

Law (1921) Department.

Education

Procurer SERIES.

Letter
G.O. No. *513*

DATED

2-4-21

901

[Despatch Abstract.]

College of Engineering, Madras

Institution of a course in elementary knowledge of
Hydro-Electric engineering. Government of India's letter replied
to

GOVERNMENT OF INDIA.

Public Works DEPARTMENT

80-C.N. 3772 A

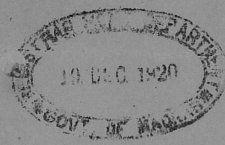
3

20.12.20

No. 1280 dated Delhi the 15th Decr: 1920

(Establs:)

To



Subject.

Institution of a course in
elementary knowledge of hydro-
electric engineering in the College
of Engineering, Madras.

The Secretary to the Govt: of
Madras, Home (Education) Deptt:

SIR,

I am directed to invite attention to the
No. 1280, dated 27th Novr: 1919 communication noted
from the Govt. of India in the margin and to
request that (with the permission of His Excellency
the Governor in Council
the Government of India may be favoured with
an early reply.

I have the honour to be,

SIR,

Your most obedient servant,

R.P. Radwa
15/12/20

Deputy Secy. to the Govt. of India.

15/12/20

Home (23rd) Sept.

Urgent

[C No. 439A]

Memo: No. 439A-1, 27.3.21

The D.P.D. is requested to furnish at a very early date a copy of the correspondence noted below regarding the institution of a course in elementary knowledge of hydro-electric engineering in the College of Engineering, Madras:-

- (1) Letter from the Govt. of India, No. 1280, Edu, 27.11.19.
- (2) Endowment No. 2794A-1, Edu, 27.5.19
- (3) Memo No. 2794A-2, 23.4.20
- (4) D.P.D.'s letter No. RE 11484/19, 27.4.20.

R
27/2

22A
22A

DESPATCHED
6 FEB. 1921

for
file

25.12.20
to the D.P.D. (Memorandum)

HOME (EDUCATION) DEPARTMENT.

CN 651A

Received 11-FEB 1921 191 Registered 11-FEB 1921 191

Subject.

Submitting copies of certain correspondences called for
in Government Memorandum No. 493 A-1 dated 3rd February 1921.

ENCLOSURES

No.

Spare copies:

R.C. No. 11484/19

Station Madras, Dated the 10th February 1921 191

From (Name) R.G. Grieve Esq., M.A.,
(Designation) Ag. Director of Public Instruction.

To The Secretary to the Government of Madras,
HOME (EDUCATION) Department.

Sir,

With reference to the Government Memorandum No. 439 A-1
dated 3rd February 1921, I have the honour to submit herewith
one copy of each of -

- (i) Endorsement No. 2794 A-1 Education dated 5th December 1919
(ii) Memorandum No. 2794 A-2 dated 23rd April 1920 and
(iii) My letter No. R.C. 11484/19 dated 27th April 1920.

The Government of India letter No. 1280 Education dated 27th
November 1919, ~~the enclosed copies for record are submitted to~~
~~Government with my letter referred to above.~~

I have the honour to be,
Sir,

Your most obedient servant,

Dubrahmantha Chell
for Director of Public Instruction.

P.R.K. 5/2.

P.T.O.

Government of Madras
Home (Education) Department

From the Government of India, Department of Education, Delhi No. 1280
dated 27th November 1919.

Endorsement No. 2794 A-1 dated 5th December 1919.

Referred to the Director of Public Instruction for remarks
in consultation with the Principal, College of Engineering, Madras.

2. A copy of Mr. J.W. Meares' pamphlet on the general Principles
of the development and storage of water for electrical purposes is
enclosed for communication to the Principal, College of Engineering,
Madras.

(By order)

Sd. C. Ramanujachari
5-12-20
Registrar.

Government of Madras
Home (Education) Department

Memorandum No. 2794 A-2, dated 23rd April 1920.

The attention of the Director of Public Instruction is invited
to endorsement No. 2794 A-1 dated the 5th December 1919 forwarding
for his remarks, letter from the Government of India regarding the
introduction of a course of Hydro electric engineering in the College
of Engineering, Madras, and to the reminders subsequently issued, and
he is requested to state when his reply may be expected to reach
Government.

