The developers plan to expand the facility to commercial size and have it operating by 1990; the capacity will be 30 000 tons per day (five 6 000 tpd modules).

All the other CCC methods are only at the bench or pilot-plant scale of development.

Process Evaluation: Chemical coal cleaning has the same problem as physical cleaning--difficulty in getting a high degree of removal without incurring high cost. Although most of the chemical cleaning methods will do better than physical cleaning processes in removing both pyritic and organic sulphur, especially the latter, overall removal is usually considered to be in the range of 60 to 75%. SRC does better than the others because the hydrogenation promotes sulphur removal; the process probably can make 85% removal at a cost competitive with wet scrubbing, but 90% or higher removal of sulphur is a difficult objective.

Cost: Because of the chemical steps involved, chemical coal cleaning costs considerably more than physical cleaning methods. The cost per lb of sulphur removed ranges from $0.253 to $0.44. In contrast, the estimated cost for FGD, which was assumed to remove 85% of the SO_2 as compared to 59 to 73% for the CCC processes, is estimated at $0.237 per lb of sulphur.

Various cost estimates have been published for SRC. EPRI estimates indicate a cost of about $4.50 per million Btu for SRC, which corresponds to about $113 per ton of Eastern coal (at 12 500 Btu/lb). This is considerably higher than the levels estimated for use of raw coal plus scrubbing, which are $25 to $30 per ton for the coal and $10 to $15 per ton for the scrubbing. However, SRC has several advantages such as low ash content that give other savings, thus making the cost comparison quite complicated. At the best, the process does not seem likely to be competitive with flue gas scrubbing at 90% and higher removal requirement.

Reliability: It should be noted that the cost comparison between CCC and FGD is affected in a major way by how the reliability problem is handled. CCC can be considered completely reliable to the power plant operator on the basis that the CCC plant will maintain a stockpile of product to assure an uninterrupted supply. For FGD, however, full reliability cannot be assumed and in fact has not been attained in most operating systems. The same criticism applies of course to all other components of the power train, from fuel input to the generator output.