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November 5, 1993

Mr. David S. Drapkin  
U.S. Nuclear Regulatory Commission  
Office of the Licensing Support  
System Administrator  
Mail Stop 7103 MNBB  
Washington, D.C. 20555

Reference: Task Order No. 4, Request for Proposal - August 3, 1993  
Subject: Final LSSARP Meeting Summary  
Enclosure: As Above

Dear Mr. Drapkin:

Please find enclosed one copy of the subject deliverable, which incorporates your comments and our discussion of October 26, 1993. If you have any questions, please do not hesitate to call me at (703) 525-9400, extension 506.

Sincerely,

LABAT-ANDERSON Incorporated



Tony Neville  
Project Manager

cc: LAI contract file  
Edna Knox-Davin, COA

**SUMMARY OF PRESENTATIONS AND STATEMENT OF ISSUES  
LICENSING SUPPORT SYSTEM ADVISORY REVIEW PANEL (LSSARP) MEETING  
OCTOBER 5-6, 1993**

for

**NRC Contract No. NRC-40-90-346  
Task Order No. 4**

**November 5, 1993**

by

**LABAT-ANDERSON Incorporated**

with

**Price Waterhouse**

**SUMMARY OF PRESENTATIONS AND STATEMENT OF ISSUES  
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**INTRODUCTION**

The purpose of this paper is to summarize the discussions at the recent LSSARP meeting and list the issues that relate to the planning and operation of the Licensing Support System Administrator (LSSA) Compliance Assessment Program ("CAP"). The purpose of the meeting was to a) inform LSSARP members of LSSA activities since their last meeting and b) introduce discussion of Commission paper SECY-93-107 and the Commission's approval of that paper's Alternative 3 for assignment of LSS program and budget responsibilities.

Listed in brackets at the beginning of each section is an explanation of how that session relates to the CAP. The numbers that appear in bold and brackets refer to the page number and line number in the official transcript where the particular discussion can be found.

**PANEL MEMBER ATTENDEES**

**Attachment A:** list of LSSARP members.

Boyd Alexander, U. S. Patent & Trademark Office  
Kirk Balcom, State of Nevada  
Mike Baughman, Intertech Consultants  
Dennis Bechtel, Clark County  
Chip Cameron, NRC, Office of General Counsel  
Wayne Cameron, White Pine County  
Linda Deselle, DOE  
Daniel Graser, DOE  
Christopher Henkel, Edison Electric Institute  
Robert I. Holden, National Congress of American Indians  
John C. Hoyle, NRC  
Lloyd Levy, Nye County  
Corinne Macaluso, DOE  
Malachy Murphy, Nye County  
Jay Silberg, Shaw, Pittman, Potts & Trowbridge

**TUESDAY, OCTOBER 5**

**OPENING REMARKS**

John C. Hoyle, NRC, LSSARP Chairperson

[Changes in management and reporting structures for the LSSA, and in who holds that position, affect the planning and execution of the CAP.]

The sixth meeting of the LSSARP was convened, in open session, by Chairman Hoyle. Hoyle described the history of the formation of the LSSARP. Founded in 1989, its membership originally consisted of nine organizations, as follows:

- NRC
- DOE
- State of Nevada
- Nye County
- A coalition of adjacent counties (City of Las Vegas, Clark, Lincoln, White Pine, Eureka, Lander, Churchill, Mineral, Esmeralda, Inyo (CA))
- National Congress of American Indians
- A coalition representing the nuclear power industry
- Securities and Exchange Commission
- U. S. Patent & Trademark Office

The last LSSARP meeting was in July 1991. Since that time, a new NRC Chairman, Ivan Selin, was appointed. Gerald Cranford, Director of NRC's Office of IRM, became the acting LSSA. A new LSSA, Arnold Levin, has been selected and will begin work on October 18, 1993. (The original urgency of establishing an LSS has been alleviated due to a five-year delay (from 1996 to 2001) in DOE's anticipated license application date.) [6(21)]

#### **HISTORICAL PERSPECTIVE ON THE LSS RULE** Chip Cameron, NRC

[This presentation gives an historical perspective on the development of the LSS Rule. The original rulemaking procedure established the LSS Rule, which is the authority for much of the CAP program as it is anticipated today. Changes to the LSS Rule to accommodate Alternative 3 will impact the requirements and the authority of the LSSA in its compliance assessment of DOE and other participants.]

