

ENVIRONMENTAL MANAGEMENT PLAN

Implementing Procedures Part II

**Environmental Health and Safety Center
North Carolina State University
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PREFACE

The procedures provided in this document are to be used with the North Carolina State University Environmental Management Plan Implementing Procedures and Policy and Organization, which set forth the administrative policies and procedures for the environmental program management. The two documents: Environmental Management Plan Policy and Organization and Implementing Procedures provide the environmental compliance management framework and is inclusive of all NC State activities throughout the State.

The purpose of this document is to delineate program scope and provide basic procedural guidance for anyone conducting or planning to conduct a project at the University.

The guidelines provided here identify potential environmental regulatory issues so that proper actions can be taken.

FRAMEWORK

It is the intent of NC State University to provide the safest possible environment in which students, staff, and the faculty may pursue their activities.

THE NORTH CAROLINA STATE UNIVERSITY APPROACH TO SAFETY AND ENVIRONMENTAL MANAGEMENT

NC State has established administrative procedures for the reduction and prevention of on-the-job accidents and illnesses and for the protection of the environment. These procedures establish the foundation for health and safety and environmental programs in every unit of the University.

NC State believes that managing our environmental resources and safety programs merits the highest priority in the conduct of all university operations. In this context, and keeping with NC State's spirit of leadership and innovation, the University has made a commitment to an environmental health and safety program that will serve as the model for other academic institutions.

At NC State, no job is so important and no service so urgent that we cannot take the time to perform our work safely and in an environmentally conscientious manner. Each line manager and each employee is responsible for assuring that all activities result in an acceptable level of risk to themselves, to others present, to the general population, and to the environment.

NC State will conduct its operations and construct its facilities in manner to protect employees and the environment, conserve resources, minimize waste, and comply with all applicable regulations.

The North Carolina State University Environmental Management Plan is composed of the Policy and Organization and Implementing Procedures components. The Management Plan provides the program framework and the Implementing Procedures describe the program scope, controlling regulations, specific responsibilities, and procedures.

NORTH CAROLINA ENVIRONMENTAL POLICY ACT

Introduction

The purpose of this section is to ensure that NC State's proposed actions receive review pursuant to the North Carolina Environmental Policy Act (NCEPA) as found in Title 01 Chapter 25 of the Administrative Procedures for North Carolina.

It is NC State's policy to comply fully with the letter and spirit of NCEPA. To ensure that environmental factors are considered in the decision-making process, NC State shall incorporate NCEPA requirements early in the project/program activity planning process.

Scope

Appropriate environmental documentation must be prepared and submitted for any project where there are any of the following:

1. An expenditure of public monies or use of public land.
2. An action by a state agency subject to this chapter.
3. A potential environmental effect upon either natural resources, public health and safety, natural beauty, or historical or cultural elements of the state's common inheritance.

Definitions

Appropriate environmental documentation may include any of the following:

Environmental Assessment (EA)
Environmental Impact Statement (EIS)
Permit application
Plan - e.g., sedimentation and erosion control plan notification or any other regulatory-required documentation.

Action includes but is not limited to licensing, certification, permitting, the lending of credit, expenditures of public monies, and other similar final agency decisions the absence of which would preclude the proposed activity. Action does not include the allocation of any-public funds transferred in accordance with a statutory or regulatory formula, which leave no discretion to the allocating agency.

Non-major action means routine operations, small construction projects, and routine maintenance projects that do not require the filing of an environmental document. These actions include:

- a. Standard maintenance or repair activities or facility operations needed to maintain the originally defined function of a project or facility including but not limited to the following:
 - (1) Routine repairs and housekeeping projects which maintain a facility's original condition and physical features, including but not limited to reroofing and minor alterations where in-kind materials and techniques are used. This also encompasses structures 50 years of age and older and for which no separate law, rule, or regulation dictates a formal review and approval process.
 - (2) Any single action which involves relocation of students, faculty, or staff from or into a site using existing university buildings or leased buildings for which the building occupancy classification is not changed.

- (3) Routine disposal operations of hazardous chemicals, asbestos, or other environmentally sensitive operations for which a written procedure has been established, reviewed by appropriate authority, and determined to be in consonance with environmental law.
 - (4) The use of chemicals for boiler feedwater treatment, cooling tower water treatment, pesticides, herbicides, cleaning solvents, and other chemical products which may be considered environmentally sensitive, provided the materials are stored and utilized in keeping with the applicable Material Safety Data Sheets (MSDS).
 - (5) The handling of asbestos incident to a repair, maintenance, or minor construction project provided that the amount of asbestos material is removed, stored, disposed, and handled in accordance with published Department of Environmental Health and Natural Resources procedures for processing asbestos.
 - (6) Routine grounds maintenance and landscaping and grounds construction such as sidewalks, trails, walls, foot bridges, gates, and related facilities including outdoor exhibits.
 - (7) Maintenance activities to roads, bridges, parking lots, and their related facilities. Note, this applies to routine maintenance operations and not to extension or expansion of the facility.
 - (8) Maintenance and repair of utilities on their existing rights-of-way.
 - (9) Surface drainage systems, including modifications that reduce the discharge of freshwater or otherwise mitigate existing negative environmental effects.
 - (10) Boat ramps, docks, piers, bulkheads, and associated facilities - when constructed in accordance with 15A NCAC 12C.0300.
 - (11) Activities necessary to fulfill the existing requirements of in-effect permits for the protection of the environment and human health.
 - (12) Other maintenance and repair activities on projects which are consistent with previously approved environmental documents.
- b. Sampling survey, monitoring, and related research activities including but not limited to the following:
- (1) Aerial photography projects involving the photographing or mapping of the lands of the state.
 - (2) Biology sampling and monitoring of:
 - (i) fisheries resources through the use of traditional commercial fishing gear, electricity, and rotenone;
 - (ii) wildlife resources through the use of traditional techniques, including but not limited to traps, drugs, and firearms; and
 - (iii) woodland using standard approved forestry monitoring and techniques.
 - (3) Soil survey projects involving the sampling or mapping of the soils of the state.
 - (4) Establishing stream gaging stations for the purpose of measuring water flow at a particular site.

- (5) Placement of monitoring wells for the purpose of measuring groundwater levels, quantity, or quality.
 - (6) Gathering surface or subsurface information on the geology, minerals, or energy resources of the state.
 - (7) Placement and use of geodetic survey control points.
 - (8) Other routine survey and resources monitoring activities or other temporary activities required for research into the environment that have minimum long-term effects.
- c. Minor construction, demolition, or real estate acquisitions activities (except that sensitive areas may require exceptions to these thresholds) including but not limited to the following:
- (1) Any new construction activity meeting the following criteria as appropriate:
 - (i) a building or structure less than 10,000 square feet in footprint and the use of the structure does not involve the handling or storage of hazardous materials; and/or
 - (ii) grading or disturbing less than five (5) acres of previously undisturbed ground (exclusion of this category does not in itself preclude development of a sedimentation plan as part of the design).
 - (2) Routine paving or repair of existing roads and parking lots (provided that no ground disturbance will be involved necessitating development of a sedimentation plan); and/or construction of a two-lane road of less than 500 feet in length - provided that other laws concerning siltation/sedimentation plans are observed.
 - (3) Demolition of/or additions, rehabilitation and/or renovations to a structure not listed in the National Register of Historic Places or less than 50 years of age.
 - (4) Acquisition of real estate for which the use of the property does not vary from its intended purpose or function at the time of acquisition or is consistent with local land-use plans.
 - (5) Potable water or other utility systems such as the following:
 - (i) construction of new wells for water supply purposes; and/or
 - (ii) improvements to water treatment plants that involve less than 1,000,000 gallons per day added capacity, or improvements not intended to add capacity to the facility that have design withdrawal less than one-fifth of the 7Q10 flow of the contributing stream; and/or
 - (iii) installation of water lines or other utility lines in proposed or existing rights-of-way for streets or utilities, or new water lines less than five miles in length; and/or
 - (iv) construction of water tanks, booster pumping, or re-chlorination pump stations; and/or
 - (v) sewer line installation not exceeding minimum criteria of the permitting agency and not located in sensitive areas.

- (6) Groundwater withdrawals not exceeding the minimum criteria of the permitting agency and not located in sensitive areas.
 - (7) Solid waste disposal activities such as the following:
 - (i) construction of solid waste management facilities other than landfills exempt pursuant to NCGS 130A-294 (a) (4) which store, treat, process, incinerate, or dispose of less than 350 tons per day (averaged over one year) of solid waste; and/or
 - (ii) disposal of solid waste by land application on 100 total acres or less and where less than 10 percent (10%) of the total land application area is converted from a non-plantation forested area; and/or
 - (ii) land-disturbing activities which are not located within High Quality Waters (HQW) Zones or Trout Water Buffer Zones and land-disturbing activities that will disturb less than five (5) acres within a HQW Zone or a Trout Water Buffer Zone.
 - (8) Development activities within Areas of Environmental Concern (AEC) of the 20-county coastal area which do not require a Coastal Area Management Act (CAMA) major or minor permit pursuant to T1 5A NCAC 7K. Also minor construction activities may be undertaken in AEC which do not require a Coastal Area Management Act permit except activities which might require a NCEPA Environmental Document under provisions of another state approval or authorization.
 - (9) Development activities within AEC of the 20-county coastal area which require a CAMA major or minor permit and which meet all applicable criteria set forth in T15A NCAC 7H-State Guidelines for Areas of Environmental Concern, except the following:
 - (i) new marinas;
 - (ii) new navigation channels;
 - (iii) excavation of materials from aquatic environments for use for beach nourishment or other purposes not directly related to approved navigation projects; and
 - (iv) any activity which might require a NCEPA environmental document under provision of another state approval or state or local governmental agency requirements.
 - (10) Air emissions of pollutants from a minor source or modification as defined in 15A NCAC 2D.0503 that are less than 100 tons per year or 250 tons per year as defined therein.
 - (11) Reclamation of underground storage tanks. Note: The reclamation is considered to be a minor activity. Consideration of product which may have leaked from the tank and restoration of groundwater quality is not authorized for non-consideration by classification as a minor activity.
 - (12) Dams less than 25 feet in height and having less than 50 acre-feet of storage capacity
 - (13) Construction or remodeling of swimming pools
- d. Management activities including but not limited to the following:

- (1) Replenishment of shellfish beds through the placement of seed oysters and/or shellfish clutch on suitable marine habitats.
- (2) Creation and enhancement of marine fisheries habitat through the establishment of artificial reefs in accordance with the Division of Marine Fisheries' Artificial Reef Master Plan.
- (3) Placement of fish attractors and shelter public waters managed by the NC Wildlife Resources Commission.
- (4) Translocation and stocking of native or naturalized fish and wildlife in accordance with appropriate agency species management plans, watershed management plans, or other approved resource management plans.
- (5) Reintroduction of native endangered or threatened species in accordance with State and/or Federal guidelines or recovery plans.
- (6) Production of native and agricultural plants species to create or enhance fish or wildlife habitat and forest resources, including fertilization, planting, mowing, and burning in accordance with fisheries, wildlife, and/or forestry management plans.
- (7) Forest products harvested in accordance with the National Forest Service or the NC Division of Forest Resources woodlands management plans.
- (8) Reforestation of woodlands in accordance with the National Forest Service or the NC Division of Forest Resources woodlands management plans.
- (9) Use of forestry Best Management Practices to meet the performance standards in Forest Practice Guidelines Related to Water Quality codified as 15A NCAC 11.
- (10) Control of forest or agricultural insects and disease outbreaks by lawful application of labeled pesticides and herbicides by licensed applicators on areas of no more than 100 acres.
- (11) Control of species composition on managed forest lands as prescribed by approved forest management plans by the lawful application of herbicides by licensed applicators.
- (12) Control aquatic weeds in stream channels, canals, and other water bodies by the lawful application of labeled herbicides by licensed applicators of no more than two acres or 25 percent of surface area, whichever is less.
- (13) Controlled or prescribed burning for wildlife, timber enhancement, and hazard reduction in accordance with applicable management plans.
- (14) Plowing fire lines with tractor plow units or other mechanized equipment for the purpose of suppressing wildland (brush, grass, or woodland) fires and prescribed burning.
- (15) Scooping or dipping water from streams, lakes, or sounds with aircraft or helicopters for the purpose of suppressing wildland (brush, grass, or woodland) fires.
- (16) Drainage projects where the mean seasonal water table elevation will be lowered less than one foot over an area of one square mile or less and riparian and wetland areas will not be permanently affected.
- (17) Manipulation of water levels in reservoirs or impoundments in accordance with approved management plans for the purpose of providing for water supply storage, flood control, recreation, hydroelectric power, fish and wildlife, and aquatic weed control.

- (18) Specific modifications in previously permitted discharges resulting in an increased flow of less than 500,000 gallons per day.
- (19) Installation of on-farm Best Management Practices for the NC Cost Share Program for Nonpoint Source Pollution Control codified as 15A NCAC 6E.
- (20) Continuation of previously permitted activities where no increase in quantity or decrease in quality is proposed.
- (21) Acquisition or acceptance of real property to be retained in a totally natural condition for its environmental benefits, or to be managed in accordance with plans for which environmental documents have been approved.
- (22) Care of all trees, plants, and groundcovers on public lands.
- (23) Activities authorized for control of mosquitoes such as the following:
 - (i) mosquito control water management work in freshwater streams performed in accordance with "Best Management Practices for selective clearing and snagging" in Appendix B in Incremental Effects of Large Woody Debris Removal on Physical Aquatic Habitat, U.S. Army Corps of Engineers Technical Report EL-92-35 Smith et al. 1992, or other guidelines reviewed through intergovernmental review processes as set out in 1 NCAC.25.021 1;
 - (ii) mosquito control water management work in salt marsh environments performed under Open Marsh Water Management guidelines reviewed through the intergovernmental review process;
 - (iii) lawful application of chemicals approved for mosquito control by the United States Environmental Protection Agency and the State when performed under the supervision of licensed operators; and
 - (iv) lawful use of established species to control mosquitoes.

