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OFFICE OF THE INSPECTOR GENERAL

U.S. NUCLEAR REGULATORY COMMISSION

Review of Electronic Publishing and
Graphics Services Performed in NRC

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NOVEMBER 1990

OIG 89A-27

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REVIEW OF ELECTRONIC PUBLISHING AND GRAPHICS SERVICES

PERFORMED IN NRC

INTRODUCTION

The Office of the Inspector General (OIG) has completed a review of the U. S. Nuclear Regulatory Commission's (NRC's) electronic publishing system and the microcomputer-based graphics system. The purpose of our review was to assess (1) the use of electronic publishing and graphics services within NRC, (2) the identification of policy changes relating to electronic publishing, (3) the use of contractual services to perform graphics work, and (4) the use of a microcomputer-based graphics system. This review was requested by the former Chairman of NRC and was included in the OIG's FY 1989 audit plan.

BACKGROUND

Electronic publishing and graphics services are divided between two NRC offices. The Office of Administration (ADM) provides the agency with electronic text processing and composition, editing, and proofreading of regulatory publications. The Office of Information Resources Management (IRM) develops and recommends agency goals, objectives, policies, standards, guidelines, and procedures for NRC graphics design and provides graphics services in support of scientific, technical, and administrative programs.

Publishing Services

Currently, there are three electronic systems used to publish information in NRC: desktop publishing, the IBM 5520 system, and the electronic publishing system. Desktop publishing refers to personal computer (PC) based systems. These systems usually produce small-scale publications such as newsletters, booklets, forms, resumes, and short reports. The IBM 5520 system is the standard word-processing system for the agency and previously was the primary publishing system for NRC. The electronic publishing system has a larger scope and capacity than either the desktop publishing system or the IBM 5520 system. The electronic publishing system uses more powerful workstations and software typically to produce large-scale, high-volume publications such as technical manuals, lengthy reports, and handbooks.

Electronic Publishing System - KEEPS

NRC entered the world of electronic publishing in December 1988 with the acquisition of a Kodak Ektaprint Electronic Publishing System (KEEPS). This system processes publications in three distinct stages: input, composition and pagination, and output. System input entails bringing the text to be published into KEEPS through various media, such as computer disks and magnetic tapes. Once the text is in the system, the operator can easily modify it

to conform with type and format specifications. These specifications allow all NRC publications to have standard, recurrent formats.

Within ADM, system operators in the Printing and Audiovisual Services Branch (PAVSB) routinely produce regulatory guides, covers for NUREG reports (NRC staff-originated reports), and several large-scale NUREGs. The NRC Annual Report, the NRC telephone directory, selected periodicals, and a variety of in-house administrative and training documents also are composed on KEEPS. As operators become more experienced, the number of NUREGs produced on KEEPS will increase.

Graphics material is input into the system by use of a scanner. Once in the system, graphics can be enlarged, reduced, cropped, duplicated, and manipulated in dozens of other ways. KEEPS outputs manuscripts on two laser printers, which offer backup and permit simultaneous printing of two manuscripts.

In a letter dated February 13, 1990 (see Appendix I), NRC informed the Joint Committee on Printing (JCP), Congress of the United States, that KEEPS became operational in May 1989 after installation, testing, and staff training. The letter stated in part: "The equipment is used to compose camera-ready originals from text transmitted to the system from the agency's word-processing equipment." On the basis of the initial 8 months (May to December 1989) of operating the electronic publishing system, NRC provided the JCP with the following information:

- . The cost of the equipment was \$176,387.
- . The total number of initial pages composed was 8,847.
- . The savings achieved in composition costs was \$27,425. In addition to these savings, \$20,801 was saved in printing costs as a result of data compaction achieved by utilizing the equipment.

Graphics Services

In October 1987, NRC acquired a microcomputer graphics system which uses the Interleaf Graphics software. The Interleaf Graphics System is similar to KEEPS.

Within IRM, the Automated Graphics and Visual Communications Section (AG&VC) provides design, art, presentation graphics, and other graphics services to the agency's 24 offices. The AG&VC staff workload totals about 1300 requests a year. Many of these requests require one or more revisions to the original request. In addition to designing brochures and newsletters, the graphics staff produces data-driven charts, diagrams, schematics, flow

charts, flyers, matrices, graphs, maps, and illustrations. The graphics staff tracks revisions on all these jobs.

In May 1988, the Graphics Section was transferred from ADM to IRM to integrate the visual disciplines with the new and emerging computer technologies and computer graphics applications. The move was made because of the technological advances in automated graphics, visual communications, and electronic visualization. These advances led to the conclusion that the graphics function should be fully integrated within the office responsible for managing the agency's computer services.

With the proliferation of computers and computer graphics software, many users have taken advantage of this technology to produce their own displays. The AG&VC staff is developing design standards for generic publications, presentation art, and other applications.

The AG&VC staff provides technical support to NRC employees for Chartmaster, Signmaster, Diagram-master, and Harvard Graphics software. This technical support allows the end-user, after consultation with a designer on color, background, layout, and chart-type suggestions for data comparison, to construct business graphics effectively in his or her office. This process also gives the end-user a last minute editing capability, as well as control in the draft stage.

SCOPE AND METHODOLOGY

Our review of electronic publishing and graphics services was performed at NRC Headquarters. We initiated a survey in September 1989 to gather background information and to assess if a full-scale audit was appropriate. We began field work in November 1989 and continued the audit until January 1990. At this time, the office suspended the audit temporarily for a higher priority assignment. The review was reactivated in May 1990 and field work was completed in June 1990.

Our initial survey identified the following areas for review: (1) publishing and graphics costs associated with NRC's electronic publishing and graphics systems, (2) efficiency and economy of operations for NRC's electronic publishing and graphics services, (3) agency policies for using both electronic systems, and (4) the use of the national laboratories or contractors to obtain publishing and graphics services. Our review was limited to the major electronic publishing and graphics systems.

We conducted our review in accordance with generally accepted Government auditing standards. We interviewed officials and employees in the Offices of Administration, Information Resources Management, and Personnel. We reviewed and analyzed

documentation such as reports, printed articles, logs, correspondence, position papers, and files provided to us by management. We reviewed current policies, procedures, and guidelines to determine whether they accurately reflect the evolving changes in NRC's electronic publishing and graphics services.

Our review did not include an evaluation of NRC's IBM 5520 system or NRC's desktop publishing systems. We did not examine the need for individual graphics workstations. Also, we did not review the agency's internal control system for the electronic publishing and graphics systems.

FINDINGS

We found that NRC has taken a step forward in the electronic publishing and graphics media with the procurement of the KEEPS and the Interleaf Graphics System. These steps include the conversion of text from typewritten to photocomposed text, an increase in data compaction, and an improvement in the quality and high resolution of graphics material. However, additional efforts are needed to ensure that:

- . the electronic publishing system is used effectively;
- . the agency complies with the GCP requirement for a central printing and publications management organization (CPPMO) and seeks approval for the electronic graphics system;
- . publications and graphics services involving the two electronic systems are properly coordinated;
- . current publications and graphics operating policies and procedures are maintained; and
- . effective procurement procedures exist over publications and graphics services as well as graphics software purchases.

Each of these areas is discussed in detail in the following sections of this report.

