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INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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NO FOREIGN DISSEM/NO DISSEM ABROAD

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COUNTRY USSR (Tula Oblast)

REPORT

SUBJECT Composite Report on the Shchekino Chemical Combine

DATE DISTR. 17 October 1963

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REFERENCES

DATE OF INFO.

PLACE & DATE ACQ

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THIS IS UNEVALUATED INFORMATION. SOURCE GRADINGS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

1. A 15-page report on the Shchekino Chemical Combine [redacted] The report contains information on sources of raw materials, electric power, ma50X1-HUMter supply, transportation facilities, background information, reasons for the plant construction, plant construction, co-operation between Soviet officials and the Western representatives, official and non-official contacts, supply of construction materials, relations between the construction site and Moscow, management from Moscow, accidents at the site, number of personnel, supervision, wages, trade unions, building costs, tools used and shortages of tools, construction methods, building program, mechanization and automation at the plant, production costs, and the integration of the plant into the economy. 50X1-HUM

[redacted]

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GROUP 1
Excluded from automatic downgrading and declassification

STATE	DIA	ARMY	NAVY	AIR	NSA	~~XD~~ NIC	[redacted]

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(Note: Field distribution indicated by "#".)

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[redacted]

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1. Resources [redacted] 50X1-HUM

A. Source of Raw Materials [redacted] 50X1

Are not transported to or imported here. The basic products for making urea (namely liquid ammonia and carbonic acid gas) both come from a liquid ammonia plant on the Shchekino Chimkombinat grounds. This liquid ammonia plant is run on natural gas. Theoretically both liquid ammonia and carbonic acid gas can be supplied in sufficient amounts for [redacted] urea plant to work at full capacity. Whether these theoretical calculations agree with what happens in practice remains to be seen. 50X1-HUM

B. Source of Electric Power

The Shchekino Chimkombinat has its own electric power plant, whose capacity is estimated at about 60 MW. The kombinat is also connected to a grid system which covers all of Central Russia and of which the closest large (thermal) power plant is located at Sovjetsk, about 15 km. southeast of Shchekino. [redacted] 50X1
[redacted] Consumption of electric 50X1
power [redacted] urea plant is estimated at 8,000 to 50X1-HUM
10,000 KW. The cost of the electric power is not known.

C. Available Manpower

1) The (chemical) urea plant for the large part has automation in the processing section. To run the machine part (the installation), very specialized operators are required. They were not available. The operating personnel had only had some school training and had to be further trained at the installation itself.

[redacted] 50X1-HUM

2) Besides the operators, there are people for shipping, keeping things generally clean, and the general services (including maintenance). According to Western standards, about 40 to 50 people are needed.

3) It is not known what staff the Soviets want to make available for the plant. Information on this can only be provided after a few months. Untrained and little-trained personnel will certainly be used in far greater numbers than is customary in the West.

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the Soviets see such projects as a sort of means to provide employment!

4) Housing for the workers is already present and, according to Soviet standards, is fairly good. About four km. from the urea plant is Pervomayskiy, where there is a settlement of about 18,000 people. The personnel for the Shchekino Chimkombinat (and thus for the urea plant) is recruited from these working people.

5) Naturally, there is, as everywhere else in the USSR, a housing shortage. In Pervomayskiy, there is a lot of building which is also being done quickly, but it is of poor quality. For the regular personnel (and certainly for the Staff) the housing is fairly good. For the foreign assembly personnel, there is little housing because this personnel is rather temporary. The great building program at the large Chimkombinat is causing this assembly personnel to be there a number of years, however.

6) The workers' quarters lie in Pervomayskiy (old village and new settlement).

D. Water Supply

There are difficulties with the plant water supply. It comes from underground sources and is insufficient to let the water flow off without recirculation. Consequently, intensive use of cooling towers is made; divided in various groups, they are spread out all over the whole Chimkombinat grounds. At present, the urea plant is supplied with water by means of a small supply line (the grading work is not yet in operation). During the month of May, the water supply was stopped two or three times for unknown reasons. To what extent the water will be

sufficient in quantity and quality in any further expansion cannot yet be determined. The steam needed for the urea process will be furnished by the steam generators present.

E. Transportation Facilities

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The Shchekino Chimkombinat is situated right along the Moscow-Kursk main railline to the Black Sea and is connected to this line. The kombinat is also about one and one-half km. from the Moscow-Tula-Orel-Kursk highway and is connected to this highway by a good asphalt road.

2. Location of Plant

There are no disadvantages in the location of the plant nor of the whole Shchekino Chimkombinat. The connection with the natural gas network (Pervomayskiy pump station) is particularly favorable.

