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1   UNITED STATES

2   NUCLEAR REGULATORY COMMISSION

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4   LICENSING SUPPORT SYSTEM

5   ADVISORY REVIEW PANEL

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8   Holiday Inn

9   Magnolia Room

10   325 E. Flamingo

11   Las Vegas, Nevada

12

13   Wednesday, October 6, 1993

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15   The panel met, pursuant to notice, at 8:40 a.m.,

16 before John C. Hoyle, Chairman.

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1   PARTICIPANTS:

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3   John C. Hoyle, LSSARP Chairman, NRC

4   Christopher Henkel, Edison Electric Institute

5   Jay Silberg, Attorney, Shaw, Pittman

6   Robert Holden, Director, Nuclear Waste

7   Program, National Congress of American Indians

8   Boyd Alexander, Assistant Commissioner,

9   Information Systems, Patent and Trademark Office

10   Daniel Graser, Acting Director, Information

11   Management Division, Department of Energy

12   Linda DeSell, Chief, Regulatory Integration

13   Branch, Office of Civilian Radioactive Waste

14   Management, Department of Energy

15   Corinne Macaluso, Regulatory Integration Branch,

16   Department of Energy

17   Dennis Bechtel, Clark County, Nevada

18   Malschy Murphy, Regulatory and Licensing Advisor,

19   Nye County, Nevada

20   Kirk Balcom, State of Nevada

21   Chip Cameron, Office of General Counsel, NRC

22   George Hallnor, Environmental Support Services,

23   TRW

24   Gerald Cranford, Acting LSS Administrator

25   Betsy Shelburne

1   PARTICIPANTS [continued]:

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3   Dave Drapkin

4   Tom Nartker, UNLV

5   Lloyd Levy

6   Mike Baughman, Intertech Consultants

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1   P R O C E E D I N G S

2   [8:40 a.m.]

3   MR. HOYLE: We have two presentations this morning

4   scheduled and Mal Murphy would like to also have a

5   discussion of the topical guidelines. So we'll have that as

6   the third item.

7   Our first is a presentation by Tom Nartker. Tom

8   is a Professor of Computer Science at UNLV and Director of

9   the Information Science Research Institute, where he is

10   conducting work on OCR projects and text retrieval systems.

11   Tom, let's have your presentation, please.

12   MR. NARTKER: Thank you, John. As many of you

13   know, I'm sure, UNLV has established a program of applied

14   research in the two specific areas of technology which are

15   important to DOE OCRWM type programs, the DOE OCRWM program

16   and LSS kind of systems.

17   These two areas are, of course, optical character

18   recognition and full text retrieval. They control the costs

19   and the benefits of systems like the LSS. We have been

20   operating now for about two-and-a-half years and a

21   significant amount of work has been completed.

22   I will try to give you a quick overview of our

23   activities this morning and talk about some of our most

24   important results.

25   First, I will focus on practical, money-saving,

1 specific completed research results which could be used in a

2 future LSS system; that is, work which you think is of most

3 interest to you. In fact, we have begun discussions with

4 OCRWM, with Dan Graser, to implement systems, to actually

5 begin building some systems at UNLV, which can save the most

6 money.

7   We think we can save significant dollars and I

8 will tell you why. Second, I will give you a review of all

9 of our activities at the Institute, a quick review of

10 research projects that are in progress, now incomplete,

11 which have the potential to save more money or give improved

12 benefits.

13   I will give you an overview of the support and

14 funding we've been able to attract from other agencies to

15 support this kind of work, an overview of the funding we've

16 attracted from industry to support this kind of work.

17   I'll talk about our annual research symposium in

18 this area. Each year we sponsor, here in Las Vegas, a

19 symposium on document analysis and information retrieval,

20 which attracts about 150 to 200 scientists from around the

21 world. I will tell you about the plans for 1994. Finally,

22 I will give you the most specific evidence of the effect our

23 program has had on the industry in the last two-and-a-half

24 years.

25   First, specific research results that can save

1   money.   The background is that one of the most important

2   requirements for the LSS system is for accurate text to

3   support a sufficient retrieval of meaningful documents for

4   LSS users.   So a key requirement is for accurate text.

5   For new documents, if text is captured

6   electronically at the source, a hundred percent accuracy is

7   guaranteed.   There will, however, be a significant number of

8   older or external documents, which text can only be made

9   available through OCR technology or through total manual-

10 key entry.

11   No current OCR technology can produce a hundred

12 percent accurate text or even close to a hundred percent

13 accurate text.   Thus, for paper documents, the question

14 arises what accuracy is required for LSS users.   The best

15 answer was provided by SAIC as part of the LSS prototype

16 tests they conducted.   It addressed this accuracy question.

17   In these tests, they determined that 99.8 percent

18 character accuracy was required to properly support LSS

19 users.   Note that this translates into an average of six

20 character errors on every page with 3,000 characters.   If

21 you think about that, that seems a little high.

22   In the absence of more definitive results, this

23 has been the generally accepted requirement for the LSS, I

24 believe.   SAIC found that none of the available OCR

25 technologies at that time would produce output text at 99.8

1   percent accuracy. That situation remains true today.

2   The only means to satisfy LSS accuracy

3   requirements, when SAIC did their original study, was to

4   provide expensive manual reentry and manual checking of all

5   documents, in addition to an initial OCR conversion step.

6   In fact, the cost of this additional manual entry and

7   checking dominated the cost of document capture for all

8   paper documents.

