

**AGENCY FOR INTERNATIONAL DEVELOPMENT**  
**PROJECT PAPER FACESHEET**  
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 3

2. COUNTRY/ENTITY  
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3. DOCUMENT REVISION NUMBER

4. PROJECT NUMBER

5. BUREAU  
 a. Symbol NE    b. Code 4

6. ESTIMATED FY OF PROJECT COMPLETION  
 FY 1970

7. PROJECT TITLE - SHORT (stay within brackets)  
 Suez Cement Company

8. ESTIMATED FY OF AUTHORIZATION/OBLIGATION  
 a. INITIAL 6/76    b. FINAL FY 7/6

9. ESTIMATED TOTAL COST (\$000 or equivalent, \$1 = 0.39)

a. FUNDING SOURCE	FIRST YEAR FY 70			ALL YEARS		
	b. FX	c. L/C	d. Total	e. FX	f. L/C	g. Total
<b>AID APPROPRIATED TOTAL</b>						
(Grant)	( 90,000 )	( )	( 90,000 )	( 90,000 )	( )	( 90,000 )
(Loan)	( )	( )	( )	( )	( )	( )
Other						
1.						
2.						
U.S.						
U.S. 1.						
U.S. 2.						
HOST GOVERNMENT		12,804	12,804		12,804	12,804
OTHER DONOR(S)		58,696	58,696		58,696	58,696
<b>TOTALS</b>	90,000	71,500	161,500	90,000	71,500	161,500

10. ESTIMATED COSTS/AID APPROPRIATED FUNDS (\$000)

b. Appropriation (Alpha Code)	c. Primary Purpose Code	d. Primary Tech. Code	FY 70		FY 71		ALL YEARS						
			e. Grant	f. Loan	g. Grant	h. Loan	i. Grant	j. Loan	k. Grant	l. Loan			
SA	930	831	90,000							90,000			
<b>TOTALS</b>													

11. ESTIMATED EXPENDITURES

12. PROJECT PURPOSE(S) (stay within brackets)  Check if different from PID/PRP N/A (NOT TID or PRP)

Finance a portion of the cost of goods and services required to construct a million-ton-per-year cement plant near Suez City.

13. WERE CHANGES MADE IN BLOCKS 12, 13, 14, or 15 OF THE PID FACESHEET? IF YES, ATTACH CHANGED PID FACESHEET.

N/A  Yes     No

14. ORIGINATING OFFICE CLEARANCE

Signature: *Selig A. Taubenblatt*  
 Selig A. Taubenblatt

15. Date Received in AID/W, or For AID/W Documents, Date of Distribution

Title: Deputy Director, NE/CD

Date Signed: mo. 06 day 24 yr. 76

mo. 06 day 24 yr. 76

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EGYPT

SUEZ CEMENT COMPANY

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TO  
Project Paper

EGYPT: SUEZ CEMENT COMPANY

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ABBREVIATIONS USED

ARE	Arab Republic of Egypt
GOE	Government of Egypt
SOC	Suez Cement Company
GOFI	General Organization for Industrialization
ECO	Egypt Cement Office
ASEA	Arab-Swiss Engineering Company
IBRD	International Bank for Reconstruction and Development
MOHR	Ministry of Housing and Reconstruction
EEA	Egyptian Electricity Authority
TCC	Tourah Cement Company

## METRIC AND CURRENCY

### CONVERSIONS

#### CURRENCY EQUIVALENTS

Official Rate:<sup>1</sup> US \$ 1.00 = LE 0.39  
LE 1.00 = US\$ 2,564

Parallel  
Market: US \$ 1.00 = LE 0.68  
LE 1.00 = US\$1.47

#### WEIGHTS & MEASURES

1 Metric Ton = 1,000 Kilograms (kg)  
1 Metric Ton = 2,205 pounds (lbs)  
1 Kilometer = 0.62 miles  
1 Meter (m) = 39.3 inches

<sup>1</sup>The official rate was used throughout this paper except where otherwise noted.

5. Project Cost: The cost of constructing the cement plant, providing engineering and management consulting services and providing for working capital and payment of interest during the construction period is estimated at \$90.0 million of foreign exchange and the equivalent of \$71.5 million in local costs, a total of \$161.5 million. Included in these figures is an allowance for contingencies of ten percent (10%) and escalation of twenty-four percent (24%).
6. Description and Purpose of Project: The objective of the Project is to support future investments in infrastructure, such as roads and ports, industrial and agricultural development projects and to reduce the need for cement imports. The Project consists of the construction of a cement plant and auxiliary facilities, the development of limestone and clay quarries to provide the bulk of the raw material requirements of the plant, and the construction of water and power lines needed for its operation.
7. Source of Funds: Supporting assistance.
8. Other Sources of Financing: No other donor or organization has indicated an interest in participating in this Project.
9. Mission Views: The Mission fully endorses the Project and the Mission Director has recommended authorization of the Grant in accordance with Section 611(e), FAA.
10. Statutory Checklist: All statutory criteria have been met (See Annex C).
11. Recommendation: That a Grant in the amount of \$90,000,000 be authorized on terms and conditions set forth in the Draft Grant Authorization (Annex A).

Project Committee:USAID/CAIRO

Chairman: Robert N. Bakley  
 Loan Officers: Domenick J. Scarfo  
 Charles Patalive  
 Engineer: Philip S. Lewis  
 Counsel: James Phippard

AID/WASHINGTON

Chairman: Justin Williams  
 Loan Officers: Dan D'Antonio  
 Gary R. Redman  
 Engineer: James Cooperman  
 Counsel: Robert B. Meighan  
 Economist: Leonard G. Rosenberg

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## PROJECT PAPER

SUEZ CEMENT COMPANY (SCC)I. SUMMARY AND RECOMMENDATIONS

1. Grantee: The Government of the Arab Republic of Egypt (GOE).
2. Executing Entities: Suez Cement Company (SCC), the Egyptian Electric Authority (EEA), and the Ministry of Housing and Reconstruction (MOHR).
3. Amount of Grant: \$90,000,000
4. Use of the Grant and Terms: The Grant will be used by the GOE, as follows:
  - A. A reloan to SCC of \$62.29 million to finance the foreign exchange cost of assets to be acquired by SCC; the reloan will have a maturity of fifteen (15) years, including a grace period of five (5) years, with interest at ten percent (10%) per annum;
  - B. A grant of \$16.4 million to SCC to finance part of the foreign exchange cost of assets; SCC will issue shares to the four existing cement companies for an equivalent amount.
  - C. A grant to SCC of \$6.7 million to finance the foreign exchange cost of engineering and management services and of training;
  - D. A grant of \$4.6 million to EEA to finance the foreign exchange cost of constructing a transmission line connecting the plant to the grid and required substations.

## II. BACKGROUND

### A. Demand and Supply

2.01 Domestic consumption of cement was about three million tons per year in the years immediately before the 1973 war and remained at that level in 1974 and 1975. In the latter two years, 470 thousand tons and 740 thousand tons, respectively, were exported. It is, however, doubtful that the consumption figures for the post-war years represent actual demand. The fact that shortages of cement have become chronic, and that inadequate foreign exchange was available to finance imports, clearly indicates there is an unsatisfied latent demand.

2.02 Investment plans of the GOE, and forecasts of cement requirements based on them, have resulted in projections of a rapid demand growth by the Ministry of Housing and Reconstruction (MOHR). MOHR estimates that demand will increase to six million tons in 1979, eight million in 1981, and ten million in 1984. IBRD projections <sup>1/</sup> are not very different; based on an analysis by sector by year, domestic consumption is projected at about 6.5 million tons in 1979, 6.8 million in 1981 and 8.3 million in 1984. Since the GOE includes exports, in its projections, <sup>2/</sup> the two sets of figures are about one million tons apart at the end of the period (1984). There appears to be no question that demand will rise substantially within the next few years, and that large additions to manufacturing capacity will be needed to meet it. The new plant at Suez here proposed is part of that additional capacity.

2.03 Cement is supplied to the Egyptian market by four companies owned by the Government. The present nominal production capacity of these companies is about 3.8 million tons per year but actual production fluctuates somewhat below that level. The expansion plans of the GOE include the construction of new plants and the expansion of existing plants to reach an annual production capacity of 7.8 million tons by 1981 and ten million tons by 1984. Details of the expansion program are given below in paragraph 2.05.

<sup>1/</sup> "Appraisal of Tourah Cement Expansion Project," December 30, 1974.

<sup>2/</sup> The GOE has "committed" exports to Kuwait, starting with 150,000 tons in 1978 and reaching 500,000 tons annually in 1981.

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## B. The Cement Industry

2.04 The first company producing cement in Egypt and still operating <sup>1/</sup> was the Tourah Cement Company founded in 1927 and now producing, after several expansions, 1.4 million tons annually. The Helwan Portland Cement Company followed in 1929 and now also produces about 1.4 million tons. In 1948 the Alexandria Portland Cement was formed and still remains the only company with production facilities outside the Cairo area; it now manufactures 500,000 tons annually. The National Cement Company was formed in 1956 and now produces 700,000 tons in its plant at Helwan. All four companies are owned by the Government. No new plants have been built since 1956, although a number of expansions of the existing plants have taken place.

2.05 Currently, additional expansions are in progress at all four plants. Their combined capacity of 3.85 million tons annually will, after completion of the expansion and after full production of the new facilities has been reached in 1979 and 1980, reach 5.8 million tons. The new plant at Cairo to be built with Kuwait's participation, and new plants planned for Alexandria, East Maadi, Nagh Hammadiand and Assiut are to add an additional 2.25 million tons; the Suez plant, the project here discussed, will add one million tons, and other expansions about 900,000 tons, for a total planned capacity of the industry of about ten million tons by 1984. The size of the investment required, and the uncertainty about the financing sources to be used for a number of these projects, make it however extremely doubtful that this production target will be reached as now scheduled by the GOE. In view of the projections of domestic demand and the uncertainties surrounding export possibilities beyond the exports committed to Kuwait, a shortfall on the order of one million tons is unlikely to be critical. A larger shortfall may well mean that domestic demand cannot be met.

