CURRICULUM VITAE

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FIELD OF EXPERTISE: Nuclear Energy, Probabilistic Risk Assessment, Nonproliferation Analysis Methods, Condensed Matter Physics

EDUCATION: Rutgers University, A.B. in Physics, 1965
Brandeis University, PhD in Physics, 1970

CURRENT POSITION: Senior Physicist and Senior Advisor to the Chairman of the Nuclear Sciences and Technology Department

APPOINTMENTS: 1974 - Present - Brookhaven National Laboratory

1982 - Appointed Senior Physicist

1984 - Awarded Tenure

2000 - Present - Senior Advisor to Department Chairman. Developed programs in risk-informing non-reactor nuclear safety arenas; developed methods for nonproliferation assessment; developed probabilistic approach to electrical grid behavior.

1999 - Interim Associate Laboratory Director - Provided management oversight and direction for two scientific departments (Applied Science and Advanced Technology) and the Office of Technology Transfer and Economic Development.

1995 - 2000 - Chairman, Department of Advanced Technology – Responsible for organization with up to 300 employees in fields of energy, environment, national security and novel technologies. Provided technical leadership, administrative direction, and funding agency interaction.

APPOINTMENTS (Cont'd):

1998 - 1995 - Deputy Chairman, Department of Advanced Technology and Department of Nuclear Energy. Developed programs and assisted chairman in management of department. Develop first strategic plan (1990) for department.

1982 - 1988 - Associate Chairman, Department of Nuclear Energy. Had responsibility for programs in probabilistic risk assessment, reactor safety analysis and waste management.

1981 - Division Head, Safety and Risk Evaluation Division. Led programs in probabilistic risk assessment, accident analysis, human factors and operational safety.

1975 – 1981 - Group Leader, Safety Evaluation Group. Led group in execution of programs in liquid metal fast breeder reactors and other advanced concepts.

1974 - Member, Fast Reactor Safety Division. Performed research on probabilistic and deterministic approaches to fast reactor safety.

1973 - 1974 - Visiting Assistant Professor of Physics, Department of Physics, State University of New York, Stony Brook, NY.

1971 - 1973 - Assistant Physicist, Physics Department, Brookhaven National Laboratory.

1969 - 1971 - Postdoctoral position in Solid State Theory Group, Massachusetts Institute of Technology Lincoln Laboratory, Lexington, Massachusetts.

<u>Other Positions Previously Held:</u>

Associate Editor, Physical Review B, 1979 - 1981

Adjunct Professor of Nuclear Engineering, Polytechnic Institute of New York, 1979 - 1983.

Adjunct Associate Professor of Mechanical Engineering, Manhattan College, 1978 - 1979.

Visiting Assistant Professor, Department of Materials Science, State University of New York, Stony Brook, NY, 1972; Visiting Associate Professor, 1990.

APPOINTMENTS (Cont'd):

Member, Department of Energy (DOE) Review Panel on Research Grants to Universities in Nuclear Energy, 1988 - 1992.

Member, Nuclear Regulatory Commission (NRC) Severe Accident Research Program Plan Development Group, 1988 - 1989.

U.S. Participant, Organization of Economic Development and Cooperation, Technical Activities of the Committee on the Safety of Nuclear Installations (CSNI), 1988 - 1991.

Member, Department of Energy Review Panel for the Advanced Neutron Source, 1990 and 1992. Chairman of Safety Panel in 1992.

Co-Chairman, International Workshop on Boiling Water Reactor Stability, Sponsored by the Nuclear Energy Agency of the Organization for Economic Cooperation and Development, New York, October 1990.

Member, DOE/NASA/DOD Nuclear Safety Policy Working Group on Nuclear Propulsion Safety for the Space Exploration Initiative, 1991.

Member, University of Maryland Advisory Council on the Department of Materials and Nuclear Engineering, 1992 - 1993.

Member, Rensselaer Polytechnic Institute Advisory Committee on the Department of Nuclear Engineering and Engineering Physics, 1992 - 1995.

Member, Editorial Board for DOE Risk Management Quarterly, 1992 - 1995.

Principal Investigator on DOE-Sponsored Fuel Enrichment Study for Advanced Neutron Source; leading expert group from four National Laboratories, 1993 - 1994.

Chairman DOE/NRC Lab Managers Group on Technologies for Sustainable Development, 1993 - 1995;

Member DOE Laboratory Energy R&D Working Group (LERDWG), 1994 - 2000.

APPOINTMENTS (Cont'd):

Laboratory Representative to Presidential Commission on Critical Infrastructure Protection, 1997 - 1998.

Member, Industrial Advisory Board, Department of Mechanical Engineering, State University of New York, Stony Brook, 1997- .

Member, Electric Generation/Environmental Peer Review Committee, KeySpan Energy, 1998 and 2000.

Vice President and Board Member, Long Island Forum for Technology, 1999 - 2001.

Member, Board of Directors, Long Island Museum of Science and Technology, 1999 - 2001.

BNL Representative to Battelle Four-Laboratory Strategy Team on Programs with NASA, 2000 - 2002.

Co-Chair, Generation IV International Forum Working Group in Evaluation Methodology for Proliferation Resistance and Physical Protection, 2002 - .

Member, Generation IV International Forum Working Group on Risk and Safety, 2005 - .

Member, US National Academies Committee on Lessons Learned from the Fukushima Nuclear Accident for Improving Safety and Security of U.S. Nuclear Plants, 2012 - 2014.

Consultant, US National Academies Committee on Improving the Assessment of the Proliferation Risk of Nuclear Fuel Cycles, 2012-2013.

SERVICE ACTIVITIES AT BROOKHAVEN NATIONAL LABORATORY (BNL)

Member of Reactor and Critical Experiments Safety Committee, 1985 - 1988.

