



Florida Department of Environmental Protection

WATER QUALITY 101

National Pollutant Discharge Elimination System (NPDES)

October 2017





NPDES Program

Background

- Florida authorized to administer NPDES wastewater component in 1995
- Florida authorized to administer NPDES stormwater component in 2002
- Approximately 20,000 permits
 - Majority → generic stormwater permits



Industrial Wastewater

- All wastewater that is not defined as domestic wastewater.
- Includes process and non-process wastewater from
 - Manufacturing
 - Phosphate mining
 - Pulp and paper mills
 - Brine discharges from drinking water plants
 - Agricultural production
 - Steam Electric Power Plant discharges
 - Etc.

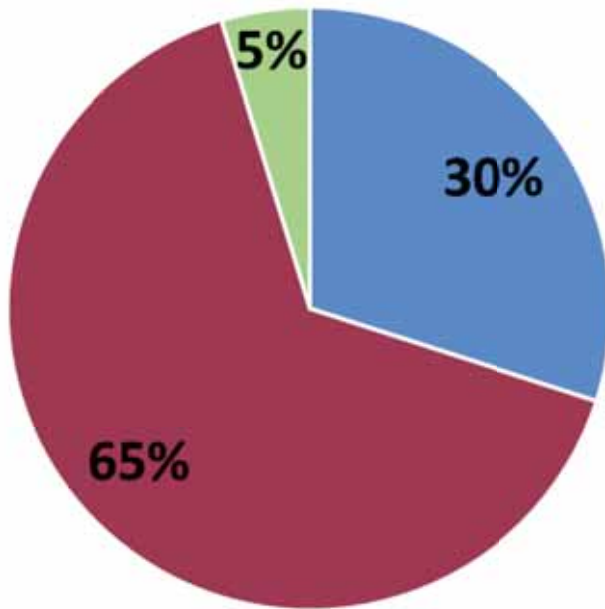




Types of Industrial Wastewater Permits

Total Industrial Wastewater Facilities*

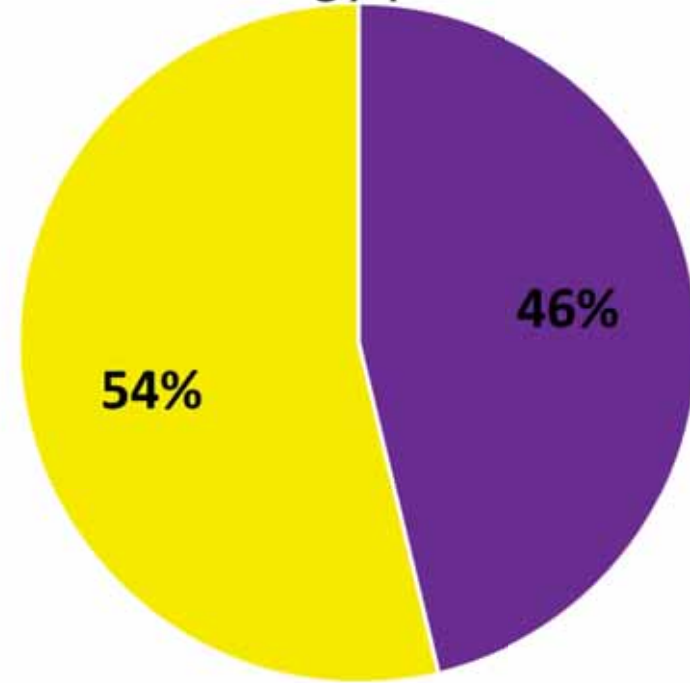
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■ Individual ■ Generic ■ General

Individual Permits*

574



■ Surface Water (NPDES) ■ Non-Surface Water



General Permits (non-NPDES)

- Permit issued by rule of the Department pursuant to section 403.814, F.S.
- Authorize a person to undertake certain activities, which when performed in accordance with the specific requirements and practices set forth in the general permit have a minimal adverse environmental effect.
- Any person complying with the requirements of a general permit may use the permit 30 days after giving notice to the Department without any agency action.