Major or Non-Routine actions means actions which have potential for impact on the environment and, therefore, are to be considered for filing of an environmental assessment of appropriate level. These actions include:

- a. Major activities will include those activities that exist or have the potential to exist at a level greater than those otherwise excluded by minimum (non-major) criteria.
- b. Major activities will include demolition of or additions, rehabilitation and/or renovations to a structure listed in the National Register of Historic Places or more than 50 years of age except where agreement exists with the Department of Cultural Resources that the structure lacks architectural or historical significance.
- c. Major activities will include ground disturbances involving National Register of Historic Places listed archaeological sites or areas around buildings 50 years or older except where agreement exists with the Department of Cultural Resources.
- d. Major activities taken after preparation of and in conformance with a master plan, management plan, or capital project for which an environmental document was completed, may require an environmental impact statement, an environmental assessment, a finding of no significant impact, or a record of decision. Determination of which type of document is most appropriate will be made after considering:

- (1) the need for updating information in the earlier, broader document as it relates to current conditions and the proposed activity, and
 - (2) the specificity and sufficiency of the earlier, broader document in addressing the effects of the proposed activity.
- e. An item that does not fall within the broad definition of a major activity in all probability will fit the definition of a non-major activity as described below. Persons who have responsibility for the determination concerning an activity falling within the major or non-major category also have responsibility as to the impact on the environment of such activity. The definitions are not fixed criteria but rather are guidelines to be applied by the person with whom the ultimate decision rests concerning appropriate environmental study and documentation.

Exceptions to Minimum (Non-Major) Criteria means an action classified as non-major, but possessing any one of the following attributes:

- a. The proposed activity could cause significant changes in industrial, commercial, residential, silviculture, or agricultural land-use concentrations or distributions which would be expected to create adverse water quality, air quality, or groundwater impacts, or affect long-term recreational benefits, shellfish, wildlife, or their natural habitats.
- b. The proposed activity has indirect effect or is part of cumulative effects not generally covered in the approval process for state action and that may result in a potential risk to human health or the environment.
- c. The proposed activity is of such an unusual nature or has such widespread implications that an uncommon concern for its environmental effects has been expressed to the University or the constituent institution.
- d. The proposed activity may have a potential for significant, adverse, and direct effects on a "sensitive area" which include but are not limited to the following:
 - (1) Wetlands delineated by the U.S. Army Corps of Engineers in accordance with 33 CFR 328.3 and 40 CFR 230.3;
 - (2) Historical and Archeological sites protected by the National Historic Preservation Act and National Executive Order 11593 and State Executive Order 16 administered by the NC Department of Cultural Resources;
 - (3) National Historic Landmarks as designated in accordance with the Historic Site Act at 16 USC 461;
 - (4) State Parks Lands administered in accordance with G. S. 113-44.9;
 - (5) State-Owned Game Lands administered in accordance with G.S. 113-264 and 306(d);
 - (6) State-Owned Forest Land administered in accordance with G.S. 113-22;
 - (7) State Nature Preserves and Dedicated Natural Areas administered in accordance with G-S 113A-164.1;
 - (8) Primary and Secondary Nurseries designated in accordance with 15A NCAC 3R.0003 and 10C NCAC.0503, and Critical Habitat Areas designated in accordance with 15A NCAC 31.0001; and 101 NCAC.0001 (5);

- (9) State High-Quality Waters designated in accordance with 15A NCAC 213.0201 (d); this includes waters classified as WS-1, WS11, SA and ORW (Outstanding Resource Waters);
- (10) State Natural and Scenic Rivers designated in accordance with G.S. 11 3A-30;
- (11) North Carolina Coastal Reserves designated in accordance with G.S. 113A-129.1;
- (12) State Lakes administered in accordance with G.S. 146-3; and
- (13) Lands that contain animal or plant species protected by the Federal Endangered Species Act (administered by the U.S. Fish and Wildlife Service), State Endangered and Threatened Wildlife and Wildlife Species of Special Concern Act (G.S. 113-311 administered by the North Carolina Wildlife Resources Commission), State Plant Protection and Conservation Act (G.S. 106-202.12 administered by the North Carolina Department of Agriculture).

Regulations/References

The NC State NCEPA program implements the University of North Carolina Administrative Memorandum No 369, entitled, "Minimum Environmental Criteria for the North Carolina Environmental Policy Act," May 5, 1997.

NC Department of Administration, State Intergovernmental Review Clearinghouse. Environmental Assessment Guidelines, March 1999.

01 NCAC 25 North Carolina Environmental Policy Act

Responsibilities

The Project Manager will:

Implement the Design Review process for his/her project and place environmental-related documentation in the project file.

Prepare (or have prepared) acceptable environmental documents, as required by the project.

Coordinate with Environmental Affairs on environmental document preparation beginning at the earliest stages of the project to ensure that all potential environmental issues are identified.

Environmental Affairs will:

Maintain this procedure and provide guidance on environmental document preparation.

Review and accept all environmental documents for submittal to the State Clearinghouse.

Coordinate any comments on environmental documents with the Project Manager.

Maintain the NC State file NCEPA documentation.

Procedure

The Project Manager (PM) will use the guidelines referenced above to make a determination as to the level of environmental documentation necessary for each project for which they have responsibility.

If the project requires an Environmental Assessment or Environmental Impact Statement, the PM will involve Environmental Affairs at the earliest possible stages in the project to ensure that all potential environmental issues are adequately addressed.

The PM will continue to coordinate with Environmental Affairs, as necessary throughout the project design and document preparation process.

If Environmental Affairs is not preparing the document, then the PM will submit a draft EA or EIS to Environmental Affairs with adequate time to review the document and provide comments.

The PM will provide a completed and acceptable EA or EIS to Environmental Affairs for submittal to the State Clearinghouse for review. The submitted material will include a clean copy of the document with reproducible maps and figures. The PM will provide any necessary documentation supporting compliance with environmental standards or other design criteria.

The PM will inform Environmental Affairs of any design change that may have impact on any of the project's environmental documentation. Environmental documents will follow the Guidelines for Preparing NC State University Assessments, which is included with this procedure.

GUIDELINES FOR PREPARING NC STATE UNIVERSITY ENVIRONMENT ASSESSMENTS

The purpose of this document is to provide more specific instructions for preparation and submittal of environmental assessments (EA's) at NC State University, using the State Clearinghouse Guidelines.

Protocol for filing an EA for NC State University

EA's for all NC State University projects are submitted by the University's Environmental Affairs Manager (the manager) to the State Clearinghouse. The party contracted to prepare the document (the preparer) should be in contact with the manager well in advance of the projected filing date to discuss the project and the submittal schedule.

The preparer should follow the guidelines as closely as possible in preparing an initial draft and submitting it to the manager for review. The manager may request more information, assist in document organization, make corrections, and provide other input to assist the preparer in arriving at a final document that is ready for submittal. The preparer will make any requested changes and resubmit the second draft to the manager for another review. This process will continue until the University is satisfied with the document.

Generally, the preparer should plan to have the initial draft to the manager at least two weeks prior to the projected submission date. Once a document is approved, the preparer will provide the manager with 18 copies.

Document requirements are provided in the NC Department of Administration State Intergovernmental Review Clearinghouse, Environmental Assessment Guidelines.

March 1999
(replaces 5/24/93 guidelines)

N.C. Department of Administration
State Intergovernmental Review Clearinghouse

Environmental Assessment Guidelines

These standardized guidelines are for use when preparing an Environmental Assessment (EA) to comply with the **State Environmental Policy Act (SEPA)** and its rules in the North Carolina Administrative Code.^{*} The purpose of the EA is to provide a state agency with enough information to determine if a planned project has a level of impact on the environment requiring the preparation of an Environmental Impact Statement (EIS) or if a Finding of No Significant Impact (FONSI) is the appropriate conclusion.

1. Prepare a cover letter including the following:

- _ Title/name of proposed activity
- _ Responsible state agency
- _ Name, address and phone number of state agency contact person
- _ Preparer of the document (if *not* a state agency, include address, phone number)
- _ List of other cooperating agencies, if applicable

Prior to completing an EA, be sure that the proposed project meets the state project agency=s minimum criteria for requiring compliance with SEPA and that you are following the lead state project agency=s procedures and required forms. This information can be obtained from the state project agency.

2. Complete all sections (A-I).

A. Proposed Project Description

Describe the entire project. Explain how it fits into any larger project or master plan. If this is a phased project, identify future and previous planned phases and their timing. Details should include, but are not limited to, the following, as applicable:

^{*} 1 NCAC, Chapter 25, Section .0500

^{**} AState project agency@ is the agency responsible for SEPA compliance due to its project-approval authority. This is the agency which is funding, permitting or otherwise giving state approval to the project.

- _ number of acres of land to be disturbed
- _ square footage and height in stories of new buildings
- _ square footage or acreage of footprint of entire project
- _ number of parking spaces in parking lot(s) or deck
- _ proposed use(s) of any building(s)
- _ location of project (county/municipality) and reference to location map(s) in Section H
- _ site improvements to be made, such as grading, filling, landscaping, etc.
- _ connections to existing utility and sewer lines and/or new utility installation
- _ amount of paved and otherwise impermeable surface
- _ construction of any stormwater control devices

B. Purpose and Need for Proposed Project

Discuss why this project is necessary and how it fits into the project sponsor=s mission. Include any unique aspects of the project. *For example, is the project needed to bring together functions that are scattered, to alleviate crowded facilities, to expand, upgrade or replace unsafe or inadequate facilities, or to create a new needed facility/service?*

C. Alternatives Analysis

Discuss all reasonable alternatives to the proposed project, including the alternative of no action. If more than one site was considered, discuss the site selection process and the factors considered in selecting the proposed site. Factors considered could include real estate considerations, space, utilities, transportation, environmental consequences, etc. **Conclude with why the proposed site or project is the preferred alternative.**

D. Existing Environmental Characteristics of Project Area

The existing or affected environment should be discussed in terms of what **currently** exists on the site and in the surrounding area.

If no site resource information exists for a given topic, make a statement to that effect and **provide a reference to a study or document which supports your statement.** *For example, if there are no wetlands on the site, reference a wetlands delineation that was done in the past or, at a minimum, a field survey that was conducted.*

For some topics, such as land use, wetlands, water supplies, shellfish or fish and their habitats, and wildlife and their habitats, discussion should also include the surrounding area if there is any possibility that the proposed project could have any impact on it. *For example, if the site itself does not contain any wetlands, but there are wetlands downstream that could be affected by the increased surface water runoff from the site, they should be identified.*

(1) Topography

* Include in Section H a reproducible 8 1/2@ x 11@ site location map showing the site of the proposed project and any significant features such as wetlands, parks, historic sites, etc. Also include a most recent USGA topographical map (7.5 minute quadrangle) with project footprint and boundaries shown.

Briefly describe the topography of the project area including landforms, slopes, and elevations. A brief description of the geology of the site can be added if available. Is the site within the 100-year flood plain? National Flood Insurance Program (NFIP) maps should be used to determine whether the project will encroach on the base (100-year) flood plain.

(2) Soils

Describe the dominant soil(s) in the project area as well as any soil types that might prove to be a constraint to the proposed project. This would include any fill, wetland soil types, etc.

(3) Land Use

Describe the current use of the land at the site and the surrounding acreage. Additionally, discuss how the current land use fits into the land use of the entire area in terms of conservation, development, and ecological function. If applicable, identify the current zoning classification of the project site and surrounding area.

(4) Wetlands

Describe the existence of any wetlands on-site or near the site. Indicate any wetlands on the map in Section H. Include a list of the type, quality, and delineation. Describe the primary function of the wetland (*e.g., flood control, wildlife habitat, groundwater recharge*), and other factors that indicate the relative importance of the function to the total wetland resources of the area.

(5) Prime or Unique Agricultural Lands

Is any of the proposed site classified as prime or unique agricultural land? Reference some authority. Local soil and water conservation districts can be of assistance in classification of these areas.

(6) Public Lands and Scenic, Recreational, and State Natural Areas

Discuss the existence of any formally designated park land, scenic or recreational areas, or state natural areas on or adjacent to the site.

(7) Areas of Archaeological or Historical Value

Reference any studies that have been done on this site. If no studies are available discuss if and how the site has been previously disturbed. List any buildings on the site and their approximate age.

(8) Air Quality

Identify the area's air quality classification, acknowledging if it is in transition and why. Discuss the current sources of emissions for the site. Discuss any previous odor problems or complaints due to any existing facilities.

(9) Noise Levels

Discuss the current noise levels on the site with a measurable benchmark, if possible.

(10) Water Resources (Surface Water and Groundwater)

Note: Since these topics tend to overlap and are interrelated, discuss them together under a single heading.

Identify surface waters and groundwater (aquifers) in the project area. For surface waters, identify the name, location (include on the enclosed map in Section H), classification, and use support ratings. Identify the river basin where the project is located. If there are unnamed streams, estimate the average flow. Discuss groundwater in terms of use, quality, quantity, depth, and recharge.

(11) Forest Resources

List type (*for example, hardwoods/pines*) at or near the site.

(12) Shellfish or Fish and Their Habitats

Are there categories of shellfish beds/fish habitats at or near the site? Are these closed beds, highly productive areas, or spawning areas?

(13) Wildlife and Natural Vegetation

Identify any wildlife habitat that exists on or near the project area. List specific species of dominant plants and animals that are indicative of the kind of habitat that exists, as well as any threatened or endangered species.

E. Predicted Environmental Effects of Projects

In this section the discussion should center on the **direct, indirect, and cumulative impacts** the project will have on the same topics covered in the previous section with the addition of (14) Introduction of Toxic Substances. Identify both the construction and operational impacts. If there will be no impact in any specific topic area (#1-13 above), that should be stated. If the impact is small and deemed to be insignificant, describe the impact and then make a statement to that effect at the end of the discussion for **each** topic. In all categories, quantify impacts where feasible (*i.e., in terms of acres, linear feet, etc.*).

