

RANDOLPH COMMUNITY COLLEGE
629 Industrial Park Avenue
Asheboro, North Carolina

Asheboro Campus

Emergency Services Training Center

Archdale Center

FIRE PREVENTION & SAFETY PLAN

Reviewed
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RANDOLPH COMMUNITY COLLEGE

Fire Prevention Plan

I. PURPOSE

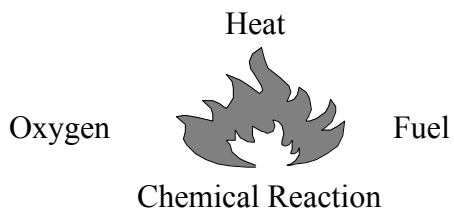
Randolph Community College recognizes the responsibility of the employer to provide a safe and secure workplace. It is the policy of the College to provide to employees a workplace free from areas where potential fire hazards exist. The primary goal of this fire protection program is to reduce or eliminate fire in the workplace by heightening the fire safety awareness of all employees. Another goal of this plan is to provide all employees with the information necessary to recognize hazardous conditions and to take appropriate action before such conditions result in a fire emergency.

This plan details the basic steps necessary to minimize the potential for fire occurring in the workplace. Prevention of fires in the workplace is the responsibility of everyone employed by the College but must be monitored by each supervisor overseeing any work activity that involves a fire hazard. Every effort will be made by the College to identify those hazards that might cause fires and to establish a means for controlling them. This fire prevention plan complies with the requirements of 29 CFR 1910.39.

The fire prevention plan will be administered by the College Director of Safety and Emergency Preparedness will compile a list of all major workplace fire hazards, the names or job titles of personnel responsible for fire control equipment maintenance, names or job titles of personnel responsible for control of fuel source hazards, and locations of all fire extinguishers in the workplace. The administrator will also be familiar with the behavior of employees that may create fire hazards as well as periods of the day, month, and year in which the workplace could be more vulnerable to fire.

II. CLASSIFICATION OF FIRES

Fire is a chemical reaction involving the rapid oxidation or burning of a fuel. It needs four elements to occur as illustrated below.



The first component is fuel. Fuel can be any combustible material: solid (such as wood, paper, or cloth), liquid (such as gasoline), or gas (such as acetylene or propane). Solids and liquids generally convert to gases or vapors before they will burn.

Another component is oxygen. Fire needs an atmosphere with only 16% oxygen to survive.

Heat is the third component. Heat is the energy necessary to increase the temperature of the fuel source to a point in which sufficient vapors are emitted for ignition to occur.

The final side of the illustration represents a chemical chain. When these components are brought together in the proper conditions, fire will develop. Take away any one of these elements, and the fire cannot exist or will be extinguished if it was already burning.

Fires are classified into four groups: Class A, B, C, and D based on the type of fuel source. Table 1 describes the classifications of fire which can be used in making hazard assessments.

| | |
|---------|---|
| Class A | Ordinary combustible materials such as paper, wood, cloth and some rubber and plastic materials. |
| Class B | Flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials |
| Class C | Energized electrical equipment and power supply circuits and related materials. |
| Class D | Combustible metals such as magnesium, titanium, zirconium, sodium, lithium, and potassium. |

REPORTING A FIRE EMERGENCY

If smoke or fire is discovered anywhere on the campus:

1. PULL FIRE ALARM
2. EVACUATE THE IMMEDIATE AREA
3. DIAL 911 FROM ANY RED PHONES IN THE HALLWAYS
OR
DIAL 9-911 ON ANY RCC OFFICE PHONE
OR
DIAL 911 ON ANY PAYPHONE OR CELL PHONE
4. Tell the operator:
 1. This is a fire emergency
 2. Your name, telephone number, and your location
 3. The location of the fire.
 4. Stay on the line until you are certain no other information is needed, unless there is an immediate threat to your safety.
 5. Notify the Information Center Main Campus at 633-0200 that there is a fire and that 911 has been contacted.