The LSS Rule was the result of a negotiated rulemaking that attempted to establish a consensus on the use of an electronic management system in the licensing process surrounding DOE's application to establish a repository for the disposal of high-level radioactive waste. The final LSS Rule came into being in April 1989. [9(6)]

The LSS Rule provides that:

- The LSS will be an integral part of the repository licensing process.
- The LSS will contain all parties' relevant documents.
- All parties will have full-text access to the LSS.
- Parties must comply with the document submission process in order to retain access to they system.

- The availability of the LSS will reduce the time required for physical production of documents after DOE's application is filed.
- Documents such as pleadings and orders will be electronically filed. [10(11)]

The LSS Rule contains three major elements:

- A framework for document submission and access
- Non-LSS provisions (not discussed in this session)
- An institutional framework of developing and implementing the LSS [12(3)]

#### **Framework for Document Submission and Access**

Under the LSS Rule, the DOE submits images, headers and ASCII text for their documentary materials. Other parties submit images and headers, and the LSSA creates their ASCII (at least until access to the LSS is granted). [12(9)]

Under the LSS Rule, all LSS participants will be given full-text access to the LSS, both before and after the application is filed. The public will be given access to headers during the pre-license phase, and to full-text after the license application has been submitted. The Pre-License Application Licensing Board, which will be created at least six months before the application is filed, will rule on requests for access to the LSS. [14(1)]

#### **Institutional Framework for Developing and Implementing the LSS**

Under the LSS Rule, DOE is responsible for designing the LSS, in consultation with the LSSA. NRC/LSSA captures non-DOE material. The LSSARP provides advice to DOE and the LSSA. [15(4)]

According to the original schedule, the LSS was to be available in January 1992. This meeting is a first step in establishing a new schedule and moving forward on LSS implementation. [16(1)]

#### **STATUS REPORT**

Gerald Cranford, NRC, Acting LSSA

**Attachment B:** slide presentation.

**Attachment C:** SECY-93-107 and related papers.

[The implementation of Alternative 3 would expressly affect the LSSA CAP. The CAP would be expanded to include LSSA review and approval of LSS requirements and LSSA oversight of DOE operation and maintenance of the LSS.]

Cranford discussed the history of the formation of the Technical Working Group and its membership. The Technical Working Group laid the foundation for the development of SECY-93-107. [20(7)] He detailed the responsibilities of the group, namely:

- Examine original SAIC proposed design
- Examine InfoSTREAMS capabilities
- Evaluate various cost-reduction/reallocation measures
- Determine whether cost reduction measures affect functionality
- Deliver recommendations on cost-cutting measures to the Commission [20(19)]

He listed some of the 11 options that the Technical Working Group reviewed and the key options they recommended. [21(17)]

He described the timeline of events that occurred over the last year:

- Technical Working Group formed to re-examine the LSS
- Technical Working Group recommended six options for further consideration
- Technical Working Group recommendations held pending resolution of broader issues with respect to the LSS program and budget responsibilities
- Commission directs staff to prepare a paper addressing LSS program and budget responsibilities
- LSSA proposed NRC development, operation and maintenance of the LSS, with costs shared by NRC and DOE
- Commission rejects LSSA recommendations
- Commission directs staff to examine alternatives and funding options that would expand DOE's LSS program and budget responsibilities
- Commission approves reconstitution of the LSSA under the Office of IRM
- LSSA/Deputy Director for IRM position was created, reports to the Executive Director for Operations
- Staff recommends and Commission approves Alternative 3 (in SECY-93-107)

He then described the components of Alternative 3:

- DOE designs, develops, operates and maintains the LSS within InfoSTREAMS
- DOE captures all LSS material (including non-DOE)
- NRC would conduct audits and install a quality assurance program
- DOE funds all other system-related LSS activities
- NRC funds LSSA system oversight activities [24(17)]

He described pros and cons of Alternative 3:

**Pros:**

- **InfoSTREAMS is technically feasible**
- **InfoSTREAMS provides LSSA more control over LSS functionality**
- **InfoSTREAMS reduces resources expended for the LSS**
- **InfoSTREAMS consolidates ownership of LSS design, development and implementation [25(21)]**

**Cons:**

- **InfoSTREAMS might be unacceptable LSS vehicle (DOE document capture) for some participants**
- **InfoSTREAMS future development tied to future budgets [26(13)]**

In the question and answer period that followed Cranford's presentation, the following issues were discussed:

**LSSARP Representation on Technical Working Group**

Some members believed that the LSSARP should have been used instead of or involved in the deliberations of the Technical Working Group. Members would have had valuable input as to functional requirements. [27(9)]