2.06 Sales and distribution of cement are handled by the Egyptian Cement Office (ECO) in Cairo. Its operating expenses are paid by the four cement companies in proportion to their annual production. The ECO receives all orders from customers and dealers and arranges for shipment from the producing plants; it has its own fleet of trucks which in combination with sub-contractor fleets, transports 95 percent of all production. The balance is shipped by rail (three percent) and barge (two percent).

<sup>1/</sup> Two vertical shaft kilns with a total capacity of 100,000 tons began operating early in the century, but were scrapped in 1929.

### C. Prices

2.07 The Government sets prices for cement both at the factory gate and at the retail level. With rare exceptions, the factory gate price has been the same for all producers, regardless of variations in operating costs. In the last ten years, the factory gate price has been increased only twice, in 1969 and in March 1974; the retail price, however, has changed more frequently as a result of the imposition of special taxes paid by the consumer and collected by the ECO. The price history is reflected in the table below:

Figure 1

<u>Period</u>	<u>(LE per Metric Ton, Bagged)</u>	
	<u>Excluding Taxes</u>	<u>Including Taxes</u>
1965-69	4.10	5.50
1969-72	5.10	6.50
Feb. 1972 - March 1974	5.10	7.50
March 1974 - July 1975	8.25	11.50
July 1975 - Present	8.25	13.40

Thus, while the gate price of the producers has increased by 60 percent since 1974, the retail price, exclusive of transportation costs which are charged separately, has increased 79 percent in the same period. In absolute terms, the price differences are LE 3.15 and LE 5.90, respectively.

2.08 In July 1975, new prices were established for all types of cement; they range from a factory gate price of LE 6.25, net of taxes, for Ordinary Portland Cement in bulk to LE 17.25 for White Cement. The corresponding dealer prices range from LE 11.40 to LE 22.40 for the same grades. These prices are valid for all producers, except the Alexandria Portland Cement Company which is allowed a slightly higher price, i.e., LE 0.56 more than the other producers. Bags are charged at LE 2.00 per ton. The margin between the factory gate price and the dealer price (or consumer price for users purchasing direct from ECO) is represented by a variety of taxes. (See paragraph 3.13 for details.)

2.09 Due to differences in transportation costs, which are borne by buyer, delivered prices vary in different parts of the country. They are lowest in Cairo at LE 15.50 per ton, bagged and highest in Aswan at LE 22.40; prices in Port Said, Suez and Alexandria are clustered around LE 17.00.

2.10 The "dealer price" of LE 11.40 per ton (factory gate price plus taxes) for Ordinary Portland Cement in bulk equals \$29.16 at the official rate of exchange and \$19.38 at the parallel market rate (\$1.70 = LE 1.00). A comparison of these prices with current prices

in other parts of the world shows that they are at the low end of the range for domestic prices in European countries. Spain, where cement prices are subsidized, is the only country where the price paid by buyers at the plant gate is substantially below the Egyptian level, computed at the official rate of exchange (\$20.50 per ton). In other countries, bulk prices range from under \$27.00 in Greece<sup>1/</sup> to over \$43.00 in France. A 20-city average price for the United States is computed at just under \$45.00, delivered within city limits.<sup>2/</sup> If the parallel market rate of exchange is used for comparison purposes, Egyptian domestic cement prices are lower than in any other country included in the review.<sup>3/</sup> One reason for the low prices in Egypt is the subsidization of oil prices paid by cement producers; their cost of fuel oil is set at about 25 percent of the world market price.

2.11 Egypt began importing cement in 1975 when one million tons were purchased abroad for delivery in 1975 and 1976. Prices paid exceeded domestic prices by LE six to eight per ton and this is the basis for the imposition of the equalization tax of LE 1.90 per ton on all domestically produced cement; it is designed to cover the price differential paid by MOHR when it imports cement.

#### D. Project Background

2.12 In October 1975 the GOEM submitted to A.I.D. a proposal for the construction of the Suez Cement Plant. The GOEM proposed establishment of a joint stock company for the annual production of a million tons of cement to meet Canal Zone and Sinai reconstruction requirements. Since then the proposed project has been the subject of intensive discussions and reviews by several technical consultants. Discussions between the Mission in Cairo, the MOHR, the Egyptian Electricity Authority and the nucleus of the proposed Suez Cement Company have resulted in a formal GOE request for a \$90 million A.I.D. grant to finance the foreign exchange costs of this project. A grant is proposed--rather than a loan--because the project will assist the Egyptian effort to revitalize the economy and reconstruct facilities in the Suez Canal Zone.

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1/ This is the delivered price and the gate price is therefore somewhat lower.

2/ "Engineering News Record," June 10, 1976.

3/ Belgium, France, Germany, Austria, United Kingdom, Greece, Spain, Sweden and the U.S.A.

### III. THE PROJECT

#### A. Purpose

3.01 The objective of the proposed project is to support investments in badly needed improvements of the infrastructure of the Egyptian economy and in industrial and agricultural projects designed to increase the output of the economy. By increasing the capacity of the cement industry, availability will be firmed up and foreign exchange will be saved by reducing import requirements.

#### B. Description

3.02 The project consists of the design and erection of a Portland cement plant capable of producing one million tons of cement per year. The plant will be located on or near the coastal road approximately 40 kilometers south of the city of Suez. Quarry sites for limestone and clay are located approximately 16 kilometers inland from the coast. A belt conveyor will be used to transport the raw materials to stockpiles at the plant site. Cement will be produced utilizing the dry process. Plant operations will include raw mill grinding, homogenizing, storage and transport; the rotary kiln section will include precalciner and clinker cooler; clinker grinding; gypsum grinding and mixing; and cement storage, bagging and bulk loading facilities.

3.03 - Auxiliary facilities will include a laboratory, machine shop and garage, administrative building and offsite staff residences. The project includes procurement of mining and ancillary equipment, construction of required civil works and supporting infrastructure, provision of advisory management and technical services, and assistance in training, management, operating and maintenance staff to operate the company and its manufacturing facilities. Power will be provided by a high-tension power line to connect the plant site and required substations. A pumping station and forty kilometers of pipeline will carry fresh water to the cement plant from Suez.

C. Project Cost Estimate

3.04 The detailed project cost estimate in Annex I is summarized below:

Figure 2

## Project Cost Estimate

<u>COST CATEGORY</u>	<u>LOCAL COSTS</u>	<u>FOREIGN EXCHANGE</u>	<u>TOTAL</u>
	(in \$ 000's)		
<u>(a) SCC Assets</u>			
1. Land & Improvements	\$ 2,015	\$ 105	\$ 2,120
2. Mining Equipment	335	6,480	6,815
3. Cement Plant Equipment	2,810	50,150	52,915
4. Cement Plant Construction	19,225	-	19,225
5. Transport Equipment	1,260	2,040	3,300
6. Contingency & Escalation	<u>8,720</u>	<u>19,970</u>	<u>28,690</u>
SUB TOTAL	34,365	78,700	113,065
<u>(b) Services</u>			
1. Engineering & Management	1,425	4,000	5,425
2. Training	200	1,000	1,200
3. Contingencies & Escalation	<u>540</u>	<u>1,700</u>	<u>2,240</u>
SUB TOTAL	2,165	6,700	8,865
<u>(c) Power and Water</u>			
1. Power Transmissions and Substations	7,630	3,400	11,030
2. Water Line from Suez	1,925	-	1,925
3. Contingencies & Escalation	<u>3,249</u>	<u>1,200</u>	<u>4,449</u>
SUB TOTAL	12,804	4,600	17,404
<u>(d) Other Costs</u>			
1. Pre-Project Expenses	1,545	-	1,545
2. Administrative Expenses	1,530	-	1,530
3. Working Capital	7,985	-	7,985
4. Interest during Construction	10,586	-	10,586
5. Contingencies & Escalation	<u>520</u>	<u>-</u>	<u>520</u>
SUB TOTAL	22,166	-	22,166
<u>GRAND TOTAL</u>	<u>\$71,500</u>	<u>\$90,000</u>	<u>\$161,500</u>

3.05 The amounts shown above for contingencies and escalation represent an allowance of ten percent (10%) of base cost estimates for physical contingencies and twenty-four percent (24%) of base cost estimates for price escalation. These percentages have been applied to all items except pre-project expenses, working capital and interest during construction (Items (d)1, (d)3, and (d)4, above). The detailed estimates in Annex I and the summary above are based on estimates prepared by ASEC on behalf of SCC and have been accepted as reasonable.

D. Project Financing Plan

3.06 The equivalent of \$71.5 million required to finance the Egyptian pound costs of the project will be provided by the five Egyptian sources shown below:

Figure 3

Sources of Egyptian Pound Financing

<u>Source</u>	<u>Amount</u> (\$000's)
1. Egyptian Electricity Authority	\$10,224
2. Ministry of Housing and Reconstruction	2,580
3. Egyptian banks' and insurance companies' equity contributions	16,410
4. Public Stock Subscription	8,205
5. Egyptian Bank Loan (13 years @ 7% per year)	34,081
	<hr/>
TOTAL	\$71,500

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3.07 The \$90 million foreign exchange required to finance this project will be provided by the proposed A.I.D. grant. Grant proceeds will be distributed by the GOE as shown below:

Figure 4

Distribution of A.I.D. Grant Proceeds

	<u>Basis</u>	<u>Amount</u> (\$ million)
1. Egyptian Electricity Authority for Power Transmission Line	Grant	\$ 4.6
2. Suez Cement Company for Training and Consultant Services	Grant	6.7
3. Four cement companies for equity investment in Suez Cement Company	Grant	16.4
4. Suez Cement Company to finance assets	Loan	62.3
	<u>TOTAL</u>	<u>\$90.0</u>

Items 1 to 3 in the table are discussed below.

3.08 The power transmission line and related substations will be built and owned by EEA. An amount of \$4.6 million is estimated to be needed for imported equipment and materials, and that amount will be made available direct to EEA in the form of a grant. Grant financing is proposed because the installations are located in the Suez area.

3.09 At the time the SCC was organized, the four existing cement companies wished to participate as investors in SCC but did not have the cash necessary for the proposed acquisition by them of 40 percent of the stock. It was, therefore, agreed to treat LE 6.4 million, equivalent to \$16.4 million, of the proposed A.I.D. financing as a grant to the cement companies. That amount represents the value of 40 percent of the stock to be issued. The A.I.D. funds will be used by SCC for the acquisition of assets requiring payment in foreign exchange.