ALL ALARMS SHOULD BE TAKEN SERIOUSLY! If you hear an alarm, evacuate the building. **DO NOT USE THE ELEVATORS! DO NOT ATTEMPT TO RETRIEVE VALUABLES! DO NOT RE-ENTER THE BUILDING!!**

- Isolate the fire by closing doors and windows
- Do not open any doors that feel hot

- Move away from the area and warn others to stay away.
- Watch for the arrival of emergency personnel and assist in directing them to the fire.
- If you are aware that someone is trapped, notify the fire fighters immediately.
- If you are trapped, stay low to the floor as you try to exit.
- If your clothes catch fire, **STOP, DROP AND ROLL!!**

FIRE EXTINGUISHER INSTRUCTIONS

P = PULL safety pin.
A = AIM at the base of the fire.
S = SQUEEZE the trigger handle.
S = SWEEP from side to side.

Each employee should familiarize themselves with the location of the fire extinguishers and emergency exits on campus. There are fire extinguishers in all RCC buildings and exact location are identified on maps posted throughout each building.

III. DETERMINING FIRE HAZARDS

There are two steps involved in the determination of fire hazards: First, identifying the existing fire hazards in the workplace and, second, taking action to resolve them. The inspection checklist (Appendix A) provides a guide for precise fire-safe practices that the College follows. The location of any major fire hazards are denoted in Appendix C. Also included in Appendix C is a listing of the personnel responsible for the maintenance of the equipment and systems installed to control fires.

Material hazards shall be identified, as evident on the specific Material Safety Data Sheets (MSDS), and shall be labeled on containers as soon as they arrive in the workplace. The identification system shall also be incorporated into the College's hazard communication program.

OXYGEN-ENERGIZED ATMOSPHERES

Oxygen-enriched atmospheres include operating rooms and anesthesia machines, oxygen tents as used by ambulances, fire and police or rescue squads, hospitals and laboratory supply systems, and cutting and welding. To prevent dangerous adiabatic heating of flammable gases, the cylinder valves will be opened very slowly to allow the gradual introduction of the high pressure gas downstream from the cylinder valve. This will permit a slow buildup of pressure and hence temperature.

INDUSTRIAL TRUCKS

The type of industrial truck being used shall be approved for use within any building storing hazardous materials. All refueling operations shall be conducted outside and away from storage

of flammable materials. Areas that are used for maintenance or battery charging of electrical trucks should be separated from storage areas.

IV. STORAGE AND HANDLING REQUIREMENTS

The storage of material shall be arranged such that adequate clearance is maintained away from heating surfaces, air ducts, heaters, flue pipes, and lighting fixtures. All storage containers or areas shall prominently display signs to identify the material stored within. Storage of chemicals shall be separated from other materials storage, from handling operations, and from incompatible materials. All individual containers shall be identified as to their contents.

Only containers designed, constructed, and tested in accordance with the U. S. Department of Transportation specifications and regulations are used for storage of compressed or liquefied gases. A compressed gas storage room, if utilized, will be an area reserved exclusively for that purpose with good ventilation and at least 1 hour fire resistance rating. In all cases, gas cylinders shall be stored vertically, secured in place, and stored away from any heat or ignition source. Pressurized gas cylinders shall never be used without pressure regulators.

ORDINARY COMBUSTIBLES

- Wooden pallets will not be stacked over 6 feet tall. When feasible, extra pallets will be stored outside away from buildings to reduce the risk of fire hazards.
- Piles of combustible materials shall be stored away from buildings and located apart from each other sufficiently to allow fire fighting efforts access to them.

FLAMMABLE MATERIALS

- Bulk quantities of flammable liquids shall be stored outdoors and away from buildings or in an approved storage area. Smaller quantities are subsequently brought into a mixing room where they are prepared for use. The mixing room shall be located next to an outside wall equipped with explosion relief vents. The room shall also have sufficient mechanical ventilation to prevent the accumulation of flammable vapor concentration in the explosive range.
- Small quantities (limited to amount necessary to perform an operation for one working shift) of flammable liquids shall be stored in, and also dispensed from, approved safety containers equipped with vapor-tight, self-closing caps, screens or covers.
- Flammable liquids shall be stored away from sources that can produce sparks.
- Flammable liquids shall only be used in areas having adequate and, if feasible, positive ventilation. If the liquid is highly hazardous, the liquid shall only be used in areas with a local exhaust ventilation.
- Flammable liquids shall never be transferred from one container to another by

applying air pressure to the original container. Pressurizing such containers may cause them to rupture, creating a serious flammable liquid spill.

