UNCLASSIFIED

~~CONFIDENTIAL~~ COVER SHEET

OAK RIDGE NATIONAL LABORATORY
Operated By
UNION CARBIDE NUCLEAR COMPANY

UIC

POST OFFICE BOX P
OAK RIDGE, TENNESSEE

Approved For
External Transmittal
Authorized

ORNL
CENTRAL FILES NUMBER

57-7-110

DATE: July 31, 1957

COPY NO. 15

SUBJECT: Bibliography on Radiochemical Processing
of Irradiated Fuel Elements

TO: F. L. Culler

FROM: W. K. Eister

LEGAL NOTICE

This report was prepared as an account of Government sponsored work. Neither the United States, nor the Commission, nor any person acting on behalf of the Commission:

A. Makes any warranty or representation, express or implied, with respect to the accuracy, completeness, or usefulness of the information contained in this report, or that the use of any information, apparatus, method, or process disclosed in this report may not infringe privately owned rights; or

B. Assumes any liabilities with respect to the use of, or for damages resulting from the use of any information, apparatus, method, or process disclosed in this report.

As used in the above, "person acting on behalf of the Commission" includes any employee or contractor of the Commission to the extent that such employee or contractor prepares, handles or distributes, or provides access to, any information pursuant to his employment or contract with the Commission.

UNCLASSIFIED

NOTICE

RESTRICTED DATA

This document contains Restricted Data as defined in the Atomic Energy Act of 1954. Its transmittal or the disclosure of its contents in any manner to an unauthorized person is prohibited.

This document contains information of a preliminary nature and was prepared primarily for internal use at the Oak Ridge National Laboratory. It is subject to revision or correction and therefore does not represent a final report.

UNCLASSIFIED

COVER SHEET

1 0219

39-1

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

LEGAL NOTICE

This report was prepared as an account of Government sponsored work. Neither the United States, nor the Commission, nor any person acting on behalf of the Commission:

- A. Makes any warranty or representation, express or implied, with respect to the accuracy, completeness, or usefulness of the information contained in this report, or that the use of any information, apparatus, method, or process disclosed in this report may not infringe privately owned rights; or
- B. Assumes any liabilities with respect to the use of, or for damages resulting from the use of any information, apparatus, method, or process disclosed in this report.

As used in the above, "person acting on behalf of the Commission" includes any employee or contractor of the Commission to the extent that such employee or contractor prepares, handles or distributes, or provides access to, any information pursuant to his employment or contract with the Commission.

**DO NOT
PHOTOSTAT**

0070280030

UNCLASSIFIED

~~CONFIDENTIAL~~

-2-

BIBLIOGRAPHY ON RADIOCHEMICAL PROCESSING OF
IRRADIATED FUEL ELEMENTS

The scope of this bibliography is limited to significant reports issued by the Oak Ridge National Laboratory and K-25 on the above subject with the following exceptions:

- (1) Journal of Reactor Science and Technology articles by ORNL personnel.
- (2) AEC sponsored conference reports.

Attention is called to the book Process Chemistry, Vol. I and II, in the Progress in Nuclear Energy Series, edited by F. R. Bruce, et al. and published by Pergamon Press and McGraw-Hill, which contains papers on this subject by ORNL personnel.

