

Correspondents include leading American, South American and European physicists, graduate students and post-doctoral fellows, academicians from other disciplines, professional scientific organizations, government agencies, military personnel, and publishing concerns. Significant physicists represented include Manuel Sandoval Vallarta, Robert A. Millikan, Willard F. Libby, and Gabriel Alviai. Korff's notes and drafts detail research methods and prose style, lectures and presentations, revisions of his own and other's publications, and a wealth of experimental data, particularly photographs of eclipses and other astronomical events and field notes from high altitude experiments. The collection documents research projects and expeditions; grant proposals, reports and correspondence; scientific conferences; students' work; administrative records of NYU and its physics department; and reprints of scholarly articles by Korff and others.

The Korff Collection provides critical insight into the field of physics, and science in general, in the 20th century. Significant topics represented include the study of cosmic rays, neutrons and optical dispersion; the theory, development and uses of devices for measuring radiation; radio-carbon dating; physics research and its social and political context around the world; international scientific cooperation, particularly the International Geophysical Year, 1957-58; observations of eclipses and astronomical events; high altitude balloon flights; and government and military funding of scientific research. File titles marked with an asterisk in the Folder Listings contain interesting images or significant documents. A folder of biographical information on Korff precedes Series I.

Arrangement

Organized alphabetically by correspondent, and (less frequently) by topic. Personal and professional correspondence is filed by name of correspondent, and institutional correspondents by organization. Recommendations and obituaries are filed under the name of the individual discussed. Some files in this series include drafts and reprints of brief articles by Korff (for example, encyclopedia articles have been filed under the name of the publisher); others contain drafts by colleagues which Korff informally reviewed. Certain materials have been assigned topical folder titles, such as "Mailing lists and addresses" and "Invitations."

Organized in six series: I. Correspondence; II. Notes, drafts and photographs; III. Research projects; IV. Organizations and conferences; V. Academia; and VI. Published materials.

Restrictions

Access Restrictions

Open to researchers.

Use Restrictions

There may be some restrictions on the use of the collection. Appointments are necessary for use of manuscript and archival materials. For more information, contact New York University Archives

Elmer Holmes Bobst Library
70 Washington Square South
New York, NY 10012

Phone: (212) 998-2646
Fax: (212) 995-4070
Email: nancy.cricco@nyu.edu

Access Points**Subject Names:**

David, William O.
Korff, Serge Alexander, 1906-
Liy, Leona Marshal, 1919-
Liy, Willard F.
Mendell, Rosalind B.
Sandoval Vallarta, Manuel.

Subject Organizations:

American Geographical Society of New York.
Explorers Club
New York Academy of Sciences.

Subject Topics:

Atmosphere physics.
Cosmic physics.
Cosmic ray neutrons.
Dispension.
Physics -- Political aspects.
Physics -- Social aspects.
Physics -- Study and teaching -- United States.
Proportional counters.
Radiation -- Measurement.
Science -- International cooperation.

Subject Places:

New York (State)--New York.

Document Types:

Administrative records.
Correspondence.
Dissertations.
Drafts (documents).
Grant proposals.
Memoirs.
Photographs.
Reports.
Reprints.
Researching.

Other Names:

Cosmic Ray Technical Panel.
Joint Commission on High Altitude Research.
New York University. Dept. of Physics.

Related Material at the New York University Archives

Separated Material

No documentation of anything separated from the collection.

Administrative Information

Provenance

This collection was transferred to the University Archives by Rosalind Mendell of the NYU Physics department.

Preferred Citation

Published citations should take the following form:

Identification of item, date (if known); The Papers of Serge A. Korff; MC 110 ; box number; folder number; New York University Archives , New York University Libraries.

Container List

Series I: Correspondence

| Box | Folder | Title | Date |
|------------|---------------|------------------|-------------|
| 1 | 1 | A - B | undated |
| 1 | 2 | Alviai, Gabriel | 1956-1984 |
| 1 | 3 | Australia trip | 1966 |
| 1 | 4 | Bjorksten, Johan | 1976-1985 |
| 1 | 5 | Bowman, Isaiah | 1976-1981 |
| 1 | 6 | C - D | undated |

| | | | |
|---|----|---|--------------------|
| 1 | 7 | Clute, Timothy R. 1980-81 | 1980-1981 |
| 1 | 8 | Cobas, Amador | 1948-1971 |
| 1 | 9 | The Cosmos Club | 1985-1987 |
| 1 | 10 | E - F | undated |
| 1 | 11 | Funk & Wagnalls, Inc./ Standard Reference Library | 1969-1978 |
| 1 | 12 | G - H | undated |
| 1 | 13 | Grolier, Inc. New Book of Knowledge | 1977-1980 |
| 1 | 14 | I - J - K | undated |
| 1 | 15 | Invitations | 1953-1983, undated |
| 1 | 16 | Instituto Geofisico del Peru | 1961-1962 |
| 1 | 17 | L - M | undated |
| 1 | 18 | Libby, Leona Marshall | 1973-1984 |
| 1 | 19 | Libby, Leona Marshall, draft articles | 1971-1981, undated |
| 1 | 20 | Libby, Willard Frank | 1956-1980 |
| 1 | 21 | Lobbying | 1957-1982 |
| 1 | 22 | Mailing lists and addresses | undated |
| 1 | 23 | Millikan, Robert A. | 1935-1937 * |
| 1 | 24 | N - O - P - Q | undated |
| 1 | 25 | Pierce, Keith A. | 1962-1972 * |
| 1 | 26 | Pregel, Boris | 1976-1977 |
| 1 | 27 | Prentice- Hall, Inc. | 1962-1965 |
| 1 | 28 | Prescott, John R. | 1975-1976 |
| 1 | 29 | R - S | undated |
| 1 | 30 | Ralph, Elizabeth K. | 1974-1975 |
| 1 | 31 | Requests for reprints | 1970-1984 |
| 1 | 32 | Scribner, Kimball J. | 1981-1985 |
| 1 | 33 | Sekido, Yataro | 1982-1986 |
| 1 | 34 | Simpson, John A. | 1976 |
| 1 | 35 | South Africa trip | 1954 |
| 1 | 36 | St. Vincent's, British West Indies | 1968-1971 |

| | | | |
|---|----|--|-----------|
| 1 | 37 | Stravon Educational Press | 1969-1970 |
| 1 | 38 | T - U - V | undated |
| 1 | 39 | Unidentified correspondence | undated |
| 1 | 40 | University of Wyoming, Archive of Contemporary History | 1983-1984 |
| 1 | 41 | U. S. Atomic Energy Commission, Rainwater samples | 1959 * |
| 1 | 42 | Vallarta, Manuel Sandoval | 1977-1978 |
| 1 | 43 | W - X - Y - Z | undated |
| 1 | 44 | Weyer, Edward M. | 1976-1978 |

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Series II: Notes

Subseries A: Lecture outlines, laboratory and field observations notes and calculations

Scope and Content:

(not explicitly linked to any specific project or event)

| Box | Folder | Title | Date |
|-----|--------|---|-----------------------|
| 1 | 45 | Astronomical observations | 1925-1986, undated |
| 1 | 46 | Spectral dispersion | 1929-1930 |
| 1 | 47 | Field notes, [" Book I, " " Book V."] Aug - 19 Sep. 1964-1969 one vol. | 1938, 1964-1969 |
| 1 | 48 | Lab. notebook, Bartol Research Foundation and NYU | 1940-1946 |
| 1 | 49 | Laboratory Note Book | 1947-1965 |
| 1 | 50 | Europeantrip | 1948-1949 |
| 1 | 51 | Tables, charts and diagrams | ca.1950-1960, undated |
| 1 | 52 | Lecture outlines [non- NYU] | 1956-1976 |
| 1 | 53 | Rocket calculations | ca.1957 |
| 1 | 54 | Asia trip | 1958-1959 |
| 1 | 55 | Unidentifiednotes | 1959-1971, undated |