- When dangerous liquids are being handled, a warning sign will be posted near the operation notifying other employees and giving warning that open flames are hazardous and are to be kept away.
- The storage and usage areas will include fire-resistive separations, automatic sprinklers, special ventilation, explosion-relief valves, separation of incompatible materials, and the separation of flammable materials from other materials.

V. POTENTIAL IGNITION SOURCES

Table 2 lists common sources of ignition that cause fires in the workplace, gives examples in each case, and suggests preventive measures.

| Table 2. Sources of Ignition Examples | | |
|--|--|---|
| Sources of Ignition | Examples | Preventive Measures |
| Electrical equipment | Electrical defects, generally due to poor maintenance, mostly in wiring, motors switches, lamps and hot elements | Use only approve equipment. Follow National Electrical Code. Establish regular maintenance. |
| Friction | Hot bearings, misaligned or broken machine parts, poor adjustment. | Follow a regular schedule of inspection maintenance and lubrication. |
| Open flames | Cutting and welding torches, gas oil burners, misuse of gasoline torches. | Follow established welding precautions. Keep burners clean and properly adjusted. Do not use open flames near combustibles. |
| Smoking and matches | Dangerous near flammable liquids and in areas where combustibles are stored or used. | Smoke only in permitted areas. Make sure matches are out. Use appropriate receptacles. |
| Static electricity | Occurs where liquid flows from pipes. | Ground equipment. Use static eliminators. Humidify the atmosphere |
| Hot surfaces | Exposure of combustibles to Furnaces, electric lamps or irons. | Provide ample clearances, insulation, air circulation. Check heating apparatus prior to leaving it unattended. |

For maximum effectiveness in preventing potential ignition sources, always include the following in your inspection routine.

- Ensure that utility lights always have some type of wire guard over them.
- Don't misuse fuses. Never install a fuse rated higher than specified for the circuit.
- Investigate any appliance or equipment that smells strange. Space heaters, microwave ovens, hot plates, coffee makers and other small appliances shall be rigidly regulated and closely monitored.
- The use of extension cords to connect heating devices to electric outlets shall be prohibited.

WELDING AND CUTTING

Welding and cutting will not be permitted in unauthorized areas. When practical, welding and cutting operations shall be conducted in a well-ventilated room with a fire-resistant floor. Randolph Community College maintains a welding shop for this purpose. When the use of the shop is not feasible, the Maintenance Supervisor shall ensure that the work areas have been surveyed for fire hazards, the necessary precautions taken to prevent fires, and a Hot Permit has been issued. This Hot Permit shall only encompass the area, item, and time which is specified on it.

If welding is to be performed over wooden or other combustibles type floors, the floors will be swept clean, wet down, and covered with either fire-retardant blankets, metal, or other noncombustible coverings.

Welding will not be permitted in or near areas containing flammable or combustible materials (liquids, vapors, or dusts). Welding will not be permitted in or near closed tanks that contain or have contained flammable liquids unless they have been thoroughly drained, purged, and tested free from flammable gases or vapors. Welding shall not begin until all combustible materials have been removed at least 35 feet from the affected areas, or if unable to relocate, covered with a fire retardant covering. Openings in walls, floors, or ducts shall be covered if located within 35 feet of the intended work area. Welding will not be permitted on any closed containers.

Fire extinguishers will be provided at each welding or cutting operation. A trained watcher will be stationed at all times during the operation and for at least 30 minutes following the completion of the operation. This person will assure that no stray sparks cause a fire and will immediately extinguish fires that do start.

