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Berkeley, California

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LIST OF UNCLASSIFIED REPORTS RECEIVED AND ISSUED BY THE UCRL
INFORMATION DIVISION DURING THE PERIOD OF MAY 16-31, 1956

June 4, 1956

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 de Nemour & 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.

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LIST OF UNCLASSIFIED REPORTS RECEIVED AND ISSUED BY THE UCRL
INFORMATION DIVISION DURING THE PERIOD OF MAY 16-31, 1956

Radiation Laboratory, Department of Physics ²⁵
University of California, Berkeley, California

June 4, 1956

<u>Index Number</u>	<u>Title</u>	<u>Author</u>	<u>Date</u>
	<u>BIOSCIENCES</u>		
HW-23352 (Rev.)	Study of Atmospheric Contamination in the Melt Plant Building	F. E. Adley, E. W. Gill, R. H. Scott	4-4-52
ITR-1159	Exposure of Foods and Foodstuffs to Nuclear Explosions. Preliminary Report of Operation Teapot for February-May, 1955. Program 32.	S. C. Rowe, C. A. Greenleaf, R. Philbeck, et al., Food and Drug Administration, Federal Civil Defense	5-55
*NARF-55-34T (Rev. A)	Preliminary Evaluation of Environmental Radioactivity in the NTA Test Area and Flight Corridor	R. Shockely, Convair, Fort Worth, Tex.	1-15-56
ORNL-1381 (Rev.)	A Review of a Polonium Contamination Problem	D. Callihan, D. Rose	8-12-52
ORO-125	Radioisotopes in Medicine	G. A. Andrews, M. Brucer, E. B. Anderson, Oak Ridge Inst. of Nuclear Studies, Inc.,	9-53

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ORO-150	Agricultural Research Program. Semi-Annual Progress Report for July 1, 1955 to December 31, 1955	Tennessee University	5-56
UCLA-367	The Effect of Gamma Irradiation Upon the Retina of Bufo	B. M. Allen M. H. Devick, California Univ.	5-10-56
UCLA-368	Reduction of Combustible, Low-Level Contaminated Wastes by Incineration	L. B. Silverman, R. Dickey, California Univ.	5-15-56

CHEMISTRY

AECD-3713	A Glass Still for the Evaluation of Column Packing with Uranium Hexafluoride	R. M. McGill, Carbide and Carbon Chem.	7-2-51
AECD-4058	Low Geometry Attachment for Methane Flow Proportional Alpha Counter	M. J. Rose, Monsanto Chem.	10-7-47
AECD-4094	Laboratory Studies of the Pentaether Process for the Recovery and Decontamination of Uranium	T. E. Hicks, P. C. Mayer, H. W. Crandall California Univ.	2-16-51
AECD-4101	Electrolytic Reduction of Uranyl and Ferric Sulfate Solutions	W. Freyberger, Mass. Inst. of Tech.	5-12-50
AECD-4105	Electrolytic Precipitation of Uranium from Rand Leach Solutions	G. W. Clevenger, Mass Inst. of Tech.	2-28-51
AECD-4106	Alpha Counting for the Assay of Uranium in Ion Exchange Effluents	E. M. Rubino, Mass Inst. of Tech.	2-28-51
AECD-4113	Systematic Ion Exchange Studies	G. W. Lower, Mass. Inst. of Tech.	2-28-51

AECL-298	Spectrochemical Analysis of Plutonium	G. Zotov, 5-3-55 C. A. Fowler, Atomic Energy of Canada Ltd.
BMI-261	Distribution of Rare-Earth Tracers Between Aqueous and Tributyl Phosphate-Diluent Phases. Final Report	R. H. Blackmore, 6-20-52 A. E. Bearse, G. D. Calkins, Battelle Memorial Inst.
CRLR-561	Absolute Beta Measurement of Mixed Nuclides (U)	F. Gabbard, 12-27-55 A. Berman, D. L. Rigotti, Chemical and Radiological Labs.
ISC-597	Preparation, Properties, and Analytical Applications of Some Substituted Alicyclic Vic-Dioximes	D. T. Hooker, 3-55 C. V. Banks Ames Lab.,
*K-389	Uranium Recovery from Decontamination Solutions by Spray Decomposition	A. L. Allen, 4-27-49 H. A. Bernhardt, S. Bernstein, et al.
KAPL-1497	The Determination of Free Acid in Solutions of Aluminum and Thorium and Uranyl Nitrates	M. E. Jones, 2-1-56 B. F. Rider, H. C. Hendrickson
*KLX-63	Detailed Project Status Report; Jaw Type Remote Connectors	G. I. Staber 8-26-49
*KLX-1336	Decontamination of Crib Wastes (24-A3). Summary Progress Report for February, 1951	Kellex Corp., 3-7-51 New York
*KLX-1614	Homogeneous Reactor Processing; Progress Report for April, 1953 Job 57	Vitro Corp. 5-10-53 of America, New York
*LA-422R	Plastic Bonding of Uranium Hydride and Other Materials	J. E. Burke, 10-5-45 Los Alamos Scientific Lab., N. Mex.

