

Dr. S.S. Ramaswamy Memorial Endowment Lecture

“SAFETY IN EVOLVING & ADVANCED TECHNOLOGICAL APPLICATIONS” BY DR. A.E. MUTHUNAYAGAM, FORMER SECRETARY, MINISTRY OF EARTH SCIENCES, GOVERNMENT OF INDIA

Invited Talks

1. “LASER SAFETY ASPECTS IN RESEARCH, DEVELOPMENT & APPLICATIONS” - DR. P. A. NAIK, HEAD, LASER PLASMA DIVISION & INDUS SYNCHROTRONS UTILIZATION DIVISION, RRCAT, INDORE
2. “SAFETY SYSTEMS FOR CYCLOTRONS AT VECC, KOLKATA” – DR. SUBIMAL SAHA, OUTSTANDING SCIENTIST, PROJECT DIRECTOR, MEDICAL CYCLOTRON PROJECT, HEAD, ATG & CPIESG, VECC, KOLKATA
3. “SAFETY ASPECTS OF GENERATIONS III+ BEYOND REACTORS” - SHRI ASHOK CHAUHAN, DIRECTOR (TECHNICAL), NPCIL, MUMBAI
4. “SEISMIC HAZARDS AND STRUCTURAL SAFETY EVALUATIONS FOR NUCLEAR INSTALLATIONS, POST FUKUSHIMA ACCIDENT” - SHRI L. R. BISHNOI, DIRECTOR, SITING & STRUCTURAL ENGINEERING DIVISION (SSED), AERB, MUMBAI
5. "HOW TO TAKE CARE OF YOUR BACK" - DR D. K. TANEJA, ORTHOPAEDICIAN, ARIHANT HOSPITAL, INDORE
6. "PRE-HOSPITAL MANAGEMENT OF CORONARY ARTERY DISEASE” - DR IDRIS AHMED KHAN CARDIOLOGIST, BOMBAY HOSPITAL INDORE
7. "STRESS MANAGEMENT THROUGH YOG" - DR.(MRS) SHIRLEY TELLES, DIRECTOR, PATANJALI RESEARCH FOUNDATION, PATANJALI YOGPEETH, HARIDWAR
8. “TIME TESTED GOOD PRACTICES FOR STRENGTHENING OF SAFETY CULTURE” – SHRI D.K. SHUKLA, GROUP DIRECTOR (RR), AERB

Contributory Papers on “Safety in Evolving & Advanced Technological Applications” and “Industrial Safety”

ORAL PRESENTATIONS			
Sr.No	Topic	Author	
1	Safety Audit from KGS	JayaprakashHegde, Safety Officer,KGS	
2	Reporting & Analysis of NMAs - A Tool for Accidents Prevention (Case Studies)	R. Thirumurgan, Sr. Exe. Engineer, Sukhveer Singh, Dy. C. E.(I&FS), AlopeVarshney, CE(IS&FS) & Pankaj Khot, AD(HSE)avarshney avarshney@npcil.co.in sukhveersinghsukhveers@npcil.co.in	
3	Case Studies on Near Miss Incidents Occurred at HWPs	A.K. Sahu, SO/E, N.L. Malaikar,SO/G & S.G. Belokar, GM(SH&E), HWB, Mumbai GM(S,H&E) sgbelokar@mum.hwb.gov.in	
4	Case Studies on Near Miss Accidents Occurred at BHAVINI	N.Kanagalakshmi, EIC (F&IS), R.Yuvarajan, Head (F&IS) &K.Rajagopalan, Director (Construction), (PFBR), BHAVINI, Kalpakkam. kanagalakshmiKanaga@igcar.gov.in	
5	Safety Aspects of Ultra-Short Ultrahigh Intensity LASER Matter Interaction Experimental Facilities	B. S. Rao, J. A. Chakera, P. A. Naik, and P. D. Gupta, RRCAT, Indore, sunnyb@rrcat.gov.in	
6	On the Safety Measures for Hydrogen Bromide Gas in Copper-Hydrogen Bromide (Cu-HBr) Laser Facility at RRCAT	R. Biswal, S. Talwar, G. K. Mishra, S. K. Dixit and S. V. Nakhe, Laser Systems Engineering Section RRCAT, Indore - 452013 E-mail: rbiswal@rrcat.gov.in	
7	Safety Issues in LASER cutting of nuclear reactor components	B. N. Upadhyaya, K. S. Bindra, S. M. Oak,and P. D. Gupta, Solid State Laser Division, RRCAT, Indore	
8	Performance of Indus-2 Machine Safety Interlock System	A M Gupta#, Pankaj Gothwal, BhavnaMerh, P Fatnani, RRCAT Indore INDIA	
9	Ozone Generation in Synchrotron Radiation Beamlines of Indus-2 and its Safety Measures	Saleem Khan, Vijay Kumar, Haridas.G, A.K Sinha T.A.Puntambekar, RRCAT, Indore saleem@rrcat.gov.in	
10	Advanced Safety Measures Implemented in Negative Neutral Beam (Nnb) HVPS Facility at IPR	A.Gahlaut1, V. Mahesh1, A. K. Chakraborty, K.G Parmar, B. K. Prajapati, D.V. Modi, D. Parmar, H. Shishangiya, M. N. Vishnudev, J. Soni, G. Bansal, M. Bandopadhyay, R. K. Yadav, K. Pandya, J. Bhagora, H. Tyagi and H. Mistri	
11	Fire Hazard Analysis of 30 MeV Medical Cyclotron Project (MCP), VECC	M. K. Pathak, SO/F, ERRC, AERB	