Hoyle agreed that the LSSARP should have been involved earlier and referenced previous efforts to convene the committee. Hoyle commented that the Commission is very interested in listening to the LSSARP. When the NRC reduced its advisory committees by one-third (at President Clinton's direction), it kept the LSSARP. [32(25)]

Cranford asserted that the working group looked only at technology and cost; not at functionality of the InfoSTREAMS system. [35(23)]

**LSSARP Involvement in Rulemaking**

Hoyle stated that the Commission would be receptive to the LSSARP's participation in developing the new rule. [32(25)]

**DOE Control of the LSS**

The requirement that the system not be placed under DOE control is a fundamental issue. [30(14)]

## **Cost/Budget**

There is an OMB mandate that program and budget responsibility should be in the same place. At the time of the original rulemaking, this was discussed with OMB and overcome. [40(11)]

In estimating cost savings with respect to Alternative 3, LSSA compliance and oversight activities were included. DOE, however, did not add a "delta" for potentially increased costs needed to accommodate LSSA audit/quality assurance requirements. Members were interested in the potential delta amount. [47(15)]

### **INFOSTREAMS AS THE LSS FOUNDATION**

Dan Graser, Acting Director of the Information Management Division, DOE OCRWM  
Janice Touser, TRW

**Attachment D:** slide presentation.

**Attachment E:** marked-up copy of the LSS Rule showing their proposed changes.

**Attachment F:** document entitled "Proposed Detailed LSS Field List".

**Attachment G:** document entitled "Proposed LSS Field Definition Summary Table".

[The design of the LSS, and mechanisms for document capture affect the quality assurance activities conducted by the QA Facility. The LSSA audit program will also be affected, if DOE controls, operates and maintains the LSS. Auditing of DOE will have to be expanded to include its operation and maintenance activities.]

Graser and Touser had three issues to raise with respect to using InfoSTREAMS as the LSS foundation:

- Wording of Rule requirements
- Header fields
- Potential copyright infringements

#### **Wording of Rule Requirements**

Touser gave examples of unnecessary technology constraints that are included in the Rule. She suggested that "technology specific implementations" be replaced with functional requirements. An example would be replacing the requirement for "ASCII" with a requirement for "standard text format". [58(22)]

Touser also suggested that the Rule be modified to include "technology levers". An example would be modifying the Rule to allow totally electronic adjudicatory filings. [96(10)]

She introduced the term "reusability", referring to the reuse of InfoSTREAMS technology for the LSS. [60(2)]

(Members did not object to such wording changes. As these are non-controversial, they were deferred pending resolution of other rule-related issues.)

### **Header Fields**

Graser/Touser recommended adding 13 new fields to the LSS header. In their opinion, the additional fields are required in order to fully take advantage of the InfoSTREAMS technology. They also suggested using common LSS/OCRWM thesaurus and authority lists. [106(25)]

A member asked which new fields would be required to be completed by non-DOE participants. Another member suggested that this should be looked at by committee. [109(15)] (Later Elizabeth Shelburne suggested that the Header Working Group reconvene. Kirk Balcom agreed to reconvene the group.)

### **Potential Copyright Infringements**

Graser surfaced the issue of potential copyright infringements if copyrighted documents are made available to the public through the LSS. So far, the DOE Office of General Counsel is saying that the "fair use" exemption cannot be applied in the InfoSTREAMS scenario. [110(17)]

During the question and answer period, the following additional topics were discussed:

### **InfoSTREAMS Acceptance Within DOE**

InfoSTREAMS is a system that is being designed for the OCRWM within DOE. It is being designed to address the requirements of the LSS Rule, which are not required to be followed by the rest of DOE. It is not an agency-wide system. While there are agency-wide systems for E-Mail and telecommunications, there are no agency-wide systems for records and information management. [63(13)]

A member expressed concern that if an agency-wide system for information and records management were developed, DOE support for InfoSTREAMS might falter. Graser responded that InfoSTREAMS is the first such system being developed within DOE and there is an advantage to being first. [66(3)]

## **InfoSTREAMS Handling of "Circulated Drafts"**

InfoSTREAMS is being developed to preserve all drafts and comments, providing an audit trail for each. This is necessary for quality assurance purposes. [75(5)]

Members expressed the concern that DOE would be capturing more information than is required to be in the LSS. They only want final documents or drafts that encountered a "non-concurrence". They do not want every preliminary draft; in their opinion, the system would be overrun with documents. They would like to have further discussion of decision tree logic with respect to "circulated drafts". The system architecture should be re-examined to see if there is a better way to design it to take into account the Rule definition of "circulated draft". [75(20)]

## **Contents of LSS/InfoSTREAMS**

InfoSTREAMS will contain the records of OCRWM. A subset of those records will be in the LSS. The LSS may also contain documents that did not come through InfoSTREAMS (an example would be headers for confidential personnel information). [91(10)] DOE documents, including "circulated drafts", that may be relevant to the licensing proceeding and were not generated by OCRWM would need to be brought into InfoSTREAMS custody and put through the document capture process. This would be OCRWM's responsibility under the LSSA QA requirements.

