TURBINE Picfacts

PLAINTIFF'S
EXHIBIT
GE-56

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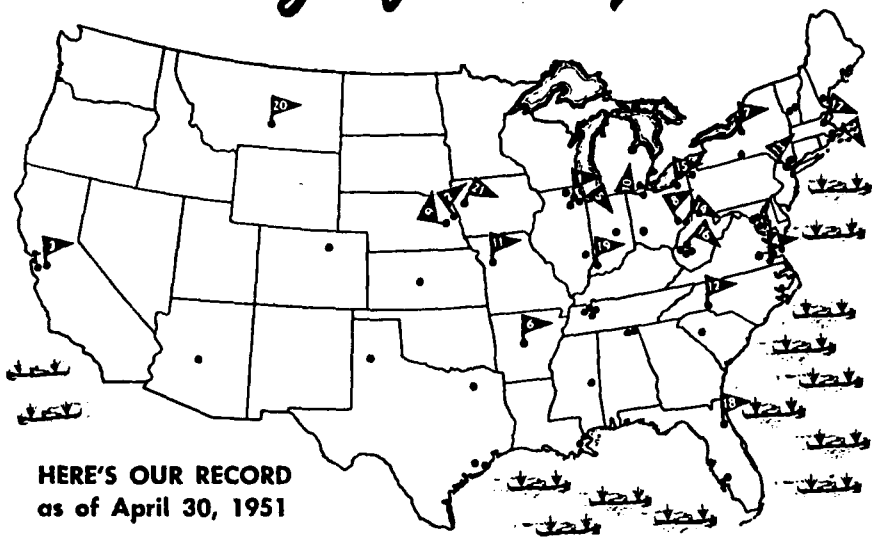
"A Challenge for Everyone in '51"



HERE'S OUR RECORD
as of April 30, 1951

1	Commonwealth Edison (HP)	50,000	Chicago, Illinois
2	Omaha Public Power District	40,000	Omaha, Nebraska
3	Pacific Gas & Electric	100,000	Contra Costa, Calif.
4	Virginia Electric	60,000	Possum Pt., Virginia
5	Commonwealth Edison (LP)	100,000	Chicago, Illinois
6	Arkansas Power & Light	60,000	Lynch, Arkansas
7	Niagara Mohawk Power Corp.	80,000	Oswego, New York
8	Union Carbide No. 1	40,000	Marietta, Ohio
9	Loup River Public Power District	30,000	Bellevue, Nebraska
10	Toledo Edison	60,000	Toledo, Ohio
11	Kansas City Power & Light	60,000	Kansas City, Missouri
12	Duke Power	90,000	Charlotte, N. C.
13	Rockland Light & Power	20,000	Nyack, N. Y.
14	Union Carbide No. 2	40,000	Marietta, Ohio
15	Cleveland Electric Illuminating	60,000	Cleveland, Ohio
16	Appalachian Power (HP)	35,000	New Haven, W. Va.
17	New England Power	60,000	Salem, Mass.
18	Florida Power & Light	30,000	Palatka, Florida
19	Public Service of Indiana	60,000	Edwardsport, Ind.
20	Montana Power & Light	60,000	Billings, Montana
21	Iowa Public Service	20,000	Sioux City, Iowa
22	Montaup Electric	60,000	Somerset, Mass.
	22 Units	1,215,000 KW	

As noted, 22 steam turbine-generators passed through Test and have been or are being shipped. Some of these units are already installed and turning out vitally needed electric power.

If we can continue completing units at the rate established in these first four months, there is no doubt that we will meet the "Challenge for Everyone in '51" and produce a new record in both numbers of units and total kilowatt capacity.

Washington Regulates Our Production Schedule

Under National Production Authority's Regulations, our entire production of turbine-generator units is now being scheduled by the Engine and Turbine Division of this government agency. The importance of our product is emphasized by the fact that as of this date our entire production through December 1952 has been approved. We expect that throughout the mobilization period we will have an order board fully scheduled 24 months ahead.

Power for Mobilization

In our March issue, we pointed out that America's productive strength is determined by the availability of Power, Materials, Transportation, Communication and Manpower. Tommy Turbine and your Pic facts photographer brought you examples of our readiness to produce power for mobilization. In this issue they extend this report to show how Men and Materials combine to do the job.

Cover Facts

On our cover this month, William Malicki, plumber and steamfitter, is shown connecting flexible tubing in the Assembly and Test Area. We'll see Bill later on making more flexible connections.



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STOCKHOLDERS VISIT OUR HOME

As a part of the annual meeting on April 17, more than 700 General Electric stockholders took advantage of the opportunity to visit our turbine home. The groups were escorted on their tours by 76 members of our Division. That the visit was both impressive and informative was evidenced by the many compliments paid to our representatives.

