

Information Technology
Services Support Center
and Training Laboratory



U.S. Nuclear
Regulatory
Commission

Division of Information
Support Services

Office of Personnel

NRC Enters A New Age of Computer Graphics Technologies

New Technologies— New Methods/Tools

Several years ago, an extensive search began for a computer graphics system that would meet NRC's publication graphics and design needs. In addition, the system would need to be state-of-the-art, compatible with future NRC systems, provide easy file transfers from PCs and have an intuitive user interface for the professional graphics staff. A Sun Microsystems met our requirements and ushered in a new way of creating black and white publication design and electronic art. In October 1987, we acquired a Sun 3/50 with two workstations and the Interleaf TPS release 4.0 software. The system is architecturally similar to the Kodak Electronic Ektaprint Electronic

Publishing System described in the Summer issue of ITS News. The system has a 190 MB drive, 8 MB RAM, 1/4 " cartridge tape drive (used for backup), a 19 inch landscape monochrome monitor with high quality graphics resolution (1152 x 900 pixel resolution), a 3-button optical mouse, 94-key low profile keyboard, Sun UNIX 4.2 Rel. 3.0 operating system, line-art image scanner, graphics tracing tablet and stylus, and laser printer with 300 DPI output in 8 1/2"x11" or 11"x17" landscape or portrait orientation. This system provides the "new tools" for the graphics staff. It is a multitasking, parallel processing system with up to 16 windows and iconic interfacing, fully WYSIWYG (what you see is what you get) with the screen displaying a full page. The system is located

in room P-100 of the Phillips Building. Call to schedule an appointment to see all of the system's capabilities.

Services

The Automated Graphics and Visual Communications Section, Information Technology Services Branch, Division of Information Support Services, IRM, provides design, art, presentation graphics and other graphics services to the agency's 24 program offices. The unit is composed of four staff members located at two different sites. Janet Thot-Thompson and Alvin Blunt are located in the White Flint building in 2G30 and 2G32; Lionel Watkins and John Orban are located in the Phillips building in P-100.



John Orban scanning a document into the Interleaf system.

THE ISSUE AT HAND

IRM Management Strategy	3
A Bernoulli Box	4
Wizards in Computer History	5
Videoconferencing	6
NUDOCS News	7
Sign on With SINET	11
ITS Training Lab News	9
IFMIS Travels Around Payroll	10
Artificial Intelligence	10
Federal Register Notices and Comments Tracking System	11
The LAN of the Unknown: IBM 5520 Replacement	12
Rotational Assignment to IRM from NPR	14
Entering the PC World	14
Microcomputer Communications in Region V	15
ITS Tech Notes	16

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PDR NUREG BR-0056 PDR

History

The graphics workload has grown to approximately 1700 requests per year. Many of the requests require subsequent revisions. With such a high volume of work and limited resources, we must operate as cost-effectively and efficiently as possible. In addition, we must produce attractive, high quality and high resolution graphics while meeting strict and competing deadlines. Before moving to electronic graphics, the section relied on outside typesetting, word processing, mechanical cutting and pasting, using a time-consuming antiquated in-house phototypesetting computer, and drawing illustrations and designs by hand. Producing graphics by this older method resulted in revisions becoming cumbersome and time consuming. The many steps and overlays necessary in creating camera-ready art was also labor intensive.

ITS NEWS CREDITS

The ITS NEWS is a quarterly publication providing information of interest to users of computer technology at the NRC. It is produced by the staff of the NRC Information Technology Services Support Center and Training Laboratory in conjunction with the NRC's Office of Personnel.

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Graphics System Applications - Examples/ Cost-Benefits

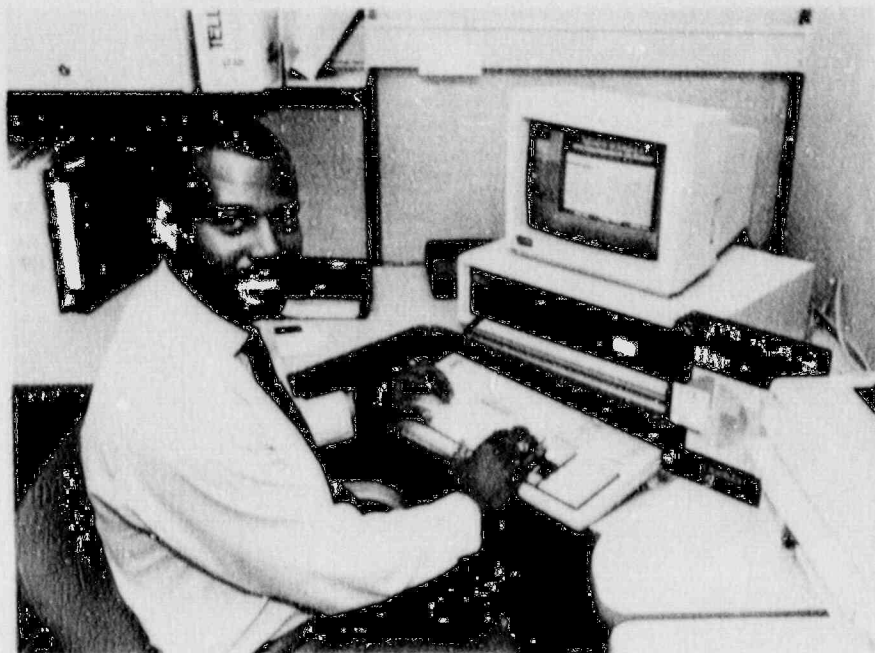
One of the most productive applications of the electronic graphics system is on jobs that require multiple reviews and revisions. An example is the functional organization charts. This year a data base was created early in the process incorporating improved layout, design and typography to enhance the readability of the charts. Once the data base was created, the graphics staff was able to respond to major organizational changes to the charts within three days. With the old production method, the same changes would have taken 10 days or more.

Brochure and newsletter design have also benefitted from the use of graphics fonts to provide special effects. The old cut and paste and photographic method would be too time-consuming and costly for these special effects. Printing costs are also more economical because the printer does not have to make photographic separations to achieve tones and special effects which are now accomplished with the computer. In a recent example, one small brochure that typically would have taken three days to design was designed in five hours.

Because of these time-savings, the graphics staff may explore more creative solutions to design and graphics problems, assure the best solution, and provide improved quality and quantity of services. As they have become more proficient, and as the software is enhanced, the graphics staff has identified more and more NRC graphics applications. They currently estimate that 70 percent of their workload is accomplished on the system with a reduced production time of 50 percent. Typical type of work, but not exhaustive, are: brochure design, newsletter design, data-driven charts, diagrams, schematics, flow charts, flyers, revision tracking, charts, matrices, graphs, maps and illustrations.

Possible Future Applications

Interleaf accepts ASCII text from most word processors, PCs, minicomputers or mainframes, and filters (translators) for popular graphics and spreadsheet packages. Many Computer-Aided Design (CAD), Computer-Aided Engineering (CAE), and Computer-Aided Software Engineering (CASE) developers supply output in highly editable Interleaf format. Program offices plan to use high performance



Al Blunt designing a chart for illustration in a publication.

graphics microcomputers at White Flint. This could enable transmission of sophisticated high resolution graphics from engineering CAD/CAE and scientific-analysis programs directly to the graphics workstation. This will improve both the effectiveness and efficiency of visual communications in the future by enhancing the quality and quantity of graphics materials used throughout the NRC.

Moreover design standards, templates and coding can be developed by the Automated Graphics staff for repetitive generic types of graphics and provided to the end-user in their office. Ported into the Interleaf system, the final design, layout, and output could be generated by a graphic artist.

New Graphics Initiatives

In May 1988, the Graphics Section was reorganized into IRM to integrate the visual disciplines with the new and emerging computer technologies, and computer graphics applications. With the proliferation of computers and computer graphics software, and with many users taking advantage of this technology to do their own displays, the Automated Graphics staff is developing design standards and templates for generic publications, presentation art, and other applications, for the NRC supported software. We have instituted a service bureau concept for supported graphics software. The concept is that the end-user can (with a designer's consultation for color, background, layout and chart type suggestions for the data comparison) construct business graphics effectively in their office. This provides the end-user last minute editing and control in the draft stage. If the presentation is external to NRC, at a high public visibility level or repetitive training, the graphics staff can take the diskette, enhance the image visually, and generate a high-resolution 35 mm color slide or viewgraph. The production time and cost associated with this method is approximately half that of older traditional methods. With limited staff, the migration of the work of data entry and formation back to the end-user allows the Automated Graphics

staff to use their limited time more cost effectively on the creative aspects of the visual display of information.

We expect delivery of an IBM PS/2 Model 80 at the White Flint office with Interleaf software and laser printer. This will enable additional on-site graphics support for the White Flint staff.

Our objective is that these initiatives will proliferate the availability of good visual support, and improve the quality of visual standards used to communicate throughout the NRC. This program is in the formative stages, but the Automated Graphics staff has already provided this support successfully to several program offices.

The Automated Graphics staff also provides the Introduction to Computer Graphics course at the ITS Training Lab. The visual guidelines presented are what constitutes a good chart, basic chart forms, basic data comparisons, and choosing your chart. Course coverage is updated as technologies evolve.

Include us early in your project. We can consult with you and give you guidance which will save you time and resources. To schedule an appointment at either the Bethesda or White Flint office for consultation and assistance, contact Janet Thot-Thompson, 492-0215.