* Microcards

LA-1975	Purification of Gram Amounts of Americium	J. S. Coleman, 5-21-56 Los Alamos Scientific Lab.
*M-1047	Thermal Decomposition of Hydrated RO_4 . Monthly Report No. 7	C. A. Kraus, 4-19-44 Brown Univ.
*M-1320	The Reaction of HF with Sodium Fluoride - The Desorption of HF from Sodium Acid Fluoride	S. G. Turnbull, 5-25-44 Jr. de Pont de Nemours
*M-1379	Determination of OA HF Content of C-616 UF_6 by Freezing Point Measurement	C. W. Maynard 10-31-44 de Pont de Nemours
*M-2783	Colorimetric Determination of Nickel in UF	Manhattan District, Oak Ridge, Tenn.
*M-3095	The Spectrographic Analysis of High Purity Magnesium Metal	V. A. Fassel
*M-4240	The Estimation of Metal Content by Hydrogen Evolution. Application to Metallic Uranium and Magnesium	N. H. Furman, 5-47 E. L. Stanley Princeton Univ.
*M-4251	The Volumetric Assay of Uranium Tetrafluoride	N. H. Furman, 5-47 G. P. Haight, Jr., Princeton Univ.
*M-4461	Report on the Helium System Experiment at Oak Ridge, Tennessee	H. W. Newson, Brookhaven National Lab., Upton, N. Y.
*MAB-104-M	Conference on High Temperature Elastomers, October 28-29, 1955	National Res. Council.
*MCC-1023-TR-186	Isotopic Studies on Some Gaseous Boranes. Final Report	W. S. Koski, 6-30-55 R. P. Hamlen, J. J. Kaufman, et al. Johns Hopkins Univ.
*Microcards		

*MCC-1023-TR-187	Complexes of Ethers with Diborane. Final Report	UCRL-3433 H. A. Wirth, 11-55 F. Massoth, Syracuse Univ.
*MCC-1023-TR-191	The Reaction of Copper (I) Chloride with Lithium Boro-Hydride in Diethyl Ether (Thesis)	R. H. Toeniskoetter Saint Louis Univ. 2-56
*MCW-31	Some Solubility and Washing Data for Ferric Nitrate in Ether Solutions of Uranyl Nitrate	A. E. Ruehle, 4-1-46 Mallinckrodt Chem.
*MCW-168	Notes on the M. I. T. Reports Regarding Working Low-Grade African Ores	C. F. Ritchie 2-15-49 Mallinckrodt Chem.
*MCW-185	Aqueous Oxidation of Metallic Uranium "Sawdust"	O. Buckheim 5-12-49 Mallinckrodt Chem.
*MCW-210	Reduction of U_3O_8 with Hydrogen Reaction Rate	C. W. Kuhlman 8-19-49 Mallinckrodt Chem.
MISC-1956-125 (Mf-63)	Properties and Analytical Applications of the Rare Earth Fluorides. (Thesis)	G. E. Knudson, 1-54 Iowa State Univ.
MISC-1956-126	The Physical Properties of Some Interstitial Phases. Trans. from Akademiia Nauk, SSSR. Doklady 93	G. V. Samsonov
MITG-207	Acid-Leaching of Western Carnotite Ores	N. N. Schiff, 9-30-48 Mass. Inst. of Tech.
MITG-220	Radioassay of Products from Precipitated Phosphatic Materials	E. M. Rubino 9-6-49 Mass. Inst. of Tech.
MITG-263	Preliminary Mineral Engineering Studies of Cupriferous Uranium Ores R-1 and R-2	D. R. George, 1-17-51 C. S. Abrams, P. Galvanek, Jr. Mass. Inst. of Tech.
MAA-SR-1446	Spectrophotometric Determination of Zirconium in Thorium	L. Silverman, 5-15-56 D. W. Hawley, Atomics International Lab.
*Microcards		

NAA-SR-1488	A Rapid and Precise Method for the Determination of Oxygen in Certain Gases; Modified Brady Method	L. Silverman, 5-15-56 W. Bradshaw, Atomics International Div.
*NAA-SR-Memo-1475	Calculated Radioactivity in the Coolant of an OMR	R. J. Beeley, 9-29-55 North American Aviation, Inc.,
*NACA-TN-3558	Heat Capacity Lag of Gaseous Mixtures	T. D. Rossing, 8-31-54 R. C. Amme, S. Legvold Iowa State Coll.
NBS-4682	Fluorine Substitution in Hydrous Silicates and Related Minerals	A. Valkenburg, 3-56 C. R. Robbins, G. M. Ugrinic
*NBS-C-562	Bibliography of Research on Deuterium and Tritium Compounds 1945 to 1952	L. M. Brown, 1-27-56 A. S. Friedman, C. W. Beckett
*NBS-C-568	High-Temperature Reactions of Uranium Dioxide with Various Metal Oxides.	S. M. Lang, 2-20-56 F. P. Knudsen, C. L. Fillmore, et al ,
*NOLC-310	High-Temperature Dielectric Materials. Interim Report No. 8 for June - September 1955	Naval 1-27-56 Ordnance Lab., Corona, Calif.
NP-1971	Relative Isotopic Abundances of the Elements	K. T. Bainbridge, A. O. Nier 12-50 National Res. Council
*NRL-4429	Partially Fluorinated Esters and Ethers as Temperature Stable Liquids. Part I. Synthesis and Characterization.	P. D. Faurote, 8-20-54 C. M. Murphy, J. G. O'Rear, Naval Res. Lab.
*Microcards		

