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NATIONAL PHYSICAL LABORATORY OF INDIA
Hillside Road, New Delhi

TELEGRAMS: "NATPHYLAB"

TELEPHONE : 43561
42937

55
11/12/58
REF: No. NPL/AO(2)/58

April 16, 1958.

Dear Shri de Souza,

Will you kindly refer to your D.O. No. 7(1)1/56-EI dated 16th April, 1958 regarding the tour of Dr. K.S.Krishnan to Colombo?

I regret I have neither any papers nor any other information with regard to the meeting of the Board of Directors of Bharat Electronics Limited at Colombo. I am accordingly passing on your letter in original to the P.A. to Director to kindly pass on the necessary information to you in case it is available with him.

With kind regards,

Yours sincerely,

(I.N.Mathur)

Shri A.W. de Souza,
Under Secretary, CSIR

Copy together with the letter under reply in original is forwarded to P.A. to D.N.P.L. for information and necessary action.

Mathur

(I.N.Mathur)

Administrative Officer
National Physical Laboratory

Encl: One



~~DIRECTOR GENERAL~~

No. 7001/56-EI

COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

NEW DELHI 10 April 1958

Dear Mr. Mathur,

Dr. Krishnan has asked for the formal sanction of the Director General, Scientific & Industrial Research, for his tour to Colombo and back with permission to attend the meeting of the Board of Directors of Bharat Electronics Limited.

I presume the meeting of the Bharat Electronics Limited will be held in Bangalore. Kindly let us know who is meeting the T.A. of Dr. Krishnan for his (a) trip to Colombo and back, and (b) for his attending the meeting of the Board of Directors of Bharat Electronics Limited.

With kind regards,

Yours sincerely,

A. W. de Souza
(A.W. de Souza)

Mr. I.N. Mathur,
Administrative Officer,
National Physical Laboratory,
NEW DELHI.

Sy no. 191/AD

9/4/58.



NATIONAL PHYSICAL LABORATORY OF INDIA
HILLSIDE ROAD, NEW DELHI.

TELEGRAMS: "NATPHYLAB"

TELEPHONE: { 42361
42362

14 October 1950

REF: No.

From
The Director.

To

The Director & General Manager,
National EKCO Radio & Engineering Co.Ltd.,
Ewart House,
Bruce Street,
Fort, Bombay, 1.

Dear Sir,

Ref: The conversation Mr. T.V.Ramamurti had
with you on the 6th of September 1950

Mr. T.V.Ramamurti reported to me that you have kindly agreed to sell to the National Physical Laboratory of India the Stokes Ceramic Press Model R3, and the Stokes Rotary Press Model DDS 2 which were imported for the specific purpose of the manufacture of ceramic capacitors, carbon resistors and iron dust cores. Mr.Ramamurti proposes to continue his work on these in the National Physical Laboratory of India, and we need the machinery for this purpose.

I had authorised Mr.Ramamurti to say that since a certain amount of preliminary work has been done on these at the National EKCO, and as you are good enough to agree to sell the presses to us, the National Physical Laboratory will offer you the first option should the work bear fruit and ~~reach~~ reach the stage of commercial exploitation. It is understood that you will part with the presses at your book value, i.e., the landed cost. I would thank you to kindly let me know the prices of the two presses.

Yours faithfully,

K.S. Krishnan
(K.S. Krishnan)
Director.

Brief Summary of the Nature of Developmental work done at The National Ekco which, it is proposed, should be continued at the NPL.

The main objective, on the manufacture of components, has been the utilisation of Indigenous Raw Materials after suitable treatment thus aiming at self sufficiency of the Industry without in any way sacrificing quality.

In fulfilling this objective raw materials of all types were studied. A special Chemical Division was set up with a Research Chemist of experience in charge and apparatus, chemicals and personnel were made available to him.

The projects under active consideration were:-

- 1). Utilisation of Castor Oil as an impregnant for paper capacitors after suitable modification.
- 2). Production and determination of a suitable Insulating Varnish for impregnation using locally available Materials.
- 3). Preparation of a moulding Compound from Shellac for moulding capacitors.
- 4). Investigation of the "Printed Circuit" technique and study of its possibilities in cheapening production.
- 5). Utilisation of Steatite as a base for the "Printed Circuit" Technique.
- 6). Manufacture of low temperature, low loss ceramic capacitors from "Rutile."
- 7). Manufacture of "High Dielectric" ceramic capacitors and studying of its incorporation in Radio receiver circuits.
- 8). Manufacture of Carbon Resistors and Vitreous Enamel Resistors using indigenous materials as far as possible.
- 9). Study and production of Permanent Magnets for Loud-speakers, Microphones, Instrument Magnets & Telephones.

while investigating item (2) a thorough study of the reasons for corrosion of copper wires in Transformers & Chokes was undertaken and special processes of impregnation & testing of Raw materials were developed. Tapes which will not produce corrosion were manufactured. Indigenous raw materials were investigated ~~xx~~ for impregnants.