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| Box | Folder | Title | Date |
|------------|---------------|--|--------------------|
| 1 | 56 | Astronomical bodies and laws | ca.1960-1970 |
| 2 | 1 | Notes on the Third Derivative Term in the Equations of Motion | ca.1963 |
| 2 | 2 | Solar events: May and November | 1964 |
| 2 | 3 | Eclipse | 1970 |
| 2 | 4 | "Some Comments on Neutrons at Sealevel" | 1973 |
| 2 | 5 | Lab notebook <i>[labelled "Field Notes 1937- Peru"- but several signatures have been removed; most of the pages are unused]</i> | 1973-1974 |
| 2 | 6 | "The Double Plateau Effect" | undated |
| 2 | 7 | "The Origins of Stratospheric Science in the United States" [introduction and table of contents | undated |
| 2 | 8 | Annotated citations | undated |
| 2 | 9 | Annotated citations [index cards] | undated |
| 2 | 10 | Clippings | 1969-1985, undated |
| 2 | 11 | Clippings, Halley's Comet | 1986 |

Subseries B: Draft articles and manuscripts: Drafts and manuscripts

| Box | Folder | Title | Date |
|------------|---------------|--|--------------------|
| 2 | 12 | Dispersion <i>(pp. 1-4 missing)</i> | ca.1929 |
| 2 | 13 | Draft articles | 1940-1959 |
| 2 | 14 | Satirical Physics | 1941-1948, undated |
| 2 | 15 | "Cosmic Ray Research" [written for Life magazine] | 1948 |
| 2 | 16 | Draft articles | 1960-1969 |
| 2 | 17 | Draft articles | 1970-1982 |
| 2 | 18 | Book reviews | 1973 |
| 2 | 19 | "Variations in Radiocarbon Production in the Earth's | 1979-1981 |

| Box | Folder | Title | Date |
|-----|--------|--|---------------|
| | | Atmosphere"SAK and Rosalind B. Mendell | |
| 2 | 20 | Draft articles | undated |
| 2 | 21 | Cosmic Physics, Correspondence and outline | 1960 |
| 2 | 22 | Cosmic Physics, Chap. 1-2 | 1960 |
| 2 | 23 | Cosmic Physics, Chap. 3-5 | 1960 |
| 2 | 24 | Cosmic Physics, Chap. 6-8 | 1960 |
| 2 | 25 | Cosmic Physics, Chap. 9-12 | 1960 |
| 2 | 26 | Cosmic Physics, Chap. 13-18 | 1960 |
| 2 | 27 | Cosmic Physics, Chap. 19-26; Cosmic Radiation, Project Report for the NYU Cosmic Ray Research Group; table of contents, errata, appendices | ca.1962 |
| 2 | 28 | Cosmic Radiation, diagrams and illustrations | ca.1960 |
| 2 | 29 | Cosmic Radiation, camera-ready illustrations | ca.1960 |
| 2 | 30 | Cosmic Radiation, Chap. 1 | ca.1960 |
| 2 | 31 | Cosmic Radiation, Chap. 2 | ca.1960 |
| 2 | 32 | Cosmic Radiation, Chap. 3 | ca.1960 |
| 2 | 33 | Cosmic Radiation, Chap. 4 | ca.1960 |
| 2 | 34 | Cosmic Radiation, Chap. 5 | ca.1960 |
| 2 | 35 | Cosmic Radiation, Chap. 6 | ca.1960 |
| 2 | 36 | Cosmic Radiation, Chap. 7 | ca.1960 |
| 3 | 1 | Cosmic Radiation, Chap. 8 | ca.1960 |
| 3 | 2 | Cosmic Radiation, Chap. 9 | ca.1960 |
| 3 | 3 | Cosmic Radiation, Chap. 10 | ca.1960 |
| 3 | 4 | Cosmic Radiation, Chap. 11 | ca.1960 |
| 3 | 5 | Cosmic Radiation, Chap. 12 and 12-cra-1 | ca.1960 |
| 3 | 6 | Unidentified chapters (10, 11, 12, 13) | 1964, undated |
| 3 | 7 | Proportional Counters, diagram | undated |

3 8 Draft proposals[partial and undated
unidentified]

Subseries C: Photographs:

Scope and Content:

(images specific to publications or events are filed with those related materials)

| Box | Folder | Title | Date |
|-----|--------|---|----------------------|
| 3 | 9 | Lick Observatory (includes photographs of facility and astronomical images taken there) | 1893, undated |
| 3 | 10 | Miscellaneous astronomical photographs | 1894-1935, 1960-1970 |
| 3 | 11 | Eclipse | 1926 |
| 3 | 12 | Eclipse | 1932 |
| 3 | 13 | Solar and planetary spectra | 1963-1967 |
| 3 | 14 | Astronomical photographs [taken at Kitt Peaks National Observatory] | 1964-1967 |
| 3 | 15 | Eclipses | undated |
| 3 | 16 | Miscellaneous photographs | undated |

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Series III: Projects, experiments and expeditions

Subseries A: Projects, experiments and expeditions not specifically funded by U. S. government agencies

Scope and Content:

(arranged alphabetically by project title or grantor, then chronologically where appropriate.)

| Box | Folder | Title | Date |
|-----|--------|---------------------------------------|-----------|
| 3 | 17 | List of Research Grants and Contracts | ca.1970 |
| 3 | 18 | High Altitude Flights, Lima, Peru | 1934-1935 |
| 3 | 19 | Balloon Flights, Pennsylvania | 1939 |

| | | | |
|---|----|---|--------------------|
| 3 | 20 | Quaker Chemical Products Corp., Study of Cutting Fluids | 1944-1945 |
| 3 | 21 | Balloon Flights | 1945-1950 |
| 3 | 22 | Inter- University High Altitude Laboratory for Cosmic Physics (IUHAL), Mt. Evans, CO. | 1946-1947 |
| 3 | 23 | Research Corporation | 1946-1948, 1957 |
| 3 | 24 | Hyuck Corporation | 1961-1965 |
| 3 | 25 | Bellinghausen Expedition (Eclipse, May 30, 1965) | 1964-1965 |
| 3 | 26 | L T V Aerospace Corporation [subcontractor for N A S Agrants 1-5209/1-01282] | 1970 |
| 3 | 27 | Eclipses | 1973-1974 |
| 3 | 27 | International Geophysical Year (IGY), Comite Special(CSAGI) | 1955-1957 |
| 3 | 29 | IGY, United States National Committee (USNC) | 1953-1959 |
| 3 | 30 | IGY, Subcommittee for Cosmic Intensity Variations (SCRIV) | 1955-1957 |
| 3 | 31 | IGY, Technical Panel on Cosmic Rays (TP-CR) | ca.1953-1956 |
| 3 | 32 | IGY, TP-CR | 1957-1958 |
| 3 | 33 | IGY, TP-CR | undated |
| 3 | 34 | IGY, Cosmic Ray Grants to NYU | 1955-1960 |
| 3 | 35 | IGY, Pan-American participation | 1955-1957 |
| 3 | 36 | IGY, Pan-American participation | 1958-1960, undated |
| 3 | 37 | IGY, Clippings, trip to South America | 1956 |
| 3 | 38 | IGY, Clippings | ca.1957-1960 |
| 3 | 39 | IGY, Miscellaneous | ca.1959 |
| 3 | 40 | International Year of the Quiet Sun (IQSY) | 1962-1965 |

