Abstract

Title of Invention

HYDROGEN AND AMMONIA PRODUCTION SYSTEM

A hydrogen and ammonia production system (1) is a hydrogen and ammonia production system for use at a plant (10) including a boiler (16) that discharges boiler blowdown water (F3) and an exhaust gas treatment device (19) that discharges a wastewater (F1) from exhaust gas treatment. The hydrogen and ammonia production system (1) includes: a first ammonia recovery device (21) that produces a first concentrated ammonia solution (F4) by subjecting the wastewater (F1) from exhaust gas treatment to a stripping treatment; a second ammonia recovery device (22) that produces a second concentrated ammonia solution (F8) by subjecting the boiler blowdown water (F3) and the first concentrated ammonia solution (F4) to a stripping treatment; an ion removal device (27) that separates a wastewater (F9) discharged from the second ammonia recovery device (22) into a concentrated ionic solution (F10) serving as an alkali source in a wastewater treatment in the plant (10) and permeated water (F11); and a water electrolysis device (28) that produces hydrogen (F12) by electrolyzing the permeated water (F11).

(FIG. 1)