

UNCLASSIFIED

Department of State
Agency for International Development
Washington, D.C. 20523

Project Paper Amendment

Egypt - Grain Silos, Project No. 263-0028

AID - DLC/P-2110, Amendment

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET	1. TRANSACTION CODE <input type="checkbox"/> A = Add <input type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number <u>1</u>	DOCUMENT CODE <u>3</u>
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2. COUNTRY/ENTITY EGYPT	3. PROJECT NUMBER <input type="checkbox"/> 263-0028
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4. BUREAU/OFFICE NE/PD/E <input type="checkbox"/> 03	5. PROJECT TITLE (maximum 40 characters) <input type="checkbox"/> Grain Silos
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6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY <input type="checkbox"/> 0 <input type="checkbox"/> 3 <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 8 <input type="checkbox"/> 5	7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4) A. Initial FY: <input type="checkbox"/> 7 <input type="checkbox"/> 5 B. Quarter: <input type="checkbox"/> 3 C. Final FY: <input type="checkbox"/> 8 <input type="checkbox"/> 5
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8. COSTS (\$000 OR EQUIVALENT \$1 = LE .83)						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AD Appropriated Total						
(Grant)	()	()	()	(13,500)	()	(13,500)
(Loan)	(44,275)	()	(44,275)	(44,275)	()	(44,275)
Other U.S.						
1.						
2.						
Host Country		18,675	18,675		30,120	30,120
Other Donor(s)						
TOTALS	44,275	18,675	62,950	57,775	30,120	87,895

9. SCHEDULE OF AID FUNDING (\$000)									
A. APPROPRIATION/PURPOSE	B. PRIMARY CODE	C. PRIMARY TECIL CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) SA	159		063		44,275	13,500		44,275	13,500
(2)									
(3)									
(4)									
TOTALS					44,275	13,500		44,275	13,500

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)	11. SECONDARY PURPOSE CODE
12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)	
A. Code	B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To provide additional closed storage capacity for food grains.

14. SCHEDULED EVALUATIONS Interim: MM YY Final: MM YY	15. SOURCE, ORIGIN OF GOODS AND SERVICES <input type="checkbox"/> 000 <input type="checkbox"/> 241 <input type="checkbox"/> Local <input type="checkbox"/> Other (Specify)
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

Add-on to offset inflation related costs.

17. APPROVED BY	Signature: <i>M.P.W. Stone</i> Title: M.P.W. Stone	Date Signed: MM DD YY	18. DATE DOCUMENT FILED IN AID/W, OR FOR AMENDMENTS, DATE OF DELETION: MM DD YY
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EGYPT - GRAIN SILOS

AMENDMENT NO. 1

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- G. Project Design Summary, Logical Framework

EGYPT: Grain Silos Project Amendment No. 1

I. SUMMARY AND RECOMMENDATIONS

1.01 Grantee: The Government of the Arab Republic of Egypt (G.O.E.).

1.02 Implementing Entity: The General Authority for Supply Commodities (GASC), of the Ministry of Supply and Home Trade.

1.03 Beneficiary/Operating Entity: The General Company for Silos (GCS) of the Ministry of Supply and Home Trade.

1.04 Proposed Grant Amount: \$13,500,000

1.05 Project Description: The original project description remains unchanged by this project paper amendment. The project consists of the construction and equipping of two 100,000 metric ton grain silo complexes, one in Cairo and one in Alexandria. The Alexandria complex includes two gantry pneumatic ship unloaders. The project is being implemented in four distinct phases, namely I - Final Engineering/Design; II - Silo Construction; III - Ancillary Buildings; and IV - Mechanical/Electrical Equipment Installation.

1.05.1 Project Amendment Purpose: The purpose of the additional \$13.5 million funding is to complete and make operational the Alexandria/Cairo Grain Silos Project. Specifically, these funds are required to offset the inflation related costs associated with the Phase IV installation of almost \$25 million of electrical and mechanical equipment after an almost three year completion delay. Work associated with this increase will change from the conventional (civil/architectural/structural) mode of the project's first three phases, to that of a highly specialized (mechanical/electrical) nature, to be provided by a U.S. subcontractor (\$4.1 million). Other major elements of this cost add-on include approximately \$2.9 million of additional equipment and spare parts to be purchased, and the provision of specific vendor services (\$1.9 million) for the project's more specialized equipment (i.e. En-Masse Conveyors, Pneumatic Ship Unloaders, Explosion Suppression System, Motor Control Centers, Industrial Personnel Elevators, etc.).

1.06 Project Costs: The project expenditure projection is revised as follows:

<u>I n M i l l i o n s</u>			
<u>Original (1975)</u>		<u>Revised (1982)</u>	
\$44.3	LE 15.5	\$57.8	LF 25.0

1.07 Environmental Issues: None. The environmental assessment made for the original project remains valid as originally approved. In light of environmental directives issued subsequent to the project's authorization, we have, however, updated that analysis. (See Annex F.)

1.08 Grant Application: The Government of Egypt, through its Ministry of Investment and International Cooperation, has requested that AID continue its assistance to complete the construction of the two grain complexes by providing the required additional foreign exchange funding. (See Annex A.)

1.09 Issues: None.

1.10 Mission Recommendation: USAID/Cairo recommends that this grant be authorized.

USAID Project Committee:

<u>NAME</u>	<u>OFFICE</u>
Winston M. McPhie, Project Officer	DRPS/IDPS
William A. Fraser, Office Director	DRPS/IEPS
Patricia Ramsey, Legal Officer	Legal
Howard Sternberger, Economist	DFPE/PAAD
Lauryn C. Drenkler, Financial Officer	FM/CLN

II. BACKGROUND

2.01 The focus of this paper is on the fourth and final phase of the Grain Silos project which was funded by AID in June 1975. The overall project consists of the construction of two grain storage facilities located in Alexandria and Shoubra (part of Greater Cairo). In Alexandria, a one hundred thousand (100,000) metric ton reinforced concrete silo complex has been built adjacent to an existing forty-eight thousand (48,000) metric ton complex, which had been designed and erected by a joint venture (M.I.A.G. from Braunschweig and A.H.I. Dusseldorf) from the Federal Republic of Germany in 1962. In addition, the Alexandria site will include the installation of two (2) self-propelled pneumatic unloading towers on Quay 85 to discharge vessels. A Transfer Station will receive ship discharged grain from these two new unloading towers and the existing unloading towers on Quay 84 and deliver it to either the new or existing grain silos.

