PakAtom

Newsletter of the Pakistan Atomic Energy Commission

January-February,2005

Nuclearpowerto play key role in meeting the country's energy needs: Governor Sindh

GovernorSindh,Dr.IshratulEbadpresidingoverKINPOEConvocation-2005, ViceChancellor,NEDUniversityEngr.Abul Kalam ontheleft andMr.ParvezButt,Chairman,PAEContheright

Sindh Governor, Dr. Ishrat ul Ebad Khan hassaidthatthenuclearpowerbeingsafe, cost-competitive, reliable and environmentalfriendly,istoplayakeyrole towards meeting the country's energy needs.Hewasspeakingaschiefguestat theConvocation2005ofPAEC's KANUPP Institute of Nuclear Power Engineering (KINPOE) at its premises in Karachi on February22,2005.

The Governor said that Pakistan Atomic Energy Commission (PAEC), having an excellent track record of nuclear power plants operations, can shoulder this responsibility with assurance and confidence.

Speaking about the manpower developmentprogrammeofPAEC,hesaid that human resource is a chief asset to success for a country and that is why advanced nations pay special attentionto educationandallocate handsome chunks oftheirbudgetsforthissector.

The Governor said that the present governmenthassubstantiallyincreasedits budget foreducationespeciallyfor higher education.

Dr.IshratulEbadKhansaidthatitisgoodto knowthatPAECisservingthecountryand itspeopleinmanyways.However,energy generation remains one of its most importantcommitments.

HesaidthatPakistanwithitslimited fossil reserves needs to install more nuclear power plants and must follow its goal oriented nuclear power programme.

The Governor pointed out that nuclear energy is comparatively cheaper, cleaner and more environment friendly as compared to other conventional sources of energy.

In his welcome address, Chairman, PAEC, Parvez Butt said that during the 50 years of its existence, the PAEC, besides power production, has established itself in various disciplines of engineering, science, minerals development, medicine, agriculture and defence.

He pointed out that 13 cancer hospitals have been set up throughout the country from which more than 350,000 patients benefit annually. Five more similar hospitals are under construction including one in Nawabshah.

Mr. Butt said that through application of nuclear techniques, PAEC has evolved more than 47 crop varieties which are of high-yield, pest-resistant and soil suitable. These varieties are fetching additional income worth billions of rupees to our farmers.

He informed that PAEC Research and Development aims at solution of industrial problems and is supporting the growth of local industry through provision of services in welding, testing techniques, design consultancy and its vast and state-of-the-art manufacturing workshops. PAEC's contribution towards strengthening the country's defence is also well-known, he added.

Talking about safety and operational performance, Mr. Butt told that CHASNUPP-1 has recently attained capacity factor of 94percent which ranks among the highest in theworldandinthe same vein, he added, that KANUPP has operatedsuccessfullyforthelast30years and through theapplicationofindigenous expertise,itsdesignlifehasbeenextended throughrefurbishment.

Heinformedthatworkhasbeenstartedon the constructionofanother 300 megawatt nuclearplantcalledC-2inthevicinityofthe existingCHASNUPP-1.

PAECchiefsaidthatiftasked,weareready to start activities to construct the next nuclear power plant which would be according to our plans K-2 in the neighbourhood oftheexistingKANUPP.

Hestatedthatnocountrycanmakeviable progress unless it commands sufficient energy sources. Countries like ours, with scarcefossilfuelreserveshavetoexplore alternate energy sources and nuclear power has manifested itself as a viable energy option. As opposed to fossil fuel power plants, nuclear power plants are decidedlybetterfortheenvironmentasthey do not produce greenhousegasesnordo

