MRI Safety Committee and so he will act as the liaison contact to the UH Radiation Safety Committee. In addition, the RSO will be

forming a Laser Safety Committee that will oversee the training of personnel, the safe use and proper applications of all lasers at the SBUMC.

- c. Chemical Waste Inventory. Environmental Health & Safety uses an internal manifest system to track hazardous waste collected from the Hospital.
- d. Waste Contractors. Waste contractors that service the Hospital are listed in Appendix A.

3 Chemical

- a. Selecting. The Laboratory Product Evaluation Committee evaluates all laboratory chemicals and makes recommendations to the Product Management Committee (PMC). The PMC reviews and approves all Hospital supplies including laboratory chemicals utilized at Hospital.
- b. Use and Handling. Employees are trained on proper chemical use and handling at Right to Know training presented at Orientation and at annual recertification training. Hospital Receiving trains their staff on proper handling, inspecting, transporting and handling spills of hazardous chemicals. Site specific training is provided for specific uses such as formaldehyde and ethylene oxide.
- c. Storing. Chemicals are stored according to manufacturer's specifications and compatibility requirements.
- d. Transporting. Chemical containers are inspected upon delivery to receiving areas and/or to the user department. Chemical products or their containers that are damaged or leaking are not accepted. Chemicals including compressed gas cylinders which are not properly labeled will not be accepted. The Receiving and Courier department receives and distributes chemicals throughout the Hospital. If a chemical is damaged, it is noted on the tracking slip and the ordering department is notified. For an Infectious Substances package, the ordering department must report damaged or missing package to the shipper and the CDC. If there is a spill of a chemical during transport, spill response is initiated by contacting University Police at 911 to activate the Hazardous Material Response Team.
- e. Disposing. Waste determinations are conducted by generating departments on hazardous materials to determine proper waste disposal. EH&S assists staff in waste determinations throughout the Hospital. Hazardous wastes are collected in waste satellite accumulation areas, less than 90 day hazardous waste storage areas and universal waste storage areas. Hazardous waste is collected by the Hospital's hazardous waste contractor weekly, monthly or on as needed basis.
- f. Other Hazardous Chemicals

i. Asbestos

- a. Identifying. Confirmed, presumed and suspect asbestos containing materials are present in the Hospital as outlined in the Asbestos Management Policy 8-3. Prior to any construction or demolition activity, Federal and State regulations require an inspection and bulk sampling of all suspect materials to be performed by a certified asbestos inspector. This inspection may be performed by EH&S or an outside consultant. Samples are analyzed by a New York State Department of Health Environmental Laboratory Approval Program to determine asbestos content.

- ii.*** Abatement and Disposal. Abatement projects at the Hospital that are larger than 10 square feet or 25 linear feet are handled by one of the University's three abatement contractors and an environmental consultant. Waste from these larger abatement projects are disposed of by licensed asbestos contractors. For minor projects, EH&S holds an New York State Department of Labor (NYSDOL) Asbestos Handling License and has certified asbestos workers to conduct these projects, and any asbestos waste generated is removed by a licensed waste hauler to an Environmental Protection Agency (EPA) approved disposal site.

iii. Tanks

- a. Use. There are nine #2 fuel oil tanks, three diesel tanks, one oil/water separator, one used oil tank and five chemical storage tanks located on East campus.
- b. Monitoring and Inspection. The tanks are inspected monthly and any deficiencies are recorded and corrected. Monthly inspection records are maintained by the tank owners. EH&S performs annual inspections. Records are maintained for 10 years according to 6 NYCRR Part 613.6.

iv. Pesticides

- a. Selection and Use. The Hospital uses a contracted commercial pesticide applicator who selects only New York State registered pesticides for use. The contractor utilizes Integrated Pest Management (IPM) techniques to perform pest management services.
- b. Tracking. The contractor tracks any pesticide use and provides monthly tracking reports to Hospital Custodial Services who manages the contract.