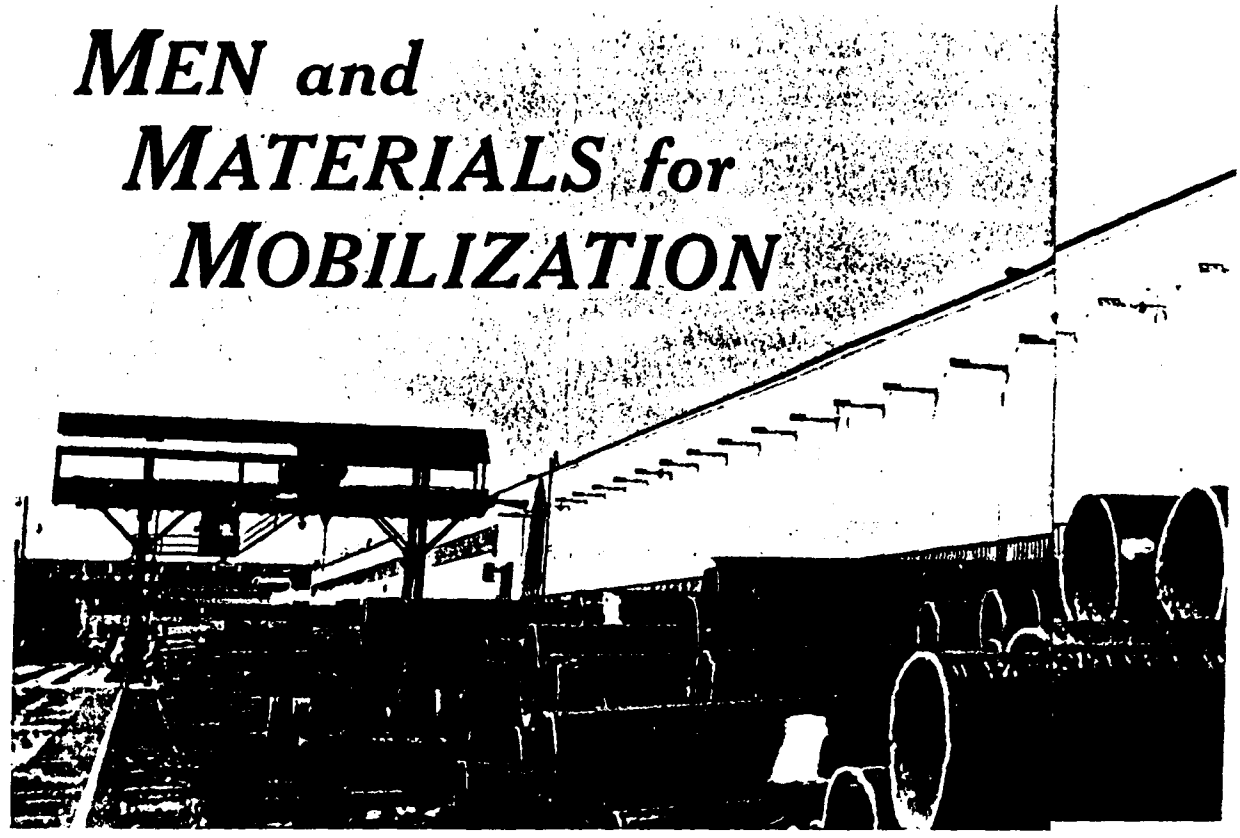








MEN and MATERIALS for MOBILIZATION



Our business is the process of putting a wide variety of raw materials into the hands of men and women who possess the skill to create a finished product. Our product – turbine-generator sets – is behind almost everything America uses for peace-time living, or war-time security. In converting many hundred types and kinds of raw materials into finished parts for turbine-generators, time and material is vital. Many new engineering and manufacturing techniques have been developed to conserve both time and material without sacrificing quality and performance which must always be maintained and improved if we are to hold our position in the power generation field.

In the last analysis, the performance and efficiency of our product itself realizes the greatest conservation of manpower and natural resources. Today, our turbine-generators produce three times the power for the same amount of fuel as did units manufactured 30 years ago.

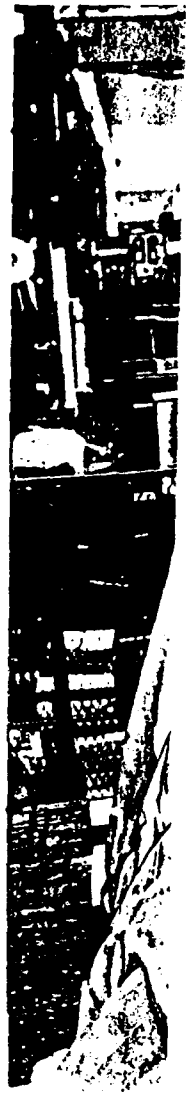
To visualize the size of our operation, let's start with the procurement of materials. Our Purchasing Group is responsible for securing the many thousands of items which in total dollars will amount to approximately 40 million this year.

