

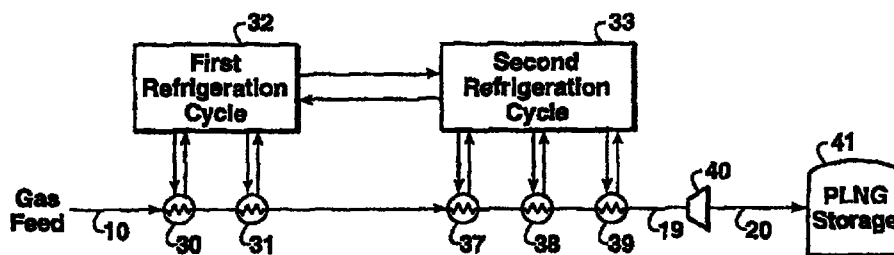


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International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶: F25J 3/06, 5/00	A1	(11) International Publication Number: WO 98/59207 (43) International Publication Date: 30 December 1998 (30.12.98)
(21) International Application Number: PCT/US98/12743 (22) International Filing Date: 18 June 1998 (18.06.98) (30) Priority Data: 60/050,280 20 June 1997 (20.06.97) US 60/079,680 27 March 1998 (27.03.98) US (71) Applicant: EXXON PRODUCTION RESEARCH COMPANY [US/US]; 3120 Buffalo Speedway, P.O. Box 2189, Houston, TX 77252-2189 (US). (72) Inventors: COLE, Eric, T.; 3607 Whispering Brook Drive, Kingwood, TX 77345 (US). BOWEN, Ronald, R.; 37602 Pinwood Court, Magnolia, TX 77355 (US). (74) Agents: CASAMASSIMA, Salvatore, J. et al.; Exxon Pro- duction Research Company, P.O. Box 2189, Houston, TX 77252-2189 (US).	(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the</i> <i>claims and to be republished in the event of the receipt of</i> <i>amendments.</i>	

(54) Title: IMPROVED CASCADE REFRIGERATION PROCESS FOR LIQUEFACTION OF NATURAL GAS**(57) Abstract**

This invention relates to a process for liquefying a pressurized gas stream (10) rich in methane with a heat exchanger being cooled by a cascade refrigeration system to produce a methane-rich liquid product (20) having a temperature above about -112°C (-170°F). In this process, a pressurized gas stream (10) is introduced into heat exchange contact with a first refrigerant cycle (32) comprising at least one refrigeration stage (30-31) whereby the gas stream is cooled against a first portion of a first refrigerant to produce a cooled gas stream. The cooled gas stream is then introduced into heat exchange contact with a second refrigerant cycle (33) comprising at least one refrigeration stage (37-39) whereby the temperature of the cooled gas stream is cooled to produce a liquefied methane-rich stream (20) having a temperature above about -112°C (-170°F) and a pressure sufficient for the liquefied stream to be at or below its bubble point.