General Permits (non-NPDES)

- **General Permit for a Wastewater Disposal System for a Laundromat**
 - Rule 62-660.801, F.A.C.
- **General Permit for Car Wash Systems**
 - Rule 62-660.803, F.A.C.
- **General Permit for Sand and Limestone Mines**
 - Rule 62-660.804, F.A.C.
- **General Permit for Disposal of Tomato Wash Water**
 - Rule 62-660.805, F.A.C.
- **General Permit for Disposal of Fresh Citrus Fruit Wash Water**
 - Rule 62-660.806, F.A.C.



Generic Permits

- Regulate a category of wastewater facilities or activities if they all:
 - Involve the same or substantially similar types of operations;
 - Discharge the same types of wastes or engage in the same types of residuals or industrial sludge use or disposal practices;
 - Require the same effluent limitations, operating conditions, or standards for residuals or industrial sludge use or disposal; and
 - Require the same or similar monitoring.
- Generic Permits can be:
 - NPDES
 - Non-NPDES



Generic Permits

- **Generic Permit for Discharges from Petroleum Contaminated Sites**
 - Rule 62-621.300(1), F.A.C.
- **Generic Permit for Discharge of Ground Water from Dewatering Operations**
 - Rule 62-621.300(2), F.A.C.
- **Generic Permit for Discharges from Concrete Batch Plants**
 - Rule 62-621.300(3), F.A.C.
- **Generic Permit for Pollutant Discharges To Surface Waters of the State From the Application of Pesticides**
 - Rule 62-621.300(8), F.A.C.
- **Generic Permit for Discharges from Fresh Citrus Fruit Packinghouses to Percolation Ponds**
 - Rule 62-621.500(1), F.A.C.

