

RESEARCH GROUP
THE 8% EXERCISE

1. INTRODUCTION

The Atomic Energy Executive have asked Groups to assess the effects of limiting the expansion of staff to 8% per annum after 1/4/59. The complement for 1/4/59. is already fixed, and so provides a firm base line for the exercise.

In assessing the effects of the 8% limit, it has been necessary to consider three main aspects of the problem.

(a) Programmes. Will there be sufficient staff to carry out the Research Group's commitments to the Authority's reactor programme, and to the programmes agreed by the R.P.C.

(b) Sites. Will there be sufficient staff to man the capital facilities built and planned at each Research Group site.

(c) Services. Will there be sufficient staff to provide the engineering, technical and administrative services without which the scientific programme cannot proceed.

The results of the assessment are therefore presented in the form of two tables showing first the breakdown of staff by project at 1/4/59., and an estimated breakdown at 1/4/62., and second the breakdown by site at 1/4/59., and estimated breakdown at 1/4/62. A commentary follows each table, in which the effect of the 8% limitation on particular programmes and sites is discussed. A further commentary deals with the adequacy of service support.

2. THE NATIONAL INSTITUTE

The exercise is complicated by uncertainties in the staffing needs of the National Institute and in the extent to which the Research Group is involved. These uncertainties have been resolved in the following way. As the Institute staff at 1/4/59 represented part of the Research Group management load, they have been included in the 1/4/59 figure that was used as a base line for the annual 8% increase. It is then assumed that in 1962 350 staff are transferred to the Institute and removed from the Research Group management load, and that it will then be permissible to use the ensuing vacancies for redeployment on other R.G. projects.

The figure of 350 is that used in the A.E.X. paper on professional staff deployment A.E.X.(58) 122 and in Research Policy Committee papers. It is made up of 140 professional staff, 120 ancillaries, and 90 industrials. The normal pro rata support required for 140 professionals is 405 ancillary and industrial staff, and it is thus implicit in these assumptions that the R.G. will be supporting the Institute to the extent of about 195 staff providing services such as canteens and transport.

The secretary of the Institute has forecast a total staff requirement of 425 for 1962/63, and if this is correct it would leave the Institute to recruit direct about 75 staff in addition to those transferred from the R.G. complement.

3. DISTRIBUTION OF STAFF BY PROGRAMME HEADING

In estimating the deployment of staff in 1962 under the main headings of the Research Group programme, the forecasts adopted by the Research Policy Committee have been used as a starting point. As a result the breakdown is for professional staff only. The R.P.C. forecasts for professional staff were quite close to an 8% p.a. increase, and only a small reduction is necessary to bring the totals within the 8% limit. These R.P.C. figures involved a reduction of about 10% in the figures for professional staff originally submitted in RPC(58)20 by the R.G. In the case of ancillary and industrial staff, however, an error was made in the figures presented to the R.P.C., and this has been corrected to maintain the proportion of supporting staff at its necessary present level.

In the table below the final R.P.C. figures are given, together with the 1959 and new 1962 estimates. No attempt at a detailed breakdown has been made, as research programmes change too rapidly to make such a breakdown of any real value.

TABLE I Distribution of professional staff by programme heading

	1/4/59	1/4/62 8% p.a.	R.P.C. estimate
Separation and production of materials	80	58	60
Reactor programme and supporting technology	610	786	791
C.T.R. programme	132	195	200
Isotopes (Harwell and Wantage	124	158	174
(Amersham	72	98	106
Defence work	20	10	10
Basic research	339	427	470
National Institute projects			
(a) Design, development and operation of machines	105	125*)	140
(b) Research	5	15*)	
Services (including a few misc- ellaneous items).	525	668	670
TOTAL Professional	2012	2540	2621
Ancillary	2514	3167	2860
Industrial	3196	4026	3800
TOTAL	7722	9733	9281

* Note that in this table effort on National Institute projects is still shown on Authority strength at 1/4/62. It is however expected that these staff will be seconded or transferred to the Institute sometime in 1962 if not before then (see para.2.).

A commentary on the 1962 figures for each programme heading is given in the paragraphs below.

(a) Separation and production of materials

The staff under this heading drops from 80 to 58, reflecting the decrease in Authority effort on mineral dressing, heavy water and graphite production.

(b) The Reactor Programme

Within the 1962 allocation of 786 to the reactor programme and supporting technology, it has just been possible to provide the necessary

expansion of the Reactor and associated Divisions to staff the Winfrith site. To achieve this, it has been possible to allow only a small increase (16) in the supporting effort in the Harwell Chemistry, Chemical Engineering, Metallurgy, Physics Divisions over their 1/4/59 levels.