If, in Section D, Existing Environmental Characteristics of Project Area, it was shown that a resource did not exist on or near the site, then indicate Not Applicable (N/A) in the appropriate section. *For example, if there are no wetlands on the site or near the site that could be impacted by the project, then there cannot be any environmental consequences to wetlands from the project and there need not be any mitigative measures. Therefore, the topic of wetlands does not need to be addressed in this or the next section and N/A should be indicated under #4 of this section.*

(1) Topography

Will this project change the existing topography? Identify and evaluate any encroachments of the project on flood plains.

(2) Soils

Will this project cause any soil disturbance or contamination? If soil is to be moved, how many square yards/feet will be moved and to what location? If soil is expected to be contaminated, discuss the contaminant.

(3) Land Use

How will the land use change due to the project and how will the new use(s) fit into the intended land use of the entire area in terms of conservation, development, ecological function, and quality of life? Will local zoning or land use plans need to be changed?

(4) Wetlands

Will there be any direct or indirect impacts on wetlands from the project? If wetland is to be filled, how many acres are involved and what kind of authorization (permit) is required? Will the diversion/addition/withdrawal of surface water impact existing wetlands? Construction activity as well as long-term operational activity should be considered.

(5) Prime or Unique Agricultural Lands

How will the project affect the identified prime or unique agricultural land? How much acreage will be lost and how much retained in that use? What will be the impact of the loss?

(6) Public Lands, Scenic and Recreational Areas

How will the project impact any formally designated park land, scenic, recreational or state natural areas on or adjacent to the site? Again, quantify the amount of loss. Also, discuss the loss of any informal scenic or recreational site functions.

(7) Areas of Archaeological or Historical Value

How will the project affect any areas of archaeological or historical value? Will any building be demolished or renovated? If yes, include photographs of buildings on the site.

(8) Air Quality

How will the ambient air quality be affected by the project? Remember to discuss both the construction and the operation of the project. Consider cumulative impacts as this project is added to the existing development. Will there be any open burning? If parking is involved and there will be more than 750 spaces, a Complex Air Source permit will be required. Confirm if the project will increase odor levels or increase the possibility for odor complaints.

(9) Noise Levels

Will the project increase noise levels? If so, when (days of the week and hours of day)? At what distance will increased noise levels be heard? Will surrounding properties be affected by noise level?

(10) Water Resources

How will the project impact the following during construction and operation: surface water quality and quantity, and groundwater quality and quantity? Address any changes in the amount of impervious surface at the project site and stormwater runoff (*i.e., nonpoint source pollution*). When discussing these impacts, include impacts on erosion rates at the site and downstream, sedimentation changes, changes in downstream water quality (e.g., eutrophication impacts), etc.

(11) Forest Resources

If any forests are destroyed by this activity, describe forestry practices to be used.

(12) Shellfish or Fish and Their Habitats

What kinds of impacts on shellfish, fish, or their habitats will the project have either during construction or operation? Again, consider on-site and nearby aquatic habitats.

(13) Wildlife and Natural Vegetation

How much of the existing natural vegetation will be destroyed or altered by the project? If the wildlife will be displaced, are there surrounding areas that provide similar types of habitat or does the project encompass any possible relocation areas nearby? What is the long-term effect if more development is planned for the area?

(14) Introduction of Toxic Substances

Will any toxic substances be introduced during construction or operation of the project? If so, name them and identify how they will be used. Discuss any measures that will be taken to ensure that toxic substances will be treated in accordance with all appropriate regulations so that there will be no significant environmental impact.

F. Mitigative Measures

The only topics that need to be covered in this section are those which were deemed to be significantly affected by the proposed project in Section E, *Δ*Predicted Environmental Effects of Projects. List all of those topics in the same order as above and discuss for each one what measures are going to be taken to mitigate the effects of the project. *For example, wetlands created to offset wetland loss, or if habitat of any kind is going to be created, it should go in this section.* If the project will cause an increase in emissions, what steps are being planned to minimize or reduce future emission increases? If stormwater control practices are going to be implemented, what kinds and what level of rainfall events will they accommodate? Provide quantitative data.

G. References

List in alphabetical order any documents referenced in the EA.

H. Exhibits

Include a reproducible 8 1/2" x 11" site location map or maps showing the site of the proposed project and any significant features such as wetlands, parks, historic sites, etc. Also include a most recent USGS topographical map (7.5 minute quadrangle) with project and boundaries shown.

I. State and Federal Permits Required

List any permits that are to be obtained for this project.

FOR LEAD STATE AGENCY USE ONLY

Conclusion Statement *(Must be completed and signed by responsible state agency and submitted with the EA document to the State Clearinghouse.)*

Select the appropriate statement below:

_____ After preparation/review of this EA, the responsible state agency has concluded there is a *Finding of No Significant Impact (FONSI)* and will not be preparing an *Environmental Impact Statement (EIS)*. (Attach any additional information regarding this conclusion that you deem important to this finding.)

_____ The agency has completed this EA and is hereby submitting it for review and comment. After a consideration of the comments received, the agency will proceed with a *FONSI* or prepare an *EIS*.

_____ Agency **Signed**

Submission Instructions

Note to non-state agency document preparer:

Documents completed for state agencies must first be sent to the appropriate agency for approval and completion of the *Conclusion Statement* prior to State Clearinghouse submission. Contact the appropriate agency for its submission procedures. Documents prepared for the N.C. Department of Environment and Natural Resources will be subject to departmental review prior to submission to the State Clearinghouse.

An EA should not exceed 40 pages in length, excluding exhibit materials. **Sixteen (16) copies** of this document with the cover letter and *Conclusion Statement* should be submitted to the State Clearinghouse, N.C. Department of Administration, Room 5106c, 116 West Jones Street, Raleigh, North Carolina 27603. For the review schedule and submission deadline dates, call the State Clearinghouse at (919) 733-7232.

AIR EMISSION SOURCES

Introduction

The purpose of this section is to ensure that the construction and operation of air pollutant emission sources comply with Federal and State regulations.

Scope

This procedure applies to all planned and existing sources of regulated air pollutants, hazardous air pollutants, and state-regulated air toxics.

Regulations/References

The Clean Air Act [42 USC 7401-7642, Public Law 88-206 as amended], is the basic Federal enabling legislation that governs air pollution. The implementing EPA regulations are contained in 40 CFR 50 - 87. North Carolina has been delegated authority to implement its air program, which is described in the following sections of Title 15A of the North Carolina Administrative Code:

2D Air Pollution Control Requirements
2H 0600 Air Quality Permits
2Q Air Quality Permit Procedures

National Emission Standards for Hazardous Air Pollutants (NESHAP) were established for air pollutants for which no ambient standards are applicable and which may result in an increase in mortality or serious irreversible illness (40 CFR 61). These standards define emission limits, monitoring requirements, restrictions on material use, worker practice standards, and reporting requirements for the affected pollutants. Only NESHAP provisions affecting potential asbestos emissions for building demolition and renovation (40 CFR 61 Subpart M, Section 61.145) affect University operations.

University operations associated with installation, maintenance, and removal of air conditioning and related equipment is affected by 40 CFR Part 82, Protection of Stratospheric Ozone. These regulations are commonly known as CFC or refrigerant management requirements.

Source-specific operating requirements for permitted sources are found in the sources' operating permit (if applicable). University air permits and the sources listed on those permits are subject to change. To obtain the current air permit for a University facility, or to determine the status of an existing source, please contact Environmental Affairs (515-6859).

Responsibilities

As described in the Design Review section of the EMP (Part I, Framework), it is the responsibility of the PM to ensure that adequate review is given to their project to identify air-related issues.

The owner/operator of a permitted source is responsible for operating the source in compliance with its permit conditions.

The Director of any operation with HVAC technicians maintaining air conditioning equipment, which subject to the technician certification requirements, is responsible for maintaining technician certification.

The Director of Construction is responsible for development and implementation of the procedure ensuring compliance with asbestos requirements.

Environmental Affairs will:

- Provide current and accurate information to the responsible parties outlining their organizations' compliance obligations.

- Assist and advise in the development of SOP's for the affected organizations. "Affected organization" in this case refers to owner/operators of permitted sources.
- Review the performance of the affected organizations relative to their SOP's.
- Maintain the air compliance-related data for the University not specifically identified in organizational procedures.

Procedure

Permit-Related

The procedure for permit acquisition and maintenance is outlined in the appropriate section of the EMP Part I, Framework.

Ozone-Depleting Substances

Compliance with the ozone protection program requirements involves certification of refrigeration technicians, collection and recycling of refrigerants, and draining refrigerants from units prior to disposal or surplus. Program records are maintained by the organization performing the work.

Asbestos

The only source of asbestos emissions at the University is associated with building demolition and renovation. Construction Management manages compliance with State asbestos notification requirements.

WASTEWATER DISCHARGE

Introduction

The purpose of this section is to ensure that the construction and operation of water pollution sources comply with all federal and state regulations and standards.

Scope

The following wastewater discharge types are discussed in this section:

Discharge to a Publicly Owned Treatment Works (POTW)
University-owned treatment system
Nondischarge source

Avoidance and management of oil and hazardous substance spills procedures are described in Releases of Oil and Hazardous Substances. Management of dredge and fill activities is described in the Wetlands and Floodplains Section.

Stormwater is discussed in the Stormwater Management section.

Definitions

Nondischarge source - The following systems which do not discharge to the surface waters of the State:

- Y sewers systems
- Y treatment works
- Y residual and residue disposal/utilization systems
- Y animal waste management systems
- Y treatment of petroleum contaminated soils

POTW means publicly owned treatment works. These are community owned and are operated under an NPDES permit to the owner.

Animal waste management system means a combination of structural and non-structural practices which will properly collect, treat, store or apply animal waste to the land such that no discharge of pollutants occurs to surface waters of the state by any means except as a result of a storm event more severe than the 25-year, 24-hour storm.

Treatment works or disposal system which does not discharge to surface waters means any treatment works, facility or disposal system which is designed to:

- (a) operate as closed system with no discharge to waters of the state, or
- (b) dispose/utilize of wastes, including residuals, residues, contaminated soils and animal waste, to the surface of the land, or
- (c) dispose of waste through a subsurface absorption system.

Regulations/References

Effluent limitations are the starting point for a complete understanding of the Clean Water Act. Federal regulations define the term as, "Any restriction established by a state or the EPA on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance."

The terms "effluent limitations" and "pretreatment standards" should be differentiated

Effluent limitations apply to industrial dischargers whose wastewater goes into streams, lakes, rivers, ponds, or any water stream which ultimately ends up in streams, etc. (e.g., a public sewage treatment system). Pretreatment standards apply to dischargers whose wastewater goes directly into public sewage treatment systems.

National Pollutant Discharge Elimination System Permit (NPDES Permit)

North Carolina is authorized by USEPA to administer the NPDES program. The State's NPDES program follows the federal rules.

Effluent Limitations

Effluent limitation regulations apply to both generators of wastewater (industrial dischargers) and to the processors of wastewater (POTWs). Since the University is not a POTW operator, any University point source discharge directly to the waters of the U.S. must obtain a certification that the discharge will be in compliance with applicable state water quality standards.

Effluent limitations from all outlets and point sources to the waters of the State are provided in 15A NCAC 02B.0400.

Discharge to POTW's

Under its delegated authority to administer the NPDES program, the State has delegated authority to numerous communities for operation of their pretreatment programs. These communities with approved programs issue pretreatment permits to significant dischargers to their system. The permit application and issuance requirements are specific to the POTW issuing the permit. For the NC State campus in Wake County, this pretreatment issuing body is the City of Raleigh, Public Utilities Department. Permit requirements are found in their Sanitary Sewer Use Ordinance & Enforcement Response Plan.

For NC State facilities discharging or proposing to discharge to other POTW's, requirements of those specific POTW's would apply and may be obtained from the controlling community utility department.

Non-Discharge Sources

Non-discharge sources (see definition above) are regulated by the State at 15A NCAC 2H.0200 Non-discharge rules apply to the construction, alteration, expansion, or operation of any sewer system, treatment works, disposal system, petroleum contaminated soil treatment system, animal waste management system, stormwater management system, or residual disposal/utilization system which does not discharge to surface waters of the state, including systems which discharge waste onto or below the land surface.

These rules do not apply to sanitary sewerage systems or solid waste management facilities that are permitted under the authority of the Commissioner of Health Services.

Prohibited Discharges to a POTW

The following list of prohibited discharges is taken directly from the City of Raleigh Public Utilities Department Sanitary Sewer Use Ordinance (November 1999). The prohibitions are taken from the State of North Carolina pretreatment program guidance and are thus applicable for all POTW's

General prohibitions state that no user shall contribute or cause to be contributed into the POTW, directly or indirectly, any pollutant or wastewater that causes interference or pass through. These general prohibitions apply to all users of a POTW whether or not the user is a significant industrial user or subject to any National, State, or local pretreatment standards or requirements.