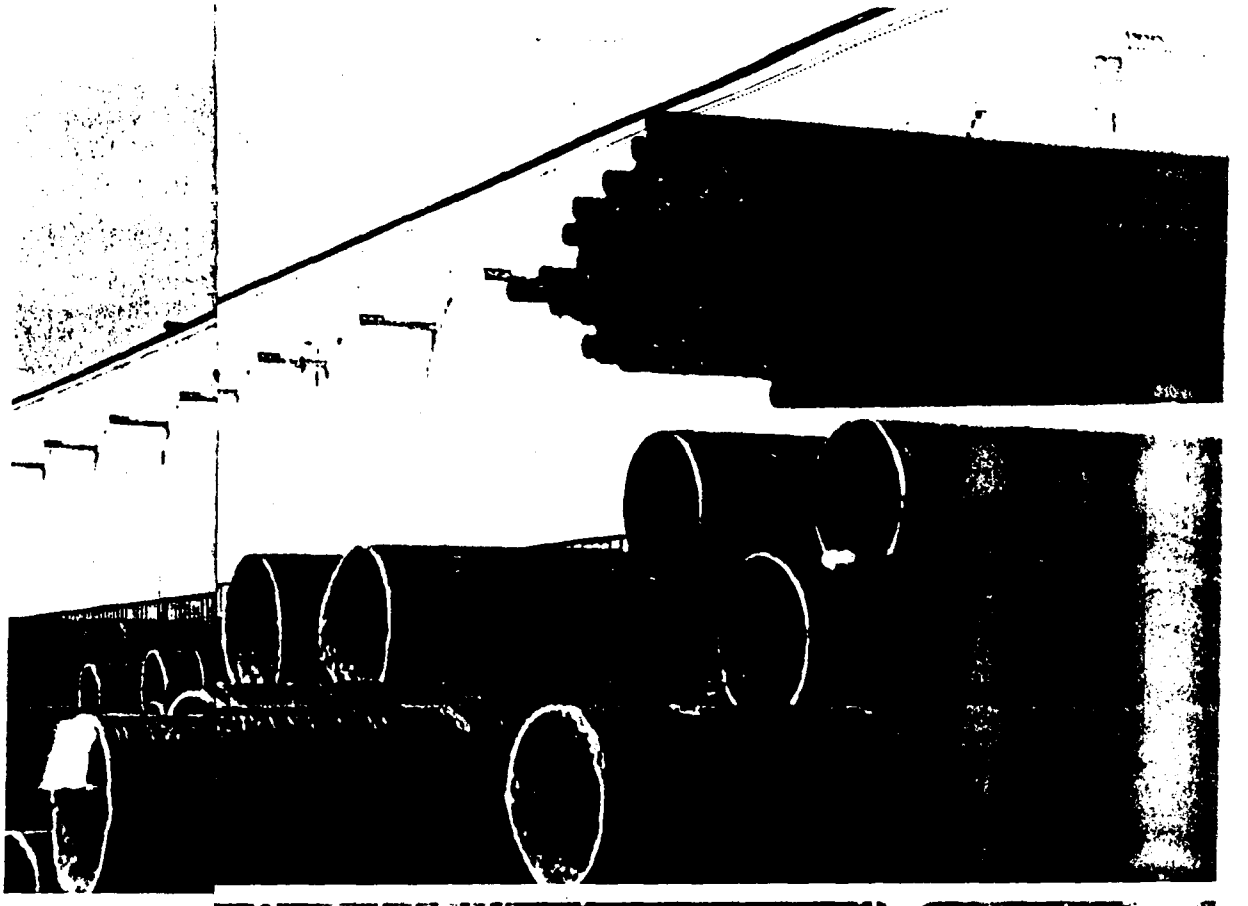
In carrying out this function, the Purchasing Group in collaboration with Engineering and Manufacturing, will negotiate with over 1600 suppliers of the many thousands of items purchased. These 1600 suppliers, in turn, obtain the various items of material incorporated in their parts from an estimated 9600 other suppliers. These thousands of small and large companies, employing from as few as two or three individuals to as many as 250,000 are located throughout the country. The basic materials are steel, copper and aluminum in hundreds of shapes and types, incorporating alloying elements such as nickel, molybdenum, cobalt, titanium, tungsten, etc. In addition, hundreds of items made of non-metallic materials such as mica, asbestos, glass, rubber, etc., are used. The many materials have been carefully selected and incorporated into our design and manufacture after years of experience. Today, many of the materials we require are critical – that is, in short supply and their use is regulated by government agencies who are responsible for the country's mobilization program. These materials are made available through a priority system to producers of such defense requirements as aircraft, ships, tanks, atomic weapons and supporting equipment, such as power generation apparatus.

Our Division, through engineering developments and manufacturing know-how, continually strives to make the most efficient use possible of critical materials, conserving them through refinements in design, improved manufacturing methods and streamlined procedures. A most valuable time and material saver is *suggestions*. Members of our Division have turned in many valuable suggestions effecting savings in critical materials, and everyone is urged to utilize this procedure to help further improve our methods. *Manufacturing methods*, as continuously studied and applied by the Methods Group, and *paper-work procedures* as developed in cooperation with the Procedures Group are also important items in this conservation program. *Good housekeeping* and *safety* are, of course, a necessity in this program.

In this issue, Tommy Turbine and your Pic facts photographer give a few samples of hundreds of time-saving and material-conservation steps now in effect throughout our Division. And, says Tommy, "It is up to each of us – wherever in the Division – to check and re-check for ways to improve our individual and division-wide contribution to the nation's mobilization program."







Inexpensive burlap-backed paper has replaced heavy lumber for packing turbine shells for shipment. Shown readying a shell on a flatcar are (l to r) packers Salvatore Capitumino and Glenn Simonds, and foreman Edgar Mooney.

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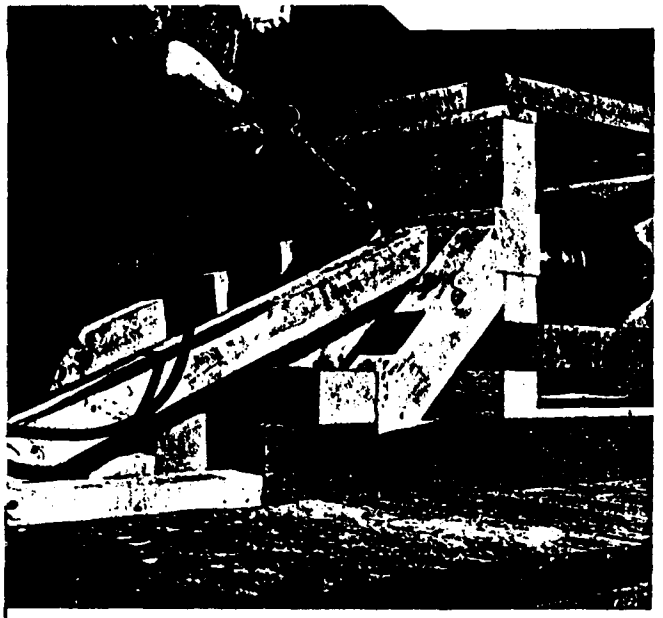
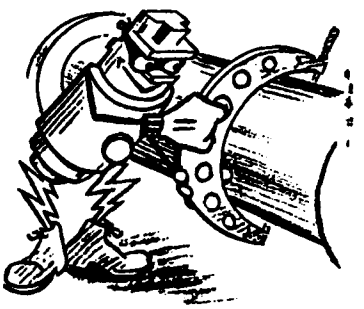