Subseries B: Government-funded research

| Box | Folder | Title | Date |
|-----|--------|------------------------|------|
| 4 | 1 | Federal Communications | |

| | | | |
|---|----|--|--------------------|
| | | Corporation, Radio Station Permits | 1957-1958 |
| 4 | 2 | National Aeronautics and Space Administration (NASA), Elevated Altitude Radiation (NAS W-31) | 1959-1961 |
| 4 | 3 | NASA, Space Studies (NsG 167-161) | 1961-1967 |
| 4 | 4 | NASA, Experimental Flight Program (NAS 1-5209; NAS 1-10282) | 1965-1971 |
| 4 | 5 | NASA, Experimental Flight Program (NAS 1-5209; NAS 1-10282) | 1972-1976, undated |
| 4 | 6 | NASA, Proposal to Study High-energy Neutrons and Possible Solar Neutrons | 1967 |
| 4 | 7 | NASA, Atmospheric Neutrons (NAS 1-5209), draft report and data | 1969-1973 |
| 4 | 8 | NASA, Atmospheric Neutrons (NAS 1-5209), project report | ca.1970 |
| 4 | 9 | NASA, Solar- Interplanetary Relationships (NSF 7116) | 1974-1976 |
| 4 | 10 | NASA, Effects of Solar Activity on Atmospheric Neutrons Flux (A-9441- B) | 1975 |
| 4 | 11 | NASA, Miscellaneous proposals and grants | 1959-1976, undated |
| 4 | 12 | National Science Foundation (NSF), Cosmic Ray Neutron Monitor, Mt. Wrangell, Alaska(NSF-G8227; G P-855; G P-16568; G P-4211) | 1958-1968 |
| 4 | 13 | NSF, Energetic Neutron Studies (NSF G P-4289; G P-1588) | 1961-1967 |
| 4 | 14 | NSF, Data Reduction (G A-731) | 1967-1969 |
| 4 | 15 | NSF, Variations in Neutrons Produced Largely in the Upper Atmosphere (G A-35962) | 1971-1973 |
| 4 | 16 | NSF, Solar- Terrestrial Relationships (G A-41167; DES 74-00667 A01) | 1974-1979 |
| 4 | 17 | NSF, Cosmic Ray Decreases and Large Scale Solar Wind Structures (ATM 77-07095) | 1977-1979 |
| 4 | 18 | NSF, Miscellaneous proposals and grants | 1955-1974, undated |

| | | | |
|---|----|---|--------------------|
| 4 | 19 | Office of Naval Research (ONR) Cosmic Ray Measurement (N6- ONR-279(2); N6-ONR-279(21); ONR-285(2); ONR-285(21)) | 1948-1955 |
| 4 | 20 | ONR, Cosmic Ray Measurement (N6- ONR-279(2); N6- ONR-279 (21); ONR-285(2); ONR-285(21)) | 1956-1963 |
| 4 | 21 | ONR, Miscellaneous Material | 1956-1957, undated |
| 4 | 22 | Pickatinny Arsenal, Feasibility Study and Altitude or Height Sensing Devices (Project 5065) | 1958-1959 |
| 4 | 23 | U. S. Air Force Office of Scientific Research (USAF-OSR), Proportional Counters; Cosmic Ray Studies; Cosmic Ray Ballooning (A F 18 (600)-1460; A F 18 (600)- 1555; A F 49-638-635) | 1955-1957 |
| 4 | 24 | USAF-OSR, Cosmic Ray Studies; Cosmic Ray Ballooning (A F 18 (600)-1555; A F 49- 638-635) | 1958-1962 |
| 4 | 25 | USAF-OSR, High Altitude Studies; Ballooning Data Reduction, (A F 19 628-378) | 1962-1968 |
| 4 | 26 | USAF-OSR, Upper Air Neutron Studies (A F 19-628-378) final report | 1967 |
| 4 | 27 | US Naval Radiological Defense Laboratory, and USArmy Office of Civil Defense (USA-OCD), Counters (O C D-21311; N O O-228-67- C- 1676; D A H C 20-68- C-0137) | undated |
| 4 | 28 | USA-OCD, Geiger-Mueller Counters (DAHC 20-68- C-0137) final report | 1970 |

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Series IV: Organizations

Subseries A: Organizations

Scope and Content:

(arranged alphabetically)

| Box | Folder | Title | Date |
|-----|--------|---|----------------------|
| 5 | 1 | American Geographical Society (AGS) | 1968-1986 |
| 5 | 2 | AGS Annual Dinners | 1957-1965 |
| 5 | 3 | AGS Annual Dinners | 1966-1968 |
| 5 | 4 | AGS Annual Dinners | 1969-1973 |
| 5 | 5 | American Institute of Physics, Visiting Scientist Program | 1958-1965 |
| 5 | 6 | Committee of Scientific Society Presidents | 1973-1975 |
| 5 | 7 | The Explorers' Club | 1971-1973 |
| 5 | 8 | Joint Commission on High Altitude Research Stations | 1952-1956 |
| 5 | 9 | The Lindburgh Memorial Fund, Inc. | 1976-1977 |
| 5 | 10 | New York Academy of Science (NYAS) | 1971-1972, 1981-1987 |
| 5 | 11 | NYAS, Committee for the Study of Natural Radioactive Substances | 1951-1952 |
| 5 | 12 | Societe D' Encouragement au Progres, Paris | 1977-1983 |
| 5 | 13 | United Nations, Executive Committee of Non-Governmental Organizations | 1978 |
| 5 | 14 | World Academy of Art and Science (WAAS), American Division | 1960-1979 |
| 5 | 15 | WAAS, American Division | 1980 |
| 5 | 16 | WAAS, American Division | undated |
| 5 | 17 | Miscellaneous organizations | 1941-1983 |

Subseries B: Conferences

Scope and Content:

Arranged chronologically. Many folders include correspondence, forms, notes, lecture outlines, drafts and preprints of articles, and photographs related to a conference.

