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# Profiles

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### **Prof. A.K. De**

Chairman, AERB (02.01.1984 - 19.03.1990)

Prof. Arun K. De, born in 1925 is a graduate of mechanical engineering from Jadavpur University (1947) and a Ph.D from Moscow (1965). After he had his industrial training and experience both in India and abroad, he switched over to teaching at Indian Institute of Technology (IIT), Bombay in 1958 as faculty member. He then joined Central Mechanical Engineering Research Institute (CMERI), Durgapur as Director in 1969, returned to IIT, Bombay as Director in 1974, went on deputation to Defence Research and Development Organization (DRDO), Ministry of Defence, New Delhi and finally became the first Chairman of Atomic Energy Regulatory Board (AERB) in 1984, the position he occupied till 1990. He is a Fellow, Indian National Academy of Engineering (INAE) and Fellow, Institution of Engineers, IE (Ind).

Prof. De is an outstanding professional engineer, a researcher, an educationist and an administrator of distinction all rolled into one. He has to his credit the autobiographical book 'Meandering Streams' published in the year 2008.



## **Shri S. D. Soman**

Chairman, AERB (30.04.1990 - 26.04.1993)

Shri S.D.Soman, former Chairman, AERB was born in June 1931. After obtaining M.Sc. (Physics) from Nagpur University in 1953 he joined the Tata Institute of Fundamental Research and later the Atomic Energy Establishment Trombay in 1955. He has been a Member of the Safety Review Committee of the Department of Atomic Energy (DAE-SRC) till June 1987. He became the Director Health, Safety Group from June 1987, looking after the scientific work of Health Physics Division, Division of Radiological Protection and Inspection Section (Factories Act) of BARC. He took over as Chairman AERB in April 1990.

In 1975 Shri Soman was honoured with the title of "Padma Shri" by the Government of India. He received the "Environmentalist of the Year" award for the year 1985-86 from CHEMTECH Foundation. He was Scientific Secretary for the Third International Conference on Peaceful Uses of Atomic Energy held at Geneva (1964).

He was deputed as a Technical Expert to the Government of Chile for six months in 1970. He was elected Member of the Executive Council of International Radiation Protection Association (IRPA) for 1977-84. He received the outstanding service award from IRPA. He was a Member of Committee-4 of the International Commission on Radiological Protection (ICRP) during 1979-88. He participated in Many Advisory/Consultants meetings at the International Atomic Energy Agency, Vienna dealing with radiation protection in nuclear fuel cycles and siting of nuclear power plants. He was a Member of IAEA-INSAG.

He has wide ranging interests in Radiological Protection and Environmental Sciences. He has to his credit large number of publications in international journals and presentations in national and international conferences.



**Dr. A. Gopalakrishnan**

**Chairman, AERB (17.06.1993 - 16.06.1996)**

Dr. A. Gopalakrishnan was born in 1937. After graduating from the University of Kerala in Electrical Engineering he successfully completed the training course at BARC in 1959.

He took Ph.D. in 1969 in nuclear engineering from the University of California, USA. He worked as scientific officer in Reactor Physics Group, BARC (1959-61); Project Manager and Research Associate in US Atomic Energy Commission/University of California (1961-66); Senior Research Engineer, CETEC Corporation, California Project Manager, US Naval Radiological Laboratory Project at University of California (1968-69); Associate Nuclear Engineer, Argonne National Laboratory, (1969-73); Programme Manager and Acting Assistant Director, Electrical Power Research Institute, California (1973-76).

He worked on planning and execution of major nuclear reactor safety projects in collaboration with US Nuclear Regulatory Commission. From 1976 to 1986 he served Bharat Heavy Electricals as Deputy General Manager, General Manager and Executive Director. After a brief assignment in Defence Research and Development Organization (DRDO) as Project Director, he joined the Central Mechanical Engineering Research Institute, Durgapur as its Director. In 1990, he became a member of the AERB Board. He took over as Chairman AERB in June 1993. His area of expertise includes nuclear reactor safety analysis, heat transfer, reliability and failure analysis, energy systems and planning and execution of remote operation and robotic systems.

