

## HUMAN RESOURCE DEVELOPMENT ACTIVITIES

### 1. Organisation of External Training Courses

Organisation of Training Courses on various physical parameters in the area of Metrology / Standards, as well as on other specialised topics is an important activity of the HRD Group. These courses are primarily meant for the personnel belonging to various industries, Testing & Calibration laboratories and other S&T organisations. However, the NPL staff members are also encouraged to attend these courses, where ever found fit.

The Training Courses consist of theory lectures on various scientific & technical aspects of the training course, followed by practical demonstration and hands-on training on the related instruments / apparatus / machines.

Twelve (12) Training Courses on diverse topics of 'Material Characterisation Techniques', 'AC & DC Measurements & Calibrations', 'Pressure & Vacuum Metrology', 'Temperature Metrology', 'Dimensional Metrology', 'Mass Metrology', 'ISO-17025 based Quality System', etc., were organised by NPL during the year 2008-2009, which were attended by a large number of personnel belonging to various national & international organisations, including many participants from NPL also.

This activity led to an ECF generation of Rs. 10.2 Lacs. This ECF includes Rs. 4.5 Lacs received from KIM-LIPI (Indonesia) for training its staff members by the NPL scientists in 07 different areas of Metrology.

### 2. Formulation and Organisation of Internal Training Programmes

Besides the external training courses, efforts were also made to formulate special training programmes for the exclusive benefit and welfare of the NPL staff members. The basic objective was to provide the

staff members knowledge and expertise in the area of relevance to their duties, so that they could perform in a more competent, productive and useful manner.

Accordingly, several special training programmes were thought about, out of which 3 were properly designed and executed also, during 2008-2009.

### 3. Dissemination of HRD-Related Information to NPL Staff Members

Dissemination of HRD-related information to the NPL staff members is another important task performed by the HRD Group. The information generally refers to conferences / symposia / workshops, or special training programmes conducted by DST, HRDC (Ghaziabad) or other such organisation, or awards instituted by various agencies.

More than 300 different types of HRD-related papers were displayed at 4-5 prominent places of the laboratory each, during the year 2008-2009.

### 4. Deputation of NPL Staff Members to Attend Conferences

NPL encourages and supports its staff members, including the floating members like JRFs, SRFs, PAs, RIs, RAs, SRAs, etc., to attend and present papers at national / international conferences / symposia / seminars / workshops, organised by different agencies in areas relevant to research activities being carried out at NPL. This is primarily meant to enable the staff members to put forward their views and research results before the leading national / international experts and interact with them on the latest developments in their research areas.

Besides the conferences / similar events, NPL also deposes its staff members to attend special training programmes organised by the DST, HRDC-Ghaziabad or other such organisation. These



programmes are aimed at enhancing the knowledge and expertise of the participants so that they could prove to be more competent, productive and useful to their organisations.

A large number of NPL scientists and other staff members (392 cases) were deputed to participate in various conferences / similar events and different Training Courses held across the country during the year 2008-09.

### **5. Placement, Ph.D. Registration and Other Support to Research Fellows**

One of the most prominent activities of the HRD Group is to provide help and support to Research Fellows (JRFs / SRFs), starting from the time they join NPL till the time they leave NPL. This includes their placement in a suitable Division / Group and helping them in getting Hostel accommodation, if required. This also includes their Ph.D. registration, assessment for continuance / upgradation, deputation to attend conferences, etc. Sometimes, the help to the Research Fellows starts even before they join NPL. This refers to the cases wherein they are invited and inspired to join NPL for their Ph.D. programme.

Thirty one (31) fresh Research Fellows (JRFs/SRFs) were inspired and motivated to join NPL during the year 2008-2009, making a total strength of JRFs+SRFs to be 71 as on 31-March-2009.

### **6. Organisation of Students' Training at NPL**

NPL provides both Short Term (Minimum Six Weeks to Six Months or so) and Long Term (One Year or so) training to students pursuing M.Sc. / B.Tech. / M.Tech. / MCA, or their equivalent degree programmes, at different educational institutions spread across the country, in the areas of research activities being carried out at NPL. The basic objective is to provide the students an exposure of the NPL's research activities and motivate them towards scientific research, and thus contribute

towards the generation of trained S&T manpower in the country.