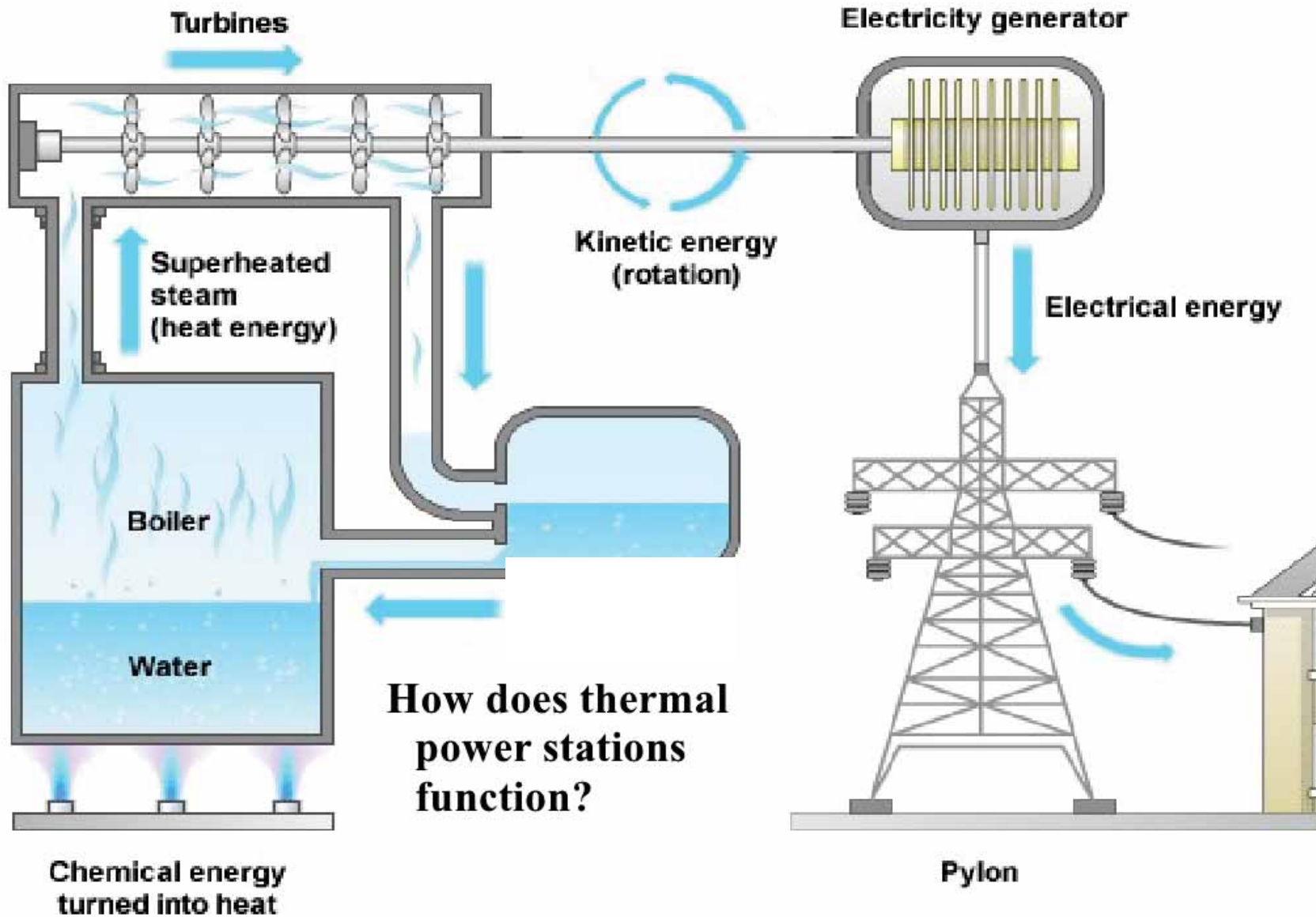


Individual Permits

- Facility Specific
- Permit Application
- Draft Permit
 - Public notice
 - EPA and other agencies review and comment
- Intent to Issue
 - Public notice
- Final Permit



Steam Electric Power Plants





Wastewater Generated

- Cooling water intake and the intake structures
- Thermal discharge, i.e. hot water
- Filter 'backwash'
- air scrubber water
- coal pile runoff
- ash pile runoff
- other stormwater
- *Boiler blowdown*, metal cleaning, reverse osmosis, i.e. concentrated metals
- domestic sewage
- Plus: plant drains, labs, tank farms, *demineralizer regeneration waste*, equipment washdown, etc.



Pollutant Types

- Heat - hot water discharged to lakes, rivers, estuaries, Atlantic Ocean, Gulf of Mexico
- Metals - iron, lead, copper, sodium, nickel, zinc, to name a few
- Organic material passing through the plant cooling water
- *Biocides* - chemicals used to stop algae clams, barnacles, etc. out of intakes, piping, cooling towers, etc.
- Oily waste from industrial lubricants and fuel
- Plus: nitrate, ammonia, acids, alkalis, and more

