



SIUC Theater Department Health and Safety Manual

This manual was adopted for the 2004-2006 academic years.

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SIUC Theater Department

2004-2006 Production Staff Workplace Health & Safety Training Guide

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SIUC Department of Theater

2003-2006 Production Staff Workplace Health & Safety Training Guide

I. The Written Health & Safety Program

The Program has been written to comply with the Occupational Safety and Health Act of 1970, the Right to Know Laws of State of Illinois, and combines written programs concerning: 1.) emergency procedures, 2.) accident and illness prevention, 3.) personal protective equipment, 4.) the hazard communication standards, and 5.) respiratory protection. This Program was revised by Southern Illinois University at Carbondale Center for Environmental Health and Safety.

A. Policy Statement

- 1.) The purposes of this program are
 - a.) to explain SIUC Theater Emergency Procedures,
 - b.) to explain how SIUC Theater meets Federal and State requirements regarding the prevention of accidents and illness in the workplace, including SIUC Theater policies regarding the use of Personal Protective Equipment (PPE),
 - c.) to comply with the Code of Federal Regulations 29CFR 1910.59.1200 and all requirements of the Hazard Communication Standards, including rules on informing employees of the possible hazards of chemicals in the workplace, and
 - d.) how SIUC Theater meets Federal and State requirements regarding Respiratory Protection.

- 2.) SIUC Theater is committed to:
 - a.) maintaining a safe workplace,
 - b.) the thorough training of its employees in proper emergency procedures, in the best methods of preventing work-related accidents and illnesses, in the safe handling, use and disposal of hazardous materials and in the proper use of personal protective equipment,
 - c.) the complete reporting and investigating of workplace accidents, near-accidents and work-related illnesses, and
 - d.) correcting the circumstances which have led to workplace accidents and illness.

- 3.) You are strongly encouraged to work together with your colleagues and management to prevent accidents and illness. You may discuss you safety and health concerns with management at any time, and should take every opportunity to discuss the safety of your workplace with colleagues.

- 4.) Information regarding the various requirements of the Occupational Health and Safety Act of 1970 may be obtained from the Faculty Technical Director or directly from the U.S. Department of Labor, Occupational Safety and Health Administration Region I office at Portland St., 1st Floor, Boston, Ma 02114; telephone (617) 565-7164; on-line @ www.osha.gov.

B. Implementation and Responsibility

1.) This program will be implemented for all personnel at the SIUC Department of Theater. The original program is kept on file in the Faculty's Technical Director's office. The Technical Director is responsible for ensuring that the program is current, that it is reviewed triennially before the start of the semester and that it is enforced. For the 2003 to 2006 seasons, the Technical Director is Bob Holcombe. His office is Communications Building Room 2234, phone: (618) 453-7593.

2.) During the initial days of the Fall Semester (or the first initial weeks of their employment at SIUC), each Faculty, students, and staff will be trained in:

- a.) proper emergency procedures
- b.) the best methods of preventing work-related accidents and illnesses,
- c.) the proper use of personal protective equipment including respirators,
- d.) reporting workplace accidents, near-accidents and work-related illnesses, and
- e.) the Hazard Communications Standard and the safe use of hazardous chemicals.

3.) During the course of the season, before starting any task involving a new procedure, tool, material or chemical, the employee will be properly instructed by the shop or department manager, including, when appropriate, instruction on protection from any potentially hazardous material or Safety Data Sheet.

4.) When any new tool, equipment or chemical is introduced into any shop in the department, the shop head will make sure that they and all employees of the department, employed in that area of work, is trained in its use according to the manufacturer's instructions. All employees that are trained are then responsible for the protection of said tool, equipment or chemical from the untrained.

C. Policy Communication

1.) SIUC Department of Theater falls under both the General Industry and Construction Industry categories of OSHA. As such, it is required to, and will:

- a.) distribute to each employee a copy of this Program at the beginning of the employment or academic period,
- b.) provide additional copies to any employee upon request throughout the season,
- c.) conduct appropriate orientation and training sessions for each employee at the beginning of the employment period and, as necessary, throughout the period of employment.

D. Compliance Enforcement

1.) It is in your current and future best interest to at all times protect your health and that of your colleagues. For that reason, SIUC Department of Theater anticipates that you will abide by the various rules and procedures that have been implemented to protect

your health, and that you will conduct yourself in ways that prevent injury to you and your colleagues.

2.) Shop and department heads will explain to their respective staffs, and strictly enforce all health and safety rules and procedures that have been set forth in the program.

E. Training

1.) During the initial days of employment, each employee will be instructed and trained in the following operational and safety procedures for each facility which the employee works:

- a.) Emergency procedures, including
 1. the location and proper use of fire extinguishers,
 2. the location of fire exits,
 3. fire, severe weather and other emergency evacuation procedures, including the establishment of evacuation meeting area(s)
 4. the location of phones for summoning fire and rescue assistance,
 5. an explanation of the area's overlapping fire and rescue jurisdictions.
 6. the proper use of personnel medical information notebooks located at each emergency phone,
 7. the location of first aid kits.
- b.) Accident and injury prevention, including
 1. the identification of the potential physical hazards of their particular facilities, equipment and tools,
 2. specific training on the proper care and use of those facilities, tools and equipment,
 3. the procedures for disabling defective equipment and reporting these and all other hazards to the appropriate supervisor.
- c.) Personal Protective Equipment (PPE), including identification of and specific training in the proper care and use of the various PPE required for the safe operation of their equipment.
- d.) Accident report forms, including the proper use of completion of these forms for all injuries, accidents, whether or not any injuries were sustained and for all illnesses that are or may be work-related.
- e.) The Hazard communication program, including
 1. the location of the master file containing the written hazard communication program and the MSDS library,
 2. how to read and use the MSDS, interpret label terms and precautions for specific materials,
 3. steps taken by SIUC Theater Department to lessen or prevent exposure to the chemicals, including both updated training when new processes or chemical products are introduced to the workplace during the season, and program monitoring by department and shop heads throughout the season,
 4. when appropriate, instruction on how to lessen or prevent exposure to hazardous chemicals through appropriate work procedures and the proper

use of personal protective equipment, and emergency procedures to follow if exposed to any chemicals.

- f.) Medical evaluation and fit testing for respirator use by Student Health Services and Respiratory Supplier personnel, for employees whose regular work requires respiratory protection, including particulate (dust) masks. These people will also receive training in the use and maintenance of the equipment. No other employees will be permitted to participate in tasks that require respirator use.
- 2.) Whenever possible, authorized factory representatives, industry specialists and CEHS personnel will be engaged for specific equipment and procedural training. However, all SIUC Theater Department heads are authorized to instruct their receptive staffs in the proper care and use of the tools and equipment necessary for the completion of their assigned duties.

F. Inspections, Investigations and Hazard Corrections

- 1.) The Technical Director and department heads will inspect each facility at the beginning of the school year to
 - a.) identify and remove current hazards,
 - b.) establish maintenance procedures that prevent hazards and
- 2.) Every time an accident or near-accident occurs or an employee reports a work-related illness, the Technical Director and the appropriate department head(s) will investigate the cause(s) and establish or revise those procedures necessary to prevent the recurrence of the problem.

G. Documentation

- 1.) After attending the orientation and training sessions, each employee will sign a form verifying
 - a.) their attendance,
 - b.) their receipt of a copy of this Written Program, and
 - c.) their understanding of the contents of this Program.
- 2.) The following documentation will also be maintained in the personnel file of each employee:
 - a.) CEHS certification of a fire extinguisher usage.
 - b.) in-house certification of specific equipment and tool use training,
 - c.) accident and illness reports, and
- 3.) All accident and illness records are also kept by the accountant for workers compensation and insurance claims purposes.
- 4.) Each department will maintain a composite training book in its shop, listing the specific training steps for each piece of equipment assigned to its jurisdiction by the Technical Director.

5.)The complete Material Safety Data Sheets (MSDS) library, including an MSDS for every potentially hazardous chemical currently or formerly in use, alphabetically indexed by the common or brand name on the MSDS, is maintained in the Shop Office and is reviewed annually for accuracy and completeness. An MSDS is obtained before a new chemical is opened or used, and the chemical is also added to the Master Inventory. Department managers are responsible for reviewing new MSDS for significant health and/or safety information, and for communicating that information to their staff.

II. Department of Theater Production Health and Safety Policies

A. Offensive Behavior *Verbal, physical and sexual harassment or abuse of any kind will not be tolerated in this work place.*

1.) Only you can determine how you feel about the verbal bantering or physical interaction involved in any crew experience. If you think that someone's actions have crossed the line and become objectionable or threatening, talk to your peers. In most cases, you won't be the only one who is offended and group peer pressure may solve the problem.

2.) However, if there is someone whose behavior only you seem to find objectionable, you may attempt to deal directly with that individual. If you do, remember that the other person may not be aware that you find their behavior objectionable, just as you may not be aware that some habit of yours is offensive to someone else. Also keep in mind that the person may simply stop doing whatever it is that offends you, if you inform them of your objections in a polite and private fashion. In other words, give your colleague the benefit of the doubt. After all, most people do want to be accepted by their peers. And, in any event, always treat the individual, and all other members of the company, as you would like to be treated.

3.) Unfortunately, peer pressure and politeness do not always solve these problems, and the prospect of a private confrontation is often simply too intimidating to be realistic solution. However, *ignoring the situation will not make it go away.* A festering situation can ruin your stay at SIUC and infect the entire crew, often to the detriment of the productions. Hence, if peer pressure doesn't work, and/or you can't deal with the person privately, go to the head of your department or to the Chair of the Department, who will take appropriate steps to resolve the situation as quickly and confidentially as possible.

B. Dangerous behavior *Dangerous or unsafe behavior must be stopped immediately, regardless of the circumstances.*

1.) Take whatever steps you deem necessary to immediately stop unsafe behavior. You will never be reprimanded for doing so, even if you misunderstood the situation. It is

better to be wrong and embarrassed than to let someone get hurt. Once the situation is secure, inform a direct supervisor of the situation so they can take appropriate action.

C. Illness *Please do not report for work if you are sick or are taking prescription or over-the-counter medications that might impair your ability to function safely.*

1.) Your supervisor must send you home if your presence poses a health or safety risk to you or the staff. Besides, you'll just prolong your illness and possibly infect your colleagues.

2.) If you are unable to report for work, please inform your supervisor immediately.

3.) However, the lack of sleep or any adverse physical reissue from activities engaged in while off work are not acceptable excuses for missing work. However, they may be grounds for your being sent home and if so, class and/or employment status may be adversely affected.