OPEN FLAMES

No open flames will be permitted in or near spray booths or spray rooms. If indoor spray-painting work needs to be performed outside of standard spray-painting booths, adequate ventilation will be provided. All potential ignition sources will also be eliminated.

Gasoline or alcohol torches shall be placed so that the flames are at least 18 inches away from wood surfaces. They will not be used in the presence of dusts, vapors, flammable combustible liquids, paper or similar materials. Torches shall never be left unattended while they are burning.

The College has a specific policy regarding cigarette/cigar/pipe smoking in the workplace. **Effective July 1, 2010, the use of tobacco is prohibited in all campus buildings, facilities or property owned or used by RCC, including outside areas;** Tobacco use shall be permitted in personal vehicles as long as no tobacco litter is left on campus. All College employees are aware of the no-smoking policy. Rigid enforcement of this policy will be maintained at all times. The plan administrator will enforce observance of permissible and prohibited smoking areas for employees and outside visitors to the workplace. Fire-safe, metal containers will be provided where smoking is permitted. No-smoking areas will be checked periodically for evidence of discarded smoking materials.

STATIC ELECTRICITY

The College recognizes that it is impossible to prevent the generation of static electricity in every situation, but also realizes that the hazard of static sparks can be avoided in part by preventing the buildup of static charges. One or more of the following preventive methods will be used: grounding, bonding, maintaining a specific humidity level (usually 60-70 percent), and ionizing the atmosphere.

Where a static accumulating piece of equipment is unnecessarily located in a hazardous area, the equipment will be relocated to a safe location rather than attempt to prevent static accumulation.

VI. HOUSEKEEPING PREVENTIVE TECHNIQUES

The following are housekeeping techniques and procedures to prevent occurrences of fire.

- Keep storage and working areas free of trash.
- Place oily rags in covered containers and dispose of daily.
- Do not use gasoline or other flammable solvent or finish to clean floors.
- Use non-combustible oil-absorptive materials for sweeping floors.
- Dispose of materials in non-combustible containers that are emptied daily.
- Remove accumulation of combustible dust.
- Don't refuel gasoline powered equipment in a confined space, especially in the presence of equipment such as furnaces or water heaters.
- Don't refuel gasoline powered equipment while it is hot.

- Follow proper storage and handling procedures.
- Ensure combustible materials are present only in areas in quantities required for the work operation.
- Clean up any spill of flammable liquids immediately.
- Ensure that if a worker's clothing becomes contaminated with flammable liquids, these individuals change their clothing before continuing to work.
- Post "No Smoking" caution signs near the storage areas.
- Report any hazardous condition, such as old wiring, worn insulation, and broken electrical equipment to the supervisor.
- Keep motors clean and in good working order.
- Don't overload electrical outlets.
- Ensure all equipment is turned off at the end of the work day.
- Maintain the right type of fire extinguisher available for use.
- Use the safest cleaning solvents (nonflammable and nontoxic) when cleaning electrical equipment.
- Ensure that all passageways and fire doors are unobstructed. Stairwell doors shall never be propped open, and materials shall not be stored in stairwells.
- Periodically remove over spray residue from walls, floors, and ceilings of spray booths and ventilation ducts.
- Remove contaminated spray booth filters from the building as soon as replaced, or keep immersed in water until disposed.
- Don't allow material to block automatic sprinkler systems or to be piled around fire extinguisher locations. To obtain the proper distribution of water, a minimum of 18 inches of clear space must be maintained below sprinkler deflectors. If there are no sprinklers, a 3 foot clearance between piled material and the ceiling must be maintained to permit use of hose streams. These distances must be doubled when stock is piled higher than 15 feet.
- Check daily for any discard lumber, broken pallets, or pieces of material stored on site and remove properly.
- Repile immediately any pile of material which falls into an aisle or clear space.

- Use weed killers that are not toxic and that do not pose a fire hazard.

VII. FIRE PROTECTION EQUIPMENT

Every building will be equipped with an electrically managed, manually operated fire alarm system. When activated, the system will sound alarms that can be heard above the ambient noise levels throughout the workplace. The fire alarm will also be automatically transmit to the fire department. Any automated fire suppression or fire detection system will automatically actuate the building alarm system.