3.10 On analysis of the proposed financial structure and projected operations of SCC as a commercial company, it became evident that debt service would have to be held to the minimum. SCC will be the first "grass roots" cement company built in Egypt in over 20 years and it will therefore have to devote considerable financial resources to acquiring under contracts the managerial and technical competence other companies have established during several decades of operations. It appeared that borrowing the funds needed to contract for the consulting and training services needed might make it difficult for SCC to achieve consistently profitable operations and it was, therefore, agreed that \$6.7 million would be made available by the GOE to the SCC in the form of a grant.

3.11 To assist SCC further in making its operations profitable, the GOE has informally agreed to exempt the company from payment of the "equalization tax" and "production tax," representing a total charge of LE 2.50 against the nominal ex-factory price of LE 11.40 per ton. A "reinvestment tax" of LE 0.75 will have to be paid, but will be more than offset by payment by the GOE to SCC of LE 1.90 per ton as its share of the proceeds of an "import differential tax" collected from the other cement companies. A comparison of the net price received by the four existing cement companies and SCC would thus look as follows:

Figure 5

Price per ton of Ordinary Portland Cement

	<u>Existing Companies</u> LE	<u>SCC</u> LE
Ex-Factory, Bulk	11.40	11.40
Reinvestment Tax	( .75)	( .75)
Import Differential Tax	( 1.90)	1.90
Equalization Tax	( 1.10)	-
Production Tax	<u>( 1.40)</u>	<u>-</u>
NET PRICE, BULK	6.25	12.55
BAGGING	<u>2.00</u>	<u>2.00</u>
NET PRICE, BAGGED	8.25	14.55

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The SCC would, under this formula, realize LE 12.55 per ton for bulk cement; twice as much as the other producers. The price of LE 14.55 per ton of bagged cement, and corresponding prices for other types of cement, have been used in preparing the financial projections. (See comments in paragraph 4.21, below).

E. Marketing Plan

3.12 It is expected that the entire output of the new Suez Cement Plant will be sold within the Suez Canal area. ECO will open a new sales office and warehouse in Suez and handle distribution from that point. The production of other plants will thus become available for other areas, primarily the Cairo and Alexandria regions.

F. Training

3.13 Trained professionals and skilled workers familiar with cement manufacturing are available to SCC only to the extent that they can be recruited from the existing companies. Most of the 370 staff required to operate the plant will therefore require training. Some of the training is expected to be supplied by the suppliers of major items of equipment, particularly for the raw mill and kiln operators. An important initial task for the U.S. consultant will be to design and establish a training program to begin as personnel are recruited and to continue for a four-year period. It is expected that the Suez Cement Plant training program can be adapted from a program designed and used by the Tourah Cement Company.

## IV. PROJECT APPRAISAL

A. Technical Analysis

4.01 The project consists of the engineering and construction of a new Portland cement plant with a rated capacity of one million metric tons per year. This is a grassroots project being launched by a newly formed Egyptian joint stock company - the Suez Cement Company (SCC). The project will include development of new mining sites for limestone and clays, procurement of mining, cement making and ancillary equipment, construction of civil works and supporting infrastructure, and technical assistance to train operating and maintenance staff and to initiate commercial plant operations.

4.02 The SCC will draw its primary raw material requirements, in limestone and clay, from deposits in the Gabal El Ramlia area located approximately 40 km south of the city of Suez and 15 km inland from the Gulf of Suez. The Gabal El Ramlia mountains consist of large uplifted fault blocks in which most exposed rocks are limestone of the Eocene age. The northeast face of the mountain range is a fault scarp that rises as much as several hundred meters above the plains of Wadi Bada and Wadi Hagoul. Various clays and limestones of the Miocene age underlie the surface of the plains to the north and east of the mountains. Near the base of the mountains alluvial material covers the clays and fills dry washes that cut down into the Miocene sediments. The thickness of suitable limestone exposed above the plain ranges from 112 to 170 meters. The limestone is lithologically uniform, massively bedded and contains no interbedded shales or sandstones within the upper 150 meters. The limestone is white in color on fresh surfaces, moderately friable, and relatively unaltered.

4.03 Investigations of these deposits have been conducted by the Geological Survey of Egypt under the supervision of the Arab Swiss Engineering Company (ASEC). Further, a review of the methods and results of these investigations was conducted by the U.S. consulting firm of Dames and Moore under an A.I.D.-funded contract in early 1976. Limestone samples were processed and analyzed by the Geological Survey of Egypt in Cairo. Duplicate samples were analyzed at the laboratories of the ASEC affiliate, Holderbank Management and Consulting Company of Aargau, Switzerland, as a means of quality control. The Dames and Moore report of February 1976 recommended that core drilling of the limestone block be accomplished as the next phase of detailed raw material evaluation. This recommendation has been accepted by SCC. Drilling will be programmed for early accomplishment during the implementation phase.

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4.04 Estimated limestone reserves are approximately 320 million metric tons. For the proposed production of one million tons of cement per year, approximately 1.35 million tons of limestone are required. Assuming a 50-year operating life for the cement plant, with the possibility of doubling the original plant capacity during its early years, the required limestone reserves are about 135-150 million tons, allowing for some wastage. An additional 50 million tons will be required should a lime plant be added to the facilities. Total limestone reserve requirements are, therefore, approximately 200 million tons. The estimated reserve of 320 million tons exceeds requirements by about 60 percent. The quality of the limestone is excellent, approaching a metallurgical grade limestone, significantly better than that required for cement manufacture.

4.05 To the north and east of the prospective quarry site, Miocene sediments have been preserved over a large area of plains of Wadi Bada and Wadi Hagoul, consisting of various clays with some interbedded limestones and sandstones present. Clays in the area were initially sampled by digging trenches and test pits. Later two drill rigs were employed. Clay samples were analyzed by the Geological Survey of Egypt. Duplicated random samples were analyzed by Helderbank for quality control.

4.06 Required clay reserves for cement manufacture are approximately 35 million tons, assuming a 50-year operation at double the originally planned capacity. Final delineation of suitable clay reserves has not yet been completed, but there appears no reason to doubt that adequate reserves can be obtained from the extensive Miocene sediments in the area. The quality of clays present in the area are variable with respect to the preparation of silica present. However, based on the results of test pit and core drilling to date, sufficient quantities of the more desirable types of clay are present. It has been recommended that the detailed investigation and mapping of clay types be continued during the project implementation phase to provide additional information for the long range planning of clay mining operations.

4.07 Gypsum is ground together with clinker to act as a retarding agent in the hydration process of cement. Approximately five parts of gypsum are ground with 95 parts of clinker to produce 100 parts of cement. At full production, SCC will, therefore, require about 50,000 metric tons of gypsum per year. Gypsum is presently being mined at several locations in Egypt to supply the requirements of existing cement plants. Investigations by ASEC have indicated that existing quarries can without difficulty increase their production to meet the needs of SCC.

4.08 Limestone quarry mining will be conducted in a conventional manner. ASEC's planning to date proposes that the quarry should begin at the western end of the deposit along the north face and start at elevation 227 meters, avoiding less suitable beds of limestone found at the lower levels. Drilling rigs will be capable of producing a 150 millimeter hole for a depth of 150 meters. After blasting, oversized blocks will be reduced by secondary blasting; mobile air compressors and jack hammers are being provided for this purpose. Two 7 cubic meter electric driven power shovels will load a fleet of six 30 ton rear-dump trucks feeding the primary jaw crusher. Both shovels will work on the quarry floor. When the height of the working face exceeds 60 meters, a 15 meter berm will be excavated for drilling purposes. The limestone above 60 meters will be drilled off from the top of the deposit, blasted, and cleared from the berm by a dull dozer of about 300 H.P. Servicing and maintenance facilities and equipment, serving both the limestone and clay quarrying equipment, will be provided at the quarry site.

4.09 Mining of clay deposits will also be conducted in a conventional manner. Current planning calls for two front end loaders of 3 and 5 cubic meter capacity to load a fleet of three 30 ton rear dump trucks feeding the impact crusher on site. The quarrying operations will be preceded by a sub-contractor using scraper operations. Further review of the nature of interbedded limestones will be required to determine if such beds can be removed by front end loader after ripping or if drilling and blasting techniques are required. This will be determined prior to finalization of the mining equipment list.

4.10 Transport of crushed limestone and clay from the quarry sites to stockpiles at the plant site (approximately 15 km) will be accomplished by use of a system of flexible belt conveyors. Final design of the conveyor, primary crusher stations, transfer points, etc., will be prepared by the U.S. engineering consultant. The limestone crusher will be a single stage, double swing hammer type of approximately 700 tons per hour capacity. The conveyor system will have a capacity of about 1,000 tons per hour.

4.11 To make cement, limestone, clay, and sand are mined in their respective quarries. The raw materials with a maximum specified block size (after blasting) are reduced to aggregates of pre-specified maximum dimensions in the crushing department and stored; pre-homogenization is achieved through intermediate storage. After proportioning according to weight and volume, the raw materials are ground to fine raw meal powder in the raw mill. The raw meal is homogenized and then transported via conveyors to the kiln department. Within the kiln heat induces a clinkering process, in which an incomplete fusion of the raw meal takes place. This clinker is then ground together with a small percentage of gypsum to produce cement which is shipped either in bulk or in bags.

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4.12 The dry process has been selected for the Suez cement plant, based on the results of the raw materials investigations carried out by ASEC and Holderbank. Fuel consumption is lower in the dry process and the benefit of heat economy is greater, particularly in this case where the raw materials contain less than 5 percent water and are not wet or sticky. The raw materials at the Suez quarry are of high quality and low humidity and are ideal for the dry process production of Portland cement. A full economic analysis to compare the financial merits of the dry process versus the wet process was not prepared by ASEC. It is noted, however, that relative to the expansion of the Tourah Cement Company plant which uses raw materials of similar properties, the incremental economic rate of return of the dry process over the wet process was about 24 percent.