D. Work-related Illness *Please notify the Technical Director if you believe that an illness or injury is work-related.*

1.) Each shop office has appropriate reporting forms for work-related accidents and illnesses. The Technical Director and shop heads will investigate the cause(s) and institute appropriate preventive measures, but only if they know that a work-related illness or injury has occurred.

III. Drug & Alcohol Policy

A. The Alcohol Policy of Southern Illinois University at Carbondale states:
The use, including sale, delivery, possession, and consumption of alcoholic beverages in or on any property owned or controlled by Southern Illinois University is strictly prohibited, except as permitted by campus policy. Where permitted under this policy, the use of alcoholic beverages on University premises shall be considered a privilege and may be permitted only if consistent with applicable laws and regulations, and only when such use will not interfere with the decorum and academic environment of the University.

1.) The Theater Department has been permitted to dispense alcohol at certain events. In such cases the Department (Faculty, Students, and Staff) will adhere to Federal Law, State Law, and University policy when these events are taking place.

2.) Any personnel of age that is participating in the current production will not be allowed to consume alcohol during the permitted event.

B. The Federal Drug Free Work Place Act, 1988: *It is unlawful to manufacture, distribute, dispense or use any controlled substance in this work place.*

1.) You may not use or be under the influence of alcohol or controlled substances while at work. You may be immediately dismissed from your position if you are under the influence of alcohol or controlled substances while at work

C. You may not knowingly allow a colleague to work under the influence of alcohol or controlled substances.

1.) Preventing a colleague from working while under the influence of drugs or alcohol falls in the category of preventing or stopping dangerous behavior (Section 1B *Dangerous Behavior*). Since common sense dictates that anyone under the influence *poses a threat to safety*, it is then your obligation, as well as in your best interest to remove that person from your work place.

2.) You also have the option of just letting your supervisor handle the entire situation. Remember that *you* are not putting your colleague's job at risk by reporting them. Your colleague *already* did that by their disregard of this very straightforward safety policy.

IV. Job Obligation

A. Your first obligation is to maintain a safe workplace.

1.) You need to know our specific procedures covering health emergencies, hazardous material use and maintenance of your facilities, tools and equipment. Regardless of your position, you should also encourage your colleagues to follow our workplace rules and procedures, and must report chronically unsafe behavior to your supervisor.

2.) Every Production staff member is expected to be courteous and respectful towards other members of the company. Part of the respect involves maintaining high production standards, diligent work habits and attention to the artistic goals for each production.

3.) Department supervisors and assistants have a specific obligation to conserve and protect the Department of Theater property and equipment. However, this is a general obligation that applies to all staff members.

B. Additional Obligations

1.) By and large, the department provides all tools and equipment required for your work. Exceptions are such items as running crew black clothing and all footwear. All PPE's (Personal Protective Equipment) are the property of SIUC and must be returned to the original department of origin.

2.) You have an obligation to inform the company of any pre-existing medical or physical conditions that may impair your ability to do your job. For instance, a fear of heights will

impede the work of an electrician, while bad knees will affect someone who moves scenery or costumes.

3.) Finally, the department recognizes that proper rest and relaxation are important ingredients in a safe and productive workplace. Hence, your hours will be reasonable. The hours of work will parallel the hours that have been agreed upon by the department.

V. Emergency Procedures

A. Fire Extinguishers *Know the location & use of extinguishers before you need one.*

- 1.) Only use a fire extinguisher to put out a fire if it is safe to do so, you have the correct extinguisher for the type of fire, and have been trained in its usage and safe fire fighting procedures
- 2.) Fire extinguishers, located in the all buildings at the Theater as required by local fire codes, and serviced and certified by the SIUC Physical Plant.
- 3.) Fire extinguisher orientation and hands-on training workshops will be conducted at the beginning of the school year.

B. Fire Containment

- 1.) It is always preferable to attempt to contain a small fire with a fire extinguisher instead of letting it burn while waiting for the fire department to arrive.
- 2.) *If a fire has consumed more than 2 square feet of space, has the potential to threaten people or flammable chemicals, or if it cannot be extinguished with the use of 1 fire extinguisher, alert all people in the building to begin evacuation immediately.*
- 3.) If it is possible to close doors to help contain the fire to one room, do so when evacuating.

C. Summoning the Fire Department

- 1.) *For the Carbondale Fire Department call 911.* This will be posted by each phone. Make the call to the fire department from another building, and remember that three people calling is better than everyone assuming someone else has done it.
- 2.) Calmly and clearly inform the dispatcher to have the response vehicles report to the Mcleod Theater in the Communication Building on SIUC Campus.
- 3.) Have someone proceed to the exterior of the building and direct the vehicles to the location of the fire. Stay on the line until dispatcher releases you.

D. Fire Lanes & Exits *Fire lanes and exits may not be blocked at any time.*

1.) Fire lanes are open pathways in each room to allow evacuation. Fire exits are marked with lighted florescent EXIT signs. *It is against federal law to tamper with, dim the illumination of, cover or otherwise obscure an Exit sign.* Blocking lanes and exits, even briefly, eliminates a means of escape.

E. Fire Evacuation

1.) ***Meeting places-*** For evacuation in the event of a fire, please meet by department at the following places.

- a.) Area South of Box Office-The main office and box office.
- b.) Parking lot outside of dock-Scene shop, Lab Theater, McLeod Theater
- c.) End of ramp down to costume shop-Costume shop

2.) ***During Work Calls-***Know where your colleagues are working and alert them to evacuate. Exit the building as quickly and calmly as possible and call the fire department. Go to your designated meeting place, report to your department head and determine if all of your colleagues are there. If someone is missing, alert the fire department upon their arrival, and tell them where your missing person(s) was working last. *Never re-enter a burning building.*

3.) ***During a Performance-****Performance emergency planning will be explained by the Technical director during orientation.*

F. Accidents& Injuries

1.) ***Know the location of all first aid kits in your work space(s).*** First Aid Kits are restocked by Cintas Services once a month.

2.) ***If an injury looks serious, call the ambulance first.*** First aid kits are only for the immediate treatment of minor cuts, bruises and similar “first aid” type injuries. If a serious injury or illness occurs, only administer first aid of which you are certain, and only *after* calling for an ambulance or designating someone else to do so. Even if you are certified in CPR and first aid, there is no substitute for professional Emergency Medical Technicians and rapid transportation to Carbondale Medical.

3.) Do not ignore an injury. Take care of it immediately and report to your supervisor if it requires an accident report.

G. Blood Borne Pathogens.

1.) ***Protect yourself against contact with blood and bodily fluids of others***

You must also protect others from coming into contact with your blood and bodily fluids, as they may contain HIV, hepatitis or other blood borne pathogens.

This is where the Accident report should be

VI. Hazardous Materials

This Chapter must be studied and understood by all employees whose work includes using hazardous materials and using tools or equipment that require respirators

A. Purpose and Implementation

- 1.) The following information is in compliance with 29CFR 1910.59.1200, the Occupational Safety and Health Act of 1970, all requirements of the Hazard Communication Standards and Right to Know Laws of this state, and will be explained to all production personnel at SIUC Department of Theater whose work at SIUC includes using hazardous materials and using tools or equipment that require respirators.
- 2.) The purpose of this chapter is to explain how SIUC Department of Theater meets the requirements of federal, state, and local rules on informing employees of and protecting them from the possible hazards of chemicals in the workplace.
- 3.) When new chemicals or hazards are introduced into the working environment, the appropriate shop Manager will check that a Material Safety Data Sheet (MSDS) has been obtained. The Manager will also maintain a complete, up-to-date MSDS Master file. The Technical Director maintains a master file of all original MSDS. The master file is reviewed annually for accuracy and completeness.
- 4.) Before starting any task involving a new chemical, the employee will be instructed by the shop or department manager in the correct use of, protection from, and the disposal of the chemical. The MSDS will be reviewed, especially regarding:
 - a.) the potential physical and health effects of the chemical,
 - b.) the methods and observation techniques used to determine the presence or release of the hazardous chemical in the workplace,
 - c.) how to lessen or prevent exposure to the hazardous chemical through appropriate work procedures and the proper use of personal protective equipment,
 - d.) the emergency procedures to follow if exposed to the chemical.

B. Definition of a Hazardous Chemical

- 1.) A *hazardous chemical* is defined as any element, chemical compound or mixture of elements and/or compounds, which can produce adverse effects on humans. These include both physical and health hazards.
- 2.) *Physical hazards* are defined as any physical phenomena that will cause damage to the body surroundings. Physical hazards include combustible liquids, compressed gases, explosives, flammables, organic peroxides, oxidizers, pyrophorics, unstable or water reactive compounds, noise, vibration, radiation, and repetitive tasks that may cause overuse injuries.

3.) A Chemical is deemed to be a *health hazard* if there is significant statistical evidence that acute or chronic health effects may occur in exposed employees. The term health hazard includes chemicals that are toxic or highly toxic agents, reproductive toxins, irritants, carcinogens, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents that act on the hematopoietic systems, and agents that damage the lungs, skin, eyes or mucous membranes.

4.) With these definitions of a hazardous substance, almost everything from solvents and resins to detergents and markers contains a hazardous substance.

C. Detection of Work Related Illness

1.) It is often difficult to determine to cause of a work-related disease or illness. Some reasons for this difficulty include:

- a.) the hazardous chemical can not be seen or smelled
- b.) symptoms may be confused with other common illnesses or ignored by the employee. Dizziness, nausea and headaches may be associated with a cold or exhaustion but are also symptoms of work related illness.
- c.) the symptom or illness may not appear until several years following exposure.

2.) There are two ends of the illness spectrum, and there are many stages in between.

a.) *Short-Term/Acute Effects*- Acute or short-term effects are the simplest and easiest to diagnose. Their causes and effects can easily be linked and the symptoms usually occur during or shortly after exposure. The outcome can vary depending on the exposure. Depending on the individual, it may be full recovery, partial recovery or even death. For example, acute exposure to solvents can cause effects ranging from mild narcosis (headache, nausea, loss of coordination) to unconsciousness and death.

b.) *Long-Term/Chronic Effects*- Long-term or chronic effects are the result of repeated, low dosage exposure. Symptoms may not appear until after permanent damage has been sustained. They may appear slowly, varying with each individual, and may mimic other illnesses. Examples include chronic damage to the liver or kidney.

3.) *Any adverse health effects which might have been caused by hazardous chemical use should be reported immediately.* This will enable a faster diagnosis and allow for better treatment.

D. Basic Concepts

1.) *Dose*-A toxic substance is defined as by a quantity (dose) that exceeds the body's ability to handle it without harm. Each chemical produces harm at a different dose.