## **Electronic Relevancy Determinations**

One thing that is being considered is the use of "natural language filters" to determine relevancy. The cost-effectiveness and viability of this software are open issues at this point. [101(1)]

## **OCRWM Decisionmaking**

OCRWM is holding off on a few design issues, waiting to find out if InfoSTREAMS will be the LSS vehicle. These include:

- Electronic signaturing
- Electronic QA [95(7)]

## **INFOSTREAMS AS THE LSS VEHICLE**

Dan Graser, Acting Director of Information Systems, DOE OCRWM  
George Hallnor, TRW

Attachment H: slide presentation.

[The design of InfoSTREAMS affects how LSS documentary materials will be captured, and entered into the LSS. The staffing and procedures of the QA Facility will be affected by the system design.]

### **InfoSTREAMS: Context, Mission and History**

Hallnor gave a presentation on InfoSTREAMS, its history, architecture and applicability as the LSS vehicle.

InfoSTREAMS is sponsored by the DOE Office of Civilian Radioactive Waste Management (OCRWM) Information Management Division (IMD). [121(21)] InfoSTREAMS stands for Information SStorage, REtrieval, Access and Management System. [125(19)]

In June 1991, TRW began evaluation of InfoSTREAMS and LSS requirements. A phased development, with four increments, was defined. Increment 1 began in September 1991 The design of increment 2 was completed in December 1992. Increment 2 is currently in code and integration and will be rolled out in February. [125(3)] (Later, Dan Graser offered a demo of Increment 2 to any interested LSSARP member.) [312(4)]

The four increments are:

Increment 1	Office Automation/Network/Communications
Increment 2	Header Format/Document Input
Increment 3	Document Capturing/Storage
Increment 4	Document Search Capability

### **Functional Overview and Architecture**

InfoSTREAMS is defined to perform four major functions:

- Create records package
- Store program records
- Access documents
- Communications [136(5)]

It is a client/server design with PC clients and VAX servers. The design uses a combination of commercial off-the-shelf ("COTS") and developed software. The user interface and audit trail segments will be developed by TRW. InfoSTREAMS uses the INGRES database package. Access is via LAN/WAN, with 250 connection points. [140(17)] Network nodes are planned for the following cities:

Albuquerque, NM  
Berkeley, CA  
Charlotte, NC

Chicago, IL  
Denver, CO  
Dunn Loring, VA  
Idaho Falls, ID  
Las Vegas, NV  
Livermore, CA  
Los Alamos, NM  
McLean, VA  
Oak Ridge, TN  
Richland, WA  
San Francisco, CA  
Washington, DC

Another node will be at the test site.

In order to use InfoSTREAMS as the LSS vehicle, certain changes to the original concept will need to be made:

- Increase capacity to handle LSS users
- Increase on-line holdings capacity to encompass all LSS documents
- Increase throughput of text and database search engines to address LSS query characteristics
- Increase capacity of document distribution capabilities to address LSS requirements [127(15)]

#### **Electronic Security and Nuclear Records Management**

Hallnor stated that an electronic environment can provide data protection mechanisms which are superior to those available in a paper/microfilm environment. He mentioned the Digital Signature Standard which incorporates:

- "Snap shots" and encrypted user keys
- "Signed, sealed and delivered"
- Authentication of originator [148(20)]

In the question and answer period following his session, the following topics were discussed:

#### **Capacity to Handle the LSS**

Using InfoSTREAMS as the LSS vehicle will require capacity modifications to the original concept. It will require an increase in anticipated on-line holdings (from 5 million pages to 40+ million pages) and an increase in capacity to move data in response to multiple search requests. [128(16)]

## **Cost of InfoSTREAMS**

One member expressed a desire to see a cost analysis for InfoSTREAMS. He wanted to answer the question "are we paying for a more expensive LSS rather than saving \$63 million?" [133(15)]

## **Comparison to Other Systems**

A member asked if Hallnor had identified any other systems that currently do what InfoSTREAMS is proposed to do on a similar scale. Hallnor stated that most systems that exist today are character-based, not image-based. Also most systems do not provide document level security. [151(8)]

## **LSS COMPLIANCE ASSESSMENT AND AUDIT PROGRAM**

Gerald Cranford, Acting LSSA

**Attachment I:** slide presentation.

**Attachment J:** memo from Cranford to the LSSARP members attaching an overview of the proposed CAP.

[This presentation gives an overview of the CAP as it is anticipated to work under Alternative 3.]