9   You may remember one-half of the projected $200

10   million cost was for data capture. In fact, over half of

11   the data capture cost was directly linked to this manual

12   cleanup step. In 1992, when we first got started at UNLV,

13   we conducted our first thorough test of six of the most well

14   known commercially-available OCR systems using the LSS

15   prototype data prepared by SAIC.

16   This graph shows a summary of the results of that

17   test. The best device tested in 1992 was the Calera RS-

18   9000 and, in fact, it produced 98.67 percent correct output

19   text. Once again, SAIC determined that 99.8 percent correct

20   text was the probable LSS requirement. The best device in

21   1992 produced 98.67 percent accurate output.

22   If you calculate that out, that's about 40 errors

23   on every 3,000-character page. Clearly, character accuracy

24   is a very sensitive measure at this point. On this

25   particular graph, the Calera RS-9000 is represented by this

1   particular curve right here. Those curves show the

2   character accuracy as a function of page quality or OCR

3   difficulty for an initial group of 132 pages we used,

4   selected from the LSS prototype database, which we used to

5   test.

6   There were, on these pages, 278,000 characters.

7   So this test for each device represented 278,000 characters

8   of OCR. The characters are divided into the three groups;

9   the characters on bad pages, the characters on middle

10   quality, and the characters on best quality pages. But,

11   nevertheless, it's over a quarter of a million characters in

12   the OCR tests.

13   The devices tested were the Calera RS-9000, the

14   Xerox Curswile 5200, the Expervision Typereader, Omni Page

15   Professional, the Recognita Plus system and the Toshiba

16   system. Having built an automated system to conduct such

17   tests, we were able to use this system to try different

18   experiments and we have continued to do that.

19   One experiment which paid off the most is to

20   operate all six OCR systems in parallel. This was not a

21   particular surprise. We expected this might happen, but, in

22   fact, it has. We synchronized the text output from these

23   systems and attempted to choose on a character-at-a-time

24   basis, attempted to choose the best character output by a

25   simple majority voting type scheme or some slight

1   modification of majority voting.

2   In fact, our 1992 majority voting scheme, shown on

3   this graph as the top curve, produced 99.3 percent character

4   output. That's approximately 21 errors per page on a page

5   with 3,000 characters.

6   So this, in fact, is not a commercial device at

7   all. It shows the performance, the output character

8   accuracy performance of an engine we built at UNLV that, in

9   fact, is composed of all of the above devices, simply

10   connecting them in a way and trying to determine what the

11   correct character would be by majority vote.

12   The exciting thing about this is that with such a

13   simple idea, we were able to reduce the number of errors

14   made by the best device, by the best competing device, by 50

15   percent. In fact, the Calera RS-9000 made approximately

16   3,600 character errors on this test and this line shows the

17   accuracies resulting, but the total number of character

18   errors with that particular test was 3,600.

19   The ISI voting algorithm, in fact, cut that in

20   half. It made about 1,800 errors on the same test. We have

21   continued this research during 1993 with the newest and best

22   technologies available to us.

23   By the way, before I take this down, I will

24   mention to you what the overall accuracies of some of these

25   other devices were. I told you the Calera produced 98.67.

1   That's overall. On the bad quality pages, they were

2   actually down around 97 percent. On the intermediate

3   quality pages, they were up above 99 percent.

4   The Curswile 5200 was 98.31. The Expervision

5   Typereader was 97.73. The Omni Page Professional was 96.83.

6   The Recognita Plus system was 95.95. The Toshiba system was

7   95.64. These results are especially meaningful because this

8   data is directly sampled from the LSS prototype database.

9   These are LSS-type numbers.

10   This is a slightly different graph that shows some

11   of the results from 1992 tests. It's not shown in the same

12   way, but it happens to show what I think is most important

13   to us. So this year, using LSS prototype data as a measure,

14   we can produce an OCR machine, again, using a voting type

15   algorithm, which produces 99.73 percent character output.

16   At our current rate of improvement, we'll be able

17   to produce an OCR system which will exceed 99.8 percent

18   accuracy within the next six months and we're very confident

19   of that.

20   This particular curve actually shows character

21   efficiency and it's slightly different. The top graph

22   shows, in fact, the 1993 ISI voting algorithm and the top

23   point here shows that we're able, by correcting reject

24   characters in the output and we have our own scheme of

25   actually producing reject characters by vote, by correcting

1   reject characters, we can actually get to 99. something, and

2   that points end up being 99.73.

3   So we are, in fact, approaching very rapidly the

4   99.8 percent requirement for LSS documents, without manual

5   -- without expensive manual re-key, without expensive manual

6   correction, in completely automatic mode.

7   The availability of this kind of technology can

8   eliminate the need for manual checking for the LSS. Using

9   the 1988 estimated LSS dollar numbers, the $200 million

10   figure, the savings which would result directly from the use

11   of this idea would most probably be between $30 and $60

12   million. That is over half of the $200 million project cost

13   for data capture. So over $100 million. Approximately $110

14   million, as I recall.

15   Over half of that, which would be over $50

16   million, was due to manual reentry. So, in fact, the $30 to

17   $60 million estimate in savings is probably conservative.

18   It's probably conservative especially when you consider that

19   perhaps the costs have increased since the original $200

20   million estimate in 1988.

21   In fact, UNLV has begun discussions with the DOE,

22   with Dan Graser, and has proposed to build an operating

23   engine, OCR engine product tailored to the InfoSTREAMS

24   interface, which would achieve more than 99.8 percent

25   accuracy. We think that could be done perhaps not within a

1   year, but certainly in well under three years.

