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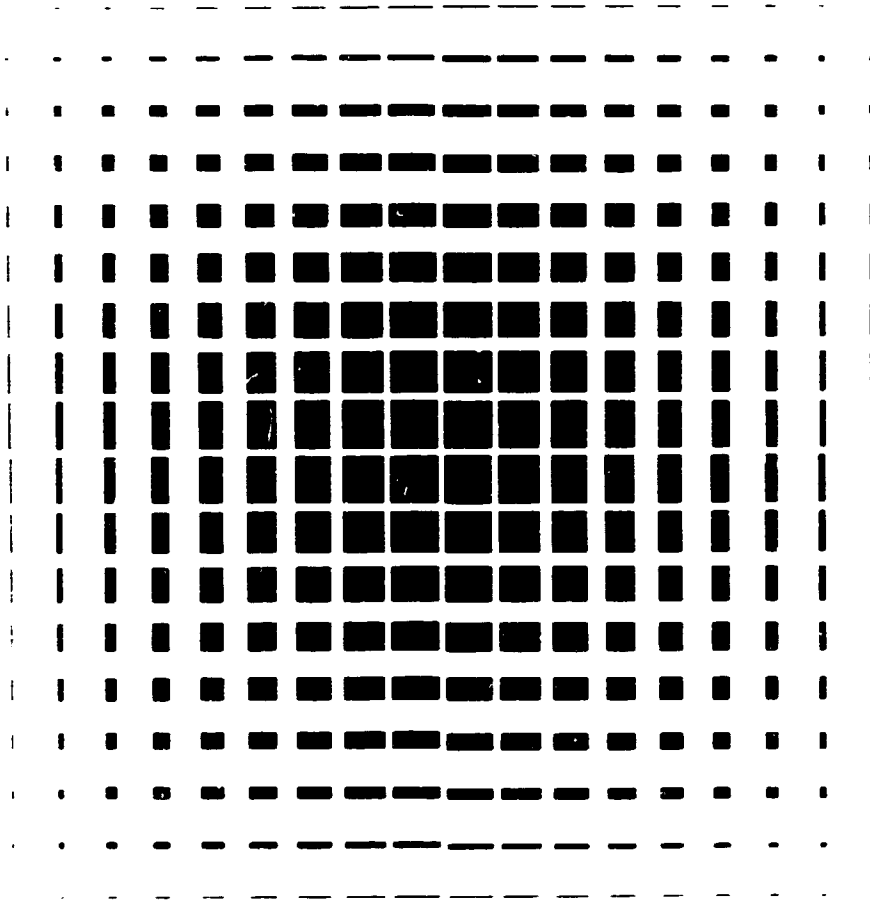
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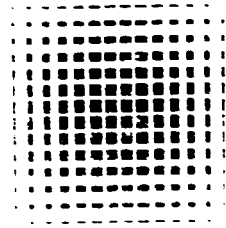
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INTERCOOL



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FINAL REPORT

AS PER DECEMBER 8, 1993

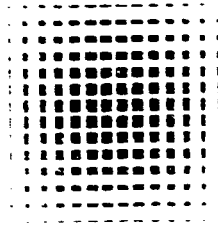
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DENMARK

PROJECT: Supply of prefabricated building,
refrigeration machinery and electrical
installation for a 10.000 tons Cold
Store in Leninakan, Armenia SSR

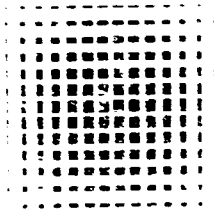


CONTENTS

A.	Introduction	1
B.	Economical Aspects	2
C.	Progress Summary	2
D.	Shipments	5
E.	Commissioning	5
F.	Training in Denmark	7
G.	Technical Assistance Period	7
H.	Rectifications under Guarantee	8
I.	Further Project Schedule	9

Enclosure:

1. Commissioning
Technical Inspection Certificate
2. Agreement on Commencement of Operational Phase
3. Training Program for Armenian Technicians
4. Drawings
11-00157-060F Layout
11-00157-061C Principle Cross Section



A. INTRODUCTION

This report is the final report from Intercool regarding the project as per Article 2.20 B; of the contract.

Section B, Economical Aspect details the changes in the contract amount during the project period due to agreed variations orders.

Section C, Progress Summary describes progressively the most important historic matters until commissioning on May 8, 1992.

Section D, Shipments summarize the numbers of partial shipments and the remedy of transport damages.

Section E, Commissioning mentions the documents from the commissioning and gives the status of all out-standing points from the commissioning.

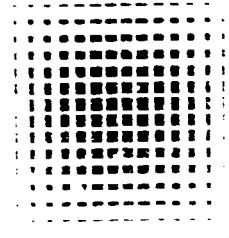
Section F, Training in Denmark gives some details from the training held for Armenian technicians.

Section G, Technical Assistance Period summarizes the results from the assistance period in Armenia of 12 months.

Section H, Rectifications under Guarantee describe the four events of guarantee works, which have occurred and the remedies.

Section I, Further Project Schedule indicates the program for Intercool before the contract can be finally concluded.

In the contract period great effort has been shown by all parties involved to reach agreement about additional deliveries of a **Meat Cutting Line** and a **Butter Packing Line**, and thereby fill out the room facilities in the warehouse with equipment as originally intended for the project. Unfortunately these extensions never became real and will not be further commented in the report.



B. ECONOMICAL ASPECTS

The variation orders approved during the project period caused the following changes to the total contract amount.

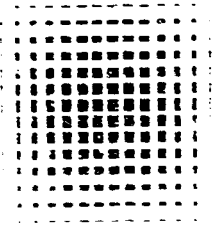
Original contract agreement	USD	4,250,000
Variation order no. 1	USD	20,949
* Transport insurance through USSR		
Variation order no. 2	USD	30,050
* Cancellation of fire protective walls		
* Additional delivery of sandwich panels		
Variation order no. 3	USD	63,000
* Delivery of tools for electrical and refrigeration erection		
* Enclosure of railway track		
* Reduction in pallet racking system		
Variation order no. 4	USD	12,200
* Delivery of floor joint materials		

Final contract amount	USD	4,376,199
		=====

C. PROGRESS SUMMARY

According to the original contract agreement a refrigerated warehouse with the main dimensions of 96 x 60 m and a separate technical service building of 20 x 12 m should be constructed.

During Intercool's first visit to Armenia investigations concluded that the building which was foreseen could not fit into the size and shape of the land lot. A new building layout having the refrigeration machinery room integrated into the building and with building main dimensions of 114 x 52,5 were agreed upon. This building has been executed as per enclosed drawing no. 11-00157-060F and -061C.



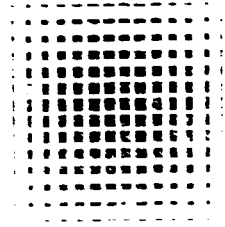
For the new building the Armenian Fire Authority required more excessive fire protection in the shape of fire protective walls than had been foreseen for the original building. As a part of the agreement about the project changes, the Ministry of Trade should be responsible for the construction of the fire protective walls whereas Intercool in the design and delivery of all other construction materials should take the appropriated considerations to the fire protective walls.

The detailed design of the building and installations were made by Intercool. The Armenian consulting engineering company Giprotorg made the final work drawings for excavations and foundations. The foundation works were executed very fast by the Armenian contractor Lenstroy. During the construction the civil works were inspected by Intercool. Regarding column foundations the quality of works was in general satisfactory, in spite of the fact that the accuracy of each column location was not the best. Regarding floor levels and surface quality especially of the finished floors in corridors, working rooms and the machinery room the work performances were poor. The required extensive repair works was not made by the Armenian party until at a very late stage of the project implementation.

Shipment from Denmark of deliveries for the project commenced on 1990.10.18 with the main steel structures for the building. The erection work was scheduled to start at the end of November immediately upon arrival of the first shipment.

The Ministry of Trade and their consulting engineering company Giprotorg discovered that the Armenian construction of the fire protective walls could not comply with the scheduled construction program without a delay of approx. 3 months of the steel structure erection. Therefore, the Ministry of Trade requested the walls cancelled and had approval thereof from highest Armenian authority. The cancellation were approved by UNIDO and variation order was given to Intercool for additional insulation sandwich panels.

The erection of the steel building started at the end of November 1990 under the supervision of Intercool erection staff and with local manpower from the Armenian contractor Montastroy. Very soon it became obvious, that the Armenian party could not deliver tools and simple erection equipments as had been foreseen. To prevent project delays Intercool air freighted tools for the building erection,



whereas tools for the refrigeration and electrical erection were approved later by UNIDO as variation order for normal delivery.

The Ministry of Trade wanted a roofed enclosure of the railway track which had neither been included in the original layout nor in the modified. Besides, they did not want the pallet racking systems in all the cold store rooms, anymore. After a longer period of consideration by all parties, the enclosure of the railway track and the reduction in deliveries of the pallet racking systems were approved and cost differences agreed as variation order.

Beside the tools problems the building erection and later on the erection of refrigeration machinery and electrical installation were hampered in several other situations, where the Armenian party of the project could not comply with his commitments. The problems range from lack of local manpower and foremen, short daily working time, lack of Armenian project and construction management to shortage and delay on nearly all local supplies such as heavy erection gears and equipment, fuel, electrical power, water and cement. In the winter periods all these conditions were additionally strengthened.

The political situation in Armenia and USSR changed a lot during the project period, and at the end of the technical assistance period all local supplies were nearly impossible to obtain.

The mentioned difficulties caused very soon a remarkable delay in the erection of the building steel structures and insulation sandwich panels. All efforts to close the gap and new commitments from the Armenian party were without positive influence.

In the beginning of June 1991 the erection of the refrigeration machinery could begin and the electrical erection followed in the beginning of August 1991. Both erections progressed with rather slow pace the following months.

