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UNIVERSITY OF CALIFORNIA
Radiation Laboratory
Berkeley, California

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LIST OF UNCLASSIFIED REPORTS RECEIVED AND ISSUED BY THE UCRL INFORMATION DIVISION DURING THE PERIOD OF FEBRUARY 15 - 28, 1958

March 4, 1958

Printed for the U.S. Atomic Energy Commission

LIST OF CODES FOR REPORT NUMBERS

ACCO	-American Cyanimid Company
AEP	-Monsanto Chemical Company
AERE	-Gt. Brit. Atomic Energy Research Establishment,Harwell,Berks.England
ALCO	-American Locomotive Company
AMF	-American Machine & Foundry Co.
ANL	-Argonne National Laboratory
ANP	-Aircraft Nuclear Propulsion Project
APEX	-General Electric Company,ANP Project
ASTIA	-Armed Services Technical Information Agency,Dayton,Ohio
BAW	-Babcock & Wilcox
BDX	-Bendix Aviation Corp., Detroit
BMI	-Battelle Memorial Institute
BNL	-Brookhaven National Lab.
BRB	-Bridgeport Brass Company
BSC	-Bethlehem Steel Company
CENP	-Combustion Engineering, Inc.
CERN	-European Organization of Nuclear Research, Geneva
COO	-Chicago Operations Office
CU	-Columbia University
DCDE	-Atomic Power Development Associates
DLWK	-Duquense Light Co-Walter Kidde
DOW	-Dow Chemical Company
DP	-E.I.duPont deNemour & Co.
FWE	-Foreign Weapons Effects
GAT	-Goodyear Atomic Corporation
GEAP	-General Electric Company
GEL	-General Electric Co., General Engineering Laboratory
HEC	-Hooker Electrochemical Co.
HO	-Hanford Operations Office
HW	-Hanford Works, Richland
IDO	-Idaho Operations Office
ISC	-Iowa State College
K	-Carbide and Carbon Chemicals Co. (K-25 Plant)
KAPL	-Knolls Atomic Power Laboratory
KLX	-The Vitro Corporation of America
KLXS	-Vitro Corporation of America (Study Group)
KY	-Carbide and Carbon Chemicals Co. (C-31 Plant)
LA&LAMS	-Los Alamos Scientific Lab.
MCW	-Mallinckrodt Chemical Works
MIT	-Massachusetts Inst. of Tech.
MLM	-Mound Laboratory
NAA-SR	-North American Aviation, Inc.
NBL	-New Brunswick Laboratory
NBS	-National Bureau of Standards
NEA	-Foster Wheeler-Pioneer Service
NLCO	-National Lead Company of Ohio
NMI	-Nuclear Metals Inc.
NNSD	-Newport News Shipbuilding and Dry Dock Co.
NPG	-Commonwealth Edison Co. (Nuclear Power Group)
NRL	-Naval Research Laboratory,Washington D.C.
NYO	-New York Operations Office
ORINS	-Oak Ridge Institute of Nuclear Studies

ORNL	-Carbide & Carbon Chemicals Co. (ORNL)
ORO	-Oak Ridge Operations Office
PWAC	-Pratt & Whitney Aircraft Division of the United Aircraft Corp.
RFP	-Rocky Flats Plant
RME	-Grand Junction Operations Office
RMO	-Division of Raw Materials
SAN	-San Francisco Operations Office
SC	-Sandia Corporation
SEP	-Sylvania Electric Products, Inc.
SFO	-Santa Fe Operations Office
SRO	-Savannah River Operations Office
SO	-Schenectady Operations Office
TEI(M)	-U. S. Geological Survey Trace Elements Reports
TID	-Technical Information Service
TVA	-Tennessee Valley Authority
UCLA	-University of California Medical Research Laboratory
UCRL	-University of California Radiation Laboratory
UR	-University of Rochester
USNRDL	-U.S.Naval Radiological Lab., San Francisco,Calif.
UWFL	-University of Washington Applied Fisheries Laboratory
WAPD	-Westinghouse Electric Corp.,Bettis Plant
WASH	-AEC,Washington
WEC	-Westinghouse Electric Company Industrial Atomic Power Group
WIN	-National Lead Co., Inc. Winchester
WT	-Weapon Test Reports
Y	-Carbide and Carbon Chemicals Company (Y-12 Plant)

Many prefixes used for research and development reports cover a number of installations. NP ("Non-Project") numbers are assigned by the Technical Information Service at Oak Ridge to those reports which it received from sources not under contract to the Atomic Energy Commission. The UCRL Information Division gives "Misc" numbers to any others received here that do not bear an identifying number. Many reports are grouped together under numbers corresponding to an AEC division or operations office. Some of these are as follows:

CO,COO	-Chicago Operations Office
IDO	-Idaho Operations Office
NYO,NYOO	-New York Operations Office
ORO	-Oak Ridge Operations Office
RMO	-Raw Materials Division
WASH	-Atomic Energy Commission, Washington

In our semimonthly "List of Reports Received" the originating installation will be placed in the author column whenever the report code number does not indicate a specific laboratory, or is obsolete or not given in the list.

Two series of translations are currently received, one sponsored by the AEC (AEC-tr), the other by the National Science Foundation (NSF-tr).

