INDEX

January—December, 1967

Achema		A.W.R.E. see Atomic Weapons Research	
A.E.A. exhibit at	p. 93	3 Establishment, Aldermaston	
	p. 212	Ayub Khan, President	
Acoustic emission	p. 77	visit to A.G.R.	p. 2
Advanced Gas-Cooled Reactor (A			P
	pp. 95/97	BEPO	
	p.187	construction pp. 51	/56 passim
	p. 304	Berkeley nuclear power station	r o passim
cost of programme	p. 215	load factor	p. 10
course on	p. 211	Birthday Honours	p. 185
development potential	p. 309	Bishop, J. P., O.B.E.	p. 185
export promotion	p. 46	Black, A., B.E.M.	p. 185
for Heysham	p. 41	"Black Prince", m.v.,	p
internal inspection of	p. 1	loading cobalt-60	p. 27
visit of President Ayub Khan	p. 2	Blood volume	F
A.E.R.E. see Atomic Energy Resea	rch	monograph on	p. 185
Establishment, Harwell		B.N.X.	p. 278
A.G.R. see Advanced Gas-Cooled	Reactor	Bomford, K. D.	P
Air cushion device	p. 181	new appointment	p. 92
Air pollution		Boorer, Miss E., B.E.M.	p. 25
research at Harwell	p. 237	Bradwell nuclear power station	1
Aldermaston see Atomic Weapons		I.A.E.A. inspection of	p. 69
Research Establishment		load factor	p. 10
Amaldi Report	p. 229	Breathing apparatus	p. 183
Analogue computer	p. 182	British Nuclear Energy Society	
Analysing diffractometer	p. 181	conference	p. 129
Anglo-Belgian co-operation		British Ship Research Association	
VULCAIN	p. 26	desalination ship	p. 133
Anglo-Swedish uranium contract	p. 63	British Standards	
Ankle joint, artificial	p. 91	radiation shielding	p. 49
Annual Report of A.E.A.	pp. 274/278	reactor containment	p. 323
APACE project	p. 67	Brown, Sir Stanley	
training courses	p. 129	on economic nuclear power	p. 279
	p. 247	Brussels	•
	p. 323	A.E.A. representative	p. 66
ARGOSY		labelled compounds exhibition	p. 38
for A.G.R. calculations	p. 81	Burge, A. E., M.B.E.	p. 185
Ariel III		Butler, F., O.B.E.	p. 185
A.E.A. work for	p. 234	Butyl rubber gloves	p. 184
Atomfair	p. 325		
Atomic Energy Research Establish	ment,		
Harwell		Calder Hall nuclear power station	
air pollution research	p. 237	design work	p. 56
ceramics research	pp. 42/44	first decade	p. 299
Cockcroft anniversary lecture	pp. 51/58	load factor	p. 10
hot laboratory	p. 52 pp. 59/62	Calder Operation School	
materials research	pp. 59/62	course at	p. 211
non-destructive testing	pp. 42/44	Canada	
Deat Contraction Education	pp. 71/78	talks in	p. 186
Post-Graduate Education Centr	-	Capenhurst	p. 96
courses	p. 40		p. 228
	p. 50	work for Europe	p. 175
	p. 289	Carbon-14 labelled compounds	p. 38
	p. 321	Carron, Lord	1000202
Atomic Weapons Research Establis	shment,	life peerage	p. 185
Aldermaston		part-time Member	p. 93
APACE project	p. 67	Central Electricity Generating Board	0/10
future of	p. 229	nuclear ground rules	pp. $9/10$
holography at	p. 249	Ceramics	12/11
Audiometer	pp. 31/36	research and development	pp. 42/44
Addionicter	p. 91 p. 130	CEDN	p. 69
Authority Health and Safety Branc	p. 130	CERN	. 176
Reactor safety course	p. 256	contracts new accelerator	p. 175 p. 216
and the state of t	P. 400	new accelerator	D. 210