Equipment is available for carrying out these projects at the National Ekco and they will be prepared to sell them to NPL.

The main items of equipment which are specialised and are not available elsewhere in India are:-

- 1) Ajax Spark Gap type Induction Furnace with an Electrical consumption of 35kVA and a capacity of 20lbs. charge of Steel per half hour or 100 lbs. of Non-ferrous metals per half hour.
- 2) Stokes Ceramic Press R3.
- 3) Stokes Rotary Press D.D.S 2.
- 4) Laboratory type Hydraulic Press-Daniels-for experimental work--capacity 19tons.

With this equipment all projects listed above can be continued and Iron Dust Core work also can be taken up.

L. Ramamurti
24.9.50

A NOTE ON THE PROPOSED STATE FACTORY FOR RADIO TRANSMITTERS
AND ALLIED EQUIPMENT.

It is learnt from various press reports and statements made on the floor of ~~xxx xxxxx~~ parliament that a factory for the manufacture of wireless transmitters, and allied equipment other than Home Broadcast Receivers, wholly state owned, is proposed to be ^{set} ~~sub~~ set up by the Government and three foreign firms have been called to submit project reports. The representatives of the firms toured the country and visited the existing factories to study the labour conditions, the availability and quality of technical personnel and the wage structure. A high power committee has been set up by the Government to study and advise them as to which project will be suitable.

The manufacture of Home Broadcast Receivers has been left in the hands of private enterprise. Some at least of the firms who have started factories for the manufacture have tried to make them on modern lines with Development and Research facilities, Tool Room and Workshop and upto date production lines. They are already manufacturing certain components with modern plants and have the latest machinery installed for some other parts.

While high power transmitters might need special components which are not mass produced, other equipment for the armed services are generally manufactured using receiver components. The installed capacity of some of the factories is much greater than the demand from the Radio Receiver Industry. It stands to reason that this installed capacity must be utilised to the full before the state launches on a factory of its own; specially under the present difficult financial position.

The well organised factories that have been set up for the Broadcast Receivers are unable to keep their factories fully occupied due to the limited demand for Radio Receivers, and will welcome additional work. An order from the defense services or a portion of the orders that are intended to be placed with the state factory will facilitate the management to run their factories economically and incidentally help to bring down the cost of receivers. If such assistance is not forthcoming some of those who have Research and Development Laboratories will have to close down these departments and convert their factories into mere assembly shops. It is not necessary to stress the importance of Development and Research in any industry, specially Electronics, where developments in foreign countries are very rapid. Further, it has been found, at least in the case of one factory, their production of receivers and specially components, was helped to a considerable extent by its development & research laboratories.

Some of these factories have entered ~~xxxx~~ into Technical arrangements with reputed manufacturers abroad who have been making specialised defence equipment for the armed services of their country. These firms were quite prepared to pass on to their associates in India all technical assistance to manufacture the very same equipment here.

To mention an instance, which illustrates the point, one of the Indian factories had negotiated for the manufacture of walkie talkie sets, called by the armed forces the '88' sets, in India. The proposition was placed before the defence department and the authorities said they were interested in the project. The Indian factory concluded a tentative agreement and arranged with the U.K. Government to permit them to manufacture the sets progressively in India on a very nominal Royalty. The U.K. firm, who are the partners of the Indian Factory, agreed to send out personnel to set up the factory and train Indian personnel. The sets were offered at a price which was about half ~~and~~ ^{of that} the price quoted by the war office in England.

in England./

The Industries and Supplies Department turned down the proposal on the ground that it will not be ~~in the best interests of~~ ~~ad-~~visable to give a contract to an Indian factory as it will complicate issues when the state sets up its own factory. So, orders were placed on the U.K. Government for the 88 sets. The deliveries promised were very long and it is gathered that the original order has not been executed yet. The irony of it is that the very firm who are partners of the Indian factory are executing this order, in England, and by the time the '88' sets reach the defense department it will cost them almost double the original quotation submitted by the Indian Factory.

The state factory project, which was mooted some three years back, has not only not been ~~set up~~ ^{set up}, but the government has not yet decided with whom they should sign a contract; yet, even if they decide during the course of the current year, it will be couple of years before the factory will be in a position to produce the equipment. In the meanwhile factories like the ones sited above have their installed capacity lying idle and are at a loss ~~as~~ as to how to keep their factories running.

Is there anything ~~which~~ that prevents the Government from ~~utilising~~ utilising the resources of the Indian factories till such time as the state factory takes shape? If the government ~~had~~ ^{had} agreed to the suggestion of the factory mentioned above would we not ~~have~~ have trained Indian personnel in the intricacies of manufacture of such complicated equipment as the '88' sets, who would have ~~formed~~ formed the nucleus of the state factory? Should we not utilise the resources of these ~~factories~~ factories now atleast? After all, though the Indian factories are not state owned, considerable amount of hard-to-get money has been sunk in putting them up and it is our duty to see that it is not wasted.