2   So we have started to talk about that and that is

3   probably the one issue which has the potential the soonest

4   to save the most money. We hope to -- it is our goal at the

5   university to try and tailor a design, an OCR engine, based

6   on some of the ideas, some of our research, that can save

7   significant money for this project.

8   Let me give you an overview. That's probably the

9   one aspect of the things we have done which you would be

10   most interested in, because it's the clearest place we can

11   save dollars in a very short time period.

12   As far as other projects at our Institute are

13   concerned, there are a large number which have more

14   potential for significant cost savings. Perhaps not as much

15   savings as represented by OCR accuracy, but significant,

16   nevertheless.

17   A good review of these projects I can show you by

18   just giving you a copy of our 1993 annual research report.

19   Let me pass those out.

20   MR. HOYLE: Tom hasn't got too many. We'll try to

21   give one per group, if we can.

22   MR. NARTKER: I'm missing some important groups.

23   Please just give me a call at -- my phone number is in

24   there. Give us a call at UNLV and we'll send some more out.

25   I think I brought a little more than this.

1   There are six different research projects written

2   up in there. I won't go through them all, but I will give

3   you kind of an overview of the results that you will read

4   about in that report.

5   One of the things we do every year is to conduct

6   an annual technology assessment test. We acquire one copy

7   of all of the best OCR devices that each vendor available

8   has to offer and we install them in our system and each year

9   we run a test versus DOE, versus LSS prototype data. Each

10   year we prepare more data and we prepared more measures of

11   performance, of goodness, more measures of performance.

12   As I told you before, our first round of testing

13   was conducted in 1992. The slides I'm going to show you now

14   are prepared from our 1993 tests and we're just getting

15   started this month and next month preparing for our 1994

16   round of testing.

17   The devices we tested in 1993 -- yes?

18   MR. BALCOM: Can I ask you a question? In terms

19   of throughput, are you also looking at like the page per

20   minute count between some of these various high end options,

21   like the voting? The voting machine, since it tries to

22   balance three or four or five or six different technologies,

23   does it take like three times as long?

24   MR. NARTKER: Actually, it's limited almost

25   completely the slowest device of the group. We operate all

1   devices in parallel and the voting machine works just about

2   as fast as the slowest device in the group. We do not

3   report -- we, of course, know about throughput

4   considerations. We know about the speed of these

5   technologies.

6   But speed is really not a very meaningful thing to

7   report on, for several reasons. It doesn't vary as much --

8   certainly, it varies by a factor of two, perhaps even more

9   than a factor of two, but in no case anything approaching a

10   factor of ten. So speed does vary somewhat, but compared to

11   accuracy, speed is simply not important.

12   MR. BALCOM: In terms of the cost savings, though,

13   since the people that will be operating this -- I was just

14   trying to get a feel for whether the old SAIC projections

15   are out of date because speed is so much faster now.

16   MR. NARTKER: Not especially. The dominant cost

17   factor, separate from speed, is accuracy, by far. You can

18   always buy another PC. If the machine is half the speed of

19   another machine, but ten percent more accurate, you buy two

20   PCs and run them in parallel. If that's not good enough,

21   buy ten PCs and run them, by 100. There is almost no limit

22   to the number of PCs you could afford if they will give you

23   good enough accuracy.

24   If they don't give you good enough accuracy, you

25   have to pay a manual typist to sit there and re-key and

1   reverify manually every document, and that's where the costs

2   really go outside.

3   So eventually we will probably report on

4   throughput, but we have focused our energies the first two

5   years on accuracy because it's such a dominant

6   consideration.

7   The specific technologies we tested in 1993 are

8   shown. The Care Corporation, Calera, CTC, CTA, Expervision,

9   Okon, Recognita, Xerox, and then the specific version

10   provided to us by these vendors and the actual version

11   number, because we ask each vendor to give us their latest

12   and greatest best technology, the best thing they can do.

13   We don't specifically test specific products. We

14   test technologies. By doing this, we hope, over a period of

15   three to five years, to have a profound effect on the market

16   to make the current level of technology more visible to

17   everyone, because that's one of the problems in this field.

18   The technology is so complex that even the Vice President of

19   a large company doesn't have the resources at his command to

20   make decisions in any reasonable period of time about which

21   technology best suits his needs, because it's too

22   complicated.

23   This is our 1993 graph showing character accuracy

24   versus page quality for all eight devices. In 1993, we

25   actually had a dead heat tie between three companies for the

1   best technology. The three lines at the top are, in fact,

2   completely over the top of one another. They are the new

3   Calera system, the Xerox system and the Expervision system.

4   Slightly behind them is the Care, the pink line.

5   Care, in fact, just about duplicated the performance of the

6   top three on normal pages, on good pages, but on poor

7   quality pages, Care's accuracy dropped off rather rapidly.

8   The other four products are shown as falling off even more.

9   We measure not only character accuracy and publish

10 that annual report showing to the world how these devices

11 compare, we measure word accuracy of all the words in these

12 documents, what percentage of them were correct. Notice the

13 word accuracy is somewhat lower than character accuracy.

14 The database used to test this year was slightly

15 different than last year's database. Once again, it was

16 page sampled from the LSS prototype database, but this year

17 it was 460 pages and these tests were conducted on 817,000

18 characters. So almost a million characters. We have built

19 an automated system to make this possible with just a few

20 keystrokes behind a computer system.