Member of Brookhaven Council (equivalent to faculty senate), 1985 - 1988 (Secretary 1986); 2002 - 2005 (Chair 2004); 2006 – 2009, 2011-2014.

Affirmative Action Representative for Reactor Safety Programs, 1979 - 1981.

Chairman of the BNL High Flux Beam Reactor Ad Hoc Inspection Committee, 1979.

Program Manager for Probabilistic Risk Assessment for High Flux Beam Reactor, 1988 - 1991.

Service Activities at Brookhaven National Laboratory (BNL) (Cont'd)

Member of Ad Hoc Committee on the Computing and Communications Division, 1992.

Member of the Lab-Wide Cost Control Committee, 1992 - 1994.

Member of the Advisory Committee on the Long Island Research Institute, 1992 - 1998.

Chairman of BNL Business Information Systems (for entire lab) Steering Committee, 1993 - 1998.

Member of Steering Committee for Computing and Communications Division, 1995 - 1998.

Member of OPSEC Committee, 1995 – 1999.

Member of Diversity Management Steering Committee, 1995 - 1999.

Member of Search Committee for Head of Environmental Science Center, 1996.

Chairman of Ad Hoc Committee on Environmental, Safety and Health Decision Making, 1997.

Member of Survey Steering Committee, 1998.

Member of Budget Policy Advisory Committee, 1999 - 2000.

Member of Standards Based Management Systems Steering Committee, 1999 - 2003.

TEACHING EXPERIENCE:

Courses Taught (Graduate Level):

State University of New York, Stony Brook

- Solid State Electronics, 1990.
- Special Topics in Solid State Physics, 1973 - 1974.
- Statistical Mechanics, 1972.

TEACHING EXPERIENCE (Cont'd):

Polytechnic Institute of New York

- Probabilistic Risk Assessment, 1982.
- Nuclear Reactor Safety and Licensing, 1982, 1981, 1978.
- Introduction to Nuclear Engineering 1983, 1982, 1980, 1979.

Manhattan College

- Nuclear Reactor Safety and Licensing, 1978.
- Introduction to Nuclear Engineering, 1979.

Doctoral Students Co-Supervised

M. Barma, 1973 - 1974, Physics, State University of New York

I.A. Papazoglou, 1975 - 1977, Nuclear Engineering, Massachusetts Institute of Technology (MIT).

C.K. Park, 1985 - 1986, Nuclear Engineering, University of Michigan.

AWARDS: Phi Beta Kappa, Sigma Xi, Sigma Pi Sigma.

"Tommy" Thompson Award of the American Nuclear Society for Research in Probabilistic Risk Assessment, 2003.

Brookhaven National Laboratory Award for Outstanding Achievement in Science and Technology, 2004.

NSF Research Grant, 1973; Project title: "Narrow Band Approach in Solids - Studies of the TCNQ Salts".

NDEA Graduate Fellowship (1965 - 1968).

PROFESSIONAL SOCIETIES:

Fellow, American Nuclear Society (ANS)

Fellow, American Physical Society

ANS Activities

ANS Representative to American Association of Engineering Societies, 1989 - 1990.

ANS Representative to International Nuclear Societies Council and Chair of the Task Group on Risk, 1997.

Board of Directors, 1994 - 1999.

Finance Committee Chair (1998), Member, 1994 - 2001.

Honors and Awards Committee, Member, 2011- .

Planning Committee

Chairman, 1990 - 1992; Vice Chair, 1988 - 1990, Member, 1984 - 1993.

Public Policy Committee Member, 1993 - 1995

Risk-Informed Standards Consensus Committee Chair, 2003 - 2006; Member, 2006 -.

Special Committee on Nuclear Nonproliferation, 2009 -2011.

Special Committee on NRC Safety Goal Policy Statement, Member, 1982 - 1985.

Standards Steering Committee, 2003 - 2006.

National Nominating Committee, Member, 1991-1992.

Committee to Select the National Nominating Committee Candidates, Chair, 2002.

Global 2009, Technical Program Committee Member.

Nuclear Reactor Safety Division

- Awards Committee, 2003 - 2009.
- Organizer of Second ANS Workshop on the Safety of Soviet-Designed Nuclear Power Plants, 1994.
- Nominating Committee Chair, 1993 - 1994.
- Chairman, 1991-1992; Vice Chair, 1990 - 1991; Secretary/Treasurer, 1989 - 1990.
- Program Committee Chair, 1988 - 1989; Vice Chair, 1987 - 1988; Member, 1986 - 1992, 2003 - .
- Executive Committee Member, 1982 - 1985.
- Standards Committee Chairman, 1977 - 1982.

Topical Meeting Technical Program Chair, ANS Probabilistic Safety Assessment, 2013.

Topical Meeting Technical Program Co-Chair, ANS/ENS Probabilistic Risk Assessment, 1981.

General Chair of International Topical Meeting on Nuclear Facility Safety, Washington, DC, November 2004.

Topical Meeting Program Committee Membership.

- 1997, 1994 International Topical Meeting on Nuclear Thermal Hydraulics, Operations and Safety.
- 1997, 1994 Advanced Reactor Safety.
- 1994, 1993, Symposium on Space Nuclear Power Systems.

- 1992, Risk Management – Expanding Horizons.
- 1990, ANS/ENS Fast Reactor Safety.
- 1990, Safety, Status and Future of Non-Commercial Reactors and Irradiation Facilities.
- 1999, 1996, 1995, 1989, 1985, 1978 ANS/ENS Probabilistic Safety Methods and Applications.
- 1986, 1984, 1982, ANS/ENS Thermal Reactor Safety.

Nuclear Nonproliferation Technical Group

- Member of Executive Committee, 2012-2015

Society for Risk Analysis

Program Committee Member for 1991 and 1994 International Conferences on Probabilistic Safety Assessment and Management.

