

**Page Denied**

DISSEMINATION CONTROL ABBREVIATIONS

NOFORN-	Not Releasable to Foreign Nationals
NOCONTRACT-	Not Releasable to Contractors or Contractor/Consultants
PROPIN-	Caution-Proprietary Information Involved
USIBONLY-	USIB Departments Only
ORCON-	Dissemination and Extraction of Information Controlled by Originator
REL . . .-	This Information has been Authorized for Release to . . .

Top Secret RUFF

IS 80-10023K

25X1

11 February 1980

Page 1 of 8

Copy No. 30

Central Intelligence Agency  
National Foreign Assessment Center  
Office of Imagery Analysis

IMAGERY ANALYSIS MEMORANDUM

SUBJECT: Construction Status of Imported Ammonia Plants in the Soviet Union [redacted]

25X1

Overview

As part of a major effort to increase production of nitrogen-based fertilizer (for which ammonia is a prime ingredient) and to provide more ammonia for industry and export, the Soviets contracted during the 1970s to build 45 imported ammonia plants by 1980. Photographic analysis shows that they have been only partially successful in completing this ammonia plant construction program. Thirty-four of the plants should be completed by 1980. Five more are under construction and should be completed by 1981. No evidence of construction has yet been seen on photography at the remaining six locations where the Soviets have stated that ammonia plants will be built. [redacted]

25X1

Construction continues on portions of a large diameter ammonia pipeline running from Tolyatti, the largest ammonia producing area in the country, to the Black Sea port of Grigoryevka near Odessa, a distance of 2,100 kilometers. The pipeline could be complete by late 1980. The terminal and port facility as well as two ammonia plants at Grigoryevka are now complete, and the first shipments of ammonia to the US were reported in late 1979. [redacted]

25X1

The information and judgments presented in this memorandum were derived principally from analysis of imagery. Although information from other sources of intelligence may be included for background, this memorandum does not reflect an all-source assessment and has not been formally coordinated within CIA. [redacted]

25X1

[redacted]

25X1

[redacted]

25X1

[redacted]

Top Secret

25X1

Introduction

In the early 1970s the Soviets began a rapid development of their ammonia industry to support a priority program to increase agricultural yields and provide more ammonia to industry and for export. Ammonia is the principal intermediate chemical used in the production of nitrogen-based fertilizer. The Soviets, through a series of agreements and contracts with various countries, proposed to construct 45 ammonia plants in support of the program by 1980. Information in this review provides a 1979 update of data presented in an earlier Imagery Research Paper (IRP) on the impact of imported technology on the Soviet ammonia industry. [Reference 1] [ ]

25X1

Discussion

It appears from photographic analysis that the Soviet Union will be only partly successful in completing an ammonia plant construction program in the time frame planned. The program, initiated in the early 1970s, was to be complete before the end of the current five-year plan (1975-1980). [ ]

25X1

A photographic survey of Soviet ammonia plant construction indicates that by the end of 1979, 34 plants should have been completed. This represents a completion of 75 percent of the program to build 45 ammonia plants by 1980. Five of the remaining eleven planned ammonia plants were noted under construction and based on their stage of construction they should be complete by 1981. No indications of construction were observed on available 1979 photography at the remaining six locations where the Soviets have stated ammonia plants will be built. [ ]

25X1

Seven ammonia plants that were projected in our earlier report for completion in 1978, were not completed until 1979. [1] With the completion of these plants and 10 others the Soviets were able to finish 17 plants in 1979. [ ]

25X1

Summary information on the construction chronology of the ammonia plants is presented in Table 1. Current construction status of the ammonia plants involved in the program is available in Table 2. The estimated completion dates for the ammonia plants under construction are based on construction times observed at other plants using similar process engineering. [ ]

25X1

Table 1. Construction Chronology of Soviet Imported Ammonia Plants Through 1979 (U)

Total Number of Imported Ammonia Plants Planned	-	45
Number of Ammonia Plants Completed Through 1978	-	17
Number of Ammonia Plants Completed in 1979	-	17
Number of Ammonia Plants Under Construction	-	5
Number of Ammonia Plants Not Started	-	6

25X1

### Technology Modification

Photographic evidence continues to indicate the Soviets have modified some of the technology gained from the purchase of foreign process engineering. First observed on photography at the Berezniki Chemical Combine, the modifications include different heat recovery and refrigeration equipment, a different gas purification system and a modified ammonia synthesis converter as well as a larger compressor building. Photography of 1979 shows that the plants at Fergana, Nevinnomyssk, Novomoskovsk, and Tolyatti No. 1 now include this modified engineering. Detailed information on the extent of the earlier modifications is available in reference 1. [ ]

25X1

### Ammonia Pipeline

Construction continues on some segments of the large diameter ammonia pipeline connecting the Tolyatti Nitrogen Fertilizer Plant No. 2 and the port of Grigoryevka near Odessa. Photography of mid-1979 showed portions between Tolyatti and the Panyutino spur still under construction. Based on the current rate of construction the pipeline could be complete by late 1980. The terminal and port facility and the two ammonia plants at Grigoryevka are complete, as are four of the six ammonia plants at the other terminal, located at Tolyatti No. 2. Construction varies from early-to-mid stages at the other two ammonia plants at Tolyatti (figure 1). The delay in construction of the pipeline and the ammonia plants may partly explain why the Soviets reportedly will ship less ammonia to the US this year. Original plans under a 1973 fertilizer agreement with the US called for the Soviets to ship 2.1 million metric tons (mmt) of ammonia; however, the Soviets have indicated that only 1.5 mmt will be shipped to the US in 1980. [2] Shipments of ammonia from Grigoryevka to the US in exchange for super-phosphoric acid began in November 1979. [3] [ ]