Cranford gave an overview of the LSSA Compliance Assessment Program ("CAP"). The program he discussed was based upon the assumption that Alternative 3 would be implemented (although many elements of the CAP would work the same under the current LSS Rule). [156(7)]

He detailed LSSA responsibilities with respect to the proposed CAP:

- Define requirements for LSS program participation [157(4)]
- Provide guidance to participants concerning compliance [157(6)]
- Evaluate participant performance against requirements [157(10)]
- Oversee DOE design, development, operation and maintenance of the LSS [157(12)]
- Certify participant compliance [157(18)]

He discussed the concept of LSS participant commitments. He referenced a document that the LSSA is preparing that will define participant commitments, standards and measurements and non-compliance thresholds. [159(1)] He defined four functional areas of LSS participant commitments:

Group 1      Proper identification of document universe, proper relevancy screening, and timely submission of materials

- Group 2      Physical condition of submitted material and accurate coding of the material
- Group 3      Participant management requirements and conditions for gaining and retaining access
- Group 4      DOE obligations relative to design, development, operation and maintenance of the LSS [159(24)]

He provided as an example of a participant commitment, the following elements of "Document Universe Identification":

- Commitment
- Processing standard
- Non-compliance reporting threshold
- Compliance assessment method [160(15)]

He discussed the concept of LSS participant compliance program plans and their role in the compliance assessment process. The LSS participant compliance program plans would contain:

- Identification of participant LSS management staff
- Material submission plan
- Implementation plan [162(25)]

LSSA would issue *Guidance on the Format and Content of LSS Participants' Compliance Program Plans*. Using the guidance, participants would prepare their compliance program plans. LSSA would then review and approve their plans, or require changes to make them more effective. LSSA would audit participants against their plans. [162(11)]

LSSA's compliance assessment activities would be carried out in four major areas:

- LSSA review of DOE-proposed requirements for the LSS
- LSSA oversight of DOE development, implementation, operation and maintenance of the LSS
- LSSA audit program
- LSSA QA facility [163(11)]

LSSA would perform the following audit activities:

- Periodic audits of DOE development of LSS
- Semi-annual audits of DOE operation and maintenance of LSS
- Semi-annual audits of each participant's document processing operation
- Interim observation audits

- Ongoing review of required participant reports and documentation
- Manage the audit contractor [164(18)]

The LSSA would perform the following activities with respect to the QA Facility:

- Manage the QA Facility contractor
- Quality assurance review of participant-submitted documentary materials
- Accept or reject participant submissions based upon quality assurance review
- Ongoing monitoring of LSS availability and functionality [165(24)]

LSSA will certify DOE compliance every six months. Determination of other participants' compliance would coincide with the DOE certification schedule. Compliance assessment would be based upon the LSSA audit activities and QA Facility evaluations. Non-compliance by any participant may result in loss of LSS access or other appropriate actions, as determined by the pre-license application presiding officer. [167(21)]

In the question and answer period following Cranford's presentation, the following topics were discussed:

#### **Certification of Non-DOE Participants**

Elizabeth Shelburne responded to a member's question regarding the LSSA's authority to certify the compliance of non-DOE participants. The certification of non-DOE participants is implied by the LSS Rule in Section 2.1009. It is necessary as part of the LSSA's responsibility to ensure the accuracy of the database. [158(12)]

#### **Audit Standards for DOE versus Other Participants**

One member stated that the quality controls applied to DOE should be stricter than those applied to other participants, as DOE is the one applying for the license. A number of members agreed that it may not be necessary to audit non-DOE participants, or at least not necessary to audit them twice a year. [171(8)]

Countering this was the argument that, although non-DOE participants may account for only five percent of the volume of material, their documents may be very significant to the proceedings. [173(14)]

#### **Non-DOE Staffing Requirements**

One member asked "will the LSSA CAP place additional staffing burdens on participants?" Shelburne responded that the LSSA would not impose "how" on the participants. The LSSA will look at the participant compliance program plans. Participants will tell us what they can do. [174(7)]

### **Participant Costs**

A few members expressed concern about the cost of participant compliance under the CAP assumptions. Robert Holden, National Congress of American Indians, noted that NRC would have to provide funding to tribes for hardware, software, etc., and was especially concerned, since he would have to incur the cost of involving 16 tribes. [176(13)]

### **Adequacy of Document Identification**

A member wanted to know what role other participants will play in relevancy determinations as to what documents are included in the LSS. [178(24)] Cameron remembered, during the negotiated rulemaking, talk of having an audit committee of users. [180(6)]

A clear definition of relevance will be important.