IRM Managment Strategy

By Joyce Amenta, IRM

The new fiscal year brings an opportunity to set new goals for the Office of Information Resources Management (IRM) which we would like to share with you. First, and always, our continued commitment is to provide service to the Agency. For this year, that means IRM will focus on developing office-specific plans and costs for providing services to your office. Deliverables will be set and approved by your office, realistic service levels will be defined, and project schedules will be met by IRM. Specific end-user problems will be handled by the various helplines for LANS, SINET, NUDOCs, and the ITS or through IRM's central Helpline at 492-HELP. The IRM Liaison will continue, with greater emphasis, to work with your office to identify and resolve service problems and changes in priorities to ensure that IRM's efforts are being properly directed. Our major project for the coming year is to contract for the replacement of the IBM 5520 word processing system with PCs and networks, and begin the three year conversion effort.

Our second objective for FY 1990, is to further open communications with users. Last year we held a briefing on the IRM agenda, which was well received. We will repeat that again

this year, and add a briefing to the SES Conference, give greater detail on IRM programs in the NRC Five-Year Plan, publish quarterly updates to Office Plans for IRM (including costs). This year we also plan to conduct a user survey to get your feedback directly on how we are doing.

Finally, IRM is tightening its operations even further. We are implementing a cost accounting system for most IRM services, which will allow us to determine where we are spending our resources by office this year. Next year, this information will become the basis for the office plans and IRM budget. We have already implemented projects to reduce the costs of NUDOCs, timesharing, Federal Telecommunications System (FTS) and distribution. A result of our internal control review this year, we highlighted other areas demanding greater control such as microcomputers, procurements, project tracking, and systems changes.

Through these initiatives, we hope to continue to provide a service that, in the words of one user, is "efficient, helpful, effective and pleasant to boot."

Question:

What acts like a hard disk, but is more than a hard disk?

The Iomega Corporation removable cartridge disk subsystem, more commonly known as the Bernoulli Box, consists of one or two drives with an independent power supply and host adapter board. Iomega states that the "cartridge-based disk subsystem is called the Bernoulli Box because it takes advantage of an aerodynamic principle discovered by Daniel Bernoulli, an 18th century Swiss mathematician." Utilizing the Bernoulli principle allows the subsystem to be virtually "crash proof" since the heads do not fall on the disk when power is suddenly lost, or when the drive system is jarred. The cartridges are rugged, highly reliable and easily transportable. They can be shipped anywhere without danger of data loss (however, it is still sensitive to magnetic fields). The Bernoulli Box combines the performance standards of quality hard disks with the convenience of removable floppy disks.

Bernoulli boxes have been in use at the NRC for several years. There are a variety of reasons for needing one and each user has different applications. To find out more about them, Information Technology Services Branch (ITSB) interviewed selected users from various Offices.

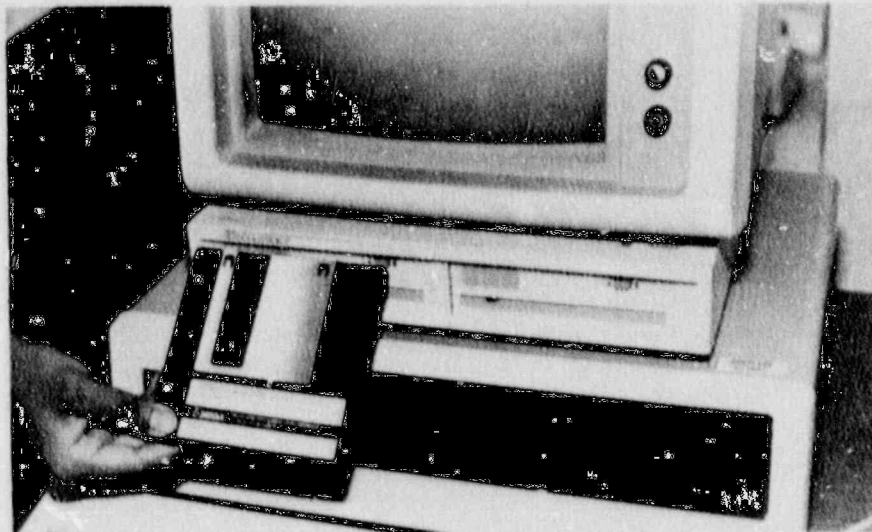
ITSB: There are various sizes and styles of Bernoulli boxes. Can you describe them?

Lance Lessler, NMSS: In the Division of Safeguards and Transportation we first acquired the 8-inch size system and later moved into the 5.25-inch format. Both are available in 20-megabyte capacities and the smaller format is now also available in 44-megabytes per cartridge. We appreciate having dual-cartridge drives because it is so fast and easy to back up our cartridges. The added cost of a second drive is well-justified since the second drive eliminates the need for a tape backup system. Bernoulli box systems have proven to be very reliable for us. We have never

Answer:

A BERNOULLI BOX

By Emily Robinson, IRM



A user, inserting the cartridge-based disk into the Bernoulli Box.

experienced a drive failure in over three years of operation. Only one cartridge ever malfunctioned, but this is to be expected because the floppy type disks enclosed within the cartridges are considered normal replacement items.

ITSB: What do you consider the most important feature?

Lance Lessler, NMSS: The most useful feature is that it provides the user with an 'infinite' amount of storage capacity, limited only by the number of cartridges you can afford.

ITSB: In what way does the Bernoulli box assist in your work mission?

Lance Lessler, NMSS: The removable cartridges are essential to our being able to process Safeguards information, since we need to be able to lock up the data when it is not in use. I have been involved in developing a number of different applications using the Clipper compiler-database language. With the Bernoulli box, I can devote an entire cartridge to one application and simply switch to another to run a different application, never having to worry about running out of disk space.

Dick Gramann, NMSS: In addition to Lance's comments, I find the portability feature useful. I use a particular file daily that, at a minimum, exceeds 1.5 megabytes. It is a directory containing Reporting Identification Symbols and other information on some 1600 licensees. This file along with other files are sent to me by my contractor, who is equipped with the same type of Bernoulli box. I use my Bernoulli box in managing the vast files of the Nuclear Materials Management and Safeguards System.

ITSB: Here are some other Bernoulli box fans! What feature makes you so enthusiastic?

Lindy McDonald, OGC: The transcripts we receive from the Licensing Board are enormous documents, so the Bernoulli box is a very good tool to use for storage and retrieval. I read and review these documents using Bluefish or Zyindex.

Ann Thomas, EDO: When I am finished producing a regular issue of NR&C, I have only 2 or 3 percent of my hard disk remaining unused. This does not allow for eventual addition of graphics capability and maybe even the capability for handling photo-

graphs. So increasing the working disk capacity is one feature I need, and the Bernoulli box provides it! Just as important, however, is the ability to quickly store and retrieve backup documents. With the expanding size of NR&C, even without graphics, storage on a floppy is time consuming and awkward. I'll never forget the Monday morning I arrived at work to find that all the text for the next issue had disappeared. The Bernoulli box now gives me the capacity for the kind of separate, secure storage I need.

ITSB: Portability is an important feature in making Probability Risk Analysis (PRA) data available to NRR, RES and AEOD users. How does your branch use the Bernoulli box?

Steve Long, NRR: Currently we have loaded into our Bernoulli system four risk-related programs (IRRAS, SARA, PRISIM and ASP) and some databases, notably NUCLAAR and some plant-specific PRAs. The revised PRAs for NUREG-1150 will be loaded when they become available. Bill Johnston, on detail from Region I is using the IRRAS program to construct and evaluate an electrical system fault tree that will assist in prioritizing issues for planning inspections. Another use for the Bernoulli cartridge is envisioned when Jim Wing's multi-megabyte technical acronym database will be moved from the MV/8000 to the PC environment to enhance its availability to other Agency staff.

Dick Robinson, RES: When we originally got our dual-drive 20 megabyte (Mb) Bernoulli box we had several reasons. At that time our largest capacity computer was an XT with a 20 Mb hard disk. The PRISIM code alone takes up to 13 Mb for one plant, and SARA and IRRAS each require around 5 Mb with data. Thus, we desperately needed the extra storage capacity. A Bernoulli disk is a very efficient way of transferring data and code revisions from the contractor, since PRISIM could require up to approximately 30 regular PC floppies. With much of our work in developmental stages, the ability to easily and quickly remove a large complex code

from the PC protects against accidental defilement by other users.

ITSB: Several references to the security feature of the Bernoulli box have been made. Are there other security needs?

Ray Brady, ADM: I find the Bernoulli box system the best solution for handling data for the NRC Drug Testing Program. It allows me to maintain the Drug Testing records in a secure manner during non-use intervals.

Ray Hsu, NRR: In the Safeguards Branch, a Bernoulli box was installed to handle the Safeguards information of the Regulatory Effectiveness Review (RER). This includes the 18 final reports since July 1987 and the 312 RER-related findings. All this information is stored on one 20 Mb cartridge and backed up on another. Any RER staff member who needs to prepare a report or retrieve an old report or a finding, can follow normal PC operational procedures to complete his job by considering the Bernoulli system as an alternate hard disk. This new system eventually will provide more than 100 times the capability of the old system for our work. Equally important is the fact that it gives us an

easily protected, storage and retrieval system for our sensitive information.

ITSB: Backup of Agency files is important in terms of work efficiency and data preservation. Who has a success story?

Thalia Stevenson, OC: In the Division of Accounting and Finance, we use our Bernoulli box to back up daily files, a most important function for protection of data from power surges and blackouts.

Steve Long, NRR: We really reaped the benefit of our Bernoulli box recently, when our PC hard disk failed. Because it is so convenient for backup of hard disks, our branch has done backups regularly. Our hard disk was replaced and we experienced no data or program losses.

