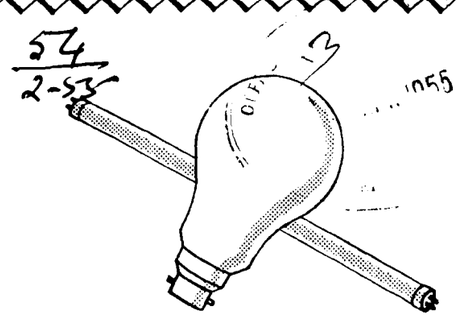
ELECTOLITE

A Journal of Electricity Supply and Utilization



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Electolite

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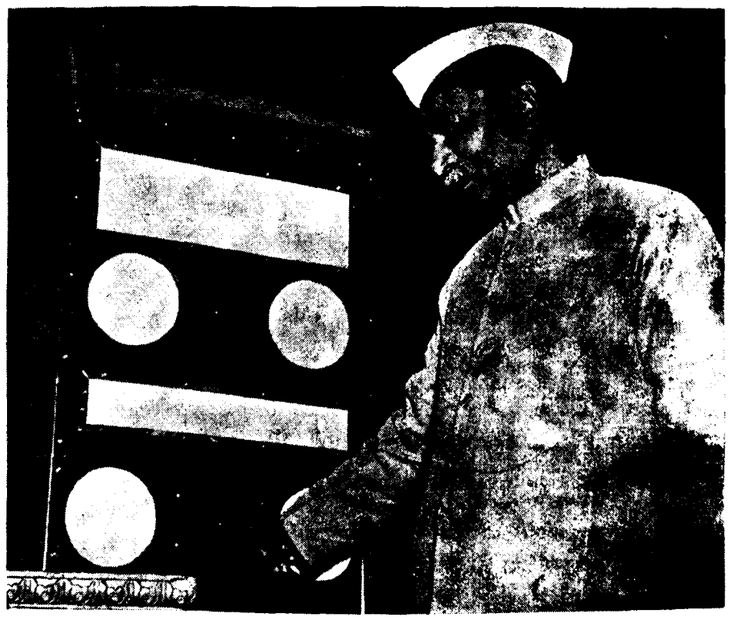
TO THE ENDS of serving the best interests of consumers, share-holders and staff, ELECTOLITE is dedicated.

The Periyar Project

A welcome piece of news in recent days is that work on the Periyar Hydro-electric Project is to commence immediately. Details of the Project had been worked out long ago, but because agreement could not be reached about the royalty to be paid to the Travancore-Cochin Government by the Madras Government, the implementation of the Project had to be deferred.

The importance of the Periyar Project to Madras cannot be over-estimated. In the three years ending with March 1954, installed generating capacity in the State has gone up from 156,000 kW to 247,300 kW. But the growing electrical mindedness of the people in the State, particularly of the agricultural community, and the demand for power from industry make it imperative that present generating capacity be increased further. The Periyar Scheme will add over 100,000 kW after ten years. Still at the present rate of expansion of demand for power even the new Periyar plant will not suffice to meet our needs. The Kundah scheme will, also, have to be taken up soon. The Neiveli Lignite Project should also be put through as soon as possible. Hydro-electric power has its special advantage of cheap production cost, but to restore a reasonable measure of stability to supply, thermal electricity is necessary.



The second phase in the execution of the gigantic Bhakra-Nangal Project was marked when Dr. Rajendra Prasad, President, Indian Union, inaugurated the Ganguwal Power House on January 2. Picture shows the President pressing the switch to open the Power House.

THE GANGUWAL POWER HOUSE

THE inauguration of the 286.5 crore Ganguwal Power House by President Rajendra Prasad on January 2, marks the advent of the second phase in the execution of the stupendous Bhakra-Nangal Multi-purpose Project, the first being the Nangal Hydel Channel and the Bhakra canals.

Ganguwal Power House is located on the Nangal Hydel Channel 12 miles downstream from Nangal Dam, in highly picturesque surroundings. On the east is the famous Naina Devi Mandir, situated on the top of hills, and on the south lies the historic town of Anandpur Sahib with its magnificient Gurdwaras (Sikh temples). A fall of 98 feet has been created at Ganguwal, thereby providing sufficient head to run the hydro-electric plant.

THREE SETS

The power house at Ganguwal will ultimately house three generating sets of 24,000 kW capacity each. With the commissioning of the first two sets, 24,000 kW of firm power will be available for transmission to the various consuming centres, the second unit being treated as stand-by for the time being.

The Kotla power house situated about seven miles further down the Nangal hydel channel will come into operation sometime towards the end of the year 1955, and it will give an additional 48,000 kW. Kotla would be remote - controlled from Ganguwal. All the machines at the Kotla power house would be started, synchronised and operated automatically from Ganguwal.

TRANSMISSION

Power from the generating stations will be taken to Delhi on a 200-miles long, double circuit 220-kV transmission line, the first of its kind in South East Asia. A link has also been created with the Punjab River system by a 132-kV double circuit line. Six hundred and fifty-five miles of 132 kV and 66 kV transmission lines have been laid to carry power to the farthest areas of Punjab and Pepsu. These lines will be extended by another 200 miles in Rajasthan areas towards Bikaner and Sriganganagar. Besides these, a vast network of 33 kV lines totalling 864 miles has been spread so far in Punjab and Pepsu. In all, there will be 84 load centres from which power will be taken to the surrounding towns and villages by spreading local distribution lines.

The President in conversation with the representative of a foreign firm. Looking on in the background is Mr. R. Chakravarthy, our Delhi Office Representative.

All I know about Electricity

by LESLIE E. GILIMAN

I have never got on well with electricity—there is something about me that electricity does not like. I have done my best to be friendly, but I regret to say that my overtures have been met with nothing short of sheer aggression. Whenever I approach electricity with a screw-driver or anything, it just spits blue flashes at me. Consequently, my ignorance of electricity is abysmal. I cannot distinguish an armature from a writ of *habeas corpus*. I am the electrician's best customer. Every time I change a broken electric light bulb, I get out the fuse wire and my kit of tools.

Piqued by a vote of no confidence from my wife, I have once insisted on trying to install a new electric point in our sitting room. With a copy of *Every Man His Own Electrician* in my right hand, I solemnly swear that I followed the instructions to the minutest detail. But what happened ? When I switched on, electricity came right back at me with everything it had and scared the living daylight out of me. Not content with personal abuse, it fused all our lights as a makeweight.

For my part, I have made an honest endeavour to understand electricity. For instance, I remember reading, in a back number of *The Brook*, the following illuminating passage : "With a motor operating on constant voltage, the flux will be practically constant, and the induced voltage in the rotor will be proportional to the slip, while for constant torque, the rotor current will be practically constant. Hence the electrical power developed in the rotor will be directly proportional to the slip".

There were a lot more exciting passages like that, but for a start, I decided to concentrate on the above and really try to see what the author was driving at.

I committed the passage to memory and made a habit of repeating it at odd moments, incurring some queer looks from friends. Every morning my wife nudged me in the back and asked what was all this nonsense about "constant talk" and "slips" and would I please go some place else to recite as she couldn't get a wink of sleep.

But it was all in vain. The whole thing defeated me. Try as I would, I could make no sense of it. It was not even the sort of passage that could be recited at parties, so I dropped it. Although I did make one attempt to flaunt the knowledge contained therein.

One day a friend of mine took me along to his works to show me a new Brook motor he had just installed. He stood beside it, like a brand-new father stands by his offspring, watching my reactions and awaiting comment. It was an awkward moment. What can one say of an electric motor? Epithets like "nice" or "shiny" seemed trite. Suddenly I remembered the passage. I walked around the motor.

"Is the induced voltage in the rotor proportional to the slip"? I asked. My friend gave me a queer look and pretended not to hear.