| Box | Folder | Title | Date |
|-----|--------|---|------|
| 5 | 18 | American Physics Society, Washington D.C. | 1929 |
| 5 | 19 | American Physics Society, Berkeley | |

| | | | |
|------------|---------------|---|-------------|
| | | C A | 1931 |
| 5 | 20 | Symposium on Cosmic Rays in Honor of Robert A. Millikan's 80th Birthday, C A | 1948 |
| 5 | 21 | Quinto Congresso Sudamericano de Quimica, Lima, Peru | 1951 |
| 5 | 22 | Cosmic Ray Conference, Guanajuato, Mexico | 1955 |
| 5 | 23 | 3rd International Conference on Ionization Phenomena in Gases, Venice | 1957 |
| 5 | 24 | International Conference on Cosmic Rays and the Earth Storm, Kyoto, Japan | 1961 |
| 5 | 25 | 5th Interamerican Seminar on Cosmic Radiation, La Paz, Bolivia | 1962 |
| 5 | 26 | 6th International Conference on Cosmic Rays, Jaipur, India | 1963 |
| 5 | 27 | American Astronomical Society Meeting, Flagstaff A Z | 1964 |
| 5 | 28 | American Physical Society Meeting, Mexico City | 1966 |
| 5 | 29 | 10th International Conference on Cosmic Rays, Calgary | 1967 |
| 5 | 30 | American Geophysical Union Meeting, San Francisco | 1969 |
| 5 | 31 | 11th International Conference on Cosmic Rays, Budapest | 1969 |
| 5 | 32 | 6th Interamerican Seminar on Cosmic Radiation, La Paz, Bolivia | 1970 |
| 5 | 33 | 14th Committee on Space Research (COSPAR) Meeting, Seattle W A | 1971 |
| 5 | 34 | 12th International Conference on Cosmic Rays, Hobart, Tasmania | 1971 |
| 5 | 35 | 13th International Cosmic Ray Conference, Denver C O | 1973 |
| Box | Folder | Title | Date |
| 6 | 1 | " Environment and Society in Transition, " 2nd International Joint Conference, WAASand NYAS, New York | 1974 |

| | | | |
|---|----|--|-----------|
| 6 | 2 | Geological Society of America National Meeting, Miami | 1974 |
| 6 | 3 | Symposia to Honor Dr. Manuel Sandoval Vallarta | 1974-1976 |
| 6 | 4 | 14th International Cosmic Ray Conference, Munich | 1975 |
| 6 | 5 | 1st Miami Conference on Isotope Climatology and Paleoclimatology, Key Biscayne | 1975 |
| 6 | 6 | 9th Annual International Radiocarbon Conference, U C L A/ U C S D | 1976 |
| 6 | 7 | 8th Texas Symposium on Relativistic Astrophysics, Boston | 1976 |
| 6 | 8 | 15th International Cosmic Ray Conference, Plodiv, Bulgaria | 1977 |
| 6 | 9 | 9th Texas Symposium on Relativistic Astrophysics, Munchen | 1978 |
| 6 | 10 | National Oceanic and Atmospheric Administration Harbor Branch Foundation Meeting | 1979 |
| 6 | 11 | 16th International Cosmic Ray Conference, Kyoto, Japan | 1979 |
| 6 | 12 | 10th Annual International Radiocarbon Conference, Berne and Heidelberg | 1979 |
| 6 | 13 | Three- Mile Island Conference, NYAS | 1980 |
| 6 | 14 | 10th Texas Symposium on Relativistic Astrophysics, Baltimore | 1980 |
| 6 | 15 | 17th International Cosmic Ray Conference, Paris | 1981 |
| 6 | 16 | 11th Annual International Radiocarbon Conference, Seattle | 1982 |
| 6 | 17 | Space Science and Technology Symposium (proposed to WAAS) | 1982-1985 |
| 6 | 18 | International Conference on Information Revolution | 1983 |
| 6 | 19 | 12th Annual Texas Symposium on Relativistic Astrophysics | 1984 |
| 6 | 20 | Management of Pain and Stress, WAAS, Washington D.C. | 1985 |

6 21 Miscellaneous conferences 1933-1985

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Series V: Academia

Subseries A: New York University

Scope and Content:

Arranged topically. Includes restricted materials. Departmental and interdepartmental communications; class outlines, lecture notes, lectures.

| Box | Folder | Title | Date |
|-----|--------|---|--------------------|
| 6 | 22 | Departmental and interdepartmental correspondence | 1951-1983 |
| 6 | 23 | " History of NYU Physics Department 1940-1970" | 1970-1971 |
| 6 | 24 | Physical Optics 251/252, course materials | 1941-1942 |
| 6 | 25 | Experimental Nuclear Physics 207/208 (later 2207/2208), exams | 1948-1972, undated |
| 6 | 26 | Experimental Nuclear Physics 2297, lecture notes | ca.1948-19[72] |
| 6 | 27 | Experimental Nuclear Physics 2298, lecture notes | ca.1948-19[72] |
| 6 | 28 | Miscellaneous course materials | 1952-1958, undated |
| 6 | 29 | Physics of the Upper Atmosphere 209, course materials | undated |
| 6 | 30 | Theory of Spectra 253 | undated |
| 6 | 31 | Astronomy and Astrophysics, exams | 1965-1972 |
| 6 | 32 | Cosmic Ray Program | 1962 |
| 6 | 33 | "Introduction to Radiological Safety," Post-Graduate Medical School and College of Engineering cooperative lectures | 1953-1956 |
| 6 | 34 | "The High Energy Universe," special resident lectureship in physics | ca.1960 |

6 35 Miscellaneous lectures 1950-1971, undated

Subseries B: Student work

| Box | Folder | Title | Date |
|-----|--------|---|--------------------|
| 6 | 36 | List of dissertations and theses supervised | ca.1970 |
| 6 | 37 | Student papers and abstracts | 1947-1948, undated |
| Box | Folder | Title | Date |
| 7 | 1 | Student grades <i>Restricted</i> | 1958-1972 |
| 7 | 2 | Hakner, Richard <i>Restricted</i> | 1968-1969 |
| 7 | 3 | Kitchen, Sumner W. "Negative Ions and Long Delays..." | 1950 |
| 7 | 4 | Krumbien, Aaron Davis, "Self-quenching Counters" | 1951 |
| 7 | 5 | Lerner, Alberto de la Zerda, thesis proposal | 1988 |
| 7 | 6 | Radin, Jonathan | 1969-1970 |
| 7 | 7 | Soicher, Haim | 1970-1971 |
| 7 | 8 | Spatz, Wilbur de Villa Bernhart | 1943 |
| 7 | 9 | Witten, Arnold, "Geiger Counters with NH ₃ Fillings" | 1952 |

Subseries C: Other Universities

| Box | Folder | Title | Date |
|-----|--------|--|-----------|
| 7 | 10 | Environmental Science Program, UCLA | 1972-1977 |
| 7 | 11 | Embry- Riddle Aeronautical University: Board of Trustees | 1977-1978 |
| 7 | 12 | Embry- Riddle Aeronautical University: Board of Trustees Meeting | 1977 |

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Series VI: Publications**Subseries A: Korff reprints, preprints, and abstracts.****Scope and Content:**

Arranged chronologically. Where Korff is the sole author, his name does not appear; for co-authored articles, Korff's initials "SAK" appear.

| Box | Folder | Title | Date |
|------------|---------------|--|--------------|
| 7 | 13 | Bibliographies | ca.1950-1970 |
| 7 | 14 | 1921-30 | 1921-1930 |
| | | <i>Refractive Index of Sodium Vapor and Width of D1 in Absorptions: Apr. 1929</i> | |
| | | <i>Dispersion and Absorption Line Width in the Alkali Vapors: Aug. 1929</i> | |
| | | <i>A Sensitive Method for Determining Refractive Indices, SAK and J. Q. Stewart: Jun. 1930</i> | |
| | | <i>Scattering of Light in Sodium Vapor: Jan. 1930</i> | |
| | | <i>Distinction between Scattering and Absorption, SAK and John Q. Stewart: Jan. 1930</i> | |
| 7 | 15 | 1931-40 | 1931-1940 |
| | | <i>Absorption Line Width in Sodium Vapor: Aug. 1931</i> | |
| | | <i>Optical Dispersion, SAK and F. Breit: Jul-32</i> | |
| | | <i>On the Measurement and Interpretation of Fraunhofer Lines: 1932</i> | |
| | | <i>Width of the D Lines of Sodium in Absorption: 1932</i> | |
| | | <i>Letter to Scientific American, v. 148, no. 296: May 1933</i> | |
| | | <i>Note by SAK on Eclipse Cinematography, Paul Bourgeois and J. F. Cox: Jun. 1933</i> | |
| | | <i>Density of Energy in the Universe: Aug. 1933</i> | |
| | | <i>Azimuthal Asymmetry of Cosmic Radiation: Sep. 1933</i> | |
| | | <i>Penetrating Power of Asymmetric Component of Cosmic Radiation: Jul. 1934</i> | |

Cosmic-Ray Observations in the Stratosphere, SAK and L. F. Curtiss, A. V. Astin, L. L. Stockmann and B. W. Brown: Jan. 1938.