- *NP-4930 Fluorescence and Conductivity Phenomena. Progress Report No. 8 H. Kallmann, 8-53
New York Univ.
- *NP-5879 Research Extending the Useful Range of the Electromagnetic P. Kusch, 12-15-55
Spectrum. Final Quarterly Progress Report for September 1, 1955 Columbia Univ.
through December 15, 1955 New York
- *NP-5884 Development of "Chain Type" Polyphenyl Compounds for Use as J. A. Krimmel, 1-20-56
High Temperature Lubricants and Hydraulic Fluids. Quarterly J. R. Hobaugh,
Progress Report No. 3 for October 15, 1955 to January 15, 1956 Denver Univ.
- *NP-5885 The Thermodynamic Properties of Molten Sats. Bimonthly Progress O. E. Myers, 2-10-56
Report No. 6 for December, 1955 - January 1956 Stanford Res.
- *NP-5887 Behavior of Na-24 and Mo-99 as Water Contaminants Leaking from R. Campana, 2-15-56
A 550 F, 2000 PSIG System. Technical Report No. 46. J. Mausteller,
Mine Safety
Appliances Co.
- *NRL-Memo- Thermal and Related Physical Properties of Molten Materials. B. Walker, 1-56
561 Progress Report No. 15 for August 1 - October 31, 1955 C. Ewing,
R. Miller,
Naval Research Lab.
- *NYO-1455 Progress Report for March, 1951 J. Pinkston, 4-6-51
K. Willson,
Harshaw Chem Co.
- NYO-3913 Part A. Thermodynamic Estimation of Feasibility of Certain T. Gibby, Jr., 2-26-53
Reactions Leading to U or UH₃. Part B. Preliminary C. Messer,
Preparative Studies. For the Period Ending February 1, 1953. G. Evans,
Tufts Coll.
- *NYO-5052 42-43A Metal Uranium - Effect of Adding Magnesium and Calcium Mallinckrodt 6-2-44
Fluorides to the Lime Liner. Report No. 4. Chem.
- *Microcards

NYO-5074	Effect of the Nitrogen Content of Magnesium Used in Reduction on Casting Yield	W. Oppold, 1-13-45 Mallinckrodt Chem.
*NYO-5075	Determination of Free XO_2 UO_2 by Ignition to X_3O_8 U_3O_8	R. Bragdon, 1-18-45 Mallinckrodt Chem.
*NYO-5123	Further Investigations of Interferences in the Titration of X U.	J. McCoy, 6-8-45 G. Martin, T. Braddock, Mallinckrodt Chem.
*NYO-5194	A Study of Some Factors Affecting the Interference of Some Elements in the Titration of Uranium.	G. Martin, 8-23-46 J. McCoy, Mallinckrodt Chem.
*NYO-5259	Tentative Operating Procedure--Sawdust U Metal Converter	Mallinckrodt Chemical
*NYO-6148	Millimicrosecond Techniques for Fast Neutron Spectroscopy. Final Report	S. Friedland, 2-1-56 Connecticut Univ.
ORNL-2064	Radioisotope Production and Process Development Annual Report for 1955	A. Rupp 5-21-56
PDB-144	Final Purification of Strontium-90. Part V. Purification of Versene Wastes on Dowex-50 Columns	W. Bourns 9-1-55 Atomic Energy of Canada
RM-1650	Approximate Thermodynamic Properties of Compressed Hydrogen Gas from 5000 to 12,000°K	F. Gilmore, 3-7-56 Rand Corp.
RMO-2030	Uranium Extractants -Preparation and Use in Phosphate System	H. Heidt, 9-13-54 D. Tynan, R. McCullough, et al., International Minerals and Chemical Corp.
*Microcards		

- TID-7508 Raw Materials Conference on Solvent Extraction, Held at Winchester, Massachusetts, January 17, -18, 1955 A. Rose, 4-1-55 National Lead Co.
- TT-546 Energy Transfer of Sensitized Fluorescence of Mixtures of Vapours of Organic Compounds. Trans. from Akademiia Nauk, SSSR. Doklady 96 A. Terenin, A. Kariakin, National Res. Council of Canada

ENGINEERING

- AECD-3976 Materials Testing Reactor, Structure Temperatures G. Hanson, 2-13-53 K. McCollom, A. Grimaud, Phillips Petroleum Co.
- CF-51-8-216 ORNL Research Reactor Design Data W. Sholl, Jr. 8-30-51 Oak Ridge National Lab.
- CF-54-4-170 Free Convection in the Reactor Pool (Revised) N. Lansing 4-27-54 Oak Ridge National Lab.
- CF-55-4-182 The Rheology of Thorium Oxide Slurries. Report No. I P. Crowley, 4-20-55 D. Thomas, Oak Ridge National Lab.
- CF-55-9-172 A Parametric Study of Rate of Power Removal from Homogeneous Boiling Reactors L. Alexander, 9-20-55 S. Jaye, Oak Ridge National Lab.
- CF-55-10-7 HRP-CP: Heat Removal from a Proposed Hydroclone Underflow Pot Geometry for a Volume Heat Source P. Haas, 10-5-55 J. Langsdon, Oak Ridge National Lab.
- CF-55-10-17 HRT Space Cooler Heat Load F. Zapp, 10-5-55 Oak Ridge National Lab.
- CF-55-12-113 HRP-CP: Design of Leak Detection System for HRT Chemical Processing Plant W. Carter, 12-20-55 Oak Ridge National Lab.