ITSB: The Bernoulli Box is not for everyone. The cost varies from \$1000 to \$1800, depending on the size of the system and the cartridges cost in the \$50 to \$85 range for 20Mb cartridges. If your requirements are similar to those identified by users in this article, then Bernoulli box may be your answer to a fast, reliable system that can provide data security, portability and unlimited storage capacity.

Wizards in Computer History

"Always look for the easy way to do something" is the philosophy of Robert Noyce. This resulted in a career of developing inventions instead of pursuing pure semiconductor research. In July 1959, Noyce patented the semiconductor integrated circuit, better known as the "micro-chip". At the time he was a vice-president of Fairchild Semiconductor, but later resigned and formed his own firm, INTEL, which most computer users recognize as the leading producer of memory chips. Noyce became the spokesman for Silicon Valley industry in 1974. His statement about the future is as good now as it was when he made it, "We need to get away from the routine things that could be assigned to computer intelligence, and

that would free us to do things that humans can do, that computers can't do."

One night in 1820, Charles Babbage was drowsing over a table of logarithms at Cambridge, England. Someone asked him what he was dreaming about. Babbage replied, "I have been thinking that it may be possible to calculate all these tables by machinery." This grandfather of computer pioneers tried to build some mechanical devices but never imagined using electricity. Charles lived 75 years too soon for his creative inventions, but his concepts of punched card input and other features were right on mark when the 1940 computers were developed.

Videoconferencing

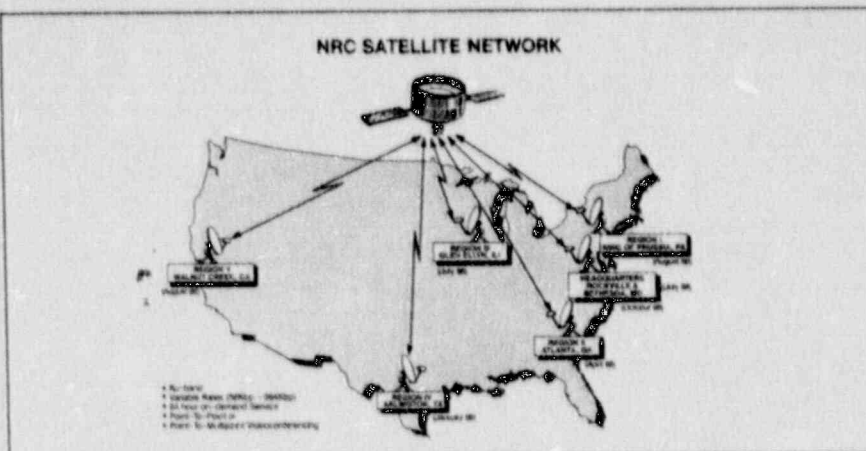
By Isaac Kirk, IRM

Over the last several months the Office of Information Resource Management (IRM) has been exploring the application of videoconferencing technology to various NRC activities. The project has proceeded fairly smoothly, allowing for the usual glitches that remind us all that Murphy's law is forever lurking beneath the surface. Initial testing involved a linkup between Headquarters and Region III. This was followed by a full-fledged Pilot Program and installing videoconferencing network to connect Headquarters and all five Regional Offices via satellite and to transmit live coverage of Commission meetings and other events to the Regions.

After several months' experience, IRM outlined the findings of the Pilot Program in a report to the EDO's office. Management response was positive. The videoconferencing capability was received as both an immediate resource and a tool of extraordinary potential, especially in the areas of training and for regular interchanges with the Regions. Inspection and enforcement applications seemed a particularly fertile area for future experimentation.

For the present, the satellite network is already bringing the Regions closer to Headquarters and to one another. All regular open Commission meetings related to plant-specific issues are broadcast to all the Regions; other events, such as Commission discussion of issues related to a particular licensed operation, are transmitted to the Regional office dealing with that licensee. Program offices are also in touch with the Regions via satellite, and they are finding that the mode is not only faster and more convenient, but that the savings both in staff travel time and in travel costs can be substantial.

Regional offices can set up videoconferences with one another, with no Headquarters involvement other than coordination of access to the network. The Agency's present network does



not allow for two-way interchange among more than two transmitting points (duplex videoconferencing), which other points on the network may observe (point-to-multipoint). However, soon it will be possible to arrange for multi-point conferencing permitting participation by up to eight sites, with each one able to view any other with the press of a button.

This level of many-to-many instantaneous exchange could have enormous impact on the frequency and effectiveness of communications between and among Headquarters and the Regions. The consolidation of NRC's once widely dispersed elements, now approaching completion the White Flint, might well be accompanied by an electronic consolidation of the entire agency's operations, including to the Resident Inspectors at licensed facilities.

A word about the compressed videoconferencing technology itself might be in order here. Compressed videoconferencing via satellite uses a digital transmission of video/audio signals (Ku-band) over long distances in wavelengths that lie between the AM and FM radio bands (closer to the FM spectrum). Video signals of a meeting or panel or individual speaker are beamed up to an orbiting satellite which then relays them to a receiving satellite dish at each Regional office. The communication can be "point-to-point" or "point-to-multipoint". The satellite communications equipment and assigned frequencies are provided by a private contractor who sells transmission services to various

customers, including government agencies. Fees are based on the duration of the transmission. NRC is a pioneer among Federal agencies in exploiting the potentials of compressed videoconferencing.

When they first appeared, videoconferencing networks were, not surprisingly, very expensive to install and operate. The recent introduction of "compressed video" technology has done much to bring costs down to affordable proportions. Because compressed video is a signal which captures the key elements of the video image in digital form, it greatly reduces the bandwidth required to transmit the image. This results in a similar reduction in the cost of the transmission service. The ability to integrate compressed videoconferencing into the NRC's microcomputer-based operations has generated a number of new opportunities to improve communications within Headquarters. An example is the integration of videoconferencing with the broadband network already in place at White Flint, so that important hearings or meetings can be carried to all elements of the Headquarters organization.

Advances come swiftly in this technology, and IRM is determined to stay on top of them and to explore any development of potential use to the NRC mission. Communication is essential to effective regulation. Videoconferencing is one way to ensure that NRC is employing the most effective and efficient means of communication available, today.

NUDOCS

NEWS

NUCLEAR DOCUMENTS
SYSTEM NEWSLETTER

File Codes Established For New NRC Advisory Committee And Review Groups

Recently two NRC review groups have been formed: Plutonium Air Transport/Shipping Cask Certification and the US/USSR Joint Coordinating Committee for Civilian Nuclear Reactor Safety. In addition, there is now a new advisory committee, Special Committee to Review the Severe Accident Risks Report (NUREG-1150). With the addition of the two review groups and the advisory committee, three new file codes have been established on NUDOCs to facilitate retrieving documentation relevant to these groups. To locate documents to or from one of these organizations, choose Search 10 (file level) from the NUDOCs Primary Search Input Menu. The file level is constructed of four fields. The first three fields are utilized when locating documents regarding these groups. The fourth field is a date which can be used to narrow the search.

To search for documents related to the Special Committee to Review the Severe Accident Risks Report, enter "PDR" in the first field of the file level. "ADVCM" should be input in the second field, and "NACSCRSA", the affiliation code for the committee, is entered in the third field. The completed query should look like this: "PDR ADVCM NACSCRSA".

Records pertaining to the Plutonium Air Transport/Shipping Cask Certification review group can also be found by using Search 10 and entering, "PDR REVGP NRGPUAIR". The US/USSR Joint Coordinating Committee for Civilian Nuclear Reactor Safety documentation can be located by entering "PDR REVGP NRGUSUSR".

These searches can be narrowed further by using the document date in the fourth field of the file level. The issue date of the document package is entered in the last six spaces of the fourth field in the YYMMDD format. The complete date can be input, or a portion of the date can be entered like this: YYMM__ or YY____.

Similar filing systems were established during the past year for the Advisory Committee on Nuclear Waste and the 3M Review Group. Documents relevant to these groups can be retrieved by the Search 10 and entering "PDR ADVCM NACNUCLE", or "PDR REVGP NRGTHMCO", respectfully.

FULL TEXT UPDATE

The January 1989 issue of the Title 10 of the Code of Federal Regulations (10CFR) is now on-line in full text form. The 10CFR was received from the Division of Freedom of Information & Publications Services, ADM, in electronic form and loaded into the NUDOCs full text data base. A specific 10CFR part can be located by searching within the Document Identification Number field and inputting "10CFRXXX". The XXX equals the part number zero filled to three digits.

Migration from INQUIRE of the full text Transitional Licensing Support System (TLSS) and the Congressional Correspondence System (CCS) into NUDOCs has been completed. Documents from the TLSS are categorized by "HLWR", and documents from CCS are categorized by "CCS" in the Other Document Identification Number field. CCS

contains full text for over 1,000 questions, answers, and selected correspondence, including congressional correspondence. As mentioned in past publications, full text is available in NUDOCs for LERs back to and including 1984, transcripts of ASLBP hearings on Seabrook, Information Notices from January 1987 to the present, and Generic Letters, Bulletins, and Regulatory Guides received since mid-November 1988.

Coming Soon !

A new course on the NUDOCs/AD will be offered in the ITS Training Lab this Winter.

Plan to Attend !

NUDOCS User Group to meet in November

Watch for the notice of date, location and time.

For information call
Mike Collins, IRM,
492-8044

SIGN ON WITH SINET

SINET Quality Assurance Report

The concept of shared data is intended to eliminate unnecessary duplication of effort in maintaining data bases for various NRC users. The implementation of the NRC shared data bases (SINET) includes specific assignments of organizational responsibility for data elements under its cognizance. Each data element is described in the SINET Data Dictionary, including such assignments as data steward, data creator and data entry organizations as well as listing the source of the data and the update frequency.