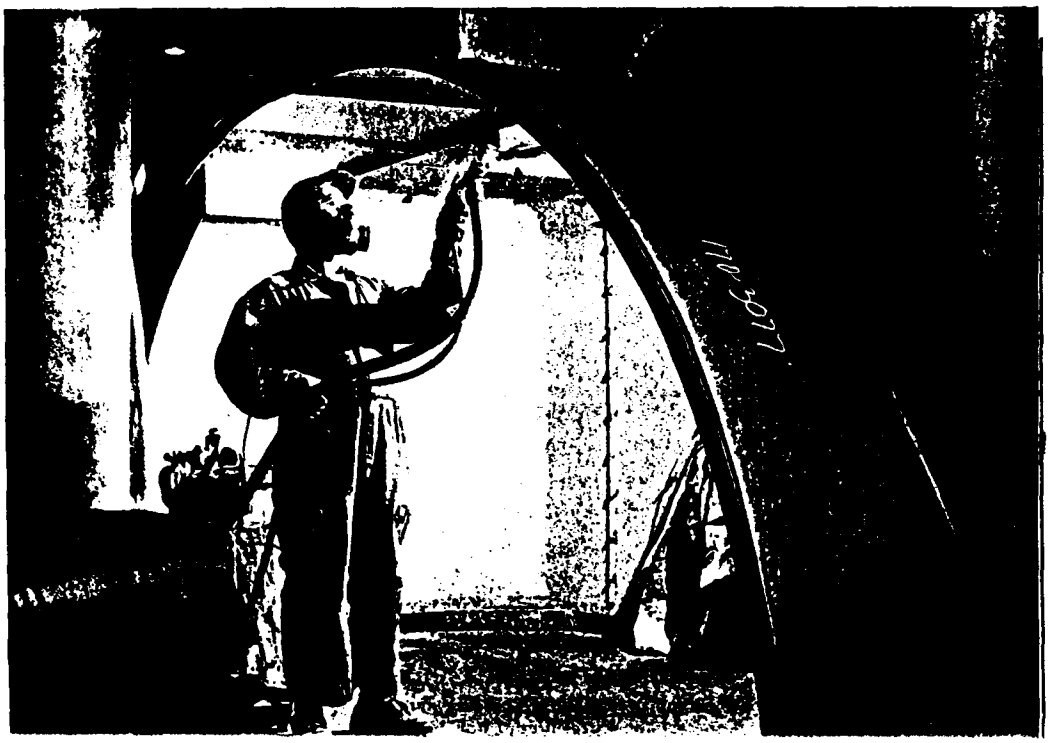
Walter Plummer uses rough lumber to block a generator field for shipment. This method of packing reduces the need for finished lumber.





One of the most important jobs of our Purchasing Department is keeping hundreds of suppliers up to date on our requirements. Here, E. S. Waters and Thomas Houston discuss steel requirements with a vendor's representative.

Here's Anthony Favata spraying a special sound deadening compound on the inside of a turbine lagging. This material replaces an asbestos-type material which had to be secured with wire mesh in what was a time-consuming process.





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Louis Chicoine, layout man; Joseph Frank, methods man; and Isaac Avery, layout man (l to r) look over new-type layout templates made of heavy paper. The paper is convenient to handle, can be re-used, and replaces critical fibreboard which had to be discarded after one job.

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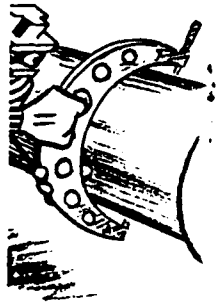

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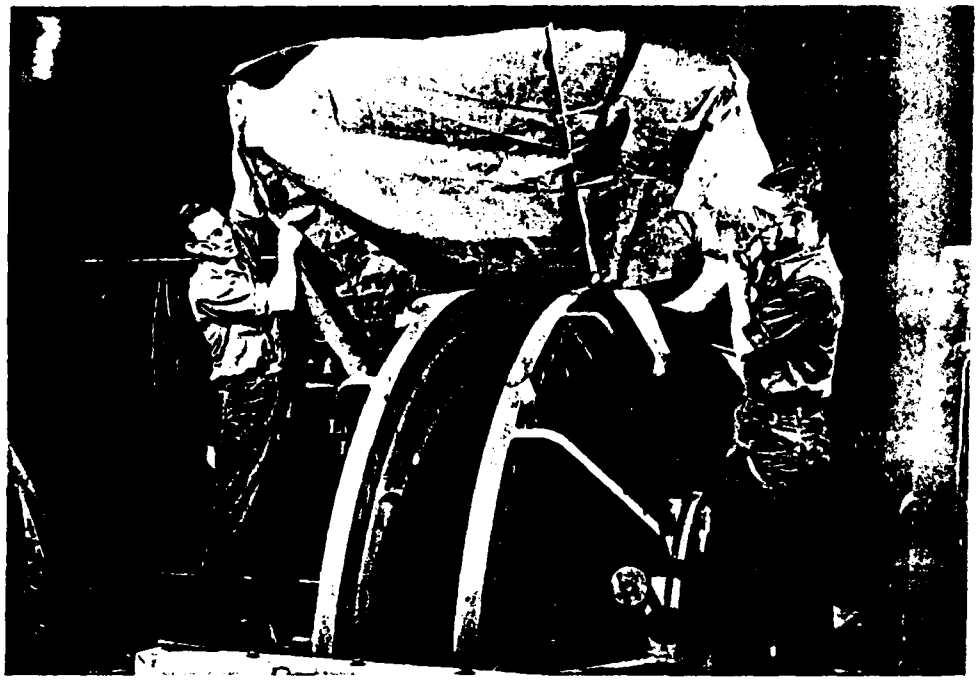

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Ralph Clark (left) and John Demkowski demonstrate a new material-saving method in shipping generator end shields. These formerly required heavy wooden crates with a steel ribbing; they are now secured to strong skids and packed with a light-weight, burlap-paper covering.