"If the motor operates on a constant voltage", I went on, "the flux will be practically constant and—"

"Let's get along to the canteen and have a drink", my friend broke in hastily. He never mentioned the matter again.

So there it is, I'm afraid. Electricity and myself just don't hit it off. We are as incompatible as Lady Astor and a pint of bitter.

Still, every man to his trade or hobby. Now when it comes to collecting cheese labels, I could tell you a thing or two. —*The Brook*

Electric Power from the Atom

by JAMES GREGORY

How soon will we have widespread use of the atom to provide electricity for our industries and homes?

Small-scale production of atomic-electricity will begin within a few years in the United States and Great Britain. Larger output and production in additional countries is expected by 1975. From that time on, it is anticipated that the building of atomic plants to produce electricity will become fairly wide-spread. The year 2050 has been suggested for a complete change over to atomic-electricity.

These are the forecasts of scientists. The opinion of most nuclear physicists and engineers is that two factors will largely determine the immediate future of atomic-electric power. These are the rapidity of technical progress and cost.

TECHNICAL PROGRESS

Nuclear engineers point out that several safety problems have yet to be worked out before atomic reactors can be built on relatively small plots of land convenient to the consumer. As one metallurgist has said :

> "Nuclear power plants differ from normal power plants only by the substitution of a nuclear reactor 'furnace' for the old firebox and boiler. The steam turbines and electric generators are the same."

What is different, he explained, is the attendant high temperatures and radiation waves of the atomic plant. New metals for shielding walls must be developed.

The United States' first full-scale atomic-electric power plant now being built at Shippingport, Pennsylvania, is an example of a fixed installation which will be absolutely safe, he said. Its pressurized water reactor will have built-in protective devices in addition to a metal and concrete outer wall.

Technical progress in perfecting atomic reactors is being made constantly, atomic engineers say. The U. S. Atomic Energy Commission is conducting a five-year research programme in this field, and numerous private electric power and light companies are also working to improve reactor design and performance.

COST

Dr. Walter Zinn, Director of the U. S. Atomic Energy Commission's Argonne National Laboratory, said recently :

"Technically, we are now making power, but the thing to do is to make it at a price that people can pay."

The question is: 'Can power from uranium fuels be made cheaply enough to be competitive with conventional fuels like coal, oil and natural gas'?

Dr. Cyril Smith, Director of the Institute for the Study of Metals at the University of Chicago, points out that since conventional fuel costs are higher in many places in Europe and Asia than in the United States, nuclear power will be more competitive in those areas.

In the opinion of many scientists, this accounts in a large measure for the great progress that has been made in England in peace-time applications of nuclear power. The Marquess of Salisbury, Director of the British Atomic Energy Corporation, forecast in a recent speech that "by the year 2000 the greater part of Britain's electricity will be generated by atomic energy and will be as cheap as—or even cheaper than—coal-produced power."

Turning to the United States, predictions are less definite. Dr. Cyril Smith believes it will be "about 10 years or so before it is really worth while building atomic energy plants on a large scale."

Repair, Test and Calibration of Meters

By R. VARADARAJAN,
Junior Engineer, (M. R. T.) Pallam (T. C. State)

MAN has now become electrical minded, and electricity has become part of man as well. The domestic consumer, the agricultural worker and the industrial magnate beckon this source of power to his doors. The press of a button or the closing of a circuit-breaker enables the consumer to make use of electricity in whatever way he wants.

But there is a silent recorder of all the usages made by a consumer. And that is the energy meter. In its quiet, unobstrusive way, this instrument situated, sometimes, "in a lone dark corner of a temple with doors all shut," registers what the consumer uses, **and only what he uses**. The registration is neither more nor less. The energy meter is the sole witness of the consumer's actions. It vouchsafes to the Department the money's worth of the electrical energy consumed by the user, correct to the last pie. It also reassures the consumer that his actions are watched and recorded faithfully to his own benefit. Well may the words of Omar Khayyam be quoted in support or this quiet instrument :—

The moving finger writes; and
having writ
Moves on: nor all your piety
nor wit
Shall lure it back to cancel
half a line
Nor all your tears wash out
a word of it.

* * * *

The purpose of this article is to give an idea of the nature of the work done by our Department in the repair, test and calibration of the various kinds of energy meters installed in our State's distribution system. The single-phase and poly-phase energy meters that go to each distribution centre and then to each consumer should bear the seal of the M. R. T. (Meter and Relay Testing) Sub-Division.

An unbroken M. R. T. seal in an installed meter means that the necessary calibration and test have been fully carried out in the laboratory and the meter is guaranteed to register energy correctly.

within ± 3 per cent as required by rules. According to B. S. 37/1937 the meter, if tested by a standard meter, should keep within limits of ± 2 per cent error, but in the Department the energy meters are tested with the help of rotating sub-standards which themselves are correct to within ±0·5 per cent. Another limit of 0·5 per cent is allowed for instrument error and thus a general accuracy limit of ±3 per cent is maintained in all the energy meters in this State. Any meter in service that does not conform to this accuracy has to be declared faulty by the Department and should immediately be sent to the M. R. T. laboratory for testing and recalibration.

Usually meters brought for test from distribution centres err on the slow side because of friction in the bearings and deposits of minute particles in the discs. A few are also observed to be on the faster side because of the magnetic adjustments having changed on account of some shock and consequent dislocations inside.

Due to competition in the market and consequent improvement in performance, the latter-day makes of meters show very noteworthy figures of accuracy. A new type of meter recently tested at the laboratory showed only an average error within

± 1 per cent in a routine series of tests conducted on 300 meters of the same make.

But the main function of the Department is to test and re-calibrate the used meters that come from the various distribution centres. These meters of different makes and models, with varying conditions of error and damage, are initially put to an accuracy test in the laboratory. All these are then opened out for repairs. Most of the parts except the coils can be immediately replaced or cleaned out depending upon the nature of damage. The conditions of the received meter can vary from a merely rusted meter cover to one with both the pressure and current coils damaged. The opened-out meter is examined for any outward damage, and then checked up for insulation. The registering mechanism, the disc and magnet assembly are removed, cleaned and refixed. After the final building up of the repaired meter, it is put to the normal accuracy test. The most important parts of the energy meter are the magnet and disc assembly and the provisions for corrections—namely, full load, power factor, and low-load corrections.

The provisions for the three adjustments are briefly discussed here to give a summary of the typical meter.

Necessary facilities are available in the M. R. T. laboratory to test all kinds of single phase and poly-phase meters at various pressures, loads and power factors. Departmental testing is carried out to see whether the meters conform fully to the specifications as per BSS. 37 of 1937. Recently the Indian Standards Institution, New Delhi, have circulated a draft Indian Standard for electricity meters. Till the latter is finally issued for official adoption, the British Standard will be followed in this State.

DIFFERENT TYPES

There are more than a dozen different types and makes of meters that are used at present in the State. Of these, several have been in service for more than 15 or 20 years and are still keeping healthy. The older makes of BICC, Venner, Chamberlain and Hookam, Smith, Krizie, Measurements Ganz, Italia, E. A. C., Compture, British Sangamo Ltd. and similar makes belong to this category. Of recent introduction—that is, within a period of a decade, can be classed the "Elgee," General Electric, Ferranti, AEG, Ericson, Metropolitan Vickers and Aron meters. All these listed makes are built in strict accordance with the exacting specifications of the British Standard Institution and have been functioning satisfactorily for many years.

To go in specially for a particular type of meter, and to leave out another is a very difficult problem, and if at all it has been done, it must be to conform to a special purpose and use for which the instrument is intended. It would be a good study in meter statistics if the total number of meters of each make hitherto ordered by the State since the inception of our department is known. Such statistics can provide information regarding the number of years of continuous service enjoyed by each particular make and would make interesting reading indeed. So far, no such detailed study seems to have been made. As such a correct figure of the total number of energy meters till now used by the State and at present in use is not readily available. Under the present Five-Year Plan, a target of 50,000 consumers has been set. So it can be stated that at the end of the Five-Year Plan—that is, in 1956 we would have in service of 50,000 single-phase energy meters alone—not to speak of poly-phase meters for industrial and agricultural purposes. In all, it can be safely guessed that a total of 75,000 meters would have been handled by the State from the birth of this Department, towards the close of the current Five-Year Plan.