It should be possible to meet existing commitments to the Authority's reactor programme with the staff available, subject to the reservations on the HTGC project set out in the Winfrith paragraphs. But no spare effort is available for new commitments. In particular, if the Authority increases its effort on boiling water reactors, even putting the design work out to contract, it may be difficult to find adequate chemical and metallurgical support.

(c) C.T.R.

The 1962 staff figure (195) provides the effort estimated to be required for the programme approved by the C.T.R. Advisory Committee. This programme consists mainly of research in plasma physics and into the problems involved in the provision of a large power supply.

(d) Isotopes

Staff is provided for the planned completion of the Wantage Radiation Laboratory, and for expected expansion in isotope trading (see para. 4.3.). The figures for W.R.L. are considerably below those presented to the Authority in AEA(57)70.

(e) Defence

Research Group commitments should all be taken over by A.W.R.E. by 1962, but a figure of 10 staff is retained for contingencies such as production of special materials.

(f) Basic Research

The proportion of R.G. staff on basic research is maintained at 17%; i.e. an 8% expansion is allowed. This includes some effort on the design of facilities for basic research.

Effort on National Institute projects is not included in this figure, but of the 140 professionals allocated in 1962, only an estimated 15 would be engaged on basic research. This represents effort under the control of the Director of the Institute.

(g) National Institute Projects

See para. 2 and (f)(page 4.)

(h) Services

The A.E.X. minutes referred to "professional and other non-industrial staff". The Member for Finance & Administration subsequently ruled that the 8% growth should be considered under two headings:-

(i) professional staff

(ii) supporting staff (non-industrial and industrial)

This presumed there was already a reasonable balance between (i) and (ii), so that each would grow in proportion by 8%. The present level of ancillary and industrial support in the Research Group is certainly on the low side but it has been decided to keep it as at present.

It is also necessary to consider whether the professional staff allocation to services in 1962 is adequate. In fact what has been done is to provide roughly the same proportionate professional service effort as in 1958. This too is on the low side.

4. DISTRIBUTION OF STAFF BY SITE

The estimated distribution of staff by site at 1/4/59 and 1/7/62 is set out in Appendix I. The figures are discussed site by site in the paragraphs below, and for ease of reference the figures for each site are repeated at the beginning of each paragraph.

4.1. Harwell

	Prof.	Anc.	Ind.	Total
1/4/59	1589	1819	2609	6017
1/4/62	1629	1866	2705	6200

In the case of Harwell it may be helpful to show how the professional staff would be distributed by project in 1962.

Reactor research and technology	364
Isotope	24
Materials	58 *
C.T.R.	195 *
Defence	10 *
Basic Research	427 *
National Institute	140 *
Services	411
	1629

In the case of the items starred, all the Research Group effort is on the Harwell site. The 1959 ratio of service staff and of ancillary and industrial support is maintained in 1962.

The total numbers, including both C.T.R. and National Institute staff, thus remain roughly constant between 1959 and 1962, although within the total there is a considerable redeployment of effort, including in particular a reduction in reactor and isotope work and an increase in C.T.R. work.

It is now necessary to consider whether the staff complement for the site will be sufficient to use and service existing and planned facilities i.e. buildings and plant. The two cases of the C.T.R. work on and off the Harwell site must be considered separately.

(a) C.T.R. at Harwell

The forecast financial estimates include a plant and building programme of about £2½ million for the C.T.R. programme and about £1½ million in 1959/61 on other new schemes. There is further provision for unspecified items to follow.

These new capital facilities can be served by staff released by moving facilities at present used by Reactor Division e.g. exponential experiments and engineering laboratory. The new buildings will go only part way to replace present temporary accommodation.

(b) C.T.R. not at Harwell

If the C.T.R. project moves off the site, the estimated site population at 1/4/62. will be about 800 less than at 1/4/59. There will be a corresponding reduction in capital plant on site at 1/4/62, and a correct balance between plant and staff should be maintained. But the number of buildings remains constant and it might appear at first sight that some would be left vacant. However there are at present about 500 staff in temporary accommodation on site, and it is assumed (para.2) that 350 staff are to be transferred to the Institute, in most cases with the associated buildings. Extra accommodation will therefore be required for the 350 replacement staff taken on to R.G. strength. This requirement and the removal of temporary huts thus absorb the space made available by the C.T.R. move.

4.2. Winfrith

	P	A	I	T
1.4.59	114	244	242	600
1.4.62	535	771	921	2227

The staff at Winfrith in 1962 provides for the following components only:-

Major part of Reactor Division
H.T.G.C.R. Division
Control & Instrumentation Division
Supporting services.