2.) Rate at which chemicals exit your body:

- a.) Noncumulative toxins like alcohol and solvents are eliminated fairly rapidly. Although medical tests can only detect their presence for a short time, the damage these toxins leave behind in your body is usually permanent.
- b.) Cumulative toxins, like lead, are removed slowly. Repeated exposure raises the level of these toxins in your body, which rids itself slowly of these poisons. The greater your exposure, the longer it takes to eliminate and the greater your risk of substantial permanent damage.

3.) Total Body Burden- the total amount of a chemical present in the body from all sources. For example, if you work with lead solder, your body burden of lead would be the sum of the lead from work plus lead from contaminated air, water and food.

4.) Multiple Exposures- We are carrying body burdens of many chemicals and are often exposed to more than one chemical at a time. The chemicals can interact with your body in different ways.

- a.) Additive means that one chemical contributes to the effects of another. This occurs when chemicals affect your body in similar ways. An example is inhaling vapors while working with paint thinner (a solvent) and then drinking alcohol (another solvent called ethanol).
- b.) Synergistic accumulation happens when two chemicals, combining within your body, produce effects greater than the effects of each alone. Alcohol and carbon tetrachloride (a spot remover) or smoking and any inhaled particulate are examples. Asbestos and smoking is particularly synergistic. If you're an asbestos worker your chance of contracting lung cancer increases about six times; if you smoke about six times; but if you're an asbestos worker who also smokes, you are not twelve (which would be additive), but about NINETY times as likely to get lung cancer.

E. Carcinogens & Sensitizers

1.) Carcinogens are substances that cause cancer. There is no safe exposure limit to carcinogens. ***One molecule can cause cancer if it is in the right place at the right time.*** However, the greater the exposure, the greater the risk of cancer will be. MSDS information must include any materials considered carcinogenic by either the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), or OSHA. These groups use the following systems to rate carcinogens.

- a.) NTP
 - 1 – known to be carcinogenic, with evidence from human studies.
 - 2 – reasonably anticipated to be carcinogenic, which limited evidence in humans or sufficient evidence in experimental animals.
- b.) IARC
 - 1 – carcinogenic to humans; sufficient evidence of carcinogenicity
 - 2a – probably carcinogenic to humans; limited human evidence; sufficient evidence in experimental animals.
 - 2b – possibly carcinogenic to humans; limited human evidence in the absence of sufficient evidence in experimental animals.

- 3 – not classifiable as to carcinogenicity in humans.
- 4 – probably not carcinogenic to humans.

c.) OSHA

x.- carcinogen defined with no further categorization.

2.) The lists of chemicals known by these organizations to be hazardous represents only a small percentage of known chemicals. Manufacturers often include statements on labels such as “This chemical is not considered to be a carcinogen by OSHA, NTP, or IARC”, which make it appear that these agencies have found the chemical to be safe. More likely, the substance is, as yet, untested by any agency. Treat these substances as hazards, too, and protect yourself from them.

3.) ***The basic rule of thumb is that your body is meant to breathe air.*** If something smells or you can taste or see airborne particles, you should wear a respirator. Similarly, if a chemical alters the surface of a material when applied to it, your skin should also be protected from contact with that chemical.

4.) A Sensitizer is a chemical that will produce an allergy in a significant number of those exposed to it. An allergy is a failure of the immune system and can take the form of skin rashes, respirator problems, sinus conditions, or other neurological conditions. Once an overreaction has developed, a person will likely have allergic reactions to similar chemicals.

5.) Sensitizers common in production work include *epoxy resins* and their curing agents, *turpentine*, *isocyanates* (used in urethane casting and foaming chemicals), *chrome compounds* (in cosmetics), *latex* (in gloves and paint), *nickel* (in welding fumes), *formaldehyde* (used in carpets and as a preservative), *fiber reactive dyes*, and *California redwoods* and other woods.

F. Labeling of Hazardous Materials

1.) “For Professional Use Only” or “For Industrial Use Only” indicates that the manufacturer expects the product to be used by people who know all the relevant information and in an appropriately controlled environment.

2.) Non-Toxic is a consumer product label term that is often misunderstood. Under the Federal Hazardous Substance Act (FHSA), toxicity is determined by acute animal tests that administer ingestion tests. The chemical is administered at a rate of five grams per kilogram of body weight. If, two weeks later, half of the rats are dead, the chemical must be labeled toxic. If less than half of the rats die, the chemical can be labeled non-toxic. ***One rat may be the difference between toxic and non-toxic.*** These tests miss all chronic hazards. Under this law even asbestos can be labeled “non-toxic.”

3.) Art Materials have a special labeling law that requires that products with chronically hazardous chemicals be labeled with warnings. Chemicals whose hazards are unknown or untested can still be labeled “non-toxic.”

G. Physical Forms of Chemicals

- 1.) Hazardous chemicals may be present as solids, liquids, dusts, mists, fumes, gases and vapors. If you do not understand the difference between these chemicals states, you cannot properly protect yourself. Understanding chemical forms will allow you to properly protect yourself by knowing how each chemical can get into your body, understanding what effect(s) each may have on you, working in a properly ventilated space, and choosing the correct respirator.
- 2.) A Solid is made up of molecules that move slowly and tend to hold their structure. Gloves and protective clothing usually provide an adequate barrier.
- 3.) The molecules in a liquid move freely and more rapidly than those of a solid. Depending on the liquid, gloves and protective clothing provide a satisfactory barrier.
- 4.) Particles in the air are dust, whether they settle on a surface or remain suspended. Dust contains larger particles than fumes. Particulate masks or respirators with dust filters prevent the inhalation of dust.
- 5.) A mist is the fog or cloudy material that is seen during an activity like spray painting. It is composed of liquid droplets and may also contain solids. Oil paint spray mist may contain solvents and an oil vehicle (both liquids) and pigment (solid). Mist begins suspended in the air but, in time, settles, dries out and converts to other forms. Ventilation and respirators can protect you from mists. However, respirator cartridges must be carefully chosen. There are different cartridges for mists with solvents and for those containing water.
- 6.) Fumes are created when a solid material is heated to its melting point. The solid particles become suspended in the air. These particles may be filtered out with a very fine respirator filter.
- 7.) Molecules in a gas move more rapidly than in a liquid. Gases mix with air and expand indefinitely to completely fill the space. Opening a door enlarges the space and allows the gas to expand further. Gas molecules are so small that it is not possible to filter them. Ventilation is the best method of removing vapors from an enclosed space. Some gases can be trapped by a chemical respirator cartridge that will absorb or react with the chemical.
- 8.) Vapors form as liquids or some solids are heated and evaporate. Vapors, like gases, expand completely in a contained space. The only difference between a gas and a vapor is that high concentrations of the vapor would re-condense to a solid or liquid at room temperature. Ventilation and certain respirator cartridges can help protect you from vapors.

H. Routes of Entry

1.) In order to properly protect yourself and those working near you, it is important to understand the methods by which chemicals can gain access to your body.

2.) Inhalation: Inhaled substances can cause direct damage to the respiratory system at any location. Once substances have reached the lungs, the toxic chemicals are carried to the rest of the body via the blood stream. For example, damage to the kidneys and brain can occur from lead inhaled in solder fumes. Ventilation and/or respirators must be used any time you are working with materials, which produce respirable particles.

3.) Surface Contact: Solvents, acids and caustics can dissolve the skin's barrier of waxes, oils and dead cells causing direct damage to the skin. Chemicals are then transferred via the blood to other organs in the body. Cuts, burns, rashes and abrasions also allow chemicals to enter the body. However, chemicals such as wood alcohol and benzene may enter the blood through undamaged skin. These types of chemicals are called skin absorbers. Chemicals also gain access to the body through our eyes. Protect your skin and eyes any time you are working with hazardous substances.

4.) Ingestion: Chemicals can enter the body if you eat, drink, or smoke while working. Touching dirty hands to your face or mouth, biting your nails, holding objects between your teeth, and similar habits allow chemicals to enter the body as well. Dust trapped in the lung mucous is removed by transport to the esophagus where it is swallowed. By this passage, harmful particles are transported to the stomach and then throughout the body. Chemicals poured into paper cups, glasses or soda cans can also cause accidental ingestion.

I. Understanding and Using the Material Safety Data Sheet

1.) The Material Safety Data Sheet (MSDS) is the form that provides information on a product's hazards and the protection required for safe use in the workplace. Material Safety Data Sheets are filled out by the product's manufacturer. The Hazard Communication Standard and right to know laws require that the MSDS are made available to all workers using or exposed to potentially hazardous chemicals in their workplace.

2.) Material Safety Data Sheets are filed both in the department file and in a Master File located in the shop office trailer. Both files are open to employees at any time and copies of the information will be provided upon request within 24 hours. The current master MSDS inventory is alphabetically indexed by the common or brand name on the MSDS.

3.) As a central part of its compliance with the Hazard Communication standard, SIUC Theater Department charges its shop and department managers with the responsibility of obtaining an MSDS for every potentially hazardous chemical currently in use in their shops. The managers are also responsible for reviewing new data sheets for significant health and/or safety information and for communicating that information to their staff.

4.) Material Safety Data Sheets are obtained through the manufacturer, distributor or importer of the chemical. Products for which there is no sheet available should be replaced with products for which better information is provided.

5.) In order to protect yourself it is important to fully understand all of the information provided in the MSDS. This section provides a brief overview. There are many other sources of information should you wish to learn more about hazardous substances. Consult the reference section of this manual for further information.

a.) **Section 1 – Identity**

Material Safety Data Sheets must have the product manufacturer's name, address, information telephone and emergency telephone number at the top. It is this company who is responsible for providing information and assistance. The emergency telephone number may be of a large chemical tracking firm such as CHEM TREC. This section also includes the date the sheet was prepared. If the sheet is more than three years old, attempt to get a more current one.

b.) **Section 2 – Hazardous Ingredients**

Specific Chemical Name/ Identity: Any chemical for which there is even one study which shows it may be capable of causing harm should be listed. Toxic chemicals which comprise more than 1% of the product by weight must be listed. Cancer causing chemicals which comprise 0.1% of the product must be listed.

Unfortunately, manufacturers are not required to list chemicals that have not been studied or are not regulated by OSHA. This means there maybe more toxic chemicals present than are listed in the Material Safety Data Sheet.

Trade Secret Exemption: The identity of hazardous ingredients can be withheld by the manufacturer if they are trade secrets or proprietary information. The MSDS should say what state department holds the authority to withhold the information. Trade secret products should be avoided whenever possible since it is very difficult and time consuming for medical personnel to get this information if there is an accident or illness.