DP-150	An Explosion-Resistant Ion Chamber for the Measurement of Tritium	F. Ryder, Du Pont de Nemours	3-56
HE-150-136	Free Molecule Flow Forces and Heat Transfer for an Infinite Circular Cylinder at an Angle of Attack.	L. Talbot, California University, Berkeley	3-26-56
*M-1485	Memorandum of Flow of Gas Through Capillary Tubes	E. Melkonian, Columbia Univ.	1-11-45
*N-2236	Considerations Relative to the Gas Flow Channels and Heat Transfer Surfaces of High-Temperature Oxide Pile	A. Robertson Chicago, Univ.	3-1-46
*NACA-1210	Analysis of Turbulent Heat Transfer, Mass Transfer, and Friction in Smooth Tubes at High Prandtl and Schmidt Numbers.	R. Deissler, Lewis Flight Propulsion Lab.	1955
*NACA-TN-3584	Free-Convection Effects on Heat Transfer for Turbulent Flow Through a Vertical Tube	E. Eckert, A. Diaguila, J. Livingood, Lewis Flight Propulsion Lab.	9-15-55
*NP-5870	Research on Minimum Scatter in Fatigue Testing. Final Research Report	F. McClintock, Mass. Inst. of Tech. Cambridge	12-28-55
*NP-5873	A Simple Method for Evaluating Blast Effects on Buildings. (Revised Edition).	Ill. Inst. of Tech. Chicago.	7-54
*NP-5878	Experimental Study of the Velocity and Temperature Distribution in a High Velocity Vortex Type Flow. Technical Report No. 6.	E. Eckert, J. Hartnett, Minnesota Univ.	9-55
*NRL-4644	A Hydrogen Effusion Method for the Determination of Corrosion Rates in Aqueous Systems at Elevated Temperature and Pressure	M. Bloom, M. Krulfeld, Naval Res. Lab.	9-16-55
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*NYO-5084	Method of Washing Uranium Metal Sawdust	W. Oppold, 2-26-45 Mallinckrodt Chem.
*NYO-5097	Mold Dressings for Graphite	W. Oppold, 3-29-45 Mallinckrodt Chem.
<u>METALLURGY AND CERAMICS</u>		
AECD-3717	Pitting Corrosion Observed on Active and Dummy Fuel Elements from the Bulk Shielding Reactor	A. Olson, 11-18-54 J. English, E. Compere, et al., Oak Ridge Nat'l. Lab.
AECD-4144	The Production of High-Purity Beryllium Carbide	J. Theodore, 10-15-52 W. Beaver, A. Dolance, et al. Brush Beryllium Co.
KAPL-1493	X-Ray Measurement of Annealed Samples of Damage Graphite	D. Chipman, 1-13-56 B. Warren, Knolls Atomic Power Lab.
KAPL-1523	Remote Operating "Tukon" Hardness Tester	E. Craig, 12-21-55 R. Sterns, Knolls Atomic Power Lab.
*M-875	Operation of Experimental C-216 Unit (Nickel Anodes) in Semi-Works	R. Downing, 4-18-44 R. McHarness, du Pont de Nemours
*M-887	Study of Factors Which Influence the Rate of Reaction Between UO_3 and CCl_4 . Progress Report	C. Kraus, 12-15-42 Brown Univ.
*M-3105	The Uranium-Carbon System	H. Wilhelm, A. Daane, J. Carter, et al., Iowa State Coll.
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*M-3106	The Uranium-Thorium System	O. Carlson, A. Daane, A. Wilson, Iowa State Coll.
*M-3107	The Uranium-Tin System	D. Treick, J. Carter, A. Snow, et al., Iowa State Coll.
*M-3300	Effects of Pile Radiation on Be Metal	S. Siegel, 11-27-46 Clinton Labs.
*M-4528	Production Report on Tubealloy Uranium Metal by Electro Metallurgical Company	G. Bagley, 5-14-43 Electro Metallurgical Co.
MISC-1956-120	Activation Energies for Creep of High Purity Aluminum Forty Sixth Technical Report	O. Sherby, 4-15-56 J. Lytton, J. Dorn, California Univ. Berkeley, Calif.
MISC-1956-121	Fortieth Quarterly Report to Sponsors of the Institute for the Study of Metals	Chicago Univ. 3-56
MISC-1956-123	Titanium Program, Project TB4-15 (Subtask 1). Twenty-First Quarterly Progress Report for January 1 to March 31, 1956	Bureau of Mines
MISC-1956-126	The Physical Properties of Some Interstitial Phases. Trans. from Akademiia Nauk, SSSR. Doklady 93	G. Samsonov
MISC-1956-128	An Index of Studies of Alloy Phase Diagrams in Progress December, 1955	A. Knapton, 4-16-56 Office of Naval Res.
MISC-1956-129	The Measurement of the Absolute Energy of Low Angle Dislocation Boundaries in Zinc. Fourteenth Technical Report	R. Shaw, 5-56 T. Johnston, R. Stokes, et al., Calif. Univ. Berkeley

