

Technology in

The U.S. Nuclear
Regulatory
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litigants, and
witnesses in hearings
2,500 miles apart.
What kind of system
will make that work?

BY PAUL GWALTNEY



More than 300 times the normal number of pleadings and evidentiary materials. Four years of real-time video transcripts. Hundreds of judges, clerks, litigants, and witnesses appearing simultaneously at geographically dispersed hearings 2,500 miles apart.

These are challenges confronting the U.S. Nuclear Regulatory Commission as it looks to stage one of the largest and most complex administrative hearings in U.S. history — licensing of the country's first long-term high-level nuclear waste repository at Yucca Mountain, Nev., 100 miles outside of Las Vegas.

The NRC is an independent federal agency responsible for regulation of civilian nuclear power to ensure adequate protection of public health and safety, promotion of common defense and security, and environmental protection. The NRC places a high priority on keeping the public informed of its activities via public hearings and meetings in local areas and at NRC offices, and on conducting those proceedings in an efficient and effective manner.

In its role regulating power reactors and nuclear materials, the NRC's Atomic Safety and Licensing Board Panel conducts hearings on applications from commercial and government entities seeking licenses. For many years, the ASLBP has conducted hearings within a traditional courtroom environment, using hard copy documents as evidence and using realtime court reporters to generate paper transcripts for each day's proceedings.

THE CHALLENGE

With the turn of the century and an increasing focus on nuclear energy, the NRC is confronted with the prospect of increasingly complex licensing proceedings. Without electronic alternatives, these proceedings are likely to generate huge numbers of paper documents. Facing hearings on the Yucca Mountain high-level waste repository in particular, the NRC needs innovative systems and processes to efficiently manage the proceedings while accurately capturing the record.

The Yucca Mountain proceedings are expected to generate up to 300 times the normal number of pleadings and evidentiary materials, and up to four years of realtime video transcripts. This material must be available in real time to hundreds of judges, clerks, litigants, and witnesses around the country. To effectively adjudicate the license application process while still meeting public accountability responsibilities, the NRC needs to ensure that all the parties are able to create and have access to a digital record consisting of all video, audio, and data generated in these proceedings.

While evaluating options for these high-level waste proceedings, the NRC found that no system in place could manage tens of thousands of documents and exhibits and hundreds of hours of video transcripts. The NRC needs to

Paul Gwaltney is the project manager for the software engineering center of Nortel Government Solutions.

the Courthouse



Shown here: The evidence presentation and audio-visual system in the Nuclear Regulatory Commission digital courtroom in Las Vegas, Nev.

ensure quick and effective access to a very large volume of information in a hearing room for use in proceedings Congress has mandated for completion in no more than four years.

Clearly, a paper-based environment will not work.

THE SOLUTION

Nortel Government Solutions brought together a team to address the NRC's business challenges. This team took new and existing technologies and integrated them into a single system. Built upon BEA Systems (Plumtree) portal technology, all of the data, audio,

and visual information is integrated into a single, consolidated Web-based view. Using custom code to integrate all of the disparate elements, the system enables all users to gain access to hearing data anytime, anywhere.

By combining commercial data storage, retrieval, voice, and video integration, networking, and collaboration technologies with custom code, Nortel Government Solutions created an integrated digital multimedia courtroom for the NRC. The system includes a state-of-the-art closed captioning feature that allows realtime streaming to video monitors as one method to comply with

ADA requirements. It also synchronizes directly with the hearing video to create a searchable video transcript.

INCREASED EFFICIENCY

This new digital courtroom allows all docket information to be organized, stored, retrieved, managed, and displayed in real time in accordance with court and security procedures.

Through the system's integrated case and hearing management capabilities, prehearing organization of information is possible, enabling more efficient and effective management of information during and after hearings. Documents,

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hearing video, and electronic transcripts are organized for instant availability to authorized users, eliminating hundreds of hours of work otherwise spent on managing paper.