International Association for Probabilistic Safety and Management

- President, 1996 - 1998.
- Board of Directors, 1994 - 2000.
- General Chairman for 1998 International Conference, New York.
- Senior Advisory Board for PSAM 7, Berlin, 2004.

COMMUNITY ACTIVITIES:

Presented Science Program of Laboratory to Local Community Visitors, 1971 - 1972.

Organized Road Race for Three Village Community as part of Bicentennial Celebration in 1976.

Played Viola with the Bellport Chamber Players which performed concerts for local communities, 1977 - 1979.

Soccer Coach for Three Village School Community, 1984 - 1986.

Treasurer and Member of Board of Directors of Setauket Yacht Club, 2000 - 2002, Vice Commodore, 2004, Commodore, 2005.

Member Greater Port Jefferson Arts Council, 1996 - 1999.

I. PUBLICATIONS:

1. Bari, R.A., and Lange, R.V., "The Hubbard Model: Insulator or Conductor for Narrow Band Regime?" Phys, Letters 30A, 418, 1969.

2. Kaplan, T.A. and Bari, R.A., "Theory of Localized vs. Band Magnetic Semiconductors," J. Appl. Phys, 41, 875, 1970.

3. Bari, R.A., "Narrow Band Expansions in the Hubbard Model: A Comment," Phys. Rev. B2, 2260, 1970.

4. Bari, R.A., Adler, D., and Lange, R.V., "Electrical Conductivity in Narrow Energy Bands," Phys. Rev, B2, 2898, 1970.

5. Kaplan, T.A., Bari, R.A., "Variational Approach to the Metal-Semiconductor Transition," from the proceedings of the International Conference on Semiconductor Physics, ed. Keller, S.P., Hensel, J.C. and Stern, F., CONF-700801 (U.S. Atomic Div. of Tech Inf., Springfield, VA, pg. 301, 1970

6. Bari, R.A. and Kaplan, T.A., "Absence of Hartree-Fock Behavior in Hubbard's Simple Decoupling Solution of the Correlated Narrow-Energy-Band Model," Phys. Letters 33A, 400, 1970.

7. Bari, R.A., "Lattice Effects in the Localized State," Phys. Rev. B3, 2662, 1971.

8. Ngai, K.L. and Bari R.A., "Multielectron Field Emission," Bull. Am. Phys. Soc. 16, 431, 1971.

9. Bari, R.A., "Low-Spin-High-Spin and Structural Transition in $LaCoO_{3,}$" AIP Conference proceedings, No. 5, Magnetism and Magnetic Materials, ed. by C.C. Graham, Jr. and J.J. Rhyne , p. 290, AIP, New York, 1972.

10. Bari, R.A., "Calculation of Partition Functions Using Functional Integral Method," Phys. Rev. B5, 2736, 1972.

11. Bari, R.A. and Sivardiere, J., "Low-Spin-High-Spin Transitions in Transition-Ion Compounds," Phys. Rev. B5, 2736, 1972.

12. Bari, R.A. and Kaplan, T.A., “Electrical Conductivity and Thermodynamics of the Narrow-Half Filled-Band Hubbard Model,” Phys. Rev. B6, 4623, 1972.

13. Bari, R.A., “Superconductivity, Ferroelectricity and the Mott Insulator,” Phys. Rev. B7, 2128, 1973.

14. Bari, R.A., “Classical Linear Chain Hubbard Model: Metal-Insulator Transition,” Phys. Rev. B7, 2128, 1973.

15. Bari, R.A., “Excitonic Polarons in Molecular Solids,” Phys. Rev., Letters 30, 790, 1973.

16. H. Fukuyama, Bari, R.A. and Fogedby, H.C., “Tightly Bound Electrons in a Uniform Electric Field,” Phys. Rev., B8, 5579, 1973.

17. Bari, R.A., “Polar-Singlet-Ground-State: Applications to Wurster’s Blue Perchlorate,” from the proceedings of the 19th Conference on Magnetism and Magnetic Materials, Boston, 1973, (American Institute of Physics, New York, 1974).

18. Bari, R.A., “Small Polaron Effects on the de Conductivity and Thermoelectric Power of the Mott Semiconductor,” Phys. Rev., B9, 1974.

19. Bari, R.A., “Thermoelectric Power of the Extrinsic Mott Semiconductor,” Phys. Rev., B10, 1560, 1974.

20. Barma, M. and Bari, R.A., “The Role of Phonon-Modulated Transfer Integrals in the Electric and Magnetic Properties of an Extended Hubbard Model,” Phys. Rev., B11, 1352, 1975.

21. Bari, R.A., “Metal-Nonmetal Transitions: Theoretical Models,” J. of Solid State Chem., 12, 383, 1975.

22. Bari, R.A., “Information Theory and Nuclear Risk,” Trans. Am. Nucl. Soc., 22, 364, 1975.

23. Fischer, G.J., Bari, R.A., and Majumdar, D., “Combined Deterministic/Probabilistic Fast Reactor Accident Analysis Procedure,” Trans. Am. Nucl. Soc., 22, 381, 1975.

24. D. C. Albright and R.A. Bari, “Double-Ended Pipe Rapture in the Clinch River Breeder Reactor,” Trans. Am. Nucl. Soc., 23, 331, 1976.

25. D.C. Albright and R.A. Bari, “On the Stress-Strength Overlap Method for the Reliability of CRBR Primary Piping,” Trans. Am. Nucl. Soc., 24, 328, 1976.

26. Tsai, S.S., Bari, R.A., and Ginsberg, T., “The Effect of Humidity on the Burning Rate of Sodium Droplets,” Trans. Am. Nucl. Soc., 26, 347, 1977.

27. R.A. Bari, M.A. Klenin, W.T. Pratt and Y.H. Sun, “Meltdown Phase for an LMFBR Loss of Heat Sink During Shutdown,” Trans. Am. Nucl. Soc., 26, 347, 1977.