A less critical but improved grade of adhesive, cloth-backed tape is applied to slot armor by Conrad Grob. Formerly, a non-hygroscopic tape, now difficult to obtain, was used.



MEN and MATERIALS for W



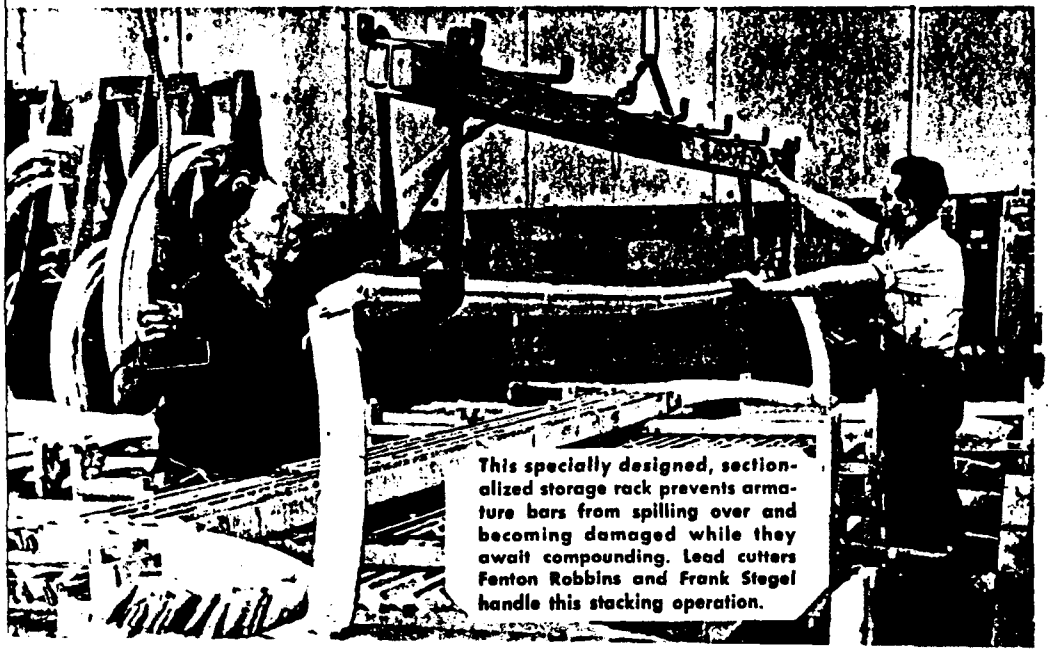
Les Denison, foreman, discusses the new method of boxing generator rotors for shipment with John Demkowski who is working with Jan Malkisz on a flatcar. The men no longer cover the rotor with lumber siding, but instead use lightweight composition material to protect the sides and top of the equipment from the weather.



Fred Rapp cleans insulation off copper armature leads with a specially designed wire brush machine that prevents damage to the leads. Before the advent of this machine, the job was performed by hand scraping, a much slower process with greater spoilage risk.



George Lawrence, babbitter, admires the results of a new method of tinning bushings. Previous techniques used excessive quantities of tin because parts of the bushing which did not require babbitting became coated. By applying a special compound, it is now possible to tin only those parts of the bushing which require it. This will greatly reduce our usage of this critical material.



This specially designed, sectionalized storage rack prevents armature bars from spilling over and becoming damaged while they await compounding. Lead cutters Fenton Robbins and Frank Stegel handle this stacking operation.



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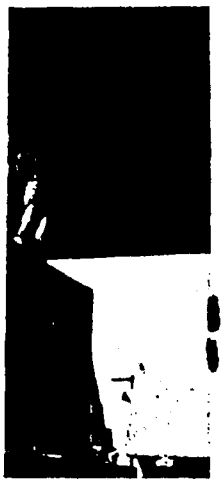

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Norman Waite, floor assembler, shows how the method of covering nozzles for shipment was recently improved. In Norman's right hand is a sample of the old-type steel plates which formerly were welded over the nozzles for protection. Now, a non-critical composition material (in Waite's other hand) is used as shown in the next pictures.