He took over as the Chair Professor in Public Policy, Administrative Staff College of India (ASCI), Hyderabad in 1996 and then as Director, Engineering Staff College of India, Hyderabad in 1998. During 2000 to 2003, he served as a visiting faculty and senior research fellow at Belfer Center for Science and International Affairs, John F. Kennedy School of Government, Harvard University, USA. From 2003 onwards, he is serving as the Honorary Professor (Energy & Security) at ASCI, Hyderabad. He also became the Honorary Advisor (Science, Technology, and Environment) to the Chief Minister, Government of Kerala in 2007.



**Prof. P. Rama Rao**  
Chairman, AERB (22.11.1996 – 22.11.1999)

Prof. Rama Rao was born in June 1937. He did his B.Sc Hons. in 1956 and MA in 1957 from Madras University, M.Sc in 1957 from Andhra University and Ph.D from Banaras Hindu University in 1964. He worked as Senior Research Assistant in IISC, Bangalore, Dept. of Metallurgy during 1960-62. He joined Banaras Hindu University, Dept. of Metallurgical Engineering as Lecturer in 1962 and subsequently became Reader in 1967 and Professor in 1975. He was the Director of Defence Metallurgical Research Laboratory, Hyderabad during 1982-91. He served as the Secretary to Dept. of Science and Technology, Govt. of India, during 1991-1995. Additionally, in 1992 he also held the charge as Secretary to Department of Ocean Development, Govt. of India before taking over as Chairman AERB in 1996. Since 1998, he is chairing the Board of Research in Nuclear Sciences of DAE. During 1999-2002, he served as the Vice – Chancellor of University of Hyderabad. From 2002-2007 he held the post of Dr. Brahm Prakash Distinguished Professor at ISRO. He is a member of the Atomic Energy Commission since 2005.

He is a Fellow of INSA, National Academy of Science, Indian National Academy of Engineering, Andhra Pradesh Academy of Sciences. He was also the President of Indian Institute of Metals, Materials Research Society of India.

Prof. Rama Rao has made outstanding contributions in the areas of mechanical behaviour of materials, alloy development and X-ray diffraction from structural imperfections. He contributed to the setting up of Heavy Alloy Penetrator Plant, Tiruchirapally, International Advance Research Centre for Powder Metallurgy and New Materials at Hyderabad and National Institute of Ocean Technology at Chennai. He was instrumental in setting up the Safety Research Institute of AERB at Kalpakkam.

He is the winner of Bhatnagar Prize in 1979, Homi Bhabha Award in 1985, Vasvik Award in 1986, INSA Materials Science Prize in 1989. He was awarded the title of “Padma Shri” by the Government of India in 1989. He also won the IISc Distinguished Alumnus Award in 1990, Tata Gold Medal in 1992, IIM Platinum Medal in 1994. In the year 2001 he was awarded “Padma Bhushan”. In 2004, he has been awarded “General Medal: The Meghnad Saha Medal 2004” by the American Society of Metals (International).



### **Prof. S. P. Sukhatme**

**Chairman, AERB (05.01.2000 – 14.01.2005)**

Born on November 5, 1938, Professor Sukhatme obtained his Bachelor's degree in Mechanical Engineering from Banaras Hindu University in 1958. Subsequently he obtained the degrees of Master of Science, Mechanical Engineer and Doctor of Science from MIT in USA. He joined the Department of Mechanical Engineering, Indian Institute of Technology, Bombay in 1965 as an Assistant Professor and became Professor in 1970. He served as the Head of the Department from 1973 to 1975. In 1982-83, he was a Visiting Professor at the Department of Mechanical Engineering, Iowa State University, USA. Professor Sukhatme worked as Deputy Director from December 1983 to December 1985 and as the Director of IIT, Bombay from January 1995 to January 2000. In 1995, he became the member of AERB Board. He took over as Chairman AERB in 2000.

Professor Sukhatme is known for his outstanding contributions in teaching and research in the areas of Heat Transfer and Energy. He guided nineteen students for their Ph.D. degree and published nearly 70 papers. He is also the author of two widely known text books in Heat Transfer and Solar Energy.