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Radiation Laboratory
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March 4, 1958

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	BIOSCIENCES		
AERE-HP/R-2354	The World-Wide Deposition of Long-Lived Fission Products from Nuclear Test Explosions	N. Stewart, R. Osmond, R. Crooks, et al. Gt. Brit. Atomic Energy Res. Est., Harwell, Berks, Eng.	10-57
ANL-5808	Environmental Radioactivity at Argonne National Laboratory	J. Sedlet	1-58
HW-54128	Calculations on Environmental Consequences of Reactor Accidents. Interim Report	J. W. Healy	12-11-57
LAMS-2038	A Survey of Some Los Alamos County Canyons for Radioactive Contamination, Spring 1953 to Spring 1955.	A. O. Dodd	4-56
NYO-4480	Semi-Annual Report [for] January 1 through June 30, 1957. Part I. Research.	Atomic Bomb Casualty Commission. Hiroshima	
ORNL-2292(Vol. 2)	A Monte Carlo Calculation of Air-Scattered Gamma Rays	R. E. Lynch, J. W. Benoit, W. P. Johnson, et al. Oak Ridge National Lab. (Tenn.	2-12-58

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ORNL-2292(Vol. 3)	A Monte Carlo Calculation of Air-Scattered Gamma Rays.	R. E. Lynch, J. W. Benoit, W. P. Johnson, et al. Oak Ridge National Lab., (Tenn.)	2-12-58
ORNL-2292(Vol. 4)	A Monte Carlo Calculation of Air-Scattered Gamma Rays	R. E. Lynch, J. W. Benoit, W. P. Johnson, et al. Same	2-12-58
ORNL-2292(Vol. 5)	A Monte Carlo Calculation of Air-Scattered Gamma Rays	R. E. Lynch J. W. Benoit, W. P. Johnson, et al. Same	2-12-58
RADC-TN-56-278	Investigation of X-Radiation Hazards, Measurements, and Shielding of High Power RF Transmitting Tubes.	P. Order, Rome Air Development Center, Griffis, AFB, N. Y.	1-57
RDB(W)/TN-58	An Anthology of Health Physics Data	H. J. Dunster, Gt. Brit. Windscale Works, Sellafield, Cumb., Eng.	10-57
USNRDL-TR-138	Relative Response of 4-PI Gas Flow Proportional Beta Counters at Several Laboratories	D. Sam, P. E. Zigman, J. L. Mackin, Naval Radiological Defense Lab., San Francisco	12-30-57
UWFL-50	Land Crabs and Radioactive Fallout at Eniwetok Atoll	E. E. Held, Washington Univ., Seattle. Applied Fisheries Lab.	5-27-57
YAEC-RD-3	Radiation Monitoring Report	J. W. Lebourveau, Yankee Atomic Electric Co., Boston	9-23-57

CHEMISTRY

A-2362	Experience in the Use of Stedman Packing	H.B. Higgins, T.G. Stack, J.E. Wolf, et al. Standard Oil Co. of Indiana, Chicago	1-28-46
AERE-C/M-207	The Effect of Radiation on the Electrical Properties of Anion Exchange Membranes	G.C.Barker, A.W.Gardner	9-7-54
AERE-C/M-233	The Separation by Cation Exchange of Small Quantities of Calcium from the Products of its Neutron Irradiation	M.J.Cabell	9-57
AERE-C/R-2320	The Co-ordination Chemistry of Uranium. A Critical Review	A.E. Comyns	8-57
AERE-C/R-2325	The Fast Separation of the Alkali Metals	E.A.C. Crouch, J.A. Corbett, H.H. Willis	10-57
AERE-C/R-2391	The Distillation of Liquid Metal (Bismuth) Reactor Fuel	F.S. Martin, R.E. Brown,	9-57
AERE-CE/R-2100	Liquid-Liquid Extraction. Part 13. The Effect of Pulse Waveform and Plate Geometry on the Performance and Throughput of a Pulsed Column	J.D. Thornton	5-57
AERE-CE/R-2215	The Preparation and Properties of the Chlorides of Uranium, Plutonium, and Thorium, and of the Fission Product Chlorides	D. Bradley	8-54
AERE-GP/R-2282	The Preparation of Anydrous Inorganic Chlorides by Dehydration with Thionyl Chloride	J.H. Freeman, M.L. Smith	8-57

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ANL-5007(Del.)	Recovery of Uranium from Ore Concentrates	I. Sheft, H.H. Hyman, J.J. Katz	3-53
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CF-50-2-55	Process for the Recovery of U^{235} Reactor Fuel for Arco Chemical Areas	C.E. Larson, Oak Ridge National Lab., Tenn.	2-7-50
CF-51-4-155	Uranium Ores Recovery Pulse Column Tests	A.C. Jealous, Same	4-26-51
CF-55-5-34(Del.)	25 Process Assistance for Period of April 18, 1955 to April 29, 1955	F.L. Culler, Same	5-5-55
CF-55-7-138(Del.)	Chemical Technology Division, Unit Operations Section Monthly Progress Report [for] July 1955	W.K. Eister, Same	7-55
CF-55-8-76(Del.)	Heat Transfer in Waste Basins	S.H. Jury, Same	8-11-55
CF-56-2-161(Del.)	Removal of Carbon from UF_4 Pellets by Oxidation	L.M. Ferris, Same	2-29-56
CF-56-5-197	Chemical Technology Division, Unit Operations Section Monthly Progress Report [for] May 1956	W.K. Eister, J.T. Long, E.O. Nurmi, et al. Same	
CF-56-9-119	Thorex: Second Thorium Cycle Manpower and Cost Summary	W.R. Winsbro, B.F. Bottenfield, Same	9-24-56
CF 57-10-6	Lithium Symposium. Analytical Procedures and High-Temperature Corrosion. Reading List	E.E. Hoffman, D.H. Jansen, Same	1-20-58