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*N-1570	Diffusion of Helium Through Graphite	M. Burton,	9-15-44
		Chicago Univ.	
*NACA-RM-E54B15	Effects of Some Metal Additions on Properties of Molybdenum Disilicide	H. DeVincentis,	2-23-54
		W. Russell,	
		Lewis Flight	
		Propulsion Lab.	
*NACA-RM-E54F10	Preliminary Investigation of Stress-Rupture and Tensile Strength of Thermenol, an Iron-Aluminum Alloy	C. Gyorgak,	6-17-54
		Lewis Flight,	
		Propulsion Lab.	
*NACA-TN-3595	Wear of Typical Carbon-Base Sliding Seal Materials at Temperatures to 700 ^o F.	R. Johnson,	12-1-55
		M. Swikert,	
		J. Bailey,	
		Lewis Flight	
		Propulsion Lab.	
*NACA-TN-3657	Friction Studies of Graphite and Mixtures of Graphite with Several Metallic Oxides and Salts at Temperatures to 1000 ^o F.	M. Peterson,	12-14-55
		R. Johnson,	
		Lewis Flight	
		Propulsion Lab.	
*NP-5871	Aircraft Structures Research at Elevated Temperatures	J. Duberg,	8-26-55
		Langley	
		Aeronautical Lab.	
*NP-5874	Investigation of a New Method for the Determination of the Coefficients of Surface Diffusion of Metals. Quarterly Progress Report No. 10	P. Mataich,	1-31-56
		Horizons, Inc.	
*NP-5875	Effects of Radiation Quenching, Ion-Bombardment and Annealing on Catalytic Activity of Pure Nickel and Platinum Surfaces. Interim Technical Report No. 1 for July 1, 1955 - January 1, 1956	H. Farnsworth,	1-20-56
		R. Woodcock,	
		Brown Univ.	
*NP-5881	The Effect of Hydrogen on the Mechanical Properties of Titanium and Titanium Alloys. Summary Report No. 4 for August 1, 1954 to July 31, 1955	G. Lenning,	7-31-55
		L. Berger,	
		R. Jaffee,	
		Battelle Memorial Inst.	

*Microcards

*NP-5882	Effect of Variation of Temperature and Pressure on Composition of Alloys. Final Report for January 1, 1954 through December 31, 1955	W. Spicer Georgia Inst. of Tech.
*NP-5888	Delayed Yielding in a Substitutional Solid Solution Alloy	L. Shepard, 2-1-56 J. Dorn, California Univ.
*NP-5890	Temperature Dependence of the Hall Coefficients in Copper-Nickel Alloys. Technical Report No. 2	F. Allison, 2-29-56 Carnegie Inst. of Tech.
NYO-7442	Determining Activity Coefficients of the Components of Na/K Alloys Over a Range of Compositions and Temperatures. Technical Progress Report	New York Univ. 5-1-56
SO-2524	Creep and Stress-Rupture Properties of Zirconium; Effect of Annealing Treatment	R. Guard, 5-56 J. Keeler, General Electric Co.
WAPD-143	Mechanical Properties Evaluation of Zircaloy-3	F. Forscher, 3-26-56 Westinghouse Electric Corp.
WAPD-153	Effect of Irradiation on Weldability of ASTM A212, Grade B.	W. Hutchinson, 2-15-56 Westinghouse Electric Corp.

PHYSICS

AECD-3712	History and Status of the EBR	W. Unbehaun , 4-15-53 Chicago Operations
AECD-4095	Suggestion for an Experimental Power Reactor. An Impregnated Graphite, Nitrogen-Cooled Reactor and Gas Turbine, Using Materials and Equipment Available Now.	F. Daniels, 4-50 Argonne National Lab.
AERE-C/M-262	Fission Product Gases from a Homogeneous Power Reactor	P. Davidge, 11-55 C. Lock, Gt. Brit. Atomic Energy Res. Establishment
AERE-I/R-1688	Prompt Gamma-Rays from Neutron Capture as a Means of Oil Well Control	D. Smith, 10-26-55 G. Church, Gt. Brit. Atomic Energy Res. Establishment
AERE-NP/R-1770	The Design of a Cerenkov Counter for the Proton Synchrotron at Birmingham University	J. Jelley, 8-22-55 Gt. Brit. Atomic Energy Res. Establishment
AERE-NRDC-81	Tables of Neutron Cross Sections of Fissile Materials. I. Harwell Data	P. Egelstaff, 11-55 Gt. Brit. Atomic Energy Res. Establishment
AERE-R/R-1225	A Two Group Analysis of Z. E. T. R. Experiments	F. Fenning, 11-24-55 C. Horton, J. McCullen, Gt. Brit. Atomic Energy Res. Establishment
AERE-RP/M-67	Some Observations on γ -Ray Scattering Round a Shadow Shield in Water	C. Horton, 9-29-55 J. Harrison, A. Mills, et al., Gt. Brit. Atomic Energy Res. Establishment