~~CONFIDENTIAL~~

UNCLASSIFIED

DECLASSIFIED

UNCLASSIFIED

~~CONFIDENTIAL~~

-3-

GENERAL

1. ORNL-1638, "Project Hope: A Chemical Reprocessing Plant for a Nuclear Power Economy", R. A. Charpie, et al. C
2. ORNL-1783, "Nuclear Properties of U-235 Fission Products", J. O. Blomeke. U
3. ORNL-2027, "Power Reactor Processing: Estimates of Throughputs from Mobile and Stationary Plants, 1060-67", J. W. Ullmann. C
4. ORNL-2039, "Fission Product Activities in Irradiated Natural U, Enriched U, and Thorium", E. D. Arnold. C
5. ORNL-2127, "U-235 Fission Product Production as a Function of Thermal Neutron Flux Irradiation Time and Decay Time", J. O. Blomeke and Mary F. Todd. U
6. ORNL-2132, "The Organization, Administration, and Operation of a Radiochemical Pilot Plant", G. S. Sadowski. U
7. ORNL-2174, "Gamma Radiation Damage Studies of Organic Protective Coatings and Gaskets", J. C. Bresee, C. D. Watson, J. S. Watson. C
8. ORNL-2265, "An Analysis of Power Reactor Fuel Processing", F. L. Culler, R. E. Blanco, H. E. Goeller, C. D. Watson. C
9. ORO-144, "Fuel Dissolution Procedures Adaptable to the Solvent Extraction Separations Procedure", R. E. Blanco. C
10. ORNL-CF-55-9-1, "Determination of Residual Activities from Long-Lived Fission Products of U-235", E. J. Frederick. U
11. ORNL-CF-56-4-51, "Decay and Storage of Irradiated Fuel", J. W. Ullmann, E. D. Arnold. C
12. ORNL-CF-56-7-10, "Suggested Activity Specifications for Depleted, Normal, Slightly Enriched Uranium", E. D. Arnold.
13. ORNL-CF-57-4-91, "Development Facilities and Aids for Radiochemical Reprocessing", F. L. Culler and E. J. Frederick. U
14. IDO-14363, Pts. I, II, III, "A Multipurpose Power Reactor Fuel Processing Plant", E. J. Frederick, C. E. Guthrie, F. E. Harrington, W. G. Stockdale, J. W. Ullmann, C. D. Watson. C
15. Paper 719, "The Solvent Extraction Chemistry of Fission Products", F. R. Bruce. U

UNCLASSIFIED

~~CONFIDENTIAL~~

FUEL RECYCLE STUDIES

16. ORNL-2104, "Effect of Recycle of Uranium Through Reactor and Gaseous Diffusion Plant on Buildup of Important Transmutation Products in Irradiated Power Reactor Fuels", E. D. Arnold. C
17. ORNL-2126, "The Buildup of Heavy Isotopes During Thermal Neutron Irradiation of U Reactor Fuels", J. O. Blomeke. U
18. ORNL-2273, "Throw-Away Fuel Cycle", J. W. Ullmann. C
19. ORNL-CF-57-4-82, "Heavy Element Isotopic Buildup", J. W. Ullmann. U
20. ORNL-CF-57-5-99, "Effect of U Recycle on Transuranic Element Buildup", E. D. Arnold. U

ECONOMICS

21. ORNL-1558, "A Design and Cost Estimate Study of a Purex Plant", H. L. Hull, H. R. Zeitlin. C
22. ORNL-1761, "Chemical Processing and Fuel Costs for an Homogeneous Thermal Breeder Reactor Power Station", A. T. Gresky, E. D. Arnold, R. J. Klotzbach, A. R. Irvine. C
23. ORNL-1786, "An Economic Study of the Chlorine Trifluoride Volatility Process for the Recovery of U and Pu from Irradiated Reactor Fuels", E. L. Nicholson. C
24. ORNL-1792, "A Cost Analysis of the Idaho Chemical Processing Plant", W. G. Stockdale, P. L. Robertson. U
25. ORNL-2020, "Effect of Plant Size on Costs of Processing of Heterogeneous Power Reactor Fuel", J. W. Ullmann. C
26. ORNL-CF-55-6-152, "Economic Requirements for Radioactive Waste Disposal in a Nuclear Power Economy", H. R. Zeitlin.
27. ORNL-CF-55-10-101, "Radioactive Waste Economics: Optimum Storage Time Prior to Shipping to Disposal Sites", H. R. Zeitlin, J. W. Ullmann. U
28. ORNL-CF-56-1-154, "Rough Estimate of Carrier and Shipping Costs for Various Irradiated Fuels", E. J. Frederick, J. W. Ullmann. S