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DP-247	The Determination of Fluoride in Plutonium Fluorides	B.B. Murray	11-57
HW-11885	Neutralization of HNO_3 in Redox ICU and IAW Streams	M.H. Curtis	12-10-48
HW-52000	Plutonium Recycle Program. Annual Report [for] Fiscal Year 1957		9-20-57
IDO-14408	Recovery of Fission Products from Calcined First Cycle Solvent Extraction Wastes	E.S. Grimmett, Phillips Petroleum Co. Atomic Energy Div., Idaho Falls, Idaho	6-26-56
IDO-16354	Examination of Boron Content in ETR 1-4 Fuel Element by Means of Fuel Scan and Transmission Measurements	W.C. Francis, Same	5-25-56
IDO-28007	Determination of Burnout Limits of Polyphenyl Coolants	T.C. Core, K. Sato, Aerojet General Corp., Azusa, Calif.	2-14-58
ISC-874	Flow of an Aqueous Slurry Through a Vertical Tube	H.E. Wolfe, G. Murphy, Ames Lab., Ames, Iowa	3-57
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KAPL-1827	Three-Channel Alpha Fission Counter	F.A. White, J.C. Sheffield	7-1-57
LA-1692	Calcium Oxalate Carrier Precipitation of Pu	W.J. Maraman, A.J. Beaumont, E.L. Christensen, et al.	2-25-54

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LA-1699	Plant-Scale Concentration of Am and Pu III Using Tributyl Phosphate	W. J. Maraman, A. J. Beaumont, R. S. Day, et al.	8-2-54
LA-1869	Some Observations on the Reactivity of Plutonium Dioxide	C. W. Bjorklund, E. Staritzky	11-1-54
MIT-LNS-PR-Aug. 31, 1957	[Fiftieth] Progress Report [For Period June 1, 1957 to August 31, 1957.]	Massachusetts Inst. of Tech., Cambridge Lab. for Nuclear Science	8-31-57
MLM-534	Status of Polonium Distillation Unit. (Information Report)	R. W. Endebrock	1-25-51
MLM-1024	Special Applications of Quartz Fibers; The Fabrication and Use of Microtubing and Helices	M. I. Gray, R. G. Olt	12-7-54
NAA-AL-1840	Properties of Resistance Spotwelded 24S-T2 and 75S-T6 Aluminum Alloy Sheet and 17-7PH Stainless Steel Sheet at Depressed and Elevated Temperatures	E. J. Pelochino, J. R. Bellah, North American Aviation, Inc., Downey, Calif.	2-1-54
NACA-TN-4111	Investigation of the Compressive Strength and Creep of 7075-T6 Aluminum-Alloy Plates at Elevated Temperatures	W. D. Deveikis, Langley Aeronautical Lab., Langley Field, Va.	11-57
NBS-5325	Reactions of the Glycosylamines	H. S. Isbell, H. L. Frush	12-1-57
NP-6463	The Fluorination of Carbides. Final Report	J. R. Aronson, Mass. Inst. of Tech., Cambridge	10-15-57
NP-6464	Research and Development of Hi-Temperature Nuclear Radiation Resistant Elastomers	P. Davis, U. F. Nager, R. E. Isley, et al. Burke Research Co., Van Dyke, Mich.	10-8-57

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NP-6472	The Determination of Hydrogen in Titanium and Its Alloys -- A Critical Review	T.D. McKinley, Battelle Memorial Inst. Titanium Metallurgical Lab., Columbus, Ohio	9-23-57
*NP-6479	Graphite Technology. Progress Report No. 3 for the Period August 1, 1957 to October 1, 1957	S.W. Bradstreet, Illinois Inst. of Tech., Chicago. Armour Research Foundation	10-1-57
*NYO-5189	The Loss on Ignition Test for Purified Uranium Trioxide	R.W. Bragdon, C.L. French, G.L. Martin, Mallinckrodt Chemical Works, St. Louis	7-46
ORNL-2451	Chemical Technology Division. Progress Report on Raw Materials for October, 1957	K.B. Brown, C.F. Coleman, D.J. Crouse, et al.	2-13-58
*SCTM-52-57(16)	Dry-Film Lubricant Studies	L.M. Berry, Sandia Corp., Albuquerque, N. Mex.	3-28-57
WADC-T/R-57-585(AD-131084)	Research to Investigate the Feasibility of Electron Mirror Microscopy in the Study of Magnetic Domains	L.J. Mayer, General Mills, Inc., Minneapolis	9-57
WIN-51	Four Corners Uranium Company Ore	J.B. Breymann, T.J. Sentementes, H.I. Viklund, et al. National Lead Co., Inc., Ray Materials Development Lab. Winchester	

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*AECU-3448	Effect of Edge Roundness on Drag of Bluff Two-Dimensional Bodies	D. M. Hankins, Sandia Corp., Albuquerque, N. Mex.	10-15-56
AERE-R/R-2275	Analysis of Experimental D. C. Pump Performance and Theory of Design	D. A. Watt	7-57
AERE-R/R-2375	The Development and Operation of a 10KW Homopolar Generator with Mercury Brushes	D. A. Watt	10-57
CF-57-9-33	The Performance of a Small Helical Tube Heat Exchanger	C. V. Chester, Oak Ridge National Lab., (Tenn.)	12-19-57
*NP-6476	Burnout in Forced Convection Nucleate Boiling of Water. Technical Report No. 10	J. M. Reynolds, Mass. Inst. of Tech., Cambridge. Heat Transfer Lab.	7-1-57
*NP-6477	Description of Boiling Project Burnout Detector. Technical Report No. 11	M. W. Raymond, J. M. Reynolds, Mass. Inst. of Tech., Cambridge. Heat Transfer Lab.	7-1-57
*NP-6487	Design Report--Closed Cycle Gas-Turbine Test Facility	Sanderson and Porter, New York	2-57
*SC-4104(TR)	Airflow Calibration of the Sandia Corporation 12-Inch Transonic Wind Tunnel	M. W. Davis, K. A. Petersen, Sandia Corp., Albuquerque, N. Mex.	6-57
SC-4127(TR)	Effect of Jet Density on Induced Flow Around an Axially Symmetric Jet	F. G. Blottner, Same	10-57

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GEOSCIENCES

ORO-167	An Investigation of the Chattanooga Black Shale of Tennessee as a Source of Uranium. Progress Report for July 1, 1956 to June 30, 1957	H. J. Klepser, Tennessee Univ., Knoxville	8-1-57

