

Spill Prevention, Control and Countermeasure Plan

Introduction

This plan outlines the procedures, methods, and equipment used at the University of Northern Iowa, Cedar Falls, Iowa facility to comply with the EPA oil spill prevention, control and countermeasures standards, inspection, training, and record keeping requirements.

Plant Information

The University of Northern Iowa is a facility for higher education. The facility address is:

University of Northern Iowa
Physical Plant
1801 West 31st
Cedar Falls, Iowa 50614-1092

The facility is classified under Standard Industrial Classification (SIC) Code 8221, Colleges, Universities, and Professional Schools. Oil is delivered by truck to various oil storage tanks.

In general, the oil is used to operate steam and power generating equipment, emergency generators, electrical transformers and switches, and elevators.

Area maps, facility site plans, and equipment location plans are located in Appendix C, Section 8, of this report.

Designated Person Responsible for Oil Spill Prevention – 40 CFR 112.7(f)(2)

Provided below is the name, address, office and home phone numbers of the Facility Response Coordinator, the designated person accountable for oil spill prevention at this facility.

Name:	Michael Zwanziger
Title:	Director, Physical Plant Administration
Address:	Physical Plant Building
Cell Phone:	319/404-8979
Office Phone:	319/273-7826

Facility Description – 40 CFR 112.7(a)(3)

The facility is composed of a number of classroom buildings, common buildings, dormitories, and physical plant buildings. The University Physical Plant uses #2 fuel oil as a backup/boiler start up to generate steam and power for the campus. A number of small emergency generators that use #2 fuel oil are located in or near other buildings across the campus. A number of campus buildings have hydraulic operated elevators with oil storage systems. In addition, there are a number of oil-filled electrical transformers and electrical switches located throughout the campus. Changes in the campus and buildings have changed the number and location of some oil containers since the last SPCC.

The facility is in operation 24 hours per day, 365 days per year.

Site Drawings – 40 CFR 112.7(a)(3)

The campus is located between two water shed intermittent streams, one north and one south of the campus, which join approximately 2,000 feet east of the main campus. The Cedar River is located approximately 8,000 feet east and north of the main campus. All storm water flow is directed to one of these two water shed streams and then flows east to the Cedar River. Appendix C, Section 8, includes a copy of the USGS map of the area. Also included in Appendix C, Section 8 is a small map of the physical plant area and a campus map showing locations of oil storage equipment around the Physical Plant.

Facility Drainage – 40 CFR 112.7(e)(1)

The campus comprises a number of buildings with interconnecting sidewalks and streets. Storm water is directed using street curbs, gutters, water sheds, and underground storm water piping to either the north or south campus site drainage streams.

Storm water around the large 500,000-gallon oil storage tank near the power plant is collected in an earthen containment dike. A valve in the containment drainage system is normally closed. Uncontaminated storm water would drain toward the south campus site drainage stream.

Concrete walls, burms, curbs, and other containment systems would contain spills from storage equipment located inside various campus buildings. Floor drains that are located near the oil storage equipment are part of the sanitary system, not the storm water system.

Storage Facilities – 40 CFR 112.7(a)(3)

A summary of the oil storage equipment located on the Campus, listed below, are located in Section 4 of the Report.

Table 4.1 Oil Storage Facilities

Table 4.2 Electrical Transformers

Table 4.3	Electrical High Voltage Switches
Table 4.4	Elevators
Table 4.5	Emergency Generators

Spill History – 40 CFR 112.7(a)

There were no reported oil spills at this facility in the last five years.

A blank Spill Notification Record form is located in Appendix B of this report.

Potential Spills – 40 CFR 112.7(b)

Spills may occur during the loading and unloading operations of trucks into the various storage tanks. Unloading hose failures or hose connection problems are the expected cause for potential spills in these areas of operation. There is also a possibility of over filling a storage tank. Small storage tanks located in buildings are generally filled by hand from smaller containers.

The physical plant has two fuel storage tanks of 10,000 gallons each. Both tanks have double wall containment. Lube and used oil are contained in 55 gallon drums. There is a potential for spillage during the transfer of fuel and oil within the facility. The potential spillage during this type of operation is small, on the order of 55 gallons. A spill has a slight opportunity to reach the storm water system.