4 Hazardous Medications

- a. Selection. The Director of Pharmacy is responsible for overseeing the selection, storage and use of all medication, including hazardous medication. The Pharmacy and Therapeutics Committee is responsible for review and approval of all Formulary additions. Review must include an evaluation of hazardous potential and any specific storage and disposal requirements for each drug considered for Formulary admission.
- b. Use and Handling. Hazardous medications are prepared in biosafety cabinets located in a negative pressure designed sterile room with limited access.
- c. Storing. Pharmaceutical drugs are stored per manufacturers' specifications and are separated from general pharmacy stock.
- d. Transporting. Hazardous medications are prepared in Pharmacy. IV bags are spiked with tubing and tubing is primed with the diluent solution prior to addition of the active agent. Hazardous medications are hand delivered in sealed bags by Pharmacy.
- e. Disposing. Gross hazardous medication is placed in yellow containers for disposal. These containers are picked up by a permitted hazardous waste contractor and disposed of as hazardous waste. Trace hazardous medication is placed in yellow bags and sent to a regulated medical waste (RMW) incinerator for disposal.

5 Radioactive materials

- a. Selecting. The SBU Radiation Safety Officer, according to license requirements, approves all radioactive material purchases in advance with authorization from the University Radiological Protection Committee (URPC).
- b. Use, Handling and Storing. The SBUH Radiation Safety Committee oversees the use, handling and storage of radioactive materials. Radiation Protection Services (RPS) provides all users with radiation safety training in order to ensure that all SBUH employees properly handle and work around sources of ionizing radiation. RPS monitors exposure to staff (i.e., personnel dosimetry, ionization chambers, GM monitors) and performs quarterly radiation control area inspections. All items of noncompliance are properly identified and the authorized user is provided with 10 days in order to resolve all issues and respond with a corrective action plan. RPS performs annual quality assurance tests on all lead apron shields in use at the Hospital. Lead aprons that fail the X-ray QA test are removed from service and properly disposed of through our hazardous waste contractor.

- c. Transporting. Only properly DOT trained personnel transport radioactive material in the Hospital.
- d. Disposing. Radioactive waste is disposed of in radioactive waste containers. Short lived radioactive waste is allowed to decay in the generator's storage area, in the RPS controlled Low Level Radioactive Waste (LLRW) Decay in Storage facility in the HSC and at the RPS Hazardous Materials Management Facility (HMMF) prior to proper disposal through a licensed contractor.
- e. RPS has a strong enforcement policy that is applied to all authorized users who have repeat items of non-compliance throughout the year. All enforcement action is carried out through the URPC and may include suspension of authorized user's ordering privileges or complete cease and desist orders regarding the handling of all RAM.

6 Infectious and regulated medical waste, including sharps

- a. Handling, Storing and Transporting. Infectious and regulated medical waste is collected, stored and prepared for shipping by Hospital Custodial Services and the Hospital regulated medical waste contractor. Sharps containers are collected and replaced by a regulated medical waste contractor.
- b. Disposing. An authorized RMW contractor transports the Hospital regulated infectious and medical waste and sharps to their facility to be autoclaved, ground and landfilled.

7 The Hospital provides adequate and appropriate space and equipment for safely handling and storing hazardous materials and waste.

Hazardous materials are stored according to the manufacturers' specifications and compatibility requirements. Hazardous wastes are stored in satellite accumulation areas or less than 90-day storage areas prior to proper disposal. Radiological waste is collected from accumulation areas and stored in the Hazardous Materials Management Facility less than 90-day storage area. LLRW is transported and disposed of by a permitted hazardous waste contractor. This contractor is scheduled to be on Stony Brook University campus every sixty days in order to clean out all LLRW that has been collected in a two month period.

8 Hazardous gases and vapors.

- a. Selecting. The Product Management Committee (PMC) reviews and approves all supplies including laboratory items utilized at the Hospital. Laboratories order all hazardous gases through Hospital Receiving and Courier. Respiratory Care and Pulmonary Function Department purchase gas cylinders as shown in table below:

Type of Gas	Vendor
Nitric Oxide (800 ppm)	Ikaria (Formerly InoTherapeutics)
Helium-Oxygen Mixtures (Helium 70%, Oxygen 30%)	General Welding
Lung Diffusion Mixture (21% Oxygen, 0.3% Carbon Dioxide, 0.3% Methane, 78.4% Nitrogen)	General Welding
100% Oxygen	Hospital Receiving and Courier
Medical Air (21% Oxygen, 79% Nitrogen)	Hospital Receiving and Courier