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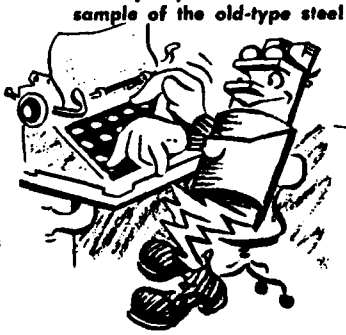
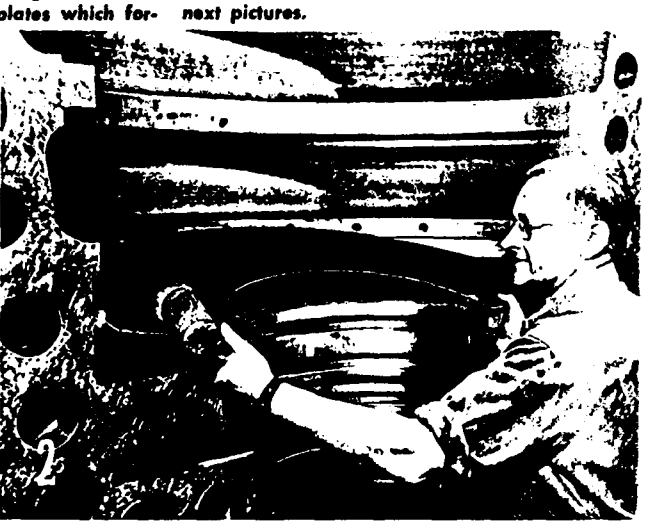
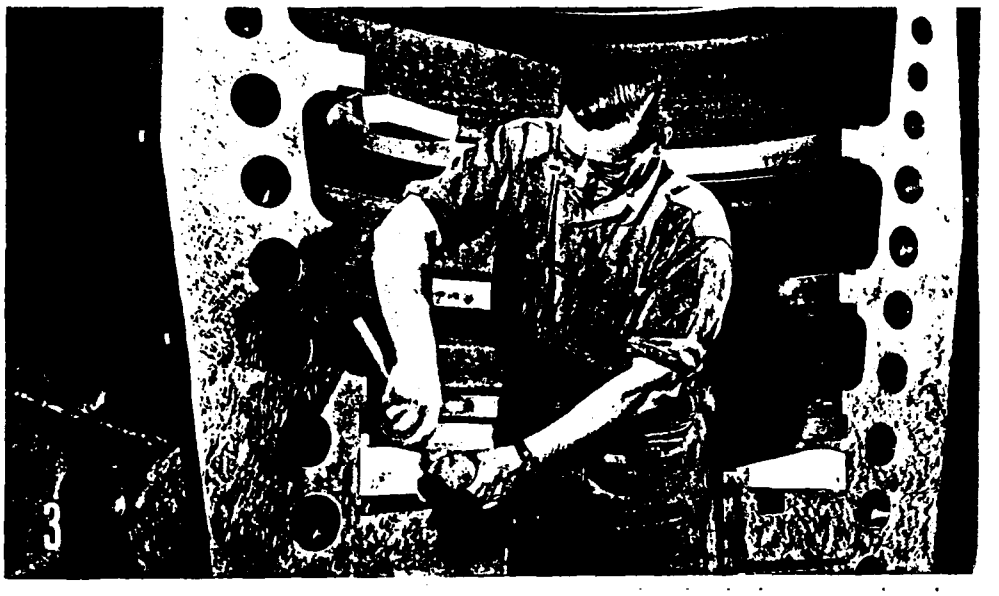


Joseph Okonski inserts the new type of composition covering for the nozzle of an upper half high-pressure turbine shell. This material is simple to handle and less critical than the steel plates.









Bernie Lackowicz, chipper, removes a driver block from a stop valve casting after the valve has been machined. These blocks, used as braces during machining, were formerly scrapped after work on castings was completed. The steel blocks (sample below), weighing from eight to ten pounds apiece, are now re-used and this current salvaging operation is saving about 100 pounds of steel daily.





Here's Louis Mauro dip coating studs and bolts with a hot cellulose coating for protection of the threads and machined parts during movement. The compound dries instantly in air, forming a firm coating which is stripped off when the part is ready for assembly. The material can be remelted for re-use. This replaces wrapping the parts in paper, and provides much greater protection.

This outdoor pipe closet reduces indoor storage and protects piping before usage. Chauncey Patrick and Frank Pone, stockroom men, are shown drawing on the supply to fill an order.





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Alton Durfee examines two parts of an oil driven centrifugal pump, both machined from one forging of the type shown at right. Two forgings of the type shown at left were formerly used to make these parts.



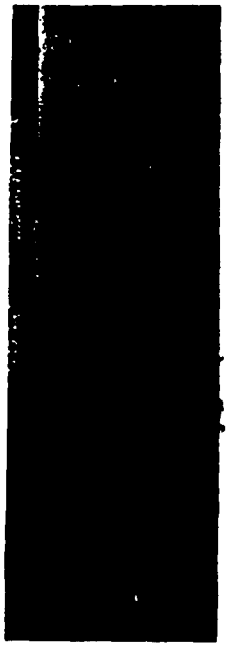
John McMurdy is shown salvaging sheet asbestos used in the welding area for heat insulation on repair welding jobs. The asbestos will be returned to the manufacturer for reclaiming. The welder in the background is C. Braddy.