(By order)

C. Ramanujachari
28-4-20
Registrar

Copy of letter R.C.No. 11484/19 dated 27th April 1920 from the
Director of Public Instruction to the Secretary to the Government
of Madras, Home (Education) Department.

With reference to Government endorsement No. 2794 A-1 dated 5th
December 1919, I have the honour to return herewith the enclosed
received with the above memo. and to enclose a copy of letter from
the Principal of the College of Engineering, Madras on this subject.

2. I am inclined to agree with the Principal who is of opinion that
in a very cursory manner only and that the lectures
in a course of only six lectures the subject could be treated, would
most profitably be given after the ordinary general Engineering
course has been taken. In that case persons who are already engaged

in

in Engineering work in different parts of the Madras Presidency
might like to attend such a course of lectures and the date for
these lectures and subsequent examination might then take place
at any period of the year which is suitable to the lecturer.

3. I doubt whether students will pay sufficient attention to a
course of lectures on this subject which given towards the end of
their ordinary Engineering course since their attention will be
devoted mainly to the subjects which are prescribed for examination
for the Bachelor of Engineering degree. The proposal of the
Government of India might be accepted and a short course of lectures
arranged to be delivered preferably during the first term to those
students who are undergoing their final year's course of study.
The examination might be placed immediately at the end of the course
of lectures or at all events not later than the end of the calendar
year.

4. It might even be desirable to include at some subsequent date
the elements of Hydro-Electric Engineering in the University
course of study for a degree in Engineering.

5. I fear that I am not at one with the Government of India in
their desire to ensure a uniform level of training in this subject
for all India and I agree with Mr James that each lecturer should
set his own examination paper. Any examination upon a practical
subject set, ^{to} inexperienced college students should have particular
reference to the applicability of theory to the conditions per-
taining in and around the locality where the students hope to
practice their engineering for Madras, the South of India and this
in general cannot be if a paper is to be set in order to ensure
a uniform level of training for all India as appears to be the
desire of the Government of India.

Copy of letter R.C.No. 891 of 19 dated 22nd December 1919
from the Principal, College of Engineering, Madras to the Director
of Public Instruction, Madras.

In reply to your reference C.No. 11484/19 dated 16th December
1919, I have the honour to offer the following remarks:-

(a) A course of lectures as proposed will unquestionably serve
a useful purpose but I would prefer it should be done on the lines
of a post collegiate course such as I have suggested in previous

communications when dealing generally with the subject of special training. Students undergoing their ordinary college course are not fit to take full advantage of such specialised instruction and the end in view would in my opinion be better served if the opportunity was afforded to men who have had at least some little practical experience and are in a position to fully appreciate what it is they should know in connection with developments of this kind. At Guindy with our Hydraulic and Electrical Engineering Laboratories and Power Station we will be in a position to provide a satisfactory post collegiate course, which should prove of real service to persons who desire to specialize in this branch of Engineering.

(b) If a syllabus such as is set forth in the letter under reference is to be covered in six lectures, it must either be dealt with in a somewhat elementary manner or a good deal assumed as to the knowledge already possessed by the students. In the latter case there is the drawback that, as Hydro-Electric Engineering includes some civil and electrical engineering, and for that matter also mechanical engineering and the training of a student is necessarily confined to one or other branch, he cannot be sufficiently preferred in theory to take up straight away a study of the subject ~~as a whole~~ as a whole. However, the ground is covered to some extent in our ordinary courses and failing the post collegiate arrangement it ~~will be~~ would be well to adopt the scheme proposed by the Government of India.

(c) In regard to the period of the year for holding the lectures the most suitable for college students would be towards the end of the session, say in February or March. This would mean that the examination it is proposed to institute should be held in April, but it could be later on if Government is prepared to meet the travelling expenses of students coming in ~~from~~ where they are posted later on for practical training. The necessity for a common paper can of course only arise with the same peripatetic lecturer for all the colleges, as otherwise each separate lecturer would naturally set his own paper.