Specific prohibitions state that no user shall contribute or cause to be contributed into the POTW the following pollutants, substances, or wastewater:

- (1) Pollutants which create a fire or explosive hazard in the POTW, including, but not limited to, wastestreams with a closed cup flashpoint of less than 140OF (600C) using the test methods specified in 40CFR 261.21.
- (2) Solid or viscous substances in amounts which will cause obstruction of the flow in the POTW resulting in interference [but in no case solids greater than one quarter inch (1/4") in any dimension].
- (3) Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin, in amounts that will cause interference or pass through; but in no case, concentrations greater than 100 mg/l.
- (4) Any wastewater containing pollutants, including oxygen-demanding pollutants, in sufficient quantity, (flow and/or concentration) either singly or by interaction with other pollutants, to cause interference with the POTW.
- (5) Any wastewater containing pollutants, including oxygen-demanding pollutants, in sufficient oxygen-demanding pollutants, in sufficient quantity, (flow and/or concentration) either singly or by interaction with other pollutants, to cause interference with the POTW.
- (6) Any wastewater having a temperature greater than [1 50OF (660C)], or which will inhibit biological activity in the POTW treatment plant resulting in interference, but in no case wastewater which causes the temperature at the introduction into the treatment plant to exceed 1040F (400C).
- (7) Any pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.
- (8) Any trucked or hauled pollutants, except at discharge points designated by the POTW Director.
- (9) Any noxious or malodorous liquids, gases, or solids or other wastewater which, either singly or by interaction with other wastes, are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for maintenance repair.
- (10) Any substance which may cause the POTW's effluent or any other product of the POTW such as residues, sludges, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case, shall a substance discharged to the POTW cause the POTW to be in noncompliance with sludge use or disposal regulations or permits issued under section 405 of the Act; the Solid Waste Disposal Control Act, or State criteria applicable to the sludge management method being used.
- (11) Any wastewater which imparts color which cannot be removed by the pretreatment process, including, but not limited to, dye wastes and vegetable tanning solutions, which consequently imparts sufficient color to the treatment plant's health or secondary recreation or to aquatic life and wildlife or to adversely affect the palatability of fish or aesthetic quality or impair the receiving waters for any designated uses.
- (12) Any wastewater containing any radioactive wastes or isotopes except as specifically approved by the POTW Director in compliance with applicable State or Federal regulations.
- (13) Storm water, surface water, ground water, artesian well water, roof runoff, subsurface drainage, swimming pool drainage, condensate, deionized water, noncontact cooling water and unpolluted industrial wastewater, unless specifically authorized by the POTW Director.

- (14) Fats, oils, or greases of animal or vegetable origin in concentrations greater than 300 mg/l, unless specifically authorized by the POTW Director.
- (15) Any sludges, screenings, or other residues from the pretreatment of industrial wastes, unless specifically authorized by the POTW Director.
- (16) Any medical wastes, except as specifically authorized by the POTW Director in a wastewater discharge permit.
- (17) Any material containing ammonia, ammonia salts, or other chelating agents that will produce metallic complexes that interfere with the municipal wastewater system.
- (18) Any material that would be identified as hazardous waste according to 40 CFR Part 261 if not disposed of in a sewer except as may be specifically authorized by the POTW Director.
- (19) Any wastewater causing the treatment plant effluent to violate State Water Quality Standards for toxic substances as described in 15A NCAC 2B.0200.
- (20) Wastewater causing, alone or in conjunction with other sources, the treatment plant's effluent to fail a toxicity test.
- (21) Recognizable portions of the human or animal anatomy.
- (22) Any wastes containing detergents, surface active agents, or other substances which may cause excessive foaming in the municipal wastewater system.
- (23) At no time, shall two successive readings on an explosion hazard meter, at the point of discharge into the system (or at any point in the system) be more than five percent (5%) nor any single reading ten percent (10%) of the lower explosive limit (LEL) of the meter.

Pollutants, substances, wastewater, or other wastes prohibited by this section shall not be processed or stored in such a manner that they could be discharged to the municipal wastewater system. All floor drains located in process or materials storage areas must discharge to the industrial user's pretreatment facility before connecting with the system.

Responsibilities and Procedure

Responsibilities for identifying discharge or nondischarge permitting requirements are discussed in the Design Review section to Part I of the Environmental Management Plan.

The procedure for permit acquisition and maintenance is also outlined in the appropriate Part I sections.

STORMWATER MANAGEMENT

Introduction

The purpose of this section is to describe the components that define the stormwater management program at NC State University.

Scope

The scope of the stormwater management program is defined by the combination of the breadth of University property, range of operations and federal and state stormwater management requirements.

Main Campus, Raleigh, Wake County

On the main campus areas located in Wake County, the University's Municipal Separate Storm Sewer System (MS4) permit application and State requirements for municipalities located in the Neuse River basin (15A NCAC 02B.0235) establish the stormwater framework.

Principal actions associated with this program are listed below:

Stormwater Program Requirements

- § Review and approval of stormwater management plans and permit applications for new development
- § Public education
- § Training
- § Identification and redirection of illegal discharges
- § Identification of retrofit sites where water quality management projects can be installed in existing developments
- § Review and approval of operational Best Management Practices and maintenance procedures
- § Recordkeeping and Reporting

Other Operations and Locations

At other University locations and operations, stormwater management requirements are defined by the combination of federal and state requirements for that operation in that location. The facility managers for those remote operations are encouraged to discuss surface water management requirements for their specific operations with Environmental Affairs.

Definitions

Stormwater is defined in G.S. 143-213 (16a) as the flow of water that results from precipitation and which occurs immediately following rainfall or a snowmelt.

Surface water discharge means a discharge to all waters of the State as defined in G.S. 143-212 except underground waters.

Built-upon area means that portion of a development project that is covered by impervious or partially impervious cover including buildings, pavement, gravel roads and parking areas, recreation facilities (e.g., tennis courts), etc. (Note: Wooden slatted decks and the water area of a swimming pool are considered pervious.)

CAMA Major Development Permits means those permits or revised permits required by the Coastal Resources Commission according to 15A NCAC 7J Sections.0100 and.0200.

Development means any land disturbing activity, which increases the amount of built-upon area or otherwise decreases the infiltration of precipitation into the soil.

Off-site Stormwater Systems means stormwater management systems that are located outside the boundaries of the specific project in question, but designed to control stormwater drainage from that project and other potential development sites. These systems shall designate responsible parties for operation and maintenance and may be owned and operated as a duly licensed utility or by a local government.

On-site Stormwater Systems means the systems necessary to control stormwater within an individual development project and located within the project boundaries.

Redevelopment means any rebuilding activity which has no net increase in built-upon area or which provides equal or greater stormwater control than the previous development (stormwater controls shall not be allowed where otherwise prohibited.)

Sedimentation/Erosion Control Plan means any plan, amended plan or revision to an approved plan submitted to the Division of Land Resources or delegated authority in accordance with G. S. 11 3A-57.

Stormwater Collection System means any conduit, pipe, channel, curb or gutter for the primary purpose of transporting (not treating) runoff. A stormwater collection system does not include vegetated swales, swales stabilized with armoring or alternative methods where natural topography or other physical constraints prevents the use of vegetated swales (subject to case-by-case review), curb outlet systems, or pipes used to carry drainage underneath built-upon surfaces that are associated with development controlled by the provisions of Rule .1003(c)(1) in this Section.

Regulations/References

The Clean Water Act of 1972 prohibits the discharge of any pollutant to waters of the United States from a point source unless a National Pollutant Discharge Elimination System (NPDES) permit authorizes such discharge. In November of 1990, the US Environmental Protection Agency (EPA) issued new regulations requiring specific industries and construction sites to apply for NPDES permits for point source discharges of stormwater. The list of industries for which specific discharge requirements have been established is provided in Appendix A to 40 CFR 122. The NPDES permit program was also extended to large and medium cities that own and operate municipal separate storm sewer systems under 40 CFR 122.26.

The North Carolina Environmental Management Commission under G.S. 143-214.7 establishes state rules for stormwater control. These rules apply primarily to new development and other construction activities occurring in sensitive watershed areas.

The regulatory program developed by NCDENR to meet these requirements in the Neuse River Basin, including Wake County, is defined at 15A NCAC 02B.0235.

The University Stormwater Program Manual provides specific program implementation procedures (under development).

Procedures

Main Campus (WakeCounty)

- Review and approval of stormwater management plans and permit applications for new development

Each new development or modification of existing property on the Wake County Main Campus must be reviewed for compliance with stormwater program requirements. The University has developed a stormwater management assessment program (SMAP), which supports evaluation of project-specific design scenarios while achieving the overall nitrogen reduction goal and flow limitations mandated by State regulations. The SMAP is based upon achieving compliance with the mandated 30 % reduction requirement basis and no increase in peak

stormwater flow on a campus-wide, rather than applying the requirement on a development (project-specific) basis. Therefore, although SMAP uses the State-mandated stormwater device characteristics (e.g., removal rates), the project is evaluated in a larger context. Once a project stormwater design is shown to meet University requirements, it receives approval from the Stormwater Program Manager.

§ Public education

An important component of the University stormwater program is public education. This program is a composite of activities, which include info-ads in the campus newspapers, presentations to student organizations, and information provided to

§ Training

The regulations which underpin the stormwater program also stress continual training. In a university setting, where staff turnover is large and employment of student help is common, targeted and periodic training is crucial. Training programs have been developed and are provided by Environmental Affairs to several university organizations.

§ Identification and redirection of illegal discharges

Illegal discharges are generally defined as any discharge of non-stormwater to a surface water body or conveyance. The identification of illegal discharges triggers definition of a corrective action and timeframe to redirect the discharge to the appropriate receptor. Also as part of this program is the identification of a responsible party.

Examples of improper/illicit discharges to the storm sewer include washing of equipment over or near drains, draining of fluids (e.g. oil, antifreeze, tank contents, etc.) to the storm drain or ground, commercial vehicle washing, cleaning paint application equipment, or discharging of leftover paint or paint-related materials.

§ Identification of retrofit sites where water quality management projects can be installed in existing developments

We have no idea what we are doing with this, but at least we admit it.

§ Review and approval of operational Best Management Practices and maintenance procedures

There are a number of routine activities on the campus which have the potential to affect the quality of stormwater runoff. Organizations and activities affected include Transportation, Facility Operations,

- Recordkeeping and Reporting

An annual report is submitted to the NCDENR describing the University's progress in achieving the targeted reduction in nitrogen load from the affected campus area.

These procedures are fully described in the University Stormwater Program Manual (under development).

Responsibilities and Procedure

Responsibilities and the procedure for achieving and maintaining compliance with stormwater requirements on the Wake County Campus is provided in the Stormwater Program Manual.

Responsibilities and the procedure for achieving and maintaining compliance with State stormwater requirements for remote facilities is consistent with the general guidance provided in the EMP Part I, Framework.

North Carolina State University Stormwater Guidelines (Draft January 2002)

North Carolina State University Environmental Affairs is responsible for the University stormwater program being developed in response to federal and state regulations (40 CFR 122.26 and 15 NCAC 2B .0235). The purpose of these guideline is to provide project managers and design teams for new development with a mechanism to meet the university stormwater requirements.

Definitions

New Development – Any project that changes impervious surface area or stormwater conveyance.

Best Management Practice (BMP) – Devices that are utilized to reduce nitrogen from new development. These devices include:

- Wet Detention Basins
- Constructed wetlands
- Open channel practices
- Riparian buffers
- Bioretention
- Proprietary BMPs

Property owner – Lessee for ground lease properties, and Project for university projects.

Rules

1. In accordance with the university Neuse River Stormwater Program for Nitrogen Control and 15A NCAC 2B .0235, the nutrient load contributed by new development activities is held at 3.6 pounds per acre per year. Property owners shall have the option of partially offsetting projected nitrogen loads by funding the university restoration activities. However, the total nitrogen loading rate cannot exceed 6.0 lbs./acre/year for residential development or 10 lbs./acre/year for non-residential development.
2. In accordance with 15A NCAC 2B. 0233(5) diffuse flow of runoff shall be maintained in the riparian buffer by dispersing concentrated flow and reestablishing vegetation. Concentrated runoff from ditches or manmade conveyances shall be converted to diffuse flow before the runoff enters Zone 2 of the riparian buffer, or treat stormwater with approved Best Management Practices (BMPs) for a total nitrogen reduction of 30% or greater. Periodic corrective action to restore diffuse flow shall be taken if necessary to impede the formation of erosion gullies. BMPs must be maintained in order to continue to provide proper nitrogen reduction.

Calculating N Export from New Development

The methodology for calculating nitrogen export from new developments is found in the Appendix.

BMPs for reducing Nitrogen

Table 1 provides a list of approved list of best management practices, TN removal rates, and the appropriate design manual. The design must be based on the latest edition of the North Carolina Department of Natural Resources Design Manuals. This is the responsibility of the designer. Any deviation from these design standards will result in the burden of the designer to prove the design is sufficient and any additional cost to the university for review of design not based on this standard will be incurred by the designer.

Table 1. BMP Types, TN Removal Rates and Design Standards

BMP Type	TN Removal Rate	Design Standards
Wet detention ponds	25%	NC Design Manual
Constructed wetlands	40%	NC Design Manual
Open channel practices	30 %	NC Design Manual
Riparian buffers	30%	Neuse River Buffer Rule (15A NCAC 2B .0233)
Vegetated filter strips with level spreader	20%	NC Design Manuals and other literature information
Bioretention	25%	NC Design Manual
Sand Filters	35%	NC Design Manual
Proprietary BMPs	Varies	Per manufacturer subject to DWQ approval
Green Tree Reservoirs	To be determined	To be determined

If more than one BMP is installed in series on a development, then the removal rate shall be determined through a serial calculation. For example, if a wet detention pond discharges through a riparian buffer, then the removal rate shall be estimated to be 47.5%. The pond removes 25 percent of the nitrogen and discharges 75 percent to the buffer. The buffer then removes 30 percent of the nitrogen that discharged from the pond, which is 22.5%. The sum of the 25 and 22.5 percent is 47.5.

Calculating Peak Runoff Volume

The Neuse Stormwater Rule requires there be no net increase in peak flow leaving the site from predevelopment conditions for the 1-year, 24 hour storm. Acceptable methodologies for computing the pre and post-development conditions for 1 year, 24 hour storm include:

- The Rational Method
- The Peak Discharge Method as described in USDA Soil Conservation Service's Technical Release Number 55 (TR-55).
- The Putnam Method

The same method must be used for both the pre- and post-development conditions. Rainfall depths for the 1-year, 24 hour storm for the Raleigh area is 3 inches.

The flow control requirement is not required for developments that meet one or all of the following requirements:

- The increase in peak flow between pre- and post-development conditions does not exceed ten percent.
- The proposed new development meets all of the following criteria: overall impervious surface is less than fifteen percent, and the remaining pervious portions of the site are utilized to the maximum extent practical to convey and control the stormwater runoff.

Centennial Campus requires the 10 year storm be held at predevelopment conditions.

BMP Maintenance

To be determined by the stormwater committee.

