

# **GOING ON-LINE: BRINGING TECHNICAL REPORTS TO THE DESKTOP**

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## **Abstract**

Information management is moving quickly toward archiving and retrieving documents electronically, so Oak Ridge National Laboratory (ORNL) is taking steps to help its research staff create electronic documents. Declining budgets frequently dictate that authors handle the technicalities of getting published as well as the scientific and technical information that they publish. To help the Laboratory benefit from being the leader in this area, ORNL's Information Management Section formed a multidisciplinary team to develop, pilot, and implement a Web-based process to register and clear technical documents and to add the full text of these documents to the Laboratory's Comprehensive Publications and Presentations Registry (CPPR). Making this happen required implementing policy changes to address the new performance measure, acquiring software needed for file conversion, developing Web guidance, and providing training and consulting for ORNL staff.

## **Change When Benefits Outweigh the Hassle**

With information management moving quickly toward archiving and retrieving documents electronically, Oak Ridge National Laboratory (ORNL) is taking steps to help its research staff create electronic documents. These documents will then be made available via the World Wide Web and serve as the record copy for business and legal purposes.

Greater accessibility of scientific and technical information is one of the benefits the Laboratory's researchers will enjoy as a result of implementing a Web-based information management system. Also, results of the Laboratory scientists' work will be more visible to potential collaborators and sponsors. In addition to increased access and quicker delivery of scientific and technical information, production costs will decrease. Total distribution costs are expected to go down because few copies will be physically printed and delivered.

## **Background**

### *The Document Clearance Process: Moving from a Paper-Based to an Electronic System*

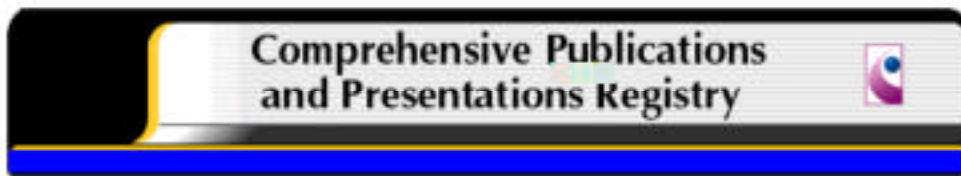
During its early years, all reports produced at ORNL were classified. Today, only a small fraction of the reports produced are classified or sensitive. The bulk of the sensitive documents deal with Cooperative Research and Development Agreements.

Despite the shift in information sensitivity, the document clearance process at ORNL had changed little until 1993. Publishing a technical report at the beginning of that year took ten signatures. Keeping the publications and presentations database current was also a difficult, time-consuming process.

Developing an electronic process to satisfy clearance and record management requirements led to

- eliminating the need to review every document for classification,
- eliminating the need for patent review of every document,
- eliminating the choke point of having all records go through one input point,
- responding to the Office of Scientific and Technical Information's (OSTI's) request for electronic documents,
- giving simpler guidance for routine things like cover pages and title pages, and
- continuing our responsibility for holding the record copy of ORNL reports.

With solutions to these problems in hand, we completed the evolution of the electronic clearance/registration form. Today, authors can register their documents using a Web-based form and submit not only the metadata, but also full text of their document to the Laboratory's publications database.



### *Document/Presentation Registration*

<a href="#">Generate a New Report Number</a>	<a href="#">Register/Clear document</a>	<a href="#">Foreign Trip Report</a>
<a href="#">Upload previously registered document</a>	<a href="#">Update ORNL Publications citation information</a>	

**NOTE:** Documents to be submitted electronically with the registration/clearance form must be in PDF format. If you need assistance in converting your document to PDF, please contact [ORNL Publishing Services](#).

### *Document/Presentation Approval (Designated or Division Approvers Only)*

<a href="#">Registrations for which you are a designated approver</a>	<a href="#">Registrations awaiting division approval</a>
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### *Web Area Requests and Registrations*

<a href="#">Request a Work Space on a Central Server</a>	<a href="#">Register an Information Area</a>	<a href="#">Update an Information Area Registration</a>
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*The information owner and the server administrators are listed below if you have questions, comments or suggestions. An e-mail form is provided with the appropriate links for your convenience. Please include title, URL, or other document descriptor in your message.*

- [David R. Harnin](#) (information owner)
- [Information Index](#)
- [Search ORNL/LMES server](#)
- [Home Page](#)
- [Technical Publications](#)

Number of times accessed 1,710

***The first page of the CPPR Web page links  
to all features necessary to use the electronic clearance process.***

### *Managing Records: Moving from a Paper-Based to an Electronic System*

The Records Policy and Management program is integral to ORNL business in providing access to and retrieval of technical information to support ongoing research. In addition, ORNL Records Policy is responsible for managing the Department of Energy's (DOE's) required records inventory and disposition schedules for all ORNL divisions, for providing support to special historical and medical studies, and handling Freedom of Information Act requests.