RADIATION AND CRITICALITY CONTROL

29. ORNL-1726, "Critical Mass Studies Part VII (Aq. U Slurries)", A. D. Callihan et al. C
30. ORNL-1982, "Relative Biological Hazards of Radiations Expected in Homogeneous Reactors", E. D. Arnold, A. T. Gresky. C
31. ORNL-2102, "Analysis of the Thorex Pilot Plant Radiation Exposures During 1955", W. T. McCarley. C
32. ORNL-CF-53-3-47, "Control of Radiation Exposure in the ORNL Pilot Plant", G. S. Sadowski. U
33. ORNL-CF-57-4-59, "Radiochemical Separations Processes: Chemical Safety", A. T. Gresky. U
34. A-4716, "Critical Mass Studies Part I (U Cubes)", A. D. Callihan et al. C
35. K-126, "Critical Mass Studies Part II (U Cubes)", A. D. Callihan et al. C
36. K-343, "Critical Mass Studies Part III (Aq UO_2F_2 Solutions)", A. D. Callihan et al. C
37. K-406, "Critical Mass Studies Part IV (Aq UO_2F_2 Solutions)", A. D. Callihan et al. C
38. K-643, "Critical Mass Studies Part V (Aq $UO_2(NO_3)_2$ Solutions)", A. D. Callihan et al. C
39. K-1019, Pt. 8, "Basic Critical Mass Information and Its Application to K-25 Design and Operation", H. F. Henry, A. J. Mallett, C. E. Newlon. C
40. Y-801, "Critical Mass Studies Part VI (P-10 Slugs)", A. D. Callihan et al. C

NATURAL U/Al FUEL PROCESS

41. ORNL-463, "Summary Report of the ORNL Pilot Plant Investigation of the Redox Process: Technical Division, November 1949", H. K. Jackson, G. S. Sadowski. S
42. ORNL-479, "Purex Process for Plutonium and Uranium Recovery", W. D. Lanham, T. C. Runion. S
43. ORNL-717, "Purex Process Laboratory Development", W. B. Lanham, A. T. Gresky. S
44. ORNL-880, "Summary Report for ORNL Pilot Plant Program for the Recovery of Plutonium from Chalk River and Hanford Fuel Rods", A. T. Gresky, R. J. Rigstad. S

45. ORNL-1138, "The Hydrolysis of Tributyl Phosphate and Its Effect on the Purex Process", V. J. Reilly. S
46. ORNL-1210, "Corrosion Data from the ORNL Purex Pilot Plant Acid Recovery Equipment", J. W. Landry, J. W. Ullmann. S
47. ORNL-1242, "Decontamination of ORNL Purex Pilot Plant", H. P. Wood. S
48. ORNL-1343, "Progress Report: Purex Process Laboratory Development....", J. R. Flanary, et al. S
49. ORNL-1481, "Progress Report: Purex Process Laboratory Development....", J. R. Flanary, et al. S
50. ORNL-1519, "Terminal Report for the ORNL Pilot Plant Investigation of Purex Process", J. M. Chandler et al. S
51. ORNL-1548, "Progress Report: Purex Process Laboratory Development....", J. R. Flanary, et al. S
52. ORNL-1558, "A Design and Cost Estimate Study of a Purex Plant", H. L. Hull, H. R. Zeitlin. S
53. ORNL-1689, "Analysis of Chemical Problems Arising from Purex Operations with Short-cooled Hanford Production Metal", J. R. Flanary. S
54. ORNL-1786, "An Economic Study of the Chlorine Trifluoride Volatility Process for the Recovery of U and Pu from Irradiated Reactor Fuels", E. L. Nicholson. S
55. ORNL-CF-51-11-103, "Purex Evaporators De-entrainment Studies", A. E. Wible. U
56. ORNL-CF-52-2-214, "Development and Operation of a Semi-Continuous System for the Production of Ferrous Sulfamate", W. B. Watkins. S
57. ORNL-CF-52-2-215, "Continuous Evaporation of the Purex Process ICU Stream in the ORNL Pilot Plant", A. E. Wible. S

ENRICHED U/Al FUEL PROCESS

58. ORNL-343, "The Laboratory Development of a Continuous Solvent Extraction Process for the Recovery of U-235", F. R. Bruce. C
59. ORNL-676, "Terminal Report of the ORNL Pilot Plant Development of the MTR 25 Recovery Process", A. M. Rom, et al. S
60. ORNL-1195, "Dissolution of U-Al Alloy Slugs", D. L. Foster, E. O. Nurmi. S
61. ORNL-1672, "Continuous Dissolution of Uranium-Aluminum Fuels", J. C. Bresee, D. L. Foster, E. O. Nurmi. C