21 Another metric reported on in our annual report is

22 called non-stop word accuracy. If you use the text

23 retrieval system and know how they're built, you know that

24 within text retrieval systems, there are -- in the text

25 retrieval community, there are words called stop words and

1   the stop words are "in," "the," "and," "but." They are

2   words that have virtually no retrieval value.

3   You would never ask an information retrieval

4   system to give me all the documents in your memory that have

5   the word "the" in them. You'd almost always get them all,

6   wouldn't you? So there's no retrieval value to the word

7   "the" or "in" or "and."

8   It is only the non-stop words that have retrieval

9   value. In fact, in most retrieval systems, the stop words

10   are not even indexed. They are not even read into the

11   system. They're just eliminated and it's assumed that all

12   documents would probably have all stop words.

13   So you're not interested in all the word accuracy

14   because there are, in most cases, on the order of a hundred

15   common words, like "in" and "the," that aren't even indexed.

16   What you'd like to know is what is the accuracy on all the

17   words that are not stop words, because those are the ones

18   you're going to put in your text retrieval system. Those

19   are the ones that can cause you trouble.

20   We have invented a metric called non-stop word

21   accuracy and, in fact, measured that for the same 460 LSS

22   pages. It's interesting to compare the last three graphs

23   I've showed you side-by-side on the same scale on the same

24   page. This shows a trend which we have observed is

25   consistent in all of our testing.

1   That is the word accuracy is always lower than

2   character accuracy and that non-stop word accuracy is always

3   lower than word accuracy.

4   MR. HOYLE: Tom, let me ask you a question.

5   MR. NARTKER: Yes.

6   MR. HOYLE: Of the number of pages that you used,

7   how many were in the quality group five versus group one?

8   MR. NARTKER: The groups are defined in such a way

9   that the number of characters in each group is approximately

10   the same. It's approximately the same. It's within a few

11   percentage points of being the same number of characters in

12   each of the five groups.

13   Another metric we've defined on these pages is

14   called marked character efficiency. This actually shows

15   what the raw output of accuracy is of each of the devices.

16   It shows if you go in and find all of the reject characters,

17   which is the first point on the curve, and you go in and

18   find all the characters marked suspect, which is the second

19   and third and fourth points, it shows you what accuracy you

20   can obtain on the ordinate of the Y axis, plotted as a

21   function of the total percentage of the characters that were

22   marked that you have to look at to do that.

23   So the further out you are here shows you how much

24   work you have to do. The further up you go here shows you

25   what you get for doing that work and using each particular

1 technology. Marked character efficiency is a new metric

2 we've introduced. These curves show rather graphically how

3 these devices perform in a new way.

4   Once again, the three top performers were, in

5 fact, Expervision, Calera and Xerox. They all produced --

6 now they're up to about 99 -- you can get 99.3 percent

7 accuracy. As of today, the best device produces about 99.3

8 percent accuracy on DOE data, according to our best testing

9 results.

10   This is another metric. You will find it as the

11 third paper in that annual report. This shows the cost of

12 correcting automatic zoning errors. I don't want to get

13 into a lot of details and talking about intricacies of these

14 technologies. If you're interested, we could talk about it

15 later.

16   This is a new metric we've never introduced. It

17 has never been published before. It's a brand new idea. It

18 is the first time that anyone has ever come up with a way of

19 measuring how good devices do when they try and

20 automatically zone -- provide decomposition of a document at

21 a high level.

22   When we talk about zoning in OCR, we're talking

23 about the action of finding the photographs and not trying

24 to OCR the photographs because maybe there's no text on the

25 photograph. Differentiating between photographs and graphs

1   and main body text and tables and organizing; if there is

2   three-column newspaper-style print, decolumnizing the three

3   columns so that the text reads column-wise down.

4   If it's a table, on the other hand, of data, you

5   don't want to decolumnize a table. So how good vendors do

6   and properly decolumnizing multiple column input text, but

7   not decolumnizing the tables was something very interesting

8   to us.

9   This particular set of graphs shows that. On

10   these 460 LSS pages, this shows the cost of correcting

11   automatic zoning errors for the eight technologies. The

12   interesting curves are here. These show the costs for

13   multi-column pages and the better people are down at the

14   bottom. Lower cost is better.

15   So for the technologies tested, there were a few

16   that did pretty good in decolumnizing multiple column text,

17   but only two vendors had properly addressed the question of

18   trying to recognize when it's a table and you don't want to

19   decolumnize. Those two vendors are shown here. If you're

20   interested, they were Expervision and Xerox.

21   Another kind of test we ran was to take the ground

22   true text in our database, the text we knew that was

23   correct, that was already on the pages, and generate ideal

24   perfect images of those pages using a postscript processor

25   on our UNIX machine.

1   That is we produced a perfectly clean set of

2   documents at 12-point albetica, 12-point typed Roman, and

3   another complete set of documents at 12-point courier, and

4   we tested each of these versus absolutely perfect images,

5   where there was no speckle and no touching characters

6   resulting from second and third and fourth generation

7   photocopy process or from the scanning process or from

8   coffee stains or anything else.

9   We generated virtually perfect sort of

10 mathematically or computer-perfect images inside the machine

11 and sent the perfect images off to each of the OCR engines

12 and measured how good they did.

13   One might expect, because it's clear that the

14 thing that gives OCR devices most trouble is degraded

15 images, photocopies, Xerox copies, because of that, that if

16 you generated mathematically perfect images inside a

17 computer, that the devices would -- maybe some of them would

18 do a hundred percent correct.