2.02 At the second site, Shoubra, a similar one hundred thousand (100,000) metric ton silo complex has been built. Unlike the Alexandria complex, there were no structures existing at this site. Almost all the mechanical and electrical equipment required for a fully operational facility has been procured and most of it is stored at the site.

2.03 After about one year of negotiation, an engineering services contract between the GASC and de Laoreal Engineers, Inc. was signed on February 14, 1977. As the detailed design neared completion, the engineering services were moved to an associated company, Kidde Consultants.

2.04 The project has proceeded over the ensuing years, as originally designed, through the first three of the following four (4) phases:

- Phase I - Final Engineering and Design
- Phase II - Silo Construction
- Phase III - Erection of Structures for the Ancillary Buildings
- Phase IV - Installation of Mechanical and Electrical Equipment and Materials.

2.05 Final Engineering and Design Phase:

The Preliminary Project Design and Implementation Study was completed and submitted by the Design Engineer to the GASC and AID in September 1977. Final engineering and design included all the engineering investigations and calculations which were necessary to generate the designs, engineering drawings, specifications and the final cost estimates required for construction and/or installation/erection of all equipment, main structures, ship unloaders and appurtenances required for the entire project. The Design Engineer was also responsible for the soils and foundation investigations which were required to provide a sound basis for the final design. In addition, tests for developing pile programs to confirm the results of those soils investigations prior to the implementation of the final design were made by the Design Engineer. In an attempt to save time, however, a fast track mode (rather than the initially planned sequential method) of implementing the project was determined to be the better alternative at that time. The decision was made, therefore, to design and build simultaneously.

2.06 Silo Construction Phase:

This phase was subdivided into Foundation Construction Work and Silo and Headhouse Structures. The first included all the work necessary for demolition, earthwork, piling and concrete foundations at both project sites. In May, 1978, Misr Concrete Development Company (Misr), an Egyptian public sector firm, was competitively awarded the contract to provide these services. Misr subcontracted to Raymond International of Delaware, Inc., a U.S. firm, the installation of the cast-in-place concrete foundation piles. The latter involved the actual slipforming of the silos at both sites and the erection of a Workhouse at the Shoubra site. Misr was competitively awarded the prime contract for this portion of the project in April, 1979. Technical supervision for the slipform work was undertaken by A. B. Bygging, a slipform contractor from Stockholm, Sweden, under a contract financed by the GOE in Egyptian pounds.

2.13 Erection of Structures for Ancillary Buildings Phase:

This phase consisted of the construction of miscellaneous structures and auxiliary buildings and the

provision of utilities and related work to both project sites. The contract for this phase was given to Misr because of its prior project experience. Phase III work is scheduled to be completed by March 1983 at Shoubra and by July 1983 at Alexandria.

III. FINANCIAL AND ECONOMIC ANALYSIS

3.01 Financial Summary:

The original project, authorized and obligated in FY 1975, was estimated to cost \$44,275,000 in foreign exchange and L.E. 15,500,000 and was planned to be completed in 1979. For reasons stated elsewhere in this project paper amendment, the revised project completion date is now estimated to be the end of calendar year 1984. The foreign exchange and local currency costs are now estimated to be \$57,775,000 and L.E. 25,000,000, an increase of \$13.5 million (30%) and L.E. 9.5 million (61%), respectively.

The original and revised capital expenditure projections are shown below for comparative purposes:

	EXPENDITURE PROJECTION (millions)			
	Original (1975)		Revised (1982)	
	<u>US\$</u>	<u>LE</u>	<u>US\$</u>	<u>LE</u>
1976 (Yr. 1)	0.5	0.8	-	
1977 (Yr. 2)	9.5	4.7	.7	
1978 (Yr. 3)	24.3	5.0	1.9	
1979 (Yr. 4)	10.0	5.0	8.2	14.8
1980 (Yr. 5)	-	-	13.8	
1981 (Yr. 6)	-	-	7.7	
1982 (Yr. 7)	-	-	7.5	2.0
1983 (Yr. 8)	-	-	7.0	4.0
1984 (Yr. 9)	-	-	11.0	4.2
Total	<u>44.3</u>	<u>15.5</u>	<u>57.8</u>	<u>25.0</u>

1/ Breakdown by year not available.

Note: Foreign Exchange increase of 30% (\$44.3 to \$57.3 million)
 Egyptian Pounds increase of 61% (LE 15.5 to LE 25.0 million)

3.02 Basis for Additional U.S. Dollar Costs:

The increase of \$13.5 million in the foreign exchange costs, resulting from project delays, is made up primarily of the actual offer of the proposed mechanical and electrical U.S. subcontractor (\$4.1 million) and the estimated cost of additional equipment and spare parts purchases (\$2.9 million). It was also considered prudent, based on past experience, to include approximately \$2 million for contingencies. Components of this funding increase are outlined below:

U.S. Subcontractor (bid in hand)	\$4,063,000
Vendor Erection Services	1,880,000
Equipment Purchases	2,946,000
Shipping	1,173,000
Equipment Change Orders	1,000,000
Gantry Mothballing	500,000
Contingency	<u>1,938,000</u>
TOTAL	<u>\$13,500,000</u>

3.03 Basis for Increase in Local Currency Costs:

Through calendar year 1981, L.E. 14.8 million have been spent by the GOE. Its estimate for 1982 and Phase IV (1983-84) of the project is as follows:

Egyptian Prime Contractor	LE 6,720,000
U.S. Subcontractor	393,920
Vendor Services	620,000
A & E Services	470,000
Contingency	<u>1,996,080</u>
TOTAL	LE <u>10,200,000</u>

3.04 Economic Summary:

The GOE has requested an additional \$13.5 million in grant funding to complete the Alexandria/Cairo Grain Silos project. The consultant has stated that without the additional funding, the grain silos cannot be put into operation. Thus, the incremental gains from the proposed increase in silo capacity and equipment is equivalent to the full value of the benefits captured by the project.

3.05 A very conservative estimate of annual project benefits against costs---not an estimate of full benefits captured by the incremental investment---yields a favorable range of IRPs which vary with the assumption structure. The base case assumptions generate annual project benefits of \$56 million including major savings from reduced demurrage charges (\$27.8 million) and lowered wastage (\$17.2 million). The base case IRR is estimated to be 23 percent. The internal rate of return rises to 27 percent under the most favorable set of assumptions (annual project benefits estimated at \$77.1 million) and falls to 21 percent assuming the least favorable case (annual project benefits estimated at \$48.2 million). It is clear from this analysis that the proposed additional funding to permit the completion of the project is feasible. A more comprehensive analysis is provided in Annex D.

