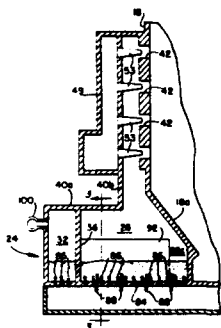


fluidized to minimize the heat input requirements. Once the central portion of the bed has been heated to the required temperature, primary fuel is delivered to sustain combustion without the start-up burner. At the completion of the start-up process and during high fire conditions all of the tubes are pressurized to fluidize the entire bed.

4344371

**VAPOR GENERATING SYSTEM  
HAVING INTEGRALLY FORMED  
GASIFIERS EXTENDING  
TO EITHER SIDE OF THE HOPPER  
PORTION OF THE GENERATOR**

Robert J. Zoschak; Assigned to Foster Wheeler Energy Corporation



A vapor generating system in which a furnace section is provided that is formed by four upright walls, the lower portion of two opposed walls being slanted inwardly to form a hopper portion. A plurality of openings are formed in each of the opposed walls immediately above its slanted portion. Two gasifiers extend adjacent said opposed wall portions, respectively, and surround the respective slanted wall portions and openings, so that the respective interiors of the gasifiers communicate with the openings. A bed of adsorbent material is supported in each gasifier for adsorbing the sulfur generated as a result of the gasification of fuel introduced into the gasifier and air is passed through the bed of adsorbent material to fluidize said material so that, upon combustion of said fuel, a substantially sulfur-free product gas is produced which passes from the gasifier, through the openings and into the furnace section.

4343926

**FLUIDIZED BED  
TERPOLYMERIZATION  
OF ETHYLENE, PROPYLENE  
AND NON-CONJUGATED DIENE**

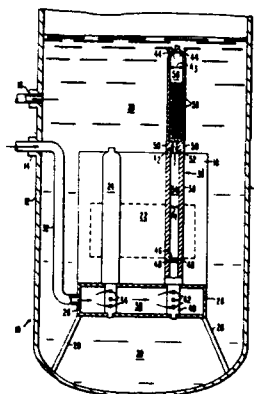
Francois Caumartin; Jean L. Vidal; Pierre Mangin assigned to Naohtachimie Societe Anonyme

The invention concerns a process for the production of elastomeric terpolymers of ethylene, propylene and dienes by the direct polymerization of the monomeric olefines in the gaseous state, in contact with a catalytic system comprising one or more solid compounds of titanium. The resulting terpolymers which are produced in the form of powders can be used without intermediate transformation for the production of molded or extruded articles.

4343764

**NUCLEAR REACTOR CONTROL  
COLUMN**

Dennis M. Bachovchin; assigned to The United States of America as represented by the United States Department of Energy



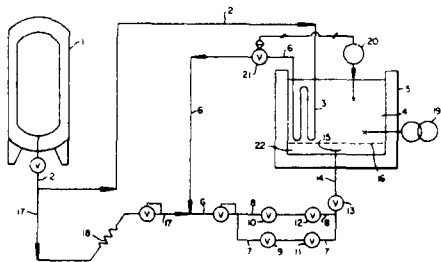
The nuclear reactor control column comprises a column disposed within the nuclear reactor core having a variable cross-section hollow channel and containing balls whose vertical location is determined

by the flow of the reactor coolant through the column. The control column is divided into three basic sections wherein each of the sections has a different cross-sectional area. The uppermost section of the control column has the greatest cross-sectional area, the intermediate section of the control column has the smallest cross-sectional area, and the lowermost section of the control column has the intermediate cross-sectional area. In this manner, the area of the uppermost section can be established such that when the reactor coolant is flowing under normal conditions therethrough, the absorber balls will be lifted and suspended in a fluidized bed manner in the upper section. However, when the reactor coolant flow falls below a predetermined value, the absorber balls will fall through the intermediate section and into the lowermost section, thereby reducing the reactivity of the reactor core and shutting down the reactor.

4343634

### PROCESS FOR OPERATING A FLUIDIZED BED

Robert B Davis; assigned to Union Carbide Corporation



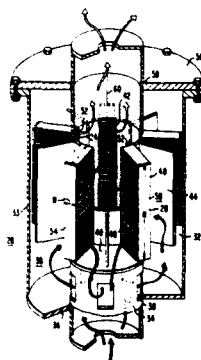
In a process for operating a fluidized bed, wherein the bed particles have a Reynolds number of less than 20, at a predetermined cryogenic temperature comprising (i) bringing a cryogenic fluid into indirect contact with the bed; (ii) permitting the fluid to vaporize at the area of indirect contact whereby the bed is cooled; and (iii) utilizing the vapor from step (ii) to fluidize, and further cool, the bed, said

cooling in steps (ii) or (iii) being from ambient temperature to the predetermined cryogenic temperature, the improvement comprising changing, continuously or stepwise, the minimum fluidizing mass accordance with a specified equation.

4343631

### HOT GAS PARTICULATE REMOVAL

David F. Ciliberti; assigned to Westinghouse Electric Corp



Filtration system configurations particularly useful for cleaning high temperature raw gas containing fine particulates such as that discharged from coal gasification and fluidized bed combustion processes. Thin filter elements, having elongated clean channels on one side of a gas permeable ceramic membrane and shorter dirty channels on the other side, extend radially outward from a central duct. Raw gas flows about and through the filter elements, and clean gas which permeates the membrane enters the duct. The elements are cleaned by a back pulse of clean air, spitting the particulates to the bottom of the containing vessel and through an outlet. A high density filter packing within a containing pressure vessel is achieved by nesting a plurality of the duct and filter element modules, or through other orientations and filter element configurations.