Prof. Sukhatme is the recipient of many honours and awards. He received the Prince of Wales Gold Medal for standing first class first in Banaras Hindu University. He was awarded the Shanti Swarup Bhatnagar Prize for Science and Technology in 1993. He was elected as a Fellow of the Indian Academy of Sciences in 1966, a Fellow of the Indian National Academy of Engineering in 1987, a Fellow of the Indian National Science Academy in 1995 and a Fellow of National Academy of Sciences in 1999. He was awarded the title of Padma Shri by the Government of India in 2001 and was the first recipient of the Lifetime Achievement Award of the Indian Institute of Technology, Bombay. He also received the Om Prakash Bhasin Foundation Award for Engineering and was conferred the title of Doctor of Science (*honoris causa*) by the Banaras Hindu University in 2001. At present he is serving as Professor Emeritus at Indian Institute of Technology, Bombay.



**Shri S.K. Sharma**

**Chairman, AERB (14.01.2005 - till date)**

**Chairman, SARCOP & Vice Chairman, AERB  
(01.01.2003 – 31.07.2004)**

Shri S.K.Sharma was born in July 1942. A Graduate in Chemical Engineering from the Banaras Hindu University, he was associated with the research reactors at the Bhabha Atomic Research Centre, Trombay in various capacities since the year 1963 and was the Director of Reactor Group of BARC from 1997 to 2002. As Director, Reactor Group, he had the responsibility for operation and facilitating utilization of the three research reactors APSARA, CIRUS and DHRUVA at Trombay. He played a key role in the commissioning of the totally indigenous 100 MWt Dhruva reactor and in solving the complex problem of excessive flow induced vibration of fuel encountered during initial operation of this facility. He was responsible for successfully carrying out extensive refurbishing of CIRUS reactor. After refurbishing, CIRUS was brought back into operation at its rated capacity. He has been deeply involved in developing the design of an advanced 10 MWt high neutron flux pool type research reactor employing annular heavy water reflector around the reactor core. He served as Vice Chairman, AERB and Chairman of Safety Review Committee for Operating Plants (SARCOP) of AERB from January 2003 to July 2004 before taking over as Chairman AERB in January 2005.

Shri S.K. Sharma has carried out several assignments of the International Atomic Energy Agency (IAEA) by way of participating in expert missions and co-ordinated research programmes, developing safety documents for research reactors and nuclear power plants and as lecturer in IAEA training courses. Presently, he is a member of the IAEA's Commission on Safety Standards (CSS), International Nuclear Event Scale (INES) Advisory Committee and the prestigious International Nuclear Safety Group (INSAG). In 2002, he has received the prestigious INS award for his outstanding achievements in the field of Nuclear Fuel Cycle Technologies including radiation safety and environmental protection.



**Shri M.S.R. Sarma**

**Chairman, SARCOP (03.06.1988 – 31.08.1991)**

Shri M.S.R. Sarma was born in August 1931. He did his M.Sc. (Tech) in Chemical Engineering in 1953 from Osmania University. After spending a couple of years with the Birla organization he joined the Department of Atomic Energy in 1956 and was deputed for training at Chalk River Nuclear Laboratories in Canada for the operation and maintenance of NRX reactor for a period of one and a half years. On his return, he was a member of the team of engineers that was responsible for erection, commissioning and operation of CIRUS reactor.

He joined RAPS group in 1964 and was deputed to Canada stations for a period of three years. After returning from Canada he was appointed as the Station Superintendent for RAPS and continued to hold that position till 1984. He was transferred to the Bombay office of the then Power Projects Engineering Division as Director (Operations) and was responsible for the operation of the two power stations, namely TAPS and RAPS. He held charge as Director, Long Range Planning for a brief period before joining the Atomic Energy Regulatory Board in 1985 as Director, Nuclear and Industrial Safety Division. From June 1988 till his retirement in August 1991, Shri Sarma was holding the post of Executive Director, Operating Plants Safety Division and Chairman, Safety Review Committee for Operating Plants.

He represented India in various International Committees, conferences and symposia. He is a life fellow of the Institution of Engineers (FIE), Member of the Indian Institute of Chemical Engineers (MIChE), Life Member and past President of Indian Association for Radiation Protection (IARP) and life member and past President of Indian Nuclear Society (INS), Life member of Indian Society for Radiation Physics (ISRP), life member of Indian Association of Nuclear Chemists and Allied Scientists (IANCAS) etc.





**Shri S. Vasant Kumar**

Chairman, SARCOP (01.09.1991 – 31.10.1998)

Vice-Chairman, AERB (1997-1998)

Shri S. V. Kumar was born in October 1937. After graduating in Chemical Engineering from Indian Institute of Science, Bangalore, he joined the second batch of training school at the Atomic Energy Establishment, Trombay in 1958.