IV. TECHNICAL ANALYSIS

4.01 The technical aspects of the Project were considered during the original project selection process. The proposed project Amendment is considered technically feasible within the meaning of section 611(a), FAA.

4.02 Project Description:

The project consists of two Grain Silos facilities, each of 100,000 metric tons capacity. One facility is located in Cairo and the second is located in Alexandria. The facility at Cairo is capable of receiving bulk grain by either truck or rail. The facility at Alexandria port is capable of receiving grain by two pneumatic ship unloaders and shipping bulk or sack grain by rail, truck or barge. This facility is an extension to the existing 48,000 metric ton facility, which will bring Alexandria's total capacity to 148,000 metric tons.

4.03 Project Location:

The Alexandria facility is located within the port of Alexandria. The pneumatic ship unloaders are located on what is known as Quay 85. The Cairo facility is located in the Shoubra area in the northern section of the City.

4.04 Site Access and Utilities:

4.04.1 Alexandria Facility

The Alexandria extended facilities are served by ocean vessels via the pneumatic ship unloaders on Quay 85. The facility has access to the existing water and electric power system of the city of Alexandria. Sewage disposal is handled by on-site treatment.

4.04.2 Cairo Facility

The Cairo facility is served by existing roadways and a rail link. The facility has access to the existing water and electric power system of the city. Sewage disposal is handled by on-site treatment.

4.05 Design and Construction:

Both the Alexandria and Cairo facilities were approved for design and construction initially on a "fast track" basis, in an attempt to minimize the overall project time and cost. Plans, therefore, were for design to occur concurrently with the construction elements of the project. This has not materialized, however, as the project has proceeded sequentially (with some overlap) through the following four phases:

- Phase I Final Engineering and Design (completed)
- Phase II Silo Construction^{2/} (completed)
- Phase III Erection of Structures for Ancillary Buildings
(56% completed)
- Phase IV Mechanical and Electrical Installation.

Other significant construction activities are:

- A. The construction of the extension of Quay 85 at the Alexandria facility.
- B. The installation of the two pneumatic ship unloaders on Quay 85 at the Alexandria facility.
- C. The installation of the electrical power lines at the Alexandria facilities.
- D. The installation of the electrical substation and power lines at the Cairo Facilities.
- E. The installation of the railroad line extensions at the Cairo facility.
- F. The relocation of the railroad lines at the Alexandria facility.
- G. The transportation of the mechanical and electrical materials and equipment from Alexandria to Cairo.

^{2/} Includes Piling and Foundations, and Concrete slinforming of Silos and workhouse.

4.06 Phase III Erection:

The Cairo facility's Phase III construction work appears to be experiencing a shortage of manpower and was not completed by the scheduled completion date of October 31, 1982. Anticipated completion date is now March 31, 1983.

The Alexandria facility's Phase III Construction work was delayed for a considerable time. The Contractor had been instructed to hold all construction activities, related to the erection of the Gantry Substation Building, Maintenance Building and Stores Building, while the previously approved design and location were reevaluated by the GOE.

4.07 Phase IV Installation:

4.07.1 Phase IV Contractual Mode: Initially three (3) contractual modes were presented by the design engineer as the most straightforward approaches for consideration. These were: Option 1 - Egyptian Prime Contractor; Option 2 - Egyptian Prime Contractor with a U.S. Subcontractor; and, Option 3 - U.S. Prime Contractor with an Egyptian Subcontractor. Option 1 was subsequently dropped since currently there are no known Egyptian firms with the available manpower and related in-house grain silos experience to complete an assignment of this size and complexity. Alternatives No. 2 and 3 were, therefore, considered. The U.S. Prime/Egyptian Subcontractor alternative was adjudged to be the more costly, by far, of the two considered alternatives. Foreign exchange cost was projected, then, at \$10.9 million versus \$6.1 million for the Egyptian Prime/U.S. Subcontractor alternative. This latter alternative was, therefore, considered to be the most reasonable and cost-effective approach. In December 1981, the GOE officially accepted this approach. After notifying AID/Washington of its intent USAID has proceeded with securing the services of a U.S. subcontractor, while the GOE has negotiated a prime contract with the Misr Concrete Company. Any change in the mode of contracting at this time could delay the project for a further 6-12 months.

Egyptian Prime Contractor/U.S. Subcontractor: This mode of operation is based on the premise that the Egyptian Prime does not have the grain silos related experience and that the U.S. Subcontractor will provide general contracting assistance in mechanical and electrical installation. The use

of the U.S. Subcontractor is expected to contribute to the shortening of the construction period in a number of ways. The projected construction period (18-24 months) is more than that of the U.S. Prime alternative (12-18 months), but considerably less than that of the Egyptian Prime Contractor alone (36 months).

4.07.2 Planned Phase IV Operation: The major design has been completed for Phase IV's Mechanical and Electrical Installation; however, as information and shop drawings have not been received on some procurements, some design effort will be necessary during the Phase IV construction period.

The program for the Phase IV Construction consists of three main elements:

a. The General Contractor, Misr, was awarded contract for Phases I, II and III construction work and is being retained with prime responsibility for Phase IV work. More specifically, Misr is responsible for providing the equipment and workers, who are to be supervised by a U.S. contractor. This decision takes advantage of the fact that Misr is already mobilized and established on both sites and is familiar with the project.

b. A U.S. contractor will be hired by Misr under a subcontract to provide hands-on supervision, technical assistance and employee training. This U.S. contractor shall be experienced in the construction of grain silos and facilities and, therefore, will provide the needed construction expertise for the mechanical and electrical installation. Thus, the general contractor and the U.S. contractor will be responsible for the means and methods of the construction.

The U.S. contractor's major responsibility is to provide manpower of foreman classification, expatriate employees and possibly some special tools to assist Misr in the following activities:

1. estimating of project needs.
2. supervising and training local construction labor.
3. scheduling work activities.
4. coordinating and scheduling vendor technical services.

c. Vendors services are required for the installation of the project's more specialized equipment (e.g. En-Masse Conveyors, Pneumatic Ship Unloaders, Explosion Suppression System, Motor Control Centers and Industrial Personnel Elevators). Vendor technical services personnel will be requested by the Design Engineer to come to Egypt, as required, to advise on the installation of specific pieces of equipment. As these services are very expensive, every attempt will be made to utilize them in an effective and efficient manner.

d. The Design Engineer has prepared the Phase IV contract documents to include the mechanical and electrical details required for construction, and has prepared electrical material procurements to provide the required material. He has also prepared a computerized Critical Path Method Schedule with updates for each facility, and will provide construction management services through a Construction Manager at each site. Additionally, the Design Engineer will provide Electrical and Mechanical engineers for the sites supplemented by engineers from his home office.