28. Albright, D.C. and Bari, R.A., “Pipe Rupture Studies in the Clinch River Breeder Reactor,” Trans. Am. Nucl. Soc., 26, 353, 1977.

29. Perkins, K.R., Bari, R.A. and Albright, D.C., “Natural Circulation Decay Heat Removal in an LMFBR,” Trans. Am. Nucl. Soc., 27, 1977

30. Buslik, A.J., Papazoglou, I A. and Bari, R.A., “Reliability of the CRBR Shutdown Heat Removal System,” from the proceedings of ANS Topical Meeting on Probabilistic Analysis of Reactor Safety, May, 1978.

31. Pyun, J.J., Gasser, R.D., Pratt, W.T., and Bari, R.A., “Ex-vessel Containment Response to a Core Meltdown,” from the proceedings of the Post- Accident Heat Removal Exchange Meeting, November, 1977.

32. Bari, R.A., Ludewig, H., Pratt, W.T., and Sun, Y.H., “Recriticality Considerations for the Loss-of-Heat-Sink Accident with Scram,” Trans. Am. Nucl. Soc., 28, 471, 1978.

33. Perkins, K.R., Chen, L., and Bari, R.A., “Thermal-Hydraulic Analysis of the Air Dump Heat Exchangers in the Fast Flux Test Facility,” Trans. Am. Nucl. Soc., 28, 545, 1978.

34. Perkins, K.R. and Bari, R.A., “Interassembly Flow Redistribution at Natural Circulation Conditions in the Fast Flux Test Facility,” Trans, Am, Nucl. Soc., 30, 413, 1978.

35. Bari, R.A., Ludewig, H., Pratt, W.T., and Sun, Y.H., “An Assessment of the Loss-of–Heat Sink Accident with Scram in the LMFBR,” from the proceedings of the ENS/ANS International Topical Meeting on Nuclear Power Reactor Safety, Brussels, Belgium, October, 1978.

36. D.C. Albright and R.A. Bari, “Primary Pipe Rupture Accident Analysis for the Clinch River Breeder Reactor,” Nucl. Tech., 39, 225, 1978.

37. Bari, R. A., Ludewig, H., Pratt, W.T., and Sun, Y.H., “Accident Progression for a Loss-of-Heat-Sink Accident with Scram in a LMFBR,” Nucl. Tech, 44, 357, 1979.

38. Sun, Y.H., Papazoglou, I.A., and Bari, R.A., “Quantitative System Interaction Methodology: Application to PWR Power Supplies,” Trans. Am. Nucl. Soc., 32, 484, 1979.

39. Bari, R.A., Pratt, W.T., Perkins, K.R., and Meyer, J.F., “Phenomena and Scenarios Related to a Loss-of-Heat-Sink Accident (with Scram) in an LMFBR,” from the proceedings of the International Meeting on Fast Reactor Safety Technology, Seattle, August, 1979.

40. Perkins, K.R. and Bari, R.A., “SAS-3D Evaluation of Boiling at Decay Heat Levels in FFTF,” Trans. Am. Nucl. Soc., 33, 516, 1979.

41. Tsai, S.S., Bari, R.A., “Combustion of Large Sodium Pools,” Trans. Am. Nucl. Soc., 33, 532, 1979.

42. Sun, Y.H., Bari, R.A., “Comparative Reliability Analysis for PWR, HWR and LMFBR Shutdown Heat Removal Systems,” Trans. Am. Nucl. Soc., 33, 568, 1979.

43. Perkins, K.R. and Bari, R.A., “In-vessel Natural Circulation During a Hypothetical Loss-of-Heat-Sink Accident in the Fast Flux Test Facility,” ASME Transaction, Winter Annual Meeting, December, 1979, 79-WA/HT-66.

44. Perkins, K.R. and Bari, R.A. “Analysis of Secondary System Transients in FFTF,” Trans. Am. Nucl. Soc., 34, 508, 1980.

45. Sun, Y.H. and Bari, R.A., “Shutdown Heat Removal System Reliability in Thermal Reactors,” Proceedings of the ANS/ENS Topical Meeting on Thermal Reactor Safety, Knoxville, AL, April, 1980.

46. Perkins, K.R., Bari, R.A., and Cazzoli, E.G., “An Analysis of Boron Injection Transients in Pressurized Water Reactors at Natural Circulation Conditions,” Trans. Am. Nucl. Soc., 38, 488, 1981.

47. Buslik, A. J. and Bari, R.A., “Risk Reduction from Safety-Grade Means of Reaching and Maintaining Cold Shut-down,” Trans. Am. Nucl. Soc., 38, 485, 1981.

48. Pratt, W.T. and Bari, R.A., “PWR Containment Response During a Postulated Core Meltdown Event,” Trans. Am. Nucl. Soc., 38, 460, 1981.

49. Jaung, R., Pratt, W.T., and Bari, R.A., “Carbon Monoxide Burning During Core Meltdown Events in a PWR,” Trans. Am. Nucl. Soc., 39, 606, 1981.

50. Pratt, W.T., Grasser, R. D., and Bari, R.A., “Potential Influence of Core-Concrete Interactions on PWR Containment Pressurization,” Trans. Am. Nucl. Soc., 39, 609, 1981.

51. Coffman, F., Atefi, B., Bari, R.A., Chelliah, E, Conran, J., Cybulskis, P., Galluci, R., Papazoglou, I.A., Pelto, P., and Widrig, R., “The Development of Interim Guidance on Systems Interactions,” Proceedings of the International ANS/ENS Topical Meeting on Probabilistic Risk Assessment, p. 625, Port Chester, NY, September, 1981.

52. Pratt, W.T., Yang, J.W., Gasser, R.D., Yu, W.S., Jaung, R., Zahra, J. and Bari, R.A., “MARCH1B: BNL Modifications to the March Computer Code,” from the proceedings of the International Meeting on Thermal Meeting Reactor Safety, NUREG/CP-0027, p. 1167, Chicago, IL, August, 1982.

