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(54) Title: IMPROVED SCALE CONDITIONING AGENTS

(57) Abstract: The present invention provides an improved scale conditioning composition and method that results in improved dissolution and disruption of tube scale, hardened sludge and other deposits composed primarily of highly densified magnetite such as those found in heat exchange vessels. After treatment with the advanced scale conditioning composition, these magnetite rich deposits are more easily removed using known and commercially available high pressure hydro-mechanical cleaning techniques. The present invention further provides effective cleaning in a short period of time and at relatively low temperatures, while reducing the amount of waste produced and reducing the resulting corrosion of carbon and low alloy steel components within the steam generator during the cleaning process.

**INTERNATIONAL SEARCH REPORT**

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**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : C11D 1/66  
 US CL : 134/3, 2, 1, 40; 510/434, /247,365,238; 252/180

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 134/3, 2, 1, 40; 510/434, /247,365,238; 252/180

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 CAS ONLINE

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A ✓	US 3,996,062 A (FROST et al) 07 December 1976 (7.12.1976)	1-13
A ✓	US 4,586,961 A (BRADLEY et al) 06 May 1986 (06.05.1986)	1-13
A ✓	US 4,972,805 A (WEEMS) 27 November 1990 (27.11.1990)	1-13
A	US 5,764,717 A (ROOTHAM) 09 June 1998 (09.06.1998)	1-13

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See patent family annex.

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