The consumer's energy meter is first of all tested for accuracy.

To obtain correct registration of watts, or VI cos it is necessary to provide the voltage and current fluxes at 90° apart in time. This is approached by making the voltage coil with a large leakage gap and highly inductive winding and the current coil with a large air-gap and low inductance. The remainder of the angle of lag requires compensation in some form, or a power-factor error would result. Compensation is accomplished usually by providing additional lagging around the centre core of the voltage electromagnet; this may be adjustable in position, number of turns and loops or in the amount of series resistance included. In each case the aim is to increase the angle of lag of the flux behind the applied voltage and it is adjusted on test at a power factor less than unity, such as 0.5 lagging. This is commonly called Quadrature correction.

Adjustment for full load is provided by an alteration of the amount of magnetic flux from the brake magnet passing through the most effective part of the disc. This is usually either a magnetic shunt or a slight displacement of the magnet or magnets.

The third adjustment is a light-load compensation. Due to friction there is a tendency for the meter to fail to start at the specified low load (1/20 of full load) and this is accomplished by the addition of other shading rings on the voltage coil tending to unbalance the fluxes in the two gaps, thus creating a tendency to rotation with no current applied. Adjustment is carried out on test until there is just no rotation at no load.

Performance tests done in the M. R. T. laboratory include a starting test at 1/20 full load and accuracy over the range up to 125 per cent; but some meters are so liberally designed (type LR) that they are able to withstand cent per cent overload continuously. All the accuracy tests are conducted at power factors of unity and 0.5 lag.

Thus the consumer is guaranteed full correctness in the registering mechanism of the energy that he utilizes. An untampered M. R. T. seal in his meter is the stamp of Departmental guarantee for accuracy.

— *Hydel*

WATTS IN THE AREA:

THE RICE MILLS OF PATTUKOTTAI

A flourishing industry in the Tanjore district—usually known as the "granary of the South"—is rice-milling. This article, however, proposes to confine itself to the mills of Pattukottai, one of the important centres of the district. These mills were among the first to switch over to electric supply from steam and oil engines.

There are, on the whole, 48 mills in the taluk, Pattukottai itself leading off with 20 mills, followed closely by Madukkur and Adirampatnam, each with 15 and 14 mills, respectively, the balance of 9 mills being accounted for by the villages of Nattuchalai, Mukkutuchalai, Anaikadu and Vadaseri.

TWO KINDS

There are two categories of mills—wholesale and "cooly".

Wholesale mills are those which, on their own, procure paddy immediately after harvest, steam the stuff and turn it into rice for export to deficit areas in the State. "Cooly" mills hull paddy mostly in small quantities for consumption by individual customers.

Normally, a unit will consist of one No. 1 huller, driven by a 20 h. p. motor and a winnower and a water-pump driven alternately by a 3 to 5 h. p. motor. In most of the wholesale mills, two or three such units obtain.

The wholesale mills handle in all 7000 *kalams* or 3500 bags of 48 measures of paddy per day, and the cooly mills 2000 kalams or 1000 bags per day.

Skilled labour employed by the bigger units usually is 2 drivers, 1 hullerman and 1 clerk. Unskilled labour working inside the mill will be about 20 men and women and outside it, engaged in handling and transport, will be another 10 to 15 men.

The season for paddy hulling begins in September / October when the *kuruvai* (short-term crop) starts arriving. This paddy is usually used for conversion into boiled rice. The season for the long-term crop *samba* (which is slightly of higher cost) lasts from January to July.

Sri. T. Srinivasa Iyengar,
Rice Millowner, Pattukottai.

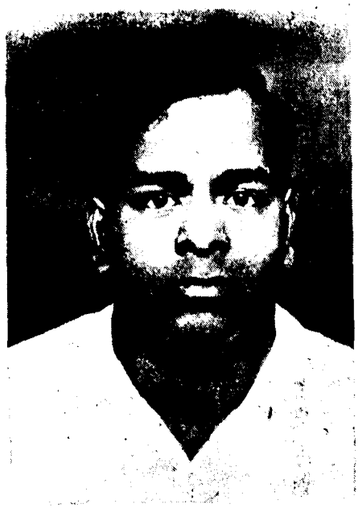
GROUNDNUT

Besides paddy, the Pattukottai area is noted for its groundnut production. Practically all the mills are, therefore, equipped with decorticators to handle groundnut. A battery of 3 to 4 decorticators is connected to a 20 h. p motor by means of a countershaft. This arrangement enables the millowner to utilise the same primemover both for paddy-hulling and groundnut decorticating.

SAGO

During wartime, another crop which became increasingly popular with the agriculturists of the area was tapioca Sago imports from Penang and Singapore stopped, and a substitute product had to be evolved, as sago is used in the preparation of various Indian dishes. For manufacturing sago, tapioca root (*Manihot utilissima*) began to be used. Tapioca is purchased in large quantities by millowners, dessicated, dried and ground into powder. Starch is separated by washing with water and the fine flour made into sago globules.

There is a big market for sago in Calcutta and in Bombay, and it may



Sri A. Sundaramoorthi,
Rice Millowner, Madukkur.

Sri B. S. Selvam Chettiar,
Rice Millowner, Madukkur.

safely be assumed that sago manufacture has now come to stay in Pattukottai, along with rice-milling and groundnut decorticating.

How sago is prepared was described by a writer in a recent newspaper article.

" After removal of the outer skins, the tapioca tubers are crushed finely in grinders and mixed with water. The mixture of starch and water is filtered to separate the fibrous waste. The starch-milk is then drawn into sedimentation tanks. The top layer of the liquid is decanted and the starch which settles at the bottom is removed partially dried, finely powdered and converted into granules in cloth bags or mechanically operated granulators The granules are passed through sieves to separate the different sizes and roasted in pans with a little oil till they get hardened or gelatinized. The roasted granules are dried in the sun and separated mechanically in individual globules."

Sri S. V. Appavoo Thevar,
Rice Millowner, Vadaseri.

Strictly Personnel

IN this issue we propose presenting to you members of our staff at Pattukottai, East Tanjore area.

This office is headed by Mr. M. Krishnamurthi, Junior Engineer. Although designated an Engineer he is our liaison officer too. He has not only to help local millowners and other industrial and domestic consumers, find answers to their electricity problems, but also to see that good consumer relations are maintained.

Our ambassador of good will at Pattukottai, Krishnamurthi is an extremely popular personality and is held in high regard by local residents. He is one of our senior employees, having joined us back in 1934.

P. Natarajan, Meter Tester, is the son of Mr. Panchapakesa Ayer, Lecturer in Mathematics, Findlay College, Mannargudi, and one of the authors of the book popularly known as "Three Authors' Algebra." Natarajan holds diplomas of the Madras Government in Electrical Engineering (Higher), Applied Mechanics (Lower) and Heat Engines (Lower). He joined as an Apprentice at Mannargudi in the year 1939. He has experience of both H. T. and L. T, construction work. Natarajan has also served as a clerk at Pattukottai and Paramakudi and as a switch-board operator at Tiruvarur. His chief interests are reading of technical books, magazines and scouting.

R. Srinivasan, Clerk, joined in 1936. Out of his service of nineteen years, he has spent fourteen years at **Kodaivasal**. He has also served at Shiyali and Tranquebar.

S. Ramadoss, **Bill collector, joined** in 1933. For about ten years he was at Tiruvarur. He has also served in Adirampatnam. From 1945 onwards, he is at Pattukottai. The devotional hymns of Saint Ramalingaswami are his favourite reading.

