

CENTRAL INTELLIGENCE AGENCY
INFORMATION REPORT

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COUNTRY East Germany/Sino-Soviet Bloc Nations/

REPORT

SUBJECT VEB Transformatoren- und Roentgenwerk
Dresden: Transformer Production and
Export

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This is UNEVALUATED Information

THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

1. Plant No. 1 of VEB Transformatoren- und Roentgenwerk (TRARO), Dresden-
Uebigau, Overbeckstrasse, is producing transformers with automatic
oil-cooling (Oelselbstkuehlung) under the overall supervision of
manager¹ Karl Heinz Graichen, engineer, SED member. Transformer
production is divided into the following groups:

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- a. Transformers of 5 to 100 kVA (and under)
- b. Transformers of 100 to 750 kVA
- c. Transformers of 750 to 7,500 kVA
- d. Transformers of 7,500 to 25,000 kVA
- e. Transformers of 25,000 kVA and over
- f. Automatically-controlled transformers (Regeltransformatoren) and
thrust transformers (Schubtransformatoren) for cascade generators².
- g. Special transformers according to customers' specifications.

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2. All transformers produced by TRARO are for the range from 1 to 110 kV;
transformers with higher voltage ranges have not been produced. The
automatically-controlled transformers are equipped with special control
installations (Spezialregelwerk) and can be adjusted to 21 ranges.

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3. During 1954, the following transformers were produced:

- a. About 8,200 smallest-type transformers of 350 to 750 VA
- b. About 2,000 transformers of 5 to 100 kVA
- c. About 1,400 transformers of 100 to 750 kVA
- d. About 450 transformers of 750 to 7,500 kVA
- e. About 45 transformers of 7,500 to 25,000 kVA
- f. About 22 transformers of 25,000 kVA and more
- g. An unspecified number of special transformers for the chemical
industry and for the melting ovens of steel mills (Hoechststrom-
transformatoren).

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In addition, about 40 transformers from 750 to 31,500 kVA were overhauled in the enterprise during 1954. The total value of transformer production and overhauling during 1954 amounted to between 15 and 16 million DME. This amount corresponds to the yearly production capacity of the enterprise.

4. About 25% of the entire transformer production is for export, mainly to the USSR and satellite countries. Twenty to 25 percent is for "indirect export", i.e. for East German enterprises which are exporting equipment in which the TRARO transformers are used as parts. The remainder goes to East German industry. During 1954, the following exports were carried out to Soviet Bloc countries:
 - a. 251 small net transformers from 30 to 2,500 kVA with input voltage (Oberspannung) from 6 to 30 kV (to the USSR). In addition, spare windings for 25 large transformers were delivered to the USSR in 1954. These large transformers of 16 to 31.5 MVA with 110 KV input voltage had been previously delivered to the USSR (in 1952 and 1953).
 - b. Four large transformers of 31.5 MVA, 110 KV, with automatic-control installation for 21 ranges (to Poland).
 - c. 12 large transformers from 16 to 25 MVA, 110 KV with automatic-control installations for 15 to 21 ranges (to China).
 - d. One mobile transformer (Wandertransformator) of 31.5 MVA, 110 KV, and two mobile transformers of 25 MVA, 110 KV (to Czechoslovakia). These transformers were equipped with automatic-control installations for 21 ranges.
 - e. 64 control transformers (Regelaggregate) for the control of the rolls in rolling mills and pipe-drawing plants (to Czechoslovakia). Czechoslovakia needed these transformers in the framework of its so-called LURGI program (metallurgy program).
5. In February 1955, the enterprise received an order from Poland for the delivery, in 1955, of two large generators of 50 MVA, 110 KV, with control installations for 21 ranges, and for two large transformers of 105 MVA, 110 KV, with special cooling equipment. Since the Dresden enterprise was not able to produce the latter two machines, the order was transferred to VEB Transformatorenwerk Oberspree (TRO), Berlin.
6. The deliveries to the USSR, Poland and China were made through DEUTRANS, Berlin. The deliveries were labelled "Energo-Import Moscow", "ELEKTRIM Warszawa" and "International Electric Peking".
7. From 1954 on, the exports of the enterprise to Soviet Bloc countries showed a strong tendency to decrease, probably as a result of the "new line" limiting heavy industrial activities in these countries. The enterprise therefore attempted to activate its export business with countries not belonging to the Soviet Bloc.