In the meantime the civil contractor had great difficulties completing the upper floor in the low temperature rooms. UNIDO were forced to send a civil engineer to assist and supervise the concrete pouring to obtain acceptable floor surfaces.

Permanent power and water supply should have been established from August 15, 1991. Power was connected in March, 1992 and pressurized water supply was not



established at the commissioning in May 1992.

The plant start-up commenced on March 18, 1992 and was completed in the middle of April. Until the commissioning date May 8, 1992 all contractors were involved in finishing and touch-up works.

During the erection period all events on the construction site were registered in the weekly minutes of meeting with participation from the Ministry of Trade, Lenstroy, Montastroy, UNIDO's CTA, Intercool and during the last construction period from AGBU's Jerevan office as well.

D. SHIPMENTS

All construction materials from Intercool were shipped in containers to Tallin and from there transported by railway to Leninakan. Totally 3 shipment had been anticipated. However, due to restrictions on the number of containers on the same ship given by the shipping line and the additional deliveries under variation orders, the number of partial shipments became a total of 9.

In general the deliveries arrived to the construction site in good condition. The railway transport through the USSR caused for some of the partial shipments a very long transport time.

Two incidents of transport damages happened. Influenced equipment were orderly repaired by Intercool and necessary replacement parts were received from Denmark. All repair works have been covered by the insurance company.

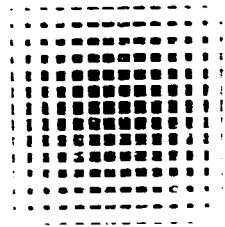
E. COMMISSIONING

The commissioning of the plant was finished on May 8, 1992.

Enclosed to this report is the two documents from the commissioning:

- * Technical Inspection Certificate
- * Agreement on Commencement of Operational Phase

Annex 1, 2 and 3 to the last mentioned document describe the outstanding works to be done after the commissioning and their status is the following.



Annex 1 Outstanding Deliveries from Intercool

Intercool has completed all mentioned deliveries.

Annex 2 Outstanding Works under Armenian Responsibility

All works have been completed except the following:

- D1 Establishment of pressure on the main water supply of 2-3 bar.

The Ministry of Trade has not yet completed the water supply installations for the complete construction complex and with the difficult situation in Armenia they are without any scheduled completion date.

- D3 Approval of the warehouse from the Fire Authority.

The Ministry of Trade has been reminded several times about the outstanding points. During our visit to Armenia at the end of June 1993 a submittance to Intercool within one month were promised. So far, nothing has been received.

- D4 Approval of the warehouse and the technical installations from any other relevant Armenian authority.

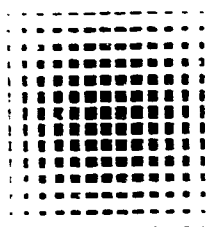
Same status as D3.

Annex 3 Outstanding Works under Joint Intercool/Armenian Party Responsibilities

- * Performance test of the water softening plant.

Without a permanent water pressure of 2-3 bar a performance has not been possible.

After one year of plant operation no inconvenience for the evaporative condensers has been noticed, because the supply water itself is very soft.

- 
-
- * Plant performance test under summer conditions and normal product handling and storage within the warehouse.

Since the commissioning date the warehouse has been very poorly utilized by the Ministry of Trade. Reasonable conditions for a performance test has therefore never been available and the test has not been made.

The plant has been operating for more than one year and through 2 summer periods without any indication of lack in performances.

F. TRAINING IN DENMARK

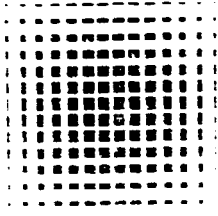
A training in Denmark in technical disciplines related to the refrigeration plant and cold store operations for 6 Armenian technicians were held in the period April 26, 1991 to May 16, 1991. The training program is included to this report.

G. TECHNICAL ASSISTANCE PERIOD

The technical assistance period commenced immediately upon the commissioning date and Intercool had one refrigeration technician allocated for the job in Armenia and had also engaged the Armenian engineer Mr. Artashes Barakian, who has participated in the project from the erection start.

In the winter 1992/93 the power supply for the plant was cut off for a long period. The Danish technician was therefore withdrawn to Denmark until the energy situation allowed the work to be resumed in April 1993. The assistance period was finish on July 2, 1993.

As already mentioned, the Ministry of Trade has not used the warehouse very much. Only small amounts - approx. 100 ton - of frozen food were available for long time storage. Nevertheless, the refrigeration plant was kept operating at reduced capacity during the assistance period. 3 out of 7 cold store rooms and all the corridors in operation was the typical situation. The conditions in general, for training in cold store operation and management were thereby very limited.



The training conditions regarding refrigeration, electrical and other technical installations were good, and the Armenian staff reached a profound knowledge and capability in plant operation and maintenance.

Unfortunately, the cold store management has not been able to keep employment of the trained staff. Only one trained technician is left today and all others are new. Thus the gained results from the assistance must be concluded as rather poor.

Therefore, Intercool decided to maintain the engagement with Mr. Artashes Barakian until the expiry of the guarantee period on May 7, 1994.

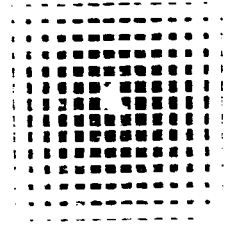
H. RECTIFICATIONS UNDER GUARANTEE

After commissioning the plant has had the following problems, which all have been rectified by Intercool as guarantee works.

1. The low stage ammonia compressors were without water cooling as recommended by the manufacturer Sabroe. Summer time operation discovered, that compressor cooling is required. The necessary equipment have been delivered from Denmark and are installed.
2. The inconstant power supply to the plant causes in winter time a great risk for the compressors with frozen water in the compressor cooling system. The medium in the cooling system has therefore been changed from water to glycol.
3. When the plant was stopped for months during the winter 1992/93 two water pump houses broke due to frozen water.

Intercool has delivered and installed new pump houses.

4. The roof of the railway ramp has been damaged from excessive snow load. Intercool proposed a reinforcement of the steel structure, which was approved by UNIDO and the Ministry of Trade. Construction materials were delivered from Denmark by truck to Ukraine and from there airfreighted to Leninakan. The repair works were finished by Intercool at the end of October 1993.



I. FURTHER PROJECT SCHEDULES

The guarantee period expires on May 7, 1994.

A visit to Armenia in April 1994 is scheduled for the Intercool project manager to conclude any outstanding points with the Ministry of Trade, and to make an agreement on the amount of consumptions from the stock of spare parts which shall be re-delivered by Intercool.

Enclosure 1

Refrigerated Warehouse, Leninakan, Armenia
UNIDO Contract No. 90/064
UNIDO Project NO. TF/GLO/90/008
INTERCOOL Project No. 11-00157

COMMISSIONING

TECHNICAL INSPECTION

CERTIFICATE

The parties had agreed to use the check list mentioned in "Commissioning - Aims and Check List" dated 1992.05.01 for their technical inspection of the project and the project deliveries.

1.0 Project lay-out

The project lay-out was controlled with reference to drawing no. 11-00157-060E and -061C.

* Building main dimensions

Executed in accordance with the contract specifications.

* Numbers and sizes of rooms, corridors etc.

Executed in accordance with the contract specifications.

The room heights have been measured with the following results:

- Low temp. rooms:	7.00 m
- Meat cutting room	4.36 m
- Butter packing	4.36 m
- Corridors	4.48 m

All room heights are in accordance with Annex J of the contract.

* Railway ramp enclosure

Executed in accordance with the contract specifications.

* Railway ramp

Executed in accordance with the contract specifications.

The Armenian part has decided not to build the inclined access ramp for fork lifts at grid line 20. The access shall take place near the truck ramp; see the following point.

* Truck ramp

The roofing is executed in accordance with the contract specifications.

According to the lay-out drawing there should be a ramp with a height of 1.2 m above ground level in the full width of the building. The Armenian part has decided only to utilize the ramp for the trucks from gridline B to C. In front of the ramp from grid line A to B the ramp and the ground will have the same level, thereby access will be allowed to the building for fork lifts. See enclosed sketch no. 1.

2.0 Building

2.1 Main steel structures

* Columns

* Frames

* Bracings

The above mentioned subjects are all executed in accordance with the contract specifications.

The steel have been examined. In accordance with drawing no. 11-00157-300 to -373, totally 23 drawings, were verified.

The design calculations have been reviewed. Full accordance with the design loads from seismic forces, wind

pressure and snow weight was verified.

2.2 Secondary steel structures

- * Main equipment suspensions
- * Main pipe supports and equipment suspensions
- * Ladders

The above mentioned subjects are all executed in accordance with the contract specifications.

The necessary numbers of ladders are installed giving easy access for maintenance of the refrigeration installation and for emergency escape in case of ammonia leaks.

2.3 Roofing

- * Roofs
- * Gutters and drain pipes

The above mentioned subjects are all executed in accordance with the contract specifications.

The drain pipes along grid line A, F and the truck ramp are not yet connected to the sewage system. The connection shall be made as soon as Shirakshin has stopped the nearby traffic by heavy equipment.

2.4 Steel claddings of walls

- * Exterior claddings
- * Interior claddings
- * Interior machinery room claddings

The above mentioned subjects are all executed in accordance with the contract specifications.

Several surface damages made from traffic inside and around the building have been noticed, for instance along grid line A.

The most severe damages have been repaired by new cladding.

The minor damages are acceptable and will not be corrected.

2.5 Room insulations

- * Sandwich panels for walls and ceilings

In the corridors several surface damages made from traffic by concrete mixer have been noticed, for instance at B/3-4, C/6 and C/16. These minor damages are acceptable and will not be corrected

In the corridor as well a lot of concrete splashes remain on wall panels and steel structures up to a height of 3 m. The surfaces shall be cleaned.

In the corridor as well several wall and ceiling areas have taken color from the exhaust smoke from the concrete mixers and the diesel driven air compressor used by Shirakshin during execution of concrete works. The areas shall be cleaned and the color removed as good as practically possible.