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A-2388	Development of Niobium Base Alloys. Fifth Quarterly Report	R. T. Begley, Westinghouse Electric Corp. Aviation Gas Turbine Div., Kansas City, Mo.	6-1-57
*A-4048	Developments in Cutting and Machining Uranium at the Iowa State College Laboratory	C. F. Gray, Ames Lab., Ames, Iowa	1-46
*AECU-3445	Volume Resistance-Temperature Characteristics of PZT (53% Lead Zirconate and 43% Lead Titanate Composition by Molecular Weight).	M. A. Uman, Sandia Corp., Albuquerque, N. Mex.	8-31-56
AERE-M/R-1156	The Tensile Properties of Uranium from Room Temperature to 600°C	N. H. Hancock	3-23-53
AERE-M/R-2306	Surface Structure of Slip Bands in Copper Fatigued at 293°K, 90°K, 20°K and 4.2°K	D. Hull	6-57
AERE-M/R-2323	Some Studies on Thermal Gradient Transfer in Bismuth	J. W. Taylor, M. Vevers	8-57
*ANL-4316(Del.)	Metallurgy Division Report for January, February, and March 1949		3-31-49
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BMI-1249	The Effect of Primary Alpha on the Beta Decomposition of Zirconium-Uranium-Oxygen Alloys	D. L. Douglass, L. L. Marsh, Jr.	1-14-58
*CF-50-6-26(Del.)	Radiation Damage. Chapter IV, Part 1	G. E. Evans, [Oak Ridge Nation Lab., Tenn.]	6-7-50
CF-58-1-93	The Reactions of Magnesium and Magnesium Alloys with Gases at High Temperatures	H. Inouye, Oak Ridge National Lab., (Tenn.)	1-20-58
*HW-26692(Del.)	Interim Report on Examination of Powder Metallurgy Slug From PT-105-313-4M	D. P. O'Keefe	1-5-53
HW-54364	Mechanical Properties of Aluminum Alloy M-388; Effect of Fabrication Variables	R. S. Kemper, K. F. Powell	1-6-58
IGRL-T/C-43	Irreversible Changes in Length of Zinc Under Thermal Stress Trans. from Zeitschrift für Metallkunde 46, 582-8 (1955).	K. Claus, K. Löhberg, Gt. Brit. Culcheth Labs., Culcheth, Lancs, England	
*KAPL-876(Del.)	Iodide Decomposition Process for Coating Uranium with Zirconium	W. L. Robb, F. J. Shipko	2-24-53
KAPL-1555	Preparation of Nuclear Poison and Control Alloys. Zirconium Base-Boron Alloys	A. P. Beard, J. W. Harrison, W. B. Clark	7-18-57
*LMFR/I-1	Bismuth Uranium Fuel Solution. LMFR Information Sheet No. 1	A. M. Cocks, R. W. S. Carlson, Gt. Brit. Atomic Energy Res. Establishment, Harwell, Berks, Eng	10-25-56

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MISC-1958-30	X-Ray Determination of Beta Phase in Titanium Alloys. Technical Report No. 1 [on] Physical Metallurgy of Titanium Alloys	M.F. Comerfore, B.L. Averbach, M.B. Bever, Mass. Inst. of Tech., Cambridge Dept. of Metallurgy	1-31-58
MISC-1958-54	Activation Energies for Creep of Single Aluminum Crystals Favorably Oriented for Cubic Slip. Technical Report No. 5	Y.A. Rocher, L.A. Shepard, J.E. Dorn, California Univ. Berkeley. Minerals Res. Lab.	12-20-57
*NAVORD-2055	Rapid-Heating Stress-Rupture Properties of Several Engineering Alloys	A.T. Robinson, J.D. Ramsdell, Naval Ordnance Test Station, Inyokern (China Lake), California	9-2-53
*NAVORD-3403	Relation of High-Heating-Rate Tests to Very-Short-Time Creep Tests	W.K. Smith, Same	3-15-55
*NBS-5607	Oxidation of Experimental Alloys. Part VII. Hastelloy W. Topical Report No. 7		10-57
NBS-5764	Fluorine Substitution in Hydrous Silicates and Related Minerals	A. Van Valkenburg, C.E. Weir, E.N. Bunting	12-57
*NEPA-1282	Development of Apparatus and Methods for Measurement of Creep to Temperatures of 3500°F	M.J. Sinnott, Michigan Univ., Ann Arbor. Engineering Res. Inst.	1-20-50
*NP-6462	Report on Powder Metallurgy in USSR	H.H. Hausner, Penn-Texas Corp., New York	9-1-57

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*NP-6466	Research and Development of Procedures for the Joining of Similar and Dissimilar Heat-Resisting Alloys by Ultrasonic Welding	N. E. Weare, R. E. Monroe, J. N. Antonevich, et al. Battelle Memorial Inst., Columbus, Ohio	9-30-57
*NP-6470	Comparison of Thermal Fatigue with Mechanical Fatigue Cycling. Final Report [for] September 1, 1954 to September 1, 1957	H. Majors Jr. Alabama Univ., Bureau of Engineering Research	9-57
*NP-6471	The Corrosion Properties of Titanium and Titanium Alloys	D. W. Stough, Battelle Memorial Inst. Titanium Metallurgical Lab., Columbus, Ohio	9-13-57
*NP-6473	Hydrogen in Titanium and its Alloys	R. I. Jaffee, Same	9-30-57
*NP-6478	I. An Apparatus for Use with Condensed Phases at 10,000°C. II. Some Thermodynamic and Rate Considerations at very High Temperatures	H. T. Hall, B. Brown, B. Nelson, et al. Brigham Young Univ. Provo, Utah	9-18-57
*NP-6482	The Galvanic Corrosion Properties of Titanium and Titanium Alloys in Salt-Spray Environment	D. W. Stough, F. W. Fink, R. S. Peoples, Battelle Memorial Inst. Titanium Metallurgical Lab., Columbus, Ohio	10-25-57
*NP-6486	Residual Stresses in Welded Titanium Plates. Final Technical Report	E. F. Nippes, W. F. Savage, Rensselaer Polytechnic Inst., Troy, N. Y.	11-57
NYO-4773	Measurements of Deformation Resulting from Grain Boundary Sliding in Aluminum and Aluminum-Magnesium Alloys from 410° to 940°F	H. Brunner, N. J. Grant, Mass. Inst. of Tech., Cambridge Dept. of Metallurgy	2-58