Review Process

The design team should calculate the N export of their project as early in the process as possible so that any required BMPs can be fully integrated into the design. The more involved Environmental Affairs is during the design development

phase of the project the easier the approval phase will go. However, official design review will not commence until the plans (both hard and digital file) with the design calculations, and the N export and peak flow calculations have been submitted to Environmental Affairs. The review time is 15 working days from submittal. If the design is acceptable, the project manager will receive a letter stating that the project has been reviewed and is in compliance for stormwater. If the design is not acceptable, the project manager will receive a letter as to why and the design team will be allowed to submit improved designs. The clock restarts for every submittal.

Offset Payments

To be determined by the stormwater committee.

WASTE MANAGEMENT

Introduction

The purpose of this section is to provide the procedural framework describing how NC State manages its solid waste in compliance with federal EPA, State, and local regulations.

Purpose

To ensure that wastes are properly removed and disposed and recycled.

Scope

The University has operations at several locations across the state. For the purpose of describing waste management procedures, the discussion is divided into two components; main campus and satellite facilities.

The scope of solid waste management at NC State encompasses a broad range, as outlined below.

Nonhazardous

- Construction/Demolition Debris
- Land Clearing Debris
- Yard Waste
- Biological
- Municipal Solid Waste
- Paper
- Cardboard
- Plastics
- Lead-Acid Batteries
- White Goods
- Fluorescent Tubes
- Used Oil
- Equipment
- Asbestos-containing Materials

Chemical Waste

Radioactive Waste

Universal Waste

Medical Waste

- General Waste
- Sharps and Blood and Body Fluids (≤ 20 ml)

- Regulated Medical Waste
 - Pathological
 - Microbiological
 - Blood and Body Fluids (> 20 ml)

- Surplus Equipment

Definitions

Agricultural wastes means waste materials produced from the raising of plants and animals, including animal manures, bedding, plant stalks, hulls, and vegetable matter.

Biological Waste means organic non-pathological waste, including dead animals, animal parts, and tissue.

Blood products means all bulk blood and blood products.

Construction or demolition when used in connection with *waste* or *debris* means solid waste resulting solely from construction, remodeling, repair, or demolition operations on pavement, buildings, or other structures, but does not include inert debris, land-clearing debris or yard debris.

Garbage means all putrescible wastes, including animal offal and carcasses, and recognizable industrial byproducts, but excluding sewage and human waste.

Generator is any person whose act or process produces waste. At NC State, and for the purpose of this document, this would be the Principal Investigator, Laboratory Supervisor, Manager or other person responsible for a local area in which chemicals are used or stored. "Generator" will also be used for matters pertaining to the University as a whole.

Hazardous waste is any solid waste that is ignitable, corrosive, reactive, or toxic, a listed hazardous material, or contains a listed hazardous material.

Inert debris means solid waste which consists solely of materials that is virtually inert and that is likely to retain its physical and chemical structure under expected conditions of disposal.

Land-clearing waste means solid waste which is generated solely from land-clearing activities such as stumps, trees, limbs, brush, grass, and other naturally occurring vegetative material.

Medical waste means any solid waste which is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals, but does not include any hazardous waste identified or listed pursuant to this Article, radioactive waste, household waste as defined in 40 Codes of Federal Regulations Section 261.4(b)(1) in effect on July 1, 1989, or those substances excluded from the definition of solid waste in this section.

Microbiological wastes means and includes cultures and stocks of etiologic agents. The term includes cultures of specimens from medical, pathological, pharmaceutical, research, commercial, and industrial laboratories.

Municipal solid waste means any solid waste resulting from the operation or residential, commercial, industrial, governmental, or institutional establishments that would normally be collected, processed, and disposed of through a public or private solid waste management service. Municipal solid waste does not include hazardous waste, sludge, or solid waste from mining or agricultural operations.

Non-regulated Hazardous Waste is any solid waste that is technically not a "hazardous waste", but may pose a significant hazard to human health or the environment, or is unacceptable at local solid waste management facilities. Sanitary (municipal) landfills cannot accept liquids or contained gaseous wastes. Wastewater treatment plants must operate within specific limits for their sludges and treated effluent.

Open dump means a solid waste disposal site which is not a sanitary landfill,

Operator means any person, including the owner, who is principally engaged in, and is in charge of, the actual operation, supervision, and maintenance of a solid waste management facility and includes the person in charge of a shift or periods of operation during any part of the day.

Pathogens means organisms that are capable of producing infection or diseases, often found in waste materials.

Pathological wastes means and includes human tissues, organs, body parts, secretions and excretions, blood and body fluids that are removed during surgery and autopsies; and the carcasses and body parts of all animals that were exposed to pathogens in research, were used in the production of biologicals or in the in vivo testing of pharmaceuticals, or that died of known or suspected infectious disease.

Putrescible means solid waste capable of being decomposed by microorganisms with sufficient rapidity as to cause nuisances from odors and gases, such as kitchen wastes, offal and carcasses.

Radioactive waste defined in the Manual for Protection Against Radiation, Section 10, Disposal of Radioactive Waste.

Recovered materials means those materials which have known recycling potential, can be feasibly recycled, and have been diverted or removed from the solid waste stream for sale, use, or reuse by separation, collection, or processing.

Recyclable material means those materials which are capable of being recycled and which would otherwise be processed or disposed of as solid waste.

Refuse means all nonputrescible waste

Regulated medical waste means blood and body fluids in individual containers in volumes greater than 20 ml. microbiological waste, and pathological waste that have not been treated pursuant to Rule .1207 of this Subchapter.

Resource recovery means the process of obtaining material or energy resources from discarded solid waste which no longer has any useful life in its present form and preparing the solid for recycling.

Sharps means and includes needles, syringes, and scalpel blades.

Solid waste means any hazardous or nonhazardous garbage, refuse or sludge from a waste treatment plant, water supply treatment plant or air pollution control facility, domestic sewage and sludges generated by the treatment thereof in sanitary sewage collection, treatment and disposal systems, and other material that is either discarded or is being accumulated, stored or treated prior to being discarded, or has served its original intended use and is generally discarded, including solid, liquid, semisolid or contained gaseous material resulting from industrial, institutional, commercial and agricultural operations, and from community activities.

Solid waste does not include:

- (a) Fecal waste from fowls and animals other than humans;
- (b) Solid or dissolved material in:
 - (1) Domestic sewage and sludges generated by treatment thereof in sanitary sewage collection, treatment and disposal systems which are designed to discharge effluents to the surface waters;
 - (2) Irrigation return flows; and
 - (3) Wastewater discharges and the sludges incidental to and generated by treatment which are point sources subject to permits granted under Section 402 of the Water Pollution Control Act, as amended (P.L. 92-500), and permits granted under G.S. 143-215.1 by the Environmental Management Commission. However, any sludges that meet the criteria for hazardous waste under RCRA shall also be a solid waste for the purposes of this Article.
- (c) Oils and other liquid hydrocarbons controlled under Article 21A of Chapter 143 of the General Statutes. However, any oils or other liquid hydrocarbons that meet the criteria for hazardous waste under RCRA shall also be a solid waste for the purposes of this Article;

- (d) Any source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C. Section 2011).

Special wastes mean solid wastes that can require special handling and management, including white goods, whole tires, used oil, lead-acid batteries, and medical wastes.

White goods includes refrigerators, ranges, water heaters, freezers, unit air conditioners, washing machines, dishwashers, clothes dryers, and other similar domestic and commercial large appliances.

Yard waste means *yard trash and land-clearing debris* as defined in G.S. 130A-290, including stumps, limbs, leaves, grass, and untreated wood.

Used oil means any oil which has been refined from crude oil or synthetic oil and, as a result of use, storage, or handling, has become unsuitable for its original purpose due to the presence of impurities or loss of original properties, but which may be suitable for further use and is economically recyclable.

Biological, Medical, and Related Waste

Biohazards are biological agents or substances present in or arising from the work environment. They present or may present a hazard to the health or well-being of the worker or the community. Biological agents and substances include infectious and parasitic agents, non-infectious microorganisms, such as fungi, yeasts, algae, plants and plant products, and animals and animal products that cause occupational disease. Generally, biohazards are either:

- Infectious microorganisms
- Toxic biological substances
- Biological allergens
- Any combination of the above.

Biological/medical waste includes a broad range of waste types that are excluded from disposal as a municipal solid waste. Medical waste means any solid waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research, or in the production or testing of biologicals.

Regulated Medical Waste

Regulated medical waste means blood and body fluids in individual containers in volumes greater than 20 ml., microbiological waste and pathological waste.

Microbiological waste

Cultures and stocks of infectious agents including specimens from medical, pathological and research labs.

Pathological waste

Human tissues, organs and body parts; the carcasses and body parts of -all animals known to have been exposed to pathogens. Animals having died of a known or suspected disease transmissible to humans.

Blood and body fluids

Liquid blood, serum, plasma, other blood products, emulsified human tissue, spinal fluids, pleural and peritoneal fluids.

Sharps

Needles, syringes with attached needles, capillary tubes, slides and cover slips, and scalpel blades

Universal Waste

Universal Waste is a broad term EPA uses to identify certain widely generated wastes. While universal wastes are not hazardous wastes, EPA has determined that these wastes require special management practices because of their high-generation volume and the waste's potential to be associated with hazardous waste.

Although the list of *universal wastes* is expected to grow, EPA has initially classified the following as universal wastes:

Batteries (nickel cadmium batteries, in particular)
Pesticides recalled by EPA
Thermostats containing mercury

Specific Universal Wastes

Batteries (40 CFR 273.6): Discarded nickel cadmium and other types of batteries (electrically connected electrochemical cells) are included in this definition. Batteries become "wastes" on the date they are discarded -- such as when batteries are sent for reclamation. Of importance in this definition is EPA's inclusion that a battery is a waste if has been used, or if it is an unused battery that the owner decides to discard.

Batteries that are not universal wastes: Car batteries regulated under 40 CFR 266.80, the rules covering lead-acid battery reclamation are exempt from both the universal and other federal hazardous waste regulations.

Pesticides (40 CFR 273.3): Certain federally recalled pesticides become universal wastes on the date when the chemical meets both of the following conditions: the generator agrees to participate in the recall and the people conducting the recall decide to discard the pesticides.

Those pesticides classified as universal wastes include: stocks of a suspended and canceled chemical that is part of a mandatory or voluntary. Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

Recall: stocks of a suspended or canceled pesticides; or stocks of other unused pesticides that are collected and managed as part of a pesticide-waste collection program.

Mercury-containing thermostats (40 CFR 273.4): EPA's definition of the thermostats is: "(a) temperature control device that contains metallic mercury in an ampule attached to a bimetal sensing element, and mercury-containing ampules that have been removed from these devices in compliance with 40 CFR 273.13 or 40 CFR 273.33 " (40 CFR 273.6)

Similar to the definition of battery, a used liquid mercury containing thermostat or thermometer becomes a universal waste on the day it is discarded (e.g., sent for reclamation), and an unused thermostat becomes waste when its owner decides to discard it. Note, however, that a thermostat is hazardous waste if it meets one of the characteristics of hazardous waste, as identified in 40 CFR 261.

Household and conditionally exempt wastes: Another intended benefit of this rule is to divert wastes presently being disposed in municipal landfills, to being recycled. Under the universal waste rule, batteries, pesticides, and thermostats from homes and conditionally exempt small quantity generators (those generating less than 100 kilograms (kg) of hazardous waste and less than 1 kg of acutely hazardous waste a month) have the optional of being managed as universal wastes (40 CFR 273.5).

Commingled wastes: Finally, any waste that is commingled with a universal waste must be managed as a universal waste.

Regulations/References

Solid Waste Management, Article 9. North Carolina General Statutes, 130A

North Carolina Hazardous Waste Management Rules 15A NCAC 13A

Letter to Interested Parties From Dexter Matthews, Chief Solid Waste Section. Subject: Policy for Management of Used Lights Containing Mercury (LCM's) in North Carolina. September 20, 1995

NC State Manual for Protection Against Radiation

NC State Manual for Chemical Waste Management

NC State Surplus Property Policy and Procedures

NC State Biosafety Manual

Responsibilities

Environmental Health and Safety - Environmental Affairs is responsible for providing guidelines and training (as requested), tracking regulatory requirements and ensuring that this procedure accurately reflects current requirements, and auditing program implementation.

At the request of the waste generator or facility operator, Environmental Affairs will provide review and assistance for acquisition and management of waste management contracts.

Waste Generator - For the purpose of this procedure, the waste generator is the individual responsible for handling or use of the material being offered for disposal or removal. This applies to all waste, from simple to complex; the person making the initial decision affecting how waste is offered for removal/recycling is most knowledgeable about the nature of the material. It is the generator's responsibility, to understand how to properly manage their waste.

The generator (e.g., PI or supervisor) is responsible for determining if a material is spent or intended for discard, thereby a waste material. The generator must determine if the material is a hazardous waste by characteristic or specific constituents. The hazardous waste generator is also responsible for recognizing opportunities for waste minimization.

The organization responsible for managing nonhazardous solid waste is responsible for providing collection devices, removal equipment, and trained personnel for managing specific categories of waste.

A facility operator or property manager who offers waste for removal or enters into an agreement for waste management services is responsible for ensuring the facility or operation for which they have responsibility is in compliance with all pertinent federal, state and local requirements and the activity is Consistent with University policies and programs.

Procedures - Main Campus

Waste management procedures are presented by waste type. The discussion is applicable to only the main campus.

Nonhazardous

Facilities Operations is responsible for the management of the following waste streams and services the Main Campus.

- ÿ Construction and building demolition debris from Facilities Operations projects
- ÿ Municipal solid waste

Recyclable Wastes

The Main Campus recycles a diverse set of waste. The Facilities Operations Recycling Program is responsible for the following:

Paper	
Plastic Containers	
Aluminum Cans	
Glass	
Corrugated Cardboard	
Scrap Metal	
Pallets	
Yard Waste	
	Tires
	Motor Oil
	Batteries (lead acid)
	Freon
	Anti-Freeze

Fluorescent Tubes

Spent fluorescent tubes generated on the main campus are not to be disposed of as a municipal solid waste.