Odor Thresholds (OT)(optional) are the concentrations in the air at which most people can smell the chemicals. If the OT is smaller than the TLV, then the chemical provides warning before health effects are expected. If the OT is larger than the TLV, one is already at risk by the time the odor can be detected.

Exposure Limits

Permissible Exposure Limits (PEL) are exposure limits regulated by OSHA for hazardous workplace chemicals. The eight hour time weight average (PEL-TWA) should be listed. This is the amount of the substance in the air to which most healthy adult workers may be exposed each workday without adverse effects. In general, the smaller the PEL, the more toxic the substance.

Threshold Limit Values (TLV) are airborne substance standards set by the American Conference of Governmental Industrial Hygienists (ACGIH).

Time weighted average (TWA) is the maximum total amount of the product a worker can be safely exposed to over an eight-hour day. They are meant to protect workers with a normal eight-hour day and forty-hour work week.

| DUSTS & FUMES (solid particles) | TLV-TWA (milligrams/meter ³ –mg/m ³) |
|--|---|
| Nuesance dusts (e.g. plaster or chalk) | 10 |
| Wood (respirable) | 5 |
| Graphite | 2 |
| Quartz (e.g. dust from sand) | 0.1 |
| Lead (e.g. lead/ chrome pigments) | 0.05 |
| Cadmium (e.g. cadmium pigments) | 0.005 |

| GAS or VAPOR (molecules in air) | TLV-TWA (parts/million-ppm) |
|--|-----------------------------|
| Ethyl alcohol (grain alcohol) | 1000 |
| Odorless paint thinner | 300 |
| Turpentine | 100 |
| n-hexane (e.g. rubber cement thinner) | 50 |
| Carbon Tetrachloride | 5 |
| Acrolein (e.g. buring wax/paraffin) | 0.1 |
| Diisocyanates (from urethane resins/foams) | 0.005 |

Threshold Limit Value- Short Term Exposure Limit (TLV-STEL) is the fifteen-minute average concentrations that should not be exceeded at any time during the workday.

Threshold Limit Value – Ceiling (TLV-C) are concentration that should not ever be exceeded.

NOTE: Only about 700 chemicals have TLVs. Experts estimate there are over 70,000 chemicals used in the workplace. Chemicals without TLVs should never be considered safe. Is a TLV a safe limit? We can see from the definition that exposure limits are for “almost all healthy adult workers.” This means TLVs do not apply to some healthy adults, people with certain health problems, especially respiratory diseases and allergies, children or fetuses.

c.) **Section 3- Physical/ Chemical Characteristics**

Chemical properties such as boiling and melting point, evaporation rate, vapor pressure, vapor density, solubility in water, specific gravity, appearance and odor are all found here. Some of this data may be omitted when it does not apply to the chemical in question. The manufacturer must indicate in the space provided when the information does not apply.

Boiling Point is the temperature at which a substance changes from a liquid to a vapor, usually by means of rapid bubbling. Liquids with a low BP Will expose workers to large quantities of vapor. Flammable vapors also present a hazard to workers. Vapors are formed at a much lower temperature: water boils at 212° F but will evaporate at room temperature.

Specific Gravity describes the weight of the material in comparison to a reference substance. For example water has a density of 1; using this as a reference indicates whether the substance will float or sink.

Vapor Pressure indicates the pressure exerted by a saturated vapor above its own liquid in a closed container. When combined with evaporation rate, these numbers are useful in determining how quickly a material becomes airborne and

how quickly workers become exposed. Substances with VP's above 20mm Hg are extremely volatile and may also present a hazard.

Melting Point is the temperature at which a solid changes to a liquid. This only applies to solids.

Vapor Density refers to the weight of a vapor or gas as compared to an equal volume of air. Gases and vapors will mix with air and disperse; however, in locations with little air movement, large quantities of unmixed gas or vapor will take longer to dissipate. These gases or vapors will either rise or sink depending on their VD. Flammable vapors that are heavier than air can spread to an ignition point and flash back to the source.

Evaporation Rate is the rate at which materials will vaporize from solid or liquid states. This information is also helpful in determining worker exposure.

Solubility in Water represents the amount by weight that will dissolve in water at room temperature. Solubility is useful in deciding appropriate cleanup and extinguishing methods. Solubility is determined in grams per liter or in the following categories:

| | |
|-------------------------|----------------------------|
| Negligible or insoluble | 0.1% |
| Slight | 0.1-1.0% |
| Moderate | 1-10% |
| Appreciable | >10% |
| Complete | soluble in all proportions |

d.) **Section 4 – Fire/ Explosion Hazard Data**

This section lists the flash point, flammable limits, extinguishing media, any special fire fighting procedures and any unusual fire or explosive hazards.

Flash Point is considered the lowest temperature at which a flammable liquid will give off enough vapor to ignite when an ignition source is present. Following the Flash Point data is the procedure to determine it.

Flammable Limits show the highest and lowest chemical concentration that will cause a fire or flash when an ignition source is present. They are expressed as upper explosive limit (UEL), upper flammable limit (UFL), lower explosive limit (LEL) or lower flammable limit (LFL). Limits are expressed as a percentage of the volume of gas or vapor in the air.

Extinguishing Media describes the type of extinguisher required to put out a fire started by this chemical. It is important to understand how to deal with emergencies before using the chemical. ***Always locate fire extinguishers before starting work and make sure they are appropriate for the type of fire which could ensue.***

Special Fire Fighting Procedures lists any special methods required to extinguish the flaming chemical. For example, some chemicals create oxygen as they burn and cannot be extinguished through smothering.

Unusual Fire and Explosion Hazard discusses characteristics and special conditions of which user might not be aware. For example, certain chemicals become more volatile and explosive with age. Care should be taken to ensure that these chemicals are properly disposed of before worker safety is threatened.

e.) **Section 5- Reactivity Data**

This section indicates how the substance reacts in combination with other chemicals and also indicates what chemicals should be avoided. ***No artist or craftsperson should use or experiment with chemicals without first reading this section.***

Stability: Stable or Unstable

Under reasonable conditions of use and storage this section refers to the chemicals ability to remain unchanged. It also indicates conditions that should be avoided in normal use.

Incompatibility

Substances which will react dangerously with the product should be listed here. This section should also be used to determine what chemicals should not be stored near by.

Hazardous Decomposition Products

Hazardous chemicals that are emitted as the product burns, decomposes or degrades are listed.

Hazardous Polymerization

When the molecules of a chemical combine to form larger molecules, the process is called polymerization. Heat, gases or other byproducts may be given off. This becomes dangerous if sufficient quantities are present to cause fires, burst containers, or cause other physical damage.

f.) Section 6- Health Hazard Data

Toxicology information is summarized here. Included in this section is information on product hazards, routes of entry, acute and chronic health effects, signs and symptoms of exposure, medical conditions aggravated by exposure, and emergency and first aid procedures.

g.) Section 7- Precautions for Safe Handling

This section lists the proper way to clean up spills or accidents and how to dispose of excess or contaminated materials. It also describes proper storage conditions for the substance. ***Never pour wastes down the sink.*** Doing so can risk contaminating the ground water supply of the University. We will have designated waste containers for commonly used solvents. Please speak with your department head or the Technical Director to help solve disposal problems.

h.) Section 8- Control Measures

Provided here is information about protective equipment needed during normal use of the product. "Normal use" is determined by the manufacturer. ***They are not usually liable for any damages sustained if products are used in any way other than directed.*** No employee should use materials in a manner which is inconsistent with manufacturer's instructions without first discussing the procedure with their shop head. Should any question arise about what constitutes normal use, the shop head should contact the manufacturer immediately. Inquiries should also be made regarding any further protection that may be required for prolonged or abnormal exposure. ***Because of the liability involved, questions about hazards should be made and answered in writing.***

Respiratory Protection (specific type): If needed during normal use, a good MSDS explains precisely what type of respirator is proper. Even the type of cartridge for air-purifying respirators should be specified.

Ventilation: If needed during normal use, a good MSDS specifies the type of ventilation system that provides proper protection. This includes recommendations about the use of general (mechanical) ventilation, local exhaust (which captures the contaminants at their source), or any special ventilation system which might be needed.

Protective gloves: Good MSDSs list the specific type of glove material needed (rubber, nitrile, etc.) and other glove attributes such as length and thickness. Workers should know that some solvents penetrate gloves without changing the glove's appearance. Often such solvents are perceived only as perspiration. Good MSDS indicate with gloves will resist penetration by product. When in doubt, contact the technical department of your glove supplier.

Eye protection: Good MSDSs list precisely what type of goggles or glasses are needed by their ANSI Z87.I standard classification. The MSDS at least should indicate whether vented or unvented chemical splash goggles, impact goggles, or other specific types are needed.

Other protective clothing or equipment, such as aprons, boots, face shields, or eye wash stations should be listed here if needed.

Work/hygienic practices: Practices such as proper daily clean up methods and equipment after normal use should be detailed here.

Check with your shop head for assistance in finding proper filters, gloves, and other protection if you are unsure about what to use.

J. Container Labeling

1.) Primary Containers: Shop and department heads are responsible for monitoring all containers of hazardous chemicals in their workplace. They ensure that all chemical containers are properly, legibly, and prominently labeled with the following information:

- a.) The identity of the product or hazardous chemical(s) as they are listed on the MSDS.
- b.) The name and address of the manufacturer, importer or other responsible party for whom information can be obtained.
- c.) Appropriate warnings to help employees protect themselves from the hazards of the material.

2.) Secondary Containers: Shop heads will ensure that all secondary containers are properly labeled. Secondary labels can be an extra copy of the manufacturer's label or a generic label. All secondary labels must have the above information. If a chemical in a secondary container is used up in one shift, a label is not necessary provided that the secondary container is either disposed of or properly cleaned. For help with labeling, contact your shop head.

3.) Chemicals poured into paper cups, glasses, or soda cans can cause accidental ingestion. ***The use of cups, soda can or other food containers as secondary materials containers is not allowed.*** Further, eating, drinking and smoking are never allowed in any SIUC Theater Department Facility.

VII. Personal Protective Equipment

A. Using Personal Protective Equipment

1.) SIUC Theater Department requires you to wear appropriate Personal Protective Equipment (PPE's) while using tools and equipment, while working with hazardous chemicals and while engaged in many production activities. Protection is required both for those using equipment *and for those working in close proximity*. For example, anyone working in a shop while a belt sander is in use must be wearing hearing protection. In order to protect yourself from the dangers of your work environment, you must understand how each protective device works and acknowledge its place in your work routine.