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NYO-4871	The Adaptation of New Research Techniques to Mineral Engineering Problems. Progress Report	Mass. Inst. of Tech., Cambridge Dept. of Metallurgy	10-31-57
*RDB(C)/TM-215	Mechanical Properties of Magnesium Alloys in the Range 350°C to 500°C	A. Cowan, F. P. Ellen, Gt. Brit. Culcheth Labs., Culcheth, Lancs, Eng.	
*RDB(C)TM-233	Tensile Properties of Some Magnesium Alloys Within the Range 20°C-500°C	F. P. Ellen, Same	10-14-54
*RDB(C)/TM-235	The Stress Rupture Properties of Magnox C at 200°, 250° and 300°	A. Cowan, Same	11-9-54
*RDB(S)/TM-3331	A Theoretical Consideration of the Compatibility of Various Metals and Alloys with Magnox	R. D. Stacey, Same	[195?]
*SCTM-283-56(51)	Eight-Year Storage Programs for Determining Aging Characteristics of Mainsprings	J. M. Wiesen, Sandia Corp., Albuquerque, N. Mex.	12-7-56
*TML-82	The Properties of Titanium Alloys at Elevated Temperatures	F. R. Schwartzberg, F. C. Holden, H. R. Ogden, et al. Battelle Memorial Inst. Titanium Metallurgical Lab., Columbus, Ohio	9-10-57
*TML-84	The Stress Corrosion and Pyrophoric Behavior of Titanium and Titanium Alloys	D. W. Stough, F. W. Fink, R. S. Peoples, Same	9-15-57
WAPD-PWR-PMM-904	Résumé of Uranium Oxide Data. VIII	J. Belle, L. J. Jones, ed.	12-3-56

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*AECU-3443	Energy Transformers with n Secondaries	E.F. Schroeder, Sandia Corp., Albuquerque, N. Mex.	7-18-56
*AECU-3444	Printed Circuit Methods and Applications	D.A. Loren, Same	9-10-56
*AECU-3447	Normal Incidence Reflection of Dipole Radiation from a Plane Interface	R.K. Moore, Same	9-7-56
*AECU-3449	A 10-Megacycle Transistor Binary Counter	D. Holliday, [Sandia Corp., Albuquerque, N. Mex.]	9-19-56
*AECU-3464	A Problem in Reactor Shielding	D.C. Kleinecke, Sandia Corp., Albuquerque, N. Mex.	12-18-56
*AECU-3476	Tables of the Normal Probability Intergral	D.B. Owen, D.T. Monk, Same	3-25-57
AECU-3510	Procedures for Shielding Calculations. Technical Report No. 1	R. Dennis, S.N. Purohit, L.E. Brownell, Michigan Univ., Ann Arbor. Engineering Research Inst.	1-57
AECU-3595	Surface Fluxes and Currents for Various Shielded Radiation Sources	E.R. Cohen, F.B. Estabrook, Atomics International Div., North American Aviation, Inc., Canoga Park, Calif.	10-1-57
AERE-GP/R-2184 *Microcards	Resonant Cavity Measurement Techniques at 400 Mc/s	W. Boyd	8-57

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AERE-RP/M-40	The Temperature Coefficient of Reactivity Due to Thermal Expansion of a Reflected Spherical Core	J. Codd	4-54
AERE-RP/R-2031 (Suppl. 1)	Effective Cross Section Data for Thermal Reactor Calculations [Supplement 1]	C.G. Campbell, R.G. Freemantle	7-57
AERE-T/R-2351	Methods for a Quadratic Non-Linear Resonance	D. Morgan, R. Taylor	9-57
ANL-5786	Physics Division. Summary Report [for] July through September, 1957		11-57
CERN-PS/JGL-2	The Problem of Runaway Electrons in Plasma	European Organization for Nuclear Research, Geneva	12-57
CERN-PS/JGL-3	Low Pressure Ring-Discharge in an External Magnetic Field	J.G. Linhart, Same	12-57
CERN-PS/MM-33	Pulsed Excitation of the Models and of Individual Elements of the Magnet	Same	11-57
CF-58-1-79	Two-Group Constants for Aqueous Homogeneous Reactor Calculations	T.B. Fowler, M. Tobias, Oak Ridge National Lab., (Tenn.)	1-22-58
CREL-741	Transistorized Radiation Monitors	F.S. Goulding, Atomic Energy of Canada Ltd. Chalk River Project, Chalk River	11-57
CRNE-747	Solution of Temperature and Stress Transients by Analogue Computer	T.E. Burnup, Same	12-5-57