It consisted of 18 large transformers of 12.5 MVA, 110 KV, with automatic controls for several ranges

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8. During 1953 and 1954, the enterprise delivered the following equipment to East German consumers:
- a. A large number of transformers from 7,500 to 25,000 kVA, 110 kV, to power plant I in Trattendorf, the Bleicherode power plant, the Erfurt power plant, the Rudolf Breitscheid power plant in Halle, the Gross-Kayna power plant, the J. W. Stalin power plant in Stalinstadt, the Klingenberg power plant, the lignite power plant Sonne in Lauchhammer, VEB Stahl-und Walswerk Riesa, and VEB Edelstahlwerk Doehlen;
 - b. Six large transformers of 8 MVA, 60 kV, to the Calbe power plant. The deliveries to Calbe and to the places mentioned under a. above were carried out in the framework of the so-called East German energy program;
 - c. Seven highest current transformers (Hoechststromtransformatoren) for carbide production to:
 - VEB Stickstoffwerk Piesteritz (3 each)
 - VEB Chemische Werke Buna (4 each).
9. Following are the principal East German enterprises to which the Dresden enterprise has delivered transformers for "indirect export":
- VEB LEW (Lokomotiv-und Elektrotechnische Werke),
Hennigsdorf
 - VEB Apparatewerk J. W. Stalin, Berlin
 - VEB Elektrowerke Soernewitz
 - VEB Hartmetallwerk Immelborn
 - VEB Transportanlagenfabrik Bleichert, Leipzig.
10. During 1954, the enterprise delivered four large automatically-controlled transformers of 31.5 MVA, 110 kV, to the central supply depot of Wismut A.G. in Schwarzenberg.
11. Following are the most important enterprises delivering to TRARO Dresden the materials needed for the production of transformers:
- a. VEB Kabelwerk Oberspree - Berlin and VEB Messing- und Kupferwerke - Hettstedt deliver profile copper wire for the transformer windings. The most important profiles are 3 by 5; 3 by 12; 4 by 5 and 4 by 6 millimeter with rounded edges and cable insulation paper-wrapping. The wrapping consists of 3, 6, 9 and 12 layers according to the insulation strength required. TRARO has a monthly requirement of about 150 tons of copper wire;
 - b. VEB Schichtpresswerk Dresden and VEB ISOKOND in Berlin-Weissensee deliver the hard-paper cylinders upon which the copper wire is wound. After winding, which is done at TRARO, the cylinders are soaked with a shellac-phenol solution and vacuum-dried;
 - c. VEB Papierfabrik Wolfswinkel near Eberswalde delivers cable insulation paper for the wrapping of the copper wire and for the insulation of unprotected parts of the transformers. Deliveries from this enterprise are not sufficient for TRARO demands. The lack of suitable cable insulation paper represents one of the most serious bottlenecks in East German transformer production. The research and development department of TRARO is therefore working on the development of substitute material;
 - d. VEB Blechwalzwerk Olbernhau delivers transformer sheet metal. The only other East German enterprise able to produce suitable sheet metal for transformers, VEB Eisenhuettenwerk Thale, is the main delivery firm for VEB TRO, Berlin. The Olbernhau enterprise cannot cover the demand of TRARO.

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The lack of suitable sheet metal therefore also constitutes a serious bottleneck in East German transformer production. This difficulty is increased by the fact that the East German sheet metal is not of high quality due to water losses, waviness of the surface, etc. The research and development department of TRARO is therefore working on the development of higher-quality sheet metal for transformers. In the past, TRARO has covered its need for sheet metal, in addition to its deliveries from Olbernhau, through import of second-quality sheet metal [redacted] through DIA. For the first time in December 1954, a delivery of 70 tons of high-quality sheet metal [redacted] arrived via Poland. TRARO's monthly requirement of sheet metal is about 300 tons;