### **Protected/Privileged Material**

Holden was especially concerned about disclosing the location of artifacts and the potential for looting. [182(15)] Graser responded that in InfoSTREAMS it is possible to flag privileged or confidential business information records for security purposes. [184(24)] One member suggested that this be put on the agenda for the next rulemaking. [183(16)]

### **Use of Contractor to Conduct LSSA Audits**

Several members were unhappy with the idea of a contractor conducting the audits. In the case of audits of NRC compliance, a contractor paid by NRC is unlikely to issue demerits. [187(12)]

### **Alternatives to Alternative 3**

Some members expressed the need for more information before they could determine whether Alternative 3 was worthwhile. [191(6)] They wanted to know the costs of Alternative 3 versus other alternatives. They wanted to know how much of InfoSTREAMS incorporates features they may believe to be "above and beyond" the LSS needs. [191(23)] For those concerned about DOE's control of the system, they need to know what kind of protections are needed. [192(2)]

Is there some other way (alternative) that would allow uncomfortable parties to submit their documents to someone other than DOE, possibly LSSA? Political/public perception reasons may require turning over documents to a party other than DOE. [194(11)]

**WEDNESDAY, OCTOBER 6, 1993**

**CURRENT OCR PROJECTS AT UNLV**

**Tom Nartker, UNLV**

Nartker's slides were not available. He handed out copies of his 1993 research report and brochure on the Industrial Affiliates Program at the University Nevada-Las Vegas (UNLV) Information Science Research Institute. The handouts are not attached to this paper.

[A significant cost to the QA Facility is the cost for manual review of converted full text. If the OCR process can achieve a high enough accuracy rate to reduce the level of manual review and error correction, then the costs for the QA facility would be reduced.]

SAIC specified a 99.8 percent character accuracy rate (about 6 character errors per 3,000-character page) for full text. Currently, none of the OCR technologies produce output text at 99.8 percent accuracy. To satisfy the 99.8 percent accuracy requirement, one half of the projected \$200 million cost of the LSS was data capture, and one-half of the projected data capture cost was manual checking. [212(17)]

Nartker described the progress his group has made with OCR technology. His group tested various OCR products against actual LSS documents. The documents fell into three groups; characters on bad pages; characters on middle quality pages, and characters on best quality pages. [214(6)] His initial tests, in 1992, were run against a 278,000-character sample. His 1993 tests were run against a sample containing in excess of 800,000 characters. His tests were for typed characters only. He was not testing handwriting or marginalia. [213(12)]

In 1992, he tested six different OCR products. The best results yielded a 98.67 percent accuracy rate. In 1993, he operated all six machines in parallel, using a majority voting scheme to recognize characters. With this technique, he achieved a 99.3 percent accuracy rate. When he added an algorithm to correct reject characters based on vote results, he improved the accuracy rating to 99.73 percent. [214(19)] In the next six months, he is confident that he will be able to exceed 99.8 percent, thus eliminating the need for manual correction of full text within the LSS. [216(16)]

Totally automated OCR should result in savings of \$30 - \$60 million, based on SAIC cost data. In addition, the cost of OCR technology is going down. [217(17)]

For further information on UNLV's OCR research contact:

Tom Nartker  
Director of the Information Science Research Institute  
Engineering Building, Room B332  
University of Nevada  
Las Vegas, NV  
(702) 895-0848.

**INFOSTREAMS TEXT INFORMATION MANAGEMENT SYSTEM STUDY**

George Hallnor, TRW

Attachment K: slide presentation.

[Under Alternative 3, the LSSA's compliance assessment activities include oversight of DOE's design of the system. This would include the search and retrieval capability of InfoSTREAMS.]