19   In fact, on this particular test, which is

20 reported as the third article, I believe, in that annual

21 report, we tested nine complete copies from the database,

22 10-point, 12-point and 14-point, courier, albetica and typed

23 Roman versus the eight devices. On this test, we don't

24 identify who is who.

25   But the most important thing you can see is even

1   for a very idealized situation of characters generated

2   inside a computer by a postscript processor, that today's

3   technology does not produce a hundred percent correct

4   accuracy.

5   In fact, in a fairly large number of cases, it's

6   not as good as 99.8 for very perfect characters. We also

7   have completed several projects in experimenting with text

8   retrieval systems. If you look in the annual report, you

9   will see there is a noisy data project reported where we're

10 trying to measure what effects a person using an information

11 retrieval system notices as the data in that system gets

12 dirtier and dirtier or noisier and noisier, has more and

13 more character error, at what level of character error does

14 the use of the system become unacceptable to a retrieval

15 person.

16   It turns out that kind of data is not known.

17 There is no -- there is a lot of folklore in the business

18 and a lot of speculation, but there really has been no

19 definitive report that gives any insight into the

20 relationship between errors in text and retrieval

21 efficiency.

22   So there's a noisy data project in there. There's

23 also a project attempting to use text retrieval to do some

24 global type correction. So we have several approaches to

25 improving accuracy besides the voting algorithm, which I've

1 already told you about, and one of them is described in our

2 annual report.

3   During these last two years of operation, we have

4 secured several other grants from other Federal agencies.

5 From the Office of Research and Development, we managed to

6 secure an additional 145,000 in 1991 and another 140,000 or

7 145,000 in 1992. This year we have secured support from the

8 Department of Defense to extend this work and to actually

9 begin doing this kind of testing on foreign languages.

10   We, in fact, this year have an additional $790,000

11 to begin doing testing not only on English devices, but on

12 Japanese and Zorilic. So by January, we are committed to be

13 producing the kind of performance comparisons I have shown

14 you not just for English, but also for Japanese OCR devices

15 and for Russian Zorilic OCR devices.

16   At the same time, we have initiated an industrial

17 affiliates program where we have solicited support from

18 companies who do business in this area. A collection of

19 companies -- we have asked these companies to contribute

20 annual membership fees, $25,000 each, to support our work.

21 So far, five companies have signed up. We have $125,000

22 from industry and we have good indications there are three

23 or four more who are very interested. We expect to see

24 probably two more companies sign up between now and

25 Christmas.

1   The brochure we have describing our affiliates

2   program is here. It's a little smaller and I have a few

3   more copies of that. Everyone can have a copy of that. You

4   can read that when you get time. That shows the benefits

5   and shows the goals of our research center. So you can,

6   indeed, learn quite a lot about us, what we're doing, by

7   reading carefully the annual report and that industrial

8   affiliates program brochure.

9   In addition to that, we, as I told you at the

10   beginning, sponsor an annual symposium on document analysis

11   and information retrieval. It's the only symposium that's

12   dedicated to both subjects at the same time and the

13   interaction between recognition accuracy and retrieval

14   effectiveness.

15   Most academic researchers work in one area or the

16   other and very few have considered that the two areas, in

17   fact, are intimately connected. We believe our symposium is

18   starting to be very successful because of this specific

19   feature.

20   The first annual symposium was in 1992 and, in

21   fact, I have a -- I just brought one copy of the

22   proceedings. This is the proceedings from our 1992

23   symposium, which was held in March of 1992 at the Tropicana

24   Hotel. Our 1993 symposium grew a little bit. It was held

25   in April of this year at Caesar's Palace. The 1994

1 symposium is scheduled for April 11 at Alexis Park.

2   Papers are arriving as we speak. We have about 38

3 submissions so far. We expect about 50. Approximately 30

4 to 35 of the papers will be accepted for presentation.

5   We currently have participation from ten foreign

6 countries and we expect about 200 people at this symposium.

7   Finally, we think the most profound evidence which

8 our annual technology assessment test program has had is in

9 the product improvements made by OCR vendors between 1992

10 and 1993. In fact, I told you we did -- and I showed you a

11 curve when we started showing the performance of devices in

12 1992. Subsequently, I have shown you some more graphs

13 showing the performance of devices from some of the same

14 vendors in 1993.

15   It's worthwhile to ask, well, the data you used to

16 test in 1992 was different from the data you used to test in

17 1993. The data we tested with in 1993 was a great deal more

18 -- was several times more, 817,000 characters instead of

19 278,000.

20   But you might ask how did the competing vendors do

21 between their 1992 products and their 1993 products. In

22 fact, there was very significant improvement. In 1992, five

23 of the six participating vendors were Care, Calera,

24 Expervision, Recognita and Xerox. The version tested was,

25 as you will remember, the RS-9000, the Curswile 5200, and so

1   forth.

2   The actual number of errors made on the 1991 data

3   -- that is the 278,000 characters in 1992 -- are shown in

4   this table. The number of errors made by the Calera RS-

5   9000, I told you, was 3,600. It was actually, in fact,

6   3,709. The number of errors made by the second device,

7   which I told you was the Xerox Curswile 5200, was 4,716.

8   The third device was Expervision, 6,318. Of course, the

9   worst of this five was the Recognita device, 11,282

10   character errors.

11   We took the 1993 version of the Care product and

12   the Calera product, the 1993 version of each of these

13   products, and we ran the same data across that to see how

14   many errors would be produced by the 1993 products. In

15   every case, in every single case, the improvement was

16   greater than 25 percent. There was more than a 25 percent

17   reduction.