53. R.A. Bari, Pratt, W.T., and Meyer, J.F., "Severe Accident Trends in Light Water Reactors," from the proceedings of the International Meeting on Thermal Reactor Safety, NUREG/CP-0027, p.1854, Chicago, IL, August, 1982.

54. Ludewig, H., Pratt, W.T., et. al. and Bari, R.A., "An Assessment of Core Melt Accidents in the Limerick Facility," from the proceedings of the International Meeting on Light Water Reactor Severe Accident Evaluation, Cambridge, MA, August, 1983.

55. Pratt, W.T., Ludewig, H., Bari, R.A., "An Assessment of Uncertainties in Core Melt Phenomenology and their Impact on Risk at the Zion and Indian Point Facilities," Proceedings of the International Meeting on Light Water Reactor Severe Accident Evaluation, Cambridge, MA, August, 1983.

56. Papazoglou, I.A., Karol, R., Shiu, K., and Bari, R.A., "Risk Evaluation of the Alternate-3A Modification to the ATWS Prevention/Mitigation System in a BWR-4, MARK-II Power Plant," from the proceedings of the International Meeting on Light Water Reactor Severe Accident Evaluation, Cambridge, MA, August 1983.

57. Bari, R.A., Papazoglou, I.A., Pratt, W.T., Shiu, K., Ludewig, H., Hanan, N., "Severe Accident Analysis and Risk Assessment for Two Boiling Water Reactors," from the proceedings of the Fifth International Meeting on Thermal Nuclear Reactor Safety, Karlsruhe, FRG, p. 1937-1976, September, 1984.

58. Park, C. and Bari, R.A., "An Information-Theoretic Approach to Uncertainty Importance," from the proceedings of the ANS/ENS International Topical Meeting on Probabilistic Safety Methods and Applications: San Francisco, CA, February, 1985, Vol. 3, p. 174-1.

59. Cho, N.Z., Papazoglou, I.A., El-Bassioni, A., and Bari, R.A., "A Decision Theoretic Methodology for Reliability and Risk Allocation in Nuclear Power Plants, ibid, Vol. 1, p. 14-1.

60. Pratt, W.T., Khatib-Rahbar, M., Rosenthal, J., and Bari, R.A., "Insights Gained from In-Depth Reviews of Several Industry Generated PRAs," ibid, Vol. 1, p. 23-1.

61. Bari, R.A., Cho, N.Z. and Papazoglou, I.A., "Reliability Allocation in Nuclear Power Plants," Transactions of the 8th International Conference on Structural Mechanics in Reactor Technology, Brussels, Belgium, Paper M2, 4/4, August, 1985.

62. Bari, R.A., Cho, N.Z. and Papazoglou, I.A., "Some Thoughts on Allocation of Reliability," Nuclear Engineering and Design, 89, pp. 421-424, 1985

63. Bari, R.A., Pratt, W.T. and Park C., "On Containment Performance Criteria for Light Water Reactors," (invited paper), from the proceedings of the International ANS/ENS Topical Meeting on Thermal Reactor Safety, San Diego, CA, Vol. 4, p. xxiv.3,February, 1986.

64. Fitzpatrick, R.G., Papazoglou, I.A. and Bari, R.A., "Can an Advanced Light Water Reactor Meet a 10^{-5}/yr Core Melt Criterion?," (invited paper), ibid, Vol.4 p. xxiv.4.

65. Bari, R.A., "Decision making and Probabilistic Risk Assessment," Nuclear Engineering and Design, 93, pp. 341-348, 1986.

66. Papazoglou, I.A., Cho, N.Z., and Bari R.A., "Reliability and Risk Allocation in Nuclear Power Plants: A Decision-Theoretic Approach," Nuclear Technology, 74, pp. 272-286, 1986.

67. Cho, N.Z., Papazoglou, I.A., and R.A. Bari, "Multiobjective Programming Approach to Reliability Allocation in Nuclear Power Plants," Nuclear Science and Engineering, 95, pp. 165-188, 1987.

68. Bari, R.A. and Kouts, H.J., "The Safety of Nuclear Power Plants in the United States," Journal of the American Medical Association, letter to the editor, 257, p. 190, 1987.

69. Park, C.K., Bari, R.A., Kerr, W., "A Consistent and Cost-Effective Quantification of Containment Performance Criteria," Nuclear Technology, 83, p. 360, 1988.

70. Bari, R.A., Pratt, W.T., Lehner, J., Leonard, M., DiSalvo, R., Sheron, B., "Accident Management for Severe Accidents," from the proceedings of the International ANS/ENS Conference on Thermal Reactor Safety. Avignon, France, pp. 269-276, October, 1988.

71. Bari, R.A., "Application of PRA Insights to Severe Accident Management," from the proceedings of the Third International Topical Meeting on Nuclear Power Plant Thermal Hydraulics and Operations, Seoul, Korea, pp. B11.1-4, November, 1988.

72. Park, C.K. and Bari, R.A., "Uncertainty Characterization of Data for Probabilistic Risk Assessment," Reliability Engineering and System Safety, 26, 163, 1989.

73. Park, C.K. and Bari, R.A., "Comment: On Uncertainty Analysis and Data Utilization," Reliability Engineering and System Safety, 26, 184, 1989.

74. Bari, R.A. and Speis, T.P., "The Uses and Benefits of Probabilistic Risk Assessment in Nuclear Reactor Safety," from the proceedings of the International Conference on the Fiftieth Anniversary of the Discovery of Fission, Leningrad, USSR, October 16-20, 1989.

75. Chu, T.L., Azarm, M.A., Oliviera, L. and Bari, R.A., "Level 1 PRA for the High Flux Beam Reactor, An Overview," the Proceedings of the ANS International Topical Meeting on the Safety, Status and Future of Non-Commercial Reactors and Irradiation Facilities, Boise, ID, September 30-October 4, 1990.