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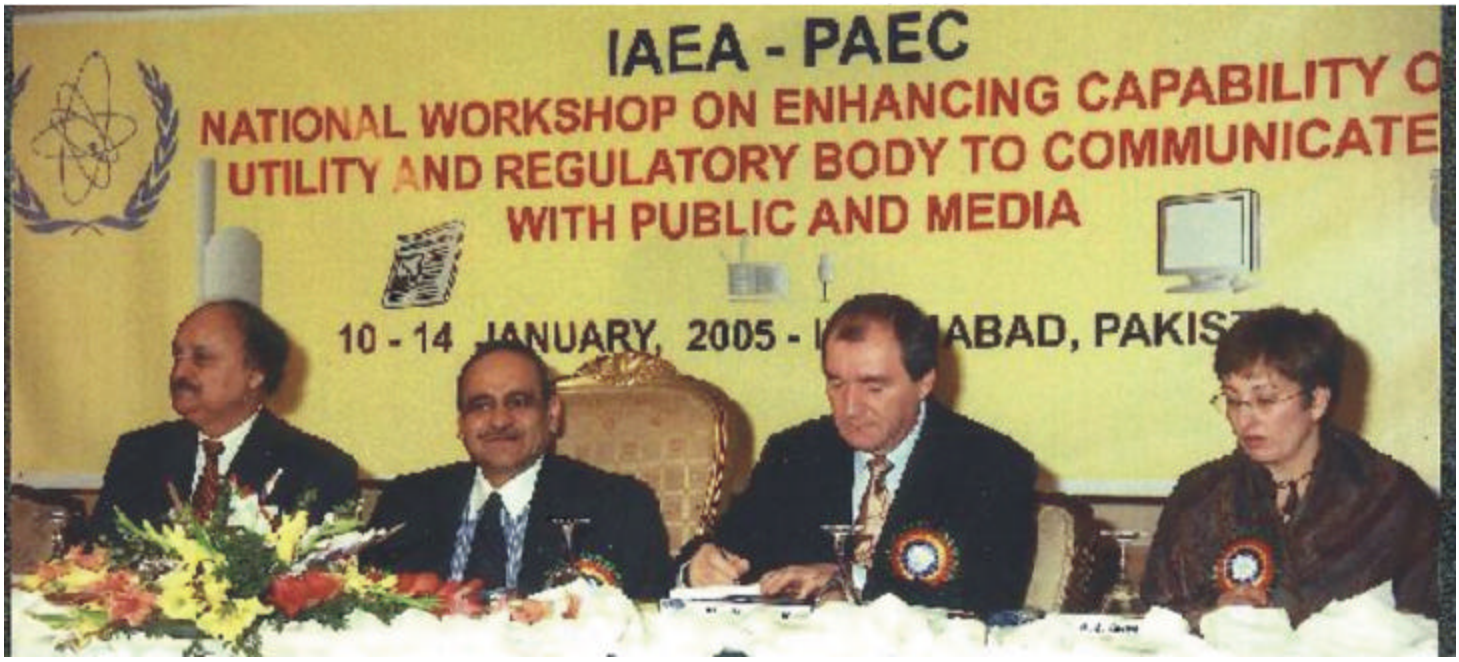
Pakistan has excellent safety record in nuclear power

PAEC planstoinstall morenuclear power plants: PAEC chief



Mr.ParvezButt,chairingtheinauguralsessionof one-week'PAEC-IAEANationalWorkshoponEnhancingCapabilityofUtilityandRegulatoryBodytoCommunicate withPublicandMedia"FromLtoR,Dr.SyedArifAhmad,DirectorofSafety,PAEC, Mr.ParvezButt,Chairman,PAEC,Mr.MroslavLipar,HeadofOperationalSafetyDivision, IAEAandMs.AngelaSueGreenman,IAEAExpertinNuclearCommunications

Pakistan has excellent safety record in nuclear power operation for the last 31 years and based upon accumulated installationandoperationalexperienceand expertise, PAEC plans to build more nuclear power plants for the economic developmentofthecountry.

This was stated by Chairman, Pakistan Atomic Energy Commission, Mr. Parvez Buttwhileinauguratingaoneweek'PAEC-IAEA National Workshop on Enhancing CapabilityofUtilityandRegulatoryBodyto Communicate with Public and Media' on January10,2005.

Govt. of Pakistan has taken significant steps towards strengthening the safety of nuclear power operation which include creation of an independent Pakistan Nuclear RegulatoryAuthority(PNRA), signing of international protocolon safety and its joint efforts in this domain with international bodies like International Atomic Energy Agency (IAEA), CANDU Owners Group (COG),World Association of Nuclear Operators (WANO) and others.

PAEC has valuable operating expertise coupled with acquisition of capability in design, quality control techniques and fabricationofmajorpartsofnuclearpower plants. Based upon this indigenous strength, we plan to build more nuclear powerplants,Chairman,PAECinformed.

He said in the face of global warming causedbygreenhousegasescomingfrom conventional power production modes, nuclearisthefutureenergyaswitnessedin the shape of its resurgence worldwide whereithasavitalroletoplaybecauseofits inherentvirtuesintheareasofsafety,cost competitiveness, reliability, abundance of availability and its environment friendly nature,PAECchiefasserted.

Nuclear technologybeingapromoterofhi-technology augurs well for the overall development of our country and we look forwardtoitsincreasingcontributiontothe nationalgrid,ParvezButtstated.

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Mr. Parvez Butt talked about excellent relations between PAEC and media and appreciated the role of media in Commission's efforts tostrengthen safety culture.Ourinteractionwithmedia,both,in routine andemergencysituation, isbased upon truth, honesty and facts. Apart from the media, we communicate directly with thepublicinmanyformsandmethods,he added.

Speakingontheoccasion,IAEAexpertMr. MiroslavLiparwhowasheretoconductthe workshop on MediaCommunicationssaid thatIAEA,likeever,willcontinuetoprovide allavailablesupporttoPakistan.Thisfactis evidentfromtheholdingofthisworkshopby IAEA aiming at development of communications skills for nuclear safety andrelatedareas.

Earlier, Dr. Syed Arif Ahmad, Director of Safety, PAEC inhisintroductory remarks saidthatthereisarobustmechanismwithin PAECtopromotesafetyofitsoperationas per national and international norms and obligations.
TheworkshopwasarrangedbyDirectorate ofSafety,PAECwithcollaborationofIAEA.

Theeventmadeanexcellentimpressionon local Electronic and Print Media as it reported the same with prominent placements.