39 6 DECLASSIFIED

62. ORNL-1782, "Caustic Dissolution: Preliminary Studies", R. G. Wymer, et al. S
63. ORNL-1792, "A Cost Analysis of the Idaho Chemical Processing Plant", W. G. Stockdale, P. L. Robertson. U
64. ORNL-1801, "The Effect of Acidity and Reducing Agents on Ruthenium Solvent Extraction by Tributyl Phosphate in the 25 Process", F. R. Flanary, L. D. Frashier. S
65. ORNL-1993, "Chemical Development of the 25-TBP Process", J. R. Flanary A. H. Kibbey, J. H. Goode, R. G. Wymer, J. T. Roberts. C
66. ORNL-1999, "A Design Proposal for a 25-TBP Enriched Fuel Processing Plant", E. L. Nicholson. S
67. ORNL-CF-51-6-53, "Chemical Material Flowsheets for the ICCP", F. L. Culler. S
68. ORNL-CF-52-11-39, "Design of the Dissolver Off-Gas System for ICPP", J. M. Holmes. S
69. ORNL-CF-54-6-51, "Continuous Dissolution Uranium-Aluminum Fuels", J. C. Bresee, D. L. Foster, E. O. Nurmi. C
70. TID-2004, p. 35, "Recovery of Enriched Uranium from Irradiated Reactor Fuels by Solvent Extraction (Hexone)", W. B. Ianham. S
71. Reactor Science and Technology, Vol. III, No. 4, pp. 171-192 (December, 1953).

THORIUM TARGET PROCESS

72. ORNL-343, "The Laboratory Development of a Continuous Solvent Extraction Process for the Recovery of U-235", F. R. Bruce. C
73. ORNL-715, "Summary Report for the 23 Pilot Plant Program", D. E. Ferguson, E. L. Nicholson. S
74. ORNL-1425, "Separation of U-233 in the ORNL Pilot Plant", C. D. Hylton. S
75. ORNL-1817, "Products Produced in Continuous Neutron Irradiation of Thorium", A. T. Gresky, E. D. Arnold. S
76. ORNL-1818, "Products Produced in Batch Neutron Irradiation of Thorium", A. T. Gresky, E. D. Arnold. C
77. ORNL-1869, "Formation of U-232 and the Effect of Its Decay Chain Activity on U-233, Thorium, and the Thorex Process", E. D. Arnold. S

39 7 DECLASSIFIED

78. ORNL-2056, "Thorex Thorium Nitrate Product Specifications", E. D. Arnold. C
79. ORNL-CF-56-2-157, "Thorex Process Summary, February, 1956", A. T. Gresky. U
80. ORNL-CF-57-5-20, "The Thorex Process", F. R. Bruce. U
81. TID-2013, p. 43, "Reactor Science and Technology, Vol. 4, No. 2, June 1954".

U/SS FUEL PROCESS

82. ORNL-2239, "Laboratory Development of the Darex Process", M. L. Hyman. S
83. ORNL-CF-57-4-83, "Alternate Processing Methods for Zr and SS Containing Fuels", R. E. Blanco. U

U/Zr FUEL PROCESS

84. ORNL-1877, "Dissolution of Metals in Fused Fluorides", R. E. Leuze, G. I. Cathers, C. E. Schilling. S
85. ORNL-2077, "Long-Range Evaluation of Fused Salt-Fluoride Volatility Methods of Processing Irradiated Fuel", A. T. Gresky, E. D. Arnold, R. J. Klotzbach. C
86. ORNL-2182, "Oxidation of Zirconium-containing Fuels to Facilitate Uranium Recovery", R. G. Wymer. C
87. ORNL-2183, "Dissolution of Uranium-Zirconium Fuel Elements in Fused NaF-ZrF_4 ", R. G. Wymer. C
88. ORNL-2184, "Alloying of Zirconium-containing Fuels with Zinc and Magnesium", R. G. Wymer. C
89. ORNL-CF-56-11-4, "Volatility Process - Use of NaF-LiF Melt for Batch Dissolution of Zirconium Type Reactor Fuels with HF ", R. P. Milford. S

VOLATILITY PROCESS

90. ORNL-1709, "Recovery and Decontamination of Uranium from Fused Fluoride Fuels by Fluorination", G. I. Cathers. S
91. ORNL-1786, "An Economic Study of the Chlorine Trifluoride Volatility Process for the Recovery of U and Pu from Irradiated Reactor Fuels", E. L. Nicholson. S
92. ORNL-1877, "Dissolution of Metals in Fused Fluorides", R. E. Leuze, G. I. Cathers, C. E. Shilling. S

