New Mexico's Electronic Permitting Initiative

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Several years ago New Mexico Mining and Minerals Division, Energy Minerals and Natural Resources Department (MMD) began to consider developing and implementing an electronic permitting initiative for its surface coal mine regulatory program. Much of the initiative was developed after the June 1997 Electronic Permitting Forum sponsored by the Office of Surface Mining (OSM). MMD's first task was to decide what is electronic permitting is? In our minds it is simply a transfer from a paper medium to an electronic one. We believe it will allow us better access to information, more control over work products and hopefully will streamline MMD's review and approval processes. As part of the shift, however, we are planning for changes in virtually every aspect of how we administer our program.

We laid out a number of issues as part of an internal process to define electronic permitting and its implications to the New Mexico program. The discussions were soon expanded to include the operators, who have been involved in this initiative since the beginning. Although the process of implementing electronic permitting is evolving, I would like to identify a number of critical elements and explain how we have, or plan to, deal with them.

Format

What will an electronic permit look like?

We have worked for a long time with our operators to create a more uniform format for the paper permits. We decided the permit organization should track the regulatory requirements in 19 NMAC 8.2 (Surface Coal Mining regulations). In MMD's regulations, Section 700 describes the Legal, Ownership & Control requirements, Section 800 has requirements for description and baseline data, and Section 900 covers requirements for reclamation and operations plans. Instead of chapters, the permits are organized by the sections and paragraphs corresponding to the regulations (804 Groundwater, 805 Surface Water, etc.). This formatting scheme will be continued into the electronic permitting. We either are asking for hyperlinks to tables, maps and objects or clear association in the text of the appropriate information.

Software has not been an issue since we have deferred to the mines. They all use AutoCAD 14 or Map and the Microsoft Office 97 Professional programs. All of this software is available to the State.

We have decided to stay away from a specific policy and procedure for electronic permitting. New Mexico already has a number of standards that apply to permitting. We do not see the need to create more. We fell strongly that this process is about making everyone's job easier. As a result we are giving the operators as much latitude as possible to generate their submittals.

At this time we are working toward electronic submittals from all of our active mines, but we also have older records and some smaller mines under reclamation where the best option is for MMD to create an electronic permit from paper using a scanner and OCR (*optical character recognition*) software. We already have a flatbed scanner with a sheet feeder for the bulk of the permit. A map scanner or use of an outside contractor could be employed to convert maps and exhibits.

Internal Access

We currently have two copies of each paper permit, one archive and one working copy. For the review of a revision, modification or new application, staff members use the working copy. As may be expected, scheduling access to a critical volume can be complicated. The archive copy serves as the official version of the permit. Access to these copies is more restricted than the working volumes and changes are extensively documented and controlled.

Internal access to the electronic permits is facilitated through an Intranet. Staff has access to "read only files" and an archive (Magnetic-Optical drive (M-O) and CDROM) is also kept. This set up allows staff members to access permits at their desktop. It also allows for more than one person to access a file concurrently. In general an Intranet should reduce access problems and help to reduce delays in review time.

Implementation required a server and CPU upgrades to ensure each desk top has sufficient processing speed and storage capabilities to access the permit documents and run appropriate software. We have decided to upgrade a plotter to enable us to generate paper copies of large format map files. Using real maps is still preferred to using a 17"-20" monitor to conduct some types of reviews. A Sony 2.3 GB M-O drive will be used to archive electronic permits. OSM, through its electronic permitting initiative, has provided funds for purchase of Monitor, other computer upgrades and the M-O unit.

Submittals

We will accept just about any medium, CDROM, floppy, Zip, JAZ, E-mail or Internet submittals. The Internet and E-mail can be the most complicated as far as file integrity and security. Disk medium (CDROM and floppy) is currently the most popular, but we are continuing to develop the other options. Since we have been processing electronic water, vegetation and spoil monitoring data for some time, we do not envision any major problems in the future.

We have upgraded all of our computers to include either a Zip or Jaz drive. OSM assisted with the purchase of the Iomega drives through their Electronic Permitting Grant Program.

Updating Permits

Only one person is allowed to update the permits once changes are approved. Records of the changes (text and exhibit replacements) are noted in a log associated with modifications and other revisions. It is possible for us to track all changes made to a permit by a specific event.

We will continue to use this method as electronic permits come on line and are modified. One person will be responsible for updating the M-O and CDROM archive and the Intranet. A new CDROM will be sent to the operators reflecting the changes on either a modification basis or a monthly basis if changes occur. The frequency will depend on the number of changes a particular mine typically has during a year. Our goal is to make the permits uniform and eliminate discrepancies we have encountered when modifying a number of multiple paper copies in various parts of the State.