(d) A part from M. Forbes, I am not aware of any officer of standing in South India who has had special experience of Hydro-Electric Engineering, but Messrs Dickenson and Gibbs are not far away on the Bombay side. (True copies)

Copy of letter from the Hon'ble Mr. H. Shappe C.S.I. C.I.E.,
Secretary to the Government India No. 1280 Delhi the 27th November 1919.

I am directed to address the local Government on the subject of the institution of a course in Elementary Knowledge of Hydro-electric Engineering in the College of Engineering, Madras.

2. As the local Government are aware, the Government of India having lately caused a Committee to be appointed to examine the hydro electric possibilities of India, the preliminary report of this Committee, compiled by Mr J.W. Meares, Chief Engineer of the Hydro Electric Survey has recently been issued. A perusal of it will show that detailed knowledge of the possibilities of the country in this respect is very limited. The further investigation of the sites brought to notice in this report and of such others as will certainly be discovered as the systematic survey progresses is likely to extend over a considerable period of years indeed as the importance of the development of hydro electric enterprise becomes more widely recognised it is almost impossible to set a limit to the time during which further surveys and investigation will be required. The Government of India are therefore of opinion that it is extremely desirable that special attention should be directed to the instruction of students in the Engineering Colleges in the elements of hydro electric engineering. They suggest that steps should be taken to provide for a course of lectures on the subject at each of the major engineering colleges. A course of six lectures in the final year would probably suffice but it is considered essential that they should be delivered by an expert with practical experience in the subject. They should be designed to supplement the general engineering education of the students and to show how such education can best be applied to hydro electric engineering.

3. The syllabus for the lectures should cover the following subjects:-

1. An extension of the ordinary course of map reading with special reference to the reading of contour maps for the purpose of the determination of catchment areas, storage sites and the location of falls as well as the choice of suitable channel lines pipe lines,

R. Subramanian
for D.P.I.

transmission routes and so forth.

- (2) Stream gauging as distinct from that of regular channels by both weir and bed measurements especially as applied to streams carrying very small volumes.
- (3) Their commercial aspect of hydroelectrical schemes including the compilation and use of load curves in electric supply, load factor, diversity factor, plant capacity spare plant permissible charges for supply and so forth.
- (4) Power generally and especially a proper understanding of the various mechanical and electrical units of power and the losses in each conversion.
- (5) The generation of power from flow and of power from storage in relation to the actual working conditions of the load curves.
- (6) The lay out of Hydro Electric Installation on low medium and high heads of storage and non-storage schemes with and without open channels with single and multiple sources of supply forebays pipe systems and tail races.
- (7) The general arrangement of hydro electric power houses.

It will be seen that generally what is required is the co-ordination of the ordinary instruction in civil and electrical engineering with special reference to Water-power requirements. It may be possible to include some of the subjects noted above in the ordinary courses of lectures but it is thought that this will not be sufficient to attain the object aimed at. This can, it is believed, only be done by a course special lectures such as it is now proposed.

It has been indicated in paragraph 2 above that an expert would be required for the special instruction required. But the Government of India are very doubtful if there would be sufficient work in any College to keep such an officer fully or even nearly fully employed. They are accordingly of opinion that pending final orders on the Indian Industrial Commission's recommendations regarding the industrial services the problem can best be solved by arranging for some officer with experience of hydro electric development to give a course of

lectures without appointing him to the whole time staff of any college. The Government of India desire to leave open the question whether there should be a single peripatetic lecturer or whether each engineering College should find its own officer, though the former course, if feasible, appears to them in many ways preferable. I am to invite the Governor-in-Councils' view in this connection and to enquire whether he is in a position to suggest any suitable officer who would be prepared to undertake the work. It is possible that Mr. Forbes Chief Electrical Engineer, Mysore, might be able to spare time to deliver six lectures at the College of Engineering, Madras, though he might find it difficult to travel to other colleges. In this connection I am to mention that other local Governments concerned are being similarly addressed and that the Government of India will probably make a selection from among the names put forward.