Bursts in Cosmic Radiation in the Equatorial Zone: Sep. 1938

Discussion of Present Status of the Theory of the Effect of the Earth's Magnetic Field on Cosmic Rays by M. S. Vallarta, Sc. D, Ph. D.: Jan. 1939.

Neutron Measurements with Boron-Trifluoride Counters: May 1939

Correlation of Counter and Electroscop Measurements of Cosmic Radiation in the Stratosphere, SAK and W. E. Danforth: Aug. 1939

The Upward Radiation Produced by Cosmic Rays at High Altitudes, SAK and E. T. Clarke: Oct. 1939

Cosmic-Ray Investigations: Dec. 1939

Fast Neutron Measurements with Recoil Counters: Dec. 1939

On the Interpretation of Neutron Measurements in Cosmic Radiation, SAK, H. A. Bethe and G. Placzek: April 1940.

Solar Influences on the Cosmic Ray Intensity at High Elevations: Jun-40

On the Contribution to the Ionization at Sea-level Produced by the Neutrons in the Cosmic Radiation: Jun. 1940

The Latitude Effect in Cosmic Rays at Far Southern Latitudes, SAK and E. T. Clarke: Jul. 1940

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| | | Theory and Use (unbound signatures) | 1946 |
| 7 | 18 | 1946-50 | 1946-1950 |
| | | <i>The Energy Distribution and Number of Cosmic Ray Neutrons in the Free Atmosphere, SAK and B. Hamermesh: Mar. 1946</i> | |
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| | | <i>Cosmic Ray Investigations at New York University: Dec. 1946</i> | |
| | | <i>The Production of Nucleons by the Cosmic Radiation: Jun. 1947</i> | |
| | | <i>Comments on F. H. J. Figge: Jun. 1947</i> | |
| | | <i>On the Rise of the Wire. 19 Potential in Counters: Sep. 1947</i> | |
| | | <i>A Photoelectric Hygrometer, SAK, Bernard Hamermesh, and Frederick Reines: Sep. 1947</i> | |
| | | <i>Electronic Techniques in Nuclear Science: Dec. 1947</i> | |
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| | | <i>The Energy Distribution of Neutrons in the Atmosphere, SAK, M.S. George, and J.W. Kerr: May. 1948</i> | |
| | | <i>Detecting Atomic Particles: Jun. 1948</i> | |
| | | <i>A Critique of Ionization Measurements of Nuclear Disruptions Produced by Cosmic Radiation: Jan. 1949</i> | |
| | | <i>Tests of Self. Regenerating Fillings for Geiger Counters, SAK and A.D. Krumbein: Nov. 1949</i> | |
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| 7 | 19 | 1951-1955 | 1951-1955 |
| | | <i>The Latitude Effect of Cosmic Neutrons, SAK, W.P. Staker and M. Pavalow: Mar. 1951</i> | |
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| 7 | 28 | Promotional materials | 1952-1967, undated |
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| 7 | 29 | Kodak promotional materials | 1964-1967 |
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7 30 Travel brochures and maps undated

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Radiation-induced biological effects on crew members: a combined analysis on atmospheric flight personnel

G. De Angelis, M. Caldora, M. Santaquilani, R. Scipione, A. Verdecchia

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Abstract

Human data on low dose rate radiation exposure and its effects are not readily available. A huge amount of such data may be obtained through flight personnel cohorts, in the form of epidemiological studies on delayed health effects induced by the cosmic-ray generated atmospheric ionizing radiation, to which flight personnel are exposed all throughout their work activity. All the available results from different studies on flight personnel exposure have been combined in various ways to evaluate the association between atmospheric ionizing radiation environment and health risks and to assess directions for future investigations.

KEYWORDS: Aerospace, human factor, radiation health.

1. Introduction

While men are ready to be sent as crew members into Lower Earth Orbit [1] or deep space [2] mission scenarios for several months or more, there are still many radiation safety issues to be resolved concerning low dose rate exposure from the galactic background radiation [3]. Human data on low dose rate radiation exposure and its effects are not so readily available [4]. A huge amount of such data may be obtained by considering flight personnel cohorts [5], in the form of epidemiological studies on health effects induced by the cosmic-ray generated atmospheric ionizing radiation, to which flight personnel are exposed all throughout their work activity so that the total dose, increasing over the years, might cause delayed radiation-induced health effects [e.g. ref. 6], with the high-LET and highly ionizing neutron component typical of atmospheric radiation [7] known to be quite effective in causing biological damage [8].

In 1990 flight personnel has been given the status of "occupationally exposed to radiation" by the International Commission for Radiation Protection [9], with a received radiation dose that is at least twice larger than that of the general population [10]. In this respect, in several countries epidemiological studies on the health status of civilian airlines crew members have been promoted [see e.g. refs. 11, 12, 13], but limited in scope and cohort size, with no conclusive answers on disease risk, no use of information on radiation occupational exposure (e.g. radiation dose, flight hours, route haul, etc.), and no correlation possible between atmospheric ionizing radiation and (possibly radiation-induced) observed health effects [14]. So all the available information may be evaluated on the basis that the exposure to the 'flight environment' (i.e. exposure to atmospheric cosmic radiation and other physical or chemical agents due to civilian airline crew members occupational and/or leisure lifestyle) may pose health risk for flight personnel.

In this study all the available results from different studies on flight personnel exposures have been considered in different ways to evaluate the association between atmospheric flight environment and health risks, with a particular regard to cancer induction, and to assess features and needs of future investigations.

2. Analysis Techniques and Outcomes

2.1. Literature Review

Thorough literature reviews on epidemiological studies among pilots and cabin attendants have been published, mostly related to cancer risk [14, 15, 16]. From these reviews, even if updated with more recent results, no clear picture with regards to disease patterns emerges, with individual studies being unrelated to exposures from the flight environment, lacking statistical power to indicate clear trends, and with cancer site-specific incidence increased in some studies and not increased in other ones. A need comes out of further investigations of much larger cohorts and a much better description of the flight environment to which aircrew members are exposed.

2.2. Flight Personnel Cancer Incidence and Mortality Meta-Analysis

Increased cancer risk among flight personnel have been noted in individual studies [see e.g. refs. 11, 13], but without the statistical power to identify increased risks with statistical significance. In order to increase the precision of the estimated association between occupation as flight personnel crew member, different aircrew member cohorts have been selected for a meta-analysis process. Calculations for combined relative risks (RR) for selected causes

See p. 2
for reference
to R. Mandel

have been performed, with an evaluation of potential selection biases and heterogeneity among the combined groups, and with estimate and correction of possible sources of confounding (e.g. by socio-economic status). Flight personnel appear to be at increased risk for several types of cancer, with increased adjusted RRs among male pilots for mortality from melanoma and brain cancer and for incidence from prostate and brain cancer, and among female flight attendants for incidence of all cancers, of melanoma and breast cancer. However even in the meta-analysis the RRs show quite large confidence intervals, and the results must be interpreted with caution. This work has been published in [14].