4.13 The finished cement will be transported pneumatically from the mills to six cylindrical concrete silos, each of approximately 4,000 ton capacity. Cement will be withdrawn from the silos by cross worm conveyors and from these it will be transported by bucket elevators to the feed hoppers of two rotary packers having a capacity of 100 tons per hour each. Bags will then be transported to truck loading stations via horizontal belt conveyors having pneumatically controlled deflectors and end skids.

4.14 The estimated maximum electric power load of the plant is 20 megawatts. Power will be provided to the plant site via 220 or 66 kilovolt transmission lines from the national power grid. Approximately 40 kilometers of transmission lines and a substation near the plant site are required.

4.15 The fresh water requirement of the plant has been estimated as 500 cubic meters per day. The Ministry of Housing and Reconstruction has undertaken to provide a water pipeline from Suez City and pumping stations. If required, water treatment at the plant site will be provided by SCC.

4.16 Storage facilities for heavy fuel oil (Bunker C), called mazout, will be provided at the plant site. Fuel oil will be transported in tank cars or trucks from the Egyptian General Petroleum Corporation refineries in Suez and/or Cairo.

4.17 A two-lane bituminous surfaced highway exists between Suez City and the plant site. The geometric features of the highway are acceptable and the present condition of surfacing is fair to good. However, it is expected that heavy truck traffic resulting from construction activities and the transport of cement after start up will result in rapid deterioration of the highway. An early requirement to improve the highway's base and surface courses is anticipated. A two lane road exists between plant and quarry sites, a distance of approximately 15 kilometers. It is bituminous surfaced for about half that distance. The remainder is unsurfaced. This road will require upgrading along its entire distance to accommodate personnel and maintenance vehicles.

4.18 There is a standard gauge, single track railroad line between Suez City and Sadat Quarry, approximately 25 kilometers south of Suez City. The possibility of reconstructing this line and extending it to the plant site will be later considered in conjunction with studies of developing bulk cement transport and storage facilities throughout Egypt.

4.19 Based on a review of consultant reports and all the foregoing information, A.I.D. has concluded that the proposed cement production project is technically feasible. An adequate quantity and quality of raw materials is available, and necessary utilities and communications are either in place or can be created at reasonable cost.

#### B. Environmental Impact

4.20 Cement plants pose ecological problems of water pollution if wet scrubbers are used, air pollution from dust and toxic gases, and noise pollution. The site of the proposed cement plant is uninhabited and remote from population centers. The proposed plant and quarry will not displace current or potential agricultural or other economic activity. Consultant services to be used for the review of plant design criteria to be included in the tender documents will also include a more detailed review of environmental problems and an analysis of measures that would be recommended to SCC for inclusion in the design criteria.

#### C. Financial Appraisal

4.21 Projected income statements for the first ten years of operation are shown in Annex F. It is clear that operating costs will increase during the period, but it is also obvious that selling prices will have to increase unless the GOE decides to introduce additional subsidies.<sup>1/</sup> Both sales revenues and operating costs have, therefore, been assumed as constant. The sales prices used in projecting sales revenue are based on the net sales price per ton for each grade of cement, exclusive of special taxes (collected and remitted to the Government by ECO), and of transportation costs which are borne by the buyer. These prices are equivalent to \$37.31 <sup>2/</sup> per ton of ordinary cement, \$39.87 for rapid and \$33.46 for mixed cement. Depreciation has been based on a 25-year life for equipment and a 35-year life of buildings, using the straight-line method.

<sup>1/</sup> The subsidization of fuel was mentioned earlier in this paper.

<sup>2/</sup> LE 14.55, including bags.

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Production has been assumed at 80 percent of capacity in the first, 90 percent in the second, and at 100 percent of capacity in the third year of operations and thereafter.

4.22 The largest single component of "cost of goods sold" is paper bags; that cost has been assumed to be LE 2.00 per ton of cement, the same amount that is charged to buyers. At that price it represents 35 percent of production costs totalling LE 5.68 per ton. It is quite likely, however, that bags can be purchased at a lower price and the estimate shown is therefore conservative. <sup>1/</sup>

4.23 The projected income statement for the first full year of production is summarized in the following table, together with profit ratios based on those figures:

Figure 6

Summarized Income Statement

Projected for Third Year Operations (1982)  
(U.S. \$ million)

	<u>1982</u>
1. Net revenues <sup>2/</sup>	\$40.6
2. Gross profit	24.3
3. Operating profit	17.5
4. Net profit after financing charges	9.6
5. Net profit as a percent of net sales	24.0%
6. Cash generation	15.5%
7. Net profit as % of equity	23.4%
8. Net profit as % of total capital	7.0%

<sup>1/</sup> In its appraisal of the "Tourah Cement Expansion Project," the IBRD assumed a cost of LE 1.40; on that assumption, SCC would save LE 0.60 production costs for each ton of cement sold, or about \$1.5 million per year, equivalent to about nine percent of production costs.

<sup>2/</sup> Includes an amount of \$335,000 representing share of profits from ECO's transport operations.

4.24 Income taxes will be payable from the ninth year on. At 39.7 percent of taxable income, they will amount to \$5.3 million in that year. The after-tax return on sales will then drop to 23 percent and the return on equity to 13 percent.

4.25 The profitability of the company, as reflected in the above figures, is satisfactory, assuming that sales prices are adjusted from time to time to compensate for the expected rise in production costs. A covenant to this effect will be included in the Grant Agreement. Debt service coverage in the third year of operations, the first year requiring amortization of principal under both the A.I.D. and the Egyptian bank loans, is better than 2.25 and improves thereafter; that ratio is satisfactory since it would permit the company to service its debt even if the net profit realized were to be substantially less than projected. Large borrowings in addition to the A.I.D. and Egyptian bank loans would, however, impair the company's ability to service its debt; a covenant requiring approval of additional borrowing will, therefore, be included in the Agreement.

4.26 The relatively favorable financial forecast for SCC's operation is due to the fact that the GOE has agreed that SCC's sales will be exempted from payment of some of the taxes paid by the other producers. <sup>1/</sup> Without those concessions, SCC would clearly be unable even to meet its operating costs. A comparison of the projected operating results of the Tourah Cement Company (TCC) <sup>2/</sup> with those projected for SCC points to the principal reasons for the need to increase the revenues realized by the cement producers from their sales above the level now generally in effect. TCC will, in the first year of reaching full production with its expanded facilities realize only 66 percent of the net profits it showed for the last year before starting with its expansion program because of increased depreciation charges (3.5 times the amount charged from LE 75,000 to just under LE 2 million. The change in debt service coverage from 16.2 to 2.0 is another indication of the effect of installing new facilities, at current prices, and of borrowing to finance those costs only because 65 percent of its production will come from equipment which has to a large extent been written off and for which financial charges are no longer payable. <sup>3/</sup> In more general terms, it is obvious that the construction of new plants and their profitable

1/ See paragraph 3.11 above.

2/ Based on financial analysis of TCC in IBRD Appraisal Report.

3/ The debt/equity ratio of TCC increases from 2/98 before the expansion to 45/55 in the third year after completing the expansion.

operation is impossible unless the revenues of the producers are increased at least to the level agreed upon for SCC by permitting the cement companies to retain all or most of the proceeds of sales to consumers. In connection with the IBRD loan for the expansion of the TCC facilities, the IBRD reached agreement with the GOE to conduct a broad study of the distribution of cement in Egypt and of investments needed to reduce distribution costs. That study does, however, not encompass an examination of the pricing system which would be highly desirable. This subject will be discussed with the GOE during negotiations of the Grant Agreement.

#### D. Economic Analysis

4.27 The economic rate of return calculations are shown in Annex J. The economic rate of return is 14.6 per cent. The value of output of the plant is based on an assumed long-term price for imported bagged cement of \$38 per metric ton, C.I.F. Alexandria. That price was paid by the GOE for purchases made abroad late in 1975, and in the light of prices in Europe quoted in paragraph 2.10 above, is unlikely to drop, except to the extent other governments subsidize cement exports. The US\$ price was converted to Egyptian pounds to reflect imports at the parallel market rate of 1 L.E. = US\$1.47 and applied to the annual production shown in Annex F.

4.28 On the capital cost side, the direct foreign exchange components of investment costs shown in Annex I, excluding working capital and interest during construction, were also converted to Egyptian pounds utilizing the L.E. 1 = US\$1.47 parallel exchange rate and pro-rated over the four year construction period. The Cost of Cement Sold (Annex G) served as the bases for the calculation of the annual operating and maintenance costs commencing in 1980 (year 5 of the analyses). For each of the cost items an assumption was made as to its plausible foreign exchange component and that portion of the costs was multiplied by 1.74, the ratio of the official exchange rate to the parallel exchange rate. In the special case of heavy fuel oil, the cost estimate in Annex G was multiplied by 4 since the domestic price of heavy fuel oil to cement producers is currently \$18.75 per metric ton or approximately one-fourth the world price of \$75.00 per metric ton. The details as to the various calculations and assumptions are presented in the explanatory note to Annex J.

4.29 A detailed study of foreign exchange savings has not been made. The gross saving would be the foreign exchange needed to import one million tons annually at an assumed cost of \$38 per ton, or \$38 million. Debt service by the GOE and spare parts imports would require about \$6.0 million. In addition, fuel exports of the quantities consumed by SCC at world market prices would be foregone; using 100,000 tons as an estimate of fuel consumption would put the value of exports foregone at \$7.5 million. Deducting the total of \$13.5 million from the savings of \$38 million would leave a net saving of \$24.5 million annually, so that the foreign exchange cost of the plant would be recovered in a little over 3½ years.

#### E. Social Effects

4.30 The project will directly create 420 new jobs in the Suez City area; 370 jobs will be employed in the mining operations and cement manufacturing; 50 jobs will be in marketing and distribution activities performed by ECO. Some of these new jobs may go to women. The cement produced will be used to construct houses, schools, water and sewage systems, and other infrastructure in the Suez area. The new plant will thus make an indirect contribution to the rehabilitation and development of the Suez region with concomitant social benefits to the people living in the area, in terms of employment opportunities, availability of housing, educational facilities and other social infrastructure.

