

2006 Inventory Update Reporting
A General Summary of IUR-related Issues for Utilities
October 19, 2006

We have received numerous questions from utilities, and therefore have prepared a summary of the information most frequently requested. The following may or may not apply to your specific utility. This information is very general, and each utility needs to consider its own systems. This information is in no way comprehensive, but should provide enough information to help you evaluate your own systems.

Note that this in no way replaces either the regulation or the guidance materials available on our website. Please go to www.epa.gov/oppt/iur for those materials.

If your utility burns either coal or wood to generate energy, then you may produce some of the following chemical substances as byproducts:

1. *Ashes, Residues* (CAS RN 68131-74-8). Definition: The residuum from the burning of a combination of carbonaceous materials. The following elements may be present as oxides: aluminum, calcium, iron, magnesium, nickel, phosphorus, potassium, silicon, sulfur, titanium, and vanadium. A utility may call this material fly ash, bottom ash, bed ash, or wood ash.
2. *Slags, Coal* (CAS RN 68476-96-0). Synonym: Electric utility boiler slag (coal)
Definition: Inorganic residuum from the combustion of coal

Substances produced by flue gas emission control systems can include:

1. *Slimes And Sludges, Coal Flue Gas Scrubber Thickener Underflow* (CAS RN 71808-58-7). Definition: The product from the thickeners used in the flue gas wet scrubbing system of coal burning steam electric plant. Consists primarily of the oxides of aluminum, calcium, iron, magnesium, potassium, silicon, sodium, and sulfur.
2. *Slimes And Sludges, Flue Gas Desulfurization* (CAS RN 71302-92-6).
Definition: The waste product from flue gas desulfurization system. Consists primarily of CaCO₃, CaSO₃, CaSO₄ and fly ash.
3. *Slimes and Sludges, Flue Gas Desulfurization, Stabilized* (CAS No. 71302-93-7).
Definition: The stabilized waste product obtained by mixing the scrubber waste from the flue gas desulfurization system with fly ash and lime, Composed primarily of the scrubber sludge, calcium sulfoaluminates, and comparable sulfite.
4. *Waste Solids, Calcium Sulfate-Ash Sludges* (CAS RN 70969-48-1). (no definition provided with CAS listing)

Byproducts, in general, are reportable unless they have no commercial purpose or their only commercial purpose is for

...use by public or private organizations that (1) burn it as a fuel, (2) dispose of it as a waste, including in a landfill or for enriching soil, or (3) extract component chemical substances from it for commercial purposes. (This exclusion only applies to the byproduct; it does not apply to the component substances extracted from the byproduct.) (40 CFR 720.30(g), referenced by 710.50(c))

Each utility will need to determine if any of the byproduct substances listed above meet the requirements of 720.30(g). If not, the byproduct substance is subject to reporting under the IUR.

Note that further processing of a byproduct to prepare it for a use is considered manufacturing. For example:

Slimes and sludges, flue gas desulfurization [CAS RN 71302-92-6] is defined as “The waste product from flue gas desulfurization system. Consists primarily of CaCO_3 , CaSO_3 , CaSO_4 and fly ash.” This CASRN can be used if what you produce is consistent with this chemical name and definition. However, if synthetic gypsum is produced from “Slimes and sludges, flue gas desulfurization” by additional processes such as oxidation, then the **synthetic** gypsum should be identified as calcium sulfate and is separately reportable under IUR.

Various methods are used to scrub the flue gas, processing it for disposal. You may possibly be doing one of the following:

1. Manufacture ammonia from urea. The ammonia is used to scrub the NO_x from the flue gas. The manufactured ammonia is reportable under IUR by its manufacturer. Ammonia purchased and used for this purpose is not reportable by the user. Slip gas – the ammonia that doesn't react and escapes with the N_2 and H_2O is not separately reportable (in other words, you already reported that ammonia as part of the ammonia you manufactured or, if you purchased the ammonia, it was already reported by its manufacturer or importer). As there is no commercial purpose associated with the N_2 and H_2O and they are treated as a waste, you do not need to report those substances.
2. Manufacture calcium hydroxide (or a calcium hydroxide/magnesium hydroxide mixture) from lime slurry, calcium carbonate slurry, or similar material. This material is used to scrub the SO_2 from the flue gas, resulting in the production of flue gas desulfurization (FGD) materials. This process also may involve the manufacture and use of calcium thiosulfate (CaS_2O_3) in the FGD module. The calcium thiosulfate would be considered a non-isolated intermediate and is exempt from reporting under IUR because it is never removed from the FGD module in which it is formed and is used for the purpose of altering the rate of the chemical reaction between sulfur dioxide and calcium hydroxide. FGD materials are likely to be reportable unless they are disposed of as a waste.

You may manufacture other substances for different applications at your site. For instance, you may use quicklime in your wastewater treatment system. Mixing the quicklime with water produces calcium hydroxide, which is the substance used in the wastewater treatment system. The calcium hydroxide you are manufacturing is reportable.

You should report the total amount of a substance manufactured at your site, not the separate amounts for each process at your site. For instance, in the examples provided above, you would add the amount of calcium hydroxide manufactured for the FGD system and the amount manufactured for the wastewater treatment system together and report the total manufactured. Do not report any amounts purchased (unless the material is imported and you served as the importer).