18   In one case, one vendor, in fact, reduced the

19   number of errors by 52 percent between his 1992 product and

20   his 1993 product.

21   We know from talking to the technical staff of

22   these companies that we at least have a little bit to do

23   with that, because until UNLV began to do these tests and

24   publish them nationally for the world to see, it was quite

25   invisible how good the products were and how they compared.

1   Vendors could make assertions and it was -- PC

2   Magazine could run a test on four pages of maybe 2,000

3   characters, which was simply not sufficiently -- not a

4   sufficient sample size to be statistically significant.

5   So until we began to establish a system which

6   would compare the performance of devices on millions of

7   characters at a time, management was not motivated to spend

8   money on product improvement. Management was motivated to

9   bring their products out on more platforms, to conduct more

10   expensive advertising campaigns, to build more glitzy color

11   graphic interfaces to their products, to give expensive

12   demonstrations of conducts and other kinds of shows, but

13   they were not particularly motivated to invest a lot of

14   money in product improvement.

15   We think it's changed and we think we have

16   something to do with it. Perhaps in the long run, the most

17   valuable service we provide to the industry is in doing that

18   kind of thing and we hope to continue.

19   Any questions?

20   MR. HOYLE: Tom, did the cost of the products go

21   up very much between --

22   MR. NARTKER: Actually, it went down very

23   significantly. We paid -- when we got started, we paid

24   $21,000 for the Curswile 5200. We still have it. A much

25   better product exists today. It's the new PC Stanwards

1   product that costs $99. You could buy it yourself, $99. It

2   is much better, more than 25 percent better than the

3   products which less than two years ago we paid $21,000 for.

4   We paid $30,000 for the Calera RX-9000. You can

5   now buy technology from Calera for well under $1,000 that's

6   better, much better than the Calera RS-9000. That pattern

7   holds true across the market.

8   The market prices are changing certainly yearly,

9   maybe every few months. The market is very dynamic. The

10   thing you might not recognize is that the need for OCR

11   technology is probably greater than what you're aware of, if

12   you haven't paid a lot of attention to this kind of market.

13   What we really need is a Xerox machine where every

14   time you take a document up to the Xerox machine, the

15   machine first prompts you when you put the document in do

16   you want a paper copy of this document or do you want a

17   floppy disk copy of this document in ASCII text or do you

18   want both, because, in fact, almost every document you work

19   with, you'd really like to have it available on your PC so

20   you can manipulate the text and so you can make use of it

21   and other documents, so you can electronically forward it to

22   you friends.

23   Information in electronic form is significantly

24   more valuable than in paper form. The market is felt to be

25   about to explode. Think for a minute about the market for

1   Xerox machines. How big has the market for Xerox machines

2   been for the last over 30 years versus how big the market is

3   for OCR devices?

4   Most vendors believe that the measure of the

5   ultimate market for OCR technology is, in fact, the size of

6   the current Xerox machine photocopy market, which is huge.

7   Thank you.

8   MR. HOYLE: Thank you very much, Tom. George, are

9   you ready for your presentation?

10   MR. HALLNOR: What I will do here today is to very

11   briefly discuss a little bit of a study we did on text

12   information management systems, and that has a potential

13   component for InfoSTREAMS and also the LSS in terms of the

14   text search capability.

15   Specifically, I want to address why we undertook

16   the systems study here, what we view the concept of errors

17   against text in InfoSTREAMS and also anticipated in the LSS,

18   what the evaluation criteria was, and what we recommend for

19   a follow-on study.

20   It's very clear that a very rapid comprehensive

21   free text search capability is essential for both

22   InfoSTREAMS and the LSS. Free text search happens to be a

23   key component in what is known as the text information

24   management systems offered by a number of vendors.

25   The technology is changing very rapidly. So the

1 reason we wanted to take a quick look at this right now is

2 we wanted to get some baseline on what is out there and then

3 follow the technology over the next year or so to see what

4 we actually then want to build into the InfoSTREAMS and into

5 the LSS.

6   What we need to do in the selection of the product

7 is balance the features against both InfoSTREAMS and LSS

8 functional needs, the characteristics of the queries in

9 InfoSTREAMS and LSS, and, of course, we believe that the

10 queries will be different in the two systems and also, of

11 course, the architecture of the InfoSTREAMS is something we

12 haven't taken into account.

13   We started this study looking at the most

14 promising candidates to support a free text search

15 capability. Over 50 commercial products were identified and

16 the 50 established the 16 potential inclusion of the

17 architecture.

18   The evaluation resulted in four products that

19 ranked the highest in terms of satisfying the potential

20 constraints of InfoSTREAMS and LSS, as we see it, and then

21 would be suitable for integration in that architecture.

22   MR. SILBERG: When you talk about the need for a

23 rapid free text search, what criteria did you use and how

24 rapid is rapid and what was that based on?

25   MR. HALLNOR: We did not have a real scientific

1   means to identify that. We looked at search times for what

2   we considered a reasonable query that would give you been

3   ten and a hundred hits on the database of at least five

4   million pages, in the range of 30 seconds to two minutes to

5   find those hits doing a free text search.

6   In terms of the architecture, on the left, you see

7   the users that are connected to this text search complex,

8   server complex, either through dial-up, through local area

9   network. The query would be entered into the query server

10   system, which is another part of the picture.