Message of PAEC-IAEA Workshopeffectively communicated;
Member (Power), PAEC addressestheconcluding session

Mr.JavedIqleem,Member(Power),PAECaddressingtheconcludingsessionofPAEC-IAEACommunication workshop

Inviewofthelargenumberofstakeholders to a nuclear programme, any message conveyed to media must always be well prepared. This was stated by Mr. Javed Iqleem, Member (Power), PAEC while addressingtheconcludingsessionofaone week 'PAEC-IAEA National Workshop on Enhancing Capability of Utility and Regulatory Body to Communicate with PublicandMedia'onJanuary14,2005.

Pakistan Atomic Energy Commission (PAEC)isinvolvedinthedevelopmentand operation of facilities based on complex technologiesinamannerthatprotectsthe workers, public and the environment and we keep the media and public informed about progress in different areas of applications of nuclear technology like power generation, agriculture, medicine andresearch,headded.

Pakistan is a signatory to several conventions related to safety of nuclear facilities.ThismakesitobligatoryforPAEC to abide by therulesoftheseconventions, which amongst others include immediate notificationinanycaseofuntowardincident in a facility. Our safety record has been endorsed by several international expert missions that periodically visit our establishments, Member (Power), PAEC apprised.

IAEA faculty members who were here to conducttheWorkshopincludedMs.Angela SueGreenman,whoiscurrentlyworkingfor IAEA as an expert in nuclear communicationswiththejournalpublicand news media, Mr. Thomas Franklyn Hilton whoisanexpertcommunicationtrainerand Mr. MiroslavLipar, whoissectionheadof Operational Safety Section in Division of NuclearInstallationSafetyatIAEA.

SpeakingonthebehalfoftheIAEAfaculty at the concluding session, Mr. Miroslav Lipar said that the Workshop focused on providing fundamental information on communication skills and exchange of experience and added that enthusiastic participation by various concerned organizations shows the importance of nuclearsafetyanditscauseinPakistan.He said Pakistani people made an excellent impressiononhimandhisteamandlocal media well received the message of the trainingworkshop.

Speaking on the occasion, Dr. Syed Arif Director, Safety, PAEC informed that next communicationworkshopwillincludemore stakeholders and departments of the country.

Objectives of IAEA-PAEC National Workshop on "Enhancing of Utility and Regulatory Body to Communicate with Public and Media":

Theobjectivesofthe Workshopwerefive fold:

1. To understand and develop the art of effective communication on nuclear issues
2. To be able to communicate with the media, both electronic and print, in ordertofurtherenhanceandpromote sustainability of the nuclear programme
3. Crisisplanningandriskcommunication with the media to maintain the organization'scredibilityintheeyesof thepublic
4. Identify and correct falseinformation
5. Topromoteacultureoftransparencyin reporting to the media with honesty andintegrity

ProfilesofIAEAFacultywhichconducted theCommunicationWorkshop

Ms. Angela Sue Greenman has a Bachelor of Arts degree in Speech Communications from Roosevelt University and has obtained several academic distinctions.During1980-'93,sheworkedin differentcapacitiesfortheCityofChicago, inmattersrelatedtopublicity.From1993-'99shewasPressSecretaryoftheUSNRC and has authored the publication "Guidelines for Conducting Public Meetings" (NUREG/BR-0224). Currently, she is working for IAEA as an expert in nuclear communications with the general publicandnewsmedia.

Mr.MiroslavLipar obtained his M.Sc. degree from Slovak University. He has extensive experience on Bohunice NPP. He has remained head of the department for operations and maintenance of NPPs at Slovenske Elektrarne Utility organization. He has also worked as Director Department of Assessment & Inspections and Chairman of Nuclear Regulatory Authority of Slovak Republic. Currently,heissectionheadofOperational Safety Section in Division of Nuclear InstallationSafetyatIAEA.

Mr. Thomas Franklyn Hiltonhasgraduatedasa pilot from Royal Airforce College Cranwell. He has lectured extensively in businesscommunicationat Universities of Stockholm andthatofManchester.He isanexpertcommunicationtrainer. Inthis capacity, he trains Directors, Senior Managers,Consultantsfromdifferentparts of the world in international presentation and negotiations skills and media management. His special career accomplishmentwasin1992whenhewas invited as first outside consultant to the WorldEconomicForum.

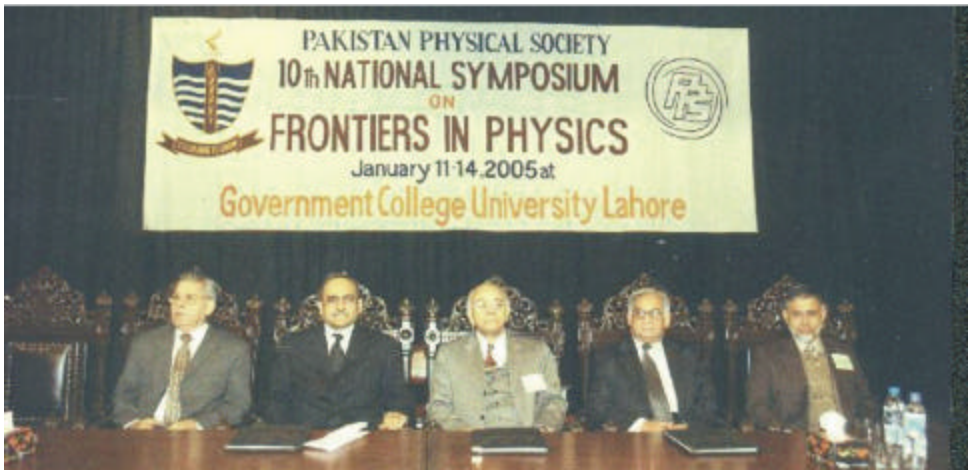
Partnership between scientific institutions, universities and industry essential to reap dividends of science and technology: Parvez Butt