Spent fluorescent tubes generated during routine building maintenance are picked up on an established schedule at selected locations throughout campus. The building maintenance supervisor is responsible for training his or her maintenance staff on tube management.

Tubes generated from relamping projects are recycled as part of the project. It is the responsibility of the Project Manager for those projects to incorporate tube recycling costs and logistics into the project plan.

Construction/Demolition Debris - Contracted Projects

Proper disposal of contractor-generated construction and demolition debris generated on a project is the responsibility of the contractor.

Management of any hazardous waste generated by a construction project will be coordinated with Environmental Affairs.

Chemical Waste

The University hazardous waste program is described in the Manual for Chemical Waste Management. Call the Hazardous Waste Program Manager at 515-6863 for more information.

Radioactive Waste

The University radioactive waste management program is described in the NC State Manual for Protection Against Radiation, Sixth Edition, 1996. Call the Radiation Protection Office at 515-2894 for more information.

Biological/Medical Waste

Sharps must be packaged in a rigid container, which is leakproof when in an upright position and puncture resistant. The package then may be disposed with the general waste. Sharps do not need to be treated (e.g., autoclave).

Pathological waste is excluded from disposal with the municipal waste stream and must be provided for incineration. See Incineration discussion (below) for details.

Microbiological waste may be treated through incineration, autoclaving, or chemical treatment. If the waste is autoclaved or chemically treated, it may be disposed with the general municipal waste. This sterilization process is described in the Biosafety Manual.

Blood and body fluids in volumes < 20 ml are not Regulated Medical Wastes and may be disposed of by incineration or to the sanitary sewer.

Regulated Medical Wastes, after treatment, may be handled as general solid waste (Municipal Solid Waste). Treatment methods are described in the NC State Biosafety Manual.

Sterilization/disinfection methods for each waste type are described in the NCSU Biosafety Manual.

Incineration of wastes is provided under contract. Wastes to be incinerated must be placed in plastic bags and then placed in the containers provided at the College of Veterinary Medicine. For information on the procedure contact the Facilities Operations Office at the College of Veterinary Medicine at 513-6423.

Asbestos-Containing Waste

General Guidance

Asbestos waste, both friable and nonfriable, will be containerized in 6 mil. thickness plastic bags and labeled as "asbestos" waste. The bags should be tied appropriately and disposed of in a sturdy chemical waste container. Plastic bags are to be labeled as asbestos waste. Make sure that the waste is wetted down before the bag is tied. Identification forms will need to be filled out for each bag.

Small Amounts

Small amounts can be disposed of through the Chemical Waste Program.

Large Items

Items that are too large to be placed into plastic bags, such as doors, counter tops and large size debris, will not be picked up by the EHSC. Persons needing assistance in disposing should contact EHSC at 515-6863. Arrangements will be made by EHSC for the disposal of these items.

Contracted Renovation Projects

Proper disposal of asbestos-containing waste generated by a contracted construction or renovation project is the responsibility of Construction Management (515-6380).

Identifying Asbestos

To determine if a material or item contains asbestos, please contact the EHSC at 515-6862

Surplus Equipment

Surplus equipment is subject to the University Surplus Equipment Procedure. Equipment being processed for surplus must not contain any hazardous materials or substances.

Hazardous waste generated through removal of hazardous materials or substances from equipment being surplus is managed through the Hazardous Waste Program.

The Surplus Equipment Procedure is available from Central Stores (515-2197).

Satellite Campus Operations

As described in the responsibilities discussion, the satellite facility operator is responsible for managing the solid waste generated at their facility in compliance with the applicable federal, state, and local regulations, laws, and ordinances.

PETROLEUM, OIL, AND LUBRICANTS MANAGEMENT

Introduction

The purpose of this section is to ensure that the operation of, or actions involving, underground and aboveground storage tanks UST's and AST's) comply with Federal and State regulations.

Scope

This procedure applies to all planned and existing UST's and AST's containing petroleum products,

For the purpose of this procedure, those AST's that are required to have a spill plan, are defined as permitted tanks.

Definitions

Existing tank system means a tank system used to contain an accumulation of regulated substances or for which installation has commenced on or before December 22, 1988.

Farm tank is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. "Farm" includes fish hatcheries, rangeland and nurseries with growing operations.

Hazardous substance UST system means an underground storage tank system that contains a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (but not including any substance regulated as a hazardous waste under subtitle C) or any mixture of such substances and petroleum, and which is not a petroleum UST system.

Heating oil means petroleum that is No. 1, No. 2, No. 4 -- light, No. 4 -- heavy, No. 5 - light, No. 5 - heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C) and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.

Motor fuel means petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol, and is typically used in the operation of a motor engine.

New tank system means a tank system that will be used to contain an accumulation of regulated substances and for which installation has commenced after December 22, 1988. (See also "Existing Tank System.")

Noncommercial purposes with respect to motor fuel means not for resale,

Operator means any person in control of, or having responsibility for, the daily operation of the LIST system

Tank is a stationary device designed to contain an accumulation of regulated substances and constructed non-earthen materials (e.g. concrete, steel, plastic) that provide structural support.

Petroleum UST system means an underground storage tank system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

Regulations/References

Federal underground storage tank regulations 40 CFR 280

Federal aboveground storage tank regulators 40 CFR 113

State underground storage tank regulations 15A NCAC 02N

Spill Prevention Control and Countermeasures Plans

Cates Avenue Steam Plant

Yarborough Drive Steam Plant

Engineering Graduate Research Center

Operating Permits for UST's

Responsibilities

As described in the Design Review section of the EMP, the Project Manager is responsible for ensuring that adequate review is given to identify tank-related issues for their projects.

Environmental Affairs is responsible for providing project-related guidance to PM's on tank issues.

Environmental Affairs will assist tank owner/operators in establishing compliance management procedures

Environmental Affairs will maintain the tank data for the University

Tank owner/operators will be responsible for operating tanks under their responsibility in compliance with all pertinent regulations and meeting all permit conditions, as appropriate.

PCB MANAGEMENT

Introduction

The purpose of this section is to establish a procedure to ensure that the operation of or actions involving PCB-containing equipment comply with Federal and State regulations.

Federal PCB regulations allow in-service PCB equipment to remain in service. While in service, the equipment must be labeled and periodically inspected. Any leaks detected must be corrected. Once taken out of service, PCB equipment can be stored for disposal for one year in a specially designed storage area. PCB fluids must be disposed of by incineration and PCB equipment (less the fluid) must be disposed of in a specially licensed landfill.

Scope

This procedure applies to all known and suspected PCB-containing equipment.

Uses of PCB's most likely to be found on the University campus include:

- Transformers
- Capacitors
- Heat transfer systems
- Hydraulic systems
- Electromagnets
- Switches and voltage regulators
- Circuit breakers, reclosers, and cables

Definitions

Fluorescent light ballast means a device that electrically controls fluorescent light fixtures and that includes a capacitor containing 0.1 kg or less of dielectric.

Capacitor means a device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric. Types of capacitors are as follows:

Small capacitor means a capacitor that contains less than 1.36 kg (3 lbs.) of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 1,639 cubic centimeters (100 cubic inches) may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid and a capacitor whose total volume is more than 3,278 cubic centimeters (200 cubic inches) must be considered to contain more than 1.36 kg (3 lbs.) of dielectric fluid. A capacitor whose volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid if the total weight of the capacitor is less than 4.08 kg (9 lbs.)

Large high voltage capacitor means a capacitor that contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates at 2,000 volts (A.C. or D.C.) or above.

Large low voltage capacitor means a capacitor that contains 1.36 kg (3 lbs.) or more of dielectric fluid and which operates below 2,000 volts (A.C. or D.C.)

Excluded PCB products means PCB materials that appear at concentrations less than 50 ppm, including but not limited to:

- (1) Non-Aroclor inadvertently generated PCB's as a byproduct or impurity resulting from a chemical manufacturing process.
- (2) Products contaminated with Aroclor or other PCB materials from historic PCB uses (investment casting waxes are one example).
- (3) Recycled fluids and/or equipment contaminated during use involving the products described in paragraphs (1) and (2) of this definition (heat transfer and hydraulic fluids and equipment and other electrical equipment components and fluids are examples).
- (4) Used oils, provided that in the cases of paragraphs (1) through (4) of this definition:
 - (i) The products or source of the products containing < 50 ppm concentration PCB's were legally manufactured, processed, distributed in commerce, or used before October 1, 1984;
 - (ii) The products or source of the products containing < 50 ppm concentration PCB's were legally manufactured, processed, distributed in commerce, or used, i.e., pursuant to authority granted by EPA regulation, by exemption petition, by settlement agreement, or pursuant to other Agency approved programs;
 - (iii) The resulting PCB concentration (i.e. below 50 ppm) is not a result of dilution, or leaks and spills of PCB's in concentrations over 50 ppm.

Generator of PCB waste means any person whose act or process produces PCB's that are regulated for disposal under subpart D of this part, or whose act first causes PCB's or PCB items to become subject to the disposal, requirements of subpart D of this part, or who has physical control over the PCB's when a decision is made that the use of the PCB's has been terminated and therefore is subject to the disposal requirements of subpart D of this part. Unless another provision of this part specifically requires a site-specific meaning, generator of PCB waste" includes all of the sites of PCB waste generation owned or operated by the person who generates PCB waste.

Non-PCB Transformer means any transformer that contains less than 50 ppm PCB; except that any transformer that has been converted from a PCB Transformer or a PCB-Contaminated Transformer cannot be classified as a non-PCB Transformer until reclassification has occurred.

PCB article means any manufactured PCB item (other than a PCB container) that contains PCB's and whose surface has been in direct contact with PCBs PCB article includes capacitors, transformers, electric motors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, cable, hydraulic machines, pumps, and pipes. PCB article also includes any other manufactured item which is formed to a specific shape or design during manufacture, has end use functions dependent in whole or in part upon its shape or design, and has either no change of chemical composition which have no commercial purpose separate from that of the PCB article.

PCB-Contaminated electrical equipment means any electrical equipment including but not limited to transformers (including those used in railway locomotives and self-propelled cars), capacitors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, and cable, that contain 50 ppm or greater PCB, but less than 500 ppm PCB. Oil-filled electrical equipment other than circuit breakers, reclosers, and cable whose PCB concentration is unknown must be assumed to be PCB-Contaminated Electrical Equipment.

PCB Equipment means any manufactured item, other than a PCB container or a PCB Article Container, which contains a PCB Article or other PCB Equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.

PCB Item is defined as any PCB Article, PCB Article Container, PCB Container, or PCB Equipment, that deliberately or unintentionally contains or has a part of it any PCB or PCBs.

PCB Transformer means any transformer that contains 500 ppm PCB or greater.

PCB waste(s) means those PCBs and PCB Items that are subject to the disposal requirements of subpart D of this part.

Unless otherwise marked, any piece of electrical equipment manufactured prior to 1977 is considered to contain PCB's at above the 50 ppm.

Regulations/References

Federal PCB regulations are provided in 40 CFR 761

State requirements for storage and disposal are provided at G.S. 130A Section 130A - 294(h)(4)

Responsibilities

As described in the Design Review section of the EMP, the Project Manager is responsible for ensuring that adequate review is given to identify PCB-related management and disposal issues.

Environmental Affairs is responsible for providing guidance for meeting regulatory requirements associated with PCB management.

Environmental Affairs will identify necessary procedures and provide approval of procedures for identification, inspection, maintenance, and/or storage of affected equipment.

The owner/operator of PCB equipment is responsible for maintaining necessary records for the equipment under his/her control.

Procedure

Project Requirement

1. Installation of new equipment

Installation of new equipment associated with a project should be non-PCB containing. Any exception to this should be discussed with Environmental Affairs.

2. Removal of old equipment

Electrical or other equipment potentially containing PCB's, for which there is no information on PCB level, will be assumed to contain PCB's if the date of manufacture is before 1977.

Small pieces of equipment, such as light ballasts, which may contain PCB's and for which no information on PCB content is provided, should be placed in a suitable container (e.g., drum) and managed as a PCB-containing waste. (See NC State Chemical Waste Management Program Waste Generator Manual).

Larger PCB-containing equipment (e.g., transformer) removed from service may be placed in storage for eventual disposal or immediately shipped for disposal. Placing this equipment into storage has a number of associated requirements, including marking, storage area design and construction, and record keeping. Environmental Affairs should be consulted to establish specific requirements and procedures for PCB-containing equipment storage.

Equipment removed from service that is either known to not contain PCB's or has a manufacture date after 1977, can be managed as non-PCB containing. Requirements placed on this equipment follow normal equipment disposal guidelines.

3. PCB reduction action

Actions taken to reduce PCB levels in existing equipment should be coordinated with Environmental Affairs.

Operational Requirements

Use of known PCB containing equipment is allowed. Provisions for keeping PCB-containing in service primarily involve inspection and record keeping. These procedures should be developed in coordination with Environmental Affairs.

HAZARDOUS MATERIALS MANAGEMENT

Introduction

Hazardous materials are a necessary part of University operations. A wide range of hazardous chemicals are used in both research and operational settings.

Scope

OSHA identifies two sources that list hazardous chemicals; 29CFR 1910, Subpart Z, Toxic and Hazardous Substances, and the American Conference of Governmental Industrial Hygienists Threshold Limit Values.

Other lists of hazardous materials are: Superfund Amendments and Reauthorization Act (SARA) Section 302 Extremely Hazardous Substances (42 USC 11000 et seq.). Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Hazardous Substances (42 USC 9601 et. seq.), or Section 311 of the Clean Water Act, as amended (33 USC 1251 et. seq.); oil and hazardous substances.

Definitions

Regulations/References

Safety and Health Management Plan, Section 110-13, Procedures for the Use of Hazardous Materials

NC State Chemical Waste Management Program

Responsibilities

The owner of the hazardous materials is responsible for safe storage, use, and transport of the material and proper disposal of any waste.