11   An accessor will be queried when you -- when the

12   query server receives the user request for information, the

13   accessor will verify the user indeed has a right to do the

14   search. The query will be issued into both the document

15   header database, because there may be queries that are more

16   of a key word search, author, data, generation, specific

17   titles and so forth, and that can be handled obviously by

18   the database, and a full text search will be conducted with

19   constraints that are imposed by the query itself.

20   The text search engine would be a system that is

21   loosely coupled with the rest of InfoSTREAMS and it has its

22   own free text database that has been downloaded from the

23   document storage.

24   So the free text database we have is really a copy

25   of the originals that they have in our document repository.

1   So the data in this search system is not the data that you

2   would get back. It is actually referenced -- the queries

3   are referenced back to the header database and the header

4   database will be used to pull out the information you wanted

5   out of the document repository.

6   So we will always be assured that what we call the

7   original is actually what is going to be seen. Before we

8   started the evaluation, we identified a number of evaluation

9   criteria, and I will touch upon a few of the key areas.

10   Clearly, the criteria were selected to reflect the

11   use of InfoSTREAMS functional requirements, actual type of

12   experience, what had to be done, and also architecture and

13   life cycle concerns that were at issue.

14   As I mentioned, the initial product list had 50

15   products in it. We collected vendor information on that and

16   evaluated suitability of the product. The first cut

17   eliminated products that did not functionally address the

18   problems with InfoSTREAMS and LSS and also, of course,

19   things that were incompatible with the architecture.

20   Therefore, products that were mainframe oriented

21   and products that were only based on a personal computer

22   were not included in the set that we were looking for. So

23   there were 16 after the first weeding out of the vendor

24   offers.

25   Of those 16, six were eliminated for technical

1   reasons. They did not have certain query type capabilities.

2   They did not have the application program interfaces that

3   were required to integrate into the architecture or

4   something of that nature, or they were eliminated for

5   corporate viability reasons.

6   There are a number of products out there that

7   essentially are offered by a one-man company and we think

8   that is a little bit too risky for our needs in this

9   environment.

10   Then with the remaining products, what we did is

11 we evaluated each one and scored them against what we

12 considered the criteria. A key evaluation criteria is the

13 application interface, because we don't want a product that

14 is sold as an encapsulated product, where you can't use

15 interface and text search and the document management system

16 as one entity which cannot be broken apart.

17   The reason for that is we would like to keep the

18 common consistency of the user interface so there's not an

19 abrupt change in how the system operates in going from the

20 document integration, from the document routing and for

21 concurrence, and also for any other normal database queries

22 that we have already set up in InfoSTREAMS.

23   Also, of course, the application program interface

24 allows us to tailor the product in a manner that it fits

25 into the client server architecture that industry is using

1   at this time.

2   The client server support is obviously an

3   important factor. We would want the product -- to

4   understand the concept of client server as an inherent part

5   of the product and use a PC workstation for the clients.

6   Many of the information management systems out

7   there are UNIX-based systems, assuming an X terminal as the

8   client side rather than the PC. So that is an issue we have

9   here. The UNIX-based is something that is substantially

10   more costly and not as user-friendly as the PC as we'd like

11   to see that in the system.

12   The other thing we looked at very carefully is we

13   want to have the capability on the server side to expand the

14   system to address large databases through -- we can section

15   free text search into searches of multiple independent

16   databases concurrently to reduce the wait time that an

17   individual researcher would have to experience on the access

18   of data.

19   Another key criteria, of course, was the

20   capability to handle the query volumes expected in

21   InfoSTREAMS and LSS. The baseline we used there was, of

22   course, what we know we will have within InfoSTREAMS in

23   terms of its holdings and we also used the study, the SAIC

24   study in terms of estimating the number of pages that will

25   be on-line at certain times through the life cycle of this.

1   It's clear that both InfoSTREAMS and LSS are

2 rather large applications for this. LSS text holdings, the

3 text is estimated to be in excess of 100 gigabytes. There

4 are very few systems that have been put in place today out

5 there that uses that.

6   The other curious thing is the performance data is

7 very hard to get and that the industry, as such, has no

8 really established benchmarks. So there's a lot of hearsay

9 and there's this particular application here, but those

10 applications may or may not be relevant in LSS.

11   MR. BALCOM: Are there any client server

12 applications, to your knowledge, that are this size?

13   MR. HALLNOR: No, not as far as we know. The

14 strongest client server support was from a product called

15 Falcrom, which has a very large marketshare. They have

16 marketshare in that they have the search end in CD-ROM

17 that's used to distribute large databases and so forth.

18   But they do have the architectural concepts and

19 they also have an understanding of the issue of parallelism

20 and those things. There is, to my knowledge, nothing of

21 this kind of architecture. There may be some mainframe

22 systems that have this size.

23   MR. BALCOM: The reason I ask is because this is a

24 departure from the old study, not that anybody is wedded to

25 the SAIC study.

1   But eliminating mainframe only software, we're in

2   a different ballgame, it seems to me.

3   MR. HALLNOR: That's correct. But on the other

4   hand, there's a lot of systems being built today that are

5   heading this way. In the medical and insurance worlds,

6   these kinds of systems are coming in to search and they have

7   very large databases, too. So I think that we're not the

8   pioneers necessarily, but we're certainly at the edge of

9   what's out there.

10   MR. ALEXANDER: Actually, there is at least one,

11   Chemical Abstracts. They are messenger systems that run on

12   distributed processors. The 39.50 client server. We use it

13   on about 400 gigabytes.