- * Insulations of columns and bracing
- * Floor insulations
- * Machinery room insulations

The thickness of the sandwich panels and the thickness of the machinery room insulation were verified by measurement and found in accordance with contractual agreed dimensions.

The above mentioned subjects are all executed in accordance with the contract.

2.6 Top floor sealings

- * Sealing of floor joints
- * Sealing between sandwich wall panel and truck protection

Sealing of floor joints and panel wall joints are completed in all low temperature rooms.

Sealing of floor joints and panel wall joints in corridors and processing rooms are outstanding.

2.7 Doors, gates and windows

- * Insulated doors to cold stores

Measured dimensions:

W x H = 2,4 x 2,7 m

- * Other internal doors

- * Access gates to corridors

Measured dimensions:

W x H = 3,6 x 3,0 m

- * Train access gate

Measured dimensions:

W x H = 4,6 x 5,0 m

- * Other external doors

- * Windows for machinery room area

Double glas with aluminium frames;
wooden frames acceptable.

- * Light band for railway track enclosure

The above mentioned subjects are all executed in accordance with the contract specifications.

2.8 Various building installations

- * Overpressure valves for cold stores

- * Ventilation of machinery room

- * Ventilation of roof space

- * Ventilation of toilet area

- * Toilets, basins and shower

Toilets are not installed because the floor is not yet finished. The equipment is available on site.

- * AC-unit for control room

- * Walk way along main pipe routing

The above mentioned subjects are all executed in accordance with the contract specifications.

2.9 Concrete works under Armenian responsibility

* Top floor in low temp. rooms

The repair work of one floor section, 6x6 m, in room 1 and one in room no 2 has not been executed by Shirakshin. The repair is required because of unacceptable concrete strength.

* Floors in corridors and process rooms

* Truck protections

Repair of truck protection near the watertap in room no 8 and 9 is outstanding.

Repair shall be made at several locations in the corridor.

Protection shall be made at B/17 around the ventilation pipe of sewage system.

* Floor in machinery room area

* Floor in toilet areas

The floor is not yet completed.

* Floor on railway ramp

The floor is not finished around 4 floor scales, which are not yet delivered by the Armenian part.

* Floor on truck ramp.

The floor is not acceptable because of level differences between the different areas of the ramp and between the ramp and the corridor. A greater repair work is required. It is recommendable that the floor is knocked down and a new floor is made.

* Machinery foundations

No comments

- * Underground water reservoir

No comments

- * Inclined access ramp

The ramp is canceled, see point 1.0.

- * Excavation and backfilling

Completion of excavation in front of the truck ramp is outstanding.

Completion of backfilling around the building is outstanding.

2.10 Other works under Armenian responsibility

- * Cleaning of the complete interior/exterior building

Clening of:

- Roof space
- Ceilings
- Walls
- Floors
- Machinery and installation parts
- Steel structures

3.0 Refrigeration installations

3.1 Main refrigeration equipment

- * Compressors
- * Condensers
- * Water pumps
- * Water softening plants
- * Receiver
- * Air purger
- * Pump separators
- * Ammonia pumps
- * Air coolers in cold stores
- * Air coolers in processing room
- * Fresh air coolers for processing rooms

- * Air coolers in corridors

The the above mentioned subjects are all executed in accordance with the contract specifications.

3.2 Installations and arrangements

- * Machinery room arrangements
- * Air cooler arrangements
- * Ammonia piping
- * Valve stations
- * Water piping
- * Air ducts
- * Thermometers for low temperature rooms

The above mentioned subjects are all executed in accordance with the contract specifications.

3.2 Vessel and pipe insulation

- * Vessel insulations
- * Pipe insulations

The above mentioned subjects are all executed in accordance with the contract specifications.

4.0 Electrical installations

4.1 Switchboards

- * Main switchboard

Capacity regulation controls are installed.

Two room temperature recorders are installed.

The main alarm horn is defect and shall be replaced.

- * Decentralized sub-switchboards

5 pcs. sub-switchboards are installed

along the corridor.

The above mentioned subjects are all executed in accordance with the contract specifications.

4.2 Control and alarm systems

- * Floor heating system
- * Basic operation controls
- * Automatic capacity controls
- * Room temperature recording system
- * Refrigeration system alarms
- * "Man in Room" alarms
- * Ammonia leak alarms

One sensor from room no. 6 and one sensor from the machinery room are moved to the technical installation corridor. Thereby the total installed numbers are the following:

- 7 pcs One in each of room no. 1 to 7
- 1 pc Machinery room
- 2 pcs Technical installation corridor

This arrangement has been preferred and is acceptable to locate the sensors into an area (technical installation corridor) where a higher risk of leakage is present.

* Smoke detectors

The total installed numbers are the following:

- 1 pc Room no. 8
- 1 pc Room no. 9
- 3 pcs Corridors
- 1 pc Machinery room

The above mentioned subjects are all executed in accordance with the contract specifications.

4.3 Lightings

- * Cold store lighting
- * Other internal lighting
- * External lighting
- * Emergency illumination

The total installed numbers are the following:

- 8 pcs Corridors
- 1 pc Meat cutting room
- 1 pc Butter packing room
- 4 pcs Technical installation
 corridor
- 2 pcs Machinery room

The above mentioned subjects are all executed in accordance with the contract specifications.

4.4 Electrical installation material

- * Cables
- * Cable racks
- * Power and control installations

380 Volt (32 Amps) socket is installed:

- 1 pc Machinery room

380 Volt (16 Amps) sockets are installed:

- 5 pcs One in each sub-switchboard
 no. 1, 2, 3, 4, and 5.
- 1 pc Room no. 8
- 1 pc Room no. 9
- 1 pc Machinery room
- 1 pc Work shop
- 2 pc Tech. installation corridor

220 Volt sockets are installed:

- 4 pcs One in each sub-switchboard
 no. 2, 3, 4, and 5.
- 1 pc Room no. 8
- 1 pc Room no. 9
- 1 pc Machinery room
- 1 pc Control room
- 1 pc Work shop

- 1 pc Spare part store
- 5 pc Tech. installation corridor

The above mentioned subjects are all executed in accordance with the contract specifications.

5.0 Pallet racking system

- * Racking system in room no 1, 2 and 4

The total capacity of the system is 2.920 pallets.

The system is executed in accordance with the contract specifications.

6.0 Spare parts and tools

- * Spare parts

The amount of delivered spare parts is stated in the enclosed list, Annex 1.

The delivered spare parts have been inspected. Except for some very few items the content of the deliveries are in accordance with Annex I of the contract. The missing parts shall be delivered by Intercool.

- * Maintenance tools

One set of normal maintenance tools according to the enclosed list, Annex 2, is available on site.

One set of special compressor tools are available on the site. During the technical assistance periode the tools will remain under the responsibility of the Intercool technician.

- * Construction tools

The construction tools delivered under the contract are available for the continuation of cold store operation with the exceptions of some tools which worn out or disappeared by theft. A complete list will be established during the technical assistance period.

7.0 Various deliveries

- * Ammonia
- * Compressor oil
- * Shelves for storage of spare part
- * Special maintenance tools
- * Ammonia gas masks
- * Fire extinguishers

The above mentioned subjects are all executed in accordance with the contract specifications.

8.0 Starting-up

8.1 Tests before starting-up

- * Pressure test

The plant has been pressure tested. Insulated pipes were pressure tested before the insulation works.

The plant has been vacuum tested after the pressure tests and before the ammonia charging

The pressure certificates have been reviewed.

- * Electrical tests

Before starting-up the electrical equipment and cables have passed the normal on job tests to secure smooth starting-up and plant operation.

8.2 Starting-up review

- * Log book

From the beginning of the starting-up period, i.e. from 18th. of March 1992, a daily log book has been issued and signed by the representative from the Ministry of Trade and INTERCOOL's site manager.

In the log book is stated all the progresses achieved, incidents,

technical problems and their solutions, operated machinery, operated rooms and achieved plant performances.

The log book has been reviewed.

* Plant adjustments

The plant is adjusted for industrial operations.

9.0 Functional test

* Equipment

Each individual equipment or control has been functionally tested.

The water softening plant has passed satisfactory functional tests but not been brought into operation because of insufficient pressure on the water main supply.

The plant shall be brought into operation during the technical assistance period when sufficient water pressure will be available.

* Manual plant operations

Manual operation of the plant has been tested.

* Automatic plant operations

Automatic operation of the plant has been tested.

* Safety controls

The safety controls of the plant have been tested.

* Lux measurements

The illumination has been measured and the values are compared with the contractual specification. The results are the following:

	Spe- cif. Lux	Mea- sured Lux
Cold store no. 1	125	160
no. 2	125	125
no. 3	125	190
no. 4	125	135
no. 5	125	160
no. 6	125	250
no. 7	125	400
Meat C. no. 8	250	400
Butter P. no. 9	250	400
Corridors	125	260/180
Machinery room	250	280
Control room	N.A.	520
Work shop	250	280
Spare part store	200	600
Toilets	100	N.A.
Tech. Inst. Corridor	125	30
Truck ramp	50	N.A.
Railway Ramp	50	50

The deviations from specified values are accepted.

The above mentioned subjects are all executed in accordance with the contract specifications.

11.0 Performance tests

* Air temperatures in refrigerated rooms

The plant has performed without any products in the rooms the achievement of the following room temperatures:

Room no. 1	-25	Celcius
Room no. 2	-25	Celcius
Room no. 3	-25	Celcius
Room no. 4	-25	Celcius
Room no. 5	-25	Celcius
Room no. 6	-25	Celcius
Room no. 7	0/-25	Celcius
Meat cutt. room	10	Celcius
Butter pack.room	10	Celcius
Corridors	10	Celcius

* Simultaneous operation conditions of the refrigeration plant

The above mentioned performances are obtained at the following average operation conditions:

One low stage compressor working at 50 to 75% capacity and -35/-8 Celcius.