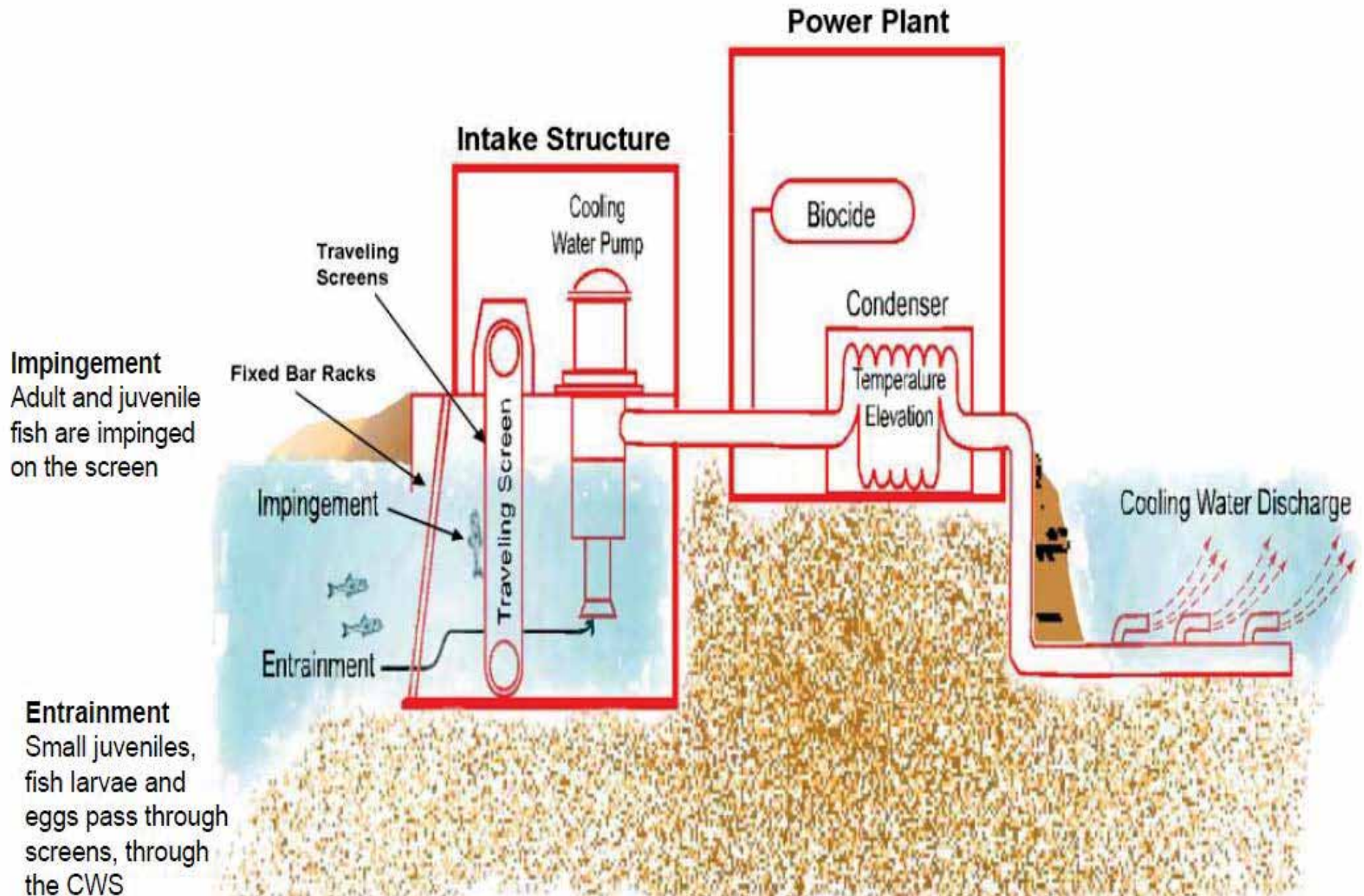


Thermal Discharges & Intake Structures





COOLING WATER SYSTEM



Impingement
Adult and juvenile fish are impinged on the screen

Entrainment
Small juveniles, fish larvae and eggs pass through screens, through the CWS