2.) SIUC Department of Theater will provide all required Personal Protective Equipment in the shops that require them. The PPE's will stay in these shops (unless disposable) for the use of students and employees. The use of personal PPE's is encourage but SIUC Department of Theater will not be held responsible if personal PPE's are lost or broken during the course of work.

3.) You must inspect this equipment before each use to ensure that it is in proper working order. Protective equipment must be kept clean and free from damage. Report any unusable equipment immediately and a replacement will be issued to you as soon as possible. Until a replacement has been made, you are not to perform tasks which require that particular piece of equipment

B. Head Protection

Hard hats should be worn any time you are exposed to Potential injury from falling objects.

1.) Simply put, you must wear a hard hat whenever someone is working above you. Grid, ladder, genie, and any overhead rigging work all present situations that require protective hard hats. Head protection is required even if you are not working directly with someone on a ladder or a lift, but only in close proximity to him or her.

a.) SIUC Department of Theater has provided hard hats which are approved in both Class A and B. They are rated as follows:

1. Class A- general service, limited voltage protection
2. Class B- utility service, high voltage protection
3. Class C- special service, no voltage protection.

2.) You must properly maintain regularly inspect your helmet for wear to suspension and cracks in the shell. Shells should be washed only with soap and hot water since some cleaning solvents can damage the structural integrity of the construction material. Hard hats should also never stored in direct sunlight. Cracked helmets must be replaced immediately.

3.) Access to the stage will be restricted when overhead rigging is in progress. Those who must be on stage will be required to wear hard hats. ***However, even hard hats that***

meet OSHA safety standards will not protect you from injury if you are struck by an object that has fallen from grid height.

C. Eye & Face Protection *You must wear suitable protection any time there is the potential for injury to the eyes or face from flying/ suspended materials or splashing hazardous liquids.*

1.) Safety Glasses, Safety Goggles and Face Shields- When your vision becomes impaired, you become a danger to yourself and to your colleagues. Safety glasses, goggles, and face shields will protect your eyes and face from a variety of hazards. Protection is required anytime there is a potential for injury to the eyes or face from flying particles, molten metal, liquid chemicals, a combination of these. However, your protection must be appropriate to the task or environment, and must meet the following minimum requirements:

- a.) provide adequate protection against the particular hazards for which it was designed;
- b.) be reasonably comfortable when worn under the conditions for which it was designed;
- c.) fit snugly without interfering with the movements or vision of the wearer;
- d.) be durable;
- e.) be capable of being easily cleaned and disinfected;
- f.) be kept clean and in good repair.

2.) Chemicals can destroy or scar the tissue of the eyes or face and flying particles can scratch your eyes. Damage can be severe and permanent. ***Goggles or shields must be worn any time there is a danger of getting something in you eyes or on your face.***

- a.) Safety glasses provide impact protection from the front. Side shields provide protection from object approaching from the side. Glasses cannot protect from all particles.
- b.) Safety goggles provide front and side impact protection as well as splash protection from liquids. Goggles can be vented or non vented depending on the degree of protection needed. Goggles fit easily over prescription glasses.
- c.) Face shields provide impact and splash protection for the entire face. Face shields should always be worn in combination with glasses or goggles.

3.) Eye protection should be kept clean. After cleaning, the wearer should inspect the equipment for visible damage. Pitted or dirty lenses can impair vision, while deeply scratched or pitted lenses are apt to break. Slack or twisted headbands may not hold the protector in place and should be replaced. See shop head for replacements.

4.) Welding- Welding face masks must be worn anytime the welder is in use. Welders must use protective equipment with filter lenses of an appropriate shade number. Following is a list of appropriate shade numbers for various tasks performed at SIUC:

| Task | Electrode Size | | Minimum Shade Value |
|-------------------|----------------|--------------------|---------------------|
| Metal arc welding | 3/32 – 5/32 | 60 – 160 amps | 8 |
| | 5/32 – 8/32 | 160 – 250 amps | 10 |
| | > 8/32 | 250 – 550amps | 11 |
| Gas Welding | <1/8 | 3.2 mm plate | 4 |
| | 1/8 – 1/2 | 3.2 – 150 mm plate | 5 |
| | <1/2 | >12.7 mm plate | 6 |

D. Skin Protection *You must properly protect you hands and other exposed skin
From cuts, bruises and abrasions.*

1.) Hands- Gloves can only protect you if they are appropriate to the task. Hence, proper glove selection must take into account the hazard(s) of the task to be performed. Many manufacturers provide glove guides to assist you in choosing proper protection. Each employee must be measured for proper glove size.

a.) Abrasion Resistant Gloves (AR): These gloves protect the hands from materials, which can cut or scrape them. Leather gloves provide good protection when lifting scenery or hauling ropes. Fabric gloves are useful for light or medium duty work. Leather replacement gloves have a fabric liner that is dipped into a polymer.

b.) Temperature Resistant Gloves (TR): Non-conductive, heat resistant gloves should be worn when working with the lighting equipment. Heat resistant gloves must also be worn for all welding, brazing and torch cutting operations.

c.) Chemical Resistant Gloves (CR): In order to properly protect you hands from chemical penetration gloves appropriate to the task at hand must be worn. Proper glove selection must take into account the hazard, the task to be performed and the length of exposure. Before selecting a glove to protect your hands from solvents and dyes, for example, you must consider the type of chemical being used. No one glove is suited for all chemical exposures. For chemicals that are mixtures, choose a glove based on the chemical with the shortest breakthrough time. Three properties effect which glove works best with each chemical or mixture of chemicals

1. Permeation: The rate at which a chemical passes through the glove material

2. Breakthrough Time: The elapsed time between initial contact of the chemical on the glove surface and the analytical detection of the chemical on the inside of the glove.

3. Degradation: A change in one or more physical properties of a glove due to contact with a chemical. Degradation could result in swelling, softening, drying or cracking of the glove material.

Glove thickness and style must also be taken into consideration when choosing a glove.

2.) Arms & Legs- Full-length leather or canvas aprons, trousers and /or long sleeves will protect arms and legs from splashes, welding sparks, sawdust, and splinters.

E. Noise Protection

Damage to your hearing is permanent and untreatable. If you must raise your voice to speak to a person 2 feet from you, you should be wearing hearing protection.

1.) The level of noise that is permissible in the workplace varies with the length of time of exposure and with the intensity of the noise (sound pressure). However, ringing in the ears and temporary hearing loss following work are both signs of overexposure. Sound is measured in decibels (dB) and hearing protection is rated in terms of the amount of sound (in dB's) that is blocked out. For example, hearing protection rated at 25 NRR would reduce the noise of 120 dB by 25 dB.

2.) OSHA's permissible exposure limit (PEL) over an 8 hour day (TWA) is 90 decibels. Decibels are nonlinear, logarithmic functions so a doubling of noise increases the sound level by only 3 dB. For example, if one table saw produces 105 dB, turning on another equally noisy saw adds 3dB to bring the level to 108 dB. However, the increase of 3 dB doubles the sound intensity and the amount damage.

3.) The chart below gives some comparative noise levels.

- 120db Hammering On Metal
- 110db Rock 'n' Roll Bands
- 105db Textile Looms
- 95db Power Lawn Mower (At Operator's Ear)
- 85db Diesel Truck 40Mph (at 50') Milling Machine (At 4')
- 80db Garbage Disposal (At 3')
- 70 db Passenger Car 50 Mph (At 50') Vacuum Cleaner
- 60db Conversation (At 3') Window Air conditioner
- 40db Quiet Room
- 0db Threshold of Hearing

You should note that hammering rates the highest dB level, a fact often ignored in shops. Similarly, air hammers and staplers produce extremely high dB levels and are, hence, very damaging to your ears. Remember, too, that you don't have to be using the tool to need protection from its noise: *proximity is all that matters!*

4.) Hearing protection that will diminish environmental noise by 27 dB will be provided to any staff member who needs it, in a variety of styles.

5.) Shop radio/tape/CD player policies will be set at the discretion of the appropriate shop head(s). ***However, any person working in a shop may turn down or turn off any player at any time.*** The player will then remain off until the end of that work period.

F. Hair Protection

Long hair, including ponytails, must be secured under caps or under shirt collars whenever power equipment is being used.

G. Foot Protection *All employees working on or around the stage, including stage managers and wardrobe staff members, are required to wear work shoes with hard toes, heels, and soles.*

1.) The purpose is to protect you against puncture wounds and various injuries that may be caused when toes have things dropped on or rolled over them, or are stepped on. Obviously, you should wear toed shoes or boots, and are encouraged to do so!

H. Lifts *-All four personnel-lift outriggers must be used when the lift is extended.
-The worker must always stand on the basket floor. Never climb the railings of the basket.*

1.) It is never appropriate to use people as counterweights on the genie-lift base as a substitute for the outriggers. Nor is it ever appropriate to move the genie-lift when the basket is occupied and extended.

VIII. Respiratory Protection

A. Using Respiratory Protection

1.) You are meant to breathe air and inhaling anything else is a bad idea. Prolonged exposure to sawdust will eventually cause respiratory problems. However, since you may amplify the hazard and put yourself at great risk by using inappropriate protection, adequate ventilation should be the primary means of controlling potentially harmful substances in the air. However, when ventilation is inadequate, OSHA allows the use of respirators.

2.) Your respiratory system consists of upper respiratory tract (nose, throat, trachea and bronchial tubes) and the lungs (lung cavities and the alveoli). The alveoli are the small sacs that actually transfer the gasses to the blood stream. Inhalation of hazardous materials can irritate the linings of the upper respiratory tract, particulates can settle in the lung cavities slowly destroying the lungs and inhaled gasses and vapors can be transferred to the bloodstream where they can have damaging effects on all of the internal organs.

3.) Respiratory protection depends on the hazards to which you are exposed, the exposure levels, and the respiratory protection equipment used.

B. Respirators *Only employees who have received the pulmonary functions evaluation through Student Health and have been fit-tested, are allowed to use tools or equipment, or perform tasks that require the use of any respirator.*

1.) The National Institute of Occupational Safety and Health (NIOSH) regulates respirators, filters, parts and components. Only components and respirators carrying the initials NIOSH and an approval number should be used.

2.) Take great care to choose a form of respiratory protection that is suited to your task. ***You may amplify the hazard and put yourself at greater risk by choosing inappropriate protection.*** There are three basic types of respirators:

- a.) Supplied-Air respirators or self-contained breathing apparatus (SCBA) bring fresh air to the wearer by means of pressurized gas cylinders or air compressors. These are usually used in an oxygen-deprived atmosphere or for gasses and vapors that cannot be controlled through chemical cartridges.
- b.) Air-Purifying respirator purifies the air as it is inhaled through filters or cartridges.
- c.) Powered air-purifying respirators provide air which has been pumped through a filter.