93. ORNL-1885, "A Fused Salt-Fluoride Volatility Process for Recovery and Decontamination of Uranium", G. I. Cathers, M. R. Bennett. S
94. ORNL-2077, "Long-Range Evaluation of Fused Salt-Fluoride Volatility Methods of Processing Irradiated Fuel", A. T. Gresky, E. D. Arnold. C
95. ORNL-CF-57-1-118, "Uranium Recovery for Spent Fuel by Dissolution in Fused Salt and Fluorination", G. I. Cathers. U
96. ORNL-CF-57-3-43, "Design of a NaF Packed Tower for Removing HF from Fluorine", J. S. Watson. U
97. ORNL-CF-57-5-10, "Session II - Auxiliary Processes: Introduction", F. R. Bruce. U
98. Paper 278, Nuclear Eng. Sci. Cong., Cleveland, Ohio (Dec. 12-16, 1955).
99. K-519, "Pilot Plant Studies of the Recovery and Decontamination of Hanford Irradiated Uranium by the Chlorine Trifluoride (CTF) Process", R. A. Gustison. C
100. K-617, "Removal of Fission Products from Uranium Hexafluoride by Distillation", A. L. Allen, R. H. Harrison, E. W. Powell, H. A. Bernhardt. C
101. K-641, "Removal of Fission Products from Uranium Tetrafluoride by Fluorination", R. H. Harrison, R. M. McGill, E. W. Powell, H. A. Bernhardt. C
102. K-725, "Laboratory Scale Decontamination of Pile Irradiated Uranium Using Chlorine Trifluoride", R. A. Gustison, S. T. Benton, E. J. Barber, H. A. Bernhardt. C
103. K-727, "Liquid Phase Fluorination of Uranium Metal with Bromine Trifluoride", G. J. Vogel, R. W. Vogel. C
104. K-817, "Recovery of Plutonium and Fission Products from Reactor Pot Residues of the Chlorine Trifluoride Process", S. T. Benton, R. A. Gustison. C
105. K-831, "Fluorination of Massive Metallic Uranium with Liquid ClF_3 ", T. McMillan, S. S. Kirslis, E. J. Barber. D
106. K-945, "Studies of the Rate of Reaction Between Metallic Uranium and Solutions of Chlorine Trifluoride and Hydrogen Fluoride", R. A. Gustison, E. J. Barber. C

PYROMETALLURGICAL PROCESSES

107. ORNL-2242, "Status of the Hermex Process (Declassified Issue)", O. C. Dean. U

108. ORNL-CF-56-1-151, "New Hermex Process for Metal Decontamination by Mercury Processing", B. M. Morrison, R. E. Blanco. U

ELECTROCHEMICAL PROCESSES

109. K-587, "The Electrolytic Dissolution of Metallic Uranium", J. A. McLaren W. D. Cline, H. S. Clinton, J. J. Finley, J. H. Goode, J. A. Westbrook. C
110. K-588, "The Electrochemical Recovery of Uranium and Fission Products from Two-Year Old Hanford Metal Wastes", J. A. McLaren, M. R. Bennett, S. T. Benton, W. D. Cline, H. S. Clinton, D. W. Correll, J. J. Finley, J. H. Goode, A. J. Humphrey, R. L. Lines, H. L. Peeler, J. A. Westbrook, H. B. Whetsel. C
111. K-589, "The Electrochemical Separation of the Rare Earths, Strontium, and Plutonium, from Two-Year Old Hanford Metal Waste", J. A. McLaren, S. T. Benton, H. S. Clinton, J. J. Finley, J. H. Goode, A. J. Humphrey, J. H. Paehler, H. L. Peeler. C
112. K-601, "The Electrochemical Processing of Uranium Slugs: Preliminary Studies on Metal Dissolution, Plutonium Separation and Uranium Recovery", J. A. McLaren, H. S. Clinton, J. J. Finley, J. H. Goode. C