One high stage compressor working at 0% to 25% capacity and -8/+20 Celcius.

One evaporative condenser with a condensing temperature of 20 Celcius. The condenser worked with forced airflow and only periodically with water.

Ambient air temperature at noon of approximately 10 Celcius.

During the technical assistance period and at high summer ambient temperatures the plant performance shall be verified. At the same time the product subcooling capacity rate shall be verified.

12.0 Technical documentations

* Operation and maintenance manuals

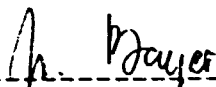
Two sets of Operation and Maintenance Manuals have been handed over to The Ministry of Trade and are available on the site.

The manuals have been reviewed and verified and are in accordance to the operation and maintenance procedures and requirements.

* Pressure vessel certificates a.o.

One set of the manual: "Certificates", which contains pressure vessels certificates and material certificates for the entire ammonia refrigeration system is available on the site.

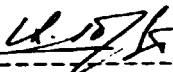
Leninakan 7th of May 1992



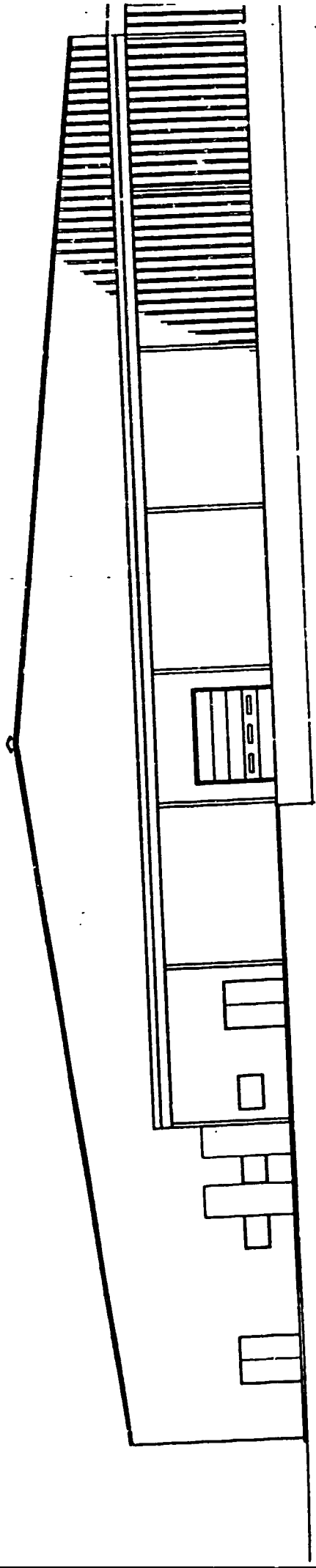
Wilhelm Bayer
UNIDO consultant



Erik Ramsing
INTERCOOL project manager



Ara Petrosian
Deputy Trade Minister
MINISTRY OF TRADE OF REPUBLIC ARMENIA



ELEVATION GABLE

REFRIGERATED WAREHOUSE , LEWISIAKAN
TRUCK RAMP
MAY 1992

SKETCH NO. 1

ANNEX 1

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
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REVISION 1992.05.06

COMPRESSOR BLOCK PARTS
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157-01- 1	8	Gasket for top cover	1B-1 /2353-151	1 / 2
157-01- 2	2	Gasket for end cover at oil pump	1C-1 /2353-011	1 / 2
157-01- 3	2	Gasket for cover for shaft seal	2C-1 /2353-005	1 / 2
157-01- 4	2	Shaft seal (s.p.set)	10 -1 /SMC104L/SMC108L	2 / 3
157-01- 5	4	Gasket, dia.32/27x1.5	11P-1 /2353-139	1 / 2
157-01- 6	8	Benzing-ring, dia. 7	12K-2 /1437-103	1 / 2
157-01- 7	4	Spring for unloading mechanism	15D-1 /2142-044	1 / 2
157-01- 8	2	Piston w/pin and rings	18 /SMC104L/SMC108L	1 / 3
157-01- 9	8	Piston ring	18C-1 /3125-018	2 / 3
157-01-10	4	Oil scraper rings	18D-1 /3125-065	2 / 3
157-01-11	2	Cylinder liner with suction valve	19 /SMC104L/SMC108L	2 / 3
157-01-12	16	Ring plate for suction valve	19F-1 /3131-021	2 / 3
157-01-13	120	Valve spring	19G-1 /2141-047	1 / 2
157-01-14	8	Gasket for cylinder liner - 0.8 mm	19K-2 /2356-233	1 / 2
157-01-15	8	Gasket for cylinder liner - 0.5 mm	19K-1 /2356-111	1 / 2
157-01-16	2	Discharge valve	20 /SMC104L/SMC108L	2 / 3
157-01-17	16	Ring plates f/discharge valve	20C-1 /3131-015	2 / 3
157-01-18	2	Gasket for oil pressure valve	22G-1 /2354-075	1 / 2
157-01-19	2	Sealing ring dia. 62/45 x3	25H-1 /2354-003	1 / 2
157-01-20	2	Sealing ring 110/91x3	25H-4 /2354-117	1 / 2
157-01-21	2	O-ring (neoprene) dia. 72,39x5,33	25J-1 /1331-154	1 / 2
157-01-22	2	O-ring (neoprene) dia. 116,84x7,0	25J-4 /1331-198	1 / 2

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
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157-01-23	8	O-ring (neoprene) dia. 21,8x3,53 no.212	25P-1 /1331-020	1 / 2
157-01-24	2	O-ring (neoprene) dia. 28,1x3,6 no.216	25P-4 /1331-024	1 / 2
157-01-25	4	O-ring dia. 17,12x2,6	25R-1 /1331-016	1 / 2
157-01-26	4	Gasket for stop valve	25AG-3/2354-105	1 / 2
157-01-27	4	Gasket for stop valve	25AG-4/2354-106	1 / 2
157-01-28	16	Filter cartridge	33L-1 /SMC104L/SMC108L	2 / 3
157-01-29	4	Filter bag	34B-1 /3425-083	1 / 2
157-01-30	4	O-ring dia. 75,56x5,33	34D-1 /1331-042	1 / 2
157-01-31	4	O-ring (neoprene) dia. 91,67x3,53 no.239	34F-1 /1331-080	1 / 2
157-01-32	4	Gasket dia 27/21x1,5ma	38F-1 /2356-133	1 / 2
157-01-33	2	O-ring (neoprene) dia. 29,51x5,33 no.321	38E-1 /1331-039	1 / 2
157-01-34	2	O-ring (neoprene) dia. 26,58x3,55	38P-1 /1331-023	1 / 2
157-01-35	8	Gasket for water cover	2D-1 /2353-154	1 / 2

OTHER COMPRESSOR PARTS

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157-02- 1	3	Thermostats	KP 98 /060L1131	1 / 4
157-02- 2	3	Pressostate, oil	MP 55A /060B0176	1 / 4
157-02- 3	3	Pressostate, high/low	KP 15A /060-1294	1 / 4
157-02- 4	8	Coil f. capacity solenoid v.	SMC104L/SMC108L	1 / 3
157-02- 5	2	Coil f. water solenoid v.	SMC104L/SMC108L	1 / 3
157-02- 6	2	Stop valve cooling water	SMC104L/SMC108L	2 / 1
157-02- 7	3	Discharge pressure gauge	1541-029	1 / 2
157-02- 8	3	Suct./oil pressure gauge	1541-108	1 / 3
157-02- 9	2	Coupling disc pack	SMC104L	1 / 3
157-02-10	16	Coupling bolt	SMC104L	1 / 3
157-02-11	2	Coupling disc pack	SMC108L	1 / 3
157-02-12	16	Coupling bolt	SMC108L	1 / 3

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
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AIR COOLERS
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157-03- 1	2	Fan motor	KPER 90L4, B3	1 / 1
157-03- 2	1	Fan motor	KPER 62G6, B3	1 / 1
157-03- 3	1	Fan motor	KPER 71K6, B3	1 / 1
157-03- 4	1	Fan motor	KPER 71G6, B3	1 / 1
157-03- 5	1	Fan wing	dia.500/12/30dgr	2 / 1

157-03- 6	1	Fan wing	dia.628/6-12/35dgr	2 / 1
157-03- 7	1	Fan wing	dia.448/6/40dgr	2 / 1
157-03- 8	1	Fan wing	dia.628/6-12/35dgr	1 / 1
157-03- 9	2	Fan wing	dia.628/12/35dgr	1 / 1
157-03-10	1	Glass fibre frame	dia.630	2 / 1

157-03-11	1	Glass fibre frame	dia.450	2 / 1
157-03-12	20	m Heating cable		2 / -

FRESH AIR COOLER
=====

157-04- 1	4	set Air filter	F-55 (EU 5)	4 / 1
157-04- 2	2	set V-belt		4 / 1
157-04- 3	2	Differential pressostate	PC301	4 / 1

CONDENSER
=====

157-05- 1	2	Bearings	240076 P	2 / 1
157-05- 2	1	Bearing	24008 P	2 / 1
157-05- 3	11	Nozzles		3 / 1
157-05- 4	11	Nozzles seal		3 / 1
157-05- 5	2	Gaskets		2 / 1

157-05- 6	6	V-belts		2 / 1
157-05- 7	4	Fan wheels	250092 MGP	2+3 / 1
157-05- 8	1	Charging valve	RK0101 MG	2 / 1
157-05- 9	1	Filter	582659 MGSA	3 / 1

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
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AMMONIA PUMPS
=====

157-06- 1	4	Bearings		2 / 2
157-06- 2	4	Gasket set		2 / 2

CONDENSER PUMPS
=====

157-07- 1	2	Shaft seal	1838792	3 / 1
157-07- 2	2	Gasket	E30332	3 / 1
157-07- 3	2	Sealing rings	E33103	3 / 1
157-07- 4	2	Sealing rings		3 / 1