COST-EFFECTIVENESS OF KEEPS AND THE INTERLEAF GRAPHICS SYSTEM

NRC has taken a major step forward in the electronic publishing and graphics media with the procurement of KEEPS and the Interleaf Graphics System. The two independent systems have reduced publishing and graphics costs and have improved efficiency and economy of operations for NRC's publications and graphics services. Savings of over \$190,000 yearly can be

graphics services. Savings of over \$190,000 yearly can be achieved with improved operations of KEEPS and better coordination between the electronic publishing and graphics systems.

Electronic Graphics System

The most productive applications of the electronic graphics system are for jobs that require multiple reviews and revisions. For instance, the Interleaf Graphics System is most efficient and cost effective in preparing functional organizational charts. A database created early in the Interleaf process incorporated improved layout, design, and typography to enhance the readability of the charts. Once the database was created, the graphics staff could respond to major organizational changes to the charts within 3 days. With the previous production method, the same changes would have taken 10 days or more.

The graphics staff estimates that they now do 70 percent of their work on the Interleaf Graphics System and have reduced their production time by 33 percent. The graphics staff has estimated that the design of one small brochure that typically took 3 days in the past now takes 5 hours.

Electronic Publishing System

Additional savings can be achieved with improved operation of the electronic publishing system and better coordination between KEEPS and the Interleaf Graphics System. If KEEPS can process and compose all NRC's regulatory and technical publications for printing, we estimate that NRC can achieve savings in both composition and printing costs of almost \$190,000 over the next year.

In a January 9, 1987, memorandum on electronic publishing (see Appendix II), an ADM branch chief stated that "A typeset [photocomposed] paragraph containing the same information as a typewritten one, uses less space. A savings of 33 percent less pages can be realized from an average publication inventory." On the basis of FY 1986 contracted printing costs, the branch chief estimated that a savings of almost \$284,000 in printing and mailing costs could have been achieved by purchasing an electronic publishing system.

When a photocomposed job is reproduced, a 50 percent savings results. This savings is achieved by reducing the need for paper, plates and masters, ink and solution, press time and equipment, collating time and equipment, postage, and storage and handling. An additional savings result from less reproduction expense and less residual (personal) copymaking. This was the justification for purchasing KEEPS.

In addition to cost savings, the benefits produced by KEEPS also include improved readability. Publications processed on the system have the look of professionally produced books and magazines. Also, electronic publishing permits at least 35 percent more text on an 8-1/2-by-11-inch page than word processors. This data compaction feature reduces the number of pages in the finished document, resulting in significant savings in printing, distribution, and inventory costs. The final output, run on a laser printer, is a camera-ready copy ready for printing.

Analysis of Technical and Regulatory Reports

Our analysis of technical and regulatory reports published by the NRC during the past 4 years (1986 through 1989) showed that the introduction of KEEPS has not reduced the number of pages per document. In 1988, the average number of pages for a regulatory or technical report was 172 pages. In 1989, the average number of pages increased by 25 percent to 215 pages. This increase was the result of the small number of publications composed on KEEPS during 1989. If KEEPS had been used exclusively, there would have been a 35-percent reduction in the number of pages per publication through data compaction.

The following data were extracted from the "Regulatory and Technical Reports (Abstract Index Journal)" for 1986, 1987, 1988, and 1989:

<u>Year</u>	<u>NUREG Pages</u>	<u>NUREG/CR Pages</u>	<u>NUREG/CP Pages</u>	<u>NUREG/IA Pages</u>	<u>Total Pages</u>
1986	41,881	57,458	7,418	1,056	107,813
1987	45,232	59,188	6,180	343	110,943
1988	31,597	38,162	5,720	0	75,479
1989	39,300	59,339	6,690	878	106,207

NOTE: a NUREG is an NRC staff-originated report
 a NUREG/CR is an NRC contractor-prepared report
 a NUREG/CP is an NRC-sponsored conference report
 a NUREG/IA is an international agreement report

The total number of publications issued by NRC between 1986 and 1989 were 633, 536, 438, and 493, respectively. The average number of pages per regulatory or technical report for 1986 through 1989 was 170 (107,813 pages, 633 reports) in 1986, 207 (110,943 pages, 536 reports) in 1987, 172 (75,479 pages, 438 reports) in 1988, and 215 (106,207 pages, 493 reports) in 1989.

Technical and Regulatory Reports Composed on KEEPS

Our analysis of projects published on KEEPS found that only 24 regulatory and technical publications were composed on KEEPS in 1989 (see Appendix III). This figure represents only 5 percent (24 out of 493) of all regulatory and technical reports published in 1989. However, when KEEPS was used to compose text, a 45-percent reduction in typewritten pages resulted through data compaction. Of the 3,002 typewritten pages submitted for publication, KEEPS reduced the initial typewritten pages by 1,356 pages to 1,646 composed pages.

The Deputy Director of the Division of Freedom of Information and Publications Services (DFIPS), ADM, stated that a 40-percent reduction through data compaction had been achieved by using KEEPS to compose text during a 6 month period in FY 1990. The Deputy Director noted that savings associated with KEEPS have been pretty steady at the 40-percent level. However, DFIPS still projects a 33-to-35-percent overall savings from data compaction.

Savings Calculations

In 1989, if all regulatory or technical documents had been composed on KEEPS, the number of initial pages could have been reduced by 35 percent through data compaction. From the example provided to the JCP, KEEPS saved \$48,225 through data compaction composition and printing costs for 8,847 initial pages, or \$5.45 per page. Therefore, NRC had the potential for \$185,700 in reduced publishing costs ($106,207 - 8,847 = 97,360$ pages that were not composed on KEEPS during 1989 \times 35% \times \$5.45) for 1989. Additional savings could also result if other large agency documents were composed on KEEPS including regulatory guides and manual chapters.

Additional efforts are needed to ensure that KEEPS is effectively used to reduce agency printing costs. We estimate the potential savings at more than \$190,000¹ for future years. The agency should specify processing procedures for NRC documents. All documents should eventually be processed and composed on KEEPS, including reports prepared by contractors.

NEED FOR A CENTRALIZED MANAGEMENT ORGANIZATION

NRC has not centralized the management of all publications and graphics services. As a result, services between the electronic

¹ The estimated cost savings was based on an average of approximately 100,000 pages being published over the past 4 years and that figure continuing into future years. The average number of pages per year of 100,000 \times 35% compaction \times \$5.45 savings per page equals \$190,750.

publishing system and the electronic graphics system can overlap, and additional costs are incurred. Each system should have its unique mission clearly defined.

Paragraph 30 of the Government Printing and Binding Regulations, published by the Joint Committee on Printing (JCP), Congress of the United States, dated November 1987, states:

H heads of departments shall maintain under their direct supervision a central printing and publications management organization with responsibility for the conduct of a coordinated program controlling the development, production, procurement or distribution of materials through the utilization of conventional printing and binding methods or through the utilization of multiple copy microform methods. The central printing and publications management organization also will maintain responsibility and control of duplicating equipment and automatic copy-processing or copier-duplicating machines, as identified in column 2 of the equipment tables.

The Deputy Director of DFIPS, ADM, was not aware of the requirement for an organization to manage printing and publications throughout the agency. He stated that NRC is not unique in not having a central printing and publications management organization (CPPMO). At NRC, the responsibilities for printing and publications are delegated to two individuals. The Director of DFIPS, ADM, is NRC's Central Printing and Publications Manager. The Chief of the Printing and Audiovisual Services Branch (PAVSB), DFIPS, ADM, is NRC's Printing Officer.