## V. PROJECT IMPLEMENTATION

### A. The Suez Cement Company

5.01 The project will be carried out by a newly formed joint stock company, the Suez Cement Company. The legal capital of the SCC is LE 16.0 million divided into four million shares with a par value of LE 4.0. The financial plan calls for ownership of 40 percent of the stock by the four existing cement companies, 40 percent by banks and insurance companies, and 20 percent by the public. The National Bank of Egypt and the Bank of Alexandria, insurance companies and the four cement companies, all owned by the GOE, have participated in the formation of the Company. The subscription of the cement companies (LE 6.4 million) will be financed by an allocation of \$16.4 million of the proposed A.I.D. grant, the subscription of the other companies from their own funds. Twenty-five (25) percent of the total subscribed capital has been deposited with the Central Bank of Egypt. This is the amount required to be paid-in as a legal condition of issuance of a presidential decree law authorizing formation of the Company. The remaining 20 percent of the Company's capital, 800,000 shares, is intended to be subscribed by the public. Because of delays expected in marketing these shares, the founding banks and cement companies have requested the National Bank of Egypt to act as underwriter.

5.02 The preliminary organization plan foresees the creation of seven departments: (1) production; (2) maintenance; (3) purchasing; (4) quality control; (5) financial management; (6) administration; and (7) legal counsel. The total staffing level is projected at 370 employees. The founders and MOER have selected the former Chairman of the General Organization for Building Materials and Services and the Managing Director of the Cement Company to act ad interim for SCC until its organization is completed. Only two full-time professional employees have so far been assigned, one accountant and one engineer. The existing cement companies have, however, agreed to make some staff available to SCC as needed until SCC can recruit its own staff.

5.03 Recruiting and training staff will require a major effort. Technicians and skilled workers familiar with mining and cement manufacturing operations will probably be available only to the extent that the existing companies will agree to their transfer to SCC. Initially, a substantial input of foreign expertise, both in management and technical departments, will be required. The services to be obtained from a U.S. firm will, therefore, cover all aspects of company operations, including training of SCC's staff. Discussions are still in progress on the role to be played by ASEC, the Egyptian-Swiss firm which has provided most of the technical expertise in the preparation of the project.

## B. Implementation Plan

5.04 The first step in the execution of the Project will be the conclusion of a contract between SCC and a U.S. firm to provide the managerial and technical services mentioned in the preceding paragraph. Specifically, these services will include:

- advising SCC on the organization of the company and assisting with the preparation of administrative and accounting systems and procedures;
- provide overall project planning and scheduling;
- preparation of tender documents for equipment and other contracts and assistance to SCC in the evaluation of bids and contracting;
- detailed scheduling of construction activities, project management and construction supervision;
- assistance with testing, start-up and initial commercial operation;
- training of SCC staff.

Design work will be required of the consultants to the extent necessary for the preparation of tender documents for equipment purchases and may be done by ASEC if satisfactory arrangements for its participation in the Project can be made.

5.05 Equipment for the plant is expected to be purchased in seven major groups: (1) cement manufacturing equipment; (2) mining equipment; (3) laboratory equipment; (4) workshop equipment; (5) trucks and other vehicles; (6) electrical equipment; (7) office equipment. Depending on the analysis by the consultant, cement making equipment may be split into several sub-groups. In addition to these major purchases, there will undoubtedly be a substantial number of smaller transactions for miscellaneous items. A construction contract is expected to be let to an Egyptian contractor who would be responsible for the construction of all civil work. Installation of electrical equipment and wiring will also be carried out by Egyptian contractors. The equipment suppliers will be required to furnish erection engineers to supervise installation of their equipment.

### C. Implementation Schedule

5.06 A tentative implementation schedule is shown below. A more detailed schedule will be prepared by the consultant as soon as his staff arrives in the field.

Figure 7

#### Project Implementation Schedule

<u>Action</u>	<u>Date</u>
A.I.D.-GOE loan agreement	June 1976
GOE-SCC re-loan agreement	July 1976
GOE grants to EEA and SCC executed	July 1976
Contract with U.S. A/E firms	Nov. 1976
Initial C.P.'s satisfied	Nov. 1976
Initial equipment IFB's issued	Jan. 1977
First annual evaluation	June 1977
Civil works construction start	July 1977
Equipment erection start	Oct. 1978
Plant start-up	Dec. 1979
Commercial operations begin	Mar. 1980
Termination of disbursements	June 1980

The grant is thus expected to be disbursed between October 1976 and June 1980. A PPT will be prepared after the detailed project schedule has been completed by the consultants.

### D. Procurement and Disbursement

5.07 Goods and services financed by the proposed grant will be procured in the United States in accordance with the competitive procedures set forth in A.I.D. Handbook 11. Funds will be disbursed pursuant to letters of commitment issued by A.I.D. to U.S. banks designated by the GOE or to contractors.

### E. Monitoring and Control

5.08 A.I.D. will monitor the execution of this project based upon SCC financial statements and upon periodic reports that the consultants will be required to submit to A.I.D. and to the SCC. The Mission in Cairo will carry out regular site visits to inspect the progress of the works and be in frequent consultation with SCC and the consultant.

F. Evaluation

5.09 In addition to the regular consultations and site visits, SCC, A.I.D. and the consultant will undertake joint annual reviews of progress made and examine any major problems encountered in the execution of the project. Within several months of the beginning of commercial operations, A.I.D. will undertake a final review to ascertain that the plant is operating at the level expected for that time and whether SCC is adequately staffed to operate the plant thereafter or, if the findings so indicate, what further technical assistance may be needed.

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## VI. CONDITIONS AND COVENANTS

A. Conditions Precedent

6.01 In addition to the standard Conditions Precedent relating to legal opinions and the appointment of representatives, the following Conditions Precedent to the first disbursement will, in substance, be included both in the Authorization and in the Agreement:

(1) An executed loan agreement, between the GOE and SCC, satisfactory to A.I.D., under which \$62.3 million of Grant funds will be lent to SCC for a period of 15 years, including a grace period of 5 years, with annual interest of not less than 10 percent, without maintenance of value;

(2) An executed grant agreement between the GOE and SCC, acceptable to A.I.D., for an amount of \$23.1 million, specifying that \$6.7 million of that amount will be used to cover the foreign exchange cost of consulting services and that the remaining \$16.4 million will be used for other foreign exchange costs of the project, with the understanding that SCC will issue stock for such \$16.4 million to the four cement companies which participated in the formation of the company at such time or times as may be agreed upon between SCC and such cement companies;

(3) A Grant Agreement between the GOE and EEA, satisfactory to A.I.D., under which \$4.6 million will be made available to EEA which will use the funds to cover foreign exchange costs of construction for a power transmission line and related facilities to connect SCC's plant to the national grid;

(4) Evidence, satisfactory to A.I.D., that 80 percent of the capital stock of LE 16 million to be issued by SCC have been subscribed and that 25 percent of the amount of such subscriptions have been paid;

(5) Evidence of a valid and effective underwriting agreement for 20 percent of the capital stock to be issued by SCC;

(6) Evidence that SCC is a legal entity under applicable Egyptian law;

(7) Opinions of legal counsel of SCC and EEA, satisfactory to A.I.D., that the respective loan and grant agreements with the GOE have been executed by persons duly authorized by the respective entities and are legally binding obligations on such entities;

(8) An executed contract between SCC and a U.S. firm for consulting services required for the execution of the project.

6.02 The substance of the following Conditions Precedent to Disbursement for other than consulting services will be included in both the Authorization and the Agreement:

- Evidence satisfactory to A.I.D. that SCC has obtained legal title to, or full rights of use of, all land required for the plant and ancillary facilities, the quarrying of limestone and clay, the construction of office buildings and staff housing and to access to all such land;

- Evidence that core drilling in the limestone deposit has been carried out to the extent and with methods approved by A.I.D. as sufficient to prepare a definitive mining plan.

#### B. Covenants

6.03 In addition to the standard general covenants which will be included in the Agreement but not in the Authorization, the substance of the following special covenants will be included in the Authorization and the Agreement:

(1) The GCE will undertake not to assign, abrogate or amend, without approval by A.I.D., any of the Agreements with SCC and EEA concluded in connection with this Grant;

(2) To cause the Ministry of Housing and Reconstruction, or other organization acceptable to A.I.D., to construct a pumping station and necessary pipe line to provide an adequate and continuous flow of water to the project site for SCC in accordance with the project implementation schedule to be prepared by the U.S. consulting firm.

(3) To set cement prices and the level of taxes imposed on cement at a level which will allow SCC to generate a reasonable profit on the investment after paying for all production and other operation costs.

6.04 The following special covenants are subject to negotiation and will not be shown in the Authorization:

(1) SCC will furnish to A.I.D. not later than six months after the end of each fiscal year copies of its audited financial statements for the preceding fiscal year together with notes of the auditors, if any.

(2) SCC will furnish to A.I.D. any information which A.I.D. may reasonably request relating to the qualifications and experience

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of the individuals proposed to be nominated to the position of Chairman or Managing Director of SCC or other management positions to be agreed upon.

(3) The COE will undertake to prepare within one year from signature of the Agreement a study of its pricing policies relating to the cement industry and to consult with A.I.D. from time to time on the financial situation of the cement industry.

(4) SCC will undertake not to contract any long-term debt, nor any short-term debt in excess of LE 1 million, unless A.I.D. has previously approved such borrowing in writing.

ANNEX A

- C O P Y -

MINISTRY OF ECONOMY  
AND ECONOMIC COOPERATION

Economic Cooperation Division  
Office  
of the Under Secretary

Cairo, 2nd June 1976

Mr. Wilbert R. Templeton  
A.I.D. Representative  
United States Embassy  
CAIRO

Dear Mr. Templeton,

The Government of Egypt is planning to construct a new one million ton per year portland cement plant at Suez to help meet the rapidly increasing demands for cement needed for continuation of our reconstruction efforts.

The total cost of designing and constructing the required facilities has been estimated as \$160 million, including a foreign exchange component of \$95 million.

We therefore request that the Agency for International Development provide a grant of \$95 million to cover such foreign exchange costs, including engineering, onsite and offsite facilities, spare parts and materials, and training in the operation and maintenance of the facilities.