Science has tremendous importance globally and each country should aim at having high-quality scientific institutions capableofprovidingresearchandtraining facilities through a strong national and internationalcooperation.There shouldbe partnershipbetweenuniversities,scientific institutions and industry for promoting innovation, accelerating returns and generating benefits from science and technology.

This was stated by Mr. Parvez Butt, Chairman, PAEC while speaking at the inaugural session of the four-day 10th National Symposium on "Frontiers in Physics" organized by the Pakistan PhysicalSociety(PPS)incollaborationwith theGovernmentCollegeUniversityLahore onJanuary11,2005.

PAEC chief stressed that communication and exposuretosocialsciencesshouldbe a partoftheeducationofthescientistsas innovation is no longer a lineal process arisingfromasingleadvanceinscience,it requiresasystemapproachhavinglinkage between many areas of knowledge a n d a constantfeedbackbetweenmanyplayers.

Science policy should promote the incorporation of knowledge in social and productive activities. Possible initiatives include cooperative research centres and research networks, technology incubators andresearchparksandadvisorybodiesfor small and medium enterprises, Mr. Butt suggested.



FromLtoR,Prof.Dr.KhalidAftab,ViceChancellor,GCU,Mr.ParvezButt,Chairman,PAEC, Prof.Dr.GhulamMurtaza,President,PakistanPhysicalSociety,Dr.MasudAhmad,Member (PhysicalSciences),PAECandDr.Zaka-Ullah,Prof.QAU

Pakistan Atomic Energy Commission (PAEC) has a programmeforcooperation with universities under which grants are given for specific research projects in variousuniversitiesfordiversifyingresearch output,Mr.Buttinformed.

Tobringtheyoungscientiststothelureof science in termsofitsmarvelstoraisethe living standardsofordinarypeople,PAEC, apart from its other human resource development programmes, has taken few initiativeslikesendingthesciencestudents to 'Physics Olympiad' competitions and sponsoringbrightyoungscienceschoolarsto interactat'MeetingsofNobelLaureates'in Lindau,Germany.Thestudentswhodowell inthesemeetingsareofferedscholarships byPAECtopursueacareerofscienceand engineering,ParvezButtapprised.

GCUvice-chancellorProf.Dr.KhalidAftab, PPS Vice President, Dr. Hasan A. Shah, Austria-based International Institute for Applied Systems Analysis director Prof. LeenHordijkalsospokeontheoccasion.

MINAR Holds First PAEC Workshop on Doppler Imaging and Mammography

The first PAEC Workshop on Doppler ImagingandMammographywasheldfrom 29th January to 3rd February 2005. The workshop was inaugurated by Member BiosciencesandAdministrationPAEC.Dr. KausarAbdullaMalik, whospokeofplans to upgrade Multan Institute of Nuclear MedicineandRadiotherapy(MINAR) and enterintoapartnershipofcollaborationand cooperation with Nishtar Medical College andBahaUddinZakiryaUniversity.Healso announcedtheapprovalofaPC-1ofalmost Rs.40millionfortheconstructionofanew blockforMINAR,thepossibilityofacquiring a LINAC forMINARandthemobilebreast cancerunits.

Other speakers at the inauguration were Prof.Dr.ShabbirAhmadNasir,FRCP,Dean of Medicine, Principal Nishtar Medical College andCEONishtar Institutions, Mr. Jalal Uddin Rumi, Chairman Board of ManagementNishtarHospitalandDr.Durr-e-Sabih,DirectorMINAR.Dr. Sabihspoke oftheregularworkshopsthathavebecome ahallmarkofMINAR,anotherworkshopon UltrasoundandDopplerhasbeenplanned forMarch,thisworkshopwillhaveDr.AliN. Khan FRCP,FRCRasoneoftheresource persons.

The currentworkshophadtwomodulesof

Fromlefttoright, Dr.Durr-e-Sabih,DirectorMINAR,Dr.KausarAbdullaMalik, Member (Biosciences/Administration)PAECandDr.ShabbirAhmadNasir,CEOofNishtarInstitute attheinaugurationsessionofthe Workshop

3 days each, the first on Doppler imaging andthesecondonMammography.Dr.Durr-e-SabihconductedtheDopplermodule. Dr. Zahida Sabih (MINAR), Dr. Mahboob Hussain (Nishtar Hospital), Dr. Safoora Shahid (IRNUM) and Dr. Durr-e-Sabih (MINAR) conducted the Mammography module. MS. MEDEQUIPS sent their applicationsengineerandM/SMetalTronica senttheirrepresentativefromItalytoaidin theworkshopsessions.