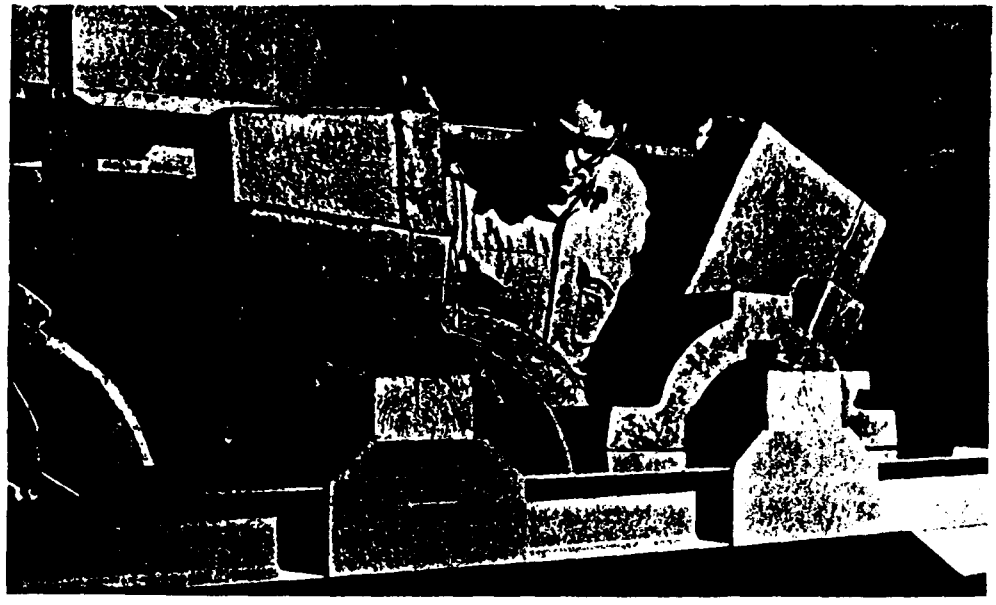


To protect threads from damage and facilitate unit handling, nuts are left on studs as they move through manufacturing and assembly operations. Assembling and checking studs are (l to r) George Vrooman, Floyd Kelly, and George Fontaine.

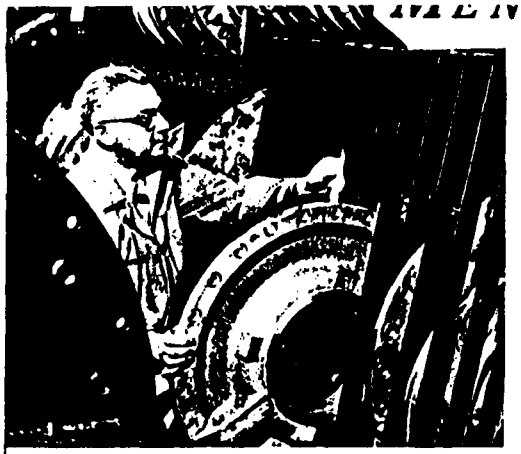


The segregation method of chip salvage is followed by S. Cavalieri, porter. The containers shown in this picture hold yellow brass, cast iron, and leaded yellow brass.

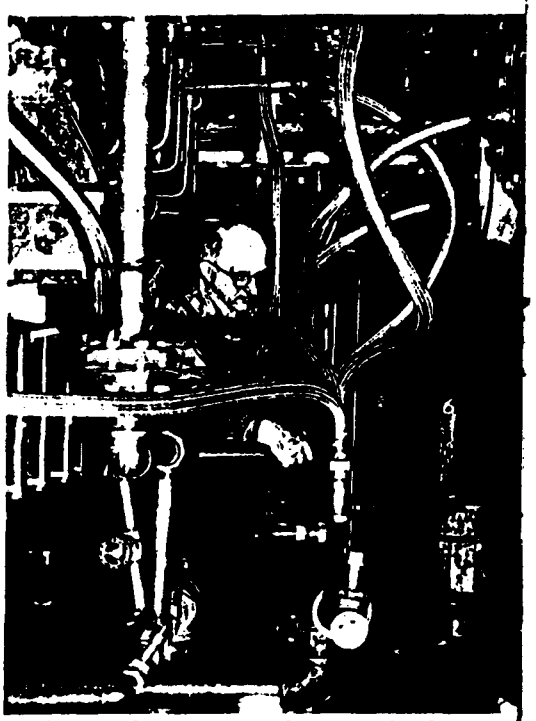




Samuel Ulisano selects a cat head from a supply stored on wooden blocks. These blocks



Here's Charles Jordan, stock clerk, checking carefully stored finished oil deflectors. This special storage rack prevents damage to the machined surfaces.



Flexible tubing is use the test section for temporary steam ar l lines. It replaces steel pipe and elbows which had to be specially fitted for each test. William Malicki, steamfitter and plumber, featured on this issue's cover, is shown making steam connections before a test.



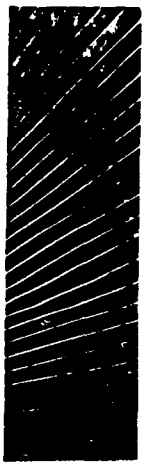
This recent installation will substantially reduce shop paper costs. Doris Trantor, Mary Bianchi and Marguerite Simone operate new high-speed multigraph machines.





Paul Visaillon and Anthony Griesmer examine a worn machine tool shaft which will be metal sprayed and brought back to size.









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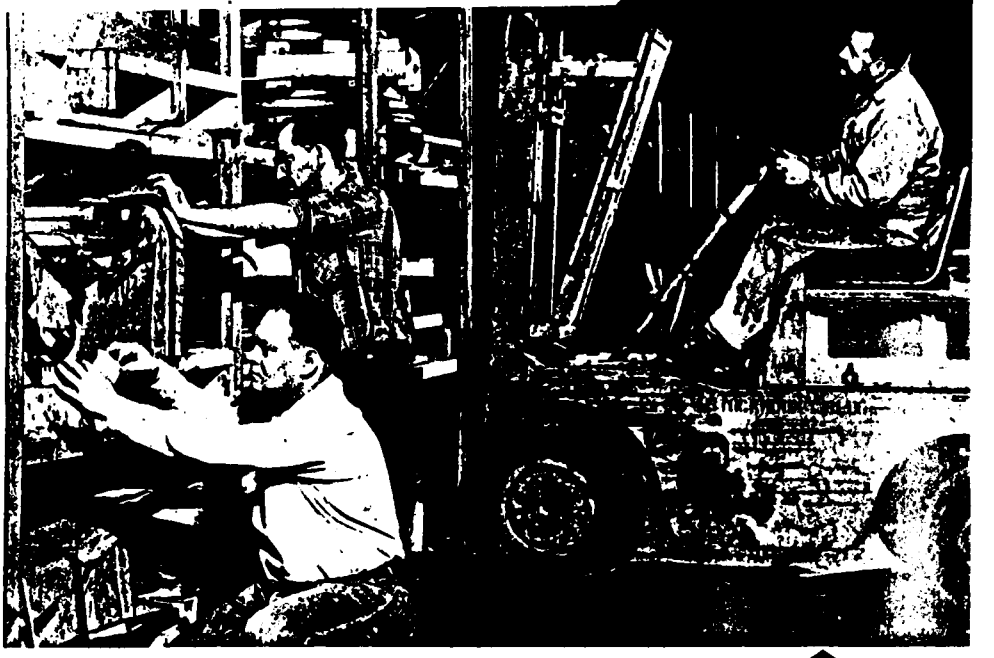