COMPRESSOR COOLING WATER PUMP
=====

157-08- 1	1	Service Kit		3 / 1
157-08- 2	1	Pressostate	RT110/017-5290	2 / 4

AMMONIA STOP VALVES
=====

157-09- 1	3	Stop cone valve	STV 6	2 / 1
157-09- 2	3	Stop cone valve	STV 15	2 / 1
157-09- 3	3	Stop cone valve	STV 20	2 / 1
157-09- 4	1	Stop cone valve	STV 25	2 / 1
157-09- 5	1	Stop cone valve	STV 32	2 / 2
157-09- 6	1	Stop cone valve	SCV 50	2 / 2
157-09- 7	1	Stop cone valve	SCV 65	2 / 2
157-09- 8	3	Sealing set for valve	STV 6 / 2453+016	2 / 2
157-09- 9	10	Sealing set for valve	STV 15 / 2453+022	2 / 2
157-09-10	5	Sealing set for valve	STV 20 / 2453+022	2 / 2
157-09-11	1	Sealing set for valve	STV 25 / 2453+022	2 / 2
157-09-12	4	Sealing set for valve	STV 32 / 2453+025	2 / 2
157-09-13	1	Sealing set for valve	STV 40 / 2453+025	2 / 2
157-09-14	3	Sealing set for valve	SCV 50 / 3184+077	2 / 2

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
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157-09-15	5	Sealing set for valve	SCV 65 / 3184+078	2 / 2
157-09-16	2	Sealing set for valve	SCV 80 / 3184+078	2 / 2
157-09-17	1	Sealing set for valve	SCV 100 / 3184+079	2 / 2
157-09-18	1	Sealing set for valve	SCV 125 / 3184+080	2 / 2
157-09-19	1	Sealing set for valve	SCV 200 / 3184+081	2 / 2

157-09-20	1	Sealing set for valve	SCV 250 / 3184+108	2 / 2
157-09-21	2	Stop/throttle valve	6F003 /006F0030	2 / 2
157-09-22	2	Stop/throttle valve	SRV15D124	2 / 2
157-09-23	5	Gasket set for valve	6F003 /006F0414	1 / 4
157-09-24	6	Sealing set for valve	SRV15D124 /2583+038	2 / 2

157-09-25	1	Sealing set for valve	SRV25D126 /2453+040	2 / 2
157-09-26	1	Sealing set for valve	SRV25D127 /2453+041	2 / 2
157-09-27	1	Stop/check valve	SCV 32	2 / 2
157-09-28	1	Stop/check valve	SCV 50	2 / 2
157-09-29	1	Sealing set for valve	SCV 25 / 3184+111	2 / 2

157-09-30	2	Sealing set for valve	SCV 32 / 3184+111	2 / 2
157-09-31	3	Sealing set for valve	SCV 50/ 3184+112	2 / 2

AMMONIA CONTROL VALVES

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157-10- 1	2	Solenoid valve, bottom part	EVH (NO) /027B1130	1 / 4
157-10- 2	4	Solenoid valve, bottom part	EVH (NC) /027B1120	1 / 4
157-10- 3	2	Solenoid valve, excl. coil	EVRA 10 /032F3060	1 / 4
157-10- 4	2	Solenoid valve, excl. coil	EVRA 15 /032F3063	1 / 4
157-10- 5	35	Repair set for solenoid v.	EVH (NC) /032F0201	2 / 4

157-10- 6	15	Repair set for solenoid v.	EVH (NO) /032F0199	2 / 4
157-10- 7	25	Repair set for solenoid v.	EVRA 10 /032F0202	2 / 4
157-10- 8	15	Repair set for solenoid v.	EVRA 15 /032F0203	2 / 4
157-10- 9	2	Repair set for solenoid v.	EVRA 20 /032F0206	2 / 4
157-10-10	3	Repair set for solenoid v.	EVRA 25 /032F0208	2 / 4

157-10-11	70	Gasket set for solenoid v.	EVH (NC) /032F0209	2 / 4
157-10-12	30	Gasket set for solenoid v.	EVH (NO) /027F0666	2 / 4
157-10-13	50	Gasket set for solenoid v.	EVRA 10 /032F0211	2 / 4
157-10-14	30	Gasket set for solenoid v.	EVRA 15 /032F0211	2 / 4
157-10-15	4	Gasket set for solenoid v.	EVRA 20 /032F0213	1 / 4

157-10-16	6	Gasket set for solenoid v.	EVRA 25 /032F0214	1 / 4
157-10-17	70	Coil sealing set for s. v.	EVH (NC) /018Z0093	2 / 4
157-10-18	30	Coil sealing set for s. v.	EVH (NO) /018Z0091	2 / 4

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
157-10-19	50	Coil sealing set for s. v.	EVRA 10 /01820093	2 / 4
157-10-20	30	Coil sealing set for s. v.	EVRA 15 /01820093	2 / 4
157-10-21	4	Coil sealing set for s. v.	EVRA 20 /01820093	2 / 4
157-10-22	6	Coil sealing set for s. v.	EVRA 25 /01820093	2 / 4
157-10-23	70	Coil for solenoid v.	EVH (NC) /01826701	2 / 5
157-10-24	30	Coil for solenoid v.	EVH (NO) /01826801	2 / 5
157-10-25	50	Coil for solenoid v.	EVRA 10 /01826701	2 / 5
157-10-26	30	Coil for solenoid v.	EVRA 15 /01826801	2 / 5
157-10-27	4	Coil for solenoid v.	EVRA 20 /01826701	2 / 5
157-10-28	6	Coil for solenoid v.	EVRA 25 /01826701	2 / 5
157-10-29	1	Main valve	GPS 40	2 / 2
157-10-30	1	Main valve	GPS 50	2 / 2
157-10-31	1	Main valve	PM1-20 /027F1001	1 / 5
157-10-32	1	Main valve	PM1-25 /027F1006	1 / 5
157-10-33	1	Main valve	PM1-32 /027F1011	1 / 5
157-10-34	1	Main valve	PM1-40 /027F1016	1 / 5
157-10-35	1	Main valve	PM3-15 /027F1059	1 / 5
157-10-36	1	Repair set for main valve consisting of:	PM-15	
157-10-36A		Pressure rod complete	027F0162	1 / 5
157-10-36B		Piston ring, 2 pcs	027F0650	1 / 5
157-10-36C		Piston complete	027F0395	1 / 5
157-10-37	3	Repair set for main valve consisting of:	PM-20	
157-10-37A		Pressure rod complete	027F0260	1 / 5
157-10-37B		Piston ring, 2 pcs	027F0650	1 / 5
157-10-37C		Piston complete	027F0395	1 / 5
157-10-38	1	Repair set for main valve consisting of:	PM-25	
157-10-38A		Pressure rod complete	027F0261	1 / 5
157-10-38B		Piston ring, 3 pcs	027F0650	1 / 5
157-10-38C		Piston complete	027F0395	1 / 5
157-10-39	1	Repair set for main valve consisting of:	PM-32	
157-10-39A		Pressure rod complete	027F0262	1 / 5
157-10-39B		Piston ring, 3 pcs	027F0651	1 / 5
157-10-39C		Piston complete	027F0396	1 / 5

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
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157-10-40	1	Repair set for main valve consisting of:	PH-40	
157-10-40A		Pressure rod complete	027F0263	1 / 5
157-10-40B		Piston ring, 3 pcs	027F0652	1 / 5
157-10-40C		Piston complete	027F0397	1 / 5

157-10-41	12	Gasket set for main valve	GPS 40/2453+047	2 / 2
157-10-42	12	Gasket set for main valve	GPS 50/2453+047	2 / 2
157-10-43	4	Gasket set for main valve	PH-15 /027F0086	1 / 5
157-10-44	20	Gasket set for main valve	PH-20 /027F0086	1 / 5
157-10-45	2	Gasket set for main valve	PH-25 /027F0086	1 / 5

157-10-46	2	Gasket set for main valve	PH-32 /027F0087	1 / 5
157-10-47	2	Gasket set for main valve	PH-40 /027F0088	1 / 5
157-10-48	3	Check valve	RD 10-L	1 / 2
157-10-49	3	Check valve	NRVA 15 /020-2000	1 / 4
157-10-50	15	Repair set for ch. valve	RD 10-L	1 / 2

157-10-51	10	Piston	NRVA 15 /020-2104	1 / 4
157-10-51A	1	Spring set of 10 pcs.	NRVA 15 /020-2136	1 / 4
157-10-52	3	Gasket set of 20 pcs for	NRVA 15 /020-2133	1 / 4
157-10-53	1	Safety valve	HERL T19	2 / 2
157-10-54	1	Safety valve	HERL T21	2 / 2

157-10-55	2	Strainer	FA 15 /006-0052	1 / 4
157-10-56	60	Repair set for strainer	FA 15 /006-0331	2 / 4
157-10-57	1	Repair set for strainer	STR 32	2 / 3
157-10-58	1	Repair set for strainer	STA 50	2 / 3
157-10-59	1	Thermostatic pilot valve	CVT /027B1111	1 / 4

REFRIGERATION CONTROL

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157-11- 1	2	Control box	38E /038E0220	1 / 4
157-11- 2	2	Coil for float control	38E /038E0202	1 / 4
157-11- 3	4	Gasket set	38E /038E0082	1 / 4
157-11- 4	1	Capacity regulator	EKC 30 /084U2015	1 / 3
157-11- 5	1	Capacity regulator	EKC 30 /084U2017	1 / 3

157-11- 6	1	Capacity programmer	TSL 2/12	1 / 3
157-11- 7	1	Capacity programmer	TSL 2/18	1 / 3
157-11- 8	2	Pressure transmitter	EMP2 /084G2101	1 / 3
157-11- 9	3	Room thermostats	RT 4 /017-5036	1 / 4
157-11-10	3	Room thermostats	RT 17 /017-5117	1 / 4