RAPID INFORMATION CONSOLIDATION

Advanced search capabilities link documents, witness information, exhibits, and issues for rapid access with minimal effort. Judges and clerks can manage the flow of evidence by selecting and sequencing the documents, witnesses, and exhibits via a single interface that makes the most often used elements available in real time and with minimal effort, ensuring that everyone is on the right page, even in geographically remote locations.

CUTTING-EDGE COURTROOM TECHNOLOGIES

The digital courtroom system integrates realtime transcription directly into a video transcript and synchronizes the text with corresponding video. The court reporter's station includes a dedicated monitor displaying the speaker at all times, an evidence feed, dedicated switched audio, and connections for a laptop computer containing the realtime transcription software. The realtime captioning is mixed with the video on Line 21 and sent to all courtroom monitors to be displayed as closed captioning. The signal is also captured using Virage VideoLogger software, which helps create the video transcript. Through standard video switchers, the signal is also available for web-streaming and TV broadcasts.

Attorney tables contain monitors and connections that allow parties to select and view evidence, search and play back any previous video testimony, connect a laptop to display a presentation or simulation, or monitor the far-end of a video conference.

The in-courtroom digital audiovisual system includes evidence presentation and display, integrated teleconference and video conference capabilities, and a voice-activated camera switching feature that allows the courtroom video

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to follow the speaker. All of these features serve to create a contextual video transcript, automatically switched to the speaker and synchronized with the realtime transcript. The result is a text- and key frame-searchable video transcript that is linked to electronic versions of evidence, providing a multimedia complement to the official transcript.

THE RESULT

The NRC system is one of the first comprehensive integrated digital courtroom systems in the world. The system combines electronic case management, digital evidence stamping and management, hearing workflow, realtime transcription, and evidence presentation. Few other courts have combined all of these elements into a single system accessible through a single interface. The International Criminal Court at The Hague comes closest, combining digital case management with an elaborate courtroom presentation, transcription, and translation system.

THE FUTURE

The challenges faced by the NRC are not unique. Many jurisdictions around the country are facing larger and more complex trials; increased use of electronic filing, case management, and docketing systems; increased public demand for timely electronic transcripts; and increased use of digital audio and video recording. Judges, clerks, and court reporters are beginning to request access to these systems inside the courtroom.

In one federal court, a judge uses four monitors to access each of the systems he may need during a trial.

Pamela Manuel, a court reporter with the 19th Judicial District Court in Baton Rouge, La., suggests linking the docketing system into the court reporter's station to facilitate easier uploads of comments and notes.

These business needs will increasingly be met with integrated systems similar to the one created for the NRC.

Jurisdictions around the country are addressing advances in courtroom technology in a variety of ways. Many are looking far into the future.

"It's important to consider all available state-of-the-art technology when constructing a new facility to ensure that the modern courthouse of today is not obsolete in just a few short years," said Jo Bruce, judicial administrator for the 19th Judicial District Court, which has a new court facility under construction.

Other jurisdictions turn to educational institutions and associations for guidance. The National Judicial College in Reno, Nev., maintains a showcase courtroom with many of the latest technologies. Last year, Nortel Government Solutions and partners ExhibitOne, MediaEdge, and LeVare combined to donate a version of the NRC digital courtroom to the NJC. The goal was to help the NJC foster its mission to provide education and professional development for judges from around the world. The system will demonstrate to a new generation of judges the possibilities and capabilities of integrated digital courtrooms.

Digital courtrooms with realtime, multimedia access to evidence, testimony, and other information are the judicial future. Digital capture of transcripts will be the norm, enhancing the court reporters' effectiveness. Electronic capture, stamping, and management of evidence will allow court reporters to link electronic copies of evidence to digital transcripts. Courts across the country are addressing this transition in fits and starts, typically as budget allows.

One thing is sure. In the coming decades, integrated digital courtroom systems won't be the exception. They'll be the rule. ■