6. The lecturer cannot reasonably be expected to perform the work required without some remuneration. The Government of India would accordingly allow him Rs. 1000 for the first four lectures and Rs 100 for each of the last two in addition to ordinary travelling allowances if admissible, and are prepared to make to each college for this purpose a special recurring grant of Rs 1500 for two years or until the introduction of the reforms scheme whichever period is shorter.

7. The Government of India would be glad to be informed of the period of the year which would be most suitable for these lectures. They also desire to know whether in order to insure a uniform level of training it would not be advisable to institute an examination on the various subjects mentioned in paragraph 2 above, to be taken simultaneously in all the four Government Engineering Colleges. They have not overlooked the objection that each institution has its own dates of examinations and that these dates do not invariably coincide but this is in their opinion a minor difficulty which might be got over by having a special paper set simultaneously outside the ordinary examinations. Should the Local Government so desire, the electrical adviser to Government of India would be glad to furnish the lecturer with further details of the syllabus and to assist in the setting of the examination paper.

10
8. I am to send herewith two copies of a reprint of "The general Principles of the development and storage of water for electrical purposes" by Mr. J.W. Meares, Electrical Adviser to the Government of India for communication to the Principal, College of Engineering, Madras.

The paper deals in some detail with certain aspect of the proposed syllabus. More copies, if required, can be had by direct application to the author.

(True copy)

All communications should be addressed to the Secretary to the Government of India, Public Works Department, by title NOT by name.

1486
2573
No. 153 E.A.
GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
Establishments.

From

Mr. R.P. Hadow,

Deputy Secretary to the Government of India,
Public Works Department,

The Secretary to the Government of Madras,
Home (Education) Department.

Delhi, the 21st March 1921.

Sir,

I am directed to invite your attention to the Government of India, Education Department letter No. 1280, dated the 27th November 1919, on the subject of the institution of a course in elementary hydro-electric engineering in the College of Engineering, Madras, and to the three reminders sent on the dates noted on the margin asking for a reply to the letter referred to above, and to request that with the permission of His Excellency the Governor in Council the Government of India may be favoured with an early reply.

I have the honour to be,

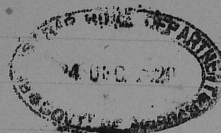
sir,

Your most obedient servant,

R.P. Hadow
21/3/21
Deputy Secretary to the Government of India.

Documents accompanying :-
Nil.

11
Havel 20/12/20



[Cm. 3772A]
dy

Distribution of a course in elementary knowledge of hydro-electric engineering in the College of Engg., Madras.

From the Govt. of India, P.W.D. no. 1280/3-2/15.12.20

The main file on the subject was sent to the P.W.D. with Edn. no. no. 1507 A-1, 2/19.5.20. A previous reminder from the Govt. of India was sent to that Dept. with no. no. 2967 A-1, 2/16.10.20. The present reminder may also be forwarded to P.W.D. who may be requested to state in what stage the matter is, so that an interim reply may be sent to the Govt. of India. They may also be requested to return the main file as early as possible.

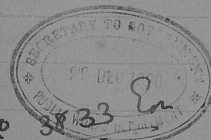
Submitted to Mr. Havel on 20/12/20
+ not received back

4501

22-12-20

En no. 3772A-1

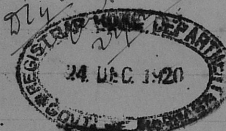
21-12-20.



Cm. 3773 En

24/12/20

dy



P.W.D. no. 4501AD-1

23.12.20

mmr
E Ad
21/12/20

24.12.20

24.12.20

Mr. Havel was dealing with the case and has been written to. He is being reminded.

24.12.20

Havel (Edn) no 28/12/20

Law (204) Sept

Please see the P.W.D. note on page 1 ante. For orders as to the reply that may be sent to India.

MA.
21.21.

India's reminder ^{need} ~~does~~ not be answered. They only want early reply. P.W.D. may be asked to note the stage in which the matter is as soon as they hear from Mr. Howley as to have the file otherwise in the meantime.

CA
4.1.21

Wm
57/121

Cor no. 3772A-2
5-1-21

P.W.D.

P.W.D.

Ad SECTION
-6 JAN 1921
CURRENT NUMBER
13

~~the~~ U.S.