CRP-745	The Standardization of Electron Capturing Nuclides; A Preliminary Study	P. J. Campion, W. F. Merritt, Atomic Energy of Canada Ltd. Chalk River Project, Chalk River	11-57
CRT-338(Rev)	The Spherical Harmonics Method. II. (Application to Problems with Plane and Spherical Symmetry)	C. Mark, Same	2-57
CRT-340(Rev.)	The Spherical Harmonics Method. 1. (General Development of the Theory)	C. Mark, Same	2-57
ERI-2375-3-T	Investigation of Nuclear-Energy Levels. Technical Report to January 1, 1958	M. L. Wiedenbeck, Michigan Univ., Ann Arbor Engineering Research Inst.	1-58
*LA-749	Polythene-25 Critical Assembly and Neutron Distribution Studies	H. C. Paxton, G. A. Linenbarger	9-30-49
LA-2156	Index and Annotated Bibliography of Range and Stopping Cross Section Data	R. E. Brown, N. Jarmie, comps.	2-14-58
LA-2166	Optimization of Rocket Orbits. Part I. Idealized Calculations	K. W. Ford	2-10-58
*LAMS-2082	The Particle-in-Cell Method for Two-Dimensional Hydrodynamic Problems	F. H. Harlow, M. W. Evans, D. E. Harris, Jr.	8-29-56
MISC-1958-48	About the Λ^0 - α Potential from the $^5He_\Lambda$ and $^9Be_\Lambda$ Hyperfragment Binding Energies. Report No. 8/VI	H. Wilhelmsson, P. Zielinski, Instytut Badań Jadrowych, Warsaw and Nordisk Institut for Teoretisk Atomfysik, Copenhagen	1-58

*Microcards

MISC-1958-49	About High Energy Interactions in Nuclear Emulsions	P. Ciok, T. Coghen, J. Gierula, et al. Instytut Badan Jadrowych, Warsaw and Československá Akademie Věd. Fysiky Ústav, Prague	[1957]
MISC-1958-51	The Relativistic Limit of the Theory of Spin 1/2 Particles	M. Cini, B. Touschek, Istituto Nazionale di Fisica Nucleare, Rome and Rome. Universita. Istituto di Fisica	[1957]
MISC-1958-53	Research Investigation Directed Toward Extending the Useful Range of the Electromagnetic Spectrum. Eighth Quarterly Progress Report [for] September 16, 1957 through December 15, 1957	P. Kusch, Columbia Univ., New York. Columbia Radiation Lab.	12-15-57
MIT-RLE-TR-276	Characterization of Probability Distributions for Excess Physical Noises. (D.SC. Thesis)	J. Hilibrand, Mass. Inst. of Tech., Cambridge. Research Lab. of Electronics	9-7-56
*MURA-373	Design of a 50 Mev Electron Radial Sector FFAG Accelerator	F.T. Cole, A.M. Sessler, Midwestern Universities Research Assn., Madison, Wis.	11-4-57
NAA-SR-1992	Graphical Aids in the Calculation of the Shielding Requirements for Spent U^{235} Fuel	R.L. Ashley, Atomic International Div., North American Aviation, Inc., Canoga Park, Calif.	11-15-57
NARF-57-57T	Neutron Spectrum Measurements with Radioactivants	W.E. Dungan, Convair, Fort Worth, Tex.	12-30-57

*Microcard

NARF-58-2T	Effects of Reactor Radiation on the Electrical Properties of Electronic Components. Part III. Batteries and Standard Cells	J. W. Kunzman, Jr. Convair, Fort Worth, Tex.	1-17-58
NDA-86-1	The Neutron Cross Sections of Nitrogen	H. Lustig, H. Goldstein, M.H. Kalos, Nuclear Development Corp. of America, White Plains, N.Y.	6-30-57
NNP-6474	On Renewal Processes Related to Type I and Type II Counter Models--The General Counter Problems. Technical Report No. 37	R. Pyke, Stanford Univ., Calif. Applied Mathematics and Statistics Lab.	10-21-57
NYO-3436	Electron Microscope and Optical Studies of the Reaction of Carbon with Oxygen	T. J. Streznewski, J. Turkevich, Princeton Univ., N. J.	8-30-57
NYO-3786	Irradiation Damage to Glass	N. J. Kreidl, J. R. Hensler, Bausch and Lomb Optical Co., Rochester, N. Y.	10-57
ONRL-7-58	Nuclear Physics at Glasgow and Edinburgh	D. J. Zaffarano, Office of Naval Research, (London	1-23-58
ONRL-101-57	Directory of European Solid State Physicists	J.S. Smart, Same	8-28-57
ORNL-2292(Vol. 2)	A Monte Carlo Calculation of Air-Scattered Gamma Rays	R.E. Lynch, J.W. Benoit, W.P. Johnson, et al.	2-12-58
ORNL-2292(Vol. 3)	A Monte Carlo Calculation of Air-Scattered Gamma Rays	R.E. Lynch, J.W. Benoit, W.P. Johnson, et al.	2-12-58

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ORNL-2292(Vol. 4)	A Monte Carlo Calculation of Air-Scattered Gamma Rays	R. E. Lynch, J. W. Benoit, W. P. Johnson, et al.	2-12-58
ORNL-2292(Vol. 5)	A Monte Carlo Calculation of Air-Scattered Gamma Rays	R. E. Lynch, J. W. Benoit, W. P. Johnson, et al.	2-12-58
ORNL-2456	A Modification of the Spherical Harmonics Method in Neutron Transport Theory	A. Sauer	2-7-58
SCTM-126-57(51)	High-Speed Magnetization Versus Magnetic Field Intensity Curves for Various Ferromagnetic Materials	R. W. Kulterman, A. J. Shell, Sandia Corp., Albuquerque, N. Mex.	5-17-57
SCTM-195-57(51)	A Calibrated Raster Generator	G. E. Ingram, Same	8-27-57
SCTM-232-57(52)	Tape Data Editor	J. E. Liston, Same	9-10-57
SCTM-290-57(52)	A Miniature VHF Telemetering Transmitter for 28-VDC Operation	L. G. Snyder, Same	10-29-57
SCTM-301-57(14)	Theory of Shunt-Tuned Three-Wire Monopole	C. W. Harrison, Jr. Same	10-23-57
WASH-194	Reports to the AEC Nuclear Cross Sections Advisory Group, Idaho Falls, Idaho, July 17-18, 1957	C. W. Zabel, Los Alamos Scientific Lab., N. Mex.	2-14-58