Day-to-day facility operations at the Power Plant present only a small risk for spillage since most of the operations are contained within buildings. There is a potential for spillage during the transfer of oil within the facility. The potential spillage during this type of operation is small, on the order of 55 gallons. Leaks from pumps and piping inside the Power Plant should be detected during the pumping operations. A spill from a 55-gallon drum of used lube oil has a slight opportunity to reach the storm water system. This type of drum spill could be expected during the loading of used oil drums into trucks for delivery off site.

In the unlikely event of a catastrophic tank failure, a substantial spill could occur. The largest petroleum oil storage tank has a capacity of 500,000 gallons. This particular oil storage tank is not being used for daily operation of the Power Plant Boilers and contains only about 13 inches of oil (approximately 27,000 gallons of oil). All oil storage tanks are inspected regularly for any sign of leaks. The oil storage tanks are highly reliable and it is unlikely that a tank rupture will develop. Most oil storage tanks have some form of secondary containment to keep oil spills from getting to waterways.

There are twenty eight emergency generators located in buildings across the Campus. Nine of these emergency generators use diesel fuel while the rest use natural gas for fuel. The maximum oil storage capacity is 898 gallons. All diesel fueled generators have secondary containment and are inspected regularly for any signs of leaks.

There are 58 electrical transformers on site ranging from 75 to 10,000 KVA. The oil capacities are estimated to be from 50 to 2,130 gallons. These electrical transformers are highly reliable and it is highly unlikely that a transformer oil spill would develop. Any oil spill is expected to remain near the transformer and be easily contained due to the small quantity of oil. The few transformers that are located near storm water drains have containment curbs or walls installed. Regular maintenance inspections are used to detect any oil leaking from electrical transformers.

There are 67 electrical high voltage switches on site. The oil capacities are estimated to be from 40 to 415 gallons. These electrical high voltage switches are highly reliable and it is highly unlikely that an oil spill should develop. Any oil spill is expected to remain near the switch and be easily contained due to the small quantity of oil. Regular maintenance inspections are used to detect any oil leaking from electrical high voltage switches.

There are 70 elevators and lifts located in various buildings on site. 50 of these are hydraulic operated elevators using petroleum or soy oil. All elevators have solid piping and metal storage containers that are highly reliable and it is highly unlikely that an oil leak would develop. Spills may occur during filling or testing the oil in the storage tank. Any oil spill is expected to remain near the storage tank and be easily contained due to the small quantity of oil. The few storage tanks located near sanitary drains are having containment curbs or walls installed. An oil leak will effect the operation of the elevator so a leak would be detected quickly. Regular maintenance inspections are used to detect any oil leaking around the elevator oil storage tanks.

The potential for an oil spill due to tampering or vandalism of the noted oil storage containers is very limited. Access to the large power plant storage tanks is restricted and valves are locked. Electrical transformer and high voltage switch oil storage tanks are located in locked cabinets or inside locked fenced enclosures. Oil storage tanks for emergency generators and elevators are all located in separate locked mechanical rooms.

There is a potential for a small oil spill in classroom locations where teachers or students are using oil products. Quantities would be small and any spills would be restricted to a small area. It is unlikely that a spill would reach a waterway. Regular maintenance inspections are used to determine potential classroom oil spills.

Containment – 40 CFR 112.7(c)(1)

Small oil spills located in buildings are contained in the area of the spill usually within the room containing the tank. Concrete curbs, gutters, and walls are used to contain small outside oil spills. Larger storage tanks are located within concrete or earthen containment to control any spillage or leakage. The largest storage tank containment will contain the entire volume of the oil stored within.

Tank #1 (#2 fuel oil storage) is contained by an earthen dike. The dike can be drained of rainwater by a valve located at the south end of the berm. This valve shall remain normally closed.

Tank #2 (E-85 fuel storage) is a double walled tank designed to contain all fuel in the event the primary tank develops a leak.

Containment Capacity

Area	Volume of Largest Tank (Gallons)	Containment Capacity (Gallons)
1 – Fuel Oil Storage #8	500,000	1,423,175
2 – E-85 Fuel Storage #3	10,000	10,000
TOTAL	510,000	1,433,175

Contingency – 40 CFR 112.7(d)

The facility has a written commitment of manpower, equipment, and materials required for expeditiously controlling and removing any harmful quantity of oil discharged. A copy of the contingency plan is included as Section 5 of this report.