HOMOGENEOUS REACTOR PROCESSES

113. ORNL-CF-56-3-139, "HRT-CP: Design and Operation of Recombiners for HRT-CP", W. L. Carter. U
114. ORNL-CF-56-3-151, "Diff. Infrared Absorption Technique for Characterizing the Surface of ThO_2 ", V. D. Allred. U
115. ORNL-CF-56-8-19, "Instrumentation for HRT-CP Dissolver System", H. O. Weeren. U
116. ORNL-CF-56-8-132, "HRP Hydraulic Cyclone Study for Liquid-Solid Separation", P. A. Haas. U
117. ORNL-CF-56-9-24, "HRP-CP: Analysis of Gas Separator for Use as Solids Concentrator:", W. L. Carter and F. C. McCullough. U
118. ORNL-CF-56-11-25, "Instrumentation for HRT Blanket Processing System", H. O. Weeren. U
119. ORNL-CF-52-2-128, "Proposed Design of HRT Waste Storage Tank and Handling Facility", H. O. Weeren. U
120. ORNL-CF-57-3-44, "Semipermanent Freeze Plug Tests for HRT-CP", W. D. Burch, R. H. Winget. U

121. ORNL-CF-57-3-121, "Information of Slurried Prepared for Inclusion in the Addison Wesly Reactor Handbook", J. P. McBride. U
122. TID-7540, "HRP Civilian Power Reactor Conference Held at Oak Ridge National Laboratory, May 1-2, 1957".

DISSOLUTION

123. IDO-14363, "New Fuel Processing Procedures in Preparation for Solvent Extraction", R. E. Blanco.
124. ORO-144, "Fuel Dissolution Procedures Adaptable to the Solvent Extraction Separations Procedure", R. E. Blanco. C
125. ORNL-1195, "Dissolution of U-Al Alloy Slugs", D. L. Foster, E. O. Nurmi. S
126. ORNL-1208, "Recovery of Nitrogen Oxides and Rare Gas Fission Products from Nitric Acid Dissolution of Irradiated Uranium", A. T. Gresky. S
127. ORNL-1672, "Continuous Dissolution of Uranium-Aluminum Fuels", J. C. Bresee, D. L. Foster, E. O. Nurmi. S
128. ORNL-1782, "Caustic Dissolution: Preliminary Studies", R. G. Wymer, et al. S
129. ORNL-CF-52-11-39, "Design of the Dissolver Off-Gas System for ICPP", J. M. Holmes. S
130. ORNL-CF-54-6-51, "Continuous Dissolution of Uranium-Aluminum Alloy Slugs", D. L. Foster, E. O. Nurmi. S
131. ORNL-CF-57-4-84, "Dissolution and Feed Adjustment", R. E. Blanco. U

TAIL END PROCESSES

132. ORNL-1343, "Progress Report Purex Process Laboratory Development February through April 1952", J. R. Flanary, et al. S
133. ORNL-1364, "An Ion Exchange Process for U-233 Isolation and Purification", D. C. Overholt. C
134. ORNL-1397, "Progress Report: Ion Exchange Isolation Processes for Plutonium and U-233", D. C. Overholt, F. W. Tober, D. A. Orth. S
135. ORNL-1442, "Recovery of Plutonium from Metallurgical Waste", R. L. Folger, et al. S
136. ORNL-1449, "Progress Report: Ion Exchange Isolation Processes for Plutonium and U-233", D. C. Overholt, D. A. Orth, F. W. Tober, R. H. Rainey, D. G. Karraker. S

35 07 DECLASSIFIED

137. ORNL-1520, "Progress Report No. III: Ion Exchange Isolation Processes for Plutonium and Uranium", D. C. Overholt, D. A. Orth, F. W. Tober, R. H. Rainey, D. G. Karraker. S
138. ORNL-1585, "Progress Report No. IV: Ion Exchange Isolation Processes for Plutonium and Uranium", D. C. Overholt, D. A. Orth, F. W. Tober, R. H. Rainey, D. G. Karraker. S
139. ORNL-CF-55-12-88, "Investigation of Countercurrent Ion Exchange for Isolation of Uranium-233", R. E. Leuze and V. C. A. Vaughen. C
140. ORNL-CF-57-4-101, "Tail End Treatment for Zr-Nb Removal", F. R. Bruce. U
141. ORNL-CF-57-5-6, "Ion Exchange Isolation Processes", F. R. Bruce. U
142. TID-2010, "Ion Exchange Processes for Plutonium and U-233 Isolation", D. C. Overholt. S

