

Mr. P. Bowles

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NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GENERAL PURPOSES COMMITTEE

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New Steam Main

Covering Note by the Secretary

Proposed new steam and compressed air mains to the Rutherford Laboratory, are described in the attached aper. The new mains would be laid in connection with new mains in the AERE. The AERE would pay for the part laid on their property, and the Institute for the part on theirs. The mains would enter Institute property just south of Fermi Avenue, at the (projected) roundabout shown on the plan.

Authorisations of the Institute's share of this scheme at an estimated cost of £20,000 is requested. I would be very grateful if members of the G.P.C. would let me know whether they approve, and if they do I will ask the Chairman whether he will give approval on behalf of the Committee, since an early decision would be very helpful in the arrangements with the AERE.

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11th March, 1960

NI(GP)6017

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GENERAL PURPOSES COMMITTEE

Steam and Compressed Air Supplies to the Rutherford Laboratory

Note by the Chairman of the Rutherford Laboratory Building Committee

1. The steam and compressed air supply to the Rutherford Laboratory is obtained from service mains connected to plant installed at the A.E.R.E. Harwell.
2. A recent assessment of the steam requirements in relation to the development of the Rutherford Laboratory has shown that the present steam supply is inadequate to meet future demands. It is therefore proposed to increase this supply by the addition of a new steam line laid from an existing main within the A.E.R.E. Details are shown in the attached appendix.
3. The capacity of the new steam main is sufficient to provide for all known building work and will also allow a reasonable margin for possible future site development. The cost of this scheme which includes provision for a compressed air supply line in the same trench is estimated at £40,000.
4. The routing of this proposed steam main is across an area that the A.E.R.E. may well develop at some future date, and for this reason it has been agreed that the cost of this scheme be divisible, each organisation being responsible for providing the necessary funds for installing the steam main on its own territory.
5. The cost of the N.I.R.N.S. proportion of this scheme is £20,000. Funds are available in the estimates for 1960/61. A submission is also being made to the Harwell Management Board to secure financial approval for A.E.R.E.'s share which is likewise £20,000.
6. It is recommended that the scheme be adopted and the necessary financial approval is hereby sought to enable work to commence at an early date.

P. BOWLES

Appendix I

RUTHERFORD LABORATORY - STEAM SUPPLY

1. With the completion of the design of the Phase I buildings it has been possible to make a more accurate assessment of the steam requirements. This together with the heating load for Phase II buildings amounts to 17,000 lbs/hour. Allowance is also made for future known developments requiring another 6,000 lbs/hour.
2. The existing steam main connected to the Rutherford Laboratory can supply 9,000 lbs/hour and consists of a short 4" service connection from the existing 6" main in the vicinity of the Proton Linear Accelerator Buildings. It is not practical to increase the size of this existing service connection since the 6" feeder will in turn be overloaded.
3. It is therefore proposed to lay a new steam main from an existing 12" main within the A.E.R.E. It is recommended that this main should be 8" as far as the eastern boundary of the Rutherford Laboratory where a blanked tee be left for future development and then a 6" main running south through the Laboratory with a 4" main to inter-connect with the existing distribution mains. The 6" main will carry 20,000 lbs/hour, which with the facility to add further connection to the 8" main should allow a reasonable margin for future development.
4. In order to return the condense it is proposed to run a 3" gravity condense main to the point of junction of the 6" steam main with a 4" gravity condense main to the junction of the 8" steam main, thence a 5" main to a new condense receiver and pump house just north of Fermi Avenue. From there a new 3" pumped main to the Boiler House hot wells.
5. At the same time and in the same trench with resulting economy it is proposed to install a 3" compressed air main to link up with the distribution mains which have already been installed. This has the advantage of providing increased supplies and at the same time improving reliability by converting the existing spur feeder into a ring main.
6. It is proposed to lay steam mains in steel and condense lines in copper in the ground, both pipes being insulated together with light weight cellular concrete.
7. The cost of these works is estimated at £40,000. Of this sum £35,000 would be expended in 1960/61 and the remaining £5,000 in the following year.
8. The proposals are indicated in the attached sketch.