NRC Manual Chapter 0260, paragraph 032a, states that the Director of the Division of Publication Services maintains the NRC central printing and publications management organization as delegated by the Director of the Office of Administration and Resources Management. The organizational structure as represented in Manual Chapter 0260 is outdated. Further, since May 1988, the graphics function has not been represented in the CPPMO.

We contacted a professional staff member on the JCP regarding the requirement that the agency establish a CPPMO. We were told that each agency is required to establish and maintain a CPPMO. There are no exceptions to this provision, and NRC has never sought a waiver to this requirement.

We believe the function of the CPPMO is to control and manage the divergent interests in the agency on printing and publishing of information, visuals, documents, texts, announcements, brochures, publications, reports, newsletters, books, and manuscripts. Presently, an NRC employee can use several means to obtain, publish, and print data. For example, an NRC employee can use

two separate and distinct electronic microcomputerized systems (KEEPS and Interleaf Graphics), several desktop publishing and PC graphics systems, the national laboratories, and also small-purchase procurements.

To ensure that publishing and graphics services are processed in the most efficient and cost-effective manner, NRC should establish a CPPMO that will serve as the initial point of contact for processing all agency publishing, printing, and graphics services.

Request for Approval for Interleaf Graphics System

On December 19, 1989, the JCP advised the NRC Chairman that an electronic publishing system [KEEPS] was acquired "in the early part of 1989 without advising the Committee prior to acquisition." The Chairman of the JCP further stated:

Such equipment falls within the statutory purview of the Joint Committee and the proposed acquisition should have been presented to the Committee prior to purchase. While the Committee reviews the validity of the acquisition, the electronic publishing system should be under the control of the Central Printing and Publications Management Organization which should be responsible for determining that it is used efficiently in accordance with the Agency's printing management regulations and the Joint Committee's Government Printing and Binding Regulations.

On February 13, 1990, the Chairman of NRC responded to the letter of December 19, 1989, from the JCP by stating that "After amended regulations were promulgated, the NRC should have advised the JCP in early 1988 that we had an acquisition of printing equipment in progress and sought the Committee's advice on how to proceed."

On April 4, 1990, the Chairman of the JCP approved the acquisition, in essence, by notifying the NRC that "The Committee finds no reason to disapprove the system as currently installed." All proposals for electronic publishing systems must be reviewed by the Committee before acquisition.

NRC has never sought JCP approval of the electronic graphics system. This system is comparable to the electronic publishing system and has been used to compose camera-ready originals for printing. As used by the agency, the graphics equipment falls within the purview of the JCP. We believe that the acquisition should be presented to the JCP for approval even though it is after the fact.

COORDINATION BETWEEN KEEPS AND INTERLEAF GRAPHICS SYSTEM

We found several problems associated with the management organization and the compatibility of software for the two electronic systems. Organizationally, the systems are located in two separate offices. KEEPS is controlled by the Office of Administration (ADM) and the Interleaf Graphics System is controlled by the Office of Information Resources Management (IRM).

Software Compatibility

The systems are not compatible and cannot communicate directly with each other because they use different versions of the Interleaf software. KEEPS uses the 3.0 release version of the software while the Interleaf Graphics System uses the 4.0 release version. The Interleaf Graphics System can receive information from KEEPS because it has a later version of the software. However, the electronic publishing system cannot receive data from the electronic graphics system. Even if the two systems had the same version of the software, they are not linked so that data could be transferred efficiently. Therefore, all designs, illustrations, or material developed by the Interleaf Graphics System must be printed, delivered, and then scanned into KEEPS.

Duplication of Effort

We found that through the Interleaf Graphics System, IRM has diversified into the publishing discipline. ADM intends to cross over into the graphics medium by upgrading an employee position to deal with presentation graphics. This course of action will result in duplication of effort and services between the two offices.

Several publications were composed on the Interleaf Graphics System, including the OIG semi-annual report and the NRC's Information Digest, 1990 Edition, from the Office of the Controller. We believe that all publications should be composed on KEEPS. Graphics should be transferred from the Interleaf Graphics System to KEEPS for final composition.

Both offices were aware of the duplication of effort problem. The Deputy Director of DFIPS stated that there had been some duplication of services between KEEPS and the Interleaf Graphics System because each system is capable of performing the same services. An estimated 10 percent of all publications processed in DFIPS include graphics material. The Deputy Director was aware that the Interleaf Graphics System can produce photo-composed text. However, this duplication should decline with the increased proficiency of KEEPS operators. The Deputy Director suggested that ADM and IRM designate one individual from each

office to serve as a liaison or coordinator between publications and graphics services.

The Chief of the Automated Graphics and Visual Communications Section (AG&VC), IRM, was concerned that personnel in the Printing and Audiovisual Services Branch (PAVSB), ADM, were handling work that is ordinarily performed in AG&VC. This work included designing layouts for charts and graphs for agency publications. This concern was intensified by the creation of a position in PAVSB for a Visual Information Specialist.

A Senior Position Evaluation Specialist from the Office of Personnel (OP) stated that an ADM branch chief requested OP to upgrade a position in PAVSB. The proposed position description for the Visual Information Specialist reads as follows:

consults with NRC senior project managers, program managers, and office staff to provide advice and assistance in the design, layout, and composition for printing of a variety of NRC publications.... Using a professional knowledge of typography, including typefaces, point sizes, symbols, visual graphics, photography, design and layout, and use of color, offers suggestions to enhance the presentation of text, graphics, photographs, and white space.... Follows new developments in hardware, software, and communications as they relate to NRC application of business and professional graphics uses.

The Chief of AG&VC stated that this position in PAVSB is similar to several positions in AG&VC.

From discussions with several employees in AG&VC and PAVSB, it seems there has been very little interaction or communication between the two sections. This lack of communication has led each section to cross over into the discipline of the other, duplicating and performing services that should have been performed on one system and transferred to the other.

Additional effort is required to ensure that the electronic publishing and graphics systems are used properly, effectively, and efficiently for their intended purposes. NRC must protect the integrity of the two systems and prevent them from duplicating each other's services and disciplines. The agency should define the services of and set the limitations on each electronic system. Additional coordination is needed between the KEEPS and the Interleaf Graphics System to ensure better use and savings in printing and graphics costs. Further, ADM and IRM should investigate a means by which KEEPS can receive data more efficiently from the Interleaf Graphics System.

MAINTENANCE OF CURRENT POLICIES AND PROCEDURES

We found that NRC has not updated policies and procedures to include the operation and use of the electronic publishing and graphics systems.

The Chief of AG&VC initially indicated to OIG that both a brochure and a revised manual chapter for graphics services would be issued before June 1990. Some work has been done on drafting a new appendix to Manual Chapter 0904. However, the Chief of AG&VC stated that several important graphics projects have taken most of her time and her staff's time including Harvard Graphics software templates and an NRC brochure on "Below Regulatory Concern." The Chief of AG&VC also noted that the delay was caused by many graphics requests from agency employees. This delay is expected to be temporary, however, and the draft manual chapter is scheduled to be completed soon.

The Deputy Director of DFIPS noted that agency policies and procedures for requesting publication services are contained in Manual Chapter 0260 and Manual Chapter 0261. However, these manual chapters are outdated and are being revised to reflect changes in the agency's publications process. Currently, ADM is drafting a brochure to inform NRC personnel about the procedures necessary to request publications and printing services.

An ADM section chief noted that ADM has revised both manual chapters on publications and printing services. However, the manual chapters will not be issued until a new management directives system is implemented. Several manual chapters that may require revisions to the objectives, responsibilities, procedures, or guidelines on publishing, printing, and graphics services are contained in Appendix IV.