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
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157-11-11	3	Room thermometer		1 / 2
157-11-12	2	Temperature phial PT100	1804001-RM	1 / 4
157-11-13	2	Pressostate	RT 5A /017-5046	1 / 4
157-11-14	2	Pressostate	RT 260A/0170021	1 / 4
157-11-15	1	Thermostats	RT 8 /017-5063	1 / 4

157-11-16	1	High pressure gauge		1 / 3
157-11-17	2	Low pressure gauge		1 / 3
157-11-18	2	Diff. pressure gauge		1 / 3

WATER SOFTENING PLANT

157-12- 1	1	Top and center section	601303-002	1 / 2
157-12- 2	1	Diaphragm	251789-001	1 / 2
157-12- 3	1	Gasket	203705-002	1 / 2
157-12- 4	1	Spring	208272-001	1 / 2
157-12- 5	1	Armature	208273-001	1 / 2

157-12- 6	1	Diaphragm	208274-001	1 / 2
157-12- 7	1	Piston seat	251784-002	1 / 2
157-12- 8	1	Check valve	251549-001	1 / 2
157-12- 9	2	O-ring	201424-001	1 / 2
157-12-10	1	O-ring	201237-001	1 / 2

157-12-11	1	Air check	502119-002	1 / 2
157-12-12	10	Fuse F5A	319567-006	1 / 2

UNDERGROUND WATER RESERVOIR

157-13- 1	2	Coil 12volt for solenoid v.	308010-003	1 / 2
157-13- 2	2	Level switch	319560-001	1 / 2

INSULATED DOORS

157-14- 1	60	■ Rubber gasket type A	25-0010/1	5 / 5
157-14- 2	6	■ Rubber gasket type B	25-0020/1	5 / 5
157-14- 3	10	■ Rubber gasket type C	25-0030/1	5 / 5
157-14- 4	6	Recess block type TE	30-0950/1	5 / 5
157-14- 5	4	Roller	30-1500/2	5 / 5

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
157-14- 6	2	Bottom guide front	30-3010/2	5 / 5
157-14- 7	2	Bottom guide rear	30-3050/2	5 / 5
157-14- 8	2	Heating cable start	59-7000/1	5 / 5
157-14- 9	22	■ Heating cable	59-7005/1	5 / 5
157-14-10	50	■ PVC strip	60-0320/1	5 / 5

SWITCHBOARDS

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157-15- 1	1	Overload cut-out	SN 800	3 / 2
157-15- 2	1	Safety cut-out	160 A	3 / 2
157-15- 3	1	Safety cut-out	125 A	3 / 2
157-15- 4	1	Ammeter	800/5	3 / 2
157-15- 5	1	Current transformer	800/5	3 / 2
157-15- 6	1	Voltmeter		3 / 2
157-15- 7	1	Voltage change over switch		3 / 2
157-15- 8	1	Contactora	B 85 A BBC	3 / 2
157-15- 9	1	Contactora	B 72 A BBC	3 / 2
157-15-10	1	Contactora	B 30 A BBC	3 / 2
157-15-11	1	Contactora	B 25 A BBC	3 / 2
157-15-12	2	Contactora	B 16 A BBC	3 / 2
157-15-13	6	Contactora	B6 30-10-220 ABB	3 / 3
157-15-14	1	Thermal relay	T 85 60-100A BBC	3 / 2
157-15-15	1	Thermal relay	T 75 36-52A ABB	3 / 2
157-15-16	1	Hand-oper. motor protect.	KTA3-25-25	3 / 3
157-15-17	1	Hand-oper. motor protect.	KTA3-25-10	3 / 3
157-15-18	2	Hand-oper. motor protect.	KTA3-25-4	3 / 3
157-15-19	2	Hand-oper. motor protect.	KTA3-25-1	3 / 3
157-15-20	2	Hand-oper. motor protect.	KTA3-25-2.5	3 / 3
157-15-21	2	Hand-oper. motor protect.	KTA3-25-0.63	3 / 3
157-15-22	2	Hand-oper. motor protect.	KTA3-25-0.4	3 / 3
157-15-23	2	Timer	SA 205 0-600 S	3 / 3
157-15-24	2	Timer	SA 245 0-60 M	3 / 3
157-15-25	2	Timer	SA 205 0-18 S	3 / 3
157-15-26	2	Timer	SB 205 0-18 S	3 / 3
157-15-27	2	Timer	SB 205 0-180 S	3 / 3
157-15-28	2	Timer	S 115	3 / 3
157-15-29	2	Supervision relay	SM 115	3 / 3
157-15-30	1	Trafo	MI 50	3 / 3

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
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157-15-31	2	Timer	KOF512FOMSD4N26-220	3 / 3
157-15-32	2	Timer	ABB 0-24 H	3 / 3
157-15-33	2	Timer	SA 205 0-180 S	3 / 3
157-15-34	14	Auxiliary block	KTA 3-25 PEI-01	3 / 3
157-15-35	30	Auxiliary relay	RY 4 incl. socket	3 / 3

157-15-36	15	Control lamp	220 V/6 V red	3 / 3
157-15-37	15	Control lamp	220 V/6 V yellow	3 / 3
157-15-38	15	Control lamp	220 V/6 V green	3 / 3
157-15-39	2	Switch	0-1	3 / 3
157-15-40	2	Switch	1-0-1	3 / 3

157-15-41	4	Aut. fuse	1p 10 A	3 / 4
157-15-42	2	Aut. fuse	2p 10 A	3 / 4
157-15-43	2	Aut. fuse	4p 10 A	3 / 4
157-15-44	2	Aut. fuse	4p 16 A	3 / 4
157-15-45	2	Aut. fuse	4p 63 A	3 / 4

157-15-46	2	Aut. fuse	4p 20 A	3 / 4
157-15-47	1	Ammeter	100/5	3 / 4
157-15-48	1	Ammeter	200/5	3 / 4
157-15-49	1	Hour counter	220 V	3 / 4
157-15-50	1	Switch	ABB 4p 63A	3 / 4

157-15-51	12	Fuse	125 A NH 0,0	3 / 4
157-15-52	12	Fuse	160 A NH 0,0	3 / 4
157-15-53	20	Auxiliary relay	RY4.5-UL	3 / 3
157-15-54	3	Auxiliary relay	RM2B-0	3 / 4
157-15-55	1	Timer	SB 125 230-60S	3 / 3

157-15-55	50	Bulb, bayonet socket	6 V, 200 mA	3 / 3
157-15-56	2	Timer	SB 125 8-180S	3 / 3
157-15-57	3	CEE socket box (plate erect.)	5P 16A	4 / 4

FIRE ALARM

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157-16- 1	1	Smoke detector	Cerberus	3 / 4
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AMMONIA ALARM

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157-17- 1	1	Zone unit	GJD-02R	3 / 4
157-17- 2	2	Sensor element		3 / 4

STOCK PART NUMBER	DELIVERED STOCK QTY.	DESCRIPTION	TYPE AND/OR MANUFACTURE PART NO.	STOCK LOCATION RACK NO./ SHELF NO.
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157-17- 3	1	Detector	EX	3 / 4
157-17- 4	1	Detector	GJ-B	3 / 4
157-17- 5	3	Fuse		3 / 4

LIGHTING AND INSTALLATION MATERIAL

157-18- 1	7	Sodium bulb	250W	5 / 3
157-18- 2	1	Poly. armature	2 x 58 W	4+5 / 2
157-18- 3	1	Poly. armature w/energ.b.u.	2 x 58 W	4+5 / 2
157-18- 4	1	Poly. armature	1 x 58 W	4+5 / 2
157-18- 5	1	Poly. armature w/energ.b.u.	1 x 58 W	4+5 / 2

157-18- 6	70	Discharge tube	TLD 58W/83	4+5 / 2
157-18- 7	20	Standard bulb	75 W	5 / 3
157-18- 8	20	Halogen tube	500 W	5 / 3
157-18- 9	2	Signal lamp for frost store		4 / 3
157-18-10	1	Push switch cold store	5328000017	4 / 3

157-18-11	2	Indication lamp cold store		4 / 3
157-18-12	2	Safety switch	6P 16A	4 / 3
157-18-13	5	Safety switch	4P 16A	4 / 3
157-18-14	10	Connection box w/lid		4 / 3
157-18-15	10	Gland	P16	4 / 4

157-18-16	10	Gland	P11	4 / 4
157-18-17	1	Push switch w/support	NES	4 / 4
157-18-18	1	Plug w/light, earth, support	2P NES	4 / 4
157-18-19	1	CEE socket box (wall erect.)	5P 16A	4 / 4

157-18-20	2	CEE plug	5P 16A	4 / 4
157-18-21	40	Starter f. disch. tube 4/65 W		4 / 4
157-18-22	2	Thermostats for floor heating	19101203	4 / 4
157-18-23	15	Bulb for lock-in alarm	5350004010	4 / 4
157-18-24	1	Switch	NES	4 / 4

TEMPERATURE RECORDER

157-19-01	2	Phial	PT 100	
157-19-02	14	Paper band		
157-19-03	2	Pen		

INTERCOOL FOOD TECHNOLOGY LTD.

16. Raadhusspladsen
 DK 1550 Copenhagen V
 Denmark
 Telephone +45 33 12 31 58
 Telex 16 226 cool dk
 Telefax +45 33 12 14 10
 Reg no 153806

Date: 04.05.1992

Contract no: UNIDO no.90/064/GYL

Re: Cold Store, Leninakan, Armenia.

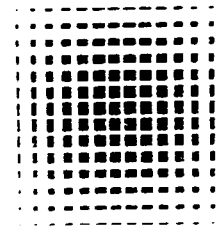
Project no: 11 - 00157.

Please find enclosed list of tools

which will be allot as belonging to the New Cold Store in Leninakan.