Chamberlain, A. G. W., B.E.M. p. 185	DRAGON reactor continued
Chapelcross	p. 98
no. 2 reactor Chemical Separation Plant, Windscale p. 274	p. 186
building of p. 53	annual report p. 280 coolant problems p. 135
Chicago	future of p. 47
FASEB exhibition p. 130 Chlormerodrin	p. 178
from R.C.C. p. 90	p. 229 p. 250
Citrine Lecture	on full power p. 44
by Sir Wm. Penney Clarke, Dr. F. J. P. pp. 136/144	Drake, A. E., C.B.E. p. 185 Dungeness p. 9
head of Ceramics Research Centre p. 44	Dungeness A p. 9
Cobalt-60	coolant gas pressures p. 300
for Germany p. 3 in grain irradiation plant pp. 27/30	Dungeness B p. 214 costs p. 188
p. 38	p. 188 p. 215
Cockeroft, Sir John	RIPPLE installed at p. 234
appreciation by Dr. Spence p. 293 appreciation by Lord Penney p. 274	turbo-alternators p. 309
Harwell's 21st anniversary pp. 51/58	
obituary p. 253 retirement from A.E.A. p. 209	Eddy current inspection p. 182
retirement from A.E.A. p. 209	Edwards, Sir Ronald
	at Winfrith prizegiving p. 322 Electrical power
Computers APACE project p. 67	future demands p. 69
APACE project p. 67 Culham information service p. 92	Electronics colloquium
training courses p. 129	in France p. 252 Electron synchrotron
Corrosion of surgical implants p. 91 Cost benefit analysis p. 95	first at Harwell p. 58
Cost benefit analysis p. 95 Culham Laboratory p. 213	Engineering Materials and Design
p. 108	exhibition p. 271 Engineer's Day exhibition p. 24
information service p. 189	Exhibitions
information service p. 91 statement on run-down p. 239	Achema p. 93
Cyanocobalamin p. 90	Atomfair p. 212 p. 325
Cyclotron 110" at Harwell p. 57	Brussels—Labelled compounds p. 38
110° at Harwell p. 57	Chicago—FASEB p. 130
Densitometer	Engineering Materials and Design p. 271 Engineer's Day p. 24
developed by Harwell p. 91	High Pressure Engineering p. 290
Desalination p. 26	International Hospital Equipment p. 206
p. 48	International Safety Exhibition pp. 183/184 Interplas p. 208
by off peak nuclear power p. 175 p. 230	Medical Engineering and Automation
the mechanism of flashing flow pp. 240/247	(MEDEA) p. 91
progress p. 213 ship design p. 133	Oslo—Federation of European Biochemical Societies p. 236
Troon Research Centre p. 298	Physics exhibition pp. 180/183
"Water for Peace" p. 190	Quality and Reliability p. 23 Tokyo—International Congress of
Desalination technology postgraduate course in p. 135	Biochemistry p 247
DIDO p. 57	"Water for Peace" pp. 190/194
Diffusion in ionic solids p. 181	Wellington International Trade Fair p. 129
Digital converter p. 183 D.M.T.R. see Dounreay Materials	p. 270
Testing Reactor	
Dounreay Experimental Research	Farmer, F. R., O.B.E. p. 25
Establishment p. 46 P.F.R. contracts p. 66	Fast analogue computer p. 182 Fast reactors p. 8
Dounreay Fast Reactor	Fast reactors p. 8 pp. 56/57
early design work p. 57	p. 66
sodium leak Dounreay Materials Testing Reactor	p. 95 p. 97
(D.M.T.R.)	p. 97 p. 140
fast neutron flux facility p. 92	p. 296
shut down p. 296	
220220000000000000000000000000000000000	Fibre optics p. 91
DRAGON reactor p. 9 p. 95	Films
p. 93	for Montreal p. 238