Additionally, revised manual chapters should include all informal directives. For example, the Office of the Executive Director for Operations (EDO) issued a memorandum to Office Directors and Regional Administrators on "Viewgraphs for Commission Briefings," dated September 1, 1989. This paper provided guidance on the preparation and processing of visuals for Commission briefings. Inclusion of informal directives in the revised manual chapters will ensure that all agency employees are familiar with NRC's policies on presentation graphics and that all policies, both formal and informal, are integrated into the manual chapters.

The revised manual chapters should be completed as quickly as possible. These manual chapters will provide the appropriate guidance necessary for the agency to ensure an efficient, effective, and orderly processing of publications, graphics, and printing services. The manual chapters should explicitly detail the responsibilities of the Office of Administration and the Office of Information Resources Management.

PROCEDURES FOR PUBLICATIONS AND GRAPHICS SERVICES

We found several instances in which program and administrative offices obtained publications and graphics services outside NRC. These offices did not evaluate whether these services could have been provided more effectively or economically by the appropriate administrative offices in NRC.

For example, on July 8, 1988, the Program Management, Policy Development, and Analysis Staff, Office of Nuclear Regulatory Regulation (PMAS/NRR) identified and recommended the purchase of the hardware and software necessary to develop a graphics workstation. The graphic workstation provided NRR with the capability to generate high-quality, professional video electronic slide shows. The estimated cost of the computer graphics workstation was \$32,000. The complete system was installed and implemented in FY 1988, and the property was assigned to NRR. This system duplicates the services provided by AG&VC.

In August 1989, the Planning, Program and Management Support Branch, Office of Nuclear Reactor Regulation (PMSB/NRR), requested AG&VC to support their graphics workstation. The AG&VC staff indicated that with their limited staff and resources, it was not possible to provide support for all the types of software now in use at the NRC. Additionally, NRR's graphics workstation was not routinely supported by the Information Technology Services Branch (ITSB). However, AG&VC offered to provide a measure of technical and graphics support through a contract services agreement. NRC offices are acquiring independent electronic publishing and graphics systems without adequate support to ensure that quality standards are upheld and that each system will be used effectively.

A computer system was identified and recommended to the Office of Nuclear Materials Safety and Safeguards (NMSS) by the Center for Nuclear Waste Regulatory Analyses (CNWRA). The computer workstation will support the needs of the Division of High Level Waste Management, NMSS, for production of high-quality graphics and word processing. The CNWRA in San Antonio, Texas, aided in the development of the software and the attendant hardware specifications for this computer system. On June 27, 1989, IRM delivered and installed the computer system to support the needs for production of high quality graphics and word processing. External sources are specifying computer requirements for NRC even though this responsibility for managing resources for computer hardware and software has been assigned to IRM.

In addition to the standard software installed by ITSB, NMSS acquired two highly sophisticated graphics and publishing packages, Adobe Illustrator and Ventura Desktop Publishing,

through IRM. As this software is not routinely installed or supported by ITSB, ITSB recommended a contract services agreement to provide technical and graphics support. The AG&VC staff stated that they would have supported the graphics workstation if the equipment and software were maintained in AG&VC and made available for agency use.

IRM does not restrict the purchase of software requested by program offices. As a result, offices have obtained software for which the agency does not provide technical support. If technical problems occur during system operations, IRM may not be able to provide the necessary assistance to ensure full use of the publishing or graphics system. Additional procedures are needed to ensure that computer equipment and software are purchased, supported, maintained, and used effectively. This is critical in such areas as desktop publishing and computer graphics.

We found that offices could also obtain graphics services without determining whether the appropriate administrative offices could have provided these services in-house. On several occasions, offices procured graphics design and publication materials through small purchase contracts. For example, the brochure on "Career Opportunities with the United States Nuclear Regulatory Commission" was developed by an advertising agency on a small purchase contract for about \$6,000. The requester stated that the request for the brochure was processed directly through the Division of Contracts and Property Management. The employee was not required by any directive to route his request through AG&VC for approval. The requester also noted that he thought AG&VC was understaffed. He also believed that the final work product would have been different if AG&VC had prepared it.

We believe that all graphics requests should be accounted for and controlled by AG&VC. This practice will ensure design quality, design standards, and cost-effectiveness for both contracted and in-house graphics services.

CONCLUSION

NRC has taken a major step in the electronic publishing and graphics media with the procurement of KEEPS and the Interleaf Graphics System. The two independent systems have reduced publishing and graphics costs and have improved efficiency and economy of operations for NRC's publications and graphics services.

We believe additional efforts are required to ensure that electronic publications and graphics cost savings are fully realized. We estimate that additional savings of more than

\$190,000 yearly can be achieved in future years with improvements in the KEEPS operation.

NRC should develop a process in which eventually all regulatory and technical reports, regulatory guides, manual chapters, technical specifications, and other agency publications will be composed on KEEPS. ADM and IRM should (1) coordinate overall operation of KEEPS and the Interleaf Graphics System, (2) improve overall use of the two independent electronic systems, (3) preserve distinct disciplines of each system and section, and (4) ensure savings in publications and graphics costs.

NRC should follow the JCP requirement that a CPPMO be established in NRC. The CPPMO should be made the initial processing point for the agency's publishing, printing, and graphics services requirements. The CPPMO should ensure that all publications are processed in the most efficient and cost-effective manner. The responsibilities of the CPPMO should be included in the manual chapters on publishing, printing, and graphics services.

NRC should seek approval for the electronic graphics system from the JCP as the agency's graphics system has been used to compose camera-ready originals for printing or no longer use it to compose camera-ready originals. This acquisition should have been presented to the Committee before purchase. If the Interleaf Graphics System continues to produce camera-ready originals, the agency is also required to place the equipment under the direct control of the CPPMO.

Publications and graphics services should be coordinated to ensure that the KEEPS and the Interleaf Graphics System are used properly and for their intended purposes. ADM and IRM should ensure that the two systems are not duplicating each other's services or disciplines. In view of this requirement, ADM and IRM must define the services that the two independent systems can provide, including the limitations of those services. Additionally, ADM and IRM should find a more effective way to transfer data between the two electronic systems.

NRC should develop current policies and procedures for publications and graphics services, requests, and standards. The revised manual chapters on publications, printing, and graphics services should be completed as quickly as possible so that appropriate guidance can be provided to NRC personnel. This guidance should ensure a more efficient and effective processing of publications, graphics, and printing services. In addition, procedures are needed to ensure that computer equipment and software are effectively supported, maintained, used, and are properly accounted for and controlled in the areas of desktop publishing and computer graphics.

RECOMMENDATIONS

We recommend that the Director of ADM take the following actions:

1. Develop procedures to improve the use of KEEPS, thereby reducing the agency's overall publishing, printing, and storage costs.
2. Revise the publication process to ensure that NRC technical and regulatory reports, regulatory guides, manual chapters and major publications are composed in final form on KEEPS with limited exceptions.
3. Enhance coordination between KEEPS and the Interleaf Graphics System for improved economy, efficiency, and use and ensure that disciplines and efforts are not duplicated.
4. Update and revise all manual chapters on publications and printing services, including word processing, to ensure accurate and complete directives on policies, procedures, duties, and responsibilities for publications and printing functions.
5. Account for and control all publications and printing requests to ensure the cost-effectiveness of either in-house or contracted services, including task orders for the national laboratories, small purchase procurements, tasks on the in-house desktop publishing systems, and KEEPS tasks.