Environmental Affairs provides regulatory requirements and assists, as requested by the hazardous materials owner, with procedure development to meet appropriate requirements.

Procedure

Hazardous materials management is discussed in Section 100-13 of the Safety and Health Management Plan,

NATURAL RESOURCES

Introduction

The purpose of this section is to establish procedures to ensure that University actions and operations comply with federal and state regulations concerning natural resources management.

Scope

This procedure applies to all University activities. Natural resource issues managed under this procedure include:

- Threatened and Endangered Species
- Natural resources
 - Wetlands and Floodplains
 - Surface Waters
 - Land Resources

Definitions

Currently, federal regulations define *wetlands* as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3; 40 CFR 230.3). In other words, any areas that are "wet" at any time during the year may be considered wetlands. The exact boundaries will depend on technical criteria for vegetation, hydrology, and soils.

Regulations/References

50 CFR 402 and 17 Threatened and Endangered Species

Clean Water Act (Section 404 Permits for Dredged or Fill Materials): 33 USC 1344

EPA Interim Regulations on Discharge of Dredged or Fill Material into Navigable Waters: 40 CFR 230

EPA Rule on Activities Exempt from Dredge or Fill: 40 CFR 232

EPA Regulations on State Permit Program: 40 CFR 233

Army Corps of Engineers Regulations: 33 CFR 320 to 330

15A NCAC 02B Surface Water and Wetland Standards

15A NCAC 2H.0500 Water Quality Certification

15A NCAC 10D Endangered and Threatened Species

G. S. 11 113A, Article 7, Coastal Area Management Act
15A NCAC 7H, 7J, 7M, 7K
15 CFR Part 930

G. S. 113-229, State Dredge and Fill Permit
15A NCAC 7J Permits

Responsibilities

As described in the Design Review section of the EMP, the Project Manager or Project Team Leader is responsible for ensuring that adequate review is given to identify natural resources-related issues.

Environmental Affairs is responsible for providing assistance and review for meeting natural resources management regulatory requirements, as requested by the Project Manager.

The facility manager for remote operations is responsible for ensuring that his/her facility is in compliance with environmental regulations affecting natural resources.

DRINKING WATER

Introduction

The NC State Main Campus obtains its water from the City of Raleigh. Therefore, the University is not a drinking water supplier, but rather a customer. However, the University has the potential to affect drinking water before it is provided to the public.

NC State properties at other remote locations in the State, however, may not be on a community water supply system. These outlying facilities are responsible for providing acceptable drinking water.

The Safe Drinking Water Act (SDWA) was enacted in 1974. The act required EPA to set national health-based standards for levels of contaminants in drinking water and protection for sole source aquifers. The State administers its drinking water protection program as part of its overall groundwater protection program.

Scope

This procedure applies to all University facilities and operations.

Definitions

Non-community water system means a public water system that is a non-community system,

Person means an individual; corporation; company; association; partnership; municipality; or State, Federal, or tribal agency.

Supplier of water means any person who owns or operates a public water system

Public water system means a system for the provision to the public of piped water for human consumption, if such system has at least fifteen service connections or regularly serves an average twenty-five individuals daily at least 60 days out of the year. Such term includes (1) any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system, and (2) any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system is either a "community water system" or a 11 noncommunity water system.* (1 (15A NCAC 18C)

Regulations/References

Safe Drinking Water Act of 1974 (42 USC 300f-300j)

15A NCAC 2C.01 00 Water Supply and Other Wells

15A NCAC 18C Water Supplies - Public

15A NCAC 18C .1500 Water Quality Standards

Responsibilities

As described in the Design Review Section of the EMP, the Project Manager or Project Team Leader is responsible for ensuring that adequate review is given to identify project impacts on the drinking water system.

The operator or facility manager is responsible for managing the property or water supply system to ensure that drinking water meets appropriate standards.

Environmental Affairs is responsible for providing assistance, as requested, on drinking water issues.

Permitting of new or modified drinking water systems will be coordinated by Environmental Affairs.

Procedure

Any project that involves installation, repair or maintenance, or abandonment of a permitted or permit-required water supply well will be discussed with Environmental Affairs.

Any project that would place the University in a position of becoming a "supplier of water," will be discussed with Environmental Affairs.

PESTICIDES MANAGEMENT

Introduction

In addition to federal regulations, persons involved in the sale, distribution or use of pesticides in North Carolina may be governed by certain state laws such as (1) the North Carolina Pesticide Law of 1971 which regulates the registration of all pesticides and their use, application, sale, storage and disposal; and (2) the North Carolina Structural Pest Control Law which regulates pest control operations in and around buildings and similar structures. These two laws are separate and distinct and their terms and regulatory agencies differ. For example, persons licensed under one law are not automatically licensed under the other law.

The University uses pesticides in a variety of settings including both research and operational.

Scope

This procedure applies to all University uses of pesticides; both research and operational

Definitions

Pesticide means any substance or mixture of substances, including biological control agents that prevent, destroy, repel, or mitigate pests; also any substance or mixture of substances used as a plant regulator, defoliant, or disinfectant; and is further categorized into the following:

Excess pesticides means all pesticides that cannot be legally sold pursuant to the Act or that are to be discarded.

Organic pesticides means carbon-containing substances used as pesticides, excluding metallo-organic compounds.

Inorganic pesticides means noncarbon-containing substances used as pesticides,

Metallo-organic pesticides means a class of organic pesticides containing one or more metal or metalloid atoms in the structure.

Restricted Use Pesticide means pesticides designated for restricted use under the provisions of Section 3 (d)(1)(c) of FIFRA. These pesticides are only to be used by certified applicators or by persons working under their supervision (40 CFR 152.30). Restricted use pesticides are identified on the label.

Toxicity Category means required warnings and precautionary statements are based on the toxicity category of the pesticide. The category is assigned on the basis of the highest hazard shown in the table listed in 40 CFR 162.10.

Pesticide user means the responsible individual within the organization responsible for acquisition, management, and application of the pesticide.

Regulations/References

40 CFR Chapter 1, Environmental Protection Agency, Subpart E Pesticide Programs, Part 152 - 180

02 NCAC 09L Pesticide Section

02 NCAC 34 Structural Pest Control Division

29 CFR 1910. Safety and health standards that govern the storage and handling of flammable and combustible liquids.

Responsibilities

The individual acquiring and using pesticides is responsible for ensuring that all appropriate requirements for storage, transport, use, record keeping, and disposal are met.

The supervisor of the individual handling and/or using the pesticide is responsible for ensuring that the individual under his/her supervision has the appropriate training and license(s).

Environmental Affairs is responsible for providing guidance on the proper use, storage, and handling of pesticides.

Procedure

All activities associated with the project-related or operational use of pesticides is the responsibility of the pesticide user and Project Manager.

Contractors used for pest management must have current State licenses for the types of applications being performed.

Requirements for storage, handling and use of pesticides are described in the Safety and Health Management Plan.

Requirements for empty container management and waste disposal are provided in the Chemical Waste Management Program.

CULTURAL AND HISTORIC RESOURCES

Introduction

The University performs projects which may impact cultural or historic resources

Scope

This procedure applies to all University projects.

Definitions

Examples of *Ground disturbing activity* means examples of ground disturbance include, but are limited to, construction of dikes, clearing and grubbing of forests, subsurface alterations around standing structures, borrow pits, trenching for water and sewer lines, utility line construction or improvements requiring excavation; construction, widening, or improvements of highways; and airport expansions, bridge replacements, housing developments, boat basins and channels, and placement of fill or spoil dirt.

Regulations/References

National Historic Preservation Act of 1966. Codified at:

36 CFR 800
36 CFR 63
36 CFR 60

Archeological Resources Protection Act of 1979. Codified at:

18 CFR 1312
32 CFR 229
36 CFR 296
43 CFR 7

State regulations are found at 7 NCAC 4R, specifically .0200 -.0206 and .0700 - 0718.

Responsibilities

As described in the Design Review section of the EMP, the Project Manager is responsible for ensuring that adequate review is given to identify potential project impacts on cultural or historic resources.

Environmental Affairs is responsible for maintaining this procedure to ensure compliance with federal and state cultural and historic requirements.

The University Real Estate Office is responsible for maintaining the inventory of National Register of Historic Places property owned by the University.

Procedure

Any project that requires an EA will address archeological resource concerns meeting the requirements of 7 NCAC 4R.0200 and .0700.

Projects are reviewed for archeological concerns (.0203 Archeological Review) whenever ground disturbing activity is involved.

Other reviews include an underwater archeological review and architectural review. The underwater archeological review is triggered by water-related construction activities and evaluated according to the extent of bottom disturbance. The architectural review takes into consideration National Register criteria, known sites, historical maps and documents, results of previous surveys, individual properties, districts, and thematic and multiple resource nominations listed in the National Register of Historic Places.

7 NCAC 4R.0700 Archeological Resource Protection Act. Permits are required for persons wishing to conduct archeological investigations on state lands.

ENVIRONMENTAL NOISE

Introduction

The University performs projects that may generate excessive ambient noise

Scope

This procedure applies to all University projects and operations

Definitions

Regulations/References

Consult community ordinance on allowed noise levels

Responsibilities

As described in the Design Review section of the EMP, the Project Manager is responsible for ensuring that adequate review is given to identify potential project-related noise issues.

The facility operator is responsible for operating their equipment so as not to generate excessive noise

Environmental Affairs will assist resolving environmental noise issues at the request of the Project Manager or facility operator.

Environmental Affairs is responsible for coordinating with any outside agency (State or local) or community group or legal counsel on resolution of noise issues.

Procedure

In the absence of uniform ambient standards for noise, the OSHA requirements for implementing hearing conservation will serve as an indicator for an evaluation of a potential ambient noise issue. The Project Manager or Facility Operator will coordinate with Environmental Affairs for projects or activities with potential noise impacts.

ENVIRONMENTAL MONITORING AND SURVEILLANCE

Introduction

Environmental monitoring may be required to measure and monitor the effluents or emissions from University operations and conduct surveillance through measurement, monitoring, and calculation of the effects of those operations on public health and the environment.

Environmental data collection may be performed in support of a new project

Scope

This procedure applies to all environmental sampling, monitoring, or other data collection performed to support a University program, activity, or permit. This procedure does not apply to research projects not associated with University environmental compliance or management.

Regulations/References

Environmental monitoring or surveillance requirements are defined in the specific permits, plans, or licenses under which the activity is conducted.

The requirements for environmental data collection are provided in the regulatory reference that drives the data collection.

Responsibilities

Responsibilities for environmental sampling are discussed in the Environmental Management Plan

The Project Manager or Facility Operator is responsible for coordinating with Environmental Affairs on all environmental sampling or data collection, which is regulatory compliance driven.

Procedure

Environmental sampling or monitoring may be required as a condition of a specific permit, in response to a compliance requirement, or to support environment management decisions. In these situations, the conditions on the monitoring/sampling are established as a function of that permit or other requirement.

Sampling and analysis will be conducted according to procedures that meet the requirements of the permit, license, or plan.

Procedures will be documented and the data produced the activity will be traceable and meet the minimum data quality objectives specified by the driving document or regulation.

RELEASES OF OIL AND HAZARDOUS SUBSTANCES

Introduction

University operations involve use of a wide range of petroleum products, chemicals, and radioactive materials. This procedure addresses the proper management of spills or releases of these hazardous materials to protect the health and safety of staff, students, and the public and minimize or avoid environmental impact.

Scope

This procedure describes the process of notification of releases of petroleum products or hazardous substances.

Notification has two components; internal and external

Release Notification Exclusions

The following releases are exempt from the federal release notification requirements

Any release that results in exposure to persons solely within a workplace

Emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine

Release of source, byproduct, or special nuclear materials from a nuclear incident, defined in the Atomic Energy Act of 1954

Normal application of fertilizer

A "continuous" and stable release under CERCLA (i.e., a leaking hazardous waste landfill)

A release from a facility that does not produce, use, or store hazardous chemicals (i.e., laboratory or medical facility)

A federally permitted release:

Discharges under Section 402 of the Clean Water Act, which include wastewater discharge permits under the National Pollutant Discharge Elimination System

Discharges under a dredge and fill permit

RCRA-permitted releases (such as disposal in a permitted hazardous waste landfill)

Ocean dumping in compliance with the Marine Protection, Research, and Sanctuaries Act
Underground well injections in compliance with the Safe Drinking Water Act

Permitted air emissions

Injection of fluids in oil and gas exploration

Discharge to publicly owned treatment works according to pretreatment standards.

Definitions

EPCRA Release: EPCRA requires the owner or operator of a facility at which a hazardous chemical is produced, used or stored and at which a reportable quantity of an extremely hazardous substance or CERCLA hazardous substance is released to immediately notify the community emergency coordinator for the local emergency planning committee, if established, for any area likely to be affected by the release, unless the release specifically is exempted from EPCRA reporting requirements.

EPCRA Hazardous Chemical: The EPCRA reporting requirements apply only to facilities at which hazardous chemicals are produced, used or store. EPCRA adopts the OSHA definition [29 CFR 1910.1200(c)] of hazardous chemical but excludes from its scope the following substances:

1. Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration.
2. Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use.
3. Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public.
4. Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual.
5. Any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

Hazardous substances: A CERCLA hazardous substance is any substance listed pursuant to the federal Clean Water Act (CWA) §§ 307(a), 311 (b)(2)(A), the Resource Conservation and Recovery Act (RCRA) § 3001, the Clear Air Act (CAA) § 112, or the Toxic Substances Control Act (TSCA) § 7, and any characteristic hazardous waste. Hazardous substances do not include petroleum, petroleum products, natural gas, natural gas liquids, liquefied natural gas or synthetic gas usable for fuel. EPA has listed the hazardous substances and their reportable quantities at 40 CFR § 302.4 (1992) (See Appendix 2).

CERCLA Release: A CERCLA release is any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

Facility- A CERCLA facility is any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft; or any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.

Extremely Hazardous Substance: EPCRA, any substance listed at 40 CFR 355, Appendix A or B.