Mr. Howley was reminded by wire on 24th with No. 4366 ^{19.1.21} 23.12.20. No reply has been received from him as yet. He may perhaps be

Mr. Dagh. to verify whether the telegram was despatched.

19.1.21

The copy of the telegram has not been in the book. It is not clear from the entry in the dispatch register whether a telegram has been sent.

A.B.K.

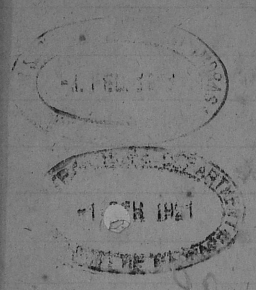
19.1.21.

S. D.W. There was no necessity to mark this to me. It only means delay D.W.

Put up another 20. Semp. quoting Dagh - saying that India have reminded 27/1/21

9meow R.

Apparently only cannot find the file. In the circumstances we must ask Home (Edul) to be good enough to send us a copy of the original reference Home (Edul) / 6th 27.1.21



Pho. no. 43A d21-1
31. 1. 21.
Esp. C. N. 439A
1. 2. 21

Home (Esp.) Dept. A.
The D.P.D. may be requested to furnish a copy of the correspondence. A draft memo is submitted.
Issue then submit to Hq for perusal
H.A. 2.2.21. 21/21

The omission to submit file to Sec for perusal has been explained to Registrar in person.

Despatch no. 439A-1, d 3. 2. 21.
From me D.P.D., no. 11684/19, d 10. 2. 21.

Copies of the original correspondence have been obtained from the D.P.D.'s office.

[Cm. 651A]
13/4

para 2 of India's letter
page 7 cf

para 5 of letter, page 9 cf

Ibid

para 6 of India's letter
page 9 cf

para 7, p 9 cf

14
4
2 The Govt. of India suggest that steps should be taken to provide for a course of lectures on hydro-electric engineering in all Engineering colleges in India, and they consider that a course of six lectures in the final year of the college course delivered by an expert with practical experience on the subject would be sufficient. As regards the expert, the Govt. of India leave ~~the~~ the question to the local Govt. whether there should be a single peripatetic lecturer for the whole of India or whether each Engineering College should find its own officer, but they would prefer the former course if it were feasible. They suggest the name of Mr. Forbes, Chief Electrical Engineer, Mysore, for delivering the lectures in the Madras College.

The Govt. of India propose a remuneration of Rs. 1200, excluding T.A., for the lecturer. As the Reforms Scheme has been introduced it appears that this expenditure should be met from provincial funds.

The Govt. of India also ~~had~~ wish to be informed of the period of the year which would be most suitable for these lectures and also whether it would not be desirable to institute a simultaneous examination on the subject in all Engineering Colleges.

para 2 of P.W.D.'s letter
app 4-5-21

para 3, p 5 cf.

para 4 p 5 cf.

3

The B.O.D. and the Principal, College of Engineering are of opinion that in a course of six lectures the subject could be treated in a very cursory manner only and the lectures would most profitably be given after the ordinary general Engineering course has been taken, as a post-graduate arrangement.

The B.O.D., however, suggests that the proposal of the Govt of India might be accepted and a short course of lectures arranged to be delivered preferably during the first term to those students who are undergoing their final year's course of study. He also suggests that the examination might be placed immediately at the end of the course of the lectures or at all events not later than the end of the calendar year.

The Director seems to be of the opinion that each college should find its lecturer and he therefore ~~cons~~ considers that each lecturer should set his own examination paper.

The file may, it is felt, be sent to the P.W.D. for remarks.

J.A.
4-2-21.

18/11/21

18-2-21
5

If I remember right, what I wrote before was to the following effect.

2. The lectures keep an expert, sufficient preliminary training should be given in the ordinary classes & the students to whom the lecture is delivered should have advanced sufficiently to benefit the special lectures. I draw attention to the scheme of postgraduate lectures.

3. I deprecated an examination at the close of the lectures. An attendance certificate ought to suffice.

4. As the Hydrocyclic works are scattered there is no guarantee that our students will serve in this regard, the money ought to be found by India

11/19/21

PWD

PWD

See 439A-2
19-2-21

AD SECTION
23 FEB 1921
CURRENT NUMBER
616

U.S.