12	Evolution of Intelligent Fire Detection and Alarm Technology	A.K. Panda and Paridhi Aggarwal, AERB	
13	Implementation of Safety Measures of New High Heat Flux Test Facility at IPR	Sunil Belsare*, RajamannarSwamy, Tushar Patel, Samir Khirwadkar, DevendraModi, YashashriPatil, KedarBhope, Prakash Mokaria *Email: belsare@ipr.res.in	
14	Challenges Faced in Mastering Sodium Technology during the Operation of Fast Breeder Test Reactor	M.Thangamani, G.Shanmugam, K.V.Suresh Kumar, G.Srinivasan, tmani@igcar.gov.in, gshan@igcar.gov.in, kvsuresh@igcar.gov.in, gsv@igcar.gov.in, Reactor O&M, IGCAR	
15	Advanced Technique for Estimating Frequency of Failure in Nuclear Facilities	Diptendu Das, Sadhvi Srinivasan, K Ramprasad and Ramdas Bhattacharya, AERB	
16	RF & MW Radiation Hazards, Safety and Measurements at RRCAT, Indore	M.K.Nayak1*#, Haridas.G1#, Nitish Tiwari2, Tapas Bandyopadhyay1, Mahendra Lad2, T.A.Puntambekar3 &R.M.Tripathi, HPU, RRCAT(HPD, BARC), 1HPD, BARC, 2RF Systems Division, RRCAT, 3Indus Operations, Beam Dynamics & Diagnostic Division, RRCAT	
17	Electro-polishingof Superconducting RF Cavities	S.Raghavendra, S.K. Suhane, P.RamSankar, A.P.Singh, Amar Singh, K.K.Das, S.K.Chauhan,S.V.Kokil, D.S.Rajpoot and S.C.Joshi, RRCAT	
18	Safety Aspects in the Fabrication of Radiation Hard Semiconductor Detector	V. K. Dixit, S. K. Khamari, A. Chatterjee, A. Khakha, T. K. Sharma and S. M. Oak Semiconductor Physics and Devices Laboratory, Solid State Lasers Division, RRCAT, Inodre	
19	Safety Aspects in the Fabrication of Nitride MetalOrganic Vapour Phase Epitaxy System	G. Jayapraksh,* Tapas Ganguli, V. Agnihotri, A. Chatterjee, T. K. Sharma+ and S. M. Oak, RRCAT	
20	Challenges & strategies for promoting safety during construction of Nuclear Power Project at RR Site	B.C.Pathak, PD, RAPP 7&8, J.R.Khatsuriya, Head (Industrial Safety & Fire), RAPP 7&8	
21	Challenges in Massive Excavation Work at FRFCF Site in KalpakkamComplex	C.Vijayakumaran, P. Venkatanarayana, S.Kandasamy&K.K.Satpathy Industrial & Fire Safety, Fast Reactor Fuel Cycle Facility, IGCAR, Kalpakkam (e-mail: satpathy@igcar.gov.in)	
22	Reactive Thermal Hazard Evaluation of Tri-N-Butyl Phosphate Under Different Experimental Conditions.	H.Seshadri, V.Lakshman and M.Surianarayanan, SRI, Kalpakkam	
23	Safety and Environment (S&E) Aspects of Tokamak-Type Fusion Power Reactors - An Overview	Bharat Doshi* and D. Chenna Reddy Corresponding author: doshi@ipr.res.in Institute for Plasma Research, Gandhinagar, Gujarat.	