76. Chu, T.L., Azarm M.A., Oliviera, L. and Bari, R.A., "Quantification of the Probabilistic Risk Assessment of the High Flux Beam Reactor at Brookhaven National Laboratory,"

the Proceedings of the ANS International Topical Meeting on the Safety, Status and Future of Non-Commercial Reactors and Irradiation Facilities, Boise, ID, September 30-October 4, 1990.

77. Azarm, M. A., Bari, R.A., Chu, T.L., and Oliveira, L., "Level-1 PRA for High Flux Beam Reactor," Proceedings of the International Conference on Probabilistic Safety Assessment and Management, Elsevier Publishing Company, pp. 85-90, 1991.

78. Azarm, M. A., Chu, T.L., Oliveira, L. and Bari, R.A., "High Flux Beam Reactor PRA: Level 1, Internal Events," Trans. Am. Nucl. Soc., 64, 1991.

79. Marshall, A.C., Bari, R.A., Lee, J.H., McCulloch, W.H., Sawyer, J.C., Cullingford, H.S. Hardy, A.C., Niederauer, G.F., Remp,K., Rice, J.W., Sheltis, J.A., and Brown, N.W., "Nuclear Safety Policy Working Group-Recommended Safety Requirements and Guidelines for Space Exploration Initiative Nuclear Propulsion," from the proceedings of the AIAA/SAE/ASME/ASEE Twenty-Eighth Joint Propulsion Conference and Exhibit, Paper No. AIAA 92-3697, Nashville, TN, July 6-8, 1992.

80. Bari, R.A., Duffey, R.B. and Baron, S., "Current Trends in Nuclear Safety Programs at Brookhaven National Laboratory," Abstracts of the Third Annual Scientific Conference of the Nuclear Society International of Moscow, St. Petersburg, Russia, p. 147, September 14-18, 1992.

81. Bari, R.A., "Applicability of Trends in Nuclear Safety Analysis to Space Nuclear Power Systems," from the proceedings of the Tenth Symposium on Space Nuclear Power and Propulsion, pp. 435-437, January, 1993, AIP Conference Proceedings, No. 271.

82. Bari, R.A., "Status on Nuclear Safety R&D in the U.S.," from the proceedings of the Eighth KAF/KNS/OKAEA Annual Conference, Seoul, Korea, pp. 655-660, April 20-21, 1993.

83. Bari, R.A., "Risk-Based Regulation: Challenges and Opportunities," from the proceedings of the International Conference on Probabilistic Safety Assessment and Applications, Seoul, Korea, November 26-30, 1995.

84. Bari, R.A., "Second ANS Workshop on the Safety of Soviet-designed Nuclear Power Plants," Nuclear Safety, 36, pp.181-182.

85. Bari, R.A., Ludewig, H., Weeks, J., "Advanced Neutron Source Enrichment Study," Nuclear Technology, 115, pp. 243-265, 1996.

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"Interpretation and Use of the Results of Proliferation Resistance Studies," Nuclear Technology, 179, pp. 106-111, July 2012.

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142. M. Denman, J. LaChance, T. Sofu, G. Flanagan, R. Wigeland, and R. Bari, "Sodium Fast Reactor Research Plan," Proceedings of the ANS Winter Meeting, San Diego, CA, November 11-15, 2012**.**

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II. SEMINARS GIVEN

1. "Low-Spin-High-Spin Transition in Transition Metal Compounds," Department of Materials Science, SUNY, Stony Brook -March 1, 1972.

2. "Superconductivity, Ferroelectricity and the Mott Insulator: Physics Department, Michigan State University - October 2, 1972.

3. "Excitonic Polarons in Molecular Solids," Physics Department, CUNY, - February 27, 1973.

4. "Properties of TCNQ Salts," GWR Meeting, Chemistry Department, SUNY, Stony Brook – September29, 1973

5. "Electrical and Magnetic Properties of the Organic Solid State," Physics Department, Yale University – December 7, 1973.

6. "Electrical Properties of Organic Semiconductor," Chemistry Department, SUNY, Stony Brook, April 16, 1974.

7. "Small Polarons, the Mott Semiconductor and the TCNQ Salts, Yeshiva University – May 9, 1974.

8. Strong Coupling Effects on the TCNQ Salts, IBM, Yorktown Heights, June 5, 1974.

9. "Manifestations of Strong Coupling in the TCNQ Salts, Argonne National Laboratory,

June 5, 1974.

10 "Fast Rector Safety and Reliability Analysis: Department," Department of Nuclear Engineering, Rensselaer Polytechnic Institute, Troy, NY, January 26, 1976.

11. "Aspects of Reactor Safety," Physics Department, Brookhaven National Laboratory, Upton, New York, January 14, 1977.

12. "Probabilistic Risk Assessment in Reactor Safety," American Nuclear Society Section in Rio de Janeiro, Brazil, May 25, 1983.

13. "Nuclear Reactor Safety," Physics Department, University of Illinois, March 1, 1984.

14. "Probabilistic Risk Assessment in Reactor Safety," Demokritus, Athens, Greece, September, 1994.

15. "Probabilistic Risk Assessment," Brookhaven Lecture, No. 219, November 13, 1985.

16. "Decision making and Probabilistic Risk Assessment," Post-Conference Seminar of the Eighth International Conference on Structural Mechanics in Reactor Technology, Brussels, Belgium, August, 1985.

17. "Survey of Human Error Contributions in Some Recent Probabilistic Risk Assessment," IAEA Headquarters, Vienna, Austria, May 5, 1986.

18. Lectures on Probabilistic Risk Assessment and Severe Accident Analysis, INER and AEC Taiwan; KAERI, KEPCO, and KAIST, Korea; Tsinghua University, Peoples Republic of China, September, 1986.