Since many NRC data systems were in existence prior to the establishment of SINET, in many cases direct electronic transfer of data was used to initially populate SINET.

Some reviews of data included in SINET (and also utilized in EXSIS) indicated that some incorrect or out-of-date information existed. Accordingly, a systematic review (quality assurance) of data was initiated.

IRM initial effort of quality assurance (QA) began with reviews in areas of their primary control. This included some of the data that also appears in the monthly publication commonly known as the Gray Book, NUREG 0020 and data from Licensee Event Reports (LERs).

The Gray Book is currently produced utilizing a separate data base and some other old NRC data bases. Work is proceeding towards using SINET to produce the Gray Book, but a special program will have to be prepared to accomplish this goal.

A list of the initial set of data elements reviewed follows:

Initial Criticality Date -
UNT-INIT-CRITY-DT
Date Unit First Generated Electricity -
UNT-FIRST-GEN-ELEC-DT
Commercial Operation Date -
UNT-CMRCL-OPER-DT
Nameplate Rating -
UNT-NAMEPLATE-RTG
Design Electric Rating -
UNT-DESIGN-ELEC-RTG
Gross Maximum Dependable
Capacity - UNT-GROSS-MAX-
DEPEND-CAP
Net Maximum Dependable Capacity -
UNT-NET-MAX-DEPEND-CAP
Licensed Thermal Power -
UNT-LICD-THERML-POWER

An error rate of about 10% was found and the errors were corrected. While some of the data elements typically do not change after being established, some change periodically and others occasionally. For example, several licensees have changed the date of commercial operation many months after first reporting it and the maximum dependable capacities can be changed annually. Even the design electric rating can change, when substantial modifications are made.

Licensee Event Reports (LERs) were initially transferred to SINET utilizing a data tape from the Oak Ridge National Laboratory LER System. Data was later entered manually as LERs were received. SINET contains information from the first page of the LER, including the abstract of the event. NUDOCs contains the entire text of the LER.

To assure that all LERs received by NRC were included in SINET and could be fully utilized the following steps were taken:

1. Lists of LERs in NUDOCs, Oak Ridge and SINET were prepared and compared to identify missing LERs.
2. When missing LERs were identified, they were obtained and entered into the system.
3. When gaps in LER numbers were encountered, hard copy files in AEOD were utilized to obtain copies for data entry.

Approximately 1900 LERs were found on current NUDOCs and Oak Ridge LER System listings that were not contained in SINET. This discrepancy was caused primarily by a time gap between the period covered by the original Oak Ridge tape and the start of manual data entry. The bulk of the missing LERs were obtained from AEOD files and were entered in SINET. About 300 of the original LERs transferred from Oak Ridge were found to have one or more data fields missing, such as the abstract, the NUDOCs accession number, etc. The necessary data has been added for most of these LERs.

About 300 LERs remain to be located and entered into SINET.

4. Incomplete or missing fields in SINET were also corrected, such as adding the NUDOCs accession number.

For the bulk of the remaining QA activities, IRM believes that an inter-office working group will be most effective. This group, led by IRM, will work on both establishing QA procedures and a schedule for ongoing activities. A formal QA program plan prepared by IRM and concurred in by the cognizant offices will describe the steps to be followed.

cont. on page 11

ITS

TRAINING LAB NEWS

What's New At The Training Lab

By Kathy Beckman

Empty Class Seats Persist Despite Heavy Demand

Recently, students coming for ITS Lab classes have commented, "I thought you said all the classes were full. But today, in my WordPerfect class, there are empty seats."

Unfortunately, this seeming paradox is a reality. Registrations for many ITS Lab classes continue to outpace available spaces, yet training classes do not always run at full capacity.

Unlike the airlines, the ITS Lab does not overbook class seats. Instead, each student is registered for an individual workstation for the class date. That student's place is held until the day of class—unless we hear from the student or the student's office.

You can help us eliminate the problem of empty class seats. Just take the following simple steps:

1. Call 492-4903 (24-hour message line) AS SOON AS you know you

will be unable to attend a scheduled class. The sooner you call, the better chance we have to fill your vacant class seat from the waiting list.

2. Find a substitute from your office when you cannot attend.
3. You will receive a class reminder card one week prior to your training date. Call 492-4903 IMMEDIATELY to confirm your attendance.

TIP FOR THOSE ON A WAITING LIST:

Call the Lab staff at 492-4744 periodically. We may have an opening for you.

REMEMBER! Each class seat filled means a shorter wait for everyone!

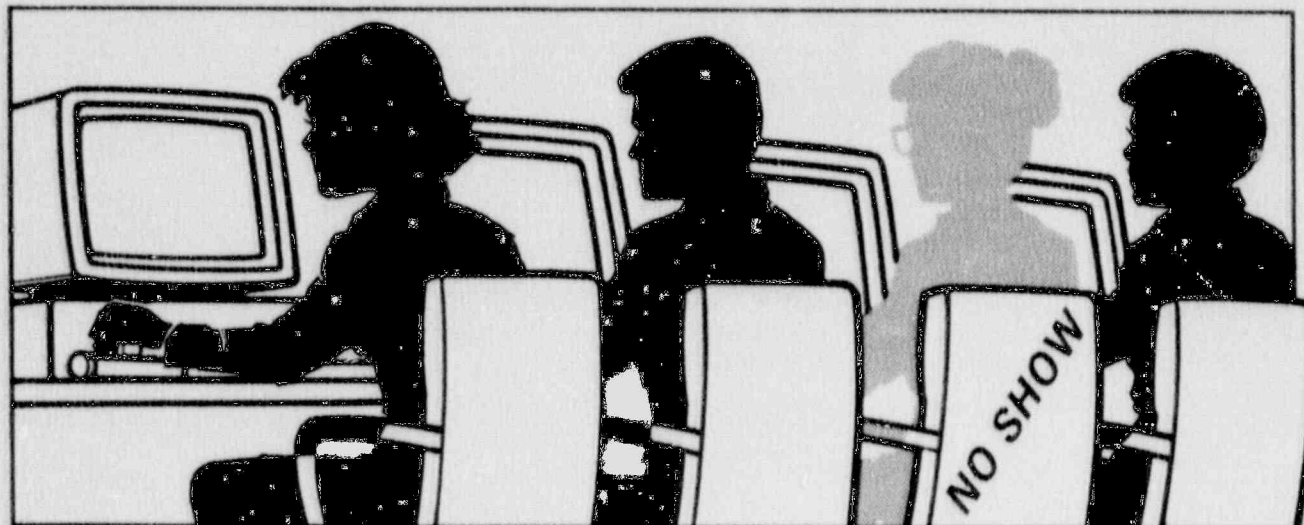
Meet the ITS Lab's New Training Coordinator

Eduardo Cunningham recently joined the staff as the Lab's Training Coordinator. Mr. Cunningham replaces

David Hennessey, who took a position as Communications Specialist with the U.S. Navy's David Taylor Research Station in Great Falls, Maryland.

Mr. Cunningham brings 12 years' experience in training systems to his new position. Most recently, he served as Senior Technical Specialist at the Walter Reed Army Medical Center. There, he programmed and maintained student tracking systems for training activities at Walter Reed, was a hardware troubleshooter for a microcomputer training laboratory, and established and maintained protocols for a 21-port network of Control Data Corporation's PLATO on-line courseware.

Mr. Cunningham's major responsibilities as Training Coordinator include: maintaining and upgrading the Lab's automated student registration system, coordinating the Lab's telecommunications links for SINET and NUOCS training, tracking the Lab's extensive inventory of hardware/software/telecommunications equipment, and serving as technical contact for on-site regional training.



IFMIS Travels Around Payroll

By Helen Irving, OC

In October 1988, the Division of Accounting and Finance (DAF), Office of the Controller (OC), implemented the General Accounting portion of the Integrated Financial Management Information System (IFMIS). The Travel portion of IFMIS first became operational in October 1986. With the completion of this project, all major accounting systems, - i.e., Payroll, Travel, and General Accounting, - are now processed inhouse on two Data General MV/15000 computers located in MNBB.

IFMIS is an on-line system. It replaces an antiquated batch system inherited from the Atomic Energy Commission (AEC) in 1975. The AEC system was processed at the National Institute of Health (NIH) computer facility.

All program specifications, programming, testing, and documentation for General Accounting were done by DAF accounting and programming staff members and a contract programmer. Work on the project started in November 1987 and was completed in September 1988. General Accounting has been operating smoothly, and any "bugs" encountered were resolved relatively easily without any major disruptions in processing.

The new General Accounting system will enable DAF to operate more efficiently and to provide more accurate and timely information to NRC offices and to outside agencies to which NRC must report. Some of

the benefits and features of the system include:

- The incorporation of the Standard Government General Ledger that all Federal agencies were mandated to install to ensure consistent accounting data throughout the Federal Government;

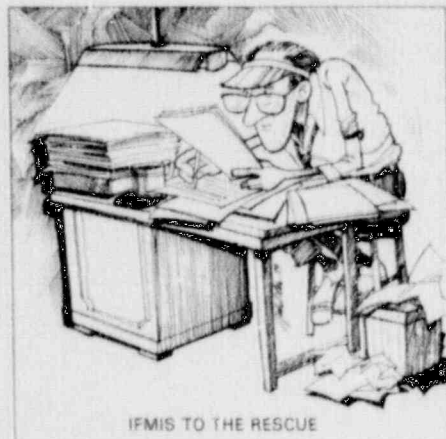
- The elimination of several manual ledgers, files, and subsystems;

Numerous edits to ensure that only valid data is entered into the system;

- Balancing before update within each program to verify that totals are correct;
- On-line update and query;
- Automated processing of payments to commercial vendors;
- An automated interface with the Travel portion of IFMIS;
- The capability to store transactions for future accounting periods;
- Cross balancing among reports;
- Immediate turnaround on reports which are printed on a 2,000 line-per-minute printer located in DAF.