R. Rajaraman, Bill Collector, is a native of Pattukottai. He joined in 1939. Excepting for a short spell of three years at Adirampatnam, Rajaraman has throughout been attached to Pattukottai office. He is interested in fiction, and is good at Badminton.

K. S. Venkataraman, Bill Collector, joined in 1943. Koothanallur, Paramakudi, Ramnad, Kilakarai, Abhiramam, Ilayangudi and Tiruvarur are the other stations in which he has worked. Cinema is his greatest interest.

P. Rangaraju, Head Lineman, hails from Trichy. He joined in 1938. Other stations in which he has served are Musiri, Lalapet and Kattuputhur. The power services at Madukkur, Kilakurichi are also looked after by him.

First Row: *1. R. Parasuraman; 2. S. Ramadoss; 3. G. Sivasami; 4. K. Subramanyam.*

Middle Row: *1. K.S. Venkataraman; 2. R. Srinivasan; 3. M. Krishnamoorthi; 4. P. Natarajan; 5. R. Rajaraman.*

Back Row: *1. S. Kuppusami; 2. K. Bangaru; 3. R. Mahalingam; 4. P. Rangaraju; 5. S. Raghavan; 6. S. Ponnusami; 7. S. Christy Paul.*

S. Ponnuswami, Lineman, joined the Corporation in 1938 and has practically spent all his time in Pattukottai. In 1945-46 he was attached to the Head Office at Trichy. Ponnuswami was a footballer at school.

K. Bangaru, Lineman, joined in 1939. Tiruvarur, Shiyali, Adirampatnam and Tranquebar are the other stations where he has worked. He is considered

to be particularly good at construction work.

S. Kuppuswami, Lineman, joined in 1946. He has seen service at Muthupet and Mannargudi.

N. Pakkiriswami, Lineman, joined in the year 1943. Has also served at Tiruvarur, Koothanallur and Vishnupuram.

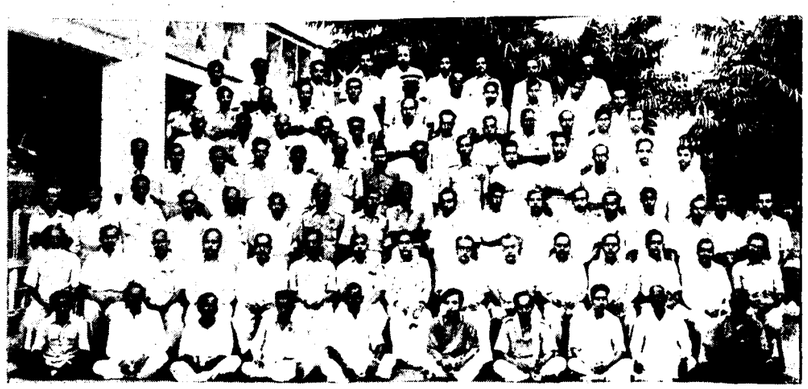
S. Raghavan, Assistant Lineman, joined in 1948. Has, also, served in Mannargudi.

Christy Paul, Assistant Lineman, joined in 1945. Mayavaram, Shiyali Nannilam and Muthupet are the other places where he has worked.

Paul has three girls studying in the local convent school.

R. Mahalingam, Line Laskar, joined in 1950. In 1953 he was at Vedaranniyam. While at the National High School, Mahalingam has won prizes in Fancy Dress competitions.

Farewells: Members of staff to leave us in recent months were: T. R. Rajagopal, P.A. to Superintending Engineer, N. Subbiah, Office Assistant, Karaikudi, and G. Parasuraman, Line Supervisor, Alangudi. Mr. Rajagopal received a scholarship from the Southampton University, England, for research study in electrical engineering. A first class Honours graduate in Physics of the Madras University, and a diploma holder of the Indian Institute of Science, Bangalore, in Electrical Technology, Rajagopal joined the organisation as a Junior Engineer in 1949. He came to Head Office in October 1951 to work as P. A. to the Superintending Engineer.



Group taken on the occasion of the farewell party got up in honour of T. R. Rajagopalan on the eve of his departure to the U. K.

Very, very patriotic in outlook, Rajagopal always writes letters to friends and relatives only in Tamil. At the farewell dinner got up in his honour, glowing tributes were paid by several speakers to the qualities of his head and heart. Rajagopal replied with characteristic modesty.

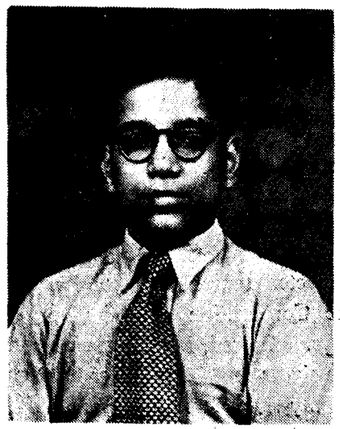
A smart young man of extremely winning manners, a capable officer, popular alike with consumers, his colleagues and other staff, we will miss him greatly.

N. Subbiah, Office Assistant, Karaikudi, who comes of a well-known family of bankers and businessmen, left us to do business on his own. He has a service record of 14 years.

G. Parasuraman joined us in 1949. Besides serving at Alangudi, he has also served as a Supervisor in Musiri, and on the distribution side, in Tiruchi. A very fine sportsman, he excelled particularly in Table Tennis, and has won several prizes.

Parasuraman has now joined the Southern Railway.

Seshasayee Scholar: Readers will recall that an award called the " Seshasayee Prize " is made each year by Mr. R. Chakravarthy, our Delhi office Representative, to the student of the Madrasi High School, New Delhi, who obtains the highest total number of marks in the science group of subjects at the Higher Secondary Examination of the Delhi Board. The 1954-winner of this prize is S. Krishnaswami, son of Mr. K. Srinivasan, Section Officer, Community Projects Administration, New Delhi. Our best wishes go to Krishnaswami for a brilliant future.



S. Krishnaswami.

OUR PEOPLE

* * * K. S. NEELAKANTA SARMA

K. S. Neelakanta Sarma.

K. S. NEELAKANTA SARMA, Divisional Engineer (Special) is one of our respected senior men, and has known the Corporation since its very early days. Indeed, Mr. Sarma was among the six or seven employees to complete twenty-five years of service along with the Corporation's own Silver Jubilee in 1952.

Sarma studied History and Sanskrit at school, but developed later a passion for the exact sciences. This second love made him qualify as a Licentiate in Electrical and Mechanical Engineering. And appositely enough he qualified in Mysore State, a pioneer in electrification projects in the South. Later, he also passed some of the technical examinations in Engineering and allied subjects of the Madras Government.

In October 1925, Sarma joined the Managing Agency firm as an apprentice—one of his first assignments being the preparation of plans and drawings for the electrification of Tiruchirapalli. Since then, he has moved steadily from one position to another taking in his stride jobs like Draughtsman, Line Inspector, Line Foreman and Line Superintendent until, in 1935, he was named Assistant Engineer. In 1942 he was promoted to the position of Resident Engineer. At present, he is Divisional Engineer, (Special), engaged in the preparation of an inventory of the assets of the Company. Some idea of the magnitude of this assignment will be had when it is remembered that he has to cover an area comprising 12,000 square miles.

In the late 20's, Sarma was among the few men in this State to be conversant with A. C. Practically all the senior technical personnel in our Company to-day have gone through his hardened hands at one time or another. And when Mr. Sarma puts a boy through his paces, you bet, the boy not only knows the high-ways and byways of Tiruchirapalli, but also its blind alleys—and the outskirts—thrown in as a make-weight!

The strong streak of pedagogy in Sarma has earned for him the affectionate sobriquet of "teacher" from the boys. A stern and severe taskmaster, one can expect from him only marginal marks even for a job reasonably well-executed. Himself a thoroughly sincere and conscientious man, any one who scamps his allotted work, is in for it from him.