Microcards

REACTOR SCIENCE

AECU-3596	Calculation of Effect of Fuel Burnup on Fuel and Poison Distributions and on Flux Distribution in the Marine Reactor	G. Hinman, General Atomic Div., General Dynamics Corp., San Diego, Calif.	1-29-57
AERE-R/R-2365	The Effect of Turbulent Diffusion on Temperature Transients in Liquid Metal Fuel Reactor Pipelines	J. J. Thompson	9-57
*ANL-5176(Pt. 6) (Del.)	Reactor Information Meeting, Argonne National Laboratory, October 7, 8, 9, 1953. Papers. Part 6. Processing.		
ANL-5798	Power Transfer Functions of the EBWR Obtained Using a Sinusoidal Reactivity Driving Function	J. A. DeShong, Jr.	1-58
CEND-0005-RS-17	Summary of Progress in Unclassified Areas of Reactor Technology	Combustion Engineering, Inc. Nuclear Div., Windsor, Conn.	2-6-58
CF-53-1-28	Studies of Straight Through Models with Multiple Inlet Jets.	L. B. Lesem, Oak Ridge National Lab., Tenn.	1-2-53
CF-57-10-41	Molten Salts for Civilian Power	H. G. MacPherson, Same	9-10-57
CREL-737	NRU Thermal Power Control	A. Pearson, C. G. Lennox	9-57
LMFS/P-1	Circulating Liquid Metal Fuel Reactors. (Engineering Studies on a Uranium-Bismuth-Thorium System).	W. Murgatroud, ed. Gt. Brit. Atomic Energy Research Establishment, Harwell, Berks, Eng.	7-25-56

*Microcards

*LMFS/P-9	Generalized Albedo Concepts in Two-Group Multi-Region Reactor Problems	J. J. Thompson,	12-17-56
NAA-SR-1955	A Further Evaluation of the Calder Hall Type of Nuclear Power Plant	W. F. Banks, Atomics International Div., North American Aviation, Inc., Canoga Park, Calif.	6-28-57
*NEI-55	The Detection of Blisters in NRX Fuel Rods by Flow Measurements	E. Siddall, Atomic Energy of Canada Ltd. Chalk River Project, Chalk River, Ont	8-22-55
*NP-6465	Simulation of a Major Pipe Rupture in a Pressurized Water Reactor Type Plant. Technical Report No. 58	M. J. McGoff, S. J. Rodgers, J. B. McDonough, MSA Research Corp., Callery, Penna.	10-31-57
*NPCC/RPWP/P-17	Conventions for Fluxes and Cross-Sections for Pippa Calculations	B. Cutts, R. R. Gallie, P. W. Mummary, Gt. Brit. United Kingdom Atomic Energy Authority. Industrial Group H. Q., Risley, Lancs, Eng.	5-56
*NPCC/RPWP/P-59	The Variation of Neutron Flux with Separation of Uranium Rods in a Channel of a Lattice	S. S. Stone, K. G. Greenhouse, Gt. Brit. Atomic Energy Research Establishment, Harwell, Berks, England	6-18-57
*NURG/M-11	Uranium Depletion, Plutonium Build-up and Long Term Changes in Reactivity in a Natural Uranium Power Reactor	J. F. Hill, Same	1-15-52

*Microcards

NURG/M-48	Temperature Transients in Pippa During the Initial Stages of Divergence	D.V. Wordsworth, Gt. Brit. Atomic Energy Res. Est. Harwell, Berks, Eng.	1-9-53
NURG/M-57	The Effect of Re-Entrant Cooling on the Attainable Temperature Rise Ratio in Gas-Cooled Reactors of the Pippa Type	J.H. Bowen, Same	4-14-53
NURG/M-59	Effect of Graphite Temperature on Power Sent Out by Pippa	J.H. Bowen, Same	5-12-53
NYO-8502	Application of Digital Techniques to Reactor Control Systems. Quarterly Report No. 3 [for] May 1 to July 31, 1957	Ford Instrument Co., New York	10-17-57
ORNL-2318	Reactor Safety System Response A Collection of Papers Presented at the Third Annual Meeting of American Nuclear Society, June 10, 1957, by the Reactor Controls Department	F.P. Green, ed.	2-14-58
POC-Data-51/A	MK I Uranyl Sulphate Loop in BEPO Design Manual (Revision A)	I. Everson, H.G. Lyall	7-57
RDB(R)/TM-16	The Effects of a Change in Graphite Density	B. Cutts, United Kingdom Atomic Energy Authority. Industrial Group H.Q., Risley, Lancs, Eng.	7-15-53
RDB(R)/TN-43	Two Group Core Calculations for the Calder Hall Thermal Reactors	B. Cutts, Gt. Brit. Dept. of Atomic Energy. Industrial Group H.Q., Risley, Lancs, Eng	6-2-54
RDB(R)/TN-55	A Survey of Lattice Calculations for Graphite Moderated Gas Cooled Thermal Reactors	B. Cutts, United Kingdom Atomic Energy Authority. Industrial Group H.Q., Risley, Lancs, Eng.	9-55
TID 7529(Pt. 1)	Reactor Heat Transfer Conference of 1956. Collected Papers and Reports of a Conference Held at New York, November 1 and 2, 1956	J.E. Viscardi, comp., Nuclear Development Corp. of Am White Plains, N.Y.	11-57

[illegible] 43	Minutes of the Fifth Tripartite Instrumentiation Conference. [Held at Brookhaven National Laboratory] October 22-26, 1956	Brookhaven National Lab., (Upton, N.Y.)	2-58
TRDC/P-55	Proposed Equipment for Neutron Flux Measurement in the Calder Works Thermal Reactors	R. J. Cox, G. V. Hough, United Kingdom Atomic Energy Authority. Industrial Group H.Q., Risley, Lancs, Eng.	10-4-54
WAPD-BT-5	The Bettis Technical Review, [Vol. 1, No. 5]. Reactor and Plant Engineering		12-57
WAPD-MRP-71	Pressurized Water Reactor (PWR) Project. Technical Progress Report for the Period October 24, 1957 to December 23, 1957		
YAEC-51	Monthly Progress Report for the Period December 1st to 31st, 1957	I.H. Coen, R.W. Garbe, Westinghouse Electric Corp. Atomic Power Div., Pittsburgh	1-20-58