25X1

References



Documents

1. CIA. IS 79-10049K Impact of Imported Technology on the Soviet Ammonia Industry, April 1979, [redacted] (TOP SECRET RUFF)

2. Chemical Week, International Newsletter, 2 January 1980 (UNCLASSIFIED)

3. FBIS BBC, [redacted] 14 December 1979 (UNCLASSIFIED)

Requirement

CER-5-89,240

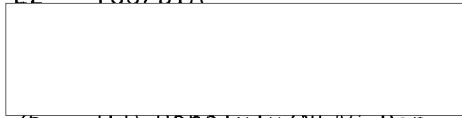
OIA Project Number and Status

4A0244CF (Continuing)




Distribution

- Copy 1 - NFAC/OIA/O/Dir
- 2 - NFAC/CRES/RSG
- 3 - NFAC/OD
- 4 - NFAC/OER/Dir
- 5 - NFAC/OER/RLO
- 6-7 - NFAC/OER/USSR-E. Europe
- 8 - NFAC/OPA/USSR-EE/SPA
- 9 - NFAC/OSI/LSD
- 10 - NFAC/OIA/ERD
- 11 - NFAC/OIA/PG
- 12 - NFAC/SRP
- 13 - NFAC/PPG/R&D
- 14 - NFAC/OGCR/CD
- 15-17 - NFAC/OCR/ADD/CDS
- 18-19 - NPIC/DCB/IS
- 20 - NPIC/IEG/WPFD
- 21 - TCO/DIA/DB-5
- 22 - TCO/DIA



25X1

- 26 - TCO Honolulu/NFAC Rep
- 27 - COB Stuttgart/Attn Liaison Group
- 28 - TCO/CIA (Chairman, COMIREX)
- 29 - NIO/Political-Economy
- 30 - NIO/USSR
- 31 - TCO/STATE/INR/ODC
- 32 - TCO/DDO/SE
- 33 - CIA/Rep/SAC
- 34 - TCO/DOE/ISA
- 35 - TCO/Commerce
- 36 - TCO/NSA
- 37 - TCO/ACDA/Intel Staff
- 38 - Records Center
- 39 - TCO/DDO/PLO, 

25X1

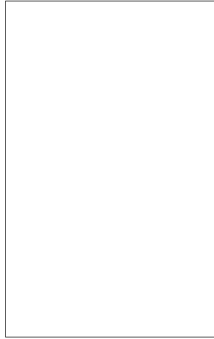

Table 2 Construction Status of Soviet Imported Ammonia Plants (U)

<u>Location of Chemical Complexes</u>	<u>Construction Status</u>	<u>Projected or Completion date</u>	25X1 25X1
Angarsk 52-33N 103-55E	Planned	1982	
Berezniki 59-24N 056-14E	Complete Complete Planned	1975 1978 1982	
Cherepovets 59-09N 037-49E	Complete	1979*	
Cherkassy 49-22N 032-04E	Complete Complete	1973 1979	
Dneprodzerzhinsk 48-29N 034-40E	Complete	1979	
Dorogobuzh 54-57N 033-22E	Complete	1979*	
Fergana 40-23N 071-47E	Early	1981	
Gorlovka 48-18N 038-06E	Complete Complete	1978 1979	
Grigoryevka (Odessa) 46-37N 031-00E	Complete Complete	1979 1979	
Grodno 53-40N 023-53N	Complete	1978	
Jonava 55-05N 024-19E	Complete	1977	



Keimerovo 1979		Complete	1978
55-20N 085-59E		Complete	1979*
		Early	1981
Khotla-Jarve 59-24N 027-14E		Complete	1979*
Kirovo-Chepetsk 58-32N 049-58E		Complete	1979
Lisichansk 48-56N 038-27E		Complete Complete	1973 1975
Nevinomyssk 44-39N 041-56E		Complete Complete	1973 1976
Novgorod 58-36N 031-13E		Complete Complete	1975 1979*
Novomoskovsk 54-05N 038-13E		Complete Complete Complete	1974 1975 1979
Perm (Location not identified)		Planned	1982
Rossosh 50-09N 039-39E		Early Planned	1981 1982
Rovno 50-43N 025-10E		Complete	1974
Rustavi 41-32N 045-03E		Complete	1979
Salavat 53-24N 055-53E		Planned	1982

25X1  
25X1

Shevchenko 4337N 051-17E		Complete	1976		25X1 25X1
Tolyatti No. 1 53-32N 049-27E		Complete	1977		
Tolyatti No. 2 53-30N 049-38E		Complete Complete Complete Complete Mid Early Planned	1979* 1979* 1979 1979 1981 1981 1982		

\*Plants that were projected (from photography) for completion in 1978 but were not finished until 1979.

This table is classified TOP SECRET RUFF

**Page Denied**