During the year 2008-2009, 177 students were provided training at NPL, oriented towards the fulfillment of their academic degree requirements, in different areas of research, under the guidance of senior scientists of the laboratory.

This activity led to an ECF generation of Rs. 15,000/-, to start with.

### **7. Organisation of Institutional Visits to NPL**

Organisation of institutional visits involving students / teachers / faculty members / personnel belonging to schools / colleges / universities / technical institutes / S&T organisations is an important activity of the HRD Group. The basic objective is to provide the visitors a glimpse of the NPL activities and achievements, and thus enhance NPL's visibility in the society.

During the year 2008-2009, eighteen (18) institutional visits were organised by NPL, which involved around 500 visitors and included prestigious institutions like NIT-Kurukshetra, Amity University, BOSCH Limited, Scindia School (Gwalior) and Kendriya Vidyalayas, etc.

### **8. Placement of Newly-Recruited Scientists 'B'/'C'**

Co-ordination was done towards the placement of newly-recruited Scientists 'B'/'C' in a particular Division/Section. These scientists were made to undergo a 2-week Orientation Programme consisting of meeting senior scientists, including all DU / DP Leaders, and interacting with them on their research activities. The basic aim of the Orientation Programme was to provide the freshly-inducted scientists an opportunity to have a glimpse of all the research activities being carried out at NPL, right in the very beginning of joining the NPL. This awareness could be very helpful in their proper placement by the authorities as well as in their pursuit of research activities in the future.



**9. Formulation of NPL Training Calendar 2009-2010**

The formulation of 'NPL Training Calendar' and its communication to the prospective industries / laboratories / scientific institutions is the very first step towards the organization of Training Courses by the NPL. The NPL Training Calendar for the year 2009-2010 was formulated by the HRD Group in consultation with the concerned DU / DP Leaders, and sent to all the relevant parties. These training courses, while benefiting the concerned personnel and thus contributing towards the generation of trained S&T manpower in the country, are beneficial to NPL also in terms of its image / visibility enhancement and ECF generation.

**10. Formulation of DU-DP-wise Directory of NPL's Manpower**

Efforts were initiated towards the formulation of a DU-DP-wise Directory of NPL's Manpower, seeing its immense usefulness in the execution of various HRD activities.

**11. Organisation of CSIR Programme on Youth for Leadership in Science (CPYLS) - 2008**

The CPYLS programme for the year 2008 was organised by NPL at its campus on 25-26 November 2008 and was attended by 24 bright young school children, specially chosen by CSIR for this programme. The programme involved a very fascinating inaugural lecture, entitled, "Metrology & Automation - Everyday of My Life" by Dr. Ramani Iyer, Forbes Marshall, Pune, besides various others lectures by the senior scientists of NPL on different topics like 'Optical Standards', 'How well do we know it?', etc. The programme also involved visits of the school children to various research groups of

NPL involving the different R&D activities, namely, Metals & Alloys, Carbon Fibres & Nanotubes, Organic Light Emitting Diodes, Luminescent Materials & Devices, Optical Thin Films, etc. Beside this, the children were made to visit the Standards Groups also, such as, Time & Frequency Standards, Optical Radiation Standards, Force & Hardness Standards, etc., in addition to groups involved in materials characterisation w.r.t. techniques like Scanning Tunneling Microscopy, Transmission Electron Microscopy, Gas Chromatography, etc.

The basic objective behind the whole programme was to inspire and motivate the bright young school children towards Science and Scientific Research as the Career.

**12. Organisation of National Science Day - 2009 (Poster Presentation Symposium)**

A Poster Presentation Symposium comprising poster presentation of the work carried out by the Research Fellows (JRFs/SRFs) was organised by NPL on 27nd February 2009 as a novel way of celebrating the National Science Day - 2009. It was kept open to all the NPL scientists so that there could be a very useful and productive interaction between the two categories of NPL staff members. To make this symposium lively and attractive, it was decided to give Best Poster Presentation Award to three Research Fellows selected by the jury, specially constituted for this purpose by the DNPL.

**13. CSIR Foundation Day Celebrations - 2008 (NPL Open Day)**

Efforts were made towards the updation and publication of NPL Brochures (NPL at a Glance) at the occasion of CSIR Foundation Day Celebrations - 2008 in the form of NPL Open Day on 26-September-2008.