Emphasis was placed on practical applicationsofthetechniques, all didactic sessions were followed by practical sessionsdesignedtogivetheparticipantsa "feel" of the techniques. The participants were unanimous on the need for more workshopsofsimilarnature.

Sustainable EnergyDevelopmentRequires Regionaland InternationalCooperation: Member(Power),PAEC

The sustainableenergy development is a global issue and requires regional and international cooperation foritspromotion to meet the needs of present without compromising the ability of future generations.Itdealswithsuchissues as food security, availability of clean water, proper healthcare, clean air and reliable energysupplyataffordableprice.

ThiswasstatedbyJavedIqleem,Member (Power),PAEC,whileinauguratingthefive-day First Meeting of Regional Project on "Tracing Future Sustainability Paths throughNuclearandOtherEnergyOptions" onFebruary14,2005.

To ascertain the sustainability aspects of energy use, International Atomic Energy Agency (IAEA) has started a two-year regional project to be participated by fourteen Asia-Pacific countries (Australia, Bangladesh, China, India, Indonesia, Malaysia, Mongolia, Myanmar, Pakistan, Philippines, South Korea, Sri Lanka, ThailandandVietnam).

JavedIqleemsaidthatenergyconsumption in the region is expected to increase significantly, in the coming years with the economicdevelopment. It is necessaryto increaserelianceonthoseenergysources, which are moresustainable fromresource and environment point of view such as nuclear power and renewable like hydro, windandsolar.

He disclosed that five countries of the region (China,India,Japan,Pakistanand South Korea) are already making use of nuclearpowerwhileseveralothercountries such as Vietnam and Indonesia are planningtostartusingnuclearpowersoon.

Mr.JavedIqleem,Member(Power)PAECconductingthemeeting.Ontheleft isMr.AhmedMumtaz, Director,ASAG,PAECandontherightDr.Nam,IAEAExpert

He explained that energy is critical for economic and social development of a society.Whileitcontributesintheeconomic development and improved standard of living.Italsocausesdegradationofnatural environment through air emissions, effluentsandsolidwaste.

He said that electricity demand in Asia-Pacific will also increase from 30 to 40 percentanditwillbeanimmensechallenge tomeettheincreaseddemandofelectricity without causing long-term damage to the naturalenvironment.

Hesaidthatnuclearpowerisproviding16% of the global electricity supply. Nuclear power is becoming more and more promising worldwide due to excellent operating experience, technological developments and increasing fossil fuel prices.

Hesaidthatnuclearpowerwillgrowasan important source of energy in the RCA region. Japan, Republic of Korea, China and India are already pursuing large-scale nuclear power programmes as economically viable and environmentally clean option. Pakistan is also planningto expand its nuclear power programme substantiallyinthecomingyears,headded

The representative of International Atomic Energy Agency (IAEA), Dr. Nam informed that sustainability is a very important objective of the current UN agenda. He expressedhisconfidencethatthisproject will be very useful for the participating countries to analyze the role of nuclear powerandotheroptionstoachievethegoal of sustainable development in the IAEA memberstates.

NIABOrganizesTrainingCourseon"SafetyMeasuresintheuseofRadiationinAgriculture& Biology"

The11th AnnualTrainingCourseon"Safety Measures in the Use of Radiation in AgricultureandBiology"wasorganizedby NIAB,Faisalabad,fromDecember 20-24, 2004. It was attended by 32 participants belongingto19Institutes/Universitiesfrom alloverthecountries.

Dr. Amir Muhammad, Vice Chancellor, National University of Computer & EngineeringSciences,Islamabad,(Pioneer Director, NIAB) inaugurated the Training Courseandwaspleasedtoknowthat NIAB isorganizingsuchcoursesonregularbasis. Thefacultycomprisedexpertsfromvarious Institutes/Organizations from Islamabad viz. PINSTECH, NARC, PNRA; and Faisalabadviz.G.C.University,NIBGEand NIAB.

ChiefguestDr.AmirMuhammadaddressingtheceremony

Intheconcludingsession,Dr.BashirAhmad, Vice Chancellor, University of Agriculture, Faisalabad distributed certificates to the successful participants and appreciated the efforts of NIABfortrainingtheresearchersin thisveryimportantfield.

Wheat Field DayatNuclear Institute of Agriculture(NIA), Tandojam

PAEC's Nuclear Institute of Agriculture (NIA)organizeda'WheatFieldDay'on8th February, 2005. Most of the area under wheatinthisregionwasatfloweringstage. Dr.BashirAhmedShaikh,ViceChancellor Sindh Agriculture University was the chief guestontheoccasion.