24	Handling of Self Powered Neutron Detectors from Reactor Core	Anant Kumar Singh, SO/F (MMU, TAPS-3&4) Amit Roy, Head (IS&F), TAPS-3&4	
25	Ergonomics Assessment for Improving the Working Conditions at IGCAR, Kalpakkam	M.V.R. Prasada, K.K. Satpathy, K.R. Balasubramanian, S.P. Sivapirakasam & K. Sankaranarayanan, IGCAR, Kalpakkam (e-mail: satpathy@igcar.gov.in ; krbala@nitt.edu , spshivam@nitt.edu , ksnsamy@nitt.edu)	
26	Ventilation Requirement Optimization: A Case Study	S. Soundararajan*, Nishith Ghosh, J.D. Sharma, G. Haridas, Pradeepkumar K.S. Health, Safety and Environment Group, BARC, Mumbai – 400085 *contact mail: ssrajan@barc.gov.in	

POSTER PRESENTATIONS

	Topic	Author	
1	Near Miss Incident	VCP Amarnath, ADM(S,F&HR), MRS Prasad, DGM, ZC, Pazhayakayal vcpamarnathzc.vcp@nfc.gov.in	
2	Electrical Safety Aspects of Flash Lamp Pumped High Power Nd: Glass LASER Chain	Shri B. Singh, M.S. Ansari, N. Sreedhar, C.P. Navathe, RRCAT *singh@rrcat.gov.in	
3	Testing and Preventive Maintenance of Electrical Power Systems in Substation for Safety and Reliability	Chandra Kishor Gupta, & Substation Division, Institute for Plasma Research, Bhat, Gandhinagar-382428, Gujarat, India >devendramodi@dmodi@ipr.res.in">modi>>devendramodi@dmodi@ipr.res.in	
4	Safety Features in High Voltage Pulse Power Supply for Copper Vapour Laser	R.K. Mishra, P.K. Agrawal, K. Murali Laser Systems Engineering Section, Krishnan, Jagdish Kumar and S.V.Nakhe, RRCAT Indore. nakhe@rrcat.gov.in rkm@rrcat.gov.in	
5	Safety Concerns in Applications of Microwave and Lasers in processing of Nuclear Materials	G. Singha, A. Kelkara*, Anirudhha Kumara, D.K. Dasa P.G. Beherea, Mohd. Afzala and ArunKumarb, Advanced Fuel Fabrication Facility, BARC, Tarapur	
6	Safety Issues and Measures in A Dye Laser Laboratory	R. Khare, V. K. Shrivastava, V. V. V. Subrahmanyam, G. N. Tiwari, S. Talwar, P. K. Shukla, Laser Systems Engineering Section, (RRCAT), Indore.	
7	Proposed Safety System for Infrared Free Electron Laser (IRFEL)	P. P. Deshpande, S. Tiwari, M. J. Joshi, L. Jain, H. Ashoka, H. R. Bundel and C. P. Navathe, Laser Electronics Support Division, RRCAT, Indore e-mail: ppd@rrcat.gov.in	
8	Safety Provisions in INDUS-2 for Undulator Operation	Pankaj Gothwal#, A Gupta, T V Satheesan, R P Yadav, R K Agrawal, P Fatnani, RRCAT	