19. "Probabilistic Risk Assessment," School of Nuclear Engineering, Purdue University, January 13, 1987.

20. Lectures on Probabilistic Risk Assessment and Severe Accident Analysis, AEC and INER, Taiwan, June, 1989.

21. Lectures on Probabilistic Risk Assessment and Severe Accident Analysis, AEC and INER, Taiwan, June, 1989.

22. "Nuclear Regulatory Commission Contractor Lessons from PRAs," MIT Summer Course, Cambridge, MA, July 28, 1989.

23. "Probabilistic Risk: Assessment, Management, and Communication," Department of Nuclear Engineering, University of Maryland, October 29, 1991.

24. “Nuclear Propulsion Safety for the Space Exploration Initiative: Recommendations of the Nuclear Safety Policy Working Group,” Department of Chemical and Nuclear Engineering, University of Massachusetts at Lowell, February 11, 1992.

25. “Probabilistic Risk Assessment,” Physics Department, Brookhaven National Laboratory, Upton, NY, March 11, 1993.

26. “Status of Nuclear Safety R&D in the U.S.,” Korea Atomic Energy Research Institute, Taejon, Korea, April 23, 1993.

27. “Impact of Nuclear Option on Environment and Economy,: ASME Workshop on Research Priorities for Carbon Emission Reductions in the Power Generation Sector, Washington, DC, July 15, 1999.

28. Nuclear Inevitability,” American Nuclear Society: Long Island Local Section, October 6, 1999.

29. “Risk Informing Systems Safety,” Department of Industrial Engineering, Rutgers University, October 31, 2000.

30. “Risk Informing Systems Safety,” Department of Mechanical Engineering, SUNY, Stony Brook, November 17, 2000.

31. “Risk Informing Systems Safety,” JetBlue Airlines Company Safety Seminar, JFK Airport, April 19, 2001.

32. “Reliability and Security Metrics for Complex Systems,” DOE Office of Power Technologies Seminar, Washington, DC, November 1, 2001.

33. “Role of National Labs in Developing Technology and Infrastructure,” Infocast Conference on New Nuclear Power Plant Technology, New Orleans, LA, February 20, 2002.

34. “Safety Goals for the Materials and Waste Arena,” PRAB Research Colloquium, U.S. Nuclear Regulatory Commission, Annapolis, MD, May 1, 2002.

35. Proliferation Resistance and Physical Protection Evaluation Methodology, Status, and Prospective,” Korean Institute of Nuclear Nonproliferation and Control, Republic of Korea, December 2, 2005.

36. “Risk-Informed Approach to System Performance and Safety,” NASA Headquarters, Washington, DC, February 3, 2007.

37. “Issues for Proliferation Resistance and Physical Protection,” 3rd UC Forum on the Future of Nuclear Power, UC Berkeley, June 11-12, 2009.

38. “Proliferation Assessment Methodologies, 2010 Users Workshop on Proliferation Assessment Tools,” Texas A&M University, College Station, TX, February 23-25, 2010.

39. “Small Modular Reactors,” Brookhaven Lecture, No.468, April 20, 2011.

40. “Nonproliferation and Security of Generation IV Nuclear Energy Systems,” Distinguished Lecture Presentation, Virginia Commonwealth University, February 11, 2013.

III. INVITED TALKS

1. “Some Electrical Properties of the Organic Solid State,” One Dimensional Physics Summer Workshop, Montana State University, July 27, 1973.

2. “Metal-Nonmetal Transitions, Theoretical Mechanisms,” International Symposium, Electrical Properties of Oxides/Applications and Science, June 1, 1974.

3. “Fuel and Clad Motion Diagnostics: Licensing Needs,” Second Technical Exchange Meeting on Fuel and Clad Motion Diagnostics for LMFBR Safety Test Facility, Chicago, IL, October 9, 1976.

4. “The development of Interim Guidance on Systems Interactions,” International ANS/ENS Topical Meeting on Probabilistic Risk Assessment, Port Chester, NY, September 22, 1981.

5. “Panel Discussion on Probabilistic Risk Assessment,” Seventh International Conference on Structural Mechanics in Reactor Technology, International Association for Structural Mechanics in Reactor Technology, Chicago, IL, August 1983.

6. “Loss-of-Heat-Sink Accident in Liquid Metal Fast Breeder Reactors,” Special Session of the Winter Meeting of the American Nuclear Society, November, 1983.

7. “On Containment Performance Criteria for Light Water Reactors,” International Topical Meeting on Nuclear Power Plant Thermal Hydraulics and Operations, Seoul, Korea, November, 1988.

8. “Applications of PRA Insights to Severe Accident Management,” Third International Topical Meeting on Nuclear Power Plant Thermal Hydraulics and Operations, Seoul Korea, November 1988.

9. “The Unprecedented Medical Experience in Chernobyl: Fire Added to Radiation,” Fourth Dr. Robert K. Match Distinguished Scholar Program, New York, March 9-10, 1989.

10. "High Flux Beam Reactor Probabilistic Risk Assessment," ANS Workshop on Aluminum Clad Fuel Reactors, Idaho Falls, ID, March 15, 1989.

11. "The Uses and Benefits of Probabilistic Risk Assessment in Nuclear Reactor Safety," International Conference on the Fiftieth Anniversary of the Discovery of Fission, Leningrad, USSR, October 16-20, 1989.

12. "Status of Nuclear Safety R&D in the U.S.," Eighth Korean Atomic Industrial Forum/Korean Nuclear Society/Organization for Korea Atomic Energy Awareness Annual Conference, Seoul, Korea, April 20-21, 1993.

13. "Advanced Neutron Source Enrichment Study," 1994 International Meeting on Reduced Enrichment for Research and Test Reactors, Williamsburg, VA., September 18-23, 1994.