Public Access

An electronic format creates much greater opportunities for dissemination of permit information. This issue has, in fact, been one of the more critical issues to operators. Some are very concerned about the prospect of having random access to their permits. Although opinions greatly differ, MMD's responsibility is dictated by the regulations. We are specifically required to provide access within the county where a permitted operation is located. We have no legal mandate to serve this information on the Internet just because we have the technical ability to do so. It also does not appear that Internet access alone would satisfy the public notice requirements of the regulations.

Public access can be achieved by continuing to file paper or electronic copies at publicly assessable locations within the counties which have surface coal mines. If we choose to, we may also provide some subset of this information on the Internet as a way of providing additional public outreach.

Security

In general, electronic permitting allows for a much higher level of security for permitting documents. Using multiple methods of backup (CDROM, CPU, tapes etc.), "read only" restrictions and limited access to archive files provide a distinct advantage over paper permits. It will be much harder for pages, chapters or even whole volumes to disappear, even considering unlikely occurrences of power outages or hard drive failures.

New security issues are created, like the spread of a computer virus, but there are ample ways to deal with these problems. More complex are issues surrounding the Internet and direct access to root programs that could be compromised. EMNRD has installed a "firewall" that will greatly restrict access to the LAN and will help to protect the integrity of FTP (*file transfer protocol*) and other public access sites. Although MMD has not implemented any exchange of information on the Internet, it may eventually become a part of our electronic permitting program. It appears possible to build in a number of safeguards to make this aspect of our program less risky. However, as the Internet becomes a more important medium for the exchange of information, technologies will be developed to eliminate many current concerns.

Comprehensive Look at Process Innovation

Electronic permitting will change how we process and approve permits in the future. We have embarked on a comprehensive analysis of our internal processes to identify changes in how we do business and to develop better tracking and information databases. We see the need to develop interactive databases as one of the hidden agendas in electronic permitting. Our process review will seek to identify crucial areas where it will be necessary to keep track of events, decisions, data or correspondence.

Through process innovation we will try to plan work duties and specific tasks associated with electronic permitting. This exercise will also seek to identify how the change from paper to electronic format will affect future directions in equipment, training and personnel needs.

Personnel Needs (training & new skills)

The development of electronic permitting has necessitated the need to provide computer software applications training to MMD employees. We have phased this process in over the past several years. The goal is to provide training on all the applications we expect to commonly use in electronic permitting (primarily Word, Access, Excel and AutoCAD primarily). Through education and training we are also interested in developing new skills such as GPS, GIS and other specialized program like SEDCAD, Earthvision and statistical analysis software. OSM will continue to provide both educational opportunities and technical assistance.

Finally, MMD has begun to review what kind of skill sets it will need to obtain in the future. For example, we recently hired a person to serve as a system administrator and systems analyst, allowing use to develop and maintain our Intranet. Planning must be made to allow MMD to develop its' DBMS and potentially move to a more comprehensive SQL server database.

Hardware Needs

Hardware to implement electronic permitting can be viewed on several different dimensions.

1. **Desk Tops**

MMD staff will have to access large electronic files, AutoCAD maps, work with various software packages and interface with the Internet and other employees through an Intranet. We have tried to keep our computer updated (faster processors, sufficient ram, newer video cards, etc.) to keep up with changes in software system demands. Most computers also have 100 MB ZIP drives for backup and make exchange of electronic files easier.

2. **Intranet Server**

We have a prototype for the next generation of TIPS, an NT server. It is used to enabled us to make our electronic permits available to all staff members on their desktop. Along with the server OSM included AutoCAD Map, ESRI GIS software and other applications. The TIPS computer will also serve the Intranet. This computer, or perhaps a second one, will also serve a GIS and relational database that we hope to integrate with our electronic permits.

3. **Local Area Network** (LAN)

MMD, along with the rest of EMNRD, supports the Department LAN, which provides a unified Department network for information exchange, web site, e-mail and T1 Internet access. The LAN can also serve other functions such as FTP and backup storage for electronic permitting files.

4. **Hardware Peripherals**

There are a number of other items that make electronic permitting easier, such as:

CDR to update and distribute permits
Digitizing tables and tablets to create maps
Map scanner to create electronic copies of older maps from permits and annual reports
Flatbed scanners to convert paper to electronic files
GPS equipment for inspection and GIS development
Laptops for out of office uses
Digital Camera for recordation
Large format plotter to create hard copies of electronic map files