4.07.3 The construction of the extension of Quay 85 at the Alexandria facility has been subject to considerable delay, which has adversely impacted on the turnkey installation of the two pneumatic ship unloaders. This could affect the final completion of the project as the installation of the conveyors, serving the ship unloaders, is a critical path item of the Phase IV construction schedule. The final completion date of Quay 85 is controlled by others and is now projected to be completed by March 1983. The Design Engineer will provide the designs for the necessary rail extensions for the ship unloaders and plans to include the construction work for the pilings and the foundations in the existing Phase III Contract.

4.07.4 At Alexandria the turnkey installation of the two pneumatic ship unloaders has been hampered (re para 4.07.3 above) by the Quay 85 extension construction, and the unavailability of electrical power for testing and final check out. Thus, it has been necessary for the unloader construction work to stop short of check out and testing, and the need for the equipment to be mothballed. It appears prudent to have the vendor make periodic preventative maintenance inspections and take appropriate preventative maintenance measures during the period the equipment is mothballed. Consequently, the sum of

\$500,000 (refer to para 3.02) has been included in USAID's add-on funding request.

4.07.5 Presently the provision of electrical power at the Cairo facility is projected to be in two stages: 1) the provision of 1000 KVA of temporary power and 2) the installation of the new substation on the site by the utility company, which will make available 5000 KVA of permanent electrical power. It is likely that the facility may be operated on the temporary power source for an interim period.

4.07.6 Currently it is believed that the installation of the railroad line extensions at both facilities will be completed by the railroad authority in a timely manner.

4.07.7 The timely completion of the Phase IV construction work is predicated on the mechanical and electrical materials and equipment for the Cairo facility being transported from the storage facilities in Alexandria to Cairo before the Phase IV work commences. Presently approximately 90% of that move has been accomplished, with only those items requiring covered storage remaining in Alexandria.

4.08 Capacity and General Design of Facilities:

The capacity and general design of the facilities remain as originally programmed with the following exception:

The soil conditions dictated that the silos at Alexandria be constructed on pilings rather than the raft foundation first proposed in the 1975 cost analysis study by Kansas State University.

The original plan called for the use of local piles and local reinforcing steel, however, due to lack of available local materials, U.S. steel piles and reinforcing steel was used, which required the unanticipated use of additional U.S. dollars.

V. ENVIRONMENTAL CONSIDERATIONS

5.01 It has been determined that no significantly adverse effects on the environment shall occur, as a result of the installation of the two Grain Silos Complexes' mechanical and electrical equipment. Consequently, the determination that the project will not "... have any deleterious environmental side effects..." recommended in the environmental analysis outlined in the original (1975) Project Paper is not affected by this funding increase. We have, nevertheless, updated that analysis and included it in Annex F.

VI. IMPLEMENTATION PLAN

6.01 Administrative Arrangements:

The General Authority for Supply and Commodities (GASC) and the General Company for Silos (GCS) of the Ministry of Supply and Home Trade will implement the project and operate the completed facilities, respectively. A full time Project Manager from GASC has been appointed to oversee the project during the period of construction.

6.02 Engineering Consulting:

Since February, 1977, GASC has had a Contract with the consulting firm of de Laoreal Engineers, division of KIDDE Consultants for design, procurement advisory services and construction supervision. GASC has recently amended that the de Laoreal contract to include additional services to complete the project. USAID has approved that amendment.

6.03 Construction Contracting and Procurement:

6.03.1 As previously noted, the project is divided into the four following construction phases:

- Phase I Piling and Foundations
- Phase II Concrete Slipforming of Silos and Workhouse
- Phase III Erection of Structures for Ancillary Buildings
- Phase IV Mechanical and Electrical Installation.

6.03.2 Phases I, II and III:

The Phase I and II have been completed, while Phase III is well on its way to completion. The plan for implementing Phase IV is outlined in the following sections.

6.03.3 Phase IV - Mechanical and Electrical Installation:

The Phase IV construction is considered a significant construction effort in Egypt as major problems are evident on existing mechanical/electrical industrial type construction projects throughout the country.

At the request of USAID, the Design Engineer visited several construction sites in Egypt to gain first hand knowledge of the progress of these mechanical/electrical type erections. As a result, the factors critical to successful completion of Phase IV were identified.

The Design Engineer will provide construction management services through a Project management office plus a Construction Manager at each site. These will be supported by an electrical engineer for both sites, plus specialized home office engineers as required. Support is also planned to be obtained from vendor specialists, however, it is hoped to keep this support to a minimum whenever possible.

The Prime Contractor is Misr Concrete, one of the larger general contracting firms in Egypt. The principal effort of Misr will be to provide teams of skilled workmen and laborers supervised by an engineer, who will take direction from the experts being provided by the U.S. contractor.

Currently, Misr has had its mechanical and electrical engineering staff reviewing and studying preliminary drawings and specifications in an attempt to learn and familiarize themselves with certain aspects of the project, and prepare for negotiations with the successful U.S. subcontractor.

The contracts for the U.S. subcontractor and the General Contractor include provisions for incentives and penalties in an attempt to obtain mutually beneficial contractor response to project needs.

With the commencement of Phase IV work, the character of project activities will undergo a marked change. It will change from being an essentially conventional civil/architectural/structural nature to one of intensive specialty work of a mechanical/electrical nature.

A subcontract with a U.S. Contractor will provide the specialized skills needed for the mechanical/electrical equipment installation. This use of a core of U.S. supervisory personnel, essentially of the skilled general foremen level, will reinforce Misr's personnel. The U.S. personnel would be organized under a "manpower level" subcontract to Misr and would be expected to contribute to the shortening of the construction period in a number of ways.

All U.S. personnel hired must have prior demonstrable and appropriate experience. Through the application of this experience, they should be able to maintain a faster performance rate by the orderly sequencing of installation.

Priced Proposals were received from two prospective subcontractors. The lowest priced proposal was from T.E. Ibberson of Minnesota for \$4,054,247/LE 393,920. Misr will negotiate a subcontract with Ibberson.

The Design Engineer has prepared a computerized Critical Path Method Schedule, which with its periodic updates, will become a part of the construction contracts. This schedule includes the principle elements of the construction work plus the procurements and other impacting off-site activities.