14. "Impact of Nuclear Option on Environment and Economy: MARKAL-MACRO Analysis," American Nuclear Society Meeting, June 7, 2000.

15. "Transition to Risk-Informed Regulation," Twenty-Eighth Water Reactor Safety Information Meeting, Bethesda, MD, October 24, 2000.

16. "Proliferation Resistance of Generation IV Reactors," American Nuclear Society Annual Meeting, June 20, 2001.

17. "Risk-Informing the Nuclear Materials and Waste Arenas," 2002 American Nuclear Society International Topical Meeting on Probabilistic Safety Assessment, Detroit, Michigan, October 9, 2002.

18. "Safety Goals for Nuclear Materials and Waste Arenas," American Nuclear Society Winter Meeting, Washington, DC, November 19, 2002.

19. "Brookhaven National Laboratory Capabilities to Support the Nuclear Renaissance," American Nuclear Society Annual Meeting, San Diego, CA, June 2, 2003.

20. "Assessment Methodologies," Six Department of Energy Laboratories Workshop on Enhanced Proliferation Resistance and Safeguards Technology for Nuclear Energy, Washington, DC, May 20-21, 2003.

21. "Securing the Renaissance: Responsible Stewardship of the Global Nuclear Enterprise," American Nuclear Society Annual Meeting, Atlanta, GA, June 15, 2009.

22. "Metrics and Methodologies for Assessment of Proliferation Risk," Workshop on Improving the Assessment of Proliferation Risk of Nuclear Fuel Cycles, National Academies Washington, DC, August 1-2, 2011.

IV. INFORMAL REPORTS

1. Bari, R.A., Buslik, A.J., and Papazoglou, I.A., "Reliability on CRBR Primary Piping: Critique of Stress-Strength Overlap Method for Cold-Leg Inlet Downcomer," BNL-NUREG_21642, April, 1976.

2. Albright, D.C., and Bari, R.A., "Primary Pipe Rupture Accident Analysis for the Clinch River Breeder Reactor," BNL-NUREG-21656, April, 1976.

3. Bari, R.A., and Meyer, J.F., "Fuel and Clad-Motion Diagnostics: Licensing Needs," BNL-NUREG-21835, September, 1976.

4. Perkins, K.R., and Bari, R.A., "Preliminary Review and Evaluation of Natural Circulation Decay Heat Removal Capability in CRBR and FFTF," BNL-NUREG-21913, October, 1976.

5. Buslik, A.J., Papazoglou, I.A., and Bari, R.A., "Reliability of the Shutdown Heat Removal System of the Clinch River Breeder Reactor," BNL-NUREG-21962, October, 1976.

6. Albright, D.C. and Bari, R.A., "Primary Pipe Rupture Accident Analysis for the CRBR: Two Loop Analysis and Further Three-Loop Analysis," BNL-NUREG-22339, February, 1977.

7. Perkins, K.R., Albright, D.C., and Bari, R.A., "Uncertainties in the Calculated Response of the Clinch River Breeder Reactor During Natural Circulation Decay Heat Removal," BNL-NUREG-22715, April, 1977.

8. Bari, R.A., Klenin, M.A., W.T. Pratt, and Y.H. Sun, "Preliminary Assessment of the Meltdown Progression of the Loss-of-Heat-Sink Accident with Scram in the LMFBR," BNL-NUREG-23137, August, 1977.

9. Albright, D.C. and Bari, R.A., "Loss-of-Heat-Sink in the Secondary Heat Transport System of the Fast Flux Test Facility," BNL-NUREG-23269, September, 1977.

10. Bari, R.A., Ludewig, H., W.T. Pratt, and Sun, Y.H., "Material Relocation and Recriticality Assessment for the Loss-of-Heat-Sink Accident in the LMFBR," BNL-NUREG-23432, November, 1977.

11. Buslik, A.J., Papazoglou, I.A., and Bari, R.A., "System Interactions and Common Mode Failures: Review of Methods," BNL-NUREG-23815, January, 1978.

12. Perkins, K.R., Chen, L., and Bari, R.A., "A Review of FFTF Natural Circulation Test Plans," BNL-NUREG-24040, February, 1978.

13. Ludewig, H., W.T. Pratt, Sun, Y.H., and Bari, R.A., "Accident Progression for a Loss-of-Heat-Sink with Scram in a LMFBR," BNL-NUREG-50910, October, 1978.

14. Perkins, K.R., Chen, L., Albright, D.C., and Bari, R.A "Analyses of FFTF System Transients," BNL-NUREG-25560, January, 1979.

15. Perkins, K.R., W. T. Pratt, and Bari, R.A. "Evaluation of In-vessel Natural Circulation During a Hypothetical Loss-of-Heat-Sink Accident in the Fast Flux Test Facility," BNL-NUREG-26565, August, 1979.

16. Buslik, A.J. and Bari, R.A., "A Critique of the Offshore Power Systems Risk Study for the Zion Nuclear Power Plant," BNL-NUREG-28750, December, 1980.

17. Buslik, A.J., Papazoglou, I.A., and Bari, R.A, "Review and Evaluation of System Interactions Methods," BNL-NUREG-51333, January, 1981.

18. Buslik, A.J. and Bari, R.A., "National Reliability Evaluation Program (NREP) Operations Study," BNL-NUREG-51485, January, 1982.

19. Buslik, A.J. and Bari, R.A., "Risk Reduction from Safety Grade Means of Reaching and Maintaining Cold Shutdown," BNL-NUREG-Draft.

20. Perkins, K.R., Bari, R.A., "An Analysis of Boron Injection Transients in PWRs at Natural Circulation Conditions," BNL-NUREG-Draft.

21. Agrawal, A.K. and Bari, R.A., "Review of the Status of CRBR Licensing Technical Issues Related to Heat Removal System and Severe Accident Analysis," BNL-NUREG-31297, April, 1982.

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