To consumers in Tiruchirapalli, Neelakanta Sarma has for many years been a trusted friend and counsellor. All the best in Sarma particularly comes up to surface in a crisis such as, for instance, the storm that hit Tiruchi early in 1953. In emergencies, he will work himself to tatters, unmindful of even basic personal comforts.

Although not a Rotarian, his motto has always been "Service above self."

Sarma's hobby? Putting fathers of marriageable daughters in touch with fathers of eligible young men and arranging for the exchange of horoscopes between the party of the first part and the party of the second part!

Endowed with a strong physique and even a stronger passion for electrical engineering, Sarma invests—and infects—all young men who come to him with his own great enthusiasm.

Here's wishing Mr. Sarma the best of luck and several years useful activity.

—*R. P.*

THE STRUCTURE OF THE BRITISH ELECTRICITY SUPPLY INDUSTRY by Dr. V. V. Ramanadham, M. Com (Hon.) Ph. D. (Andhra), Ph. D. (Lond.), Assoc. Inst. T. (Lond.), Reader in Commerce, Andhra University (Published by Kamath & Company Ltd., Mangalore — Price Rs. 10/-

Dr. V. V. Ramanadham spent two years in England studying the structure of the electricity supply organisation in Great Britain, and the book under review is an abridged edition of his thesis for the Ph. D. degree of the University of London.

Professor Sir Arnold Plant of the London School of Economics and Political Science has, in his able introduction commended Dr. Ramanadham's study, and draws attention to the care and assiduity with which the author has presented his conclusions.

The first part of the book traces the origin and growth of the supply industry in Great Britain —how private ownership and Municipal ownership with an overriding Central Electricity Board, co-ordinating generation of power and inter-connection of generating stations, tried to achieve maximum efficiency in full utilisation.

While no doubt a high state of efficiency was reached by these multiple organisations, it was thought necessary that a unified organisation would even be better and should handle the power requirements of the State.

The Labour Government brought about this radical change by creating the British Electricity Authority in 1947 and by nationalising supply throughout the country. Under the new set-up, the country was divided into area boards, to deal with the generation and distribution of power in convenient geographical units, with the B. E. A. having an overall control on policies, and acting as a co-ordinating body.

The book also, discusses the effects of nationalisation and the benefits derived in the form of accelerated installation of additional plant, creation of a supergrid for rational transport of bulks of power and attempts at producing simplified, uniform tariffs throughout the country.

As Sir Arnold Plant has stated in his Foreword, the book is a valuable introduction to the useful Annual Reports of the British Electricity Authority.

In our own country, electric supply is still in an infant stage. The question of nationalisation of private ownership — at least to some extent—has, for years, been agitating the minds of the people responsible for planning. It must be remembered that Great Britain nationalised electricity supply after years of development, and started with a preliminary control on generation through the Central Electricity Board.

These are pointers in planning in our own country, and Dr. Ramanadham's book deserves to be studied, at least, for focussing attention on this important aspect, if for nothing else.

—*H. K. R.*

An official meeting of the Staff Association was held on 5th November 1954 and the following office-bearers year were elected :—

Mr. V. Seshasayee Comp. I.E.E. (*Life President*).
„ H. K. Ramaswami, *Vice-President*.
„ R. Sivanandham, „ R. Vaidyanathan, *Hon. Secretaries*.
„ R. Parthasarathy, „ R. Santanam, „ A. Kanakaraj, „ M. Periaswami, „ V. Sivaswami, „ P. D. S. Sundararajan, and Mr. A. Rahim Khan. *Members*

Film shows and Lectures.

Pictures screened in recent months included :

Cindrella, *Blue Veil* and *Alice in Wonderland*.

A meeting of the Staff Association was held on November 19, 1954, when Mr. C. S. Kamalapathi, Lecturer in English, Jamal Mohammed College, gave an instructive and interesting lecture on " Sweetness and Light ".

Mr. M. S. Srinivasa Sarma, Professor of the same college presided.

SME SUPPLY NEWS

VILLAGES electrified in recent months in the East Tanjore area are Sattanathapuram, Sankaranpandal and Malaiminikkadu.

Sattanathapuram was given supply in July 1954. A short H. T. spur line for about 150 feet was drawn, tapped off post No. 574 on the Mayuram-Sirkali 11-kV feeder. A 30-kVA pole-mounted transformer substation was erected and L. T. lines for 220 feet were drawn. Supply was given to one rice mill. Some houses were also connected up. The cost of the scheme is Rs. 7,800. ACSR "Gopher" was used for the H. T. line and all-aluminium conductors (equivalent to No. 8 copper) were used for the L. T. lines. Fifty-pound, single-head rails 30 feet long were used as supports.

Supply was given to Sankaranpandal on October 28 at a function presided over by Mr. Sheikh Mohideen, Director. Mr. R. M. Sundaram, Collector, Tanjore, switched on the supply.

Supply was tapped off post No. 305 on the Mayuram-Tranquebar 11-kV overhead main line and a spur line for 5.4 miles was drawn. A 30-kVA pole-mounted transformer substation was erected. Low tension lines for 1½ miles (all-aluminium Nos. 4 and 8 copper equivalent) were drawn in the village to connect up houses and street lights. ACSR "Gopher" conductor was used for the H. T. line. Fifty-pound rail poles were used for both H. T. and L. T.

The scheme has been so drawn up as to afford supply also to Ayarpadi and Thirukalacheri. The total cost is Rs. 91,700.

Malaiminikkadu, a village in the Pattukottai taluk, was given supply on November 18, 1954. A short H. T. spur line tapped off post No. 61 on the 11-kV overhead main line to Adirampatnam was drawn for 710 feet. A 30-kVA, pole-mounted transformer substation was erected and on the day of formal "switch-on", supply was given to one rice mill and two houses. The cost of the scheme is Rs. 7000.

Copper wire of 3/.104 size was used for the H. T. line along with 50 pound rails for posts.

Trichy - Srirangam Area:

The honour of being the first village in Perambalur Taluk to receive supply belongs to Kalathur. At a pleasant function arranged by the residents on December 3, Mr. H. K. Ramaswami, Deputy Chief Engineer, switched on the supply. Mr. M. M. Sivasankara Reddiar, Advocate, Thuraiyur, presided. The total cost of the scheme is Rs. 74,750. A 11-kV H. T. overhead line was extended from Kottathur for a distance of two miles. One 100-kVA floor-mounted transformer substation was erected and L.T. overhead lines for about four miles were drawn. Fifty-pound rails were used as supports. ACSR "Gopher" and all-aluminium conductors were used for the H. T. and L. T. lines respectively. The scheme was worked out to cater to 35 agricultural power services. On the day of supply twelve agricultural pumpsets of a total of 36 h.p. received supply.

A system improvement job in the Tiruchi-Srirangam area was completed on December 15, 1954. This was the conversion of the 3.3-kV system (from Tiruvanaikoil to Srirangam) to 11 kV. This work involved the extension of the 11-kV H. T. overhead mains for a length of three quarters of a mile, the laying of 11-kV underground cables for the railway and road crossings, the erection of a 200-kVA floor-mounted transformer substation inside the municipal park, and the drawing of L. T. overhead and underground mains. The total cost of the work is Rs 34,250. This job was put through to meet the growing demands in the Srirangam area and to minimise transformer losses.