Pos.	Type/Size	Description	Quantity
1	800x450x500 mm	Toolbox + padlock	1
2	Esab AB THE 180	Welding machine	1
3	0.9X1.6X6 metres	Roller platform 301	1
4	7 metre	Alu. ladder	1
5	2 metre	Trestle ladder	1
6	1200X90 mm	Bench with vice 4 inch	1
7	Bosch 1322.4	Angel grinder 230mm	1
8		Keyset for do	1
9	Bosch 1348.7	Angel grinder 125mm	1
10		Key set for do	1
11	Bosch 1126.7	Drilling machine	1
12	Bosch 1122.7	--	1
13		Key for do	1
14	Bosch 1530.1,2	Nipple machine	1
15	Bosch GSR 5.11TE	Screw driver	1
16	6-32 mm	Combination wrench set	1 set
17	6 inch	Adjustable spanner	1
18	10 --	--	1
19	15 --	--	1

29	Hultafors	400mm	Alu spirit level	1
30	--	600mm	--	1
31	--	200mm	--	1
32	-	13mm	Box of drills HSS	1 set
33	1.5	-10 mm	Allen Key set	1 set
34	5/64	- 1/4 inch	--	1 set
35	240	mm	Flat chisel	1
36	300	mm	Hack saw with blade	1
37	5	metre	Steel tape measure	1
38			Centre punch	1
39			Oil can	1
40			Stanley knife with blade	1
41			Blind rived tong	1
42			-- with gear	1
43			Jointing gun	1
44			Protection glasses	2 pair
45	Closed type		Welding glasses	1
46	Din 5		Spare glasses for do	12
47	125	mm	Grinding disc	4
48	300	mm	Carpenters square	1



MONDAY	06.05.91	COURSE II: Electrical Installations - General technology - Reading of project - Switchboard - Installation materials - Safety aspects	STRØM-HANSEN Mr. Klaus Hansen INTERCOOL Mr. H.E. Andersen
TUESDAY	07.05.91	COURSE II (continued)	STRØM-HANSEN
WEDNESDAY	08.05.91	Visit to cold store Sæby Fiskeriindustri A/S Visit to slaughterhouse with cold store facilities WENBO Sæby a.m.b.a.	DC SYSTEM Mr. E. Andersen INTERCOOL Mr. Erik Ramsing WENBO Mr. F. Rasmussen
THURSDAY	09.05.91	Departure for Copenhagen Excursion	INTERCOOL Mr. Erik Ramsing
FRIDAY	10.05.91	COURSE III: Plant operations	INTERCOOL Mr. Erik Ramsing
SATURDAY	11.05.91	Free/shopping Visit to Tivoli	INTERCOOL Mr. Erik Ramsing

57	100	--	1
58	120	--	1
59	150	--	1
60	175	--	1
61	Bacho	Combination plier	1
62	Bacho	Wire stripper	1
63	No.7	Welding Clamp tong	4
64	. 10	--	2
65	400mm	Screw Clamp Bessey	4
66		Chalk tread in sheat	1
67		Mason line	1
68	220 volt 30 metre	Extention cable	2
69		Raaping file	1
70	5.2 mm	Drill	30
71	4.9 .	--	20
72	3.3 .	--	10
73	4.1 .	Blind rivet	300
74	3.3 .	--	300
75	Dana	White silicone	2 boxes (20)

Intercool Food Technology LTD.

Joern T. Andersen
Joern T. Andersen

Signature by UNIDO/
Ministry of Trade, Armenia
for receiving the abovementioned
tools.

Leninakan, date.....

signature: _____

phase is agreed upon by all parties concerned.
Intercool has delivered according to UNIDO contract the
necessary construction materials, machinery, equipment, parts
and materials and has provided the necessary services. The
accomplishment is verified in "Commissioning - Technical
Inspection Certificate" dated 07.05.1992.

All functional tests of machinery, equipment and control
systems have been carried out satisfactorily and complete
performance tests under various conditions have demonstrated
through full qualification and acceptance procedures the
operational capability of the entire cold store plant.

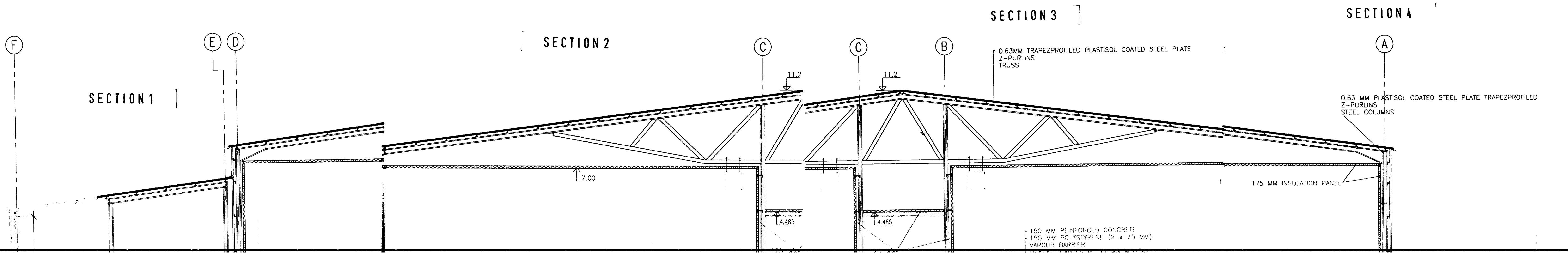
By the technical inspection documented in "Commissioning -
Technical Inspection Certificate" a number of exceptions have
been identified, which must be remedied, but which do not
prevent the commencement of the operational phase of the
warehouse. These exceptions are categorized into three groups:


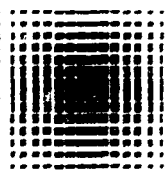
- * Outstanding deliveries from Intercool (Annex 1)
- * Outstanding works under Armenian responsibility (Annex 2)
- * Outstanding works under joint Intercool/Armenian part
responsibilities (Annex 3)

These exceptions have to be corrected at the specified dates
which were jointly agreed upon.

Therefore it is agreed that:

- * the operational phase of the warehouse is commencing on
the date of 8 May 1992;
- * the technical assistance in form of one year training



V	<p>LENINAKAN — ARMENIA COLD STORE</p> <p>PRINCIPLE CROSS SECTION</p>	
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L	 <p>UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION</p> <hr/> <p>MINISTRY OF TRADE OF THE ARMENIAN SSR</p>	
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C 91.02.15 AHA		 <p>INTERCOOL FOOD TECHNOLOGY LTD. 16, Rådhuspladsen DK-1550 Copenhagen V Denmark Teleph. +45 33 12 31 58 SCALE: 1:100 DRAWN: ERA/AHA DWG.NO.: 11-00157-061C DATE: 90.06.19</p>
B 90.10.24 MMO		
A 90.07.16		
REVISED		

210 mm.

190 mm.

SECTION 5

ad 4.1	1	pc	Main alarm horn	
ad 6.0	4	pcs	O-ring dia. 17,12x2,6	157-01-25
	2	pcs	O-ring dia. 29,31x3,33	157-01-33
	1	pc	Thermal relay	157-15-14
	1	pc	Thermal relay	157-15-15
	2	pcs	Thermal relay	157-15-31
	2	pcs	Thermal relay	157-15-56
	1	pc	Push switch, cold store	157-18-10
	1	pc	Thermosate, floor heating	157-18-22
	10	pcs	Paper band	157-19-02
	2	pcs	Pen	157-19-03

Lennakan 8th of May 1992

Erik Ramsing
 Erik Ramsing
 INTERCOOL project manager

1. Repair of two floor squares, 6 x 6 m, one in each room no. 1 and no. 2.
 The floor squares will not be reconstructed now. If repair of the squares at a later stage of the plant operation will be required then the repair will be made by the Ministry of Trade.
2. Repair of truck protection near the water tap in room no. 8 and no. 9 and at several locations in the corridors.
 Starting date: 12.05.1992
 Completion date: 20.05.1992
3. Casting of concrete below the column foot plate in room no. 9.
 Starting date: 13.05.1992
 Completion date: 15.05.1992
4. Floors in the toilet area.
 Completion date: 08.05.1992
5. Completion of the ramp floors around the floor scales when they are delivered and installed.
 Starting date: 11.05.1992
 Completion date: 15.06.1992

1. Completion date: 15.06.1992
2. Cleaning of roof space.
 Completion date: 01.06.1992
3. Cleaning of ceilings and walls.
 Completion date: 01.06.1992
4. Cleaning of steel structures.
 Starting date: 13.05.1992
 Completion date: 16.05.1992
5. Cleaning of machinery and installation parts.
 Completion date: 15.05.1992

C. OTHER WORKS OUTSIDE THE BUILDING AREA

1. Excavation in front of the truck ramp. Leveling and stabilisation of the excavated area and a road from the area to the site gate.
 Completion date: 15.06.1992
2. Establishment of access facilities to the building for fork lifts.
 Starting date: 04.06.1992
 Completion date: 15.06.1992

4. Approval of the warehouse and the technical installations from any other relevant Armenian authority.
 Completion date: 15.06.1992

