includes facilities which are coal, oil, gas, or nuclear fired. Heat captured cogeneration facilities are not covered under the definition of storm water discharge associated with industrial activity, however, dual fuel cogeneration facilities are included in the definition. When an industrial facility, described by the above coverage provisions of this section, has industrial activities being conducted onsite that meet the description(s) of industrial activities in another section(s), that industrial facility shall comply with any and all applicable monitoring and pollution prevention plan requirements of the other section(s) in addition to all applicable requirements in this section. The monitoring and pollution prevention plan terms and conditions of this multi-sector permit are additive for industrial activities being conducted at the same industrial facility (co-located industrial activities). The operator of the facility shall determine which other monitoring and pollution prevention plan section(s) of this permit (if any) are applicable to the facility.

¹Storm water discharges from coal piles are eligible for coverage under this permit, where these discharges are not already subject to an existing NPDES permit.

The production of electrical energy always involves the conversion of some other form of energy. The two most important sources of energy which are converted to steam electric energy are the chemical energy of fossil fuels and the atomic energy of nuclear fuels. Current uses of fossil fuels are based on a combustion process, followed by steam generation to convert the heat first into mechanical energy and then to convert the mechanical energy into electrical energy. Nuclear power plants utilize a cycle similar to that used in fossil fueled power plants except that the source of heat is atomic interactions rather than the combustion of fossil fuel.

The steam electric power generating process for fossil fuel systems are typically enclosed and subject to effluent limitations guidelines [40 Code of Federal Regulations (CFR) Part 423], as is coal pile runoff. However, the unloading and transport of coal within the facility is subject to the conditions set forth in this section of today's permit. Likewise, the unloading and storage areas for liquid fuels and chemicals are subject to the conditions in this section of today's permit.

Industrial activities occurring at steam electric power generating facilities that pertain to the storm water rule include, "* * but [are] not limited to, storm water discharges from industrial plant yards; material handling sites; refuse

sites; sites used for the application or disposal of process wastewaters (as defined at 40 CFR Part 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials and intermediate and finished materials; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water" (40 CFR 122.26(b)(14)). Common industrial activities at steam electric power generating facilities include the unloading, transport, and storage of raw materials, and the disposal of waste materials.

Significant materials include, "* * * but [are] not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; * * * hazardous substances designated under Section 101(14) of CERCLA; any chemical facilities required to report pursuant to Section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges" (40 CFR 122.26(b)(12)). Significant materials commonly found at steam electric power generating facilities include: coal; diesel fuel; and waste materials.

Historically, steam electric power generating facilities were categorized in accordance with the type of fuel they burned. Recently, however, steam electric power generating facilities have modified their equipment to enable them to use more than one fuel. Presented below are brief descriptions of the industrial activities and significant materials associated with the production of steam electric power. Due to the increase in facilities burning multiple fuels the industrial activities and significant materials are discussed together. However, the industrial activities and significant materials for nuclear powered facilities are discussed separately. Unique practices are noted.

a. Industrial Activities: Fossil Fuel Powered Plants. Steam electric power generation can be divided into four stages. In the first operation, fossil fuel (coal, oil, or natural gas) is burned in a boiler furnace. The evolving heat is used to produce pressurized and superheated steam. This steam is conveyed to the second stage, the turbine, where it gives energy to the rotating blades and, in the process, loses pressure and increases in volume. The rotating blades of the turbine act to drive an electric generator or alternator to convert the imparted mechanical energy into electrical energy. The steam leaving the turbine enters the third state, the condenser, where it is condensed to water. The liberated heat is transferred to a cooling medium which is normally water. Finally, the condensed steam is reintroduced into the boiler by a pump to complete the cycle.

Features unique to coal-fired plants include coal storage and preparation (transport, beneficiation, pulverization, drying), coal-fired boiler, ash handling and disposal systems, and flue gas cleaning, and desulfurization.

b. Significant Materials: Fossil Fuel Powered Plants. The type of fuel (coal, oil, gas, nuclear) used to fire power plant boilers most directly influences the number of waste streams. The influence comes principally from the effect of fuel on the volume of ash generated. Stations using heavy or residual oils generate fly ash in large quantities and may generate some bottom ash. Stations which burn coal create both fly ash and bottom ash. Bottom ash is the residue which accumulates on the furnace bottom, and fly ash is the lighter material which is carried over in the flue gas stream.

c. Industrial Activities: Nuclear Powered Plants. Nuclear power plants utilize a cycle similar to that used in fossil fueled power plants except that the source of heat is atomic interactions rather than the combustion of fossil fuel. Water serves as both moderator and coolant as it passes through the nuclear reactor core. In a pressurized water reactor, the heated water then passes through a separate heat exchanger where steam is produced on the secondary side. This steam, which contains radioactive materials, drives the turbines. In a boiling water reactor, steam is generated directly in the reactor core and is then piped directly to the turbine. This arrangement produces some radioactivity in the steam and therefore requires some shielding of the turbine and condenser.

d. Significant Materials: Nuclear Powered Plants. Few if any significant materials are exposed to storm water at nuclear powered steam electric facilities. Materials that are potentially exposed do not involve steam electric generating equipment, raw materials, or waste products. The materials that are exposed to storm water are office wastes and ground maintenance equipment and tools.

2. Pollutants in Storm Water Discharges Associated With Steam Electric Power Generating Facilities

Steam electric generating facilities are subject to effluent limitations guidelines that limit the number and variety of