We recommend that the Director of IRM take the following actions:

1. Either discontinue the use of the electronic graphics system to compose camera-ready originals for printing or seek approval from the JCP for the Interleaf Graphics System.
2. Investigate a means to improve the efficiency of communicating graphics data between KEEPS and the Interleaf Graphics System.
3. Update all manual chapters on graphics services to ensure accurate and complete directives on policies, procedures, duties, and responsibilities for the graphics function.
4. Account for and control all requests for graphics services and graphics systems and software to ensure (1) design quality and standards, (2) economy and efficiency of services performed either in-house or by contract, and (3) effective use of graphics systems and software.

We recommend that the Deputy Executive Director for Nuclear Materials Safety, Safeguards, and Operations Support take the following actions:

1. Establish a system to centralize the printing and publications management process to control the development, production, procurement, and distribution of information, visuals, documents, texts, announcements, brochures, publications, reports, newsletters, books, or manuscripts.

Sources of printing and publication that need to be controlled include such things as the electronic publishing and graphics systems, desktop publishing and PC graphics systems, the national laboratories, and small purchase and contract procurements.

2. Consider placing the Automated Graphics and Visual Communications Section and the Printing and Audiovisual Services Branch in a unified operation to allow for better coordination.

AGENCY COMMENTS

The Deputy Executive Director for Nuclear Materials Safety, Safeguards and Operations Support provided comments on a draft copy of this report on November 9, 1990 (See Appendix V). The Deputy Executive Director generally agreed with our recommendations and provided a plan for corrective action. We believe the actions outline by the Deputy Executive Director meet the intent of our recommendations.



CHAIRMAN

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

APPENDIX I
Page 1 of 2

February 13, 1990

The Honorable Wendell H. Ford
Chairman, Joint Committee on Printing
United States Senate
Washington, D. C. 20510-6650

Dear Mr. Chairman:

I am responding to your letter of December 19, 1989, concerning the Nuclear Regulatory Commission's (NRC's) acquisition of an electronic publishing system without the prior approval of the Joint Committee on Printing (JCP). I sincerely regret any oversight on NRC's part in obtaining JCP approval and want to assure you that we did not intend to circumvent the Committee.

As I understand the situation, the NRC staff did provide early notice of our intent to purchase equipment that would interface with the agency's word processing equipment to produce composed, camera-ready copy, especially for its technical reports, on June 10, 1986, when the Director of NRC's Office of Administration submitted the "Comprehensive Printing Program Plan for the Nuclear Regulatory Commission" (see Enclosure 1, item 9, page 7). Prior to issuing the Request for Proposals (RFP's) to obtain this equipment on December 23, 1987, the staff had interpreted amendments to the Federal Acquisition Regulation published in the Federal Register on March 20, 1987 (52 FR 9036) (Enclosure 2), to mean that an agency need not seek JCP approval for the procurement of composition equipment as long as it provided notice of its acquisition to the Committee. NRC's Office of the General Counsel confirmed that interpretation with the Office of Federal Procurement Policy. Not until our RFP's had been issued for over a month did the NRC staff learn of JCP Chairman Annunzio's January 21, 1988 letter (Enclosure 3) advising that Section 309 of the Legislative Appropriations Act was amended to revise again the definition of printing to "maintain the status that existed prior to implementation of the recent change in the Federal Acquisition Regulation (52 FR 9036)" and to include "composition" within the definition of printing. When the acquisition process was completed, the equipment was installed in January 1989 and placed under the control of our Central Printing and Publications Management Organization. The NRC staff reported the acquisition to the JCP in its first annual inventory report following the procurement (Enclosure 4).

After reviewing this matter, I have concluded that the NRC initiated the acquisition process under the prior guidelines contained in the March 1987 Federal Register Notice and experienced considerable confusion about reporting requirements following receipt of Chairman Annunzio's letter in January 1988. After amended regulations were promulgated, the NRC should have advised the JCP in early 1988 that we had an acquisition of printing equipment in progress and sought the Committee's advice on how to proceed.

Originated: ADM:Philips

The Honorable Wendell H. Ford

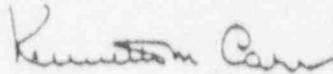
-2-

With respect to our use of the electronic publishing system since its acquisition, the system became operational in May 1989, following installation, testing, and staff training. The equipment is used to compose camera-ready originals from text transmitted to the system from the agency's word processing equipment. Consequently, the material entering the system is not keystroked, and the composed output is not printed by the NRC, but rather by Government Printing Office (GPO) contract printers under established GPO print programs. Based on the initial eight months (May to December 1989) of operating the electronic publishing system in this manner, I am providing the following information in response to your request:

1. The cost of the equipment was \$176,387.
2. Total number of initial pages composed was 8,847.
3. The total number of pages reproduced from the 8,847 composed original pages was 4,220,436 pages.
4. The average cost of reproducing the 4.2 million pages was \$11.56 per thousand pages.
5. The savings achieved in composition costs was \$27,425. These savings were calculated by comparing the costs of composition on the system with the average cost of \$15.00 per page for composition performed by GPA contractors. In addition to these savings, \$20,801 was saved in printing costs as a result of data compaction achieved by utilizing the equipment.

I hope this information will assist the Committee in its review of the validity of this acquisition. If you or the members of the Committee staff have any further questions on this matter, please contact me or Mr. Donnie W. Grimsley, NRC's Central Printing and Publications Manager. Mr. Grimsley can be reached by telephone on 492-7211.

Sincerely,



Kenneth M. Carr

Enclosures: As stated

cc: Rep. Frank Annunzio
Senator Ted Stevens
Rep. Pat Roberts



January 9, 1987

MEMORANDUM FOR: John D. Philips, Director
Division of Publications Services, ADM

FROM: Marshal D. Baggett, Chief
Printing and Graphics Branch
Division of Publications Services, ADM

SUBJECT: ELECTRONIC PUBLISHING

Why Should NRC Typeset Copy That Is To Be Reproduced?

- o A typeset paragraph containing the same information as a typewritten one, uses less space (see attached sample). A saving of 33% less pages can be realized from an average publication inventory.
- o Typeset copy is easier to format, easier to read and easier to use as a reference tool. It saves time of it's end-users throughout the useful life of a publication. The document's professional appearance creates a like attitude and impression to all within its sphere of influence.
- o Improved production - control, security, and ability to make last minute format changes and author's alterations are added benefits.

The attached samples show the difference between a regular typewritten page and a typeset one. The shaded area of sample 1-B shows the additional copy that could be set as compared to the typewritten copy of sample 1-A. When the job is reproduced, a 50% saving results in:

- | | |
|------------------------------|---------------------------------------|
| - Paper | - Postage |
| - Plates & Masters | - Storage & Handling |
| - Ink & Solution | - Less Reproduction Expense |
| - Press Time & Equipment | - Less Residual (Personal) Copymaking |
| - Collating Time & Equipment | |

Most reports that support NRC's mission contain proprietary and some classified information until released. They also require a very fast turnaround for composition and printing. These reports are presently typed on word processing equipment. By communicating with our word processing equipment and personal computers we would be able to eliminate additional keyboarding, lower mailing costs, improve production and quality control, maintain security, and have the ability to make last minute format changes.

