

9th October, 1959

NI (GP)(59) 30

NATIONAL INSTITUTE FOR RESEARCH IN NUCLEAR SCIENCE

GENERAL PURPOSES COMMITTEE

NIMROD QUARTERLY STATEMENT No. 8
(Report by the Nimrod Project Committee)

(Revised)

NIMROD PROJECT

QUARTERLY STATEMENT NO.8

1. This report shows in Appendix I the latest estimate to 30th June 1959 compared with the present G.P.C. and Treasury Approval.
2. The plant estimate has been increased by £0.296 M from £5.482 M to £5.778 M as explained in the Notes to Appendix I.
3. The building estimate has been increased by £0.08 M from £2.44 M to £2.52 M as explained in the Notes to Appendix I.
4. The total estimate is therefore increased by £0.376 M from £7.922 M to £8.298 M.
5. The approval of the Committee to the revised estimate is sought.
6. Appendix II shows actual and predicted expenditure by years compared with the Treasury Grant.
7. Appendix III shows the expenditure and commitments up to 21st June 1959 which is the end of the last U.K.A.E.A. Accounting Quarter for which Returns are available.
8. Appendix IV shows anticipated contract action to the 31st December 1959.
9. Appendix V shows the financial position in graphical form.

D. W. FRY

Chairman, PROJECT COMMITTEE

24th September, 1959.

Appendix I

HIROD PROJECT

Revised Cost Estimates - 30th June, 1959

Item	£ Million		
	Original Estimate approved by Treasury	Present Treasury approval	Revised Cost Estimates at 30.6.59
1. <u>Magnet</u>	2.60	2.652	2.623
2. <u>Injector</u>	0.30	0.450	0.450
3. <u>R.F. Equipment</u>	0.15	0.150	0.150
4. <u>Vacuum Equipment</u>	0.40	0.780	0.905
5. <u>Power Supply</u>	1.30	1.300	1.300
6. <u>Controls</u>	0.15	0.150	0.150
<u>Cooling System</u>	0.10	-	-
	5.00	5.432	5.778
7. <u>Buildings</u>			
Main & Ancillary			
Building Works	1.40	1.591	1.591
Engineering & Services	0.40	0.587	0.667
Fees	0.10	0.232	0.232
Furniture & Fittings	-	0.030	0.030
	1.90	2.440*	2.520*
<u>TOTAL</u>	6.90	7.922	8.298

For explanatory notes - See next page.

*This figure for the total Building Estimate does not include the estimated effect of the cost variation clauses (C.V.C.2); the graph in Appendix V includes this for the information of U.K.A.E.A. London Office.

Appendix I (Continued)

NIMROD PROJECT

NOTES ON REVISED COST ESTIMATE AT 30. 6.59

1. PLANT (Machine only)

A careful review of the Plant Estimate has recently been completed in the light of available design information, and this is reported in detail in paper PSFC/P.52.

The increases in the estimate are as follows:-

	<u>Present Approved Estimate</u>	<u>Revised Estimate</u>	<u>Increase</u>
	<u>£ M</u>	<u>£ M</u>	<u>£ M</u>
Magnet	2.652	2.823	0.171
Vacuum System	0.780	0.905	<u>0.125</u>
		TOTAL INCREASE	<u>0.296</u>

The increase in the estimate for the Magnet which is related principally to the Sectors, Octant End Structures and Coil Clamping, is discussed in detail in Appendix I to paper PSFC/P.52.

The increase in the estimate for the Vacuum System which is related to the Main Vacuum Chamber and additional Pumping Equipment, is discussed in detail in Appendix II to paper PSFC/P.52.

2. BUILDINGS (Civil and M. & E. Work)

The increase in the Building Estimate of £0.08 M is under the heading of Engineering and Services which have risen from £0.587 M to £0.667 M.

A detailed discussion of this increase appears in Appendix IV to paper PSFC/P.52.

APPENDIX II.

MILROD PROJECT

Actual and Predicted Rate of Expenditure as at 30.6.59 and Treasury Grant

Item	1957-58 Actual	1958-59 Actual	1959-60 Predicted	1960-61 Predicted	1961-62 Predicted	Total Predicted
Plant	£ 68,575	£ 361,047	£ 1,970,000	£ 2,770,000	£ 588,378	£ 5,778,000
Buildings	265,187	358,578	750,000	550,000	96,235	2,520,000
Total	£333,762	1,239,625	2,720,000	3,320,000	684,613	8,298,000

Item	Treasury Grant for 1959-60	Provision in 1959-60 Estimates for 1960-61
Plant	£ 2,235,000	£ 2,220,000
Buildings	1,000,000	250,000
Total	£3,235,000	2,470,000