Prevention Standards – 40 CFR 112.7(a)(3)(ii)

All oil storage tanks meet underwriter's specification for aboveground storage tanks. Materials of construction are compatible with the material the tanks contain.

The buried piping installations are protected from corrosion by coatings and cathodic protection. Above ground piping is located such that normal vehicular movement around the facility will not damage any piping.

Oil loaders and physical plant personnel are the only employees authorized to transfer or load oil storage tanks.

Electrical transformers and high voltage switches are protected from vehicular damage.

Bulk Storage Containers – 40 CFR 112.8(c)

The 500,000-gallon fuel oil tank is constructed of material compatible with the material stored and the storage conditions.

A visual external inspection by an API 653 certified inspector is scheduled to be completed every 5 years. An internal inspection, plus an external ultrasonic inspection, is scheduled to be completed every 15 years.

Records of inspections and test are kept on file to provide comparison for signs of deterioration.

Emergency Response Action Plan – 40 CFR 112.7(a)(4)

The complete Emergency Response Action Plan is located in Section 5 this report. The general plan is that once a spill of any size is detected the response plan will be implemented as follows:

1. Safeguard life.
2. Immediately initiate action to stop the flow of product if it will not endanger life.
3. Notify the Emergency Response Coordinator of the situation.
4. Contain the product in as small an area as possible in order to reduce clean up.
5. Initiate retrieval of the spilled product quickly to reduce potential hazards.

Disposal Plans – 40 CFR 112.7(a)(3)(v)

Clean-up removal and disposal of any spilled oil will be by trained personnel or approved contractors. These materials will be disposed of in accordance with applicable regulations. Nonhazardous materials will be disposed of at a State approved soil waste facility. An approved Hazardous Waste Contractor will handle hazardous materials.

Security – 40 CFR 112.7(g)

Facility lighting is adequate for nighttime operation of the Physical Plant, the Power Plant area, and security of the facility.

Security of the campus is provided by the UNI security service and should be adequate for handling any small spills that might occur on the campus area.

If oil leaks are noticed, the plant personnel will take the following action:

6. Safeguard life.
7. Immediately initiate action to stop the flow of product if it will not endanger life.
8. Notify the Emergency Response Coordinator of the situation.

Inspections and Records – 40 CFR 112.7(e)

The facility is inspected by site personnel daily in the process of operating the facility. In addition, a formal inspection of the above ground tanks, secondary containment, and

response equipment is conducted monthly. Records of facility site inspections are kept on the Plant Inspection Report and the Facility Security Inspection Checklist forms. A copy of these forms is included in Appendix B of the report. These forms are used as checklists to provide guidance for inspection items and are used as a record of the inspection and its findings. Copies of these records are retained for a minimum of five years or as required by law.

Personnel Training – 40 CFR 112.7(f)

All Physical Plant personnel are instructed in the operation and maintenance of equipment to prevent the discharges of oil and applicable control laws, rules and regulations. Spill prevention training is scheduled and conducted for operating personnel at intervals frequent enough to assure adequate understanding of this SPCC plan. The training will include a description of known spill events or failures, malfunctioning components, and recently developed precautionary measures. A log of all "personnel training" is maintained on site. The Training Lesson Plan and the Personnel Training Logs are maintained and kept on file for five years.

Instructions and phone numbers are publicized and posted at the office regarding the report of a spill to the Environmental Protection Agency and the Iowa Department of Natural Resources.

Instructions and company regulations relating to the facility SPCC are posted conspicuously.

Plan Review, Amendment, and Certification – 40 CFR 112.5(b)

This SPCC Plan is reviewed and evaluated once every five years by the Spill Prevention Coordinator. The SPCC Plan is amended, if required, within six months of the review. Evidence of these reviews shall be recorded in the Plan.

This SPCC Plan is amended whenever there is a change in plant design, construction, operation, or maintenance procedure that materially affects the plant's potential for an oil spill. This SPCC Plan is amended within six months of the change.

All amendments to this SPCC Plan are reviewed and certified by a Professional Engineer. Through this certification, the engineer attests that the SPCC Plan has been prepared in accordance with good engineering practices.