Marshal D. Baggett
Marshal D. Baggett, Chief
Printing and Graphics Branch
Division of Publications Services, ADM

Attachments: As Stated

FY86 CONTRACTED PRINTING COSTS
(Units/Cost Typewritten Copy)

	NUREG			NUREG/CR			TOTAL		
	Units	Cost	# of Docs	Units	Cost	# of Docs	Units	Cost	# of Docs
October	2,435,772	32,520	21	1,325,340	21,250	22	3,761,112	53,770	43
November	2,297,620	30,940	24	1,254,440	41,570	18	3,552,060	72,510	42
December	2,008,348	27,220	17	1,895,280	31,225	23	3,903,628	58,445	40
January	2,764,032	35,715	24	1,471,860	22,550	21	4,235,892	58,265	45
February	3,264,512	42,741	23	1,243,200	22,490	21	4,507,712	65,231	44
March	4,143,172	43,450	25	1,863,500	29,860	29	6,006,672	73,310	54
April	2,877,412	46,475	27	1,122,830	18,220	20	4,000,242	64,695	47
May	2,540,180	38,165	24	1,612,990	31,810	32	4,153,170	69,975	56
June	2,938,380	55,725	21	1,690,000	31,980	35	4,628,380	87,705	56
July	3,208,060	36,130	27	2,239,060	29,610	23	5,447,120	65,740	50
August	2,897,210	40,320	24	1,834,247	26,437	26	4,731,457	66,757	50
September	1,683,760	33,240	23	962,080	13,080	14	2,645,840	46,320	37
FY86 TOTAL	33,058,458	462,641	280	18,514,827	320,082	284	51,573,285	782,723	564

(Units/Cost Differential)
33% Less

	TYPEWRITTEN COPY		PHOTOCOPIED COPY		SAVINGS	
	Units	Cost	Units	Cost	Units	Cost
NUREG reports	33,058,458	462,641	22,149,167	309,970	10,909,291	152,671
NUREG/CR reports	18,514,827	320,082	17,404,934	214,455	6,109,893	105,627
Mailing Costs <i>.0056 per page</i>	9,000,000	77,400	6,000,000	51,600	-	25,800

TOTAL ANNUAL SAVINGS

17,019,184 Units

284,098 Printing & Mailing Costs ✓

Estimated Costs

19,350

19,350

Chapter 1

THE ROLE OF FORMS MANAGEMENT IN
PAPERWORK MANAGEMENT

1-1 Impact of the Paperwork Management Program. The Federal Records Act of 1950 (Title 44) is today the legal basis for most of the Federal programs in paperwork management, for it directs each Federal agency to set up "a continuing program for the economical management of its paperwork." Under this Act, the Air Force is required to control the creation and ensure the efficient use of reports, forms, correspondence, messages, directives, and similar issuances, to improve and simplify records systems and paperwork processes, and provide for adequate documentation of Air Force transactions and accomplishments; to insure the systematic preservation, storage, retrieval and disposal of records; and to insure the proper selection and best use of equipment in achieving the objectives of this Program.

a. To carry out this Program, the Air Force must plan for and to those things necessary to make its paperwork effective with the least expenditure of money and manpower, yet generate the lowest possible volume of paperwork. To support this effort, the forms analyst has a responsibility at the first point of creation; that is, to see that the form can be prepared and read easily, that it can be procured at a reasonable cost, and that it is necessary.

b. This Program has brought about a gradual change from the old "office of record" concept of managing paperwork. Under that concept paper records were filed in small offices throughout an organization, so that it was necessary only to design forms for storage and retrieval from a file drawer. Now, under the "central data bank" concept, the analyst must design forms that are compatible with a growing number of automated systems to arrange, store, and recall information. Often the information must go from paper to tape, and then be recalled in a paper printout. Frequently, it must go from hard copy to microfilm, and then be restored to a document that is fully legible. Many forms must be designed to be read by an optical scanner. Consequently, the problem of compatibility has also forced the forms analyst to function as an important member of the paperwork management team.

2-1. New Dimensions in the Design and Use of Forms. An area of growing interest in the design of forms as source documents for data processing systems. One expert, in commenting on this new use as an input device in data processing, says: "When the punched card and the tabulating machine represented the first hesitant steps of modern data processing, a business form was the medium by which information was transmitted from its source to the machine.

a. Need for Records. Today, the majority of transactions with Government depend largely on forms as the principal media of data transmission (reports, surveys, etc.).?

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b. This Program has brought about a gradual change from the old "office of record" concept of managing paperwork. Under that concept, paper records were filed in small offices throughout an organization, so that it was necessary only to design forms for storage and retrieval from a file drawer. Now, under the "central data bank" concept, the analyst must design forms that are compatible with a growing number of automated systems to arrange, store, and recall information. Often, the information must go from paper to tape, and then be recalled in a paper printout. Frequently, it must go from hard copy to microfilm, and then be restored to a document that is fully legible. Many forms must be designed to be read by an optical scanner. Consequently, the problem of compatibility has also forced the forms analyst to function as an important member of the paperwork management team.

1-2. New Dimensions In the Design and Use of Forms. An area of growing interest in the design of forms is the use of forms as source documents for data processing systems. One expert, in commenting on this new use as an input device in data processing, says: "When the punched card and the tabulating machine represented the first hesitant steps of modern data processing, a business form was the medium by which information was transmitted from its source to the machine."

a. Need for Records. Today, the majority of transactions within Government depend largely on forms as the principal media of data transmission (reports, surveys, etc.) There is little doubt that they will continue to perform this function, for despite the computer and its sophisticated software accessories, forms are still needed in many situations. For example, auditors will still want to be able to trace a transaction to its original writing. Also, in litigation, the case will most often be won by the person who can best support his position with hard copy documentation. Moreover, managers will still want records to show what has been done and when.

b. New Types and Uses. The avalanche of forms now found in computer records departments testifies to the fact that data processing has increased the use of paper forms. What is of greatest interest to the manager is the change in types and uses of forms—as well as the new ways in which forms are used and the new things they can do.

- (1) There has been a transition from a passive sheet of paper, of little significance, to a thing of dimension with an active role in the information explosion. Forms now feed the machines which do the daily work of Government and business. These machines produce forms that control billing, production, and inventory processes, and capture from these processes the highly critical information used by managers in carrying on their programs.
- (2) These machines now depend upon forms as the source of uniform input information in the preparation of output data. This is particularly true in the use of optical character recognition (OCR) techniques, for the advent of OCR and microfilming equipment is a major step toward the new use of forms as source documents and as direct input for data processing systems.

1-3. Future Trends. In the future, those involved in the design and control of forms will be required to obtain the skills necessary to design forms that are compatible with a wide range of mechanized data processing systems. The technical characteristics of these machines (computer, tab equipment, etc.) will dictate many of the factors in designing forms that are compatible with them. If a machine is fed by a roller device, for example, the analyst does not need to specify marginal punching to assure correct registration of the form. But if the machine is fed by a sprocket type pinfeed device, the analyst must be able to specify the proper marginal punching horizontal and vertical spacing, and even the maximum length and width of the form. With either type of

(Continued)

"KEEPS" Projects Published (To be archived)