3.) There are several types of air-purifying respirators including:

- a.) disposable or single use types which look like paper dust masks and are thrown away following one use.
- b.) quarter face masks which cover only the mouth and nose and have replaceable cartridges and filters.
- c.) half masks which cover the mouth, nose and chin and have replaceable cartridges and filters.
- d.) full face masks which resemble old fashioned gas masks and have replaceable canisters.

4.) Particulate Masks & Filters – All particulate masks and filters have a number rating based on testing against “fume-sized” particles (0.3 microns).

- a.) **N95, R95 and P95 filters** are certified as having a minimum efficiency of 95%
- b.) **N99, R99 and P99 filters** are certified as having a minimum efficiency of 99%.
- c.) **N100, R100 P100 filters** are certified as having a minimum efficiency of 99.97%
- d.) **N Series Filters** are limited to use in atmospheres containing non-oil-based particulates. For example in a wood shop, if cutting oil is being used to machine metal, this is not the appropriate filter. N filters have an eight-hour time use restriction.
- e.) **R&P Series Filters** are intended for filtering any non-oil or oil-containing particles. R filters have an eight-hour time use restriction.
- f.) **P Series Filters** have no time restrictions other than the normal ones associated with particulate filters (soiled, damaged, noticing increased breathing stress, etc.)

5.) Gas & Vapor Cartridges- choose the appropriate cartridge for the chemical being used. Some chemicals do not have a cartridge and must not be used without supplied-air

respirators. As we do not use supplied-air respirators, these chemicals cannot be used in our workplace. Cartridges are color coded.

| | | |
|-------------------------------|-----------------|--------|
| a.) Acid gasses only | AG | white |
| b.) Organic vapors only | OV | black |
| c.) Ammonia gas | NH ₃ | green |
| d.) Acid gas & organic vapors | OV/AG | yellow |
| e.) Formaldehyde | F | gray |

C. Pulmonary Functions and Respirator Fit Testing

1.) Each shop or department head will identify the individuals on their staffs who must perform tasks that involve hazardous materials such as welding or spray painting. Those individuals will be required to use a respirator and must be evaluated to see if they are medically able. A medical questionnaire is evaluated by a physician who determines if a physical exam is needed. Also, a pulmonary functions evaluation is used to ascertain if they may safely wear a respirator. If so, they will be fit-tested and instructed on the proper use and care of the equipment.

2.) Because most respirators, including particulate masks, were designed for Caucasian males, obtaining a proper fit can be difficult. However, if a good seal is not made, air may leak into the respirator without passing through the filter. Respirators also fit incorrectly if the wearer has facial hair (beards, sideburns or even a few hours growth), facial scars, a broken nose, missing dentures, or a very large or very small face. For these reasons, fit-testing is imperative before you use a respirator.

3.) ***You must also test your respirator and cartridge before each use.*** The test includes:
a.) negative pressure test- block the cartridge air inlets with your hands, inhale and hold your breath for about 15 to 20 seconds. The negative pressure should remain inside the face mask.
b.) positive pressure test- block the exhalation valve and gently exhale. You should not detect any pressure changes from air escaping around the face piece.
c.) cartridge test (organic vapor paint spray filters) – once you have donned your respirator, pass an open bottle of nail polish or iso-amyl acetate in front of your respirator. If you can detect the odor, you need to replace your cartridge.

D. Respirator & Cartridge Care

1.) Cartridges and filters should be replaced often.
a.) Filters become clogged as you breathe through them. Once breathing becomes difficult, you should replace your filter. The pressure from your breathing will draw particles through the filter and into your lungs.
b.) Chemical cartridges simply stop working after a period of time, and ***once they have stopped working, you will breathe in the contaminant as if you were not wearing a respirator.*** Chemical cartridges should be replaced after 8 hours of use or two weeks of exposure. Pay particular attention to cartridges with expiration dates.

- 2.) Properly clean and store your respirator after each use. This will help to extend the life your respirator and your cartridges. Safety equipment wipes may be used to clean the inside and outside of your respirator.
- 3.) Store your respirator in an airtight container, away from sunlight. This will keep the respirator from being contaminated by ambient atmosphere.
- 4.) Cartridges should not be left out in the air, as they will continue to absorb contaminants, shortening their life.
- 5.) Shared respirators must be thoroughly disinfected after each use.
- 6.) Inspect your respirator frequently for signs of wear, missing parts or damage. Do not continue to use a respirator if it is not completely intact.

IX. Facilities Tour

The first purpose of the tour is to orient new employees to the various facilities in which they will work. The second purpose is to identify the locations of emergency equipment, potential hazards, fire lanes, and evacuation areas. Finally, during this part of orientation employees will be trained on the proper use of certain equipment. Throughout the tour, you are encouraged to ask questions about anything that is new or unclear.

A. Location of Emergency Equipment *During your tour, be sure that you learn the location(s) of the following:*

- 1.) Fire extinguishers;
- 2.) Telephones, especially those with red Emergency Health Information notebooks;
- 3.) First aid kits;
- 4.) Flammables storage cabinets

B. Hazard Identification *Your work place(s) may have potentially hazardous areas, such as steps or catwalks. Be sure to note the following on your tour:*

- 1.) Steps and stairways, especially
 - a.) all exterior steps and stairs that may become slippery in the rain;
 - b.) the spiral stairs (SR) and the caged straight ladders (SR) leading to the grid,
 - c.) Steps up the Front of House (FOH) and in and around the F.O.H.
 - d.) Spiral staircase in the shop.

- e.) The prop loft.
- 2.) Uneven and/or potentially wet and slippery walking surfaces, especially
 - a.) the docks
 - b.) the ramp leading up to the observations booth.
 - c.) theater floor.
- 3.) Overhead obstructions, especially
 - a.) In the gridiron and catwalks:
 - b.) The FOH
- 4.) Other potential fall hazards, including
 - a.) The orchestra pit when it is lowered
 - b.) Opening in the gridiron and at the upper loading rail
 - c.) On the fly rail
 - d.) FOH

C. Fire lanes and exits

- 1.) The costume shops, Scene shop, and the theater have clearly marked fire lanes and exits. Note the location of these and ***remember that fire lanes and exits may never be blocked, for any reason.***

D. Equipment training

- 1.) During the next few days, depending upon your work area, you will receive training on the following equipment:
 - a.) ladder, including how to properly secure your tools so that they can't fall;
 - b.) personnel lifts, including the use of outriggers and the proper securing of tools;
 - c.) the counterweight system, including using the locking rail and proper weight loading;
 - d.) fall restraints (personal fall arrests) for working at the loading rail and in the catwalks.
- 2.) You will also receive appropriate training on:
 - a.) all power tools that you will be required to use;
 - b.) all personal protective equipment required to safely use or be in proximity to the tools and equipment used in your department.

E. Evacuation meeting area

- 1.) Finally, note the location of your assigned meeting area in case of an emergency evacuation of the theater or your shop.

X. Workplace Health & Safety Glossary

ACCGIH- American Conference of Industrial Hygienist; publishes the recommended TLV's for hundreds of work place chemicals.

Acute- Severe, often life threatening short term effects due to brief hazardous chemical exposure.

Allergy- A failure of the immune system in response to chemical exposure.

ANSI- American National Standards Institute; rates safety and protective equipment.

Asphyxiant- A chemical (gas or vapor) that can cause death or unconsciousness by suffocation.

Boiling Point- temperature at which liquid changes to vapor, usually by rapid bubbling. Materials with low boiling points may present fire hazards.

C- ceiling; see also ceiling and time weighted averages.

Carcinogens- substances which cause cancer.

Ceiling- descriptive term connected with chemical exposure limits. It represents the maximum exposure a worker may experience during a given period of time. It may also be written as TLV- C or Threshold Limit Value- Ceiling.

Chronic- repeated, prolonged or persistent condition.

Combustible- liquids with a flash point at or above 100° F or liquids that burn are considered combustible. These liquids do not burn as easily as flammable liquids.

Concentration- the relative amount of a material in combination with another material.

Corrosive- a substance that causes visible destruction or permanent in human skin or tissue at the contact site or is highly corrosive to steel.

Decibels(dB)- measure of the intensity of sound.

DOT- Department of Transportation; US government agency that regulates the transport and labeling of hazardous materials.

EPA- Environmental Protection Agency; US government agency that administrates laws to control and/or reduce pollution of air, water and land systems.

Evaporation Rate- rate at which material converts to vapor at a given temperature and pressure when compared to the evaporation rate of a given substance.

Flash Point- the lowest temperature at which a flammable liquid will give off enough vapor to ignite when an ignition source present.

Hazardous Material- any substance or material which can produce adverse effects on a human's health and/or safety.

Health Hazard- substance for which there is significant statistical evidence that acute or chronic health effects may occur as a result of exposure.

IARC- International Agency for Research on Cancer

Ignitable- solid, liquid or gas that has a flash point of less than 140°F. Ignitable material may be regulated by the EPA

Inhalation- breathing in an airborne substance.

Inhibitor- Substance added to another that slows down the rate of change.

Irritant- Substance which produces an undesirable effect when it comes in contact with skin, eyes, or respiratory system.

LEL- lower explosive limit.

LFL- lower flammable limit.

Melting Point- temperature at which solid changes to a liquid.

Mutagen- anything that can cause a change in the genetic material of a live cell.

Narcosis- Unconscious condition or stupor resulting from chemical exposure.

NFPA- National Fire Protection Association; voluntary organization which promotes and improves fire protection and prevention; also publishes the National Fire Codes.

NIOSH- National Institute of Occupational Safety and Health; US federal agency that tests and certifies respirators, trains health and safety consultants, and conducts research on workplace hazards.

NRR- noise reduction rating; an indication of the amount of protection hearing protection devices will provide.

NTP- National Toxicology Program.

OSHA- Occupational Safety and Health Administration; federal agency within Department Labor, publishes and enforces health and safety regulations for US business and industry.

Oxidation- process of combining oxygen with another substance; chemical change in which an atom loses an electron.

Oxidizer- substance that gives up oxygen easily to aid in combustion of organic material.

PEL- Permissible Exposure Limits; legal standard regulated by OSHA for exposure to hazardous substances. Expressed as a time weighted average (TWA), 15 minute short term exposure limit (STEL), or ceiling (C). See also TLV.