MISCELLANEOUS

AECU-3450	High-Explosive Argon Flash Light Source	J. Todd, Jr., D. Parsons, Sandia Corp., Albuquerque, N. Mex.	1-11-57
ASTIA-U58-2	Technical Abstract Bulletin. Bulletin No. U58-2		2-1-58
[illegible]SC-1958-52	Listing of Report Numbers [of] United States Atomic Energy Commission Scientific Document Collection	Atomic Energy Commission, (Washington, D.C.)	1-1-58
NACA Abstracts-[illegible]	Research Abstracts and Reclassification Notice No. 124	National Advisory Committee for Aeronautics	2-10-58

[illegible] 34	Operations. Progress Report [for] July 1, 1957 to September 30, 1957	Atomic Energy of Canada Ltd. Chalk River Project, Chalk River, Ont.

LIST OF TRANSLATIONS ISSUED BY THE UCRL INFORMATION DIVISION

UCRL Trans. 373	The Electron Mass in Quantum Electrodynamics, by L. D. Landau, A. A. Abrikosov, and I. M. Khaiatnikov. Trans. from Akademiia Nauk, SSSR. Doklady 96, 261-4 (1954) 10p.
UCRL-Trans. 374	The Effect of the Physiological Condition of a Plant and of Certain External Effects on the Composition of the Products of Photosynthesis, by T. F. Andreeva and E. Ia. Nal'borchik. Trans. from Akademiia Nauk S.S.S.R. Doklady 114, 662-5 (1957). 12p.
UCRL-Trans. 375	Direct Measurements of the Life of Excited Molecules of Chlorophyll and Analogous Pigments in Various Media, by O. D. Dmitrievskii, V. L. Ermolaev, and A. N. Terenin. Trans. from Akademiia Nauk S.S.S.R. Doklady 114, 751-3 (1957). 7p.
UCRL-Trans. 377	The Nature of the Primary Photoreduced form of Chlorophyll and Its Analogues, by V. B. Evstigneev and V. A. Gavrilova. Trans. from Akademiia Nauk, SSSR. Doklady 114, 1066-9 (1957). 11p.

LIST OF UNCLASSIFIED REPORTS ISSUED BY THE UCRL INFORMATION DIVISION

UCRL-3839 Rev.	Neutrons from (α, n) Sources	Wilmot N. Hess	12-16-57
UCRL-8013	Spectrochemical Determination of Strontium-to-Calcium Ratio in Food, Milk, Cream, Blood, Feces, and Urine of Cows	G. V. Shalimoff, J. G. Conway, A. E. Pitzer	1-58
UCRL-8086	Cyanide Effects on Carbon Dioxide Fixation in Chlorella	B. R. Rabin, D. F. Shaw, N. G. Pon, et al.	12-17-57
UCRL-8148	Cherenkov Counters in High-Energy Physics	C. Wiegand	1-21-58
UCRL-8173	A Four-Gun Oscilloscope for Use in Nuclear Research	H. G. Jackson	2-6-58

INFORMAL REPORTS ISSUED

Information Division

UCID-3 (7318-25 M1)	Heavy Ion Accelerator Drift Tubes. Post Stripper Magnets, Copper, Power and Water Requirements	R. Young	12-14-54
UCID-4 (4904-06 M1)	Radiation Shielding-University of Southern California Linac	O. W. Callahan	11-15-57

Alvarez Group

4310-03 LA11	Relativistic Transformations in Hyperon and K Decay	F. Crawford	1-15-58
4310-03 LA12	Using a "Biased" Sample to Find Unbiased Track Length	F. Crawford	2-24-58

Electronics

EE-532	Voltage Glow in the 7046 Phototube	Q. Kerns, F. Kirsten	2-21-58

[illegible]	Health Chemistry - Automatic Air Filter-Paper Survey Data Reduction Equipment	J. Russell, T. Taussig	2-26-58

Mechanical Engineering

3140-01 M162D	Engineering Note Series (Berkeley)	F. Porter	5-10-57
3140-01 M191	12 Bev Pulsed Air-Core Synchrotron Preliminary Cost Estimate	R. Burleigh	1-28-58
3140-01 M192	Comparison of Recent Magnet Costs	R. Burleigh	2-22-58
4312-04 M10	72 Hydrogen Bubble Chamber Vacuum System 200 PSIG Hydrostatic Test of Vacuum Tank Cover	W. Eaton	2-19-58
4902-02 M7	184-Inch Cyclotron Operation New Equipment and Components Floor Level Ion Source Track Design and Operating Instructions	W.O. Brunk	1-29-58
4902-02 M8	184-Inch Cyclotron Operation New Equipment and Components Meson Cave Outer Wall Steel Belt	W.O. Brunk	2-20-58
4902-02 M9	184-Inch Cyclotron "Orion" Magnetic Measurements	A. DuBois	2-24-58
4902-02 M10	184-Inch Cyclotron "Hector" Magnetization Curves (200 Mev Pair Magnet)	A. DuBois	2-24-58
4902-06 M16	184-Inch Cyclotron Modification Vacuum System Recommendations to Reduce Pump-down Time	W. Brunk	9-24-57
4902-06 M7A	184-Inch Cyclotron Operation Weight Changes in Building 6	A. DuBois, R. Burleigh	5-3-57
4901-06 M18	184-Inch Cyclotron Weight Changes in Building 6 Feb., 1958	A.O. DuBois	2-19-58
[illegible]-01 M22	Disposal of Antiproton Experimental Equipment at Tear-down	C.G. Larson	2-19-58