6.04 Implementation Schedule:

A. Original Loan:

Loan Authorization	June 27, 1975
Loan Negotiated and Signed	June 29, 1975
Original PACD	May 1, 1980
Current PACD	December 31, 1984

B. Proposed Amendment:

NEAC Approval	January 8, 1983
CN Expiration	January 10, 1983
Grant Negotiated and Signed	January 15, 1983
Phase IV Construction	
Contract Executed	March 1, 1983
Egyptian Prime Contractor	
Mobilization	May 1, 1983
Dollar L/C Established and	
U.S. Subcontractor	
Mobilization	June 1, 1983
Installation to Begin	July 1, 1983
Facilities Completed	
(Including start-up and	
testing)	January 1, 1985
PACD	March 1, 1985

VII. EVALUATION

7.01 The additional funding sought under this project paper amendment is needed principally for Phase IV. Like the first three (3) phases of the Grain Silos project, Phase IV is principally a construction activity, the progress and achievement of which can be verified entirely by monitoring on a routine basis, through the Design Engineer's periodic reports and USAID site inspections. For this reason, therefore, the evaluation component of the original project paper is still valid, i.e., no formal evaluation is planned, as a separate project activity.

VIII. DRAFT AUTHORIZATION

8.01 A draft project authorization has been included in Annex D. This will amend the existing authorization to provide grant funds and establish a new life of project funding level. All of the terms and conditions of the original loan agreement are being implemented. Additional funds provided by this Amendment to the authorization will be obligated under a separate grant agreement.

8.02 Conditions Precedent:

All of the Conditions Precedent to disbursement have been satisfied.

This Project has, in the past, experienced a number of major delays. In an attempt to minimize delays during the Phase IV mechanical and electrical installation, USAID will require the following additional C.P. prior to the disbursement of the grant funds:

(a) GASC has entered into a prime Construction Contract with an Egyptian Contractor. This prime contractor will be required to enter into a construction services sub-contract with a U.S. contractor.

8.03 Covenant:

USAID plans to include the following new covenant in an attempt to reduce delays caused by inadequate staffing at GASC:

(a) The Ministry of Supply will provide GASC with additional manpower to assist in the administrative implementation of the remainder of the project.

8.04 Congressional Notification:

The additional funds proposed under this amendment were originally expected to be authorized in FY-82, but were not. Therefore, a Congressional Notification (CN) for FY-83 funding is required. USAID/Cairo sent a cable in mid-December requesting this action by AID/W.



600085

ANNEX A

Handwritten notes:
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MINISTRY OF ECONOMY
ECONOMIC CO OPERATION WITH U. S. A
CAIRO - EGYPT

June 15, 1982

Mr. Donald S. Brown
US AID Director
American Embassy
Cairo, Egypt

TO	FROM	DATE	INITIALS
AMERICAN AID	Letter to MIEC	8/5	[Signature]
NAN			

Dear Mr. Brown,

The Ministry of Investment and International Cooperation hereby reconfirms the Government's interest in obtaining US AID Dollar to finance the completion of project No. 263-K-028 (Grain Storage Silos at Alexandria and Shoubra).

Kindly notify us of the additional funds needed for that purpose.

With best regards.

Sincerely yours,

[Signature]
Ezzat El-Madani

Senior Undersecretary of State
for Economic Cooperation with
U.S.A.

Handwritten note:
Rec 6/22

5C (2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects. For convenience, reference is made to sections of the FY 82 Appropriations Act. However, the checklist is in compliance with requirements of the FY 83 Continuing Resolution. This section is divided into two parts. Part A. includes criteria applicable to all projects. Part B. applies to projects funded from specific sources only: B.1. applies to all projects funded with Development Assistance Funds, B.2. applies to projects funded with Development Assistance loans, and B.3. applies to projects funded from ESF.

CROSS REFERENCE: IS COUNTRY CHECKLIST UP TO DATE? YES
HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT? YES

A. GENERAL CRITERIA FOR PROJECT

1. FY 1982 Appropriation Act Sec. 523; FAA Sec. 634A; Sec. 653(b). (a) Describe how authorizing and appropriations Committees of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress or not more than \$1 million over that amount)?
(a) An advice of Program Change will be submitted for this project.
(b) The intended obligation is within the level of funds appropriated for Egypt for FY 83.
2. FAA Sec. 611(a) (1). Prior to obligation in excess of \$100,000, 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 U.S. of the assistance?
(a) Yes
(b) Yes
3. FAA Sec. 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 purpose of the assistance?
No further legislative action required.

4. FAA Sec. 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973? (See AID Handbook 3 for new guidelines.)

N.A.

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistance Administrator taken into consideration the country's capability effectively to maintain and utilize the project.?

Yes. See Annex C.

6. FAA Sec. 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.

The project is not susceptible of execution as part of a regional or multilateral project.

7. FAA Sec. 601(a). Information and conclusions whether project 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.

(a) The project will increase the flow of international trade by increasing the capacity and efficiency of grain storage and handling facilities. Grain makes up a large porportion of Egypt's imports. (b)(c)(d)(f) Grain facilities in Egypt are totally within the public sector of the economy. (e) The project will increase the technical efficiency of agricultural commerce.

8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

All commodities and services financed under the loan and grant will be procured from U.S. suppliers.

9. FAA Sec. 612(b); Sec. 636(h); FY 1982 Appropriation Act Sec. 507. 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 U.S. are utilized in lieu of dollars. The loan/grant agreement will so provide. Approximately 30% of the resources required will be financed from local currency by G.O.E.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? Egypt is no longer an excess currency country.
11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? Yes.
12. FY 1982 Appropriation Act Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? N.A.
13. FAA 118(c) and (d). Does the Project comply with the environmental procedures set forth in AID Regulation 16? Does the project or program take into consideration the problem of the destruction of tropical forests? Yes.
14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)? N.A.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project
Criteria:

- a. FAA Sec. 102(b), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries? N.A.
- b. FAA Sec 103, 103A, 104, 105, 106. Does the Project fit the criteria for the type of funds (functional account) being used. N.A.
- c. FAA Sec. 107. Is emphasis on use of appropriate technology? (relatively smaller, cost-saving, labor using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor.) N.A.

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least developed" country)?

N.A.

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

N.A.

f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

N.A.

g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.

N.A.

2. Development Assistance Project
Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest.

N.A.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

N.A.

c. ISDCA of 1981, Sec. 724(c) and (d). If for Nicaragua, does the loan agreement require that the funds be used to the maximum effect possible for the private sector? Does the project provide for monitoring under FAA Sec. 624(g)?

N.A.

3. Project Criteria Solely for Economic Support Fund Project Criteria

a. FAA Sec. 531(a). Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

Project will promote economic and political stability by increasing available food grains for consumption in Egypt, thus enabling prices of some basic consumer commodities to be maintained at minimal price levels. It will also conserve scarce foreign exchange. Yes.

b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities?