Upgrades being developed include those that will allow further integration of Division of Budget and Analysis (DBA) processing (which will allow DBA to discontinue use of the NIH computer facility) and expansion of the capability to store future accounting transactions. In addition, DAF will continue to explore ways to use the system to improve internal operations and to better provide NRC offices with the information needed to monitor and manage the Agency's resources.

If you have any questions about the system, call Helen Irving on 492-9843.



Artificial Intelligence

The Artificial Intelligence User Group (AIUG) is continuing to build an expert system as a mechanism to learn about Artificial Intelligence (AI) and expert systems and to consider how AI could be utilized at the NRC. A smaller group of approximately ten people has been meeting about every two weeks on this effort. The group is attempting to develop a system, for use by others, which will be of broad interest and which can be developed in evolutionary steps. Initially, the project began as a simple system to process local travel. Further effort is planned to incrementally develop a complete system supporting local, domestic, and foreign travel including multiple per diem rates, rental cars, and other travel considerations.

Earlier this year, the group surveyed several possible development environments and methods, with each member of the group using a different approach to attempt to build a simple expert system for local travel only. The group discussed many of the successes and difficulties. As a result of these discussions and because many members are relatively new to AI, the group decided to select one approach and to work on the project together. During the summer, the group reviewed some of the basics of AI, such as structuring the overall system by deciding on final goals and developing concepts and rules that will lead to the goals. The group has completed the initial development of the rule base and is in the process of testing and debugging the local travel portion.

Come and find out more about Artificial Intelligence! Meetings are being held about every two weeks in the White Flint Building. Those interested should contact Bill Kennedy on 492-1723 or mail stop OWFN 17G19.

Federal Register Notices and Comments Tracking System

Dan Schwartz, IRM

The Regulatory Publications Branch (RPB) in the Division of Freedom of Information and Publications Services, ADM, has the delegated responsibility for transmitting to the Federal Register for publication documents signed by the Executive Director for Operations (EDO) and Offices reporting to the EDO. RPB is also responsible for accepting and docketing any comments received in response to the non-rulemaking notices it sends to the Federal Register for publication. Control of published notices and any public comments received in response to them is an important component of the licensing and license amendment process.

A new tool for ADM— A computerized tracking system

The RPB responds to questions from the staff and the public on the status of matters that have been the subject of notices in the Federal Register. RPB use to track notices using the IBM 5520 file system. However, as the volume of notices grew this system became unwieldy. In addition, this system provided only a limited capability to handle queries, and produce reports, and it did not allow multiple access. To meet its growing needs, RPB formally asked the Information Systems Branch, IRM, to develop a system that could accommodate multiple online users, provide superior query capability, and have backup and recovery features.

I was assigned to develop this new system. The system is called the "Federal Register Notices and Comments Tracking System" (FRNC), system number 3041. After researching possible hardware/software platforms, I decided to develop the system using IBM's

Database 2 (DB2). DB2 is a relational database management system that runs on IBM 370/3090s at the National Institutes of Health (NIH). DB2 was selected because of its excellent query/reporting capability, security features, backup/recovery features, user-friendliness, and ease of implementation. Additionally, DB2 applications are easy to modify for enhancing applications and interfacing with one another. Bill Carrier, IRM, developed a PC-to-host interface that allows the user transparent access to the computer system at NIH. Bill also created menus that permit the user fast and easy connection/disconnection between the PC and host as well as providing 3270 (full screen) capability.

The system provides menu screens that guide the user to process screens. The process screens permit data to be added, modified, displayed, or queried (searched). As stated earlier, the heart of the system is its powerful (and easy-to-use) query capabilities. The standard queries are very straight forward. The user selects the desired query from a menu screen; then another screen automatically appears to prompt for search values. Depending on the type of query, the user may supply an exact value, a range of values, or a partial value (called a generic search). The user may search on a pre-defined field(s) or dynamically tell the system which field(s) to search on. Response takes just a few seconds, and the query "hit" screen provides nicely formatted results. A reports selection screen allows the user to produce a pre-programmed report. The user enters the number corresponding to the desired report. A batch job is executed to produce the reports.

Question about this system may be directed to Mike Lesar, ADM, on 492-7758 or Dan Schwartz, IRM, on 492-7065.

SINET

CONTINUED FROM PAGE 8

IRM will continue to be a focal point for QA activities. At present the SINET Power Reactor book has a sheet where users can mark needed corrections or comments and send them to IRM. Work has started on an on-line screen that would provide a similar function.

Probabilistic Risk Assessment (PRA) Data Availability In SI- NET

Probabilistic Risk Assessment (PRA) data has recently become available as an integrated part of the SINET. The initial data available under SINET consists of the five most recently completed NRC sponsored studies:

- (1) Grand Gulf 1
- (2) Peach Bottom 2
- (3) Sequoyah 1
- (4) Surry 1
- (5) Zion 1

Data for other units will become available over the next several months.

The PRA System is designed to provide a central repository of summary level information on all PRAs conducted for NRC-monitored facilities. The system provides information on the status of each PRA, core damage frequency (CDF) estimates, event sequence information, and references to detail documents.

Current users of the Shared Information Access System (also called SINET QUERY) can view the PRA data by selecting option 7 from the main menu or produce PRA reports by selecting option 6 from the main menu.

Those who have questions or comments on the use of the PRA System should contact Wil Madison on 492-7781 or mail stop MNBB 7201.

The LAN of the Unknown: IBM 5520 Replacement

By Beth DeWoody, IRM

Have you heard? NRC is going to replace the IBM 5520.

What other shared system could possibly produce the same amount of text, transmit it 3,000 miles away, and have it end up on a fully compatible system in an identical format?

Why does NRC have to replace something that still works? Because technology has advanced, the personal computer (PC) has changed NRC's business, maintenance costs for old systems are high, and NRC must keep up.

PCs weren't around when HQ installed the first communicating text-editing systems (1975-78), such as Communicating Magcard and Office System/6. Some power plant sites were still using manual typewriters, and some Regions were using systems that weren't compatible with HQ.

Our first 5520s were installed in 1981. Regions and HQ started speaking the same language, sharing the same files. Sites were upgraded to communicate with Regions, and everybody was happy.

NRC didn't install the first PCs until late 1982 (and only two were installed!), and it wasn't until 1984 that the PC world started to expand. Now we have over 1,600 PCs throughout HQ and Regions for about 3,200 employees — a 1:2 ratio. Some of our PCs are cabled to 5520s, some are already on LANs, but the majority are standalone.

Standalone PCs — one user, single printer, single modem, single data line. Costs are high for individual hardware and software. Standalones don't have the "shared logic" of a 5520 or other networked system; they use an ancient technology: SneakerNet — put on your tennis shoes, sneak down the hall with your floppy diskette in hand, and give the diskette to another PC user who needs your files.

What does this have to do with replacing the 5520?

The vendor started it: IBM stopped manufacturing the 5520 central processing unit (we have 19), the displays (we have 640), and the three types of printers (we have 120); they quit making Displaywriters (we have over 90); and they cancelled hardware upgrades for both. The NRC can still get maintenance on the old word processing systems, but it's becoming less and less cost-effective.

So what's NRC's solution? To continue to use our existing PCs and to replace the old shared-logic network system (5520) with a micro-based shared design: a Local Area Network (LAN). The 5520 Replacement is The Lan Plan. You'll be hearing a lot about it in months to come.

PCs are getting better and faster every day. They incorporate the old word processing equipment functions, they talk to other vendor devices, and they support NRC's changing text and data requirements. Standalone PCs can "become a LAN" with a minimum of hardware and software changes.

What's a LAN? A group of PCs and printers cabled together sharing the software and hardware of a PC that serves as a main system unit ("file server") — similar to the 5520, which is a group of displays and printers cabled together sharing the software and hardware on a main system unit.

The LAN Plan is the 5520 Replacement Plan. What does this mean to you if you're an engineer sharing spreadsheets with another office? What does this mean to you if you're a secretary/word processing operator who has to handle hundreds of text pages in a month and who usually has to retype spreadsheets and vugraphs because they weren't typed in anything compatible with your system?

What type of equipment are you going to have when your 5520 terminal or Displaywriter is taken away? Will you still be able to send a document to another HQ building or Region? Will your printouts be as clean and conform to NRC standards (and will you have to walk down the hall to a shared printer area)? Will you be able to use someone else's document without violating their sign-on password security when they're away from the office?

If you're sitting in front of a 5520 display or Displaywriter screen right now using documents from a main library or diskette, The LAN Plan will have you sitting in front of a PC monitor sharing WordPerfect files from a main directory. If you're a PC user with DisplayWrite files on a floppy diskette or hard drive, the LAN Plan will have you use a PC with WordPerfect files on a floppy diskette or hard drive.

If you're at a Site or Region using a PC or Displaywriter to dial up a 5520 for sending and receiving, The LAN Plan will have you at a Site or Region using a PC (networked or otherwise) to dial up a central LAN for sending and receiving. If you communicate your documents by filling out one menu with the recipient's 5520 node name and local address, The LAN Plan will have you fill out one menu with the recipient's LAN node name and network UserID.

If you're printing documents on a 5520 Impact, InkJet or Laser, The LAN Plan will have you printing on a PC printer that combines those three technologies with several times the speed. (Yes, you'll still walk down the hall to a shared printer area.)