Personal Protective Equipment- devices or clothing worn to protect the worker from hazards, i.e. Respirators, gloves, safety glasses.

Physical Hazard- phenomena which will cause damage to the body or surroundings.

Polymerization- chemical reaction in which 2 smaller molecules combine to form a larger one. Hazardous polymerization is this same reaction with an uncontrolled energy release.

ppm- parts (of gas or vapor) per million (parts of air); a comparison of gas volume in air.

Respirator- device designed to protect the wearer from inhaling harmful contaminants in the air.

Respiratory Hazard- airborne contaminant that impairs some bodily function when breathed into the lungs or enters the respiratory system.

Sensitizer- substance that may cause no reaction in the first exposure but causes an allergic reaction in further exposure.

Short Term Exposure Limit- the maximum concentration to which workers can be exposed for a short period of time (15 minutes). One hour between exposures is required and workers must not be exposed more than 4 times in one day. The TLV-TWA must not be exceeded either.

Specific Gravity- weight of a substance in comparison to a reference substance.

STEL- short term exposure limit.

Synergistic- effects occurring when 2 chemicals produce a greater effect than the total effects of each alone. Alcohol and barbiturates or smoking and asbestos are common examples.

Systemic- affecting many or all body systems or organs; spread throughout the body.

Threshold Limit Value- concentration of airborne substances devised by ACGIH which workers may be exposed with no adverse effects. Advisory guidelines based on industrial experience or human or animal studies.

Time Weighted Average- average time of allowable exposure to a hazardous substance, in relation to a given work period (i.e. 8 hour workday); represented as TLV- TWA.

TLV- Threshold Limit Value.

Total Body Burden- The amount of a chemical present in the body from all sources.

Toxicity- a measure of the potential of a substance to produce adverse effects in humans or laboratory animals, condition and concentration under which the effect occurred and a description of the effect.

Trademark- commercial or registered name by which a product is known.

TWA- see time weighted average.

UEL- upper explosive limit.

UFL- upper flammable limit.

XI. Reference Sources and Bibliography

The following sources were used in preparing various aspects of the SIUC Theater Department health & Safety. All are available through the Technical Director.

The Glimmerglass Opera Production Staff Workplace Health & Safety Training Guide

1.) CAL/OSHA. *Workplace Injury and Illness Prevention Model Program, for employers with intermittent workers.* State of California, Department of Industrial Relations, Division of Occupational Safety & Health, 1994.

2.) Cal/OSHA. *Workplace Injury and Illness Prevention Model Program, for high hazard employers.* State of California, Department of Industrial Relations, Division of Occupational Safety & Health, 1995

Both of these Cal/OSHA models contain training guides employed by Glimmerglass, as well as excellent hazard assessment checklists, used in part by Glimmerglass. (Neither film nor theater production work is classified as high-hazard, by the way.)

3.) Kirk, H. Ray. *OSHA Compliance Guide, General Safety Standards, Sample Programs and Forms.* Business Publishing, Summers Press, IN> Bedford TX 1993.

A Yale University MFA thesis, this is a thorough application of OSHA general industry standards as they apply the theater production work and facilities.

4.) Inkel, Raymond. *Theatre Industry Digest of Safety and Health Standards: A guidebook to Applicable Occupational Safety and Health Administration Standards.* Raymond P. Inkel, New Haven, 1995.

A Yale University MFA thesis, this is a thorough application of OSHA general industry standards as they apply the theater production work and facilities.

5.) Rossol, Monona, *Stage Fright: Health and Safety in the Theater.* Center for Occupational Hazards, Inc. New York, 1989.

The original guide to the safe use of disposal of hazardous chemicals, and an excellent introduction to MSDS.

6.) Rossol, Monona, *the artist's Completes Health and Safety Guide.* Allsworth Press, New York 1994.

Focusing primarily on artist's materials, this is another detailed source of chemical terminology and safety precautions.

The Inkel and Rossol volumes also contain excellent bibliographies, listing many individual industry and government safety and health resources.

The Following United States Government publications provide further information about worker health and safety. All are available in the office of the Technical Director.

1.)U.S. Department of Labor, Occupational Safety and Health Administration:

OSHA 2202 *Construction Industry Digest, 1991 (revised)*
OSHA 3021 *OSHA: Employee Workplace Rights, 1994 (revised)*
OSHA 3047 *Consultation Services for the Employer, 1995(revised)*
OSHA 3074 *Hearing Conservation, 1995 (revised)*
OSHA 3077 *Personal Protective, 1993 (revised)*
OSHA 3079 *Respiratory Protection, 1993 (revised)*
OSHA 3124 *Stairways and Ladders, 1993 (revised)*
OSHA 3146 *Fall Protection in Construction, 1995*

- 2.) *Code of Federal Regulations, Title 29, Part 1910. Labor. 2 Volumes.* Office of the Federal Register, National Archives and Records Administration, 1992
Regulations relating to Labor (continued): Chapter XVII- Occupational Safety and Health Administration, Department of Labor.

The following safety training manuals from other companies are also available in the office of the Technical Director:

- 1.) Inkel, Muzilla, et al. *Safety Manual, The Santa Fe Opera Production Department.* The Santa Fe Opera, Santa Fe, NM, 1996.
- 2.) Rupp, Baker, ed. *Center Stage Hazard Communication Program, Employee "Right to Know" Training Manual.* Center Stage, Baltimore, 1993
- 3.) Baker. *The Glimmerglass Production Staff Workplace Health and Safety Training Guide.*

Appendices

Appendix A-Alarm Procedures

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Fire Alarm – Theater, No Audience

- 1.) Alarm sounds in theater or you discover a fire
- 2.) Call Public Safety at **911** before doing anything else.
- 3.) Evacuate the Theater Immediately and proceed to assigned areas. People in the auditorium should exit and meet in the lawn in front of the Box Office.
- 4.) If the fire is small and you have training, use a proper fire extinguisher to combat the fire. **DO NOT ENDANGER YOURSELF OR OTHERS** by trying to extinguish a large, well-developed fire. (The fire department must be called even if the fire was contained. Be sure to explain the extent of the fire so that the correct equipment can be sent. No one returns to the building until the fire chief indicates that it is safe to do so.)
- 5.) If the fire is beyond your means:
 - a.) Pull a fire alarm.
 - b.) Help rescue anyone in need of assistance.
 - c.) Contain the fire by closing, but not locking, as many doors as possible
 - d.) Evacuate the area.
 - e.) Drop fire curtain, if necessary.
 - f.) Take roll of crews from each department.
 - g.) Check for any vehicles that may be in the fire dept.'s way.

If you are notified of a fire in your building:

- 1.) Evacuate:
 - a.) Take keys, briefcases, purses, wallets, coats, and other personal belongings.
 - b.) Do not use elevators.
 - c.) Close, do not lock, doors.
 - d.) Turn off all electronics, including computers (except in the case of a gas leak)
 - e.) Evacuate in groups to ensure all are able to get out.
 - f.) Provide assistance for those with physical disabilities.
 - g.) Evacuate in a safe, orderly manner.
- 2.) If you are above the ground floor and fire or dense smoke has restricted your exit routes:
 - a.) Remain in your room.
 - b.) Place something at the base of your door to prevent the entrance of smoke.
 - c.) Call Public Safety **911** and let them know your situation.
 - d.) Open any windows and signal your need for help.

Fire Alarm – Theater, With Audience

1.) The Alarm sounds or if a fire is spotted.

2.) Stage Manager

- a.) Instructs **Fly Operator** or Crew Member to lower the main curtain.
- b.) At his/her discretion may instruct the **Fly Operator** to drop the fire curtain to prevent flames, smoke, or cinders from entering the pit or house, provided the stage is clear.
- c.) Instructs **Board Operator** to bring up house lights.
- d.) Reads the following announcement:

“Ladies and Gentleman: May I have your attention please? We ask for your cooperation at this time. Our Fire alarm system has been activated and we must evacuate the theater. Please follow the instructions of the ushers who will guide you out of the theater. We apologize for the interruption of today’s program and hope that it can resume shortly. Thank you.”

- e.) Evacuates the stage house to lawn in front of Box Office, closing any doors behind him/her.

3.) House Manager

- a.) Instructs **Ushers** to move to their emergency stations.
- b.) After stage management’s announcement, instructs **Ushers** to begin evacuating the house using the Emergency Evacuation Plan. Each usher is responsible for ensuring that his/her section is evacuated.
- c.) Close Main doors.

4.) After evacuation, if the **Fire Chief** has confirmed a false alarm, an administrator makes an announcement to the remaining audience stating that it is a false alarm, and the show will continue. The audience will then be reseated.

NOTE: If a fire occurs in any on-site building during a performance, the theater shall be evacuated.

Patron Illness

- 1.) If a patron is ill during a performance, a **member of the House Management Staff**
 - a.) Assists the patron out of the theater as discretely as possible.
 - b.) Remains with the ill patron at all times.

- 2.) If a patron becomes **extremely ill** during a performance such that he/she requires emergency medical attention and the performance must be interrupted
 - a.) The **House Manager, having discretion over stopping the performance** based on location of the patron and severity of the situation
 1. Contacts the **Stage Manager** to stop the performance.
 2. Tries to get the following information from the patron or his/her companion: current medication, medical history, recent actions or events that may have contributed to injury or illness. This will assist the first responders.
 3. Instructs someone to greet the ambulance and other emergency vehicles and direct them to the patron.
 4. completes an Accident Report.
 - b.) the **Stage Manager**
 1. stops performance.
 2. makes the following announcement:

“Ladies and Gentlemen: May I have your attention please? Due to a patron’s illness, we must temporarily stop the performance so that he/she can receive medical attention. Please remain in your seats and we will resume the performance shortly.”

- 3.) The performance should not resume until the patron has been removed from the theater.

Severe Weather

1.) In the case of a **Tornado Watch**

- a.) If a tornado warning is in effect at the start of a performance or before a subsequent act, the **Stage Manager** makes the following announcement before curtain:

“Ladies and Gentlemen: May I have your attention please? A severe weather warning is in effect for this area. Should severe weather occur during the performance, you are advised to remain in the theater for your safety.”

2.) In the case of a **Tornado Warning**

- a.) If a tornado is sighted in the area during the performance, the **Stage Manager**
 1. stops the performance.
 2. makes the following announcement:

“Ladies and Gentlemen: May I have your attention please. A tornado has been sighted in our immediate area. For your safety, please remain in the theater and bend forward over your knees with your arms locked over your head. We will notify you when the threat has passed. Please take these positions now.”

b.) The **House Manager**

1. Instructs the **Ushers** to move to their emergency stations to keep the patrons calm and assist them in preparing for the emergency.
2. Instructs anyone outside the theater to come inside immediately.

c.) The **Follow-Spot, Light Board, and Flyline Operators, Stage Manager, and anyone in upper vestibules** should move to lower ground.

d.) **Cast and Crew** should move to the basement.