AERE-RP/R-1776	The Diffusion Theory of Thermal Neutron Fine Structure in Reactors with Non-Uniform Spacing of the Fuel Elements. Part I.	D. Newmarch, 10-27-55 Gt. Brit. Atomic Energy Res. Establishment
APEX-248	Analytical Solution of the P_3 Approximation to Transport Theory in Two Cylindrical Regions (Program I)	R. McCready, 3-30-56 Aircraft Nuclear Propulsion Program
BMI-1083	The Development of a Thermal-Neutron-Flux Measuring Instrument	C. Smith, 4-12-56 C. Weaver, J. Chastain, et al., Battelle Memorial Inst.
BMI-1086	A Wire-Activation Technique for Reactor-Flux-Profile Measurements	A. Klickman, 4-25-56 G. Cunningham, J. Chastain, et al., Same
BMI-1086	A Wire-Activation Technique for Reactor-Flux-Profile Measurements	A. Klickman, 4-25-56 G. Cunningham, J. Chastain, et al., Same
BNL-1987	Intracell Flux Traverses and Thermal Utilizations for 1.15 Enriched Uranium Rods in Ordinary Water	H. Kouts, 8-11-54 Brookhaven National Lab.
BNL-1992	Thermal Utilization Measurement	G. A. Price 8-19-54 Oak Ridge National Lab.
BNL-2094	Exponential Experiments on Light Water Moderated 1 per cent U-235 Lattices	H. Kouts, 11-28-52 J. Chernick, I. Kaplan, Brookhaven National Lab.
BNL-JGG-7	Alignment of the Magnetic Centers of Quadrupole Focusing Magnets in a Linear Accelerator	J. Cottingham, 4-27-56 Same

BNL-JPB-5	Location of the A. G. S. Linac Injector	J. Blewett, 4-6-56 Brookhaven National Lab.
CF-54-1-25	The Capture of Polarized Neutrons by Polarized Sm ¹⁴⁹ Nuclei	L. Roberts, 1-54 S. Bernstein, J. Dabbs, et al., Oak Ridge National Lab.
CRRP-606	Method of Studying Multi-Region Reactors with an Analog Computer	J. Bayly, 4-6-56 R. Pearce, Atomic Energy of Canada
IDO-16064	Permissible MTR Power Levels With and Without Film Boiling	C. Leyse, 1-15-53 Phillips Petroleum Co.
KAPL-1502	Electrical Contact Resistance Between Sodium and Stainless Steel	L. Vandenberg, 2-14-56 Knolls Atomic Power Lab.
*LA-206	A Simplified Method for Calculating Critical Sizes	H. Bethe, 1-19-45 Los Alamos Scientific Lab.
*LAMS-1949	Theoretical Expectations Concerning Double β -Decay	E. Konopinski, 8-55 Los Alamos Scientific Lab.
*LAMS-1973	Influence of Gamma Irradiation on RG 8/U Cable	R. Kloepper, 11-55 Same
*M-1772	A Radiation Dose Integrator of High Sensitivity	G. Dessauer, 9-13-45 K. Davis, F. White, Rochester, N. Y. Univ.
*M-3685	Neutron Monitoring by Means of "Special Fine Grain Alpha Emulsion" Film	J. Cheka, Clinton Labs.
*Microcards		

MISC-1956-117	The Movement of Positive Ions in Their Own Gas. Trans. from Akademiia Nauk, SSSR. Doklady 98.	Yu. Kagan, V. Perel'
MISC-1956-118	The Conductivity of Films in a Longitudinal Magnetic Field. Trans. from Akademiia Nauk, SSSR. Doklady 99	M. Axbel
MISC-1956-119	NRL Quarterly on Nuclear Science and Technology. Progress Report for the Period January - March, 1956	Naval Res. Lab.4-1-56
MISC-1956-122	Effect of the Finite Size of the Nucleus on μ -Pair Production by Gamma Rays	G. Rawitscher, 1955 RioDe Janeiro, Centro Brasileiro De Pesquisas Físicas
MISC-1956-124	On the Possibility of Producing Thermonuclear Reactions in a Gas Discharge. A summary in English of two talks at Harwell, England	W. Igor Kurchatov
Monograph 2452	Regeneration Analysis of Junction Transistor Multivibrators	D. Pederson, 6-55
Monograph 2484	Audio Amplifier Applications of Junction Transistors	R. Kircher, 7-55 R. Trent, D. Fewer
Monograph 2520	Crosstalk on Open-Wire Lines	W. Babcock, 1955 E. Rentrop, C. Thaeler
Monograph 2549	Diffused Emitters and Bases for Silicon and Germanium Transistors	M. Tanenbaum, 1-56 E. Thomas, C. Lee
Monograph 2552	A Modern Semiconductor-Single-Crystal Germanium	H. Bridgers 1-16-56
Monograph 2557	High-Frequency Silicon-Aluminum Alloy Junction Diodes	M. Prince 10-55
Monograph 2559	Crossbar Tandem as a Long-Distance Switching System	A. Adam 1-56
Monograph 2561	Waveguide Investigations with Millimicrosecond Pulses	A. Beck 1-56
Monograph 2562	Experiments on the Regeneration of Binary Microwave Pulses	O. DeLange 1-56