The effort is estimated to be adequate to staff the planned facilities, with the following reservations:-

- (a) Apart from a small analytical section, the site will rely heavily on the chemical, chemical engineering and metallurgical Divisions at Harwell for relevant support.
- (b) Only half the 100 staff required for H.T.G.C.R. Division is provided. If the other half is not provided by O.E.E.C., then either an extra 50 is required, or other work must be slowed down.
- (c) No provision is made for design effort on the H.T.G.C. reactor experiment.
- (d) No staff is provided to man U.L.E. This establishment would therefore have to be managed by a contractor.

4.3. Radiochemical Centre, Amersham

	Prof.	Anc.	Ind.	Total
1/4/59	76	114	77	267
1/4/62	98	147	99	344

The 1962 figures are based on a 10% p.a. increase, (the professional figure is slightly below that allocated by the R.P.C.). This staff is the minimum necessary to cope with the increasing demand, and to exploit capital schemes in hand or in immediate prospect.

4.4. Wantage Radiation Laboratory

	Prof.	Anc.	Ind.	Total
1/4/59	101	92	67	260
1/4/62	134	121	94	349

The 1962 figures include the transfer to Wantage of all Isotope Division staff except those working directly with major Harwell facilities such as reactors. The figures are consistent with the buildings and plant being provided.

4.5. Bracknell

	Prof.	Anc.	Ind.	Total
1/4/59	39	68	141	248
1/4/62	39	68	141	248

No change is assumed up to 1962 as the agreed maximum site staff is 250.

4.6. Oxford Office

	Prof.	Anc.	Ind.	Total
1/4/59	-	137	3	140
1/4/62	-	145	5	150

The maximum capacity of the office is 150, and it is assumed that this is reached by 1962.

4.7. Woolwich and Chatham

	Prof.	Anc.	Ind.	Total
1/4/59	58	32	16	106
1/4/62	63	35	18	116

The maximum capacity of the present laboratories is 116 and it is assumed this will be filled, but that no extra accommodation is provided. The R.G. may not be able to retain these laboratories up to 1962 in which case alternative accommodation would have to be provided elsewhere, together with additional staff for the maintenance and services now provided by the Arsenal.

4.8. Miscellaneous (Portland, Milford Haven, London Office)

	Prof.	Anc.	Ind.	Total
1/4/59	6	-	3	9
1/4/62	6	-	3	9

4.9. Abingdon hostels etc.

	Prof.	Anc.	Ind.	Total
1/4/59	-	7	38	45
1/4/62	-	10	40	50

The 1962 figures show a slight increase for completing the staffing of the new hostel.

4.10. Overseas Staff

	Prof.	Anc.	Ind.	Total
1/4/59	29	1	-	30
1/4/62	36	4	-	40

A small increase in staff serving overseas is assumed in view of increased collaboration with other countries.

Conclusions

It is concluded that within the 8% per annum increase in staff on the 1.4.59. complement it will be possible for the Research Group

- (a) To meet existing commitments to the Authority's reactor programme.
- (b) To staff a CTR programme on the scale approved by the CTR Advisory Committee.
- (c) To provide for the Isotope trading programme and the staffing of the Wantage Radiation Laboratory.
- (d) To staff the Winfrith site.
- (e) To provide a reasonable but not excessive increase in basic research.
- (f) To provide supporting services at their present level.

There is no provision for other new commitments until 1962, when if the proposal in paragraph 2. is accepted transfer of 350 staff to the Institute provides 350 vacancies on the Research Group complement. These 350 have not been allocated to other projects.

A.E.R.E. Harwell
7th January, 1959.

APPENDIX I

Distribution of Staff by Site

	1/4/59				1/4/62			
	Prof.	Anc.	Ind.	Total	Prof.	Anc.	Ind.	Total
Harwell	1589	1819	2609	6017	1629	1866	2705	6200
Winfrith	114	244	242	600	535	771	921	2227
Wantage	101	92	67	260	134	121	94	349
Amersham	76	114	77	267	98	147	99	344
Oxford	-	137	3	140	-	145	5	150
Woolwich & Chatham	58	32	16	106	63	35	18	116
Minor sites	6	-	3	9	6	-	3	9
Abingdon	-	7	38	45	-	10	40	50
Bracknell	39	68	141	248	39	68	141	248
Overseas	29	1	-	30	36	4	-	40
TOTALS	2012	2514	3196	7722	2540	3167	4026	9733

7th January, 1959.

APT.