Submitted

ALL
24.2.21

AWR

28/2/21

Dr S
write now
one - without
any
23/2
28/2/21
24.5
25
S

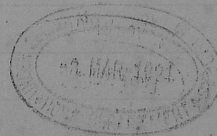
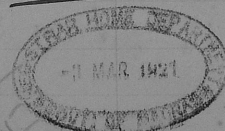
S.
Support the Govt. of India
proposal to give 6 lectures
at the College of Engineering

7
 heads to students in their
 final year in the subjects
 elementary hydro electrical
 engineering and agree
 with Law Sec that no
 examination is required.
 an attendance certificate
 may be necessary.
 As the subject develops
 as the result of
 experience the question
 of an examination may
 be taken up any time
 I do not know of any one who

Capable of meeting Law Sec's
 who has had
 extensive practical
 experience but
 formally do not
 see why D'Mathews
 W. H. H. Wood
 the P. I. & S. S. D.
 not give the lectures
 failing a practical
 expert.

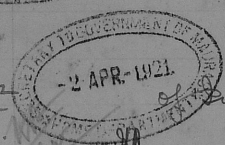
I consider that a lecturer with
 practical experience is essential, and
 India has already suggested a
 suitable individual.

Decy
 2.3.21



ad in box
 20.3.21

P.W. No. 43 Ad 21-2



2.3.21.
 E.C. 937A
 13.3.21

Law Sec's report.

A draft letter to the Govt
 of India is subd. for consideration

20/3/21
 Draft letter to India approved
 at 14

Hamilton Sept.

Institution of a course of elementary
~~hydro~~ hydro electric engineering in Melus & Coles

[Circular] Income Govt. of India, No 153 CA, PWD,
27-21-22

The main file with draft
reply to India was circulated to
M, on 20-3-21.

22
1-4-21

1-4-21 Returned
today. Please despatch
repl urgent may
2/4/21

Home (Education) Dept.

To

The Secy to the Govt. of India,

Department of
Education.

W-513 5 24-21

Sir,

In reply to your letter No.1280 dated the 27th November 1919, I am directed to state that, in the opinion of this Govt., the institution of the proposed course of lectures in Hydro-Electric Engineering in the College of Engineering, Madras, for the benefit of the ~~Engineer~~ students in the final year of their course would serve a useful purpose. They would however prefer to have the lectures delivered on the lines of a post collegiate course for the benefit of persons who have finished their general engineering ~~course~~ and are actively engaged in the carrying out of engineering works and will therefore appreciate ^{better} the instruction given ~~to the students~~. They agree that ^{Electrical} Mr. Forbes Chief Engineer of Mysore is ^a ~~the~~ most suitable ^{selection} officer to deliver the lectures, if instituted. As the Hydro-Electric works are scattered all over India, and as the students who are to derive benefit from the lectures will not necessarily ^{be} employed in this Presidency, this Govt are of the opinion that the payment of remuneration to the lecturer and his travelling expenses should be met from Imperial funds.

2. The proposed course of lectures will be of the nature of an experiment, and, at the outset, this Govt are not in favour of the proposal to institute an

DEPARTMENT OF
EDUCATION
24/11/21

Lectures with practical experience
is necessary and that

examination at the end of the course.

The question may be taken up for consideration after some experience has been gained of the working of the scheme.

In the meanwhile, the Govt consider that it will be sufficient to grant certificates of attendance to the students attending the lectures.

MS
171354

18
18-3-21
20/3/21

When given for copying _____
When copied _____
When examined _____
When signed _____

192

READ AGAIN G.O. No. _____
192

DATED

OVERSEAS No. _____

ENCLOSURES TO C. No. _____

ORDER OF GOVERNMENT A A A A A A A

LETTER OF GOVERNMENT.

STATEMENT WITH DFTD.

PAYERS NOT FILLED UP, BEING MEANT FOR SIGNATURE
IN ORIGINAL.

N.B.—

A = Copy in full.
B = Not to be copied.
P = Copy abstract only.
Q = Copy heading only.