- b. Storage, Use and Handling. All cylinders must be labeled according to DOT regulations and marked with a tag or label of its contents. All cylinders must be stored and used upright and securely fastened. EH&S performs employee monitoring for glutaraldehyde, ethylene oxide,

- formaldehyde, nitrous oxide and other waste anesthetic gases. Vapors generated while using cauterizing equipment and lasers will be addressed by the Laser Safety Committee.
- c. Internal Cylinder Transport. When transporting cylinders throughout the Hospital, the protective cap is kept in place, a cradle is used for hoisting, and a suitable hand truck is used with cylinders firmly secured.
 - d. Disposing. Tanks are marked empty in the laboratories. Where oxygen cylinders are used, the empty cylinders are placed in empty cylinder holders. Hospital Receiving and Courier stores empty cylinders in areas designated for empty cylinders prior to returning to supplier.

9 *The Hospital identifies and implements emergency procedures that include the specific precautions, procedures, and protective equipment used during hazardous material and waste spills or exposures.*

If a minor spill occurs in the Hospital, the department where the spill occurs is responsible for cleaning up the spilled material using the proper personal protective equipment and spill kit supplies. Spill kits are supplied to areas that use chemotherapy drugs, formaldehyde, glutaraldehyde, lead acid batteries and mercury containing equipment. Training is provided to these areas on specific use of spill kits and proper cleanup. For major spills, employees are trained to call University Police at 911 which will activate the EH&S Hazardous Materials Response Team.

10 *The Hospital maintains documentation, including required permits, licenses, and adherence to other regulations.*

Permits and licenses for the use and handling of regulated materials are maintained by the department that oversees or manages the program. Permit and licensing activities are reported to the EOC (Safety) Committee when changes, potential violations, occurrences or updates are made. Permits that are maintained by the Hospital include:

Permit Type	Permit #	Primary Documentation Held By:	Affected Areas/Department
Air State Facility Permit	1-4722-00243/00027	EH&S (West)	Central Sterile Supply
Air Facility Registration Certificate	1-4734-02007/00001	EH&S (East)	University/Hospital
Suffolk County Discharge Certification	021-001-0001	EH&S (West)	University/Hospital
SPDES Permit	NY 010 9291	EH&S (West)	University/Hospital
EPA Hazardous Waste ID #	NYR000161471	EH&S (East)	University/Hospital
New York State Board of Pharmacy Registration	016402	Pharmacy	Pharmacy
Radioactive Material License	455	EH&S (West)	University/Hospital
Major Oil Storage Facility License	1-3080	EH&S (West)	University/Hospital

11 *The Hospital maintains required manifest for handling hazardous materials and waste.*

The table below identifies the documentation maintained for the Hospital's hazardous materials and waste.

Material or Waste Type	Documentation	Primary Documentation Held By:
Chemical	Waste Manifest	Laboratory, EH&S
Radiation / Low Level Radioactive Waste (LLRW)	Waste Manifest	Radiation Protection Services, EH&S
Hazardous Medications	Waste Manifest	Pharmacy, Operating Room, EH&S
Infectious Material	Medical Waste Tracking Form	Hospital Custodial Services

12 The Hospital properly labels hazardous materials and waste.

Hazardous material and waste are labeled as required by State and Federal regulations. Secondary containers are labeled with identity of the hazardous chemical, National Fire Protection Association (NFPA) safety diamond hazards, and the name and address of the manufacturer. Hazardous waste is labeled with the Hospital's orange hazardous waste label.

13 The Hospital effectively separates hazardous materials and waste storage and processing areas from other areas of the facility.

Regulated medical waste, hazardous waste, and compressed gas cylinders are stored at the loading dock in rooms designated for their specific storage. Research LLRW is collected and stored prior to disposal in the Hazardous Materials Management Facility. Medical LLRW is collected and stored as decay in storage (DIS) off the HSC loading dock in a RPS designated waste storage room.

APPENDIX A
 Hospital Waste Contractors

WASTE	CONTRACTOR
Asbestos	Boyle Services, Pinnacle, Fiber Control – Asbestos Abatement Contractors Enviroscience – Consultant ATC -Waste Hauler
Chemical	Triumvirate Environmental
Pest Control	Eliminex Pest Control
Radioactive	Radiac Research Corporation
Regulated Medical Waste	Stericycle
Sharps	Biosystems