SURFACE DECONTAMINATION

143. ORNL-1242, "Decontamination of ORNL Purex Pilot Plant", H. P. Wood. S
144. ORNL-1826, "Decontamination of Stainless Steel", D. O. Campbell. S
145. ORNL-1839, "Decontamination of the Homogeneous Reactor Experiment", D. O. Campbell. U
146. ORNL-2058, "Decontamination of the ORNL Thorex Pilot Plant", K. H. McCorkle. U
147. ORNL-CF-56-3-154, "Thorex Pilot Plant Decontamination of Feed Adjustment and Separation and Radiation Exposure, etc.", G. S. Sadowski, J. H. Walker. U

WASTE DISPOSAL

148. ORNL-301, rev., "Separation of Fission Products from Aluminum Waste Solutions by Ion Exchange", R. E. Blanco, I. R. Higgins, A. H. Kibbey. U
149. ORNL-1208, "Recovery of Nitrogen Oxides and Rare Gas Fission Products from the Nitric Acid Dissolution of Irradiated Uranium", A. T. Gresky. C
150. ORNL-1410, "Summary of the ORNL Pilot Plant Development of the Radioactive Gas Separation Process", W. B. Watkins. S
151. ORNL-1472, "Distillation of Purex Wastes", R. G. Mansfield. S
152. ORNL-1687, "ICPP Liquid Waste Facilities: Design Report", F. N. Browder. C

153. ORNL-2116, "Measurement and Analysis of Hold-up of Gas Mixtures by Charcoal Adsorption Traps", W. E. Browning, C. C. Bolta. U
154. ORNL-CF-51-5-193, "Correlation of Mass Transfer Data from Linde Air Products Co. on the Adsorption of Krypton on Activated Charcoal", J. M. Holmes. U
155. ^{ORO-118} ORNL-CF-51-11-5, "Adsorption of Krypton and Xenon", J. N. Burdick. ^u
S
156. ORNL-CF-52-1-22, "Multi-Stage Evaporation of Purex Acid Wastes", V. J. Reilly. U
157. ORNL-CF-52-11-82, "Pilot Plant Radioactive Gas Separation Process Equipment and Operation Instructions", W. B. Watkins. S
158. ORNL-CF-55-6-152, "Economic Requirements for Radioactive Waste Disposal in a Nuclear Power Economy", H. R. Zeitlin. S
159. ORNL-CF-55-10-101, "Radioactive Waste Economics: Optimum Storage Time Prior to Shipping to Disposal Sites", H. R. Zeitlin, J. W. Ullmann. U
160. ORNL-CF-56-1-162, "Processing Requirements, Buildup of Fission Product Activity, and Liquid Radiochemical Waste Volumes in a Predicted Nuclear Power Economy", H. R. Zeitlin, E. D. Arnold, J. W. Ullmann. U
161. ORNL-CF-56-5-2, "The Nature and Magnitude of Radioactive Wastes as Influenced by Types of Reactor and Fuel Processing - Present and Prospective", F. L. Culler. U
162. ORNL-CF-57-2-20, "Compilation and Analysis of Waste Disposal Information", E. D. Arnold, A. T. Gresky, J. O. Blomeke. C
163. ORNL-CF-57-3-114, "Status Report on the Disposal of Radioactive Wastes", F. L. Culler. U

EQUIPMENT

164. ORNL-2174, "Use of an Air Lift as a Metering Pump for Radioactive Solutions", G. W. T. Kearsley. U
165. ORNL-2175, "Gamma Radiation Damage Studies of Organic Protective Coatings and Gaskets", J. C. Bresee, et al. U
166. ORNL-CF-52-5-142, "Instrumentation for Extraction Column Interface Control", P. E. Brown. U
167. ORNL-CF-52-11-39, "Zirconium Core Tank for HRP", W. J. Hurford. S

39 13
DECLASSIFIED

UNCLASSIFIED

~~CONFIDENTIAL~~

-14-

168. ORNL-CF-56-1-91, "Conceptual Design of Dual-Clone Liquid Separator", J. C. Bresee. U
169. ORNL-CF-56-2-66, "Countercurrent Ion Exchange", T. A. Arehart, J. C. Bresee, C. W. Hancher, S. H. Jury. U
170. ORNL-CF-56-3-171, "Design and Performance of a Dual-Clone Liquid Separator", J. C. Bresee. U
171. ORNL-CF-56-6-74, "Theory and Some Applications of the Hydraulic Ram as Applied to Countercurrent Ion Exchange", S. H. Jury. U

~~CONFIDENTIAL~~

UNCLASSIFIED

DECLASSIFIED

37

14

DECLASSIFIED