The Government of Egypt will assure that the Suez-Cement Co., the organization that will execute the project, has adequate Egyptian pounds to pay for the local currency costs of the project.

Yours truly,

/s/ Gamal El-Nazer

Gamal El-Nazer  
Undersecretary of State  
for Economic Cooperation

June 9, 1976

EGYPT - SUEZ CEMENT COMPANY PROJECT  
CERTIFICATION PURSUANT TO SECTION 611 (e)  
OF THE FOREIGN ASSISTANCE ACT OF 1961  
AS AMENDED

I, Wilbert R. Templeton, the Principal Officer of the Agency for International Development, Egypt, having taken into account, among other things, the maintenance and utilization of projects in Egypt previously financed by the United States, do hereby certify that in my judgment Egypt has both the financial capability and human resources capability to effectively maintain and utilize the capital assistance to be provided for the construction of a one million ton per annum cement plant.

  
\_\_\_\_\_  
Wilbert R. Templeton  
AID Representative

DATE: June 9, 1976

ANNEX D

CHECKLIST OF STATUTORY CRITERIA

The following abbreviations are used:

FAA - Foreign Assistance Act of 1961, as amended.

FAA, 1973 - Foreign Assistance Act of 1973.

App. - Foreign Assistance and Related Programs Appropriation Act, 1974.

MMA - Merchant Marine Act of 1936, as amended.

All Reference to a Loan or Loan Funds Shall Be Read to Mean Grant or Grant Funds.

COUNTRY PERFORMANCE

Treatment of U.S. Citizens and firms.

1. FAA § 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) a such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?  
None of the known claims of any U.S. citizen asserted against the GOE meets the criteria of this section. In any event, Egypt has agreed to participate in a Joint Commission to consider debts of Egypt to U.S. citizens and will seek to negotiate settlement of such debts.
2. FAA § 620(a)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect or nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?  
The Secretary of State has determined that Egypt's agreement to establish a Joint Commission to discuss compensation of American nationals constitutes taking appropriate steps for the purpose of this section.
3. FIA § 620(o). Fisherman's Protective Act § 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing vessel on account of its fishing activities in international waters,  
No instance of any such seizure or imposition of such penalty or sanction is now known.

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- a. has any deduction required by Fishermen's Protective Act been made?
- b. has complete denial of assistance been considered by A.I.D. Administrator?

1. Not Applicable.
2. Not Applicable.

Relations with U.S. Government and Other Nations

4. FAA § 620(a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba.

No instance of any such present course of conduct is known.

5. FAA § 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?

The Secretary of State has determined that Egypt is not controlled by the international communist movement.

6. FAA § 620(f). Is recipient country a Communist country?

No.

7. FAA § 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression?

The President has not determined that the recipient country is involved in such conduct.

8. FAA § 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property?

The President, in accordance with the requirement of section 620(j) has considered terminating assistance to Egypt and has determined that no sufficient reason exists not to furnish the assistance.

9. FAA § 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, in convertibility or confiscation, has the A.I.D. administration within the past year considered denying assistance to such government for this reason?

Egypt has reactivated its Investment Guaranty Agreement with the U.S.

10. FAA § 620(n). Does recipient country furnish goods to North Viet-Nam or permit ships or aircraft under its flag to carry cargoes to or from North Viet-Nam?
11. FAA § 620(o). Is the government of the recipient country in default on interest or principal of any A.I.D. loan to the country?
12. FAA § 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?
3. FAA § 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget?
4. FAA § 491. Has the government of recipient country failed to take adequate steps to prevent narcotic drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?

The recipient country is not known to be engaged in such a course of conduct.

No such default exists. Reconciliation is taking place between the books of AID and the Government of Egypt in regard to several very minor amounts. Egypt severed diplomatic relations with the U.S. in 1967. Diplomatic relations have now been resumed. New bilateral assistance agreements have been entered into since such resumption. Egypt has paid all of its outstanding U.N. obligations.

No.

15. FAA § 650. If (a) military base is located in recipient country, and was constructed or is being maintained or operated with funds furnished by U.S., and (b) U.S. personnel carry out military operations from such base, has the President determined that the government of recipient country has authorized regular access to U.S. correspondents to such base?

There is no military base in Egypt within the definition of this section.

### Military Expenditures

16. FAA § 620(s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems? (Consideration of these points is to be coordinated with the Bureau for Program and Policy Coordination, Regional Coordinators and Military Assistance Staff (PPC/RC).)

The President has taken into account each of the listed considerations as to current military expenditures by the GA and has determined that these do not inhibit economic aid to Egypt but rather that the projected program contributes to the underlying intent of the FAA which seeks to reduce arms costs and to stimulate economic development.

### CONDITIONS OF THE LOAN

#### General Soundness

17. FAA § 611(a)(1). Prior to signing of loan will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the United States of the assistance?
18. FAA § 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the loan.

The necessary plans and cost estimates are completed.

No further legislative action is required to implement the program than constitutional action pertaining to the signed loan agreement.

19. FAA § 611(e). If loan is for Capital Assistance, and all U.S. assistance to project now exceeds \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project?

The A.I.D. Representative in Egypt has so certified.

Loan's Relationship to Achievement of Country and Regional Goals

20. FAA § 601(a). Information and conclusions whether loan will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions.

The Grant will increase the flow of international trade and improve technical efficiency of industry, agriculture and commerce.

21. FAA § 619. If assistance is for newly independent country; is it furnished through multilateral organizations or plans to the maximum extent appropriate?

Egypt is not a newly independent country.

Loan's Effect on U.S. and A.I.D. Program

22. FAA § 601(b). Information and conclusion on how the loan will encourage U.S. private trade and investment abroad and how it will encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

The great majority of funds expended are for goods and services from private U.S. concerns.

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23. FAA § 601(d). If a capital project, are engineering and professional services of U.S. firms and their affiliates used to the maximum extent consistent with the national interest?
24. FAA § 602. Information and conclusion whether U.S. small business will participate equitably in the furnishing of goods and services financed by the loan.
25. FAA § 620(h). Will the loan promote or assist the foreign aid projects or activities of the Communist-Bloc countries?
26. FAA § 621. If Technical Assistance is financed by the loan, information and conclusion whether such assistance will be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis. If the facilities of other Federal agencies will be utilized, information and conclusion on whether they are particularly suitable, are not competitive with private enterprise, and can be made available without undue interference with domestic programs.

Procurement of goods and services will be pursuant to established AID regulations.

No.

Technical assistance will be to the greatest practical extent from private enterprise on a contract basis.

Loan's Compliance with Specific Requirements.

27. FAA § 630. Will loan be used to finance police training or related program in recipient country?

No.

28. FAA § 114. Will loan be used to pay for performance of abortions or to motivate or coerce persons to practice abortions? No.
29. FAA § 604(a). Will all commodity procurement financed under the loan be from the United States except as otherwise determined by the President? Yes.
30. FAA § 604(b). What provision is made to prevent financing commodity procurement in bulk at prices higher than adjusted U.S. market price? Commodity procurement in bulk is not to be financed.
31. FAA § 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will the loan agreement require that marine insurance be placed in the United States on commodities financed by the loan? Yes.
32. FAA § 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? There will be no such procurement.
33. FAA § 608(a). Information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items. Consideration will be given to the use of excess property when practical.
34. FAA § 611(b), App. § 101. If loan finances water or water-related land resource construction project or program, is there a benefit-cost computation made, insofar as practicable, in accordance with the procedures set forth in the Memorandum of the President dated May 15, 1962? No water-related land resource is to be financed.

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35. FAA § 611(c). If contracts for construction are to be financed, what provision will be made that they be let on a competitive basis to maximum extent practicable? The Grant Agreement will so provide.
36. FAA § 612(b); § 625(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the United States are utilized to meet the cost of contractual and other services. The agreement will so provide.
37. Section 30 and 31 of PL 93-189 (FAA of 1973). Will any part of the loan be used to finance directly or indirectly military or paramilitary operations by the U.S. or by foreign forces in or over Laos, Cambodia, North Vietnam, South Vietnam, or Thailand? No.
38. Section 37 of PL 93-189 (FAA of 1973); App. § 111. Will any part of this loan be used to aid or assist generally or in the reconstruction of North Vietnam? No.
39. FAA § 612(d). Does the United States own excess foreign currency and, if so, what arrangements have been made for its release? Endeavor is being made for negotiation of an agreement for the release of U.S.-owned non-P.I. 480 pounds.
40. FAA § 620(g). What provision is there against use of subject assistance to compensate owners for expropriated or nationalized property? The agreement will not permit such use.
41. FAA § 620(k). If construction of productive enterprise, will aggregate value of assistance to be furnished by the United States exceed \$100 million? No.

42. FAA § 636(1). Will any loan funds be used to finance purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States, or any guaranty of such a transaction? No.
43. App. § 103. Will any loan funds be used to pay pensions, etc., for military personnel? No.
44. App. § 105. If loan is for capital project, is there provision for A.I.D. approval of all contractors and contract terms? Yes.
45. App. § 107. Will any loan funds be used to pay UN assessments? No.
46. App. § 108. Compliance with regulations on employment of U.S. and local personnel. (A.I.D. Regulation 7). Yes.
47. App. § 110. Will any of loan funds be used to carry out provisions of FAA § 209(d)? No.
48. App. § 112. Will any of the funds appropriated or local currencies generated as a result of AID assistance be used for support of police or prison construction and administration in South Vietnam or for support of police training of South Vietnamese? No.
49. App. § 113. Describe how the Committee on Appropriations of the Senate and House have been or will be notified concerning the activity, program, project, country, or other operation to be financed by the Loan. The committees have been notified 15 days in advance of obligation.

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50. Ann. § 601. Will any loan funds be used for publicity or propoganda purposes within the United States not authorized by Congress? No.
51. Ann. § 604. Will any of the funds appropriated for this project be used to furnish petroleum fuels produced in the continental United States to Southeast Asia for use by non-U.S. nationals? No.
52. MMA § 901.b; FAA § 640C.  
(a) Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed with funds made available under this loan shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. Yes.