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- e. VEB Mineraloelwerk Luetzkendorf delivers the transformer oil for cooling purposes. Two kinds of transformer oil, both from Luetzkendorf, are used at TRARO: one kind, with a flash point of 150 centigrades and a freezing point of minus 40 centigrades (this oil is used with the transformers produced for export); another kind, with a flash point of 140 centigrades and a freezing point of minus 20 centigrades (this oil is used with the transformers produced for the home industry). The monthly TRARO requirement of transformer oil is about 250 tons;
- f. Schlenker und Co., Karl-Marx-Stadt, a private enterprise, delivers metal radiators. They are made from ductile sheet metal (Tiefziehblech) 1.20 and 1.25 millimeters thick and welded with the aid of electric welding machines (Rollenansschweissmaschinen). The enterprise mentioned is the only one in East Germany making radiators for all enterprises producing large-type transformers, i.e. TRARO-Dresden, TRO-Berlin and VEB Sachsenwerk Niederschütz. There is a distinct shortage of ductile sheet metal for this purpose.
12. The cases of the transformers (Transformatorengehäuse) are made of ductile sheet metal of 1.5 to 2.0 millimeters thick for transformers up to 500 kVA. The cases for transformers of higher output are made of coarse sheet metal 8, 10, 12, 15 and 20mm thick. Both kinds of sheet metal have been imported from the USSR. While import from the USSR of coarse sheet metal has not created difficulties, the Soviet deliveries of ductile material have been insufficient. TRARO has a monthly requirement of 60 to 80 tons of ductile sheet metal and of 150 to 200 tons of coarse sheet metal for casings.
13. Because of the low quality of some materials used for the production of transformers, a high percentage of them has become unserviceable or has needed major repairs after a relatively short time. This holds especially for large-type transformers delivered abroad. The following cases illustrate the situations:
 - a. Of four large 31.5 MVA transformers delivered in 1952 to Murmansk, USSR, three became unserviceable in 1953;
 - b. A 25 MVA transformer delivered in 1953 to Rumania went out of operation after two months service. It is now at TRARO for general overhauling and will be repaired and re-shipped in 1955;
 - c. Two special transformers of 12.5 MVA delivered in 1953 to Hranice, Czechoslovakia for a cement factory became so unserviceable after a short time that the factory had to discontinue production (1,000 tons of cement per day) for a long period;
 - d. Of 8 large transformers of 25 MVA with automatic-control equipment for 21 ranges, delivered to VEB Eisenhuettenkombinat J. W. Stalin in Stalinstadt in late 1952 and 1953, seven transformers had become unserviceable beyond repair by December 1954.

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2.

Comment: Cascade generators are developed in the research and development department of the enterprise. 25X1

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Comment: This power plant is under the administration of VEB BUNA, Schkopau. It has an output of 88 MVA. During most of 1954, it was undergoing repairs due to breakdown of its machines. It was scheduled to resume full operation during the winter of 1954/55.

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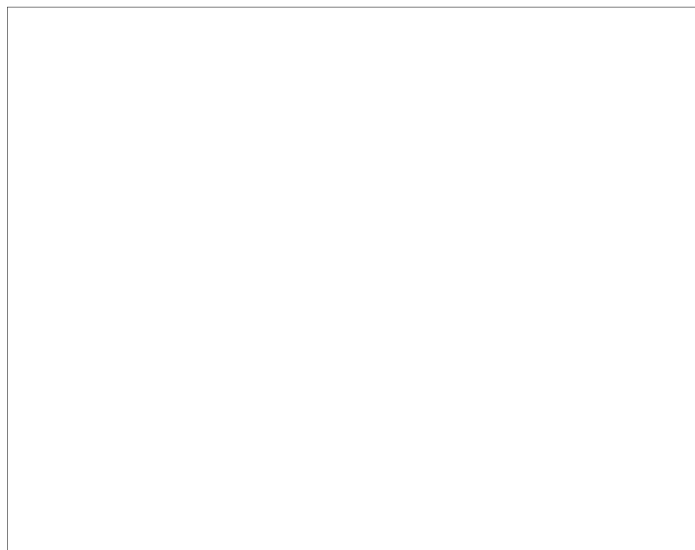


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Comment. Tiefziehblech is usually referred to as deep-drawing steel.

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