Portable fire extinguishers are placed in all buildings. Fire extinguishers must be kept fully charged and in their designated places. The extinguishers will not be obstructed or obscured from view. A map indicating the locations of all fire extinguishers for the College is located in Appendix D. The fire extinguishers will be inspected by the College Maintenance staff at least monthly to make sure that they are in their designated places, have not been tampered with or actuated, and are not corroded or otherwise impaired.

VIII. TRAINING

All employees shall be instructed on the locations and proper use of fire extinguishers in their work areas. Employees shall also be instructed as to how to operate the building's fire alarm system, and shall be familiarized with evacuation routes. The training of all employees shall include the locations and types of materials and/or processes which pose potential fire hazards. The training program shall also emphasize the following:

1. Use and disposal of smoking materials
2. The importance of electrical safety
3. Proper use of electrical appliances and equipment
4. Unplugging heat-producing equipment and appliances at the end of each work day
5. Correct storage of combustible and flammable materials
6. Safe handling of compressed gases and flammable liquids (where appropriate)

IX. EMPLOYEE ACCESS

All College employees will have access to this plan during all normal business or working hours. A written version of the plan is available in the office of the Director of Safety and Emergency Preparedness. Employee access is also facilitated through maintaining an electronic copy of the plan on the college website under employee publications.

Employees are advised of the location of the plan and their access rights at initial briefing and at recurring times throughout the year during training. Memos advising the status of the plan and location are sent by E-mail when the plan evaluation is complete.

X. EVALUATION

This fire prevention plan will be reviewed annually, or more frequently if necessary, and will be updated as needed. The college Director of Safety and Emergency Preparedness in conjunction with the College Safety Committee will review this plan. Suggested changes will be reviewed and implemented as required. The Workplace Inspection Reports, Fire Drill results, and any Fire Incident Reports will be a part of the review process. Any inspection report that indicates a potential fire hazard will also be reviewed as part of the process.

Appendix

“A”

FIRE PREVENTION CHECKLIST

This checklist should be reviewed regularly and kept up-to-date.

ELECTRICAL EQUIPMENT

- No makeshift wiring
- Extension cords serviceable
- Motors and tools free of dirt and grease

- Safest cleaning solvents used

FRICTION

- Machinery properly lubricated

SPECIAL FIRE-HAZARD MATERIALS

- Storage of special flammable isolated

WELDING AND CUTTING

- Area surveyed for fire safety
- Permit issued

OPEN FLAMES

- Kept away from spray rooms and booths
- No gas leaks

PORTABLE HEATERS

- Set up with ample horizontal and overhead clearances
- Secured against tipping or upset
- Combustibles removed or covered

HOT SURFACES

- Hot pipes clear of combustible materials
- Ample containers available and serviceable

SPONTANEOUS IGNITION

- Flammable waste material in closed, metal containers
- Flammable waste material containers emptied frequently

STATIC ELECTRICITY

- Flammable liquid dispensing vessels grounded and bonded
- Moving machinery grounded

HOUSEKEEPING

- No accumulation of rubbish
- Safe storage of flammables

- Passageways clear of obstacles
- Automatic sprinklers unobstructed

FIRE PROTECTION

- Proper type of fire extinguisher
- Fire extinguisher in proper location
- Access to fire extinguishers unobstructed
- Access to fire extinguishers clearly marked
- Fire protection equipment turned on

- Fuse and control boxes clean and closed
- Circuits properly fused or otherwise protected
- Equipment approved for use in hazardous areas (if required)
- Lights clear of combustible material

- Machinery properly adjusted and/or aligned

- Nonmetal stock free of tramp metal

- Combustible removed or covered

- Portable torches clear of flammable surfaces

- Safely mounted on noncombustible surfaces
- Use of steel drums prohibited
- Not used as rubbish burners

- Soldering irons kept off combustible surfaces
- Ashes in metal containers

- Piled material, dry, and well ventilated
- Trash receptacle emptied daily

- Proper humidity maintained

- Premises free of unnecessary combustible materials
- No leaks or dripping of flammables and floor free of spills
- Fire doors unblocked and operating freely