Hallnor described a study on text information management systems that was conducted by TRW. The purpose of the study was to identify the most promising products as candidates for the InfoSTREAMS free text search capability. [236(13)]

Fifty products were surveyed. This list was reduced by eliminating products that were not compatible with the InfoSTREAMS architecture (VAX). Sixteen products remained. Six were rejected for technical and corporate viability reasons. In evaluating the remaining 10 products, the following evaluation criteria were used:

- Quality and capability of application program interfaces (to the InfoSTREAMS applications)
- Client/server support capability to function in a distributed environment and ease of expansion
- Volume performance
- Advanced retrieval capability, including term expansion, thesaurus, query by example, fuzzy match
- Capability of system administration tools [236(15)]

The highest ranked products were:

- ConQuest by ConQuest Software Inc.
- Ful/Text SDK by Fulcrum Technology Inc.
- BASISPlus by Information Dimensions Inc.
- TOPIC by Verity Inc. [250(18)]

No recommendation or selection of a specific product has been made as of October 1993.

In the discussion following Hallnor's presentation, the following topics were discussed:

### **Comparison to Other Systems**

When asked if there are any other client/server applications that are this size, Hallnor responded that he did not know of any, but stated that there may be some mainframe systems. [241(11)]

Boyd Alexander, U.S. Patent & Trademark Office mentioned a licensed software product, the Chemical Abstracts System, a messenger system that runs on distributed processors. [242(10)] Another member expressed concern that TRW was not aware of the Chemical Abstracts product. [247(6)]

### **InfoSTREAMS Response Time**

Hallnor had quoted a response time for text retrieval of no more than 30 seconds. Alexander stated that this was slow, that anything over a second for text searching would be unacceptable for his purposes. [248(4)]

## **DISCUSSION OF TOPICAL GUIDELINES**

John C. Hoyle, NRC, LSSARP Chairman, Moderator

[Under Alternative 3, the LSSA's compliance assessment activities include oversight of DOE's operation and maintenance of the LSS, including the thesaurus and authority files. The thesaurus will need to track the Topical Guidelines. LSSA compliance assessment activities may also include oversight of DOE's searcher training and assistance program, which is assumed to include the Topical Guidelines.]

The availability of the Topical Guidelines for comments was announced in the *Federal Register* on July 27, 1993. Following are the topics discussed with respect to the Topical Guidelines. [253(2)]

### **Environmental Information**

Originally, environmental and transportation were excluded from the Topical Guidelines. Members expressed the necessity that a clear understanding exist about the definition of "environmental". Environmental should include any information developed by NRC to answer environmental issues, including their environmental impact statement ("EIS"). It should also include socio-economic information (or socio-economic should be a category by itself). It should also include transportation. [254(10)]

## **Section 1.10**

One member stated that Section 1.10 should list NEPA as one of the statutes. [(259(21))]

### **Scientist's Depositions and Exhibits**

Kirk Balcom, State of Nevada, wanted to make sure that there isn't anything to exclude the testimony of scientists and their exhibits. [260(22)]

## **REVIEW AND DISCUSSION OF OPEN ISSUES**

John C. Hoyle, NRC, LSSARP Chairman, Moderator

[Open issues all affect whether or not Alternative 3 will come into effect. Operation of the CAP will be different under Alternative 3 than under the current LSS Rule.]

Following summarizes the discussion on open issues:

### **DOE Control of the LSS**

Panel members cannot decide upon Alternative 3 without first reviewing the information they requested.

The philosophical problem with DOE still exists today. At least two members expressed doubts that their constituents could overcome past perceptions of and experiences with DOE. [266(21)]

An issue that was mentioned more than once by Malachy Murphy, Nye County, was the concern that if DOE controlled the system, priority conflicts in document processing would be resolved in DOE's favor. [268(4)]

Another concern relating to DOE control of the system, would be the potential for DOE to purge or withhold pertinent DOE documents. [196(23)]

The following alternatives to DOE control were discussed:

- Patent & Trademark Office controls the system, as an independent party (this may or may not have been a serious suggestion) [277(21)]
- Hand-off of the system from DOE and its contractors to NRC and its contractors [290(21)]
- Transfer InfoSTREAMS and contractor to NRC at some point in the process [289(17)]
- Develop InfoSTREAMS so that it is independent of DOE from day one [296(20)]
- NRC develop and design the LSS [297(11)]

- LSSA on-site control of DOE system development (if it is possible for one governmental agency to put one of its activities under the control of another governmental agency) [292(10)]
- Temporary transfer of funds from DOE to LSSA [291(25)]

Graser stated that some of these alternatives would be objectionable to DOE in terms of the records management mission for InfoSTREAMS. [309(18)]