REASONS LEADING TO THE CONSTRUCTION

1. According to Khrushchev's own statements during a visit to the plant in April 1963, the USSR is behind the West in the chemical sector. There is also a great lag in agricultural production which they want to solve by using the most modern artificial fertilizers. (Urea has a very high nitrogen content.)

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2. The Soviets have tried to develop their own urea process. The Soviet plant's capacity is 140 tons per day. It was built according to the Pechiney type (French process) 50X1-HUM Up to now, nothing has come of it; the plant is still not in operation. Great difficulties have arisen, including a few explosions; there was a fire in the prill tower (presumably because in plastering benzol was used); and regularly there are serious leaks (on 15 May 1963 eight Soviet workers were admitted to the hospital in Tula with ammonia poisoning). 50X1

3. The Soviets had also ordered separately (in addition to the four complete plants ordered) loose apparatus, that is, the parts such as reactors and carbomate pumps, etc., which are the most difficult to make. Originally, it was intended to build plants themselves with this additionally ordered apparatus. 50X1-HUM

one can conclude

the lack of capacity in Soviet apparatus manufacture.

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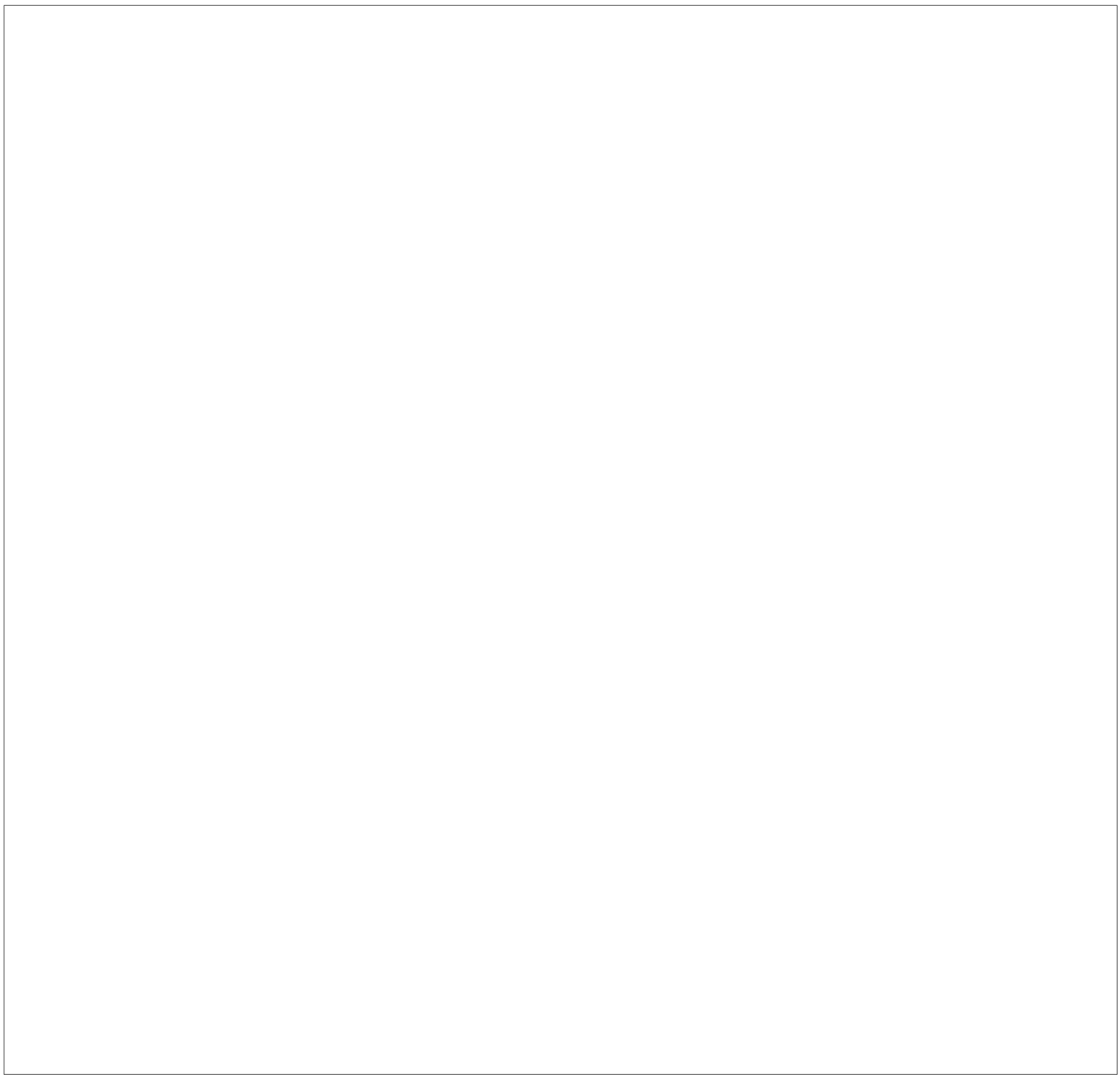