NIMROD PROJECTRecorded Commitments and Expenditure up to 21st June 1959

Item	£ Commitment	£ Expenditure	Remarks
<u>Plant</u>			
<u>Magnet</u>			
Sectors	1,430,193	275,700	
Coils	434,775	50,006	
Pole Pieces	-	-	
Pole Face Windings	-	-	
Installation	2,482	370	
	1,867,450	326,076	
<u>Injector</u>			
D.C. Gun Supplies	35,396	22,835	
D.C. Gun	17,356	8,088	
Low Energy Drift Space	5,338		
Linear Accelerator	109,755		
R.F. Drive Power	22,483	1,811	
High Energy Drift Space	7,707		
Inflector	1,989	1,989	
Local Control System	509	469	
Miscellaneous Equipment and installation	10,001	2,105	
	210,534	37,297	
<u>R.F. System</u>			
Accelerator Unit	70,751	18,444	
Bias Supply	3,525		
Drive Chain	2,397	2,235	
Primary Frequency Generator	-		
Beam Control Unit	1,816	1,409	
Local Controls	-		
Installation	-		
	78,489	22,088	
<u>Vacuum System</u>			
Curved Sections	325,000	5,890	
Straight Sections	-		
Pumping Units	176,084	61,938	
Local Control System	-		
Connections	-		
Auxiliaries	1,649		
Installation	50		
	502,783	67,828	
<u>Power Supplies</u>			
Rotating Machinery	483,585	10,000	
Converter Equipment	568,760	104,400	
Miscellaneous	-		
Installation	-		
	1,052,345	114,400	

APPENDIX III (2)

Item	£ Commitment	£ Expenditure	Remarks
<u>Plant</u>			
<u>Control System</u>			
Control Equipment	3,871	-	
Cabling	784	784	
Remote Control Panels	661	71	
Components for Advance Ordering	2,445	2,266	
C.R. Desks and Panels	5	5	
	7,766	3,126	
Plant - Grand Total	3,719,367	570,815	
<u>Buildings</u>			
Architects Services	1,289,002	1,055,694	
M. & E. Services	442,466	216,275	
Fees	232,689	85,577	
Furniture	1,947	1,947	
Buildings - Grand Total	1,966,104	1,359,493	

Commitments entered into since previous Quarterly Statement
valued at £500 and over

Item	£ Value	Firm	Remarks
<u>Plant</u>			
<u>Magnet</u>			
Installing Water Level System	600	Mathew Hall & Co.	
Transporting Sectors	2,000	" " "	
Installation Labour	2,344	" " "	
<u>Injector</u>			
Spinning Tools and Material	2,000	Lee and Wilkes	
Refrigerator Pumps and Heat Exchangers	14,037	J. & E. Hall, Dartford	
Power Supply Units - Drift Tube Magnets	9,625	Westinghouse Brake and Signal	
B.T.H. Modulators	1,700	B.T.H.	Amendment of Contract
Siemens Valve Co-Axial Circuit	3,000	A.E.R.E.	
<u>R.F. System</u>			
R.F. Cavity	765	Marston Excelsior Ltd.	Amendment of Contract
<u>Power Supply</u>			
Rotary Plant	1,335	English Electric Co.	Amendment of Contract
<u>Control System</u>			
Intercommunication System	1,367	Communications Systems Ltd.	
<u>Buildings</u>			
Vacuum Pump Heat Exchanger	1,280	Serck Radiators Ltd.	

MIRROD PROJECT

Appendix IV

Known and Anticipated Contract Action during 1.7.59 to 31.12.59

Item	Estimated Value £	Firm	Remarks
Adjustable Mounting Blocks for Magnet Sectors	5,175	J.G. Meukes, Ltd.	Contract placed on 11th August, 1959
Flexible Bellows Units for Vacuum Chamber	18,000	Teddington Aircraft Controls, Ltd.	Tender due shortly
Pressure Pads for Coil Clamping	10,545	Silvertown Rubber Co.	Contract to be placed by end of September, 1959
Gate Valves for Vacuum Chamber	25,000	Competitive tender	Tenders being studied by Group
Beam Control Unit	7,500	A.P.V.	Contract to be placed by end of October, 1959
Octant End Bracket Assembly	48,000	Competitive tender	Tenders due by end of October, 1959
Pole Piece Supports	5,000	Competitive tender	Tenders due by end of December, 1959
Bridge for Magnet Coil Clamping System	15,000	Competitive tender	Tenders due by end of December, 1959
Coil Clamping Bushes & Bolts	15,000	Competitive tender	Tenders due by end of December, 1959
Clamping Plates for Lip Conductors	13,000	Competitive tender	Tenders due by end of December, 1959
Clamping brackets for Lip Conductors	25,000	Competitive tender	Tenders due in by 15th October, 1959

Appendix IV (continued)

Item	Estimated Value	Firm	Remarks
End Coil Clamp Support Brackets	5,000	Competitive tender	Tenders due in by 15th October, 1959
Lip Conductor Packing	13,000	Competitive tender	Contract to be placed by 31.12.59
Water Flow Relays	8,000	Rotameter Manufacturing Co., Ltd.	Contract to be placed by 31.12.59
Main Pole Pieces	227,000	English Electric Co.	Contract placed on 12.8.59
Sector Side Bracket Assembly	14,000	Competitive tender	Contract to be placed by 1.12.59
Drift Tube Assemblies	56,000	B.O. Morris, Ltd.	Contract placed on 31.7.59
Build-up Plates for Magnet Sectors	32,000	Joseph Sankey & Co., Ltd.	Contract placed on 9.7.59
Ties & Brackets for Vacuum Header Vessel	8,000	Competitive tender	Contract to be placed by 31.12.59
Alarm Annunciator Equipment	10,000	Competitive tender	Contract to be placed by 31.12.59
Electrical Installation	41,000	F.H. Wheeler, Ltd.	Contract placed on 22.7.59

U.K.A.E.A. (R.G.)

TOTAL EXPENDITURE
QUARTER ENDING: 21st JUNE 1959

7 GEV. PROTON
SYNCHROTRON PROJECT