### **DOE Exposure**

Graser stated that DOE may not be willing to operate the LSS without some assurance that normal technical problems, if encountered during critical periods, would not have a negative impact on their application. [281(12)]

### **Cost/Budget**

The Commission has been concerned all along about funding this project out of the NRC budget. The budget is too small to handle allocation of percentage reductions without affecting the LSS development project. [305(9)]

If DOE has total control of the system, and suffers budget problems, there is a greater danger of LSS budget being slashed or deferred than if NRC retains program responsibility. We have already seen this type of deferral of money that should have been spent in developing the system. [282(19)]

### **Alternatives to Alternative 3**

Panel members would like to see the 11 options that were considered by the Technical Working Group. [288(9)]

## **SUMMARY OF ISSUES DISCUSSED AT THE MEETING**

**LSSARP Involvement in LSS Decision-making, Rule-making**

**LSSA Authority to Certify Non-DOE Participant Compliance**

According to LSSA interpretation, the authority derives from LSS Rule Section 2.1009.

**LSSA Audits of Non-DOE Participants**

Some members questioned the need for auditing non-DOE participants. At the very least, they thought that more stringent standards should apply to DOE than to the other participants.

#### Use of Contractor to Conduct LSSA Audits

Some members would prefer that audits were performed by LSSA staff, not a contractor dependent upon DOE or NRC for payment.

#### Cost of Compliance with CAP

Non-DOE participants expressed concern about the costs they would have to incur in order to comply with the CAP.

#### Concerns Over DOE Control of the LSS

- Political/public perception
- DOE access to privileged information
- Resolution of priority conflicts during document processing
- DOE control of access to their own documents

#### InfoSTREAMS Acceptance Within DOE

InfoSTREAMS is not an agency-wide system and does not necessarily have agency-wide support within DOE. This could affect future funding and operation of InfoSTREAMS.

#### LSS Thesaurus and Authority Lists

Who will maintain these lists? Will they be common to both the LSS and InfoSTREAMS?

#### Copyrighted Documents/DOE Position

DOE lawyers say that the "fair use" exemption would not apply in the case of InfoSTREAMS.

#### InfoSTREAMS Handling of "Circulated Drafts"

Members expressed concern that, if InfoSTREAMS tracks all drafts (not just the "circulated" ones), the LSS will be clogged with useless information. Only "circulated drafts" should be included in the LSS. The system architecture may need to be re-examined with regard to the way that draft documents are captured.

## **LSS System Functional Requirements**

Some the members' comments implied that a review of the functional requirements of the LSS would be in order. It is possible that such a review might result in a scaled-back set of requirements that would be less expensive.

## **Alternatives to Alternative 3**

In assessing budget impact and cost saving, members expressed an interest in costing alternatives other than Alternative 3. A \$63 million cost saving may not be a saving if InfoSTREAMS is the most costly option for the LSS.

## **InfoSTREAMS Capacity**

Some members expressed concern that TRW was unaware of any currently existing client/server systems that were capable of handling the volume of documents anticipated for the LSS.

## **ACTION ITEMS**

### **NRC**

- NRC will provide draft report, dated 2/19/93, by the Technical Working Group [203(11)]
- NRC will provide summary of the 11 options for the LSS that were reviewed by the Technical Working Group (this may be included in their 2/19/93 draft report) [288(9)]
- John Hoyle will schedule another LSSARP meeting for mid-January 1994. [313(21)]

### **DOE**

- Dan Graser will:
  - provide additional cost information on InfoSTREAMS [202(5)]
  - provide discussion sections of TRW study on text information management systems [317(23)]
  - provide paper on how the original SAIC capture module could be done enterprise-wide [312(17)]

- look into the question about whether it is bureaucratically feasible for NRC to control DOE's operation of the LSS [309(25)]
- continue to hold discussions with the Office of General Counsel about the copyright issue [(111(17))]
- make TRW available for demo of current InfoSTREAMS development effort for any interested LSSARP members. [311(12)]

### LSSARP

- LSSARP will draft a letter response to the Commission regarding Alternative 3. Malachy Murphy will draft the letter and circulate it to other members. [307(15)]
- LSSARP members will provide comments to Dave Drapkin on the proposed CAP in the context of Alternative 3. [318(5)]
- LSSARP members will submit comments on Topical Guidelines by the end of October. [262(23)]
- Reconvene Header Working Group. [314(14)]
- Consider the following topics at the next rulemaking:
  - Wording to exclude technology "constraints" and include technology "levers" [96(10)]
  - Protected/privileged materials and knowledge [183(16)]