9	Safety Issues in the Development of Magnets for the Operation of INDUS Accelerators	K.Sreeramulu, S. Das and R.S. Shinde Raja Ramanna Centre for Advanced Technology, Indore, India	
10	RF Controlled Protection System for Indus Synchrotrons	Pritam S. Bagduwal, NarendraBharadwaj, Nitesh Tiwari, Mahendra Lad Radio Frequency System Division RRCAT, Indore pritam @rrcat.gov.in	
11	Safety Aspect in Developing Technology in Machining Facilities Lab, ACDFS	S.D. Sharma (shivdutt@rrcat.gov.in), Sanjay Sharma, T.Veerabhadraraiyah& G. Mundra, RRCAT	
12	Safety Aspects of Operation of H- Ion Source	D. V. Ghodke, V. K. Senecha*, R. K. Khare, Rajnishkumar, Ranjan Kumar, Manish Pathak and S. C. Joshi, RRCAT, Indore	
13	Safety Aspects of High Purity Gas Lines in Semiconductor Applications	U. K. Ghosh, S. Porwal, A. Khakha, G. Jayaprakash, A. K. Jaiswal, V. K. Dixit, T. K. Sharma,* and S. M. Oak, RRCAT, Indore	
14	Safety Aspects in Helium Recovery System at IPR	Samiran Shanti Mukherjee, D.V. Modi, RanjanaGangradey, P. Panchal, J. S. Mishra, D. Tripathi, S. Kasthuriengan, Jyoti Agarwal and Pratik Nayak, IPR	
15	Strata Control of Shale Roof With New Support Technology and Its Safety at Tummalapalle Mine	Ajay Ghade, General Manager (Technical Services & Planning), K K Rao, Mine Manager, Tummalapalle Mine, Ramkishan R, Safety Officer, Tummalapalle Mine, UCIL	
16	Safety in Electroplating Processes	P. Ram Sankar, D. K. Arzare, B. P. Singh, A. P. Singh and B. Q. Khattak, RRCAT	
17	Study of the Safety Criteria and the Radiation Limit in Microwave Coal Gasification Experiments	Vishal Jain, Institute for Plasma Research, Gandhinagar, Gujarat	
18	Safety Management System Implementation at IPR	D.V.Modi* and D. Chenna Reddy Institute for Plasma Research, Gandhinagar, Gujarat.	
19	Poster Presentation from HWP, Hazira	Dinesh Prajapati, Asst. Manager, (Prod.), HWP, Hazira	
20	Analysis of Near Miss at FRP Duct Fire at HTO Scrubber Area of ZOP	Johnson D'Souza ¹ , Sheela ¹ , K.Mahesh ² , V.V.Mahesh Kumar ² , Sudhir Thakur ² ¹ Zirconium oxide Plant, ² Safety Engineering Division. Nuclear Fuel Complex	
21	Presentation of Case Studies Occurred At Nuclear Fuel Complex	K.Mahesh ¹ , V.V.Mahesh Kumar ¹ , Sudhir Thakur ¹ , ¹ Safety Engineering Division. Nuclear Fuel Complex, Hyderabad	
22	Construction Safety Audit a Tool for Critical Examination of Safe Practices at BARC Construction Sites	G.L.N. Padmavathi, S.D. Bharambe IHSS, HS&E group, BARC, Mumbai [email: padmavathigl@gmail.com ; sdb_bar@yahoo.com]	

23	Safety Guidelines for Operation and Maintenance of Security Systems Using High Voltage	VikasMeshram, S.S.Tomar, Anil Rawat Electronics Security Systems Lab, Computer Division, RRCAT, Indore	
24	Safety Precautions in Bus Bar Trunk Based Power Distribution System for High Performance Computing Clusters	P. K. Thander, DhirendraVerma, JitendraPatil, AlpanaRajan, Anil Rawat,Computer Division P. K. Mishra, Jayakumar C., Anil Pundalik, Construction and Services Division, RRCAT, Indore	
25	System reliability analysis for nuclear facilities	Gopika Vinod Reactor Safety Division, BARC	
26	The New Deterministic Approach of Fire Safety Design and Evaluation for Nuclear Power Plant and Reprocessing Facilities	Pavan K Sharma Reactor Safety Division Reactor Design & Development Group, BARC	