Dr. Mazhar Hussain Naqvi, Director, NIA, highlightedtheactivitiesoftheInstituteand briefedtheparticipantsabouttheobjectives oftheWheatFieldDay.HesaidthatNIA, beingthemainestablishmentofPAEC in agriculture, hasreleasedsixteen varieties of important crops such as wheat (7 varieties),rice(4),cotton(2),sugarcane(2) andmungbean(1).Allthesevarietieshave performedextremelywellonfarmers'fields and contributed significantly in enhancing the agricultural production. The growers were informed that during 2004, twonew wheatvarietiesMarvi-2000andBhittai,one cotton variety Sohni and one sugarcane varietyNIA-2004ofthisInstitutehavebeen releasedbytheGovernment ofSindh for cultivation. The growers had field trip,

Aviewofthe"WheatFieldDay"atNIATandojam

where scientists working in different disciplines explained their activities and achievements.Thenecessity of sowing of pure seeds to obtain higher yields was explained.

On this occasion, exhibits of wheat, rice, cotton, sugarcane, mungbean were also displayed. Achievements of biotechnology inbananaandsugarcanewereelucidated. Eco-friendlypest management, bio-control technology w*a*s also demonstrated to the farmers. The methodology was explained about the predator, *Chrysoperla carnea* which feeds on the wheat aphids. The farmerstookkeeninterestinthebio-control technology,asaphidisbecomingapestfor thewheatcrop.

NIFAOffersaNon-DestructiveOilseedsQualityAnalyticalService

For over3years,PAEC'sNuclearInstitute forFoodandAgriculture(NIFA),Peshawar is the leading research institute in the country utilizing non-destructive NIR technology for oilseed crops quality measurement.Thetechnologyisbasedon the principles of near-infrared spectroscopy. It works by measuring the absorptionoflightenergyorwavelengthsof eachcomponentofbiologicalmaterialatits characteristic frequency in the near-infraredregion.

The near infrared (NIR) spectrum is just above the visible region of the electro magneticspectrum (EMS).Thisportionof EMShas beenstudiedandinvestigatedin detail as an analytical procedure for the analysisofmanynaturalandmanufactured materials. The focus of the application of this technology at NIFA, Peshawar is to analyzebiologicalmaterials.Innowayitis implied that NIR can analyze all possible constituents inanybiologicalmaterial.The main target ofthisanalytical method has beentomeasurethemajorconstituentsof these materials and minor associated organic and inorganic constituents. The reasonthattheanalyticalprocedureis so attractive is because materials can be analyzed with no sample preparation, in lessthanaminute,formultipleconstituents, withoutdestroyingthesample.

A modern computerized NIR system scanning near-infrared spectrometer, calibrated to internationally accepted reference methods, measures theoilseed quality components such as total oil content, glucosinolates, protein, moisture and fattyacids(Erucic,Oleic,Linoleicand Lenolenic) inwholeseeds withprecision and speed. Presently, NIFA is analyzing about fifteen thousands (15000) oilseed samplesfordifferentqualitycharacteristics annually. Beside NIFA, a majority of the other stakeholders like oilseed industry, different academia and research institutionsare mainlybenefittingfromthis unique environment friendly and non-destructivetechnologyservice.

ComputerizedNIRSystem

launching of PARAS Food (Pvt.) Limited

Government has approved launching of PARASFood(Pvt.)Limitedwhichwillbea joint venture of Pakistan Atomic Energy Commission (PAEC) and Pakistan HorticultureDevelopment & Export Board (PHDEB)onequalequitysharingbasis.

The major objective of the company is to establish Food Irradiation facilities in Pakistan for irradiating food products for localmarketandexport.Theapplicationof this technology will not only increase storage life of food material in a most economical way but will also fulfill internationalquarantinerequirementssuch as disinfestation and microbial control of horticultureproduce.

Thisfacilitywillbethefirstofitskindinthe countryandwillmakefruitsandotherfood materials acceptableforforeignimporters asitwillensure disinfestationandmicrobial control of these items as per global requirement.

PAEC is providing irradiation facilities for sterilizationof Medical,Surgical andother products at Pakistan Radiation Services (PARAS),acommercialprojectofPAECat Lahoreinoperationsince1987.

Theapplicationofirradiationtechniquesfor enhancing the shelf life and protection against microbial contaminations of food itemshasalsoagreatpotentialduetoits economy and effectiveness and is being practicedglobally

21st Century tobethecenturyofmultidisciplinarysciences:Dr.MasudAhmad

21st centuryisusuallytermedasthecentury of biological sciences but it will be more realistictoconsiderthiscentury,ascentury of multidisciplinary sciences in which physicswillcontinuetoplayadominantrole becauseitissotightlywovenintothefabric ofscienceandsocietythattheboundaries separatingitfromneighbouringsciencesis hardlydiscernible.

This was stated by Dr. Masud Ahmad, Member (Physical Sciences), PAEC in a speech at the opening session of an international seminar on "Physics in Our Lives"onFebruary23,2005organizedby PAEC,COMSATS and NCP inconnection withWorldYearofPhysics2005.

Inthewidecontextofsociety as a whole, hardly any aspect of modernlife remains unaffected by the discoveries of physics. The basic concepts of physics are incorporated in virtually every area of science. Physics directly interacts with many sciences by exchanging theoretical approachesandexperimentaltechniques. We mayexpect that major discoveries will bemadeattheinterfacesofdifferentfields.