Monograph 2564	Coupled Helices	J. Cook, R. Kompfner, C. Quate	1-56
Monograph 2565	Crowing Waves Due to Transverse Velocities	J. Pierce, L. Walker	1-56
Monograph 2574	Negative Resistance Regions in Collector Characteristics of Point-Contact Transistor	L. Miller	1-56
Monograph 2575	Dependence of Transistor Parameters on Distribution of Base Layer Resistivity	J. Moll, I. Ross	1-56
Monograph 2587	Similarity Principle with Boundary Conditions for Pseudo-Analytic Functions	C. Lee	3-56
Monograph 2591	Magnetic Properties of Some Orthoferrites and Cyanides at Low Temperatures	R. Bozorth, H. Williams, D. Walsh	1956
*MonP-402	Critical Mass and Neutron Distribution Calculations for the H ₂ O Moderated Reactor with D ₂ O, H ₂ O, and Be Reflectors	E. Greuling, B. Spinrad Clinton Labs.	10-29-47
*MURA-FTC-3	Mark V FFAG Expanded Equations of Motion	F. Cole Midwestern Universities Res. Assn., Urbana, Ill.	1-19-56
*MURA-TO-5	Mark V with Scalloped Motion in the Axial Direction	T. Ohkawa Midwestern Universities Research Assn.	
NAA-SR-1571	An Electrical Resistivity Study of Lattice Defects Introduced in Copper by 1.25 Mev Electron Irradiation at 80°K	C. Meehan, J. Brinkman	4-15-56
NAA-SR-1618	The Kinetic Behavior of Water Boiler Type Reactors	M. Remley, J. Flora, D. Hetrick, et al., Atoms International Inc.	4-1-56

*Microcards

*MARF-55-88T	Calibration of a Compensated Ion Chamber for Use as a Gamma Detector	E. Kostyniak, C. Dickenson, Convair, Fort Worth, Tex.	1-25-56
NDA-18	The Improvement in Self-Regulating Ability of Water Moderated Reactors by Means of Graphite and D ₂ O Reflectors	L. Gartner, Nuclear Development Associates, Inc.,	8-31-55
NEVIS-24	The Elastic Scattering of 78 Mev Pions from Copper	R. Williams, W. Baker, J. Rainwater, Columbia Univ.	3-56
*NP-5883	East-West Asymmetry of Positive and Negative Mesons, Technical Report No. 67	F. Harris, Jr. Mass. Inst. of Tech.	12-15-55
*NP-5889	Slow Neutron Scattering by Polycrystalline and Non-Crystalline Substance Technical Report No. 2 for November 1, 1954 to December 15, 1955	R. Delaney, P. Persiani, A. Weber Saint Louis Univ.	1-15-56
NRL-4630	An Active Filter	G. Jensen, J. McGeogh, Naval Res. Lab.	11-10-55
*NYO-6457	Progress Report of the Work of the Bartol Research Foundation of the Franklin Institute for the Period September 2, 1954-September 30, 1955.	Bartol Res. Foundation, Phila.	10-1-55
*NYO-6482	A Report on a Modified Routh Method for Locating Roots of Polynomials	E. Isaacson, M. Held, T. Seidman, New York Univ.	12-1-55
NYO-6484	The NYU Matrix Codes	R. Dykaar, C. La Budde, New York Univ.	3-15-56
*Microcards			

		UCRL-3433
NYO-7109	Energies of π -Mesonic X-Rays	M. Beth, 4-56 M. Stearns, Carnegie Inst. of Tech.
NYO-7535	Ratios of Decay Modes of K^+ - Mesons Produced by the Cosmotron	T. Hoang, 3-15-56 M. Kaplon, G. Yekutieli, Rochester, N. Y. Univ.
NYO-7588	Deuteron Reactions and the A=14 Polyad	J. French, 3-15-56 Rochester, N. Y. Univ.
NYO-7589	Note on the Phase-Shifts for Pion-Nucleon Scattering at 40 Mev	F. Mandl, 3-23-56 Rochester, N. Y. Univ.
NYO-7590	On the Nucleon-Hole Interaction in j-j Coupling	S. Pandya, 4-13-56 Rochester, N. Y. Univ.
NYO-7591	Nucleon Structure in the Static Theory	G. Salzman, 4-13-56 Rochester, N. Y. Univ.
NYO-7592	A Study of the Neutron Hazard at the 130" Synchrocyclotron	W. Coomb, Jr. 4-18-56 Rochester, N. Y. Univ.
NYO-7593	Lectures on Dispersion Theory	A. Salam, 4-56 Same
NYO-7594	Two Examples of Rare K^+ - Decays in Emulsion	R. Cester, 4-17-56 T. Loang, M. Kaplon, et al., Same
NYO-7595	A Simple Method for Generating the Function $\frac{1}{1-\cos \theta}$	K. Enslein, 4-24-56 Same
ORNL-2007	A Comparison of One-Dimensional Critical Mass Computations with Experiments for Completely Reflected Reactors	F. Prohammer, 3-16-56 Oak Ridge National Lab.