The information explosion and technology advances continue to change the way we do business and meet customers' needs. The Electronic Freedom of Information Act Amendments have greatly affected the speed at which we must make this transition. The amendments made to the Freedom of Information Act by this new law address electronic records. This is the first time ever that electronic records have been mentioned in the text of the statute.

Projects with special needs such as the five-laboratory Spallation Neutron Source (SNS), which desires to manage all its information electronically, also drive the transition to electronic records management.

While steps are being taken to transition from a paper environment to an electronic environment, our goal is to establish an ORNL-wide electronic record-keeping infrastructure. That system will facilitate the retrieval of records by users at the right time, ensure compliance with federal statutes, and reduce the cost for managing records and other information.

## **Strategy for Transition from Traditional Paper-Based Systems to Electronic-Based**

### *From Pilot to Production*

The transition to a totally electronic document management system will happen incrementally over a period of years. In many ways, users are leading the process—the technology is available. We observed that printed documents were now being captured in Adobe's Portable Document Format (PDF) or HTML for the Web as well as being distributed in traditional hard copy. In fact, some programs published only on the Web, where their dollar went further—for less money, they could use color and add links to other relevant information.

Last year, ORNL began piloting the use of an electronic document clearance form. The form allows users to fill out the form on-line, attach the document, route it for approvals, and send it to the Comprehensive Publications and Presentations Registry (CPPR). We chose five research divisions covering a broad spectrum of division-level publication practices. Consequently, we received a wide variety of feedback—sometimes requesting conflicting features.

Although we had the attention and cooperation of the pilot divisions, the switch to electronic documents began in earnest when ORNL announced that electronic delivery of 20% of its documents to OSTI would be a contract performance measure.

An interdisciplinary team of information management professionals and technical consultants are working together to implement ORNL's migration from paper to electronic media for scientific and technical information. Team members include Barbara Ashdown, Information Management Section head; Dave Hamrin, technical information officer; Rebecca Lawson, records management and policy; Jeanne Dole and Michael Aaron, publishing services; Deborah York, information integration services; Bob Conrad, library services; and Bill Clapper, Basis + programmer. Making this happen required implementing policy changes to address the new

performance measure, acquiring software needed for file conversion, developing Web guidance, and providing training and consulting for ORNL staff.

### *Policy changes*

The five research divisions that we selected for fine-tuning the process for using electronic CPPR forms provided plenty of feedback. However, because each of the organizations has its own internal clearance process for documents, the way each wanted to use the CPPR form and the features they expected sometimes were in conflict. Our peerless programmer became an expert at problem resolution.

As the pilot period was nearing the end, the Laboratory accepted the challenge of committing to supply 20% of the documents sent to OSTI in electronic format. Our “build it and they will come” philosophy changed to “speak softly and carry a big stick.” This requirement meant changing Laboratory policy concerning the way documents are submitted for clearance. We decided to take a structured approach to meet the 20% requirement. Our information officer updated company policy to state that all foreign trip reports, conference papers, and technical reports of fewer than 25 pages would be transmitted to OSTI in PDF. The aim was to start with the shorter, more manageable documents.

Long documents, especially those with many integrated figures, were difficult to format with word-processing software used predominantly at the Lab. Problems increased as the size of the file increased. For this reason, we decided to initially require that only short documents be converted to PDF. Creating the integrated document is the problem; converting to PDF is the easy part of the process.

While we updated the policy to include the 20% requirement, we inserted a quality assurance checklist for authors. The checklist fills a gap in recognizing the need to create clear, correct, and complete documents to represent the work of the Laboratory. Editing, graphic, and photographic services are available to the scientific and technical staff at the Laboratory, as is guidance for writing and publishing reports. However, until this policy was instated, the Laboratory placed no quality requirements on documents released to the public. This quality assurance policy is an added perk to the system. If there’s a lesson to be learned, it would be to look for opportunities to make improvements in unexpected places. Will a document quality assurance policy make a difference? We hope so.

### *Converting Documents to PDF*

Much discussion and debate went into selecting PDF as the file format to be adopted for the record copy of Laboratory documents. PDF is considered an industry standard and is the most frequently used file format because of its compatibility with current Web browsers and computer operating systems. Retrievability, fidelity to the original file, cost, and ease of use were all

factors in making this decision. As document management technology improves, other formats may be selected.

Capital funding was not available to purchase a corporate-wide information management solution. Furthermore, we expected strong resistance to implementing a large system. Ideally, we would like to adopt a system that will allow us to archive documents in both their native format as well as in PDF. Because converting to PDF is generally a one-way street, changes or revisions to a document are most easily made in the native software. At this point, responsibility for maintaining electronic files of documents in their original software format remains with the author or program.

During the pilot phase of the switch to electronic clearance of electronic documents, organizations were offered conversion software or free conversion services. Most chose to purchase Adobe Acrobat themselves. We offered one-on-one lessons for key personnel within each group. Combined with a little phone support, this worked quite smoothly.