Animportantareainthiscenturywillbe"life physics"involvingphysicistsandbiologists trying to understand interaction at scales from the atomic to the ensemble level. Another example of this multidisciplinary nature of emerging knowledge is nanotechnology which is based upon advances in biology, chemistry, engineering,and physics.Otherexamples arebioinformaticswhichrequireintegration of biological sciences with physics and mathematicalsciences,Dr. MasudAhmad explained.

Another area of growing importance that spansthebiologicalandphysicalsciences is the environment. It will be possible to simulate, using supercomputers, the behavbiourofthewholeearthasasystem. Equippedwithmultidisciplinaryknowledge, scientists willbeabletomonitorprocesses occurring with in our own body and the outsideworldonascaleoftime,spaceand complexity, which never has been imagined.Thiswillenableustoexplorethe bigquestionsofcosmos,theenvironment and who and what we are, Dr. Ahmad pointedout.

Assignments of PAEC Experts Abroad

i. Messrs. Safder Habib, Deputy Chief Engineer,HafizullahKhan,DeputyChief Engineer and Babar Ghias, Principal Engineer, KNPC, Karachi undertook assignment as National Consultants at IAEA Headquarters, Vienna (Austria) from29Novemberto10December,2004 forparticipationintheTeamMissionfor Upgrading of the Emergency Injection System under Project-Improving Safety FeaturesofKANUPP.

ii. Mr. Muhammad Tahir Siddiqui, Deputy Chief Engineer, KarachiNuclearPower Complex (KNPC), Karachi started assignmentasKANUPPRepresentative withCanduOwnersGroup(COG)Office, Toronto, Canada for a period of six months from 07 January, 2005 under Project Improving Safety Features of KANUPP.

iii.As NationalCoordinator,Dr.Ihsanullah, Head Food Science Division, NIFA, Peshawar has presented a country progress report on "Achievements of Food IrradiationinPakistan"intheIAEA Final Progress Review Meeting of the ProjectonApplicationofFoodIrradiation for Security, Safety and Trade, held at Nuclear Training Center, Daejeon, Korea, 21-25 February 2005.

Assignments of IAEA ExpertsinPakistan

i.Mr.PaulDoherty(UK)visitedPINSTECH, Islamabad from 30 November to 03 December, 2004 under Project-Quality Assurance and Quality Control of NuclearAnalyticalTechniques.

ii. Mr. Chang Jae Yim(RepublicofKorea) visitedNCNDT,SESDirectorate,PAEC, Islamabad from 6-10 December 2004 under Project-Development of In-Service InspectionFacilitiesforNuclear PowerPlants.

iii.MrJaeSolLee(RepublicofKorea),IAEA Technical Officer, Nuclear Fuel and Materials Section, Division of Nuclear Fuel Cycle and Waste Technology, Department of Nuclear Energy, IAEA, Vienna(Austria)carriedoutassignment at KNPC, Karachi and PAEC Headquarters, Islamabad from 31 January to 2 February, 2005 under ProjectRequest"SpentfuelDryStorage of Karachi Nuclear Power Plant (KANUPP)"

iv.Mr.LarsUlfkjaer(Denmark),Information SystemOfficer, IAEA, Vienna (Austria) carried out assignment at PNRA, Islamabad from 31 January to 04 February, 2005 for Review and Assessment of PNRA Knowledge Management Activities and Related IT Infrastructure under Regional Project DevelopmentofanAsianNuclearSafety Network. Healsovisited Directorateof Safety,PAECHQon02February,2005.

v. Mr.JongBumKim(RepublicofKorea) carried out assignment as an IAEA expertatRIAD, PINSTECH, Islamabad from31Januaryto08February,2005for Task: Automatic Gamma Column ScanningTechniqueunderRCAProject-ProcessDiagnosticsandOptimizationin PetrochemicalIndustry.

Foreign Trainee under IAEA Award

Mr. Youssef Ben Chedli Trifa (Tunisia) visited NIAB,Faisalabadfortraininginthe fieldofPlantBreedingandGeneticsfrom6-10December2004.

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they cause acid rain and murky skies. Furthertheyreducethenation'srelianceon oilimportsandtheassociatedpricehikes.

Realizingtheimportanceoftrainedhuman resource, PAEC has set up task-oriented educationalandtrainingcentresindifferent citiesofthecountrywhichhavestronglinks withotheruniversities.

These educational institutions include Pakistan Institute of Engineering and Applied Sciences (PIEAS), Computer TrainingCentre(CTC),KANUPPInstituteof Nuclear Power Engineering (KINPOE), Pakistan Welding Institute (PWI) and NationalCentreforNon-DestructiveTesting (NCNDT).

Talkingabouttheindigenoussuccessesof the PAECprogramme,Mr.Buttstatedthat we have been using our own indigenous fuelatKANUPPsince1980andthisamount of fuel is equivalent to importing approximatelytwomilliontonsofoilburning whichincidentallywouldhaveproduced6.2 milliontonsofCo_2, thegreenhousegas.