No.

c. FAA Sec. 534. Will ESF funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility?. If so, has the President certified that such use of funds is indispensable to nonproliferation objective?

No.

d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

N.A.

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. PROCUREMENT

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? Yes. Tenders are advertised in the Commerce Business Daily and the AID Foreign Export Opportunities Pulletin.
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him? Yes.
3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will commodities be insured in the United States against marine risk with a company or companies authorized to do marine insurance business in the U.S.? There has been no discrimination.
4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). 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? (Exception where commodity financed could not reasonably be procured in the U.S.) N.A.

6. FAA Sec. 604(g). Will construction or engineering services be procured from firms of countries otherwise eligible under Code 941, but which have attained a competitive capability in international markets in one of these areas.
- No. Construction and engineering services will be procured from the U.S. and Egypt.
6. FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates?
- At least 50 percent of gross tonnage of commodities financed shall be transported on privately-owned U.S. flag commercial vessels to the extent they are available at fair and reasonable rates.
7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished from private enterprise on a contract basis to the fullest extent practicable? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?
- Yes; no Federal Agencies will be used

8. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S. carriers will be utilized to the extent such service is available? Yes.

9. FY 1982 Appropriation Act Sec. 604. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? N.A.

B. CONSTRUCTION

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services be used? Yes.

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? Yes.

3. FAA Sec. 620(k). If for construction or productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million except for productive enterprises in Egypt that were described in the CP)? N.A.

C. Other Restrictions

1. FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? N.A.

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? N.A.

3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries? Yes.

4. Will arrangements preclude use of financing:
 - a. FAA Sec. 104(f); FY 1982 Appropriation Act Sec. 525:
(1) To pay for performance of abortions as a method of family planning or to, motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as a method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relate, in whole or part, to method or the performance of abortions or involving sterilization as a means for family planning; (4) to lobby for abortion? Yes.

- b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? Yes.
- c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? Yes.
- d. FAA Sec. 662. For CIA activities? Yes.
- e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? Yes.
- f. FY 1982 Appropriation Act, Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for military personnel? Yes.
- g. FY 1982 Appropriation Act, Sec. 505. To pay U.N. assessments, or arrearages or dues? Yes.
- h. FY 1982 Appropriation Act, Sec. 506. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending.)? Yes.
- i. FY 1982 Appropriation Act, Sec. 510. To finance the export of nuclear equipment fuel, or technology or to train foreign nationals in nuclear fields? Yes.

j. FY 1982 Appropriation Act, Sec. 511. Will assistance be provided for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?

No.

k. FY 1982 Appropriation Act, Sec. 515. To be used for publicity or propaganda purposes within U.S. not authorized by Congress?

Yes.

CERTIFICATION PURSUANT TO
SECTION 611(e) OF THE
FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, Michael P.W. Stone, the principal officer for the Agency for the International Development in Egypt, having taken into account, among other things, the maintenance and utilization of projects in Egypt previously financed or assisted by the United States, do hereby certify that in my judgement Egypt has both the financial capability and human resources capabilities to effectively maintain and utilize the additional capital assistance to be provided for the continued construction of two (2) concrete grain silo complexes at Alexandria and Cairo, Egypt.

M. P. W. Stone
M.P.W. Stone

12-30-82

Date

ECONOMIC ANALYSIS

Introduction

Since no benefits will be realized from past project expenditures without this additional funding, the case is clear that the additional funding must be made available.

Nevertheless, the economic merits of the project must be reassessed in light of the 1975 date of the original analysis. The amendment changes capital expenditures, both total and time phasing. Estimated project benefits have changed somewhat with more recent information and the shift in project completion date from 1979 to the end of 1984.

The updated and revised analysis is viewed as being generally consistent with the earlier analysis^{1/} with respect to both the identification of key project benefits and their measurement. Inter period consistency provides a firm foundation for evaluating the impact of the project in the first year of operation, 1985. The updated analysis reaffirms the view that the project is feasible.

Capital expenditures for Project.

Annual capital expenditures have been altered in three ways. The delay in implementation shifts forward, lengthens and alters the annual amplitude of capital expenditures relative to the pattern as originally projected. For the purposes of calculating the internal rate of return, it is necessary to adjust capital expenditures as presented in the financial section of this paper. The adjustments are summarized in the following tabulation. The first step is to revalue past capital expenditures at 1981 prices. In the case

^{1/} Report of Consultant (Jack Report), "Evaluation and Cost Estimates for Grain Unloading and Storage and Distribution Facilities in Egypt," May, 1975; and, USAID Project Paper, "Egypt: Grain Silos Loan", June, 1975.

of US dollar capital expenditures the appropriate index is constructed using the GNP deflator for durable producer's equipment as presented in available publications such as the Survey of Current Business and the 1981 Statistical Abstract. The wholesale price index as presented in the IMF's International Financial Statistics and the National Bank of Egypt's publication, Monthly Bulletin is used in revaluing Egyptian pound capital expenditures. Pound expenditures are then converted into U.S. dollar value. This conversion is made by using the free market exchange rate as presented in Table VIII of an unpublished USAID/Cairo Study, Recent Changes in the Foreign Currency Buying Power of the Egyptian Pound; 1976 to Mid 1981. The results of these adjustments as summarized in the following tabulation are to raise capital expenditures from a \$93.5 million ^{2/} figure presented in the financial analysis to an adjusted level of \$100.9 million, ^{3/} a figure more suitable to this analysis.

The tabulation which follows presents our best estimates of annual capital expenditures for the project.

The General Company for Silos (GCS), the operating entity, indicated that operation and maintenance costs will rise from \$300,000 for a 106,000 ton silo facility to \$930,000 for a 306,000 ton silo facility.

Project benefits/cost savings.

An increase in silo and pneumatic evacuator capacity means a considerably decreased ship offloading time. This is expected to lead to a sizeable reduction in demurrage charges and possibly generate bonus earnings. Such changes may be viewed as equivalent, in effect, to a decrease in per ton ocean freight costs. Other project gains come from shifting from sacked to bulk distribution (estimated at 2.1 million tons) made possible by the expansion in silo capacity. Expected gains produced by the shift to bulk transport include reduced sack costs, lowered wastage rates, and lower labor costs. GCS officials also see a gain in transport savings. The new facilities will permit the distribution of grain in bulk by rail rather than sacked by truck.