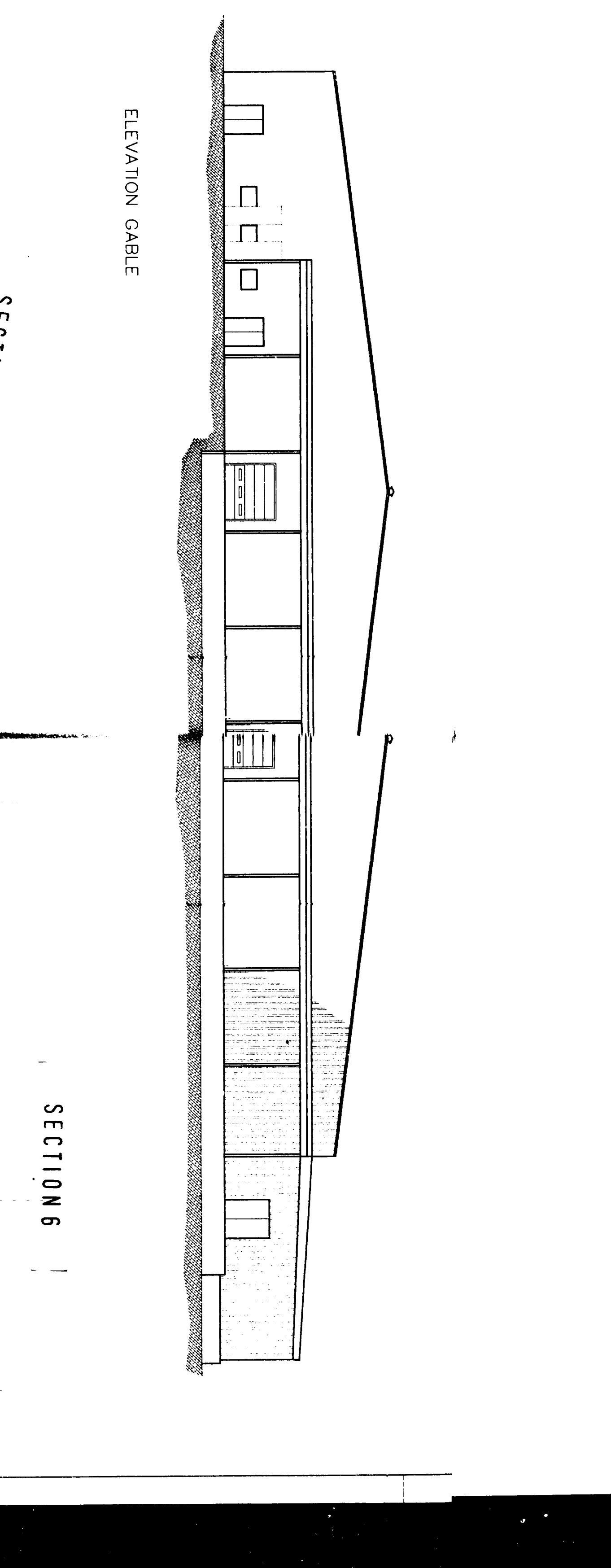
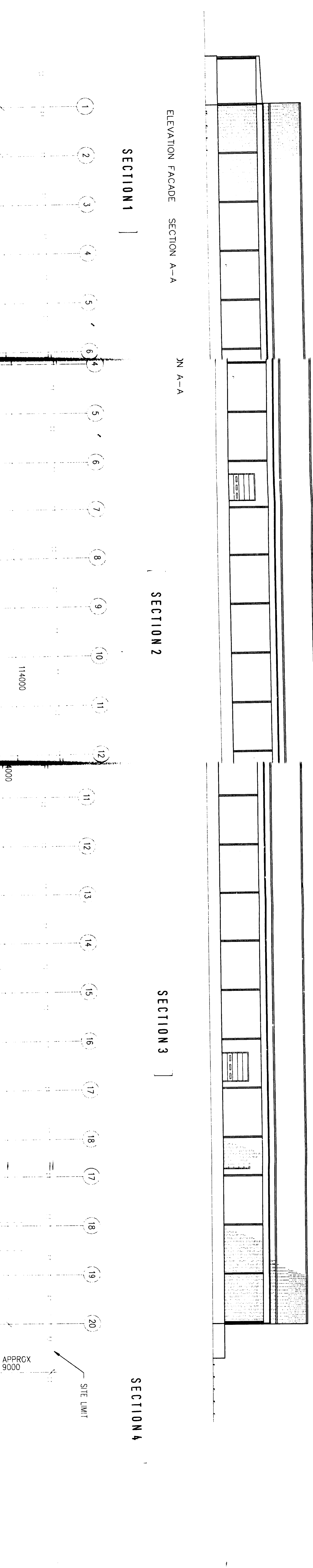
Lennakan 8th of May 1992
Ara Petrosian
 Deputy Trade Minister
 MINISTRY OF TRADE OF REPUBLIC ARMENIA

Due to various conditions (low public water supply pressure and low seasonal temperatures) a number of tests could not be performed and had to be postponed to an appropriate later stage. These tests are the following:
 * Performance test of the water softening plant.
 * Plant performance test under summer conditions and normal product handling and storage within the warehouse.

Lennakan 8th of May 1992

Ara Petrosian
 Deputy Trade Minister
 MINISTRY OF TRADE OF REPUBLIC ARMENIA

Erik Ramsing
 Erik Ramsing
 INTERCOOL project manager



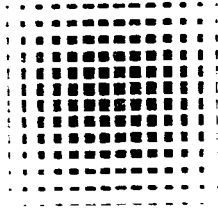
UNIDO
COLD STORE LENINAKAN

1991.04.10
ERA/smo

TRAINING PROGRAM
April 26, 1991 to May 16, 1991
for
Armenian Technicians
from the
Ministry of Trade of the Armenian SSR

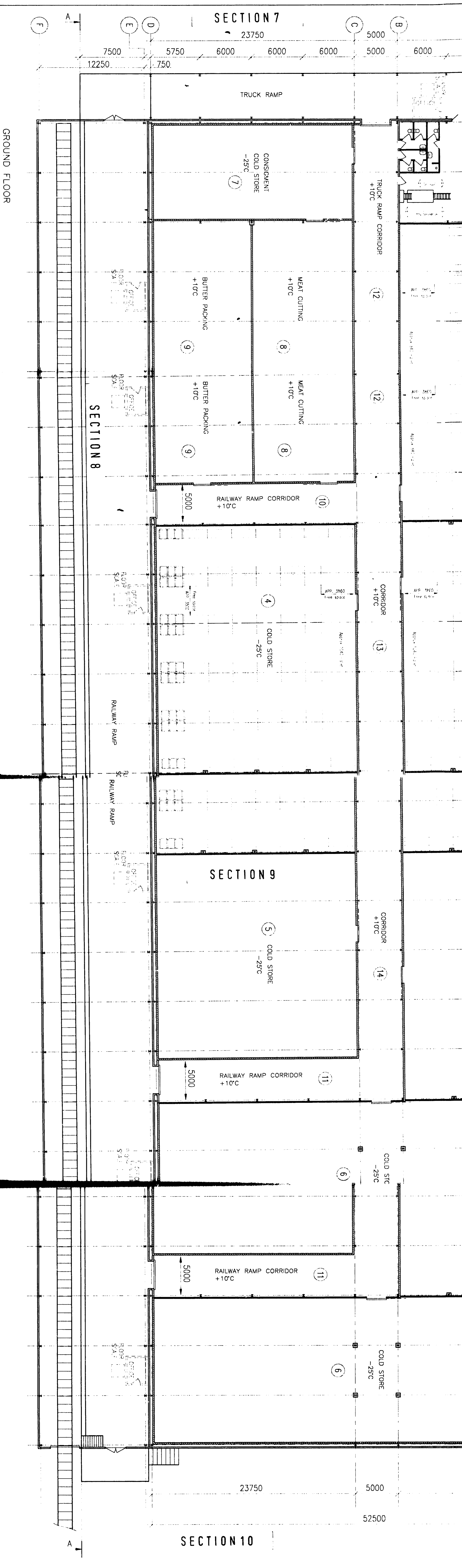
Participants:

SHALDZHIAN, Edmond Karapetovich	Chief Engineer
KHOETSIAN, Juriy Aleksandrovich	Chief Engineer
ACOPIAN, Andranic Grachovich	Chief Engineer
KUSHCIAN, Sedrac Rubenovich	Compr. Dept. Chief
KAZARIAN, Misha Aleksanovich	Plant Operator
ZARGARIAN, Hrachick Pogosovich	Plant Operator
EGIAZARIAN, Emma Vaganovna	Foreign Clerk (Interpreter)



PROGRAM


FRIDAY	26.04.91	Arrival Introduction Meeting	INTERCOOL Mr. Poul Poulsen Mr. Erik Ramsing
SATURDAY	27.04.91	Free/Shopping Sightseeing in Copenhagen	INTERCOOL Mr. Poul Poulsen
SUNDAY	28.04.91	Free Departure for Aarhus	INTERCOOL Mr. Erik Ramsing
MONDAY	29.04.91	COURSE I Refrigeration Technology: - General technology - Visit to compressor manufacturing plant - Reading of project - Piston compressors - Main plant components - Maintenance exercises - Safety aspects	SABROE Mr. J.H. Thomsen Mr. C. E. Jeding Mr. Frank Rydeng INTERCOOL Mr. Tommy Buk Mr. Erik Ramsing
TUESDAY	30.04.91	COURSE I (continued)	SABROE
WEDNESDAY	01.05.91	COURSE I (continued) - Visit to refrigeration plant, Vejle Frysehus A/S	SABROE
THURSDAY	02.05.91	COURSE I (continued) - Visit to air-cooler manufacturing plant	SABROE
FRIDAY	03.05.91	Departure for Aars - Visit to Sandwich panel manufacturing plant - Departure for Aalborg - Visit to cold store, Kjærgaard A/S	DC SYSTEM Mr. E. Andersen INTERCOOL Mr. Erik Ramsing
SATURDAY	04.05.91	Free/Shopping Excursion	INTERCOOL Mr. Erik Ramsing
SUNDAY	05.05.91	Excursion	INTERCOOL Mr. Erik Ramsing



SECTION 11

Note:
Drawing 11-00157-061 Principal Cross Section

<p>LENINAKAN - ARMENIA COLD STORE</p> <p>LAY-OUT</p>	<p>SECTION 11</p>
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UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

MINISTRY OF TRADE OF THE ARMENIAN SSR

INTERCOOL FOOD TECHNOLOGY LTD.

11-00157-060F

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