The connected load of industrial and agricultural power services for the quarter ending September 30, 1954 is as follows:

Area	*Industrial*	*Agricultural*
Tiruchi-Srirangam ...	98 h.p.	101.5 h.p.
East Tanjore ...	6 ,,	163.0 ,,
East Ramnad ...	35 ,,	5.0 ,,

The "load statement" for the quarter ending December 31, 1954 is as follows:

Area	*Industrial*	*Agricultural*
Tiruchi-Srirangam ...	168 h.p.	77 h.p.
East Tanjore ...	53 ,,	3 ,,
East Ramnad ...	105 ,,	11 ,,

Current Topics

STATE ELECTRICITY BOARD FORMED IN BOMBAY

THE Government of Bombay in the Public Works Department have, by a notification, constituted under the Electricity (Supply) Act, 1948, a State Electricity Board known as the " Bombay Electricity Board." The Board consists of three members ;

(1) Mr. M.H.M. Premji–Member.

(2) Mr. Pestonji C. Hansotia. Chartered Accountant—Member.

(3) Chief Engineer, Bombay, Electric Grid—Member (*Ex-Officio*).

Mr. M. H. M. Premji has been named the Chairman of the Board and Mr. G. V. Bedekar, I.C.S., has been appointed Secretary.

RURAL ELECTRIFICATION

It has been reported that the Planning Commission have sanctioned loans totalling Rs. 18.24 crores for rural electrification in the country and that thirteen States will utilise the loans.

WORLD BANK LOAN FOR TROMBAY PROJECT

On November 19, 1954, the International Bank for Reconstruction and Development announced a loan of $ 16.2 million to India for financing the foreign exchange cost of the Trombay Thermal Station being installed by Tatas. The borrowers are the Tata Hydro Electric Supply Company, the Andhra Valley Power Supply Company, and the Tata Power Company.

The loan is for a term of 20 years and bears interest at 4¾ per cent a year, including the statutory one per cent commission charged by the Bank. It is guaranteed by the Government of India and is secured by a trust deed with Baring Brothers & Co., of London as trustees. This is the third loan made by the Bank for the development of electric power in India. Two earlier loans were made for multi-purpose projects in the Damodar Valley which included power stations. The six Bank loans for projects in India now total $ 116.7 million.

ELECTRICITY METERS

The Indian Standards Institution have prepared a Draft Specification for electricity meters which has been circulated for the comments of all concerned.

This specification is divided into two parts—the first part covering the general requirements of all types of energy meters and the second part covering the specific requirements applicable to single-phase, two-wire credit-type A. C. meters. Further parts to be issued in future will cover other types of meters.

The Draft Standard, as far as possible, has been related to the manufacturing and testing practice followed in this country which has resulted in the draft being substantially based on B.S.S. 37-1937 for electricity meters issued by the British Standards Institution and on its revision of 1952. The draft also follows the recommendations for watt-hour meters of the International Electro-technical Commission.

RIVER VALLEY PROJECTS

Inaugurating the meeting of the Co-ordination Board on River Valley Projects held at New Delhi on October 13 and 14 1954, the Prime Minister declared that the two essential things for agriculture and industrial advancement of the country including cottage industries, were development of irrigation and power resources.

The inaugural meeting was attended by Ministers from 16 States and their officials.

Speaking on the occasion, Mr. Gulzarilal Nanda, Minister for Irrigation and Power, stated that Government's aim was to make irrigation available for 40 per cent of the land and " increase the available power from 1.7 million kW to 8.7 million kW through the projects in the first three Five-Year Plans."

The Minister expressed concern at the slow pace of progress in rural electrification. He stated that "without an abundance of cheap power for agricultural and cottage and small-scale industries, much headway cannot be made in the solution of the problem of unemployment."

At its concluding session on 14th October, the Co-ordination Board of Ministers for River Valley Projects recommended that rural electrification schemes be subsidized and the Board also decided that a few training centres for operators and maintenance staff be opened at projects which afforded the best facilities. To select the sites for these Centres, the Board set up a Sub-Committee of Ministers consisting of Mr. Gulzarilal Nanda, Chairman, Mr. Hafiz Mohamed Ibrahim, Minister of Irrigation and Finance, U. P., Mr. M. M. Naik-Nimbalkar, Minister for Public Works, Bombay and the Raja of Ramnad, Minister for Public Works, Madras.

பெரியாறு மின்சாரத் திட்டம்

— வே. ரங்கராஜன், பி. காம் —

" இனிய பொழில்கள் நெடிய வயல்கள்
எண்ணரும் பெருநாடு
கனியும் கிழங்கும் தானியங்களும்
கணக்கின்றித் தருநாடு—நீத்த நீத்தம்
கணக்கின்றித் தருநாடு".

பைந்தமிழகத்தின் பெருமையை எண்ணிப் பெருமகிழ்ச்சி கொள்ளும் போது ஞாலம் போற்றும் செந்தமிழ்க் கவிஞன் பாரதியின் இந்தப் பாடலே என் நினைவிற்கு வருகிறது. கன்னித் தமிழ் நாட்டின் சிறப்பு அதன் பசும் வயல்களிலும், அழகுச் சோலைகளிலும் தான் அடங்கியிருக்கிறது.

"சோழ வளநாடு சோறுடைத்து" என்று ஔவைப் பிராட்டியார் புகழ்ந் துரைக்கும் தமிழகம், அவனியை அச்சத் தில் ஆழ்த்திய இரண்டாம் பெரும் போருக்குப்பின் மழையின்மையால் வறு மை மிகுந்து வாடியது.

அன்று நாம் அன்னிய ஆட்சியிலிருந் தோம். இன்று தமிழ்நாடு இந்திய சுதந்திரக் குடியரசின் பெருமைமிக்க ஒரு பகுதியாகத் திகழ்கிறது. நாடு அன்பிற்குரிய முதலமைச்சர் பேரறிஞர் குறிப்பிடுவதுபோல் நம் தாய்நாட்டின் முன்னேற்றத்திற்காக முன்னிலும் அதிகமாக உழைக்கவேண்டிய அவசியம் நமக்கு இப்போதுதான் ஏற்பட்டிருக் கிறது.

விஞ்ஞானம் ஈன்ற விந்தைகளில் ஒன்றான மின்சார சக்தியை நன்கு பயன் படுத்தி நம் நாட்டை நாம் வளப்படுத்த வேண்டும். இந்திய அரசாங்கமும், சென்னை ராஜ்ய சர்க்காரும் பல மின் சாரத்திட்டங்களை வகுத்து அவைகளை நிறைவேற்றி கிராம மக்களின் வாழ்க் கையை மேம்படுத்தவும், உணவு உற் பத்தியைப் பெருக்கவும் உறுதிகொண்டு செயல் புரிகின்றனர். அத்தகைய பல திட்டங்களில் குறிப்பிடத்தக்கது **பெரி யாறு மின்சாரத் திட்டமும்** ஒன்று. இத் திட் டத்தினால் நம் தமிழகம் அடையப் போகும் பயனையும் அத் திட்டம் உரு வான வரலாற்றையும் இச்சிறு கட்டு ரையில் காண்போம்.

சென்னை - திருவிதாங்கூர் ராஜ்யங் களின் எல்லையிலுள்ள கல்விமலை என்ற மலையின் உச்சியில் பெரியாறு உற்பத்தி யாகிறது. இந்த நதி செழித்த காடு களின் வழியாக வடதிசையில் சுமார் பதினாறு மைல் தூரம் ஓடி கடைசியில் தாளக்குடி என்ற இடத்தை நோக்கிச் செல்கிறது. தாளக்குடியில்தான் 1898-ம் ஆண்டில் சுமார் 160 அடி உயர முள்ள ஒரு அணை நிறுவப்பட்டது. இவ்வணைக்கு அப்பால் பெரியாறு வட மேற்கு திசையில் திரும்பி கீராங்கனூர் என்னும் கிராமத்தின் அருகில் அரபிக் கடலில் சங்கமமாகிறது. பெரியாற்றின் மொத்த நீளம் 130 மைல்.