^{2/} Includes LE 25 million at \$1 = LE .70

^{3/} Stated in constant 1981 prices at \$1 = LE 1.00

ESTIMATED VALUE OF CAPITAL EXPENDITURES
IN CONSTANT PRICES AT FREE MARKET EXCHANGE RATE

U.S. Capital Expend. (1)	Inable Producer Index (1981=100) (2)	U.S. Capital Expenditure (1981=100) (3)	Egyptian Pound Capital Expenditure (4)	BPI Price Index (1981=100) (5)	Egyptian Pound Capital Expenditure (1981=100) (6)	Free Market Exchange Rate (7)	Capital Expenditures	
							U.S. \$ Value of Egyptian Pound (8)	U.S. \$ Value of Total (9) [3 + 8]
0.0	136.1	0.00	2.0	251.5	5.03	1.37	6.89	6.89
0.7	129.4	0.91	2.0	223.6	4.47	1.38	6.08	6.99
1.9	121.4	2.31	2.0	181.5	3.63	1.35	4.90	7.21
5.2	114.1	9.36	2.8	121.6	3.48	1.38	4.39	13.75
13.8	107.2	14.79	3.0	113.6	3.41	1.26	4.29	19.09
7.7	100	7.70	3.0	100.0	3.00	1.18	3.54	11.24
7.5	100	7.50	2.0	100.0	2.00	1.00	2.00	9.50
7.0	100	7.00	4.0	100.0	4.00	1.00	4.00	11.00
11.0	100	11.00	4.2	100.0	4.20	1.00	4.20	15.20
57.8		60.58	25.0		33.14		40.30	100.86

Footnotes

- row 2 = Column 1 x Column 2/100
- row 3 = Column 4 x Column 5/100
- row 4 = Column 6 x Column 7
- row 5 = Column 3 x Column 8

Estimates of project benefits vary with the assumption structure. The base case estimates reflect a conservative set of assumptions such as a \$10,000 per day demurrage charge, grain valued at the U.S. export price of \$180 per MT and, a 4.0% wastage rate for sacked grain. The high case assumes a \$13,000 per day demurrage charge, a grain value at the C&F price (still conservative relative to a CIF price) of \$208 per MT, and a 7% wastage rate for sacked grain. The least favorable estimate of project benefits assumes an \$8,000 per day demurrage charge, a 4% wastage rate and grain valued at the U.S. export price. Labor, transport, and sack cost savings estimate are held constant as a means of assuring a more conservative estimate of the IRR.

Project benefits are summed in Table I. It is clear from our examination that assumptions regarding demurrage charges and wastage rates are critical to the generation of project benefits. Of importance is the assumed price of grain used in the calculation of the value of savings in waste due to handling.

TABLE I
Summary of Estimated Project Benefits
Under Alternative Assumption Sets
(\$ Millions)

Cost Savings Category	Low Case	Base Case	High Case
1. Demurrage	-22.3	-27.8	-36.3
2. Wastage and Handling	-14.9	-17.2	-29.8
3. Transportation	-2.4	-2.4	-2.4
4. Operation and Maintenance	0.6	0.6	0.6
5. Labor	-4.0	-4.0	-4.0
6. Sacks	-5.2	-5.2	-5.2
Total	-48.2	-56.0	-77.1

(-) Reduced costs/project benefits
(+) Rise in costs due to project

Non-quantifiable gains/benefits include reduced congestion at the ports and operation of port facilities closer to the optimal ship handling rate. This implies the generation of secondary cost savings not readily quantifiable with available data. Exclusion of these benefits from the analysis, however, increases the likelihood that the annual project gains and the IRR are understated.

Estimated IRRs under alternative assumption sets

The first step in estimating the project's rate of return is to gather together the estimates of annual project benefits and costs. Annual benefits are combined with the capital expenditures profile to generate a projected life of project cash flow statement. This is the function of Table II which is designed to summarize the consequences of alternative assumption structures.

The calculated rates of return are conservatively estimated, high and roughly consistent with the cited 1975 studies. They vary somewhat with the underlying assumption structure. The base case assumptions generate annual project benefits of \$56 million including major savings from reduced demurrage charges (\$27.8 million) and wastage (\$17.2 million). The base case IRR is estimated to be 23 percent. The internal rate of return rises to 27 percent under the most favorable set of assumptions (annual project benefits estimated at \$77.1 million) and falls to 21 percent assuming the least favorable case (annual project benefits estimated at \$48.2 million).

Observations

It is clear from this analysis that funding the \$13.5 million project financing shortfall to permit the completion of the project is feasible. The project will contribute to a sizeable reduction in wastage and handling losses as well as demurrage charges. The annual reduction in costs is estimated to range between \$48.2 and \$77.1 million. The effect of project induced savings is to very marginally lower the grain subsidy bill to the government, i.e. a savings of \$48 million is equivalent to a \$8/ton cost decrease on imports of 6 million tons or \$12.3/ton cost decrease on 3.9 million tons of grain moving through the Alexandria grain handling facility.

TABLE II

Estimated IRRs

Alternative Cases/Assumption Structures

<u>Year</u>	<u>Capital Expenditures</u>	<u>Net Cash Flows: Alternative Cases</u>			
		<u>Low Case</u>	<u>Base Case Variant</u>	<u>Base Case</u>	<u>High Case</u>
1	6.9	6.9	-6.9	-6.9	6.9
2	7.0	-7.0	-7.0	-7.0	-7.0
3	7.2	-7.2	-7.2	-7.2	-7.2
4	13.7	-13.7	-13.7	-13.7	-13.7
5	19.1	-19.1	-19.1	-19.1	-19.1
6	11.2	-11.2	-11.2	-11.2	-11.2
7	9.5	-9.5	-9.5	-9.5	-9.5
8	11.0	-11.0	-11.0	-11.0	-11.0
9	15.2	-15.2	-15.2	-15.2	-15.2
10	---	48.2	51.5	56.0	77.1
11	---	48.2	51.5	56.0	77.1
12	---	48.2	51.5	56.0	77.1
13	---	48.2	51.5	56.0	77.1
14	---	48.2	51.5	56.0	77.1
15	---	48.2	51.5	56.0	77.1
16	---	48.2	51.5	56.0	77.1
17	---	48.2	51.5	56.0	77.1
18	---	48.2	51.5	56.0	77.1
19	---	48.2	51.5	56.0	77.1
20	---	48.2	51.5	56.0	77.1
21	---	48.2	51.5	56.0	77.1
22	---	48.2	51.5	56.0	77.1
23	---	48.2	51.5	56.0	77.1
24	(46.3) ⁴⁾	94.6	98.1	102.5	125.1
Estimated IRR		21.0	21.8	22.9	27.1

4) Salvage value calculated as stated in the 1975 PP, i.e., "an undiscounted salvage value of one half of the original costs is adopted in the terminal year of the project analysis."