Acrobat Reader is free; the PDF writing software is not. To keep from creating a bottleneck by having only a few people purchasing Adobe Acrobat, we arranged for a site license, resulting in an affordable solution to converting to PDF. We estimate that in over 90% of the documents being converted to PDF, the procedure will take only a few minutes because the user will simply print to PDF instead of to an actual paper-and-toner device. Documents that are heavily formatted or have lots of figures can cause the plain vanilla PDFWriter to fail. For those documents, another component of the software, Distiller, can be used. In other cases, documents may be created in multiple software packages (e.g., MS Word, Excel, PowerPoint) and will require use of the Exchange feature in order to be folded into one PDF file.

### *Web Guidance*

Assistance in using Adobe Acrobat is one of the areas for which we created Web-based self-help. The purpose of the Technical Publications site that we created is to provide a single source of information for Laboratory staff who want to create, find, search, or print technical documents. The site locates in one place

- a writer's guide to correct grammar and usage,
- standard report format guides,
- a database of electronic images,
- tips for selecting the best graphic file formats,
- a quality assurance checklist,
- the on-line document clearance and registration form,
- instructions for printing to PDF and hard copy,
- directions for distributing electronic and hard-copy documents, and
- several links for finding and retrieving reports from ORNL or elsewhere.

Oak Ridge National Laboratory  
**Technical Publications**

[Technical Publications Home](#) • [Publishing Services](#) • [Graphics & Photography](#) • [Laboratory Records](#) • [Libraries](#)

### Preparation of Publications

Guidelines for Author Preparation of ORNL Reports

- [Introduction](#)
- [Author Responsibilities](#)
- [QA Checklist](#)
- [Clearance and Registration](#)  
—[Comprehensive Publications and Presentations Registry \(CPPR\)](#)  
—[ORNL Publishing Regulations](#)
- [Distributing a Report](#)

### Finding Technical Publications

Databases and guidance for finding publications

- How to find [ORNL publications](#)
- Reports from [DOE and other DOE laboratories](#)
- Search the [Comprehensive Publications and Presentations Registry \(CPPR\)](#)
- [OASIS Library Catalog](#)
- [DOE Information Bridge](#)
- [Energy Science and Technology Database](#)

### Related Links

- [Foreign Trip Reports](#)
- [Generating Division Publications Lists](#)
- [ORNL Image Retrieval Information System \(IRIS\)](#)
- [Energy Science and Technology Software Center](#)
- [Radiation Safety Information Computational Center \(RSICC\)](#)

### Getting Copies

How to obtain copies of technical reports

- [Full-text Electronic Reports](#)
- Paper and Microfilm Collections (coming soon)
- [Ordering Reports](#)—When ORNL does not have a copy

Send Comments to: [Ezer Mentem](#)  
[Learning, Information, and Networking Division](#)  
 Knoxville, 37831-6099 (6:30-4:00 EST - 7:30)

*The Technical Publications home page is the starting point for users to find everything they want to know about creating, finding, and getting copies of technical reports of all kinds.*

### *Training and Consulting*

Real live help is at least as important in selling new processes as is providing on-line help. We offered demos and mini-training seminars in conjunction with the rollout of the new electronic document clearance/registration form. These sessions were attended primarily by administrative and other support personnel who will play a large role in implementing the requirement to convert certain documents to PDF for storage and retrieval. We began the first round of demonstrations the week we rolled out the electronic CPPR process to the Lab. The sessions consisted of a brief explanation of the evolution to the electronic system, a demo of the process of filling out a clearance/registration form for a sample document (using a laptop computer connected to a large-screen projector), and a question and answer period. The second phase of training was a brief tutorial on how to use Adobe Acrobat to create PDF files.

## *Tomorrow and Beyond*

Early indications show that people are using the electronic CPPR form. Feedback indicates that they're even liking it. Based on the number of full-text documents attached to the form, we expect to meet this year's performance measurement of sending OSTI 20% of our scientific and technical reports in electronic format.

## Bios

Jeanne Dole, ORNL Publishing Services Group leader, has over 15 years experience in technical publications. Jeanne is a member of the ORNL Leadership Consortium. She became a Certified Manager in 1995 and has been elected Associate Fellow in the Society for Technical Communication. She holds an M.A. in English.

Dave Hamrin is the technical information officer and the classification officer for the Oak Ridge National Laboratory. He has 25 years in the DOE national laboratory system, 11 of them in the area of publications management and document clearance. This project supports ORNL's implementation of the electronic clearance process led by Dave.

Rebecca A. Lawson, ORNL Records Policy and Management Group leader, has over 22 years experience in records management and document control at Lockheed Martin Energy Research and Energy Systems. Positions include records manager for the Oak Ridge Environmental Restoration Division, where she implemented an active records program, and department head for the ORNL Site Records and Engineering Services Department. She has a B.S. in management.