

Title (en)  
IMPROVED PRESSURE PULSE CLEANING METHOD

Publication  
**EP 0422266 B1 19930421 (EN)**

Application  
**EP 89118848 A 19891011**

Priority  
EP 89118848 A 19891011

Abstract (en)  
[origin: EP0422266A1] Apparatus for loosening and removing sludge and other impurities from the interior of a heat exchanger vessel (5) which may be the secondary side (5) of a nuclear steam generator (1). The apparatus generally comprises a nozzle (111) having a first end that is detachably mountable into an access opening (53a, 53b) such as a sludge lance port (53a, 53b) in the secondary side of the generator, and a second end that extends into the interior of the secondary side (5) at a downward angle relative to the tubesheet (7) in the vessel (5) for minimizing the stresses applied to the heat exchanger tubes (22), and for uniformly reflecting the pulse back up toward the upper portions of the secondary side (5). The apparatus preferably further comprises a recirculation system (114) for purifying the water within the generator (1) while a pulse generator (60a, 60b) emits a succession of sludge and debris loosening pulses therein. An array of inlet and suction tubes (121a, 121b) are further provided so that the sludge and debris may be removed.

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**F22B 37/48**; **F28G 7/00**

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