CERCLA Reportable Quantity. In general, the CERCLA reporting requirement applies only to releases of hazardous substances in excess of applicable reportable quantities during any 15-hour period. EPA's CERCLA rules set reportable quantities for both listed and unlisted hazardous substances. Reportable quantities for listed hazardous substances are set forth at 40 CFR § 302 (Table 302.4) and range from 1

5,000 pounds (0.454 - 454 kg). Unlisted substances (i.e., characteristic hazardous wastes) have a reportable quantity of 100 pounds (45.4 kg), unless they exhibit the characteristic of toxicity as defined in 40 CFR §

261.24. In that case, the reportable quantity is that listed in Table 302.4 for the contaminant which causes the EP toxicity, but the reportable quantity applies to the waste itself, not merely to the toxic contaminant. If there is more than one contaminant, or the substance exhibits characteristics in addition to toxicity, the lowest of the applicable reportable quantities applies.

Mixture: If a mixture or solution including a hazardous substance (except for radionuclides) has been released, and the quantity of all hazardous constituent(s) are known, then the reporting requirement applies if the volume of any hazardous constituent(s) released equals or exceeds the reportable quantity for such hazardous substance(s). If the quantity of all hazardous constituent(s) in the mixture/solution are unknown, the reporting requirement applies if the volume of the mixture/solution equals or exceeds the reportable quantity for the hazardous constituent with the lowest reportable quantity.

Oil: Under OPHSCA, oil means oil of any kind and in any form, including, without limitation, petroleum, crude oil, diesel oil, fuel oil, gasoline, lubrication oil, oil refuse, oil mixed with other waste, oil sludge, petroleum related products or by-products, and all other liquid hydrocarbons, regardless of specific gravity, whether singly or in combination with other substances.

Regulations/References

North Carolina Oil Pollution and Hazardous Substances Control Act, N.C. General Statute Section 143-215.75 - 143-215.94.

CERCLA reporting rules are codified at 40 CFR 302,

EPCRA rules are codified at 40 CFR 355

Responsibilities

The supervisor or responsible principal investigator shall ensure that an initial response and internal notification procedure exist and that adequate training has been provided to all employees under his/her supervision for successful implementation.

Environmental Affairs is responsible for maintaining this procedure to ensure compliance with spill reporting requirements.

Environmental Affairs is responsible for external notification of local, state, and/or federal agencies of a reportable release.

Procedure

Response procedures are driven by the type and quantity of hazardous material or substance released,

Internal Notification and Initial Response

Hazardous Material/Hazardous Substance/Extremely Hazardous Substances

For operations with safety plans, the safety plan for the specific work area directs the initial response to a chemical (or radioactive) spill.

Other, non-safety plan-required operations are referred to the NC State Emergency Contingency Plan

Oil

For operations with an SPCC Plan, the notification procedure is provided in the Plan

If a specific spill plan for the storage unit or operation does not exist, then the operator will notify Environmental Affairs of any release to the environment or spill as soon as practical.

Any release of oil or other petroleum products to the environment requires internal notification

External Notification

Chemical (including Hazardous Waste) - Release Notification under CERCLA and SARA Title III

In the event of an EPCRA reportable release, Environmental Affairs will notify the LEPC and SERC.

Notification will include the following information

Notification to the National Response Center

If the release is of a reportable quantity of a CERCLA hazardous substance, then notification to the National Response Center will be implemented.

When NRC is notified, the following information will be provided

Name of person calling
Name and address of carrier
Phone number where caller may be contacted
Date, time, and location of incident
Extent of injuries, if any
Classification, name, and quantity of hazardous materials involved, if known
Type of incident and nature of hazardous materials involved
Whether situation is a continuing danger to life

Special considerations for hazardous waste

NRC must be notified if more than the reportable quantity of a RCRA hazardous waste is released.

Many of these wastes are contained on the CERCLA list.

Use the following criteria to determine the reportable quantity

• If a waste is on the CERCLA list, the CERCLA reportable quantity applies.

• If the waste is not on the CERCLA list, but exhibits characteristics of a hazardous waste, (ignitable corrosive, reactive, toxic) the reportable quantity is 100 pounds.

Characteristic Wastes

If the waste exhibits the toxicity characteristic, the owner or operator must check the CERCLA list for reportable quantities of its toxic components.

The reportable quantities apply to the waste itself, not merely to a toxic contaminant. If the composition is known, the owner or operator must determine the relative amounts of the particular substances - not the entire mixture - and notify authorities only if reportable quantities of the components are present.

Releases during transport

Hazardous materials and hazardous waste transporters must notify NRC following a release if:

- Anyone is killed
- Anyone is hospitalized because of injuries Property damage totals \$50,000 or more
- A fire, breaking, spillage, or radioactivity contamination involving a shipment of radioactive material takes place
- A fire, breakage, spillage, or radioactive contamination involving a shipment of etiological agents takes place. If this occurs, the transporter should notify the Centers for Disease Control instead at (404) 633-5313 or (202) 267-2675.

Oil or Other Petroleum Product

EHS-EA will immediately notify the National Response Center as soon as it is determined that a reportable quantity of oil has been released.

The reportable quantity for oil is any quantity which either; 1) violates an applicable water quality standard, or 2) causes a film or sheen upon or discoloration of the surface water or adjoining shorelines or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Also, as required by 40 CFR 112.4(a), if the facility discharges in excess of 1,000 U.S. gallons in a single event or has discharges that exceed harmful quantities, as defined in 40 CFR Part 110, twice in a twelvemonth period, EHS-EA shall submit to the Regional Administrator, within 60 days from the time such facility becomes subject to this section, the following:

- a. Name of the facility;
- b. Name(s) of the owner or operator of the facility;
- c. Location of the facility;
- d. Name and address of the registered agent of the owner or operator, if any;
- e. Date and year of initial facility operation;
- f. Maximum storage or handling capacity of the facility and normal daily throughput;
- g. Description of the facility, including maps, flow diagrams, and topographical maps;
- h. A complete copy of the Plan with any amendments;
- i. The cause(s) of such spill, including a failure analysis of the system or subsystem in which the failure occurred;
- j. Exactly what and how much was spilled;
- k. The corrective actions and/or countermeasures taken, including an adequate description or equipment repairs and/or replacements;
- l. Additional preventive measures taken or contemplated to minimize the possibility of recurrence.

All oil spills, whether reportable or not, will be documented on the form, "Oil Spill Documentation." Completed forms are kept on file for at least five years.

The following agencies will be notified of a reportable spill:

National Response Center
United States Coast Guard
2100 Second St. SW
Washington, DC 20593
(800) 424-8802
(202) 267-2675

Fifth District Headquarters
United States Coast Guard
Federal Building
431 Crawford St.
Portsmouth, VA 23704-5004
(804) 398-6638

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW

Introduction

The University manages a wide variety of hazardous materials at its facilities across the state.

Under the Emergency Planning and Community Right-to-Know Act (EPCRA), there are provisions for emergency planning procedures, and requirements for employers to report the presence of hazardous chemicals in the workplace to certain state and local authorities. The Act is administered by EPA and state and local agencies and is intended to provide the public and local governments with information concerning potential hazards in their communities.

Scope

These procedures describe reporting for planning purposes, and not emergency response.

These procedures apply to all university facilities that store, use, or produce an Extremely Hazardous Substance in excess of the Threshold Planning Quantity.

Definitions

Main Campus: The main campus consists of the Main Campus, Centennial Campus, College of Veterinary Medicine, Method Road and Pylon.

Satellite Facilities are any University facility that is not part of the Main Campus.

MSDS means *Material Safety Data Sheet*

Extremely Hazardous Substance: EPCRA Section 302 Extremely Hazardous Substances (EHSs). The presence of EHSs in quantities in excess of the Threshold Planning Quantity (TPQ) requires certain emergency planning activities to be conducted. The extremely hazardous substances and their TPQs are listed in 40 CFR Part 355, Appendices A and B.

Threshold Planning Quantity (TPQ): Threshold planning quantities for EHS's are provided in 40 CFR 302. For chemicals that are solids, there may be two values. In these cases the lower value applies to solids in powder form (particle size less than 100 u) or if the substance is in solution or molten form. Otherwise, the 10,000 pound value applies.

EHS Reportable Quantity (RQ): Releases of Reportable Quantities (RQ) of EHS'S are subject to state and local reporting under Section 304 of SARA Title III (EPCRA). If a chemical listed under section 302 does not have a CERCLA RQ, a statutory RQ of one pound applies for section 304 reporting. The EHS RQ column lists the one-pound statutory RQ for EHS'S not listed under CERCLA.

LEPC means *Local Emergency Planning Committee*

SERC means *State Emergency Response Center*

Hazardous Substance List is found at 40 CFR 302.4

Mixtures: For many extremely hazardous substances, the MSDS will provide the trade name of a chemical mixture (see Material Safety Data Sheet). If any extremely hazardous substance is a component, the employer must determine whether it comprises more than one (1) percent of the mixture.

- ÿ If there is less than 1 percent of the substance in the mixture, it does not have to be counted.
- ÿ If there is more than 1 percent of the substance in the mixture, the amount is calculated by multiplying the percentage of the extremely hazardous substance by the total mass of the mixture in pounds [40 CFR 355.30(e)].

Note: Alloys, amalgams, and polymers are not considered mixtures

Solids: The extremely hazardous substance list provides two threshold planning quantity figures for solids. The lower threshold planning quantity is for the following:

- Y Any fraction of the solid that is in solution
- Y Any fraction of the solid that is in molten form

If any of these fractions is greater than the lower threshold planning quantity, or if the solid meets the criteria for a National Fire Prevention Association (NFPA) reactivity rating of 2, 3, or 4, reporting is required.

Minimum Threshold Level: The minimum threshold level is 10,000 pounds, unless the chemical is an EHS. For EHS the value is 500 gallons or 55 pounds, or *the* TPQ, whichever is less. Individual LEPCs or fire departments may set lower values.

In Wake County, the minimum threshold level is 500 gallons or 55 pounds for any hazardous material, including petroleum products.

Threshold Quantities (TQ): Threshold Quantities were established under the accident prevention provisions of Section 112(r) of the CAA. The list was published in the January 31, 1994 Federal Register, and codified at 40 CFR 68. The list and TQs identify facilities subject to the CAA accident prevention regulations.

Regulations/References

Federal

42 USC 11001 to 11050 Emergency planning and Community Right-to-Know Act, Codified at 40 CFR 355

40 CFR 355 Appendices A and B and 40 CFR 372. 25, Extremely Hazardous Substances and Threshold Planning Quantity

42 USC 11022 Emergency and Hazardous Chemical Inventory Form, Codified at 40 CFR 370.40 and 40 CFR 370.41.

State

North Carolina Hazardous Chemicals Right-To-Know Act: General Statutes of North Carolina 95-173 to 95-218

Requirements

State/Federal - The North Carolina Hazardous Chemicals Right-To-Know Act provides for the State's reporting and emergency planning rules, which are more stringent and in addition to the Federal EPCRA. State rules require employers to submit hazardous chemical information to the local fire department, including a hazardous substance list and emergency response plan.

New Use Notification - Covered facilities are required to notify the LEPC and SERC within 60 days after the facility first commences production, storage, or use of EHSs in amounts equal to or greater than the TPQ (40 CFR 355.30).

Section 302

Under EPCRA Section 302, covered facilities are required to notify LEPC and SERC within 60 days after the facility first commences production, storage, or use of EHS'S in amounts equal or greater than the TPQ (40 CFR 355.30 and Appendices A and B). The TPQ is the amount of an EHS that, if located at a facility, requires the facility to notify federal, state, and local authorities of the material's presence. This is a one time notification.

Emergency notification requirements under EPCRA Section 302 apply to releases of all substances on the EHS list equal to or in excess of the TPQ located at the facility. The notice rules also apply to substances that are already subject to reporting requirements under CERCLA Section 103(a) -- releases in excess of established reportable quantities that require notification to the National Response Center.

Section 311 - MSDS / Lists of Hazardous Chemicals

Under the EPCRA Section 311 reporting requirements, facilities that are covered by OSHA's hazard communication regulations are also required to comply with EPCRA's MSDS reporting requirements. This requirement specifies that a MSDS must be provided to the LEPC and SERC and local fire department for all substances present at above the minimum threshold level.

Section 312 - Emergency and Hazardous Chemical Inventory Form

Section 312 of Title III requires that a covered facility submit an Emergency and Hazardous Chemical Inventory Form by March 1 of each year.

Tier I and Tier II Forms: The annual inventory form contains basic "Tier I" information on the amount and general location of hazardous chemicals at the facility, aggregated by category. Upon specific request by any of the receiving organizations, a Tier II form must be prepared.

Forms: Forms are available from the LEPC or SERC, or may be obtained from Environmental Affairs.

Fire Department Notification: North Carolina employers that store hazardous chemicals in amounts of 55 gallons or 500 pounds (whichever is more) are required to provide their local fire departments with the following information:

- Current hazardous substance list
- Name and telephone number of the facility emergency contact person

Responsibilities

The operator of a covered satellite facility, which has the hazardous chemicals or materials, is responsible for proper reporting.

Environmental Affairs will provide necessary support material and guidance, as requested by the satellite facility operator.

Environmental Affairs will coordinate the EPCRA-required information for the Main Campus and file the submittal.

Procedure

Hazardous Substance Inventory Reporting

Main Campus

Environmental Affairs will use the chemical inventory data provided as required in Section 100-13 Procedures for the use of Hazardous Materials, of the NC State Safety and Health Management Plan to compile the information required by EPCRA Section 311 and 312.

Supplemental information may be requested by Environmental Affairs of Principal Investigators or operators/supervisors to clarify data or fill data gaps.

Satellite Facilities

The PI, operator, or supervisor of a NC State satellite facility will compile and report the necessary information to the appropriate organizations.

Environmental Affairs will provide assistance and guidance in meeting this requirement.

Reporting Guidelines

Reporting guidelines are provided with this procedure.