Ramamurthi

DEPARTMENT OF SCIENTIFIC RESEARCH

Council of Scientific and Industrial Research and Shri Ranganathan who is reported to be in U.S.A., have been asked to supply the necessary information. Ministry of Education will be informed as soon as any reply is received from them.

sc1-

(T. Gonsalves)
Phone No. 40459

Ministry of Education
DSR U.O. No. 135(3)/50(SA)-
dated 30th Sept. 1950.

No. 135(3)/50(SA)- 11108 *D. S. G.*

...
/ Copy with a copy of U.O. forwarded to the Council of Scientific and Industrial Research with the request that the information asked for may please be supplied urgently.

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T. Gonsalves
(T. Gonsalves)
Under Secretary to the Govt. of India.

- Unesto Experts...

1. Present position in regard to Dr. Alfing

- D.O. letter no. 763- Pkg (210) / NCL/50

of 19.9.50. *Flag A*

2. Disposal of Ministry of Education:-

V.O. no. F 30-2/50 - T 2(2) of 25.8.50
(being forwarded to the Director V.P.)

Flag B

MINISTRY OF EDUCATION

Reference Department of Scientific Research U.O. No. 135(4)/50(SA)-9475 dated the 29th August 1950 copy endorsed to the Ministry of Education and DO letter from Mr. Gonsalves to Dr. Ranganathan No. 135(3)/50(SA)-9483 dated the 29th August 1950, copy endorsed to the Ministry of Education.

2. One of the clauses of the standard agreement which is to be entered into with Unesco by the Government of India states as follows:

"The Government shall assume the responsibility for such part of the costs of the technical assistance to be provided under this agreement as can be paid for in local currency or otherwise to the following extent:

- (i) Full subsistence expenses of the personnel including board and lodging as well as incidental expenses at the daily rate of and an additional daily allowance for representation expenses in the amount of for the senior member of the personnel".

Unesco has suggested that for each foreign expert the Government will have to provide local subsistence allowance covering full cost of board and lodging in a first-class hotel. The Technical Assistance Board has estimated that in Delhi the per diem allowance for each expert should be 11.5 dollars in local currency and in the rest of India 9.5 dollars. This is exclusive of the salaries to be paid to the experts by Unesco.

3. Ministry of Education is writing to the Director General, Unesco, pointing out that the salaries and per diem allowances proposed to be paid would cause embarrassment to the Government in as much as experts recruited by the Government through its own efforts have not been given such salaries. For example in the National Laboratories of India, the scale of pay for Directors is Rs. 2000-2500 although in certain special cases, Rs. 3000/- have been paid. Unesco's proposals if accepted, would amount to a payment to the experts of Rs. 3500 p.m. by Unesco and approximately Rs 1500 p.m. by the Government here.

4. At a conference convened by Education Secretary on the 12th September 1950 to discuss the priorities of experts, it was decided that out of the 7 experts likely to be made available by Unesco, there may be two for the National Laboratories, one specialist in Plastics and High Polymers in the National Chemical Laboratory and one specialist in Low Temperature Physics in the National Physical Laboratory. This Ministry will be grateful if the information sought in the Ministry of Education u.o. No. F.30-2/50-T2 dated the 25th August 1950 is supplied at a very early date.

5. At the conference referred to above, it was further decided that only three experts may be obtained for the bibliographical centre and that we might request for more equipment. Dr. Bhatnagar who attended this conference, promised to let the Ministry of Education have seen the information sought in our u.o. No. F. 30-2/50-T2(2) dated the 25th August 1950. This may kindly be supplied.

Sd: G.K. Chandiramani
Dy. Educational Adviser(Techni

Dated: 30th May, 1955.

No. NPL/WS/67

A Proto-type Magic Lantern using Kerosene burning petromax lamp as illuminant was developed in the N.P.L. Workshops at the request of the Community Project Administration. They have now circulated the details of this lantern to various provincial centres, requesting them to indicate the demands against this item.

At a verbal discussion, ^{which} Shri Vohra of the Community Project Administration had with ~~the~~ D.D., N.P.L., it was agreed that N.P.L. would help the administration by getting such lanterns made through regular trade channels under close supervision, on non-commercial basis.

Since it is expected that requests for samples are likely to come very soon and the initial time required for producing such lantern would be quite long, it is suggested that steps may be taken to produce 15 to 20 pieces of such lantern for expeditious supply against such demands.

The approximate cost of such lantern including the cost of petromax lamp comes to about Rs. 150/-.

It is, therefore, requested that the necessary sanction for this purpose may kindly be given so as to start the work.

A.D., N.P.L. may kindly see in the first instance.

A.D., N.P.L.D.D., N.P.L.

D.N.P.L.

Prakash
W/S. Supdt. 30/5/55.

V. C. Guleri

We need not purchase the petromax lamps (except one or two pieces for trial).

D.N.P.L. may approve the fabrication of lantern bodies since the Community Project Administration have asked the State Government to send us their requirements. We may be asked for some pieces immediately.

Res. Walter

31/5

DNPL