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	Topic	Author	
1	Exemplary Scenario of Safety Audit at RRCAT	A.Kameshwar Rao and S M Jalali, RRCAT, Indore A Kameshwar Rao akrao@rrcat.gov.in	
2	“Innovation in Reducing Human Errors in Industries” – Case Study	V.K.SEHGAL, SO/G (ACE-M), NPCIL-HQ, yksehg@npcil.co.in , , 9920840877(M), A.K.Sinha, SO/H+, Chief Engineer	
3	Deterministic approaches of Fire Hazard Analysis in Operating Stations	R Sureshkumar, Fire Protection Engineer KGS3&4R. Y. Khasnis, Head (IS&F) KGS 3&4, M Srinivas, Chief Superintendent KGS- 3&4, Contact No-09448999769 email- rsureshkumar@npcil.co.in	
4	The 9 Yr Success Story of 24 X7 Hydro-Pneumatically Pressurised Fire Water Pumping Station for Accelerator & Laser Complex at RRCAT Indore	Deepak Arzare, R. P. Agrawal, RatneshSahu and S. S. Kulkarni, Air Conditioning Cell, Construction & Services Division Raja Ramanna Centre for Advanced Technology, Indore.	
5	Outcome of Safety Review of Liquefied Petroleum Gas (LPG) Storage Installations at HWP (Kota) & HWP(Manuguru)	A.K. Sahu, N.L. Malaikar, S.G.Belokar, GM(SH&E)HWB, Mumbai	
6	Challenges and Strategies for Promoting Safety at Work Places	Shiva Sai Prasad Gogu, S. Kandasamy, M.V.R. Prasad & K.K. Satpathy, Indira Gandhi Centre for Atomic Research, Kalpakkam	
7	Safety improves productivity- Experience adopting safety culture at WIP, WMD	K C Pancholi *, S K Solankar& N S Tomar Waste Immobilization Plant, WMD, BARC	
8	Safety Management in Saha Institute of Nuclear Physics, Kolkata – Some Aspects	Maitreyee Nandy, CSD, Oishee Chakrabarti, BSGD, SINP, Kolkata	

9	Case Study of Splash of Dilute Acidic Solution During Transfer to Dilute Solution Storage Tank in NFC, Hyderabad	K Yellaiah, R Jayacee, Dr. A L V Kumar Reddy, 1D M Reddy, 1M Misra, 1Dr. D S Setty, 1Uranium Oxide Plant, 2Safety Engineering Division, Nuclear Fuel Complex, Hyderabad	
10	Case study of Reportable disabling injury at Heavy Water Plant, (Baroda)	V K Sharma, SO/D (S&E), HWP(Baroda)	

Contributory Papers on Positive Health Management

1. Obesity and Its Management – Dr. P.T.V. Nair, Chairman, ACOH
2. Case Studies - Dr. Arindam Chatterjee, Certifying Surgeon, VECC, Kolkata
3. Occupational Pressure Management among Employees – Dr..J. Vijay Rao, K.Chandraiah, Dr.R.J.Srinivas Rao, NFC
4. Positive Health - A Mirage? - Dr. Prasad M. Agavane, Certifying Surgeon, KAPS
5. Cancer Prevention in India - Dr. Achintya Bhattacharyya, Medical Officer, VECC,Kolkata
6. Clinical Case Discussion – Dr. P.T.V. Nair, Chairman, ACOH
7. A deadly incident at home after mixing household chemicals - A case study at TAPS Hospital - Dr. (Mrs.) M. S. Daniel, Dr. (Mrs.) Sweta Agrawal, Dr. P. K. Yadav, Medical Superintendent, TAPS
8. Does Diabetes Cause Depression? - Dr Ajay Dubey, Medical Officer In Charge, KKNPP Hospital, NPCIL
9. Medical Examination for working in Heights- Dr D.S.Kathuria , Medical Superintendent , RAPS Hospital, Dr S.Ganesan , Certifying Surgeon , RR Site.
10. Medical Applications of Laser - Dr Umesh Naikaware, MO, Dr P K Gupta, Associate Director & Head, LBAID & LMDDD, Dr Z B Mirza, I/C MO