A LAN has many of the same functions as your current environment: file transfer and convert, electronic mail, printing and administrative support systems, and word processing. A LAN has the additional capability

of using the PC brains and speed for data processing and communications that the 5520 doesn't support.

LANs are not new to NRC. A few have been installed in various administrative and program offices, and these testbeds are being evaluated, reworked, upgraded, and integrated into larger networks. The unknown factor comes into play when the 5520 is totally replaced.

Last Spring a group of NRC staff, composed of managers, system administrators, technical staff and secretaries, completed a hands-on evaluation of LAN hardware and software proposed to replace the 5520. They used a prototype LAN established in the Maryland National Bank Building. Each evaluator completed a survey at the end of the session, and the comments, suggestions, and problems were compiled, studied, and used in designing the replacement system.

So when does your 5520 or Displaywriter get disconnected?

The specific implementation schedule for 5520 Replacement has been determined in coordination with Office Directors and is being reworked to accommodate changes in NRC's organization.

You'll have training classes that introduce you to your LAN equipment prior to installation in your own office (a course is under development in the ITS Training Laboratory), and additional hands-on assistance will be provided during the first weeks of LAN operation. A PC will take the place of your 5520 display, and a shared PC printer will replace your shared 5520 printer. Other 5520 equipment will slowly be phased out or moved to a common-use location so that you as a new LAN user still have access to the old while learning the new.

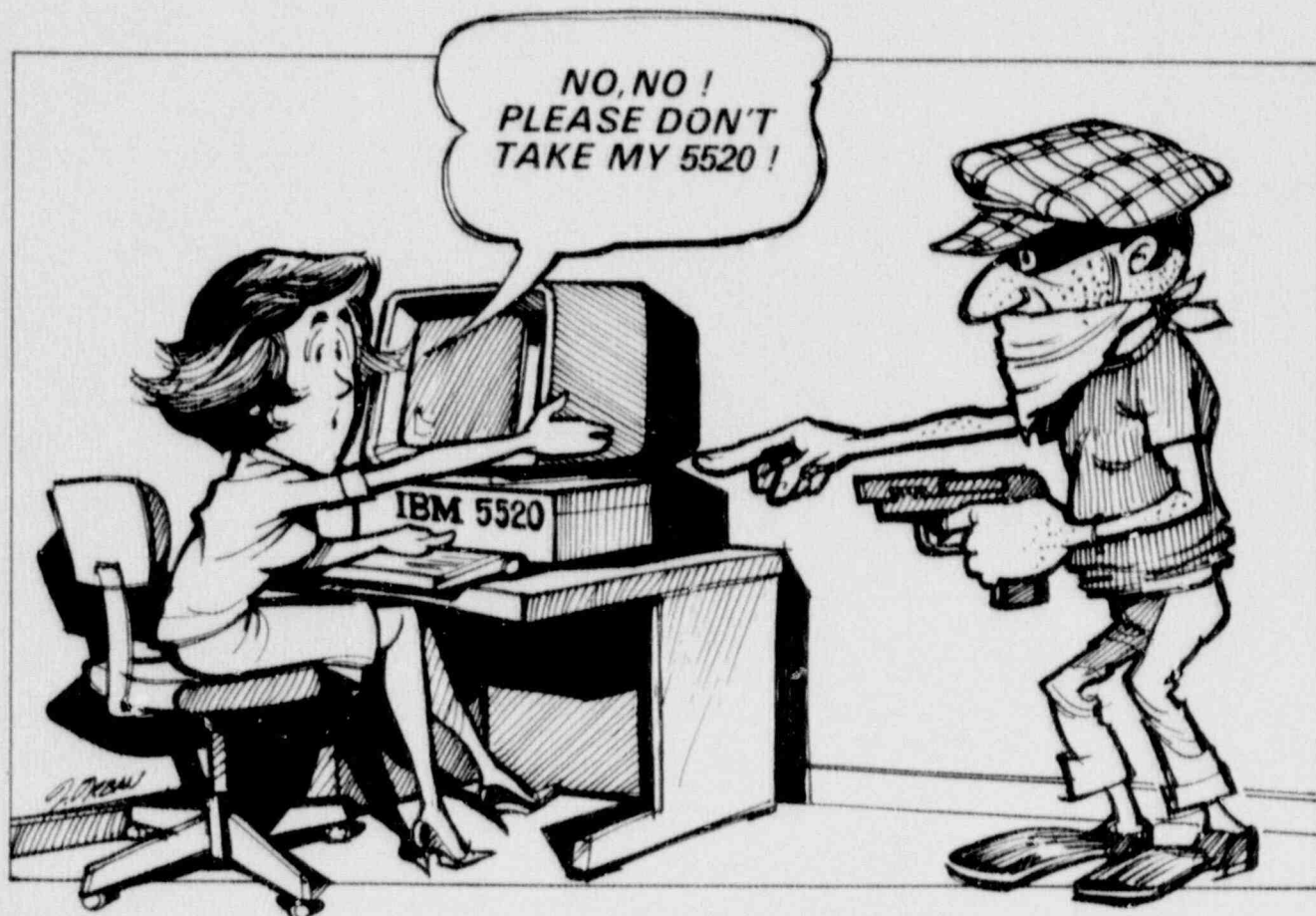
Your LAN will be fully operational when you and your coworkers are comfortable with the operations of the LAN features that overlap the 5520 and Displaywriter and when the 5520s and Displaywriters are removed and

the LAN becomes the primary source of text processing and electronic mail for your office.

What can you do to prepare for 5520 Replacement?

Check with your manager to find out when your 5520 is scheduled for replacement. If you've never used a PC, try to schedule some hands-on at a common-use PC cabled to the 5520 in your office (ask your 5520 Coordinator to show you how some basic file converts and transfers to/from DisplayWrite or WordPerfect). Then, close to the time of your 5520 replacement, sign up for the beginner's PC course in the ITS Lab (Introduction to DOS for Novices), and schedule training for both modules of WordPerfect 5.0 (that's probably what you'll be using on your LAN).

That's all you'll need to feel comfortable in The LAN World. That, and a little patience as NRC branches into the LAN of the unknown.



Editor's Note:

The following two articles were written by two employees who participated in the Agency's Rotational Assignment Program. The success of this program lies with the positive attitude of these employees and the good planning and training provided by management. These two employees were so enthusiastic and positive about their assignment and training that I asked them to share their experiences with our readers.

Rotational Assignment to IRM from NRR

By Maria Fato, NRR

My rotational assignment began in March of this year and ended in July. The focus of my assignment was understanding microcomputers and software by learning their use and relationship to NUDOCS.

My assignment was initiated after a discussion with my Division Director, Jack Roe, Division of Licensee Performance and Quality Evaluation (DL PQ) in which we discussed several positive steps I could take for career development. After that discussion, Mr. Roe explored the possibility of arranging a rotational assignment for me. This eventually led to my assignment with IRM.

During the first few weeks of my assignment, Mr. Roe arranged for a secretary from Region I to come to Headquarters on a rotational assignment to learn NRC operator licensing procedures. Mr. Roe also arranged for one other secretary in DL PQ to take a rotational assignment in the NRC Library.

At the beginning of my assignment, I met with then Branch Chief of the Information Technology Services Branch (ITSB), John Voglewede, and the Section Leader of the section to which I would be assigned, Karen VanDuser. They discussed with me what I would be doing in the months to come. A calendar was put in place for me that set out tasks for me to accomplish over the four-month period that I would be assigned to ITSB. A training program at the ITS Training Lab was arranged that included classes in PC DOS commands, dBASE III PLUS, and

CROSSTALK XVI, as well as an introductory class for NUDOCS.

My assignment required extensive field work with NRC staff at various locations in the Bethesda area. Approximately 10 percent of the assignment was spent with the IRM Document Control staff and the NUDOCS contractor, Statistica, in the Ford Building. Work with the Document Control System included observation of and participation in the Agency document accession process. Contacts were also developed with the IRM Telecommunication Branch.

I learned enough about NRC-supported microcomputer equipment and software sufficient to understand and follow procedures for the installation of assigned software (IBM DOS, CROSSTALK XVI, and SmartTerm 400) and to identify problems relating to the software. I also developed an understanding of automated data processing terms for effective communications with computer operators, programmers, analysts and representatives of user offices. I also learned about microcomputer operating systems and file structures and how to manage a data base.

In addition to all this, I improved my writing skills by preparing weekly status reports to ITSB management, by preparing and presenting materials relating to NUDOCS and my rotational assignment, and by writing this article.

My assignment has been an excellent learning experience, and I believe it will enable me to be a more valuable and effective employee for the NRC. I sincerely hope that, in the future, management will consider more opportunities of this type for NRC secretaries. I would also like to publicly thank everyone involved in my rotational assignment.

Entering The PC World

By Joan Hoffman, IRM

I began my 6-month rotational assignment in the Information Technology Services Branch, IRM, in April. I had previously worked for 8 years in the Division of High-Level Waste Management, NMSS, as Secretary.

My rotational assignment was focused on NRC's wordprocessing systems. Because, I was already highly skilled in the use of the IBM 5520 system, my training was concentrated on the PC and wordprocessing software. I learned DisplayWrite 3, DisplayWrite 4 and WordPerfect in depth. I compared the three programs in terms of compatibility with the 5520 and learned uploading and downloading procedures. I now have a thorough understanding of how to create documents with these products and how to transfer documents from one product to another.

I was also given the opportunity to assist with software installations. I learned enough so that I can install standard software on a microcomputer and I have good understanding of the hardware and software requirements for each system. I saw how the hardware impact the performance of the software products. I also gained an understanding of the subfunctions of IRM, such as whom to call when problems arise.