Finland		High temperature reactors	p. 95
A.E.A. representative	p. 42	rigit temperature reactors	p. 139
Fire extinguishing powder Firth of Forth	p. 183	Hill, D. H.	
radioactive tracers in	pp. 200/202	new appointment Hill, Dr. J. M.	p. 66
Fission products	pp. 200/202	new Chairman	p. 273
safe storage	p. 7	Hinkley Point "B" nuclear power stat	ion p. 26
Food irradiation recent developments	nn 224/227		p. 68
Forensic science	pp. 224/227	consent for construction costs	p. 41
trace element content of hair	pp. 12/22	Costs	p. 177 p. 188
	p. 47	gas pressures	p. 309
Fuel	- 255	HIPPO	p. 57
A.E.A./Japanese agreement costs	p. 255 pp. 7/8	Holography at $A.W.R.E$.	p. 77 pp. 31/36
resources and supplies	pp. 142/143	Honours and Awards	pp. 31/30
Fuel elements		Birthday Honours	p. 185
early designs	p. 56	New Year Honours	p. 25
modification	p. 300 p. 175	Hopkin, G. L., C.B.E. Hospital Equipment exhibition	p. 25
monyteurion	p. 178	Hunterston "A" nuclear power statio	p. 206
Fusion see also Culham Laborator		generation costs	p. 212
power from	p. 5	Hunterston "B" nuclear power station	
Future energy resources	p. 3	amplanment	p. 231
		employment Hydrostatic extrusion	p. 296 p. 130
		11) di ostatie extrasion	p. 150
Gamma alarm units	p. 184		
Gamma irradiation plants			
cobalt-60 for Germany Gamma radiation shielding	p. 3		
British Standard	p. 49	I.A.E.A. see International Atomic En	ergy
Gamma radiography	p	Agency	
British Standard	p. 49	Imperial College, London courses	p. 144
Gas-cooled fast reactors	p. 216	com ses	p. 179
construction	p. 52	Health Physics Summer School	p. 40
20th anniversary	p. 251	and Lord Penney	p. 25
Glove box fire extinguisher	p. 183	Impinging jets International Atomic Energy Agency	p. 183
Goitre radioactive iodine for	n 20	and irradiation plant	p. 27
Golder, J. A., M.B.E.	p. 39 p. 185	International Safety exhibition	p. 183
Grain irradiation plant	pp. 27/30	Interplas exhibition	
	p. 38	A.E.A. exhibits Inventions and designs	p. 208
Gunn, W., B.E.M.	p. 185	licensed to industry	p. 184
		Iodinated human serum albumin	p. 90
		lodine-131	
Hair		from R.C.C. Ion implantation	p. 90
trace element content	pp. 12/22	1011 III piantation	p. 60 p. 77
Harwell see Atomic Energy Resear Establishment	ch	Ionising radiations	p
Health and safety	p. 141		o. 282/288
exhibition	pp. 183/184	Isotope Division, Harwell first radioisotopes	n 52
siting nuclear power stations	pp. 152/170	Isotope School, Wantage	p. 53
Health Physics	p. 309	courses	p. 11
Imperial College Summer School	p. 40	Isotopic power generators	
Heavy ion accelerator	p. 59	conference proceedings	p. 70
HERO			
experiments in	p. 81		
Heysham, Lancs.	pp. 86/87		
A.G.R. power station for	p. 41	JUNO	-
	p. 69	experiments in	p. 81
	p. 137		p. 01
High expansion foam	p. 176		
High expansion foam High pressure engineering exhibition	p. 183 p. 290		
High sensitivity spectrograph	p. 182		
High speed facsimile display	p. 182	Khumjung hospital	
High temperature furnace	p. 180	isotopes for	p. 39