2.3. NASA AIR Project-related Radiation Health Issues

In the framework of the NASA AIR (Atmospheric Ionizing Radiation) Project, after a review of flight personnel-related health issues literature, and after a consideration of the atmospheric ionizing radiation environment (given as an AIR Project outcome) and of the possible radiobiological interactions between the radiation fields and the human body, a study on atmospheric environment radiation health issues is being carried out. This work is currently in progress.

3. Discussion

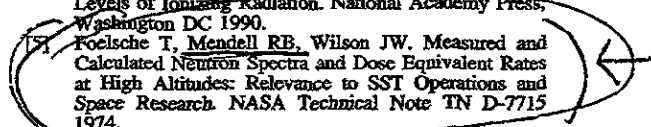
Also in individual studies excess disease risks have been found, but it has never been possible to confirm these results due to the lack of power of these studies. Much larger enrolled cohorts such as those composed of the whole flight personnel of a civilian airline are needed to provide more conclusive answers and results, with consideration in detail of the flight environment, in terms of atmospheric ionizing radiation environment, crew employment history, and aircraft route profiles, to reconstruct individual doses. This can provide more solid clues on disease morbidity patterns by exposure to atmospheric ionizing radiation and on risk analysis. A need for a multi-part or an international study in order to obtain a much larger cohort size with the radiation exposure patterns considered in detail came out long ago [17]. Now a collaborative effort with the participation of ten European countries (namely Denmark, Finland, Germany, Greece, Iceland, Italy, The Netherlands, Norway, Sweden and United Kingdom) has started, as composed of individual national-level projects, then pooled together in a joint analysis following a jointly agreed protocol [as sketched in ref. 15]. These national-level studies are presently underway, with the data analysis phase being currently in progress, and the first results are expected soon. The obtained data sets would provide potentialities for interesting side studies.

Acknowledgements

The authors acknowledge support from the Italian Ministry of Health through a Research Grant.

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FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

ELIMINATION REPORT

FOR

THE FORMER NATIONAL BUREAU OF STANDARDS BUILDINGS

VAN NESS STREET

WASHINGTON, D.C.

Department of Energy

Office of Nuclear Energy

Office of Remedial Action and Waste Technology

Division of Facility and Site Decommissioning Projects

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ELIMINATION REPORT
THE FORMER NATIONAL BUREAU OF STANDARDS BUILDINGS
VAN NESS STREET
WASHINGTON, D.C.

INTRODUCTION

The Department of Energy (DOE), Office of Nuclear Energy, Office of Remedial Action and Waste Technology, Division of Facility and Site Decommissioning Projects (and/or predecessor agencies, offices, and divisions) has reviewed past activities at the former National Bureau of Standards Buildings, Van Ness Street, Washington, D.C. Based on the review of decontamination operations by the Bureau of Standards, DOE has determined that the conditions at this site are such that no further remedial action is required and the former National Bureau of Standards, Van Ness Street, Washington, D.C., site will not be included in the Formerly Utilized Sites Remedial Action Program.

This report presents information supporting the determination that the radiological conditions at the former National Bureau of Standards, Van Ness Street, site provide assurance that use of the site will not result in any significant radiological hazard to site occupants or the general public.

BACKGROUND

Site Function

The National Bureau of Standards (NBS) occupied this site prior to moving to Gaithersburg, Maryland. A radioactivity laboratory at the site was used from the early 1920s until 1952 for measuring all radium samples used in this country for medical purposes. In the early

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1940s, NBS also performed quality control analysis for the Manhattan Engineer District.

Site Description

This site contained a number of buildings. The radioactivity Laboratory was located in the East Building, also referred to as Building 2, which has been demolished. The approximate former location of the site is shown in the attached figure.

Following the NBS move to Gaithersburg, Maryland, the buildings on this site were turned over to the General Services Administration (GSA). On February 5, 1968, six of the buildings at this site, including Building 2, were occupied by the District of Columbia for use by the Washington Technical Institute under a permit agreement with GSA.

In 1977, the entire site was turned over to the Department of State for use as an International Center. The area where Building 2 was located, Lot 14 or 8, is planned for use as an open area or a street.

Radiological History and Status

During the occupancy of Building 2 by the Radiological Laboratory, many rooms, hallways, and the attic became contaminated. In 1952 and after NBS moved, decontamination work was completed, with the exception of three rooms that were sealed and posted with signs indicating the presence of radioactive material. In 1968, when the buildings at the Van Ness Street site were leased to the District of Columbia, a survey of the facility was performed, and extensive decontamination of Building 2 was accomplished. Approximately 100 55-gallon drums of radioactive debris and building material wastes were removed during the decontamination process. Following another

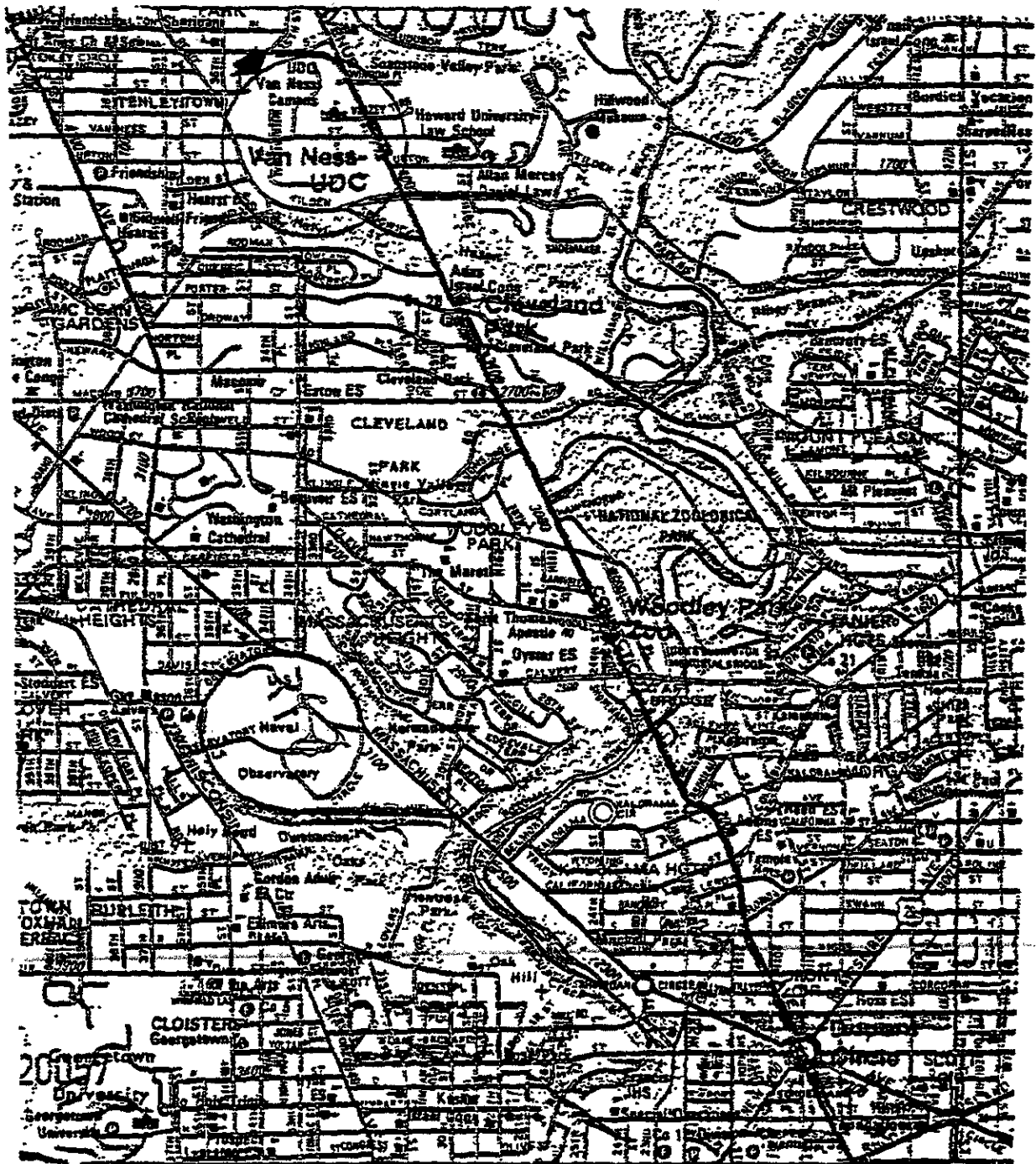
reevaluation of all areas, it was determined that, although small amounts of radioactivity remained in isolated areas, the levels were within safe limits as defined by the recommended guidelines of the U.S. Public Health Service. Building 2 was demolished during September and October 1976. The disposition of the building materials and rubble can not be determined.