When I return to the Division of High-Level Waste Management at the end of my rotational assignment, I will be able to teach the Division staff document creation and revision techniques, format transferability, file conversion, and upload and download procedures, as well as being able to trouble-shoot some hardware and software problems at the local level.

I highly recommend that rotational assignments continue to be offered, and I thank all those responsible for making mine possible.

Microcomputer Communications In Region V

By Ed Frigillana, Region V

Microcomputers (PCs) are now an integral part of the program operations in Region V. From microcomputers accessing the Operator License Examination Question Bank at Idaho National Engineering Lab (INEL) to stand-alone systems for inspection planning, PCs have increased our efficiency and productivity in the Region. One significant application of the microcomputer is for communicating data and documents from many locations to Region V.

Applications of This Mode of Communications

Gathering information by PC communications has significantly improved the availability and timeliness of data thus aiding in better decision-making. PC to PC communications in the regions usually occurs between the resident site and the office. In the early days, the residents sent inspection reports and memorandums to the regional office which usually were rekeyed because the document had to be revised. We can now revise documents by sending a DisplayWrite file via CROSSTALK or DisplayComm which allows us to edit the document without retyping the entire document. This has contributed significantly to the efficiency and timeliness of issuing reports.

One of the major applications for which we use PC communications is the Region's inspection planning system. Along with the NRC Master Inspection Planning System (MIPS), Region V has an automated inspection planning system using dBASE III PLUS. Each site develops an inspection plan at the module level defining target completion dates, last inspection date, estimated and actual hours to complete the module, and lead inspector data. From this information, an inspection work schedule can be developed within the available work hours of an inspector. This scheduling tool is an important feature because it assists in setting resident/project inspector work priorities.



Another very important feature of the system is the collection and reporting of expended hours for the Regulatory Information Tracking System (RITS). This automated method of collecting staff expenditure data allows the site to electronically collect and communicate this information to the region. We then are able to edit the data to ensure the accuracy of the time expenditures and to evaluate time information at the module and site levels. For example, a resident inspector would record their time to a formatted file and send it to the region and then we input the information into the inspection system to edit the data. These procedures increase the credibility and accuracy of our data for purposes of licensee fees and management information reporting. In addition, we have very timely information on inspection status at each facility in the region.

How Kermit Leapfrogged to NIH

Another frequently used PC communication application is with the National Institute of Health's (NIH) mainframe using "Kermit." Kermit allows the Region to process our daily report in a more efficient and timely manner by allowing us to be in two places at the same time (the "pond" and the "lily pad.") What this means is we are able to upload a PC document to the mainframe using a communication package compatible to both the micro and mainframe computer. In the past, the daily report, a summary of

significant events occurring in the Region, was generated on a WYLBUR data set. This process was very inefficient because Wylbur is not a text processor. This obviously was very cumbersome when editing or revising the initial document, and sometimes it was easier to retype the entire document. With the Kermit communication interface program, we can use DisplayWrite or WordPerfect to generate the daily report and then save the document as an ASCII file. We then upload the document using Kermit to the mainframe for processing and distribution to the various headquarters program offices and other regions. We are currently exploring other applications for using Kermit to upload and download information from the NIH mainframe for management information reporting purposes.

These are just two very important applications that were made possible by microcomputer communications. Looking to the future, we are now developing a local area network in Region V as a replacement for the IBM 5520. We are exploring other applications for the network such as electronic mail, shared databases and opening gateways to other local area networks and also the NIH computer center. These possibilities and the new applications can further simplify our work activities in the future. PC communications, especially Kermit, allow us to reach out more efficiently from our individual lily pads and communicate to the great pond beyond.

ITS TECH NOTES

Not a Valid Worksheet File Message

There are several reasons why you might get this message:

1. The file that you are trying to retrieve into LOTUS 1-2-3 might be an ASCII file. To verify, this exit LOTUS and type the following command at the C: prompt or at the A: prompt, depending on the drive that you are using.

Type: **type** **FILENAME.WK1**
press the <ENTER> key,
or

Type: **type** **A:FILENAME.WK1**
press the <ENTER> key.

If it is an ASCII file you should be able to read it on the screen. If this is the case, you should use the /File Import command in LOTUS to bring the file into a worksheet. Then be sure to select /File save.

2. The file you are trying to retrieve might be a backup file created using the DOS **BACKUP** command. This command saves files in a compressed format unrecognizable to LOTUS 1-2-3. To restore the files to the original format you must use the DOS **RESTORE** command before retrieving the file into LOTUS 1-2-3.

The DOS **RESTORE** Command may require that the same DOS version and the same named subdirectory be used when attempting to restore a file. Because the Agency has various version of DOS (2.1 through 3.3) (**BACKUP** and **RESTORE**), we discourage using these two commands. Instead we suggest using the **COPY** command to backup and recover files.

Printing And Saving Blocks Of Text WORDPERFECT 5.0

WordPerfect 5.0 provides the capability to print and save blocks of text. For example, let us assume you have a one page document and you want to print out only a certain portion of the document or you want to save a block of text.

PRINTING - To print a block of text, you need to do the following:

1. Move the cursor to the beginning of the text that you want to print.
2. Press the **Block** key (**Alt-F4**). Then by using the cursor **Control** keys highlight the text that you wish to print.
3. Press the **Print** key (**Shift-F7**). You will be prompted to respond to the question: Print Block (Y/N)?. Answer Yes and the block will be printed.

SAVING - To save a block of text, you need to do the following:

1. Move the cursor to the beginning of the text you want to save.
2. Press the **Block** key (**Alt-F4**). Then by using the cursor **Control** keys highlight the text you wish to save.
3. Press the **Save** key (**F10**). You will be prompted to enter the block name. Type a name you wish and press the **Enter** key. The block of text you have just highlighted will be saved to a file. You may later retrieve the block by pressing the **Retrieve** key (**Shift-F10**) and entering the name of the file.

Common Problems Using Wordperfect 5.0

WordPerfect 5.0 checks to see if the printer is **POWERED ON**, and **ONLINE** before it begins to print. If you are getting an error message or the document is not printing properly, check the following:

1. Make sure the printer is **POWERED ON** and **ONLINE**.
2. The printer cable that connects the computer with the printer should be properly connected - tightly coupled to both the system unit and the printer.
3. The appropriate Printer Definition File for your printer should be selected. Although WordPerfect 5.0 will work with the Standard Printer Definition File, it is recommended that you select the specific Printer Definition file for your printer to use the full capabilities of your printer.

To select the appropriate Printer Definition File:

Press **SHIFT + F7**

Type **S** (Select Printer)

The **PRINT SELECT SCREEN** will appear displaying a list of available Printer Definitions. An Asterisk (*) beside a printer name denotes the currently selected printer. Use the **UP** or **DOWN** arrow keys to position the asterisk at the Printer Definition you wish to select. You may begin the selection by:

Pressing **1** or **S** (Select) key

Once you have selected the appropriate Printer Definition file, save your document, this attaches the Printer Definition with your document. You may now print your document.

ITS TECH NOTES

NOTE:

If your printer is not listed on the Print Select Screen, call the ITS Support Center at: 492-4160 or 492-0353.

Repeating An Operation Within WordPerfect 5.0

When you press the **Esc**, the WordPerfect prompts:

Repeat value = 8.

You can change the default of 8 to any number you wish. Then, with Repeat turned on, many operations that you can perform in WordPerfect will be repeated number of times specified.

The **Escape** key (**Esc**) within WordPerfect 5.0 provides the capability of shortening the operation for the user. For example, to move down 10 lines in your document without manually moving your cursor, you could do the following:

1. Press the **ESCAPE** key (**Esc**).
2. Type 10 (Don't press the **ENTER** Key).
3. Press the **DOWN ARROW** Key.

Another example might be to type a row of 73 dashes across the page.

1. Press the **ESCAPE** key (**Esc**).
2. Type 73. (Don't press the **ENTER** key)
3. Then type one dash.

This and other features of WordPerfect are supported by the ITS Support Center. If you have any questions, please call or visit us at Phillip P-808 or at White Flint 3C-12.

Available Handouts

The ITS Support Center currently has four handouts titled:

- (1) "MOVING DATA FROM dBASE III PLUS TO LOTUS 1-2-3";
- (2) "MICROCOMPUTER TUTORIALS AVAILABLE AT THE ITS SUPPORT CENTER";
- (3) "DATA CAPTURE of NUDOCS TEXT USING SMARTERM 400 and CROSSTALK XVI", and
- (4) "CONVERTING DOCUMENTS CREATED USING NRC SUPPORTED WORDPROCESSING SOFTWARE PACKAGES TO AND FROM REVISABLE-TEXT FORM".

These handouts are available by calling the ITS Support Center at 492-4160 or 492-0353. You may also stop by P-808 in the Phillips Building or room 3C12 in at OWEN.

DATA GENERAL DG TECH NOTES

If you have an account on the Data General (DG) MV/8000 located in the Phillips Building, it is recommended that you change your password now. The password should be changed at least once each year. Passwords may be changed at logon time in the following manner:

Start to logon to the DG from your terminal or PC by entering your user name. When the current password is requested, type your password but do not press the **ENTER**, **NEWLINE**, or **CARRIAGE RETURN** key. Press the **ERASE PAGE** key on DATA General terminals or the **CRTL-L** combination on other terminals and/or PCs. The system will request that a new password be entered. Type your new password (it will not echo on your screen) and press **ENTER**, **NEWLINE** or **CARRIAGE RETURN** key. A second request for the new

password will appear. Enter the new password for verification. If the passwords entered are equal the new password is accepted. If the passwords entered are not equal the old password is kept and the logon continues.