(D R A F T)

FIRST AMENDMENT

TO

THE PROJECT AUTHORIZATION

Name of Country: Arab Republic of Name of Project: Grain Silos
Egypt

Number of Project: 263-0028

Number of Loan: 263-K-028

1. Pursuant to Part II, Chapter 2, Section 532 of the Foreign Assistance Act of 1961, as amended the Grain Storage Loan was authorized on June 27, 1975. The authorization is hereby amended as follows:

a. The initial paragraph is deleted in its entirety and the following substituted therefor:

Pursuant to Section 531 of the Foreign Assistance Act of 1961, as amended (the "Act"), I hereby authorize the Grain Silos Project (the "Project") for the Arab Republic of Egypt ("Cooperating Country"), involving planned obligations of not to exceed Forty-four Million, Two Hundred Seventy-five Thousand U.S. Dollars (\$44,275,000) in Loan funds ("Loan") and Thirteen Million, Five Hundred Thousand U.S. Dollars (\$13,500,000) in Grant funds ("Grant") over a nine and one half year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process to help in financing the foreign exchange costs for the Project.

The Project will assist in financing goods and services required in the design and construction of two grain silo facilities at the port of Alexandria and the city of Cairo and

ship unloading equipment at the port of Alexandria. The Grant will assist the Cooperating Country to complete the final phase of the construction, including installation of mechanical and electrical equipment.

b. Paragraph 2, Other Terms and Conditions, is deleted in its entirety and the following substituted therefor:

2. The Project Loan and Grant Agreements which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and delegations of authority, shall be subject to the following essential terms and conditions, together with such other conditions and covenants as A.I.D. may deem appropriate.

a) Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the Project shall have their source and origin in the Cooperating Country or in the United States, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. for the Project shall, except as A.I.D. may otherwise agree in writing, be financed on flag vessels of the United States.

2. All other provisions of the Authorization approved July 27, 1975 remain in effect.

Administrator

Late

July 28, 1982

Winston M. McPhie, DRPS/IDPS

Grain Silos Project; Loan No. 263-K-028
Project Paper AID-DLC/P-2110; Environmental Review Update
Amendment No. 1
Mr. Stephen F. Lintner, NE/PD
Bureau Environmental Coordinator

This is in response to your May 11, 1982 memo in which you requested the following additional information prior to the issuance of a final environmental clearance for Amendment No. 1 to the subject paper:

- (a) method of fumigation to be used.
- (b) type of fumigant
- (c) Outline of Safety Training Programs, if any.

Background:

The purpose of the subject amendment is the final phase of the Grain Silos Project which was authorized by AID in 1975. The overall project consists of the construction of two (2) 100,000 metric ton grain silo facilities located in Alexandria and Shoubra, A.R.E. More specifically, the objective of this phase (IV) is the installation of the mechanical and electrical equipment procured under the subject loan.

Method of Fumigation to be Used:

The completed grain silo complexes will be equipped with an automated PHOSTOXIN Pellet Dispenser fumigation system. This system has been purchased from the General Electric Company through IFB No. K-028-PM-912.

The system only dispenses "Phostoxin - Coated Pellets" and is intended for use in grain elevators for evenly distributing these fumigant pellets in moving grain transported on a conveyor belt or by gravity feed.

This method of eliminating all stages of insect infestation in stored grains with PHOSTOXIN fumigant has been widely practiced by the U.S. grain industry for many years. This method has reportedly proven to be the simplest and most economical method of fumigation yet devised. As there is virtually no sorption, a uniform dosage can be used for all types of grains.

Type of Fumigant:

The system dispenses solid PHOSTOXIN pellets automatically. A flask of these pellets, weighing a little over two (2) pounds, reportedly will treat up to 13,000 bushels, whereas 400 pounds or more of other materials could be required to treat this amount. There is no effect on germination or malting or milling qualities.

Safety Training Programs:

No formal training program was purchased with this fumigation system, as the fumigating gas does not develop from the solid pellet in appreciable quantities until an hour after it is in the grain. Workers, therefore, are not exposed to hazardous concentrations during application. It is not necessary to wear a mask, although the manufacturer advises that they must be on hand for emergency use. The gas is so active that it penetrates into all areas of the silo bin, and when the grain is turned any remaining gas dissipates rapidly into the open air, again assuring worker safety.

Attachments:

1. Technical literature from General Electric re: PHOSTOXIN Pellet Dispenser Model BW 30.
2. A 1975 report by Underwriters Laboratories, Inc. entitled "Report on Fumigant Pellet Dispenser For Use In Hazardous Locations Class II, Group G".

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Project Title & Number: Grain Silos/Amendment No. 1 (Project No. 263-0028)

<u>NARRATIVE SUMMARY</u>	<u>OBJECTIVELY VERIFIABLE INDICATORS</u>	<u>MEANS OF VERIFICATION</u>	<u>IMPORTANT ASSUMPTIONS</u>
<u>Program or Sector Goal: The broader objective to which this project contributes:</u>	<u>Measures of Goal Achievement:</u>		<u>Assumptions for achieving goal targets:</u>
To increase available food grains for consumption in Egypt.	A measurable increase in grain available for distribution to consumers. A measurable decrease in grain losses due to insufficient and/or inadequate grain storage capacity.	Grain import, loss and distribution figures.	Other sources of grain loss (e.g., pests) remain unchanged or improve. Grain imports remain constant or increase.
<u>Project Purpose:</u>	<u>Conditions that will indicate purpose has been achieved: End of project status:</u>		<u>Assumptions for achieving purpose:</u>
To provide additional closed storage capacity for food grains.	Addition of 200,000 MT of grain storage capacity to existing capacity.	Grain storage capacity figures.	No loss of previously existing grain storage capacity.
<u>Outputs:</u>	<u>Magnitude of Outputs:</u>		<u>Assumptions for achieving outputs:</u>
1) To construct a 100,000 MT grain silo complex and related pneumatic ship unloading facilities at Alexandria Port. 2) To construct a 100,000 MT grain silo complex in Cairo.	Construction and completion of two new grain silos; installation of related equipment.	USAID site visits, contractor reports.	Additional funding sufficient to complete silo complexes (i.e., inflation does not increase over expectations; no unforeseen construction delays).
<u>Inputs:</u>	<u>Implementation Target (Type and Quantity):</u>		<u>Assumptions for providing inputs:</u>
AID: \$13.5m to complete Phase IV (final) construction and installation of equipment.	Obligation of funds. Obligation of funds; office space, equipment, personnel and management provided.	AID and GOE expenditure and other project records.	