ELIMINATION ANALYSIS

Because Building 2 was demolished in 1976 and another structure was not built upon the site, DOE has eliminated the National Bureau of Standards, Van Ness Street, site from consideration for inclusion in the Formerly Utilized Sites Remedial Action Program. No further remedial action is necessary or possible.

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Approximate Former Location of the National Bureau of Standards Facilities

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Facility List

There was one record found for the facility: National Bureau of Standards, Van Ness Street .

1 - National Bureau of Standards, Van Ness Street

Also Known As: University of the District of Columbia
State: District of Columbia **Location:** Washington
Time Period: 1943-1952
Facility Type: Atomic Weapons Employer

Facility Description: The National Bureau of Standards contributed to weapons research and development from the early 1940s until 1952. They participated in experiments related to developing the purification process of uranium oxide. From the early 1920s until 1952, the NBS had a radioactivity laboratory used for measuring radium samples for medical purposes.

The National Bureau of Standards also provided oversight for uranium metal production. During World War II, considerable emphasis was placed upon uranium metal production. Researchers at Iowa State soon perfected a magnesium reduction process, which quickly became the standard. The National Bureau of Standards in Washington, DC, among other laboratories, provided quality control of the production of uranium metal using the magnesium process. Records also indicate that the NBS worked with thorium.

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THE FORMER NATIONAL BUREAU OF STANDARDS BUILDINGS
Van Ness Street
Washington, D.C.

Site Function

The National Bureau of Standards occupied this site prior to moving to Gaithersburg, Maryland. A radioactivity laboratory, at the site was used from the early 1920s until 1952 for measuring all radium samples used in this country for medical purposes.

Site Description

This site contained a number of buildings. The radioactivity laboratory was located in the East building, also referred to as Building 2.

Owner History

Subsequent to NBS occupancy, the buildings on this site were turned over to the General Services Administration. On February 5, 1968, six of the buildings at this site, including Building 2, were occupied by the District of Columbia for use by the Washington Technical Institute under a permit agreement with GSA.

Building 2 was demolished during September and October 1976. In 1977, the entire site was turned over to the Department of State for use as an International Center. The area where Building 2 was located is planned for use as an open area or a street.

Radiological History and Status

During the occupancy of Building 2 by the Radiological Laboratory, many rooms, hallways, and the attic became contaminated. In 1952 and after NBS moved to Gaithersburg, decontamination work was accomplished with the exception of three rooms which were sealed and posted with signs indicating the presence of radioactive material. In 1968, when the buildings at the Van Ness Street site were leased to the District of Columbia, a survey of the facility was performed, and extensive decontamination of Building 2 was accomplished. Following another re-evaluation of all areas, it was determined that although small amounts of radioactivity remained in isolated areas, the levels were within safe limits as defined by the recommended guidelines of the U.S. Public Health Service. Building 2 was demolished during September and October 1976, and the property released to the Department of State in 1977.

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FOLDER DC NATIONAL BUREAU OF STANDARDS, VANNESS ST.
WASHINGTON

THE FORMER NATIONAL BUREAU OF STANDARDS BUILDING 2
Van Ness Street
Washington, D.C.

Site Function

The National Bureau of Standards (NBS) occupied this site prior to moving to Gaithersburg, Maryland. A radioactivity laboratory at the site was used from the early 1920s until 1952 for measuring all radium samples used in this country for medical purposes. In the early 1940s, NBS also performed quality control analysis for the Manhattan Engineer District.

Site Description

This site contained a number of buildings. The radioactivity laboratory was located in the East Building, also referred to as Building 2, which has been demolished. The approximate former location of the site is shown in the attached figure.

Owner History

Following the NBS move to Gaithersburg, Maryland, the buildings on this site were turned over to the General Services Administration (GSA). On February 5, 1968, six of the buildings at this site, including Building 2, were occupied by the District of Columbia for use by the Washington Technical Institute under a permit agreement with GSA.

In 1977, the entire site was turned over to the Department of State for use as an International Center. The area where Building 2 was located, Lot 14 or 8, was planned for use as an open area or a street.

Radiological History and Status

During the occupancy of Building 2 by the Radiological Laboratory, many rooms, hallways, and the attic became contaminated. In 1952 and after NBS moved, decontamination work was completed with the exception of three rooms that were sealed and posted with signs indicating the presence of radioactive material. In 1968, when the buildings at the Van Ness Street site were leased to the District of Columbia, a survey of the facility was performed, and extensive decontamination of Building 2 was accomplished. Following another reevaluation of all areas, it was determined that, although small amounts of radioactivity remained in isolated areas, the levels were within safe limits as

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defined by the recommended guidelines of the U.S. Public Health Service. Building 2 was demolished during September and October 1976.

The site has been eliminated from consideration for inclusion in the Formerly Utilized Sites Remedial Action Program. The final elimination report was completed in fiscal year 1987.

Doc. A45



DATA CAPTURE DOCUMENT DISCOVERY AND REVIEW

ORAU TEAM
Dose Reconstruction
Project for NIOSH

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- Facilities/Process (i.e. source terms, contamination surveys, general area/breathing zone air sampling, area radiation surveys, radon/thoron monitoring, fixed location dosimeters, missed dose information, radiological control limits, Radiation Work Permits, incidents/accidents)
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ARMY SERVICE FORCES
UNITED STATES ENGINEER OFFICE

MANHATTAN DISTRICT
OAK RIDGE, TENNESSEE

THIS DOCUMENT CONSISTS OF 3 PAGES
NO. 2 OF 2 SERIES
11 April 1946

IN REPLY
REFER TO

EDNE-4

Subject: Work Required by Other Sites to be done by the Bureau of Standards.

MEMORANDUM to the Files.

Following is the summary of the work expected to be done by the Bureau of Standards for the Manhattan District Research Contract during the coming fiscal year.