தாளக்குடி அணைக்கு மேல்திசையில் பெரியாறு பாயும் பகுதிகளில் ஆண் டொன்றுக்குச் சராசரி நூறு அங்குல மழை பொழியும். ஆனால் பத்தொன்ப தாம் நூற்றாண்டின் முற்பகுதி வரை மழை நீர் ஒரு பயனுமின்றி வீணாகி வந் தது. இக்குறையை நிவர்த்தி செய்து மழை நீரை மதுரை மாவட்டத்திலிருக் கும் கம்பம் பள்ளத்தாக்கின் வழியாகத் திருப்பி நீர்ப்பாசனத்திற்குப் பயன் படுத்தும் பொருட்டு பெரியாற்றின் குறுக்கே ஒரு அணையை எழுப்ப அந்தக் காலத்திலேயே இஞ்சினீயர்கள் திட்ட மிட்டனர். ஆனால் 1893-ம் வருடத் தில்தான் அவர்கள் கனவு நனவாயிற்று. அவ்வாண்டில்தான் பெரியாற்றின் குறுக்கே ஒரு அணையை அமைத்து முடித்தனர். அதிலிருந்து ஐம்பது ஆண்டு களுக்கு மேலாக மதுரை மாவட்டத்தின் பெரும் பகுதியில் பெரியாற்று நீர் பாய்ந்து ஒன்றரை லட்சம் ஏக்கர் நிலத் தைச் செழிப்புமிக்கதாகச் செய்கிறது.

இந்திய அரசாங்கத்திற்கும் - திருவி தாங்கூர் சர்க்காருக்குமிடையே 1889-ம் வருடம் ஒரு உடன்படிக்கை கையெழுத் தாயிற்று. அதன் பிரகாரம் சென்னை ராஜ்யம் ஒரு குறிப்பிட்ட தொகையை திருவிதாங்கூர் அரசாங்கத்திற்குச் செலுத்த வேண்டுமென்றும், பதிலாக சென்னை ராஜ்யம் 999 ஆண்டுகள் பெரியாற்று நீரை பாசனத்திற்குப் பயன்படுத்திக்கொள்ளலாம் என்றும் ஒப்புக்கொள்ளப்பட்டது.

நீர்த் தேக்கத்திலிருந்து புறப்பட்டு சென்னைச் சமவெளிப் பிரதேசத்தை அடையுமுன் பெரியாறு சிறு சிறு நீர் வீழ்ச்சிகளாக மாறுகிறது. பெரியாற்று நீரினால் பயனடையும் நிலங்களில் பிப்ர வரி மாதக் கடைசியிலிருந்து ஜூன் மாதத் தொடக்கம் வரை சாகுபடி நடப்பதில்லை. ஆதலால் இந்த நீர் வீழ்ச்சிகள் வீணாகாமல் அவற்றிலிருந்து மின்சார சக்தி உற்பத்தி செய்வதற் கான திட்டங்களை வெகுநாட்களாகவே ஆலோசித்து வந்தனர். இருப்பினும் சில தடைகளின் காரணமாக ஒருவித திட்ட மும் உருவாகவில்லை.

1899-ம் ஆண்டு செய்துகொள்ளப் பட்ட உடன்படிக்கையின்படி பாசன

வசதிக்கு மட்டுமே சென்னை ராஜ்யம் பெரியாற்று நீரை உபயோகித்துக் கொள்ளலாமென்றும், மின்சார உற்பத்திக்கு அந்தத் தண்ணீரை உபயோகிப்பது ஒப்பந்தத்தை மீறிய செயலாகுமென்றும் திருவிதாங்கூர் ஆட்சேபித்தது. இந்த ஆட்சேபணை 1936-37-ம் வருடம் இரண்டு நீதிபதிகளின் முன் விசாரணைக்கு வந்தது. ஆனால் அந்த நீதிபதிகள் இருவரும் கருத்தொருமித்துத் தீர்ப்பு வழங்காததினால் மீண்டும் 1941-ல் வழக்கை விசாரிக்க ஒரு மத்தியஸ்தர் நியமிக்கப்பட்டார். அவர் திருவிதாங்கூர் சர்க்காருக்குச் சாதகமாக முடிவு செய்தார்.

நாடு சுதந்திரம் பெறுமுன் 1947 ஜூன், 15-உ சென்னை-திருவிதாங்கூர் சர்க்கார்களின் பிரதிநிதிகள் மறுபடியும் சந்தித்துப் பேசினர். அதன் பயனாகச் சென்னை ராஜ்யம் நீர்ப்பாசன வசதிக்காகத் திருவிதாங்கூர் ராஜ்யத்திற்கு அளித்து வந்த தொகையுடன் மேலும் ஒரு குறிப்பிட்ட தொகையைக் கூட்டிக் கொடுத்தால் பெரியாற்று நீரை மின்சார உற்பத்தி செய்யவும் உபயோகித்துக்கொள்ளலாமென ஒப்புக்கொள்ளப் பட்டது. ஆனால் 1952-ம் வருடம் வரை அந்தத் தீர்மானத்தைத் திருவிதாங்கூர் சர்க்கார் அங்கீகரிக்கவில்லை.

இதனிடையே சென்னை ராஜ்யத்தில் வைகை நீர்த் தேக்கத் திட்டத்தைப் பரிசீலனை செய்து அதனை நிறைவேற்றுவ தென்று சர்க்கார் தீர்மானித்தனர். பாசனத் தேவைக்கும், கால நிலைக்கும் ஏற்றவாறு பெரியாற்று நீரைக் கண்காணித்துவிட்டால் வழக்கத்தை விட வினாடிக்குச் சுமார் இருநூற்றைம்பது கன அடி தண்ணீர் அதிகம் பெறலாமென்று இத் திட்டத்தின் மூலம் தெளிவாயிற்று. இதனால் சாகுபடியில்லாத காலங்களில் பெரியாற்று நீரை மின்சார சக்தி உற்பத்திக்கும் பயன்படுத்தலாமென்று அறிய முடிந்தது. சில மாறுதல்களுடன் "வைகை நீர்த் தேக்கத் திட்ட"த்தை முதலாவது ஐந்தாண்டுத் திட்டத்தில் சேர்த்தனர். இதன்படி முதலில் மூன்று 35,000 கிலோவாட் மின்சார உற்பத்திக் கருவிகளையும் சின்னட்களுக்குப் பின்பு மற்றுமொரு 35,000 கிலோவாட் மின்சக்தி உற்பத்திக் கருவியையும் நிறுவுவதென்று தீர்மானித்தனர். இந்த நான்கு கருவிகளும் சேர்ந்து மொத்தம் 1,40,000 கிலோவாட் மின்சாரம் உற்பத்தி செய்யும் என்று கணக்கிட்டனர்.

"வைகை நீர்த்தேக்கத் திட்டம்" முதல் ஐந்தாண்டு திட்டத்தின் ஒரு பகுதியாகச் சேர்க்கப்பட்ட போதிலும் சென்னை — திருவிதாங்கூர் சர்க்கார்களுக்கிடையே முறையாக ஒரு ஒப்பந்தம் கையெழுத்தாகாததால் அதனைத் தொடங்கச் சிறிது காலதாமதம் ஏற்பட்டது. ஆனால் சென்னை—திருவிதாங்கூர் ராஜ்ய அமைச்சர்கள் மீண்டும் டில்லியில் சந்தித்துப் பேசினர். இந்திய அரசாங்கமும் ஆலோசனைகளில் கலந்து கொண்டு உதவி புரிந்தது. இறுதியில் இரு சாராரும் ஒப்புக்கொள்ளக்கூடிய ஒரு ஒப்பந்தம் உருவாயிற்று. இதனால் தோன்றியதே "பெரியாறு மின்சாரத் திட்டம்".

பெரியாறு மின்சாரத் திட்டத்தின் சில அம்சங்களை இங்கே காண்போம்.