NUREG No.	Off.	Title	Date to ECS	Date to print	KEEPS pages	5520* pages	Author	Remarks
1150	RES	Reactor risk	5/11	6/29	450	750	Cunningham	Draft for comment; equations cut & pasted; watch for in final
1174	RES	Eval. of Systems Interaction in nucl. power plants	5/4	5/23	40	80	Thatcher	Sanders
1217	RES	USI A-47-Eval. of Safety Implic. of control systems in LWR NPP	1/89	5/25	58	110	Szukiewicz	Sanders
1218	RES	USI A-47	1/89	6/89	40	75	Szukiewicz	Sanders (get copy of NUREG)
1229	RES	USI A-17, for Systems Interaction	?	8/89	28	50	Thatcher	Sanders
1233	RES	USI A-40, RA for Seism. Design Crit.		9/89	23	43	Shaukat	
1233	RES	NRC safety research in support of Regulation-1988	4/89	5/89	38	70		
Vol.3		Regulation-1989	2/90	4/90	57	83		Gallagher editor
Vol.4	RES	Tech. Resol. of GSI A-29		9/89	31	70	Serkiz	
1267	RES	Annual report	4/89	6/16	225	400	Benaroya	Beeson
1272	AEOD	Reg. Anal. GI-70	11/1	11/89	24	42	Kirkwood	
1316	RES	Maintenance approaches & practices	10/89	3/90	121	180	Dey	25 scanned figures
1333	RES	Reg. Anal. GI 115	5/18	5/89	25	45	Basdekas	Gallagher
1341	RES	Erosion/Corrosion-Induced Pipe Wall Thinning	4/89	5/89	30	42	Wu	Get copy of NUREG
1344	NRR	Yucca Mtn. SCA	8/17	8/31	240	550	Stablein	correct memo before archiving
1347	NMSS	Lessons learned for Emer. Oper.Proc.	4/89	4/89	26	55	Lipinsky	
1358	NRR	Lessons learned in process control in Halden reactor project	11/15	12/89	40	55	Kennedy	several tables
1361	EDO	Severe accident Res. Prg. Pl.	5/19	8/89	32	55	Eltawalia	(Gallagher) scan in figures first
1365	RES	USI A-48 Hydrogen Control Measures		9/89	11	20	Ferrell	Appendices C thru G from elsewhere
1370	RES	TP-Unsaturated Medium	6/15	8/89	28	89	Thomas, B.	
1373	NMSS	SESR-PLASAR - Concrete Bunker	8/1	8/89	97	147	Kane, J.	
1375	NMSS	Editorial Style Guide	9/89	11/89	51	50	Beeson, N.	Large point size and special layout
1379	ADM	Low level waste research prog. pl.	11/89	12/7	70	116	O'Donnell	scanned 23 figures
1380	RES	QA guid. characterizing LL radio-active waste disposal site	11/89	11/89	12	17	Pittiglio	
1383	NMSS	Fitness for Duty	10/10	10/13	16	54	Bush, L.	
1385	NRR	Environ. Monitoring of LLRW Disp.	12/6	12/20	11	17	Shum	
1388	NMSS	NRC Guide to Training Opportunities	2/90	3/90	75	92	VanSanten	previously composed
BR-0017	OP	NRC Telephone Directory	8/89	9/89	119	119	Kellam, T	previously composed
BR-0046	IRM	NRC Telephone Directory	1/90	2/90	121	119	Kellam, T	prev. composed (enlarged type)
Rev.10								
Rev.11	IRM							

*single spaced pages

"KEEPS" Projects Published (Continued) - (To be archived)

NUREG No.	Off.	Title	Date to ECS	Date to print	KEEPS pages	5520 pages	Author	Remarks
BR-0080	ADM	Translations of Foreign Documents	11/89	11/89	13	17	Wiggington	Recurring NUREG - quarterly
BR-0080	ADM	Translations of Foreign Documents	3/90	3/90	23	35	Larkins	Recurring NUREG - annual
CP-0102	NRR	Regulatory Information Conf. Proc.	8/89	9/89	266	490	Bajwa, S	
Total pages					2445	4147		111 2/3%
Total = 32 NUREGs as of 4/90								
Miscellaneous								
OGC		OGC Attorneys' Manual	9/89	11/89	112	190ds	Lichtman	Classic typeface; increased leading test of conference paper - includes 5 figures
NMSS		ANS paper-Long-term behavior of waste pkg. in geologic repository	12/20	1/5/90	6	14	Petersen	
Total					118	204		
Total = 2 projects other than NUREGs as of 1/5/90								
GRAND TOTAL					2563	4741		46 2/3%

Archive each NUREG onto a separate tape cartridge: BE SURE TO OPEN THE REPORT TO CHECK THAT YOU HAVE THE COMPLETE REPORT. Include cover, availability notice, title page, bibliographic data sheet, and spine Label outside of tape cartridge with NUREG No., date published, and author

*NUREGs 25
30*

Projects Completed but not published

NUREG No.	Off.	Title	Date	Date	KEEPS pages	5520 pages	Author	Remarks
			to ECS	to print				
								single spaced
1220	NRR	Training review criteria & proced.	1/90			118	McCoy	previously composed
1366	NRR	Tech Spec Surveillance	12/1		86	105	Tjader	Sev. tables-on hold for 6 mos.2/1
1372	RES	RA for GI-C-8, MSI valve leakage	8/29		54	80	Graves	Commission chgs 1/90
1391	RES	Chem. toxicity of uran. hexafl.	3/90		10	16	McGuire	
1394	AEOD	Emer. Respon. Data System (ERDS)	4/90	4/90	40	56	Jolicoeur	recomposed contractor appendices <i>except App 4</i>

5 NUREGs as of 4/90

- 1407
- 1393
- 1377
- 1352
- 1339
- 1272
- 1150
- 1397

MANUAL CHAPTERS PERTAINING TO PUBLISHING,
PRINTING, AND GRAPHIC SERVICES

Some of the Manual Chapters that may require revisions to the objectives, responsibilities, procedures or guides on publishing, printing and graphics services may include:

- Word Processing;
- Printing, Copying, Graphic Arts, and Photography;
- Audiovisual Activities;
- Automatic Data Processing Standards;
- Planning and Control of Automatic Data Processing (ADP) Resources;
- Policy and Procedures for Acquiring Microcomputer Equipment, Software and Support Services;
- Procedures for Placement of Work With The Department of Energy;
- NRC Printing Policy for DOE Reports and Microfiche Specifications;
- Publication of NRC Staff-Generated Regulatory and Technical Reports;
- Publication of Technical Reports Prepared by NRC Contractors, Including Reports Prepared Under or Pursuant to Interagency Agreements;
- Book Writing and Publishing; and
- Control of Production and Distribution of Periodicals and Pamphlets;



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NOV 09 1990

U.S. NRC

'90 NOV -9 P2:07

MEMORANDUM FOR: David C. Williams
Inspector General

FROM: Hugh L. Thompson, Jr.
Deputy Executive Director for Nuclear
Materials Safety, Safeguards and Operations
Support

SUBJECT: REVIEW OF ELECTRONIC PUBLISHING AND GRAPHICS
SERVICES PERFORMED IN NRC

This responds to William L. Glenn's October 11, 1990 memorandum transmitting the subject audit report. With respect to the specific recommendations addressed in the report, I submit the following:

Recommendation 1 - ADM

Develop procedures to improve the use of KEEPS, thereby reducing the agency's overall publishing, printing, and storage costs.

Response

Agree. ADM will conduct a detailed study of the efficiency in converting text to KEEPS from the IBM 5520 system and WordPerfect 5.0/5.1 diskettes, and provide the results to the KEEPS contractor for resolution by December 30, 1990. In addition, ADM will develop and adopt procedures by February 1, 1991, to achieve the following objectives:

- To improve the training of KEEPS operators to assure their maximum productivity.
- To document the internal operating procedures for KEEPS operators and design specifications for KEEPS documents.
- To expand the standardization of design formats for each category of agency reports to expedite KEEPS operator efficiency in producing camera-ready materials.