Labelled compounds exhibition in Brussels Labelled folic acid Labelled thymidine Labelled uridine Laboratory animal diet Laboratory programmer Lasers and plasma diagnostics Linear accelerators developed at Harwell	p. 38 p. 90 p. 90 p. 90 p. 288 p. 181 pp. 123/129 p. 58	Nuclear power stations continued Nuclear propulsion for container ships "Nuclear Science Abstracts" A.E.A. to prepare Nucleate boiling, detection of	p. 229 p. 305 p. 309 p. 212 p. 216 p. 231 p. 64 p. 182
Maddock, I. new appointment Manchester Business School R. & D. studies Marine reactors Materials research Medical Engineering and Automa exhibition (MEDEA) METHUSELAH for S.G.H.W. calculations Myo-electric hand	p. 92 p. 194 p. 176 pp. 59/62 pp. 91 pp. 81 pp. 87/89 p. 91	Obituaries Cockeroft, Sir John Van de Graaf, Dr. R. J. O.E.C.D. see DRAGON Oldbury nuclear power station generating costs start-up "On the Safe Side" Organisation for European Co-ope and Development see DRAGON Oskarshamn nuclear power station Oslo R.C.C. exhibit at	
Nestor Neutron detection course on Neutron detection system Neutron radiography Neutron sources Neutron thermalisation "New Technology" magazine New Year Honours New Zealand A.E.A. exhibit Non-destructive testing centre Non-restricting gas flow meter Nuclear capacity total Nuclear material security of Nuclear merchant ship Nuclear power costs	p. 80 p. 211 p. 205 p. 181 p. 90 p. 181 p. 45 p. 25 p. 129 p. 270 pp. 42/44 pp. 71/78 p. 182 p. 63 p. 8 p. 46 pp. 139/143 p. 177 p. 249 p. 274	PABLA Package irradiation plants Packman, G., M.B.E. Paint curing Patents Penney, Lord Citrine lecture life peerage memorandum to Select Committe Science and Technology new appointment retires from A.E.A. visits Russia P.F.R. see Prototype Fast Reactor Photographic research radioisotopes in Physics exhibition A.E.A. exhibits PIPPA Piston hygrometer Plasma physics Culham information service current research Plastics developed by A.E.A. tissue equivalent	pp. 94/100 p. 25 p. 273 p. 186
Nuclear power industry publicity abroad Nuclear power programme Citrine lecture Nuclear power stations costing costs of export stations first decade of generating costs ground rules load factor safety and siting	p. 108 p. 109 pp. 299/311 pp. 136/144 pp. 136/144 pp. 312/320 pp. 299/311 p. 69 p. 177 p. 203 pp. 214 p. 249 p. 188 pp. 6/7 pp. 152/170	"Plastics at Aldermaston" PLUTO ten years old Plutonium assay first produced recycling reprocessing for Italy supplies Windscale factory Portable contamination meter Portland possible power station Post-Graduate Education Centre courses	p. 91 p. 236 p. 57 p. 311 p. 91 p. 56 pp. 79/89 p. 3 p. 143 pp. 23/24 p. 184 p. 211 p. 40 p. 50 p. 289 p. 321

Pressure and density measurement	p. 182	Reactor exports p. 189
Pressure vessels		costs of stations p. 312/320
British Standard	p. 323	Reactor Safety Course No. 6 p. 256
for Oldbury	p. 298	Reactor shielding conference p. 292
prestressed concrete	p. 301	"Reactors U.K." p. 25
standards committee Process steam	p. 26 p. 230	Rigg, Miss F. A., M.B.E. p. 185
Programmes Analysis Unit	p. 194	
Protective clothing	pp. 183/184	for Baltic p. 255 at Dungeness p. 234
- Total Comming	pp. 105/104	manufacture of p. 206
Prototype Fast Reactor (P.F.R.)	p. 178	for Sweden p. 325
	p. 296	Risley
	p. 310	beginnings p. 53
contracts	p. 66	Rotating disc camera p. 181
"Putting the Atom to Work"	p. 238	Pitte
P.V.C. pressurised suit	p. 183	
		Sofety regulations - 26
		Safety regulations p. 26
Quality and reliability exhibition	p. 23	Science and Technology Act, 1965 p. 230 Science Museum
		Atomic energy exhibition p. 4 Engineer's Day exhibition p. 24
Radiation curing		SCORPIO p. 24
of paints and wood plastics	pp. 282/288	experiments in p. 80
Radiation damage studies	p. 59	Sealing ring assembly p. 38
Radiation shielding		Seaton Carew
windows for	p. 91	proposed nuclear station p. 65
Radiation sterilisation service	101	p. 249
leaflet	p. 194	Second nuclear power programme p. 68
Radiation units	p. 289	Select Committee on Science and
Radioactive fallout	p. 255	Technology
report	n 27	summary p. 294
Radioactive iodine	p. 37	Semi-conductor water vapour detector p. 181
for goitre testing	p. 39	S.G.H.W.R. see Steam Generating Heavy
Radioactive materials	p. 57	Water Reactor
transport containers	p. 183	Sharpe, Roy S. head of N.D.T. centre p. 43
"Radioactive Products"	p. 180	head of N.D.T. centre p. 43 Sherpas
Radioactive tracers		
in spoil ground selection	pp. 196/203	Skylark rocket p. 39
Radioactive waste		Culham equipment for p. 272
course on	p. 290	Smedley, J. A.
disposal	p. 107	A.E.A. representative p. 42
	p. 297	Solvent extraction processes pp. 257/269
storage	p. 176	Spectrograph
Radiochemical Centre, Amersham		for Germany p. 250
beginnings Catalogue supplement	p. 53	Spectrometer, double beam p. 235
cobalt-60 for Turkey	p. 291 p. 39	Spectrophotometer p. 181
exhibition in Oslo	p. 236	Springfields Works p. 63
exhibition in Tokyo	p. 247	Sputtering ion source p. 182
labelled compounds	p. 38	Steam Generating Heavy Water Reactor p. 47
new symbol	p. 129	p. 81
Queen's award	p. 275	p. 95 p. 139
technical bulletins	p. 90	advantages of p. 139
Radiography	•	compendium of articles on p. 22
dynamic high definition	p. 77	critical p. 274
Radioisotopes	,	p. 280
in Himalayas	p. 39	damage to p. 176
in photographic research	p. 65	designs available p. 207
made in GLEEP	p. 56	symposium p. 122
measurement of blood by new catalogue	p. 185	p. 187
RIPPLE generators	p. 180 p. 206	Sweden
RIFFLE generators	p. 234	A.E.A. convert uranium for p. 63
	p. 255	RIPPLE for p. 325
technical bulletins	p. 90	
tracers in spoil ground selection	pp. 196/203	
Radio-telescope	F P	Tape recorder
A.E.A. and design study	p. 58	for Ariel III p. 234
Radiotherapy		Technetium-99m p. 90
first isotopes made	p. 53	Technology of the Sea and Sea-bed
Reactor development programme	pp. 95/97	abstracts of conference papers pp. 111/121