The failure to type the new password correctly the second time prohibits the change to an unknown password. The user needs only to logoff and start over, taking care to enter the new password correctly.

New Reference Material In The ITS Support Center

Listed below are new books available for review in the ITS Reference Library located in the Phillips Building, Room P-808.

These books and many other are for reference only. In addition, there are many current microcomputer magazines and periodicals. If a particular article is of interest it may be copied. A xerox machine is located in the ITS Support Center. Stop by and browse!

New Books:

Using **WORDPERFECT 5**
WordPerfect 5 Desktop Publishing in Style
Handbook of **MIS MANAGEMENT** (2nd Edition)
MICROCOMPUTER LANs: NETWORK DESIGN AND IMPLEMENTATION
MANAGERS, MICROS AND MAINFRAMES: Integrating Systems for End-users
WordPerfect Tips, Tricks, and Traps (2nd Edition)
Lotus 1-2-3 Tips and Tricks
dBase III Plus Handbook (2nd Edition)
The Best Book of: WordPerfect version 5.0

ITS TECH NOTES

Getting Your Printouts From NRC's Computer Centers

Computer printouts for Headquarters mainframe computer users may be sent to the Phillips Computer Center or to the White Flint Computer Center. Both Centers have a Computer Services Counter where users may pick up their outputs. The Phillips Computer Services Counter is located room P-636 in the Phillips Building, and the White Flint Computer Services Counter is located room 2G18 in White Flint. Both centers have operators to assist users. The Phillips Center is open from 6:30 a.m. to 5:00 p.m. and the White Flint Computer Center is open from 6:00 a.m. to 7:00 p.m. The Phillips Computer Center operators may be reached on 492-7713; the White Flint Computer Center operators may be reached on 492-0885.

The guidelines below have been prepared to assist users in sending material to the appropriate Computer Center and to help them locate their printouts (or tapes) in the appropriate bin:

DG MV/8000 Printouts

Printouts from the DG MV/8000 are printed only in the Phillips Computer Center and are filed in the DG-labeled bins at the Phillips Computer Services Counter. However, users may have printouts from the MV/8000 mailed to them by using the **DEST=** option on the **QPRINT** command.

EXAMPLE: **QPRINT DEST**
=mailstop filename

NIH Printouts

Printouts from NIH may be printed in either the Phillips or White Flint Computer Center. The printouts are

filed in labeled bins at the Phillips and White Flint Computer Services Counter.

To get NIH outputs at the Phillips Computer Center, users should route printouts to Remote 14 or specify NIH Box 720. To get printout at the White Flint Computer Center, users should send outputs to Remote 276 or specify NIH Box 271.

NIH printouts are filed in the bins by the first letter of the users' name or ID. We have found that sometimes our users have difficulty in finding the correct bins for batch job outputs. Hopefully the following examples will clarify our procedures:

EXAMPLE: **//ABDREPT JOB**
(WDC1,701,C), 'Z. JONES'
/*TITLE DAILY REPORT

The printout will be filed under Z.

Please note that if no user's name is given and a title name is used (**/*TITLE** Statement) in the job, the given title name is printed as the user's name in the header and the trailer pages of the output. The computer operator will file the job in the bin under the first letter of that name.

EXAMPLE: **//ABDREPT JOB**
(WDC1,701,C)
/*TITLE DAILY REPORT

The output will be filed under D.

If both the user's name and the title are left out of the job, the printout will be filed under the first letter of the job name (i.e., the first letter of the user's initials).

EXAMPLE: **//ABDREPT JOB**
(WDC1,701,C)

The printout will be filed under A.

INEL Printouts

INEL printouts may be sent to the White Flint Computer Center only by a command from the CYBER 830 computer by using the **ROUTE** command.

EXAMPLE: **ROUTE,filename,DC-PR,UN=NRC,UJN=userid.**

The printouts are filed in the bins by the first letter of the User ID. Outputs from the CRAY are more complicated, depending on whether a batch job is from the CYBER or directly from the CRAY. Users may call 492-3490 for assistance in directing outputs from the CRAY.

ORNL Printouts

ORNL outputs may only be directed to the WFN Computer Center by a **DISPOSE** command from the CRAY computer.

EXAMPLE: **dispose dn=filename,**
text='node=nk256,rm=rm025'

Printouts are filed in the bins by the first letter of the user's name. Users may call 492-3490 for assistance in directing printouts from ORNL.

IBM 9370 Printouts

Printouts from the IBM 9370 may be printed in a number of locations. Users may select a printer from the "Choose a Printer" menu on the IBM 9370. They may choose to have their jobs printed on either a local laser-jet printer or on a high-speed laser-jet printer located in the White Flint Computer Center. Outputs may be picked up at whatever location the user chooses. For assistance in directing outputs from the IBM 9370, call 492-0256.

ITS TECH NOTES

INEL TECHNOTE

The INEL Computer Services announces that INEL has established a connection with National Science Foundation Network (NSFnet), a nationwide network that links many computer sites together and allows Email and file transfers. To register for NSFnet fill out NRC Form 380 and specify INEL NSFnet. Special forms will be sent to you.

Renewal Reminder

INEL Computer Registration sends each user renewal forms at least a month before your identification expires. Expiration dates vary by user initials so your renewal dates is unique. Please sign and return your forms ASAP when you receive them. If you do not receive them shortly before your expiration date (the date is

displayed every time you log on) please call Sharon Root, 492-4974.

CRAY Upgrades

EG&G advises users to set per process limits (1m and 1t) along with request limits (1M and 1T). The request parameters set the maximum cpu-time (1T) and memory (1M) for a NQS request (job). The per process parameters set maximum cpu-time (1t) and memory (1m) for each given process within the request. The request limit should be 5% larger than the per process time limit to allow for signal handling.

The default queue has been abolished to require users to specify these limits on each job, which results in more efficient job scheduling. The good news is that the additional memory (12 million

words) installed in late October provides an increased number of NQS queues and allows larger memory limits. For exact numbers and queue structures, call INEL Scientific User Services, (FTS) 583-9440.

Bourne Shell "IF" Tests

Users are advised to avoid parentheses when using Bourne Shell "IF" constructs. This is because the use of parentheses creates (forks) a new process which doubles the memory used, increases the CPU-time consumed and increases the wall-clock time.

Example-Instead of writing:

```
if(test var = 0)
```

Write:

```
if test var = 0
```

NUCLEAR REGULATORY COMMISSION

ITS SUPPORT CENTER: FACILITIES

Locations:

Phillips Building, Room P-808 One White Flint North, 3C-12
7920 Norfolk Avenue, 11555 Rockville Pike,
Bethesda, MD 20814 Rockville, MD 20852

Phone:
(FIS) or (301)492-4160 (FIS) or (301)492-0353

Center Hours:

7:30 a.m. - 4:15 p.m. M-F

Services:

User Assistance (Telephone & Walk-in), Equipment and Software for Trial Use, Demonstrations, Technical Library, Tours plus Computer/Video-based Tutorials. Support Center Project Manager, Karen VanDuser; AMCI Project Manager, Derrick Schreiner.

TRAINING LABORATORY FACILITY

Location: 3rd Floor Woodmont Building
8120 Woodmont Avenue,
Bethesda, MD 20814

Phone: (FIS) or (301)492-4744 Mailstop: W-306

Laboratory Hours: 7:30 a.m. - 4:30 p.m. M-F

Class Hours: 8:30 a.m. - 3:30 p.m.

Services:

Three classrooms for formal ADP training including one equipped with eight IBM XT's and one with eight IBM PCs with Hardcards. "Hands-on" instruction in the use of microcomputers and timesharing systems.

Note: The Training Laboratory is operated by the Graduate School, USDA under contract and managed by the Office of Personnel, to provide training in end-user computing for the NRC staff. Technical guidance is provided by IRM. NRC Project Manager, Carolyn Bassin; GS/USDA Training Manager, Kathy Beckman.

NRC END-USER COMPUTING SERVICES DIRECTORY

Hardware Acquisition/Upgrade/Relocation and Software Acquisition/Upgrade: Dawn Oliver, P-622, 492-8219

Hardware Installation and Maintenance:

Microcomputers: Karen McEllyea, P-626B, 492-8906
Word processors: Beth DeWoody, P-622, 492-4832
Other ADP Equipment: Charles Johnson, P-622, 492-8311

Computer Room: Phillips 492-7713
White Flint 492-0885

Computer Security: Louis Grosman, P-612, 492-5019

Data Communications - Modems and Data Lines:
Brian Brownell, MNBB-8703 492-7927

Timesharing Access/IDs: Mike King, P-612, 492-4974

PC & NIH User Support:

ITS Support Center, Phillips Bldg., P-808, 492-4160
One White Flint North, 3C-12, 492-0353

Data General and INEL User Support:

Pat Bell, 3C-16, 492-3491
Emily Robinson, 3C-14, 492-3490

SINET Hotline: 492-4222

NUDOCS Hotline: 492-8603

Data General Systems Problems:

Judy Seeherman, P-612, 492-9687

IBM PROFS/E-Mail Support: Sharon Root, P-612, 492-4093

Electronic Records Support: Brenda Shelton, P-530, 492-8132

Graphics Support: Janet Thot-Thompson, 2G-40, 492-0215

Commercial Database Support: Eileen Chen, P-160, 492-8501

Scientific Code Distribution - NESC: Pat Bell, 3C-16, 492-3491

Shared Information Network (SINET) Development:
Fran Goldberg, MNBB-7602, 492-4978

Systems Development and Modification:

Bill Usilton, P-700, 492-9739

Operations Center: Joe Himes, MNBB-3111, 492-9003

Scheduling for FIS Training Laboratory
Kathy Beckman, W-306, 492-4744