

## 1. INTRODUCTION

This final technical report covers progress achieved and work performed during the period of July 1, 1976 through November 30, 1978 on DOE contract No. EX-76-C-01-2036 - Installation and Operation of Chem Systems' Liquid Phase Methanation (LPM) Pilot Plant. This pilot plant was designed and built as part of a prior ERDA contract, E(49-18)-1505. During the reporting period, the LPM Pilot Plant was shipped to IGT's HYGAS Pilot Plant in Chicago, Illinois, and reassembled and operated. This report describes the installation work, pre-operational testing and results from the seven runs. Also presented are results from laboratory work done in support of the pilot plant experimental program. An experimental study of the rates of carbon formation in methanators was initiated in July, 1977. Results from this laboratory program are also presented.