ADM will also explore the technical feasibility of expanding the KEEPS electronic storage capabilities for art work, photography, and exhibit components not currently composed on KEEPS so that all components of a NUREG report would be in KEEPS inventory and thus capable of being reprinted on demand from a high-speed printer. As a result, documents would be reprinted from KEEPS inventory quickly and economically because of the savings resulting from not having to reprint and archive hard copies.

Completion Date: February 1, 1991

David C. Williams
Inspector General

2.

Recommendation 2 - ADM

Revise the publication process to ensure that NRC technical and regulatory reports, regulatory guides, manual chapters and major publications are composed in final form on KEEPS with limited exceptions.

Response

Agree. However, the extent to which NRC documents can be composed on KEEPS will be limited by the personnel resources available to the staff. ADM will issue procedures designed to maximize the number of agency documents composed on KEEPS. These procedures will provide for the following:

- That all staff reports, newsletters, management directives, regulatory guides, and other documents submitted for publication be convertible to KEEPS or reproducible from electronic copy.
- That criteria and procedures be updated for selecting documents to be composed on KEEPS and for determining priority work in order to assure maximum productivity with allocated resources.
- That the General Services Administration's KEEPS system and GPO contractor KEEPS-compatible systems be used as backups during NRC work overload periods.

Completion Date: February 1, 1991

In addition, ADM will conduct a review of the feasibility of requiring Department of Energy National Laboratories and other contractors that produce reports for NRC, to submit electronic versions of their publications that are compatible with the KEEPS system, as well as composed camera-ready paper copy.

Completion Date: May 1, 1991

Recommendation 3 - ADM

Enhance coordination between KEEPS and the Interleaf Graphics System for improved economy, efficiency, and use and ensure that disciplines and efforts are not duplicated.

AND

Recommendation 2 - IRM

Investigate a means to improve the efficiency of communicating graphics data between KEEPS and the Interleaf Graphics System.

Response (to both recommendations)

Agree. The Office of Information Resources Management will provide access to KEEPS via asynchronous dial-up modem. This will quickly provide the capability

David C. Williams
Inspector General

3.

to transmit text or graphics information from the Interleaf directly to KEEPS. IRM will also develop a plan for a permanent communication link between the two systems. The date for the permanent link will be established in the plan.

Completion Date: January 31, 1991

Recommendation 4 - ADM

Update and revise all manual chapters on publications and printing services, including word processing, to ensure accurate and complete directives on policies, procedures, duties, and responsibilities for publications and printing functions.

AND

Recommendation 3 - IRM

Update all manual chapters on graphics services to ensure accurate and complete directives on policies, procedures, duties, and responsibilities for the graphics function.

Response (to both recommendations)

Agree. The following management directives are in preparation and will be issued as indicated:

NRC Management Directive 3201, Preparing Staff Reports

NRC Management Directive 3202, Preparing Contractor Reports

Completion Date: April 5, 1991

NUREG-0650, Revision 1, Preparing NRC Formal Reports, which provides guidance on how to prepare a publication in the NUREG series.

Completion Date: December 1, 1990

NRC Management Directive 0260, Obtaining Printing and Graphics Services

NRC Management Directive 0235, Obtaining Word Processing Services

Completion Date: April 5, 1991

Recommendation 5 - ADM

Account for and control all publications and printing requests to ensure the cost-effectiveness of either in-house or contracted services, including task orders for the National Laboratories, small purchase procurements, tasks on the in-house desktop publishing systems, and KEEPS tasks.

Response

Agree in part. ADM and IRM will develop procedures to achieve the objectives of this recommendation by doing the following:

David C. Williams
Inspector General

4.

- Assuring that a central manager controls the receipt, assignment for action, and schedules for publication and printing actions, including the assignment of work due and schedules for contractors.
- Assuring that the procurement of desktop publishing software is reviewed and approved by ADM and IRM.

Completion Date: February 1, 1991

We will examine the feasibility of extending this control to task orders under National Laboratories in conjunction with the review to be conducted under Recommendation No. 2.

Completion Date: May 1, 1991

Recommendation 1 - IRM

Either discontinue the use of the electronic graphics system to compose camera-ready originals for printing or seek approval from the JCP for the Interleaf Graphics System.

Response

Agree. All graphics produced on the Interleaf Graphics System for printing and publication will be provided to the Printing and Audiovisual Services Branch for preparation of camera ready originals for printing. This will be accomplished by administrative direction.

Completion Date: December 5, 1990.

Recommendation 2 - IRM

Investigate a means to improve the efficiency of communicating graphics data between KEEPS and the Interleaf Graphics System.

Response

See Recommendation 3 - ADM on Page 2.

Recommendation 3 - IRM

Update all manual chapters on graphics services to ensure accurate and complete directives on policies, procedures, duties, and responsibilities for the graphics function.

Response

See Recommendation 4 - ADM on Page 3.

David C. Williams
Inspector General

5.

Recommendation 4 - IRM

Account for and control all requests for graphics services and graphics systems and software to ensure (1) design quality and standards, (2) economy and efficiency of services performed either in-house or by contract, and (3) effective use of graphics systems and software.

Response

Agree. The Office of Information Resources Management will ensure design quality and standards by review of all graphics work submitted for printing and publication, including both in-house and contract work. To assure economy and efficiency, this review will be performed in coordination with the Central Printing and Publications Manager. In order to ensure effective use of graphics systems and software, IRM will provide NRC offices with design standards for graphics systems and software used by the NRC. For work not submitted for printing and publication (e.g., presentation graphics), IRM will provide both design guidelines and training (through the Office of Personnel) for NRC staff.

Completion Date: February 1991

Recommendation 1 - DEDS

Establish a system to centralize the printing and publications management process to control the development, production, procurement, and distribution of information, visuals, documents, texts, announcements, brochures, publications, reports, newsletters, books, or manuscripts.

Sources of printing and publication that need to be controlled include such things as the electronic publishing and graphics systems, desktop publishing and PC graphics systems, the national laboratories, and small purchase and contract procurements.

Response

Agree in part. Agency printing and publication requirements, regardless of sources of the information, will be controlled centrally by the Director, Division of Freedom of Information and Publications Services who is NRC's Central Printing and Publications Manager. ADM and IRM will establish or revise, as necessary, existing procedures for controlling the development, production, procurement, and distribution of printed and published materials. The procedures will not provide for centralized control of informal walk-in traffic for quick turnaround graphic products (i.e., overheads for internal briefings, etc.).

Completion Date: July 1991

ADM and IRM will review the feasibility of extending controls to the National Laboratories, as reflected in the response to Recommendation No. 2.

Completion Date: May 1, 1991

David C. Williams
Inspector General

6.

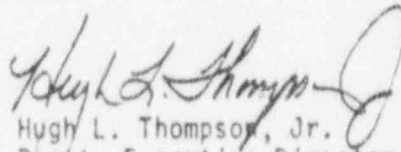
Recommendation 2 - DEDS

Consider placing the Automated Graphics and Visual Communications Section and the Printing and Audiovisual Services Branch in a unified operation to allow for better coordination.

Response

Agree. An organization change such as suggested in this recommendation may have merit and is one deserving of consideration. We also believe that the procedural and management changes reflected in our responses to the IG's recommendations above will provide an improved, more economical, and unified printing and graphics operation. The DEDS will assess the results of these changes in 12 months and determine whether organizational changes are necessary.

Completion Date: December 1991



Hugh L. Thompson, Jr.
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