Bomb Threat

Anyone receiving notification of a bomb threat should follow the plan below. A copy of the Bomb Threat Report Form is available in each of the emergency procedures notebooks.

- 1.) During the call
 - a.) **Be Calm and courteous.**
 - b.) **Listen, do not interrupt** the caller.
 - c.) Notify your supervisor if possible.
 - d.) Use the Bomb Threat Report Form.

- 2.) After the call
 - a.) Notify your supervisor as well as the stage manager.
 - b.) Inform the Jackson County Sheriff's Department or the Illinois State Police who will
 1. Send Fire and Emergency Medical Personnel.
 2. Conduct and confirm any investigation relative to the threat.
 3. Advise management of further courses of action to take.
 - c.) Initiate evacuation of the facility.
 - d.) Do not search for the bomb.

Note: Report any suspicious object that you feel may be a bomb. Do not touch it.

3.) Any performance in progress may be cancelled depending on the time required to investigate.

4.) If the performance needs to be interrupted, the following announcement should be made:

"Ladies and Gentlemen: May I have your attention please? We ask for your cooperation at this time. Please follow the instructions of the ushers who will guide you out of the theatre. We apologize for the interruption of today's program and hope that it can resume shortly. Thank you."

5.) If the performance needs to be cancelled, the following announcement should be made:

"Ladies and Gentlemen: May I have your attention please? Unfortunately, today's performance must be cancelled. We apologize for any inconvenience this creates."

Power Outage

1.) In the event of a power outage, the emergency generator immediately kicks in providing power to the emergency floodlights in the auditorium and stage house and to the pump room for the fire sprinkler system.

a.) The **Stage Manager** makes the following announcement;

“Ladies and Gentlemen: May I have your attention please? A power outage has occurred and we must temporarily stop the performance in order to locate the cause of the problem. Please remain in your seats until we can resume the performance.”

b.) The **House Manager** instructs the **Ushers** to move to their emergency stations and be available to keep patrons calm and in their seats.

2.) If the cause of the outage is found and can be corrected in a reasonable amount of time, the **Stage Manager** makes the following announcement:

“Ladies and Gentlemen: May I have your attention please? We have determined the cause of the power outage, and once power is restored we will be able to resume the performance. Please remain in your seats, and thank you for your patience.”

3.) If the outage cannot be remedied in a reasonable amount of time

a.) the **Stage Manager** makes the following announcement:

“Ladies and Gentlemen: May I have your attention please? We are unable to correct the problem causing the power outage and must cancel the performance. Please follow the direction of the ushers who can assist you in exiting the theater.”

b.) the **House Manager** instructs the **Ushers** to direct patrons out of the theater.

NOTE: Once normal power has been restored, the emergency generator remains running for an additional ten to fifteen minutes, and emergency lighting stays on for an additional five minutes.

Earthquake

1.) If you feel an earthquake, it will probably happen so fast that the stage manager will not have time to make an announcement. Therefore, when the quakes have stopped and making an announcement is a viable option, announce:

“Ladies and Gentlemen, we have just experienced an earthquake. Please remain calm and let ushers know of anyone who needs immediate attention. Otherwise, please exit the Theater in a calm manner. Watch out for broken glass, hanging electrical lines, and unstable equipment and debris. Thank you.”

2.) No matter what stop the performance for the day

3.) Call **911** if there is significant damage to your building or if anyone is hurt.

Emergency Numbers

| | |
|--------------------------------|----------------|
| Fire, Ambulance, & Police..... | 911 |
| Carbondale Police..... | 457-3200 |
| SIUC Police..... | 453-2381 |
| Jackson County Sheriff..... | (618) 684-4215 |
| Illinois State Police..... | (618) 662-4475 |

Services

| | |
|--|----------------|
| Facilities of Operation(ex. Gas, Electric)..... | 453-3621 |
| Illinois Department of Transportation..... | (618) 281-4565 |
| Jackson County Office of Emergency Services..... | (618) 684-3137 |
| SIUC Center for Environment Health and Safety..... | 453-7180 |

McLeod Theater

| | |
|-------------------|----------|
| Box Office..... | 453-3001 |
| Main Office..... | 453-5741 |
| Scene Shop..... | 453-7585 |
| Costume Shop..... | 453-7592 |
| Publicity..... | 453-7589 |

Faculty

NOTE: Home numbers should only be used in case of an emergency.

Chair of Theater

| | |
|-----------------|--------------|
| Mark Varns..... | (W) 453-5741 |
| | (H) 351-0495 |

Technical Director

| | |
|-------------------|--------------|
| Bob Holcombe..... | (W) 453-7593 |
| | (H) 967-3695 |

Head of Design and Technical Production

| | |
|-------------------|--------------|
| Ron Naversen..... | (W) 453-3079 |
| | (H) 457-7635 |

Announcements to the Audience

1.) Evacuation

“Ladies and Gentlemen: May I have your attention please? We need to evacuate the theater at this time. We ask your cooperation at this time. Please follow the instructions of the ushers who will guide you out of the theater. We apologize for the interruption of today’s program and hope that it can resume shortly. Thank you.”

2.) Power Outage

“Ladies Gentlemen: May I have your attention please? A power outage has occurred and we must temporarily stop the performance in order to locate the cause of the problem. Please remain in your seats until we can resume the performance.”

a.) If the outage can be corrected:

“Ladies and Gentlemen: May I have your attention please? We have determined the cause of the power outage, and once power is restored we will be able to resume the performance. Please remain in your seats, and thank you for your patience.”

b.) If the outage cannot be corrected:

“Ladies and Gentlemen: May I have your attention please? We are unable to correct the problem causing the power outage and must cancel the performance. Please follow the direction of the ushers who can assist you in exiting the theater.”

3.) Patron Illness

“Ladies and Gentlemen: May I have your attention please? Due to a patron’s illness, we must temporarily stop the performance so that he/she can receive medical attention. Please remain in your seats and we will resume the performance shortly.”

4.) Severe Weather

a.) Tornado Watch

“Ladies and Gentlemen: May I have your attention please? A severe weather warning is in effect for this area. Should severe weather occur during the performance, you are advised to remain in the theater for your safety.”

b.) Tornado Warning.

“Ladies and Gentlemen: May I have your attention please. A tornado has been sighted in our immediate area. For your safety, please remain in the theater and prepare to bend forward over your knees with you arms locked over you head. We will notify you when the threat has passed. Please take these positions now.”

5.) Earthquake

“Ladies and Gentlemen, we have just experienced an earthquake. Please remain calm and let ushers know of anyone who needs immediate attention. Otherwise, please exit the Theater in a calm manner. Watch out for broken glass, hanging electrical lines, and unstable equipment and debris. Thank you.”

Directions to Memorial Hospital of Carbondale ER

From Department of theater loading docks at the Southwest corner of the Communications Building:

Straight going past satellite dishes

Take a right until Chautauqua Rd.

Take a right on Chautauqua Rd. until Lincoln Dr.

Take Left on Lincoln Dr. until Stop Sign (Poplar Rd.)

Take Left on Poplar and take Poplar past West and East Bound Rt. 13

Hospital is on the right hand side after East Bound Rt. 13

Appendix B– Dye Vat and Room

1.) Using the Dye Vat and Room

- a.) The red power switch must be on. Leave it on at all times.
- b.) The pressure gauge should be checked periodically. It should read 20-25, or the green area, when the vat is cold. If the reading is different, tell the Costume Studio Manager or Faculty Costume Designer immediately.
- c.) Protective equipment should be worn in the dye room. An apron, rubber gloves, goggles, and a dust mask or respirator should be worn even in the preparatory stages. These pieces of equipment should remain in the dye room, and must be taken off in order to leave the room.

2.) Directions for using the Dye Vat

- a.) Turn on the exhaust fan switch. The fan is to remain on until the dyeing job is complete and the vat is cleaned and turned off. Keep the door to the dye room closed to make the exhaust fan more effective and to contain the chemicals.
- b.) Make sure that the vat is clean and that the screen is in place.
- c.) Close the drain valve by turning it clockwise. Do not over tighten. Run a little water and listen to make sure that the valve is closed.
- d.) Fill the vat with hot water from the tap attached to the vat.
- e.) The water should stop at the steam-jacket line. Less water can be used for smaller projects. Make sure not to overfill the vat.
- f.) Turn on the power switch, which is located on the panel near the bottom of the vat.
- g.) Turn the temperature control to 8. Turning the control higher will not make the water heat up faster; it will only make the water hotter.
- h.) Mix the powder dyes in water in a separate container to dissolve the dye and prevent uneven dyeing. Use a small stainless steel container on the drain board. Mixing here allows the exhaust hood to carry away particulates from the dyes.
- i.) The vat water has reached 8 when the light indicator shuts off. Stir in the dye mixture once the vat water has reached this temperature. Be aware that the vat will be hot, and leaning against it or touching it may burn you. The indicator light will come back on when the vat is reheating.
- j.) The mixture in the vat is hot enough when you see small bubbles rising to the surface. This is a simmer, and it takes the vat about 10 minutes to reach this temperature.
- k.) Wet out your fabric in the sinks. Use a small amount of soap, like Synthrapol, to remove surface dirt and finishes.
- l.) Put wetted out fabric into the dye vat. Make sure the fabric does not wad up, or it will dye unevenly.
- m.) Stir the fabric gently using the dowel rods provided.
- n.) Do not leave the vat unattended while dyeing!
- o.) Once the desired color depth is reached, remove the fabric from the vat using the dowel rods.
- p.) Drag the fabric across the drain board and into the sink. Follow regular procedures for rinsing dyes out of fabrics.

- q.) Once you are finished with the vat, open the drain valve by turning it counterclockwise.
- r.) When the vat is empty, use the sprayer hose to rinse it out.
- s.) Use the provided scrub brush and a mild detergent to remove all of the dye residue. Do not use a solvent or steel wool as they will scratch the surface of the vat.
- t.) Rinse the vat again with the sprayer hose and repeat until the vat is perfectly clean.
- u.) Turn off the exhaust fan switch.
- v.) Before you leave the room make sure that:
 1. The vat is clean.
 2. The vat switch is off.
 3. The temperature control is off.
 4. The sinks are clean and free of debris.
 5. The exhaust hood switch is off.
 6. The lights are turned off.
 7. The door is locked and closed.