

Title (en)

TARGETED REAGENT INJECTION FOR SLAG CONTROL FROM COMBUSTION OF COALS HIGH IN IRON AND/OR CALCIUM

Title (de)

GEZIELTE REAGENZINJEKTION FÜR DIE REDUKTION VON SCHLACKE AUS DER VERBRENNUNG VON EISEN- UND/ODER CALCIUMREICHER KOHLE

Title (fr)

INJECTION DE RÉACTIF CIBLÉ POUR LA COMMANDE DE SCORIES PROVENANT DE LA COMBUSTION DE CHARBONS À TENEUR ÉLEVÉE EN FER ET/OU CALCIUM

Publication

EP 2318489 B1 20150902 (EN)

Application

EP 09795277 A 20090713

Priority

- US 2009050354 W 20090713
- US 8000408 P 20080711

Abstract (en)

[origin: WO2010006325A1] Disclosed is a process that increases the output of a combustor fired with coal having high iron and/or calcium content, by reducing the tendency of slag to form on heat exchange surfaces and changing the nature of the slag to make it easier to remove. The process includes combusting a slag-forming coal, having high iron and/or calcium content, with an overall excess of oxygen; moving the resulting combustion gases through heat exchange equipment under conditions which cause cooling of slag formed by burning the fuel; and prior to contact with said heat exchange equipment, introducing aqueous aluminum trihydroxide in amounts and with droplet sizes and concentrations effective to decrease the rate of fouling, and preferably, increase the friability of the resulting slag. Desirably, the aluminum trihydroxide reagent is introduced in the form of an aqueous liquid and computational fluid dynamics is employed to determine flow rates and select reagent introduction rates, reagent introduction location(s), reagent concentration, reagent droplet size and/or reagent momentum. In a preferred aspect, the feed rate will be up to about 6 pounds ATH per ton and preferably with up to about 2 pounds Mg(OH)₂ per ton of coal. A process is also provided for cleaning and maintaining cleanliness of a combustor.

IPC 8 full level

C10L 10/04 (2006.01); **C10L 10/06** (2006.01); **F23J 7/00** (2006.01)

CPC (source: EP KR US)

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