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DESCRIPTION OF PLANT

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2. Mechanization and Automation

In general, it can be said that the mechanization and automation in the urea plant are not different from what is normal for a similar chemical installation. 50X1-HUM the Soviets wanted to do a lot of automation, using the argument of personnel shortage or high cost of personnel. According to the Soviets, this was also a question of Moscow's hobby. This hobbyism went to the absurd. They wanted to make the compressors in the plant automatic (a 50X1-HUM crazy idea). The Soviets insisted on this, and the compressors are now operated from a panel by the machine. The Soviets would have preferred to have remote control. It is typical that such automation is insisted upon where in fact it is

inefficient and costs a lot of money. It is not only a question of a few extra gauges, but also of maintaining these instruments (which is a weak point with the Soviets).

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3. Production Means

A. Equipment

The equipment of the plant was imported entirely from the West.

B. Technology

No Soviet parts were installed in the plant.

C. Corresponding Soviet Equipment

No corresponding Soviet equipment was observed. A lot of apparatus for other plants lay on the Chimkombinat grounds. This apparatus was mainly from Czechoslovakia, East Germany Very little was from the USSR itself. Western technicians have the impression that plants for making apparatus are still in their infancy in the USSR, at least for the chemical industry. There are still very few specialized plants or else these plants are concerned with other products.

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PRODUCTION COSTS

1. Planned Costs Per Unit

Production costs per unit are not known, considering absolutely nothing is known about the write-off policies which in a chemical installation now is the most important factor in determining production costs. What policy the Soviets follow in write-offs is absolutely unknown.

2. Standards for Replacement

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The future will show what standards the Soviets use in replacing machines.

3. Maintenance Provisions

Maintenance provisions up to the present are completely insufficient. 50X1-HUM

END RESULTS

1. Type of Product and Capacity

The product is urea, and 500 tons per day will be produced. Eighty per cent will be agricultural urea, and part of it is suitable to add to cattle feed (cattle feed prills). The remaining 20 per cent can be supplied as wished--in the form of "foliorgrade" (spraying crops) or in the form of technical urea (basis for further processing to resins, plastics, melamine, bakelite, types of glue, etc.).

2. Expansion Plans

At present, there are negotiations on the possibility of turning the expansion apparatus ordered by the Soviets into complete plants (thus, four plants of 500 tons per day extra). The total production capacity of the plants delivered and to be delivered would come to 4,000 tons of urea per day. With an average of 300 production days per year, this would mean a yearly production of 1.2 million tons of urea. 50X1-HUM

3. Production Costs

Whether production costs will be above those planned is not known.

4. Development

Nothing is known concerning what development possibilities are to be expected.

INTEGRATION OF PLANT INTO THE ECONOMY

1. Similar Plants

At present, [redacted] building four urea plants in the USSR: in Tula (Pervomayskiy), in Ufa (Salavat), in Tashkent (Chirchik), and in Lisichansk (Severodonetsk). All these plants are run on natural gas. In view of the results of recent Soviet developments in urea production (see second section, number 2--page 3), their own production will not be greater than the production capacity imported [redacted] It is impossible that the Soviets plan to take the installed machines to other plants. One cannot do this very well with a chemical plant.

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2. Level of Technology

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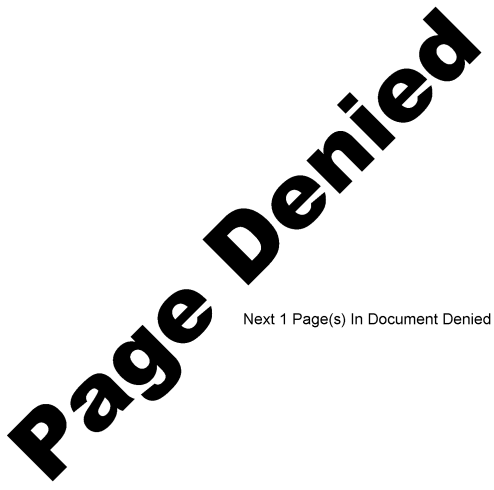
[redacted] the Soviet technologists have insufficient [redacted] experiences, such as with pilot plants in which the process is worked out and tested. Evidently, they do not have the time or the means to test ideas in actual trial set-ups. They also do not have enough personnel to build the pilot plant, to man it, and later to turn it into producing plants.

3. Distribution of the Product

The product can be transported by rail and by truck. The storage capacity of the prilled product is 40 days production, that is, 20,000 tons of urea. The storage capacity for the bagged product is about 10,000 tons. On both sides of the plant, there is a railline and it presumably is planned to transport most of the end product by rail. The product will go primarily to sovchozes and kolchozes.



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