Earlier, the Vice-Chancellor of NED UniversityofEngineeringandTechnology, Karachi, Engr. Abul Kalam, conferred degreesongraduatesinMastersofNuclear PowerEngineering.

The Governor awarded gold medals and merit certificates to nine students of the threebatches from2002,2003and2004.

In his report, Dr. Khalid Bukhari, Director, KINPOE,tracedthehistoryoftheevolution of the institute and informed that all the inductions in the M.Sc. and other short courses are made on thebasisoftestand merit.

Hepointedoutthatsofar254studentshave graduatedunderthisprogramme.

Later, theGovernor witnessed a scientific exhibitionfeaturingworkingandsuccesses of various segment of the PAEC programme.

(SpeakersfromLtoR)Mr.ParvezButt,Chairman,PAEC,Dr.Riazuddin,DirectorGeneral,NCPandDr.HameedAhmedKhan,ExecutiveDirector,COMSATS addressingthegathering

Building Better and SaferSocieties our Responsibility: PAEC Chief

Scientists and engineers have the responsibility to apply their intellectual abilitiesandskillstoevolvetechnologiesfor buildingbetterandsafersocieties.

ThiswasstatedbyPakistanAtomicEnergy Commission (PAEC) Chairman Parvez Butt, while speakingaschiefguestatthe concluding ceremony of a two-day international seminar on "Physics in Our Lives" at COMSATS Headquarters on February25,2005.

The event was jointly organized by COMSATS,PAECandNationalCentrefor Physics(NCP),Quaid-i-AzamUniversityin connection with World Year of Physics 2005.

Urging an ever new input by the researchersandtechnologistsforsolutions oftheproblemsfacedbyhumanity,Mr.Butt said, "Scientists have to go on, on an endless journey to deliver. Science and Technology must bring about economic developmentandextensiveprosperity.

"Our vision for our country for the 21st centuryshouldbetobuilditsfuturethrough 'Discovery, Learning and Innovation'. For that we need ideas, people and technological infrastructure", Mr. Butt stated.

Hesaidstepstakenbythegovernmentin thelastfourtofiveyearsforeducationand training of the youth in higher education wouldprovidesizeablecadresofscientists andengineers.Itwouldgotowardshelping in sustaining technological momentum neededforacceleratedevelopmentofthe country,headded.

Earlier, renowned physicist, COMSATS Executive Director, Dr. Hameed Ahmed Khanpresentedasummaryofthetwo-day discourse on physics in which noted scientists from Pakistan, European OrganizationforNuclearResearch(CERN) and COMSATS member countries deliveredtheirlectures.

Presentations were made highlighting various advancements in the field of physicsanditsimpactonsociety.

Dr. Khanpresentedasetofconcreteand practical recommendations given by esteemed speakers,whichwereidentified tobethefocusofactioninthecomingtime. It included preparedness for response to environment emergencies/natural disasterssuchasTsunamiandtheneedto develop warning system, R&D in nanotechnology/superconductivity,nuclear fusion for peaceful uses, water-related issues, global warming, information technology, work on cosmology and conversion of brain-drain into brain-gain. The recommendations laid special emphasis on grooming the youth and improving systems in science and technology.

The crux of the recommendations was aimed at taking science as an absolute necessityandnotasluxury.

Strong emphasis was also laid on establishing linkages between developed and developing countries and also by bridginggapbetweenscienceandsociety.

The concluding session also included commentsbyProf.Dr.Riazuddin,Director General,NationalCentreforPhysics,who underlined the importance of science towardsremovingexistinginequalities.

The concluding session was attended by scientists and engineers coming from universities, R&D organizations and international scientific bodies including Prof. El Tayeb Idris Eisa, Secretary General, Ministry of Science and Technology,Sudan,Dr.EmadA.Al-Ashkar, National Research Centre, Egypt and Dr. Mohamed Khaled Chahine, Director Syria-COMSATS-COMSTECH ITCentre,Syria.

WANO Peer Review Trainingat CHASNUPP

Peer Review is one of the most effective programsof WANO.The purpose of peer reviewtrainingistoprepare reviewersfor different review areassuch as Operation, Maintenance, Technical Support, Chemistry, Training & Qualification and Radiation Protection of Nuclear Power Plants. WANO-Tokyo Centre conducted PeerReviewtrainingfrom16-18February 2005 at CHASNUPP. Twenty-seven Engineers from CHASNUPP, KNPC and PAEC head office attended the training course. During the training, lively discussions took place while field trip to CHASNUPP-1providedpracticaltrainingto participants.

SNERDITeamvisits CHASNUPP-1

Aseven-memberdelegationfromShanghai Nuclear Engineering Research and Development Institute (SNERDI) visited CHASNUPP/PAEC from 19-23 February 2005 to discuss matters concerning technical support to CHASNUP-1. They had a series of meetings with engineers/managementtodiscussareasof support so as to further improve the performanceofCHASNUPP-1.Itisworth mentioningthatSNERDIisthedesignerof CHASNUPP-1andhasbeencontinuously providingtechnicalsupport.

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