ORNL-2067	Instrumentation and Controls Division Semiannual Progress Report for the Period Ending January 31, 1956	C. Borkowski, 5-21-56 Oak Ridge National Lab.
ORO-149	An Atmospheric Diffusion Monogram with Extended Parameter Ranges	F. Gifford, 2-15-56 Weather Bureau, Oak Ridge, Tenn. and Oak Ridge Operations Office. Res. and Dev. Div. AEC.
RM-1669	Estimate of Pressure Effects on No-Band Lines	H. Margenau 4-3-56 Rand Corp.
TIB/T-4419	The Construction and Technical Properties of High-Vacuum X-Ray Flash Tubes. Trans. from Zeitschrift für angewandte Physik <u>6</u>	W. Schaaffs, K. Herrmann, Gt. Brit. Ministry of Supply. Tech. Info. Bur.

REACTOR SCIENCE

AECD-3731	Army Package Power Reactor; Description and Supplement	Alco Products Inc., 10-14-55
AECD-3818	Proposal for a Research and Isotope Reactor at ORNL	A. Snell, 8-17-50 A. Weinberg, Oak Ridge National Lab.
HW-42331	Administration of Nuclear Safety at Hanford	R. Dickeman 4-10-56 Hanford Atomic Products
*NP-5886	Progress Report No. 32 for December 1955 and January 1956	W. Posey, 2-9-56 Mine Safety Appliances Co.

* Microcard

MISCELLANEOUS

AECU-3166 (Pt. I)	Preliminary Economic Report on the Application of Atomic Power to Merchant Ships. Part I. Mixed Dry Cargo Ships	W. Burns, Jr. 4-56 Newport News Shipbuilding and Dry Dock Co.
AECU-3166 (Pt. II)	Preliminary Economic Report on the Application of Atomic Power to Merchant Ships. Part II. Oil Tanker Ships	W. Burns, Jr. 4-56 Newport News Shipbuilding and Dry Dock Co.
ANL-5569	Additions to the Library Report for the Period April 16-30; 1956 Technical Reports and Books	P. Schulze
ANL-5578	Additions to the Library Report for the Period May 1-15, 1956, Technical Reports	P. Schulze
ASTIA-U-103	Title Announcement Bulletin No. U-103	Armed Services 5-7-56 Technical Info. Agency
MISC-1956-24 Index	Index to the Nineteenth Semiannual Report to Congress Major Activities in the Atomic Energy Programs for July 1955 Through December, 1955	Atomic Energy Commission
Monograph 2563	A Class of Binary Signaling Alphabets	D. Slepian 9-12-55
*NRL-4654	Fallout Dosages at Washington, D. C.	I. Blifford, Jr. 10-6-55 H. Rosenstock
TID-1908	Report Announcement Bulletin. Unclassified Reports for Civilian Applications	Technical Info. 5-10-56 Extension, AEC
USCEC-42-201	Principle and Application of the Two-Phase Wind-Tunnel System Interim Report	R. Chuan, 12-55 K. Krishnamurth University of Southern California, L. A.

LIST OF UCRL TRANSLATIONS ISSUED BY THE INFORMATION DIVISION

UCRL Study of the Initial Reactions in Combustion Processes. Trans. from I. Sanger-Bredt.
Translation 269L Astronautica Acta 1

LIST OF UNCLASSIFIED REPORTS ISSUED BY THE UCRL INFORMATION DIVISION

UCRL-3342	A High-Current Ion Injector	W. Lamb, E. Lofgren	3-19-56
UCRL-3371	Inelastic Scattering of 12-Mev Protons on Lithium, Carbon, Magnesium, and Silicon (Thesis)	H. Conzett	4-6-56
UCRL-3372	The Bevatron and Its Place in Nuclear Physics	E. Lofgren	4-6-56
UCRL-3392 Abstract	The Spin of Rubidium Isotopes of Mass 81, 82, 83, 84	R. Sunderland, J. Hubbs, W. Nierenberg, et al.,	4-56
UCRL-3393 Abstract	The Spin of Rubidium 81	H. Shugart, J. Hubbs, E. Lipworth, et al.,	4-56
UCRL-3399	Polarization in the Elastic Scattering of Deuterons from Complex Nuclei in the Energy Region 94 to 157 Mev	J. Baldwin, O. Chamberlain, E. Segre, et al.,	4-27-56
UCRL-3417	List of Unclassified Reports Received and Issued by the UCRL Information Division During the Period of May 1-15, 1956		5-16-56
UCRL-4672	A Device for Rotating Nuclear Track Plates about the Optical Axis of a Microscope Objective		3-30-56