Tannassas Valley Authority		TITE A TO A	
Tennessee Valley Authority nuclear station	p. 9	U.K.A.E.A. continued	
Tennison, J. W., B.E.M.	p. 25	staff reductions	p. 96
Thames Estuary	p. 25		p. 275 p. 277
radioactive tracers in	pp. 199/201	uranium conversion for Sweden	p. 63
Thermionic method	p. 138	wages	p. 178
Thermoluminescent dosimetry	p. 184	Ultrasonic spectroscopy	p. 77
Thorium Limited	p. 53	United Kingdom	5/11
Tokyo	p. 81	future of nuclear power United States	pp. 5/11
R.C.C. exhibition	p. 247	growth rate of nuclear power	p. 5
"Torrey Canyon"	P. 2	grown rate of nacical power	p. 97
A.E.A. work on oil	p. 110	Uranium	P
	p. 121	A.E.A. work for Sweden	p. 63
TRACER	p. 81	Capenhurst plant	p. 228
Tracers	p. 84	centrifugal method	p. 249
in spoil ground selection	pp. 196/203	cost of enriched cost of imports	p. 216 p. 296
Transducers	p. 181	reserves and prices	p. 290 p. 8
"Trigly" plant, Chalk River	p. 51	supplies	p. 177
Troon Research Centre	p. 298	uses for depleted	p. 91
Tube Alloys	p. 51	world supplies	pp. 142/143
Turkey grain irradiation plant	pp. 27/30	U.S.S.R.	- 100
grain irradiation plant	p. 38	Sir Wm, Penney visits	p. 186
	p. 226		
Turret suit	p. 183		
		Van de Graaf, Dr. R. J.	
		obituary	p. 49
U.K.A.E.A.		VIPER reactor VULCAIN	p. 290
annual report	pp. 274/278	on full power	p. 26
Brussels representative	p. 66		P
Canadian talks and Consortia	p. 186 p. 68		
contracts in Sweden	p. 63		
desalination programme	p. 192	Wainwright, H. G., B.E.M.	p. 25
early days at Harwell	pp. 51/58	Wantage Research Laboratory Isotope School courses	p. 11
exchange of information	p. 214	package irradiation plant	p. 226
expenditure fuel agreement with Japan	p. 231	Water contamination meter	p. 184
fuel supplies	p. 255 p. 96	"Water for Peace" conference and	
future of	p. 275	exhibition	pp. 190/194
graduate staff	p. 3	Wheeler, H., B.E.M.	p. 185
international co-operation	pp. 98/99	Windscale accident	pp. 81/84
memorandum to Select Committ new chairman		pile filters	p. 53
non-nuclear work	p. 273 p. 189	Windscale and Calder Works	
non-nuclear work	p. 277	in Harwell programme	p. 53
present organisation	p. 94	plutonium fuel factory	pp. 23/24
Programmes Analysis Unit	p. 194	primary separation plant visit of President Ayub Khan	p. 7 p. 2
R. & D. expenditure	p. 212	Winfrith Apprentices School	p. 2
reactor development programme reports available	p. 94 p. 4	Sir R. Edwards at prizegiving	p. 322
reports available	p. 4 p. 37	Wood-plastics	_
	p. 45	curing	pp. 285/288
	p. 70	Wylfa nuclear power station	p. 300 p. 308
	p. 132	generating costs	p. 215
	p. 179	generating costs	p. 213
	p. 195 p. 233		
	p. 252	Vanan flash tulus	- 102
	p. 291	Xenon flash tubes X-ray multi-purpose milliprobe and	p. 183
report of Select Committee	p. 324	A ray main-purpose mimprobe and	aryser p. 101
	p. 294		
representative in Finland review of the year	p. 42 p. 276		
review of the year royalties	p. 188	ZENITH experiments in	n 90
Junes	p. 215	experiments in	p. 80
	p. 229		
	p. 250		
scientific staff	p. 296 p. 183	ZEPHYR	p. 54 p. 56
scientific staff	p. 103		p. 56