University of California

No large volume of work is anticipated. That which will be required will consist of small items such as calibration of thermometers, calibration of standard cells and similar work.

Clinton Laboratories

No work is definitely anticipated, however, it is likely that requests will later be made for work to be done by the Bureau along lines for which it is best suited.

Hanford Engineer Works

The Bureau of Standards is now performing certain work on graphite which work is being handled through the Metallurgical Laboratory.

Iowa State College

No work is now being done by the Bureau for Iowa State College but standard samples of beryllium are being analyzed.

Metallurgical Laboratory

The Bureau of Standards is presently making determinations of heats of combustion of irradiated graphite samples from Hanford Engineer Works. This work should be continued during the coming year. It is expected that 6-10 samples of graphite will be submitted each month, in addition, a few analyses for the rare-earths in beryllium oxide samples will be required and also the usual calibration services will be used.

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Subject: Work Required by Other Sites to be done by the Bureau of Standards.

Massachusetts Institute of Technology

At the present time the Bureau is making an analysis of high-purity beryllium metal for M.I.T. and it is desired that this work be continued. Dr. Kaufmann states that the group at the Bureau which has worked on District work has been very useful and that he frequently consults with Dr. Thompson.

Madison Square Area

Following is extract from letter dated 26 March 1946 to Dr. E. U. Condon from Lt. Col. W. E. Kelley concerning the requirements for work at Bureau of Standards during the coming year:

*I. Routine Analyses

This program covers the analysis of samples arising out of the normal operation of this area. Routine work under the program has been gradually reduced during the past year but will continue to include analysis of raw materials, 'shotgun' buttons, and frequent special samples for quality control. This program is described in detail in our letter to Dr. Rodden dated 21 March 1946 (reference O-223-a MS). During the past, approximately 50% of the routine work has been on regularly scheduled samples while the remainder has resulted from special demands.

*II. Special Programs

Firm prediction of the frequency or extent of special programs cannot be made. It is reasonable to assume, however, that these programs will be similar to the ones experienced during the past year. (Examples of these programs are the recent 'GP' assay program, the preparation of uranium samples for isotope analysis and the present beryllium standardization program.)

*III. Analytical Investigations

The development and extension of analytical procedures for project materials has been a key function of the laboratory. As a result of the laboratory's excellent work, this function has become less critical. At present, the improvement of physical and chemical assays of low grade minerals and the development of reliable procedures for beryllium analysis are of concern to this office. The beryllium program is outlined in our letter of 22 March 1946. (reference O-223-b MS) to Dr. Rodden. It is expected that the facilities required for present analytical

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Subject: Work Required by Other Sites to be done by the Bureau of Standards.

Investigations will be adequate for these demands in the future.

"IV. 'Shotgun' Analysis

Arrangements have been made with Dr. L. F. Curtiss to set up 'shotgun' (neutron absorption) test facilities. Preliminary work on this program will start during April 1946 and it is expected that official 'shotgun' testing will begin on or about July 1946. These arrangements have been confirmed in a letter dated 12 March 1946 (reference O-223-a ES) from the undersigned to Dr. Curtiss and his reply dated 21 March 1946.

"V. Editorial and Writing Activities

In conjunction with the preparation of a Manhattan District technical publication, Dr. Rodden has accepted editorial responsibility for large portions of the volumes on analysis. In addition, his group has also agreed to prepare a large number of papers covering the research work done at the laboratory. It is estimated that this work will require the part time services of several people for as long as six months.

"The program outlined above is substantially as given to Dr. Rodden during a visit to Washington by Captain R. J. Rutman on 7 March 1946.

"No consideration has been given in the foregoing to the activities of the spectrographic group. It is anticipated that the program of this group will require essentially the same capacity and facilities as are available at this time, although increasing emphasis may be placed on the standardization of spectrographic procedures.

"It may be well to note at this point that the National Bureau of Standards laboratory provides the only complete facility available to this office for the analysis of project materials. The flexibility of the arrangement has always been of particular value, since it has permitted routine or emergency analyses ranging from complete characterizations of the quality of materials to the precise determination of minute quantities of valuable constituents."

JAMES A. COX,
Captain, Corps of Engineers.

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No. 4 of 6 copies series 2

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WAR DEPARTMENT
UNITED STATES ENGINEER OFFICE
MADISON SQUARE AREA
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NEW YORK 16, N. Y.

IN REPLY
REFER TO

EIDW O-223-a MS
MCH

26 March 1946

Dr. E. U. Condon, Director,
National Bureau of Standards,
U. S. Department of Commerce,
Washington, D. C.

Dear Dr. Condon:

In recent conversations with Captain E. J. Rutzen of this office, Dr. G. H. F. Lundell and Dr. C. J. Rodden inquired about the extent of the future analytical program at Dr. Rodden's laboratory planned by this office. It is understood that this information is desired so that provision of space, personnel and budget can be made for the operation of the laboratory during the coming fiscal year.

The program presented below represents the best picture available at this date as to the analytical services required by this office. The routine analysis, although subject to some variation, is considered to be a relatively firm requirement. In addition, the nature of the work of this office requires that some facilities be available for special programs of analysis or investigation representing urgent requirements for information.

I. Routine Analyses

This program covers the analysis of samples arising out of the normal operation of this area. Routine work under the program has been gradually reduced during the past year but will continue to include analysis of raw materials, "shotgun" buttons, and frequent special samples for quality control. This program is described in detail in our letter to Dr. Rodden dated 21 March 1946 (reference O-223-a MS). During the past, approximately 50% of the routine work has been on regularly scheduled samples while the remainder has resulted from special demands.

II. Special Programs

Firm prediction of the frequency or extent of special programs cannot be made. It is reasonable to assume, however, that these programs will be similar to the ones experienced during the past year. (Examples of these programs are the

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Dr. E. U. Condon

26 March 1946

recent "GP" assay program, the preparation of uranium samples for isotope analysis and the present Beryllium standardization program.)

III. Analytical Investigations

The development and extension of analytical procedures for project materials has been a key function of the laboratory. As a result of the laboratory's excellent work, this function has become less critical. At present, the improvement of physical and chemical assays of low grade minerals and the development of reliable procedures for beryllium analysis are of concern to this office. The beryllium program is outlined in our letter of 22 March 1946 (reference O-223-b MS) to Dr. Rodden. It is expected that the facilities required for present analytical investigations will be adequate for these demands in the future.

IV. "Shotgun" Analysis

Arrangements have been made with Dr. L. F. Curtis to set up "shotgun" (neutron absorption) test facilities. Preliminary work on this program will start during April 1946 and it is expected that official "shotgun" testing will begin on or about July 1946. These arrangements have been confirmed in a letter dated 12 March 1946 (reference O-225-a MS) from the undersigned to Dr. Curtis and his reply dated 21 March 1946.

V. Editorial and Writing Activities

In conjunction with the preparation of a Manhattan District technical publication, Dr. Rodden has accepted editorial responsibility for large portions of the volumes on analysis. In addition, his group has also agreed to prepare a large number of papers covering the research work done at the laboratory. It is estimated that this work will require the part time services of several people for as long as six months.

The program outlined above is substantially as given to Dr. Rodden during a visit to Washington by Captain R. J. Rutman on 7 March 1946.

No consideration has been given in the foregoing to the activities of the spectrographic group. It is anticipated that the program of this group will require essentially the same capacity and facilities as are available at this time, although increasing emphasis may be placed on the standardization of spectrographic procedures.

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