- Extinguishing system in working order
- Service date current
- Personnel trained in use of equipment
- Personnel exits unobstructed and maintained

Appendix

“B”

FIRE CONTROL EQUIPMENT MAINTENANCE

| System | Location | Responsible |
|--|---------------------|---|
| Fire Extinguishers | All | RCC Maintenance (monthly inspections) |
| Fire Extinguishers | All | Contract Maintenance (annual testing) |
| Fire Alarm System | All | RCC Safety Committee (drills and testing) |
| Fire Alarm System | All | Contract Maintenance (as required) |
| Emergency Lighting | All | RCC Maintenance |
| IDENTIFIED FIRE HAZARDS AND RESPONSIBLE PERSONNEL | | |
| HAZARD IDENTIFICATION | | |
| Hazard | Location | Responsible |
| Heating Fuel Oil | Boiler Rooms | RCC Maintenance |
| Propane | Maintenance Shop | RCC Maintenance |
| Propane (point source) | Pottery Kilns | Pottery Lead Instructor |
| Propane (point source) | Science Labs | Lab Instructors |
| Gasoline | Mower Shed | RCC Maintenance |
| Flammable Liquids | Maint Storage | RCC Maintenance |
| Flammable Liquids | Automotive/Autobody | Lead Instructor |
| Flammable Liquids | Photography | Lead Instructor |
| Flammable Liquids | Small Engine Repair | Lead Instructor |
| Flammable Liquids | Taxidermy | Lead Instructor |
| Acetylene Gas | Welding Shop | RCC Maintenance + Instructor |
| Acetylene Gas | HVAC training | Lead Instructor |
| Electric Kilns | Pottery | Lead Instructor |
| Propane | ESTC | Director of Emergency Services Training |
| Flammable Liquids | ESTC | RCC Maintenance / Director of Emergency Services Training |
| Smokeless Gunpowder | ESTC | Dean/Dept. Chair |
| Firearms Ammunition | ESTC | Dean/Dept. Chair |
| Road Flares | ESTC | Dean/Dept. Chair |

| | | |
|-------------------|----------------------|---|
| Flammable Liquids | Archdale | RCC Maintenance / Motorcycle Safety Program |
| Flammable Liquids | Archdale - Taxidermy | Lead Instructor |
| | | |

1910.165 Employee Alarm System

- (b)(1) The alarm system shall provide warning and time for safe escape.
- (1) The alarm must be loud enough to be heard over other noise in the area or visual enough for employees to see.
 - (2) Alarm shall be recognizable as an evacuation signal.
 - (3) The employer will explain to each employee the preferred means of reporting emergencies such as:
 - a. manual pull box alarms
 - b. voice
 - c. radios
 - d. telephones
 - e. public address systems
- Post emergency phone numbers near telephones, notice boards or other conspicuous locations.
Establish a procedure that allows all emergency messages to receive priority.
- (5) Establish procedures for sounding emergency alarms. For employers with 10 or fewer employees, voice alarms is acceptable as long as all employees can hear it.
- (c)(1) Alarms and devices installed to comply with this standard must be approved. Steam whistles, air horns, strobe lights which work are considered to meet this requirement.
- (2) Restore alarm system to normal operations as promptly as possible after each test or alarm. Spare alarm devices subject to wear shall be available in sufficient quantities and locations.
- (d) Maintenance and testing
- (1) Assure all alarm systems are maintained in operating condition
 - (2) Test reliability and adequacy of non supervised employee alarm systems is made every 3 months using different alarms each test.
 - (3) Maintain or replace power supplies as often as necessary to assure a fully operational condition.
Alternate means of alarms shall be provided when systems are out of service (such as telephone, radio, employee runner).
 - (4) Test alarms annually, at a minimum, for reliability and adequacy.
 - (5) Alarm servicing, maintenance and testing done by trained and competent personnel.
- (e) Manual Operation
Manually operated activation devices must be unobstructed, conspicuous and readily accessible.