Chester Ruszczwk (left), stockkeeper, and Charles J. Meleco, stockroom accumulator, examine a supply of coil copper stored in special racks and on pallets for extra protection. Lawrence H. Murtaugh, Sr. delivers a new supply.



When turbine wheels have been assembled, short lengths of bucket shrouding are usually left over. These high-temperature steel strips are saved for use on later jobs where the lengths will fit. Assembler Stanley Hoffman holds a sample short length.



Woodrow Morris (left), Harold Chambers, foreman, and Paul Briscoe disassemble a milling machine for overhaul. Periodic maintenance such as this adds to the life of our valuable equipment.

MEN and MATERIALS for



Worn-out bronze bushings can be salvaged by a new metal spraying method which brings their diameters back to proper size. Here's Everett Ashley, repairman, and Otto Kern, foreman, checking a bushing which has just been sprayed.



Henry Kiegsmt, machine repairman, uses a tap extractor. This device disintegrates the broken taps and allows the metal part to be salvaged — a big time saving.



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Robert J. Howell, coppersmith, examines some excess copper stock for possible use on other jobs. The pieces which Howell rejects are graded and salvaged.

The men in the Machine Repair Section have a new cart which allows them to carry more tools when they go out to repair equipment. The two repairmen using the cart when this picture was snapped were Frederick Hartman and Clarence Girard.



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John Valcav unrolls a length of jute felt which will be used to cushion machined parts in crates. This packing, made from waste material, eliminates the need for scarce wool felt.



Ralph Cozzoline (top) and Raymond Warner are salvaging compound after generator bars have been impregnated. The excess compound is chipped off the bars, melted, and the impurities filtered out. This process will save large amounts of valuable compound.

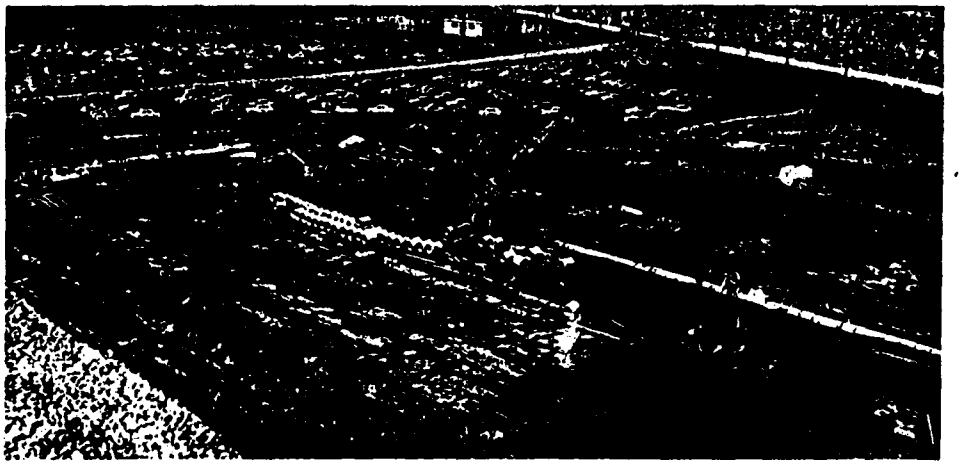


Here's a new-type deep-well car which allows generator stators to be fastened in place during shipment and eliminates the need for great quantities of heavy wooden braces

Tommy Turbine HIGHLIGHTS



CONSTRUCTION BEGINS ON EXTENSION



Recently our board of directors approved an addition to our turbine building. This 120-foot-long extension across the entire back end of the building will add more than 80,000 square feet for increased manufacturing capacity.

Our manager, Glenn B. Warren, in a release to the press said, "Our main objective is to incorporate all major steam turbine manufacturing facilities into one building structure. This will enable us to produce approximately 73 turbine generators representing 5,500,000 kilowatts annually, thereby meeting expanded production goals.

"This $6,500,000 addition to our $30,000,000 plant illustrates a long-range aim of the electric power industry – power companies and equipment manufacturers alike – to satisfy mobilization and consumer needs in the face of an unparalleled demand."

SAFETY

is no accident. Charlie Harper, recently appointed Safety Supervisor, is planning an active campaign for our Safety. Says Charlie – "Be a Safe One in '51."

ANOTHER BIG WINNER

William Hunter, right, was recently awarded $500 for his suggestion covering the application of flexible cable drive on small contour grinders to replace overhead open belt drive. Inspecting the application of Hunter's suggestion is Suggestion Investigator Charlie Gallagher.



200 CLUB

In addition to Bill Hunter, three other members of the Division have joined the exclusive 200 club. Charlie Jutton, $315; William Keller, $250; George Trunbull, $200.

Suggestions, as mentioned in this issue, play an important part in the mobilization effort.

HOW'S YOUR ADDRESS

The Payroll Section's file of home addresses is a big one and can only be as up to date as you keep it. Is your address on straight?

GENERAL ELECTRIC