Click arrow below to active video





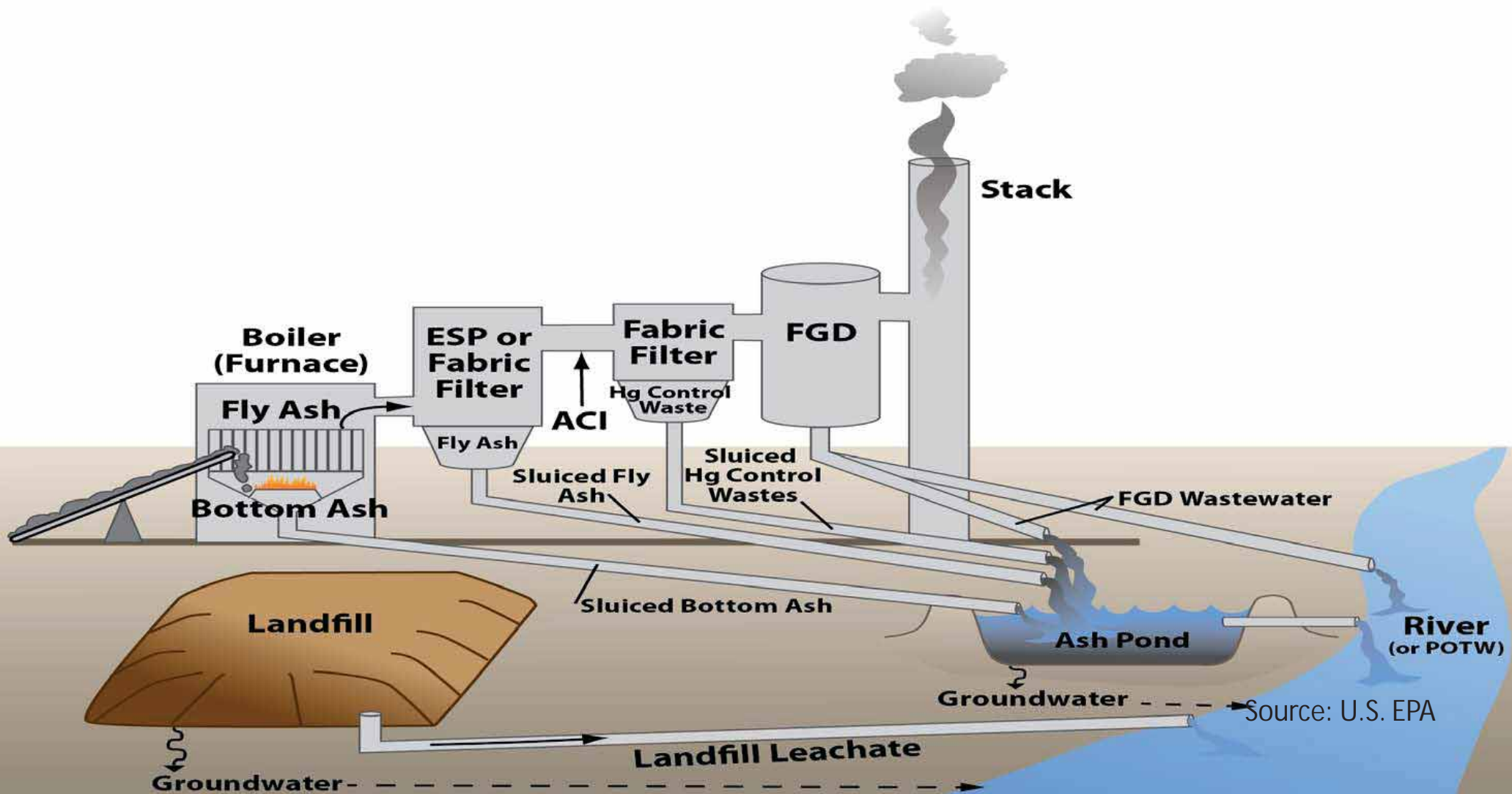
Updated Effluent Guidelines for Steam Electric Power Plants

- On November 3, 2015, the U.S. EPA published updates to the technology-based effluent limitations guidelines and standards for discharges from steam electric power plants (40 CFR 423).
- The rule became effective on January 4, 2016.
- The rule updates primarily affect certain wastewater streams of coal-fired steam electric power plants.
- Each plant must comply between November 1, 2018 and December 31, 2023 depending on when a new or renewed NPDES permit is issued and site-specific circumstances.
- In September 2017, U.S. EPA postponed earliest compliance date for flue gas desulfurization wastewater & bottom ash transport water to November 1, 2020



Steam Electric Effluent Guidelines (ELGs)

Steam Electric Effluent Guidelines (ELGs)



Source: U.S. EPA

ACI: Activated carbon injection ESP: Electrostatic precipitator FGD: Flue gas desulfurization Hg: Mercury



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