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Project Title & Number SUZ COAST CRIBERY

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><b>Program or Sector Goal:</b> The broader objective to which this project contributes:</p> <p>To stimulate continuing industrial expansion and economic recovery.</p>	<p><b>Measure of Goal Achievement:</b></p> <ol style="list-style-type: none"> <li>1. Increased GDP.</li> <li>2. Reduced balance of payments deficit, particularly the reduction of current imports.</li> <li>3. Increased employment.</li> <li>4. Creation of new industry in the Suze region.</li> </ol>	<ol style="list-style-type: none"> <li>1. OCE statistical data.</li> <li>2. OCE statistical data and EOD records.</li> <li>3. SOC payroll records and OCE employment statistics for Suze region.</li> <li>4. OCE statistical data for Suze region.</li> </ol>	<p><b>Assumptions for achieving objectives:</b></p> <ol style="list-style-type: none"> <li>1. That institutions leading to a settlement of political problems will continue and will achieve reasonable progress; that warfare will not be resumed.</li> <li>2. That the policies and services of the OCE concerning fiscal and monetary policy, prices, debt management, and inflation (e.g., "open door" policy) will foster continued growth.</li> </ol>
<p><b>Project Purpose:</b></p> <p>To furnish a major share of the cement requirements of the Suze and Sinai regions in accordance with the OCE's development and reconstruction goals for these regions.</p>	<p>Conditions that will indicate purpose has been achieved. End of project status:</p> <p>SOC sales revenues generated for .8 million M/Tons in 1980; .9 million M/Tons in 1981; and 1.0 million M/Tons during the remaining estimated 18 years of cement production.</p>	<p>SOC and EOD sales records.</p>	<p><b>Assumptions for achieving purpose:</b></p> <ol style="list-style-type: none"> <li>1. That no major delays occurred to preclude plant operation by 1980.</li> <li>2. No major delays in EOD establishing office and having available necessary transport equipment for the distribution of cement.</li> <li>3. That OCE plans for development and reconstruction of the Suze and Sinai region proceed as reasonably expected.</li> </ol>
<p><b>Outputs:</b></p> <p>A 1.0 million ton per annum cement plant is constructed and operational in the Suze region.</p>	<p><b>Magnitude of Outputs:</b></p> <p>Plant operating at 80% of capacity the first year; 90% the second; and 100% thereafter.</p>	<p>SOC production records.</p>	<p><b>Assumptions for achieving outputs:</b></p> <ol style="list-style-type: none"> <li>1. No major problems with testing the plant and start-up.</li> <li>2. Adequate power and water feeding plant.</li> <li>3. SOC management and line staff capable of operating and maintaining plant.</li> </ol>
<p><b>Inputs:</b></p> <ol style="list-style-type: none"> <li>1. \$ AID: Equipment: a) Cement plant b) Mining c) Transportation d) Power e) Offsites</li> <li>2. LE MBR: Equipment: Pkg. and water pipe.</li> <li>3. LE IZM: Construction Services</li> <li>4. \$ AID: a) Technical Services b) Training c) Other</li> </ol>	<p><b>Implementation Target (Type and Quantity):</b></p> <ol style="list-style-type: none"> <li>1. a. \$64,200,000 &amp; LE 3,600,000 b. \$ 8,300,000 &amp; LE 400,000 c. \$ 2,600,000 &amp; LE 1,600,600 d. \$ 4,400,000 e. \$ 200,000 &amp; LE 28,500,000</li> <li>2. LE 2,500,600</li> <li>3. LE 9,700,000</li> <li>4. a) \$5,100,000 &amp; LE 1,800,000 b) \$1,300,000 &amp; LE 300,000 c) \$3,500,000 &amp; LE 18,200,000</li> </ol>	<ol style="list-style-type: none"> <li>1. SOC and A/E delivery records and site inspections.</li> <li>2. SOC reports on progress of construction.</li> <li>3. Same as 2.</li> <li>4. Signed contract, SOC progress reports and site inspections.</li> </ol>	<p><b>Assumptions for providing inputs:</b></p> <ol style="list-style-type: none"> <li>1. No significant delays in:             <ol style="list-style-type: none"> <li>a. procurement &amp; delivery of equipment</li> <li>b. acquisition of A/E services</li> <li>c. installation of training program</li> <li>d. civil construction.</li> </ol> </li> <li>2. SOC, MBR and IZM provide necessary local currency.</li> <li>3. No difficulties encountered in recruitment of SOC management and line staff.</li> </ol>

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## ANNEX F

Suez Cement Company  
Projected Income Statements  
(\$000)

	Year	1	2	3	4	5	6	7	8	9	10
Operating Capacity		80%	90%	100%	100%	100%	100%	100%	100%	100%	100%
Production: Ordinary Cement		510	580	640	640	640	640	640	640	640	640
Rapid Cement		210	230	260	260	260	260	260	260	260	260
Mixed Cement		140	160	180	180	180	180	180	180	180	180
Total Production		<u>860</u>	<u>970</u>	<u>1080</u>							
Sales Price: Ordinary Cement	37.31										
Rapid Cement	39.87										
Mixed	33.46										
Sales: Ordinary Cement		19028	21640	23878	23878	23878	23878	23878	23878	23878	23878
Rapid Cement		8373	9170	10366	10366	10366	10366	10366	10366	10366	10366
Mixed Cement		4684	5354	6023	6023	6023	6023	6023	6023	6023	6023
Total Sales Revenue		<u>32085</u>	<u>36164</u>	<u>40267</u>							
Income from Transport		<u>267</u>	<u>301</u>	<u>335</u>							
Gross Income		32352	36465	40602	40602	40602	40602	40602	40602	40602	40602
Cost of Goods Sold		<u>14281</u>	<u>15653</u>	<u>16338</u>							
Gross Profit		18071	20812	24264	24264	24264	24264	24264	24264	24264	24264
Fixed Expenses:											
General		790	790	790	790	790	790	790	790	790	790
Deprec. and Amortiz.		5909	5909	5909	5909	5909	5064	5054	5064	5064	5064
Interest on AID Loan (10%)		6284	6284	6189	5789	5149	4864	4328	3729	3088	2371
Interest on LE Loan (7%)		2045	1892	1729	1554	1367	1166	951	721	474	210
Provisions		100	100	100	100	100	100	100	100	100	100
Total Fixed Expenses		<u>15128</u>	<u>14975</u>	<u>14717</u>	<u>14142</u>	<u>13115</u>	<u>11984</u>	<u>11233</u>	<u>10404</u>	<u>9516</u>	<u>8535</u>
Net Profit before Taxes		2943	5837	9547	10122	10749	12280	13031	13860	14748	15729

XCM

(Continued - Annex F)

Suez Cement Company  
Projected Income Statement  
(\$000)

Year	1	2	3	4	5	6	7	8	9	10
Less 10% Legal Reserves (Appropriated Retained Earnings)	294	584	955	1012	1075	1228	1303	1386	1475	1573
Taxable Income	2649	5253	8592	9110	9674	11052	11728	12474	13273	14156
Income Tax (39.7%)	-	-	-	-	-	-	-	-	5269	562
Net Profit	2649	5253	8592	9110	9674	11052	11728	12474	8004	8536
Net Profit as a % of Sales	8.3%	14.5%	21.3%	22.6%	24.0%	27.5%	29.2%	31.0%	22.7%	24.0%