He has wide experience in the field of spent fuel reprocessing and has made significant contribution in the areas of Process Engineering and Instrumentation Design and Development. He has actively participated in the design, installation, commissioning and operation of the first reprocessing plant at Trombay and subsequently in the design of the Power Reactor Fuel Reprocessing (PREFRE) Plant, Tarapur and KARP at Kalpakkam. He also developed a versatile package for the Computer Aided Design (CAD) for the complex piping in the process cells of reprocessing plants. He was responsible for introducing the Computerised Data Acquisition Systems in the Plants at Trombay and Tarapur. He joined AERB in the year 1991 and served as Executive Director of OPSD and Chairman of SARCOP. He was also the officiating Chairman of AERB during the period June 1996- November 1996. In 1997, he became Vice Chairman AERB.

He has participated in many national and international conferences and has to credit more than fifty publications. He was a member of several technical committees of IAEA like INES, IRS, NUSSAG and International Working Group on Reprocessing Plant Safeguards. Presently, he is serving as the Chairman of the Advisory Committee for Safety Documents for Fuel Cycle facilities (ACSD-FCF) of AERB.



**Shri G. R. Srinivasan**

Chairman SARCOP & Vice Chairman, AERB  
(28.12.1998 – 31.12.2002)

Shri G. R. Srinivasan, born in December 1942, obtained his B.E. (Mechanical) from M.S.University of Baroda in 1960. He then joined the 4th batch of Training School of AEET and worked in CIRUS reactor till 1964. During the period 1964-1967, he was in Canada under training and participation in the commissioning of Douglas Point Nuclear Power Station. He served in various capacities including Chief Superintendent at Rajasthan Atomic Power Station from 1967-1991. Thereafter he became the Director, Health Safety, Environment and Public Awareness (1993-1997) and Director, Quality Assurance (1995-1996) at Nuclear Power Corporation of India Ltd. Later as Director (Projects), he was in-charge of all the projects being built by NPCIL. He then served as the Executive Director of Operating Plants Safety Division of Atomic Energy Regulatory Board before taking over as Chairman SARCOP and Vice Chairman of AERB in 1998.

He was a member of Expert and Advisory Committees both nationally and internationally to prepare several important documents. He is the author of more than 100 papers published in national / international conferences/ seminars and in reputed journals mainly on nuclear power including safety.

He is a Fellow of Institute of Engineers and was Chairman of the Institute of Engineer, Kota, Local Centre in Rajasthan in 1989. He was associated with several technical activities of IAEA and also of International Organizations like WANO and CANDU groups. Presently he is chairing several important advisory committees of AERB such as ACNS, ACCGORN and ACPSR-PHWR/FBR.



**Shri S. K. Chande**

Chairman SARCOP & Vice Chairman, AERB

(01.08.2004-till date)

S.K. Chande, born in July 1948, has a B.E. (Hons.) degree in Mechanical Engineering from University of Jabalpur. After graduating from the 12th Batch of BARC Training School in 1969, he started his career in the Fast Reactor Section of Reactor Engineering Division, BARC. He had extensive training in plant operation in CIRUS research reactor and at Rajasthan Atomic Power Station before being deputed to France for a period of one year training at RAPSODIE Fast Reactor in Cadarache.

He worked in Indira Gandhi Centre for Atomic Research, Kalpakkam for a period of 22 years in Commissioning, Operation & Maintenance of Fast Breeder Test Reactor (FBTR). He held the post of Commissioning Superintendent of FBTR. In 1993 he joined Atomic Energy Regulatory Board and was working in the area of Safety Review of Operating Plants. He held the posts of member-secretary, Safety Review Committee of Operating Plants (SARCOP) and Director, OPSD before taking over as Chairman SARCOP and Vice-Chairman of AERB in August 2004. He was also the Director of Safety Research Institute of AERB at Kalpakkam from 2003-2005. His field of specialization is Commissioning and Operation of Nuclear Power Plants, Nuclear Safety & Training of Personnel. He is a Fellow of the Institute of Engineers (India).

He has participated in many national and international conferences and is involved in several technical activities of IAEA. He has also led AERB delegation during bilateral technical interactions with Regulatory Bodies of USA, France and Russian Federation. He was awarded the prestigious Indian Nuclear Society (INS) High Technology Award for the year 2006.