TITLES OF MAIN ARTICLES

The future of nuclear power as seen from the United Kingdom

Sir William Penney to the Conference on Scientific Progress and Human Values, California Institute of Technology

The trace element content of human head hair in England and Wales and the application to forensic science

R. F. Coleman to the International Conference on Forensic Activation Analysis, San Diego

February

The world's first large-scale continuous grain irradiation plant, Iskenderun, Turkey

Holography at Aldermaston By J. D. Redman

March

Harwell's 21st Anniversary Sir John Cockcroft at the Cockcroft Hall, Harwell Ion beams and materials research By R. S. Nelson

April

Research in non-destructive testing The Honour Lecture by R. S. Sharpe to the Non-Destructive Testing Society Physics of plutonium recycling in thermal

G. H. Kinchin to the I.A.E.A. Symposium on the Use of Plutonium as Reactor Fuel in Brussels

May

Memorandum to the Select Committee on Science and Technology Presented by Sir William Penney

National Conference on the Technology of the Sea and Sea-bed

Lasers and plasma diagnostics By J. L. Watson

June

Nuclear power—the Citrine Lecture Sir William Penney to the British Electrical Power Convention, Eastbourne Fuel and energy policy Debate in the House of Lords

Siting criteria—a new approach

F. R. Farmer to the I.A.E.A. Symposium on the Containment and Siting of Nuclear Power Reactors, Vienna

July

Water for Peace" conference and exhibition Mr. Anthony Wedgwood Benn, Minister of Technology, to the international conference in Washington, U.S.A.

Application of radioisotope tracers to spoil ground selection

D. B. Smith to the British National Conference on Technology of the Sea and Sea-bed, Harwell

August

The productivity of science in a society Dr. J. B. Adams to a C.I.B.A. Foundation Symposium on Decision Making in National Science Policy, London

Recent developments in food irradiation By F. J. Ley

September

A study of the mechanism of flashing flow by experiment and theoretical analysis

R. I. Hawes and D. C. Leslie to the European Symposium on Fresh Water from the Sea, at Athens

October

Optimisation and control of solvent extraction processes

Mills, A. J. Oliphant and N. Parkinson to the conference "Industrial Physics—The Contribution of Government Laboratories'

November

13th Annual Report and Press Conference

The application of ionising radiations to coatings and wood plastics

Dr. F. L. Dalton to the Symposium on the Applications of Ionising Radiations in the Chemical and Allied Industries, Imperial College, London

December

Factors affecting cost of export nuclear power stations

G. R. Bainbridge, D. Pashley, D. T. H. Rowlands and C. V. Wagstaff to the Symposium on International Extrapolation and Comparison of Nuclear Power Costs, London.

Electricity from the atom-Britain's second

E. S. Booth to the Société Royale Belge des Ingénieurs et des Industriels, Brussels.