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## ANNEX G

## SUEZ CEMENT COMPANY

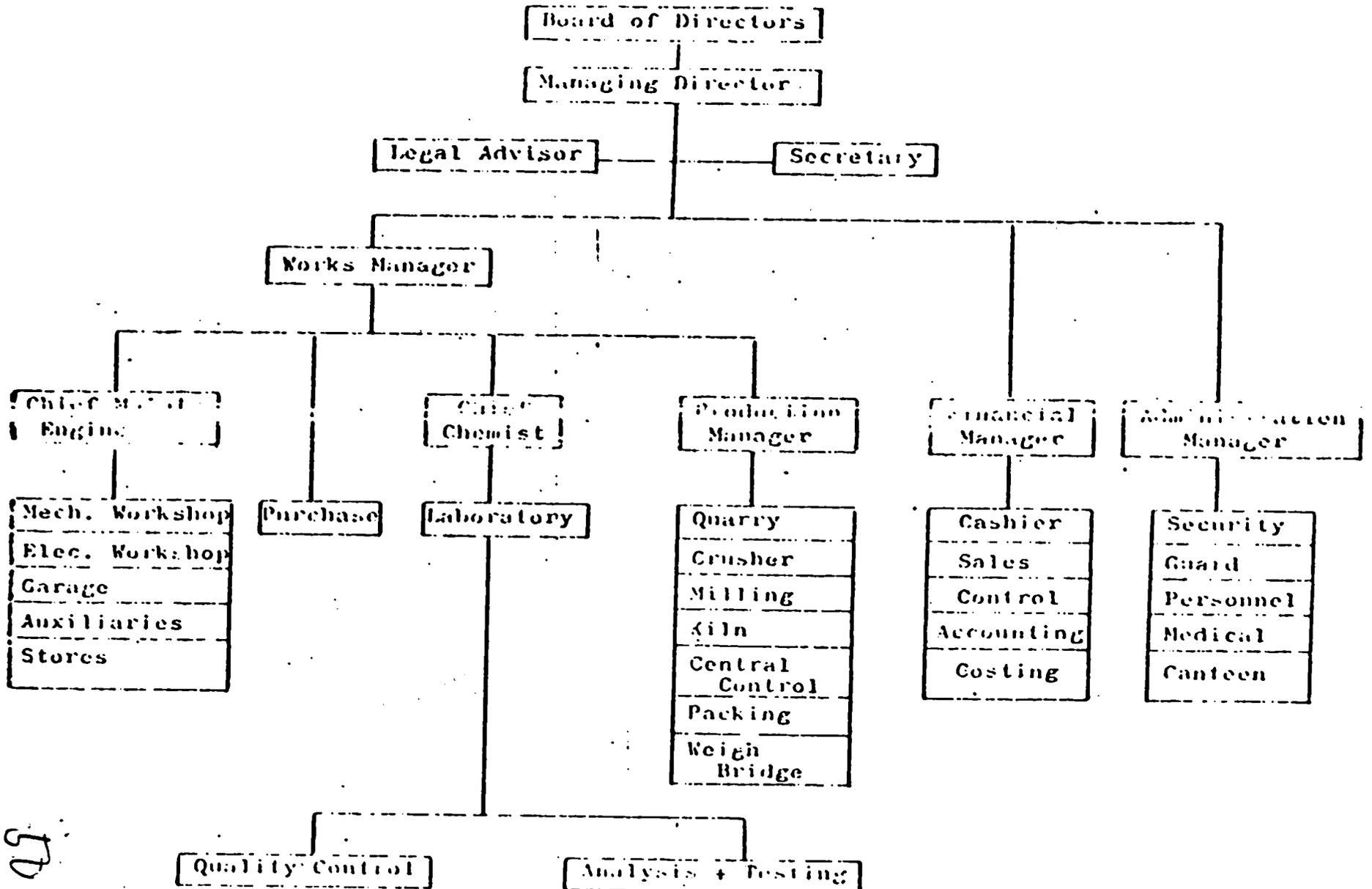
## Cost of Cement Sold

	L.E. 1000		
	Year 1	Year 2	Year 3 through 10
Production % of full capacity.....	80%	90%	100%
<b>Raw Materials:</b>			
- Limestone & Clay	281	305	339
- Other additives & gypsum	54	60	67
- Sand	9	10	11
<b>Sub-Total</b>	<b>344</b>	<b>375</b>	<b>417</b>
<b>Fuel and Power:</b>			
- Heavy fuel oil	625	694	694
- Electric power	777	862	862
<b>Sub-Total</b>	<b>1402</b>	<b>1556</b>	<b>1556</b>
Refractories and Grinding Media	432	480	480
Spare Parts and Maintenance	761	761	761
Direct Labor	362	402	402
Other Expenses	326	362	362
<b>Total Operating Costs</b>	<b>3627</b>	<b>3936</b>	<b>3978</b>
<b>Selling Expenses:</b>			
Cost of cement sold Locally in bulk.	43	49	54
	3570	3985	4032
Packing	1720	1940	2160
Additional Expenses for Exports	180	180	180
<b>Total Costs of Cement Sold</b>	<b>5570</b>	<b>6105</b>	<b>6372</b>
<b>US Dollar Equivalent (in 000's)</b>	<b>\$14,281</b>	<b>\$15,653</b>	<b>\$16,338</b>

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SUEZ CEMENT COMPANY

Organization Chart



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ANNEX I  
COST ESTIMATE

	Egyptian Pounds (in \$000)	Foreign Exchange (in \$000)	Total (in \$000)
<b>A. <u>SCC Assets</u></b>			
<b>1. <u>Land and Improvements</u></b>			
Plant Site	165		165
Mining Sites	550		550
Roads	415		415
Sewers	275		275
Fencing	165		165
Internal Railway	445		550
Subtotal	<u>2,015</u>	<u>105</u>	<u>2,120</u>
<b>2. <u>Mining Equipment</u></b>			
Drill Rigs and Jack Hammers		563	563
Mobile Compressors		104	104
Blasting and Testing		39	39
Face Shovels		2,719	2,719
Front Loaders, 5m <sup>3</sup>		248	248
Front Loaders, 3m <sup>3</sup>		96	96
Bulldozers		272	272
Dump Trucks		920	920
Mobile Crane, 30-ton		172	172
Mobile Crane, 10-ton		52	52
Subtotal		<u>5,185</u>	<u>5,185</u>
Spare Parts		520	520
Freight and Insurance		775	775
Customs Duties and Clearance	179		179
Inland Transportation	156		156
Subtotal	<u>335</u>	<u>6,480</u>	<u>6,815</u>
<b>3. <u>Cement Plant Equipment</u></b>			
Limestone Crushing and Conveyors		2,085	2,085
Clay Crushing and Handling		1,745	1,745
Raw Mix Grinding and Drying		5,805	5,805
Kiln		11,740	11,740
Electric Filters		2,150	2,150
Clinker Grinding and Dust Collection		5,335	5,335
Cement Silos		2,150	2,150
Electrical Equipment		6,580	6,580
Laboratory and Workshop		880	880
Misc. Equipment		1,410	1,410
Subtotal		<u>39,880</u>	<u>39,880</u>
Spare Parts		3,690	3,690
Freight and Insurance		6,535	6,535
Customs Duties	1,503		1,503
Inland Transportation	1,307		1,307
Subtotal	<u>2,810</u>	<u>50,105</u>	<u>52,915</u>

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COST ESTIMATE (continued)

	<u>Egyptian Pounds (in \$000)</u>	<u>Foreign Exchange (in \$000)</u>	<u>Total (in \$000)</u>
<b>4. <u>Cement Plant Construction</u></b>			
Crusher Plant	1,770		1,770
Raw Grinding Plant and Storage	2,680		2,680
Kiln Plant	6,420		6,420
Clinker Grinding Plant	2,465		2,465
Bagging and Loading	995		995
Utilities	3,325		3,325
Administrative Building	580		580
Housing Colony	500		500
Misc. Construction	490		490
Subtotal	19,225		19,225
<b>5. <u>Transport Equipment</u></b>			
Trucks and Trailers	355	1,890	2,245
Employees Bus Transportation	205	150	355
Service Cars	700		700
Subtotal	1,260	2,040	3,300
TOTAL, A-1 to A-5	25,645	58,730	84,375
<b>6. <u>Contingencies and Escalation</u></b>			
Physical Contingencies - 10%	2,565	5,875	8,440
Escalation - 24%	6,155	14,095	20,250
Subtotal	8,720	19,970	28,690
TOTAL GROUP A	34,365	78,700	113,065
<b>B. <u>Services</u></b>			
1. Engineering and Management	1,425	4,000	5,425
2. Training	200	1,000	1,200
Subtotal	1,625	5,000	6,625
3. Contingencies & Escalation- 34%	540	1,700	2,240
TOTAL GROUP B	2,165	6,700	8,865
<b>C. <u>Power and Water</u></b>			
1. Power Transmission and Substations	7,630	3,400	11,030
2. Water Line from Suez	1,925		1,925
Subtotal	9,555	3,400	12,955
3. Contingencies & Escalation- 34%	3,249	1,200	4,449
TOTAL GROUP C	12,804	4,600	17,404

COST ESTIMATE (continued)

	<u>Egyptian Pounds (in \$000)</u>	<u>Foreign Exchange (in \$000)</u>	<u>Total (in \$000)</u>
D. <u>Other Costs</u>			
1. Pre-Project Expenses	1,545		1,545
2. Administrative Expenses	1,530		1,530
3. Working Capital	7,985		7,985
4. Interest During Construction	<u>10,586</u>		<u>10,586</u>
Subtotal	21,646		21,646
5. Contingencies and Escalation on Item 2 - 34%	<u>520</u>		<u>520</u>
 TOTAL GROUP D	 <u>22,166</u>		 <u>22,166</u>
 GRAND TOTAL	 <u>71,500</u>	 <u>90,000</u>	 <u>161,500</u>

ANNEX J

SUEZ CEMENT CO.

ECONOMIC RATE OF RETURN  
(In 000 L.E)

<u>YEAR</u>	<u>TOTAL REVENUES</u> (1)	<u>TOTAL COSTS</u>		<u>NET REVENUES</u> (4)
		<u>CAPITAL COSTS</u> (2)	<u>OPERATING &amp; MAINT. COSTS</u> (3)	
1976	-	1694	-	(1694)
1977	-	13226	-	(13226)
1978	-	48342	-	(48342)
1979	-	32329	-	(32329)
1980	22231	-	9455	12776
1981	25075	-	10407	14668
1982	27918	-	10833	17085
1983	27918	-	10833	17085
1984	27918	-	10833	17085
1985	27918	-	10833	17085
1986	27918	-	10833	17085
1987	27918	-	10833	17085
1988	27918	-	10833	17085
1989	27918	-	10833	17085
1990	27918	-	10833	17085
1991	27918	-	10833	17085
1992	27918	-	10833	17085
1993	27918	-	10833	17085
1994	27918	-	10833	17085
1995	27918	-	10833	17085
1996	27918	-	10833	17085
1997	27918	-	10833	17085
1998	27918	-	10833	17085
1999	27918	-	10833	17085
2000	27918	(47790)	10833	64831

Internal Rate of Return 14.6%

SUEZ CEMENT CO.

EXPLANATORY NOTE TO ECONOMIC RATE  
OF RETURN CALCULATION

Column 1 - TOTAL REVENUES - Annual total production from Annex F (Projected Income Statements) multiplied by \$38.00 per metric ton divided by 1.47 to convert to Egyptian L.E. The parallel exchange rate is assumed throughout as 1 L.E. = US\$1.47

Column 2 - CAPITAL COSTS - For 1976 through 1980, the annual distribution of capital costs was as follows: 2%, 16%, 59% and 23%. Capital Costs were obtained from Annex I (Cost Estimate) excluding interest during construction and working capital. In order to convert Annex I (less exclusions) into Egyptian L.E. and shadow price the direct foreign exchange capital costs, the local currency procurement was divided by 2.564 (the official exchange rate of the US\$ to L.E.) and the direct foreign exchange outlays by 1.47 (the parallel exchange rate of the US\$ to L.E.).

A salvage value of 50% of the capital costs was adopted in the terminal year of the calculation.

Column 3 - OPERATING & MAINTENANCE COSTS - The basic information was obtained from Annex G (Cost of Cement Sold). For each cost item (excluding heavy fuel oil) shown in Annex G an assumption was made as to the foreign exchange component included in the cost. The proportion of the cost item assumed to be a foreign exchange cost was multiplied by 1.74, the ratio of the official exchange rate to the parallel exchange rate. The following foreign exchange proportions of various cost items were utilized: Raw materials, 25%; electric power, 40%; refractories, and grinding media, spare parts and maintenance, 50%, and packing, 100%. Direct labor, other expenses and selling expenses were assumed as local resource costs.

It is reported that heavy fuel oil is priced at about 25% of world market price. This cost item was, therefore, increased by a factor of 4.

Column 4 - NET REVENUES - Column 1. less Column 2. + Column 3.