பெரியாற்று அணை 158 அடி உயரம் உள்ளது. இதன் முழு நீர்த்தேக்கம் 10·21 சதுர மைல் மேல் பரப்புள்ளது. அதாவது அந்தத் தேக்கத்தின் அளவு 1566·2 கோடி கன அடிகள் ஆகும். நீர்த் தேக்கத்தின் ஆழம் 152 அடி.

நீர்த்தேக்கத்திலிருந்து பெரியாற்று நீரை சுரங்கத்தின் வெளியாக விடுவதற்கு உபயோகப்படும் மதகு 119 சதுர அடி விஸ்தீரணம் உள்ளது. ஆற்றின் படுகைக்கு மேல் 106·75 அடி உயரத்தில் மதகின் அடிப்பாகம் இருப்பதால் நீர்த்தேக்கத்தின் மொத்த அளவில் சுமார் 900 கன அடி தண்ணீரையே பயன்படுத்த இயலும்.

சென்னை சர்க்காரின் நீர்ப்பாசன இலாகா ஏற்கனவே 5887 அடி நீளமும், 96 சதுர அடி அகலமும் உள்ள ஒரு சுரங்க வழியை அமைத்துள்ளது. ஆனால் இதன் குறுக்குப் பரப்பை 152 சதுர அடியாக மாற்றி அதன் மூலம் 1600 கன அடி தண்ணீரை வெளிப்படுத்த விரைவில் ஏற்பாடு செய்யப் போகிறார்களாம்.

சுரங்கத்தின் வழியாக வெளிவரும் தண்ணீர் 30 லட்சம் கன அடி அளவு கொண்ட ஒரு பெரிய ஏரியில் சேருகிறது. இந்த ஏரியிலிருந்து 4188 அடி நீளமும், 150 அடி அகலமும் உள்ள சுரங்க வழியொன்றின் வழியாகத் தண்ணீர் வெளிச்செல்லும். அங்கிருந்து வினாடிக்கு 1600 கன அடி வீதம் தண்ணீர் பாய்ந்து 40 அடி விட்டம் உள்ள ஒரு தொட்டியை அடையும்.

இந்தத் தொட்டியுடன் 3500 அடி நீளமுள்ள மூன்று குழாய்களை இணைப்பார்கள். ஒவ்வொரு குழாயும் சுமார் 400 கன அடி தண்ணீரை எடுத்துச் செல்லக்கூடியதென்று கூறப்படுகிறது. தொட்டியில் தேக்கி வைத்த தண்ணீரை ஒரு சுழல் சாதனத்தின் வழியாகச் செலுத்துவார்கள். இதனால் மின்சார சக்தி உற்பத்திக்கு உபயோகப்படும் நீர்ஸ்திக் சக்தி சுமார் 1200 அடியாகும்.

முன் கூறப்பட்ட குழாய்களின் வழியாக வரும் தண்ணீர் 50,000 குதிரை ஓட்ட சக்தியுள்ள ஒரு சக்கரத்தின் வழியாகச் செல்லும். 35,000 கிலோவாட் மின்சார உற்பத்திக் கருவி ஒன்றுடன் இந்தச் சக்கரம் இணைந்திருக்கும். பத்து ஆண்டுகளுக்குப் பின் இதுபோன்ற மற்றுமோர் குழாயும், மின்சக்தி உற்பத்திக் கருவியும் அமைக்கப்படுமாம்.

இந்தத் திட்டத்தில் உற்பத்தியாகும் மின்சாரத்தை 240 மைல் நீளமுள்ள கம்பித் தொடர்களின் மூலம் மற்ற திட்டங்களுடன் இணைப்பார்கள்.

அரசாங்கம் அங்கீகரித்துள்ள கொள்கையின்படி ஆரம்ப நிலையில் ரூ. 675·6 லட்சமும், பத்து வருடங்களில் மொத்தம் சுமார் ரூ. 1048 லட்சமும் இத் திட்டத்திற்காகச் செலவழிக்கப்படுமாம்.

இத் திட்டம் நிறைவேறினால் மதுரை மாவட்டத்தைச் சுற்றியுள்ள இடங்களில் வியக்கத்தக்க தொழிலபிவிருத்தி ஏற்படும் என்று எதிர்பார்க்கப்படுகிறது. பெரியாறு மின்சாரத் திட்டம் பூர்த்தியானவுடன் மதுரை மாவட்டம் தமிழகத்தின் தலையாய இடங்களில் ஒன்றாகும் என்பதில் ஐயமில்லை.

செய்திக் கதிர்

கிராமங்களுக்கு மின்சார விநியோகம்

1954 அக்டோபர் 14-ஆ அன்று மூத லமைச்சர் திரு கே. காமராஜர் தலைமையில் நடைபெற்ற சென்னை அமைச்சரவைக் கூட்டத்தில் கிராமங்களில் மின்சார விநியோகத்திற்கு ரூ. 60 லட்சம் செல வில் 16 திட்டங்களை நிறைவேற்றுவ தென்று முடிவு செய்யப்பட்டது.

சென்னை மின்சாரத் திட்டத்தின் கீழ் செங்கற்பட்டு மாவட்டத்தில் நான்கு திட்டங்களும் மேட்டூர் மின்சாரத் திட் டத்தின் கீழ் ரூ. 21 லட்சம் செலவில் ஏழு திட்டங்களும் நிறைவேற்றப்படும் மேட்டூர் திட்டத்தினால் திருச்சிராப் பள்ளி, சேலம், கோயம்புத்தூர், வட ஆற்காடு ஆகிய ஜில்லாக்கள் பயனடை யும்.

பாபநாசம் மின்சாரத் திட்டத்தின் கீழ் திருநெல்வேலி, மதுரை ஜில்லாக்களில் ரூ. 7 லட்சம் செலவில் இரண்டு திட்டங் களும், பைகாரா மின்சார விநியோகத் [illegible] மூலம் ரூ. 19 லட்சம் செல [illegible] கோயம்புத்தூர், மலபார் ஜில்லாக்களில் மூன்று திட்டங்களும் நிறைவேற்றப்படும்.

இந்த வருட வரவு செலவு திட்டத் தின் (பட்ஜெட்டின்) உபமானியங்களி லிருந்து இத் திட்டங்களுக்குப் பணம் செலவிடப்படும்.

* * *

1954 டிசம்பர் முதல் தேதி தொடங் கிய சென்னை மேல் (சட்ட) சபை, கீழ் (சட்ட) சபை ஆகியவற்றின் கூட்டுக் கூட்டத்தில் ராஜ்ய கவர்னர் **ஸ்ரீ பிரகாச** அவர்கள் உரை நிகழ்த்தினர்.

கிராமங்களுக்கு மின்சார வசதியை விஸ்தரித்து குடிசைத் தொழில்களை வளர்ப்பதன் மூலம்தான் கிராம மக்க களின் வாழ்க்கை நிலையை விரைவில் உயர்த்த இயலும் என்பதைச் சர்க்கார் உணர்ந்திருப்பதாகக் கவர்னர் தனது பிரசங்கத்தில் குறிப்பிட்டார்.

கிராம மின்சார வேலைக்காக மேலும் ரூ. 3 கோடி பண உதவி புரிய மத்திய அரசாங்கம் இசைந்திருக்கிறது. தற் போது ஆண்டொன்றுக்கு 250 கிராமங் களுக்குச் சென்னை சர்க்கார் மின்சார வசதியை விஸ்தரிக்கின்றனர். வருடத் திற்கு 1000 கிராமங்களுக்கு மின்சார வசதி அளிக்க அரசாங்கத்தினர் முயன்று வருகின்றனர். எப்படியும் இரண்டாவது ஐந்தாண்டுத் திட்டம் நிறைவேறு முன் ராஜ்யத்தின் கணிச மான பகுதி மின்சார சப்ளை பெறும் என்று எதிர்பார்க்கப்படுகிறது. இவ் வாறு கவர்னர் தனது பேருரையின் ஒரு பகுதியில் குறிப்பிட்டார்.

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