14   MR. BALCOM: What's the software?

15   MR. ALEXANDER: They developed it. It's called

16   their messenger software.

17   MR. BALCOM: And was that one of the systems that

18   you looked at?

19   MR. HALLNOR: No, it was not. That is not a

20   commercial product.

21   MR. ALEXANDER: It's a license software product.

22   You can buy it. We bought it.

23   MR. HALLNOR: I don't recognize it as a thing we

24   might have looked at.

25   MR. BALCOM: Also, Dan, may I ask you is this a

1   --could we get a copy of this study? Could you make this

2   study available to the ARP? I'm a little bit concerned

3   about the mainframe -- the distinction between the mainframe

4   and the client server world and I personally would feel

5   better if I knew more about this.

6   MR. HALLNOR: These aren't distributed yet. It's

7   not mainframe oriented.

8   MR. GRASER: Let me respond to that. There's a

9   certain sensitivity about the study itself because we

10   actually went through the drill of assigning various weights

11   and scores that -- we just have not made a public

12   distribution of that.

13   Furthermore, we're probably approaching a point

14   where we need to make a decision in terms of procurement

15   activity. So certain sections of the report certainly; the

16   discussion sections of the various capabilities of the

17   software. So perhaps with having the opportunity to look at

18   it and ensure that we don't go out and compromise our future

19   activities, we could probably do that, yes.

20   MR. BALCOM: I think it's something that the ARP

21   ought to take a look at in terms of -- because of the fact

22   that for InfoSTREAMS, it might serve you very well, but when

23   you add -- when you multiply the volume by 600 percent or

24   1,000 percent, it seems to me that it's something we ought

25   to be looking at.

1   MR. CAMERON: Boyd, as a point of information, in

2   your system, you used advisory panels.

3   MR. ALEXANDER: We had an industry advisory panel.

4   MR. CAMERON: I'm just wondering how we handle --

5   this is going to come up probably time and time again about

6   how do we handle the sensitivity of information, like Dan is

7   pointing out, and still have the panel involved in

8   decisionmaking.

9   I know in operating in the procurement context,

10   there's going to be a lot of those types of issues. I

11   wondered how you might have handled it at Trademark.

12   MR. ALEXANDER: We had the Institute share the

13   panel and then they got people who were involved in the

14   standards of whatever technology you're looking at. We got

15   major -- ten co-representatives from industry. We had ten

16   different incorporation experts who had done it before, not

17   people who had heard about it or read about it, but who had

18   done it, come in and they came to us twice.

19   They spent three days one time, came back a year

20   later for another three days. This is looking at what we

21   had done and the progress we had made, gave us advice on

22   what technology to use and not to use, completely unbiased.

23   They were only paid their expenses. So there was no

24   consulting fee. We paid them $150 a day for three days

25   each. That turned out to be invaluable.

1   They gave us a thumbs-up on part of our design and

2   suggested major changes in others and it was fairly cheap.

3   MR. CAMERON: Did they have access to material

4   that would --

5   MR. ALEXANDER: We gave them all the information

6   about a month ahead of time, all of the requirements, all of

7   our technical papers, etcetera, and then we had a library

8   there for them and then we had a lot of text searchable

9   information, as well. They had free access to that. They

10 made a non-disclosure agreement.

11   MR. CAMERON: So that's how you -- they signed a

12 non-disclosure agreement.

13   MR. ALEXANDER: Yes. It was a sanctioned advisory

14 panel through GSA. It took us about four months to set it

15 up. It was chaired by Jim Burroughs at NIST, National

16 Institute of Science and Technology.

17   MR. HOYLE: Were the meetings closed?

18   MR. ALEXANDER: They were closed to -- I guess

19 vendors were not involved. It was just them and the staff

20 and our own vendors at the time who were doing the work, but

21 other outside vendors were not allowed.

22   It was very profitable. It paid off very nicely.

23 And you have an unbiased report. None of these people were

24 -- one of the key things in selecting the members were that

25 they weren't going to do business with us. So we had

1   insurance companies, we had some aircraft corporations,

2   things like that, and these were people who had similar

3   problems and they solved it in whatever method at that time.

4   The technology has changed. That was in 1988 and

5   1990, but the concept works, I think, very well.

6   MR. CAMERON: I guess that's one thing we'll have

7   to keep in mind for the panel's operation in the future, how

8   we handle that type of sensitive procurement information.

9   MR. GRASER: I think what you are doing is

10   probably verbalizing, the first time I've heard it, a need

11   for the panel to have independent technologist resources

12   available to them, if, in fact, the level of -- I mean, we

13   have a certain comprehension here within the group, but some

14   of the things that we are talking about here, if you really

15   wanted to know the inside skinny, you would say let us have

16   access to some sort of technologist group.

17   It could be an individual, it could be an advisory

18   subcommittee or whatever the case may be. Maybe that's the

19   thing that's surfacing here in this discussion.

20   MR. SILBERG: It doesn't necessarily have to be

21   this group. I would feel confident if DOE or the M&O went

22   out and got a group like, let's say, that you put together

23   that is unrelated to the program, but has actually faced

24   these problems.

25   I don't think the people around this table, except

1   maybe Kirk and you guys, we certainly, between Chris and I,

2   don't have that kind of expertise. I'd feel much more

3   comfortable with the people who had really faced these

4   problems, and I would want you on that panel as someone who

5   has faced that problem.

6   But I am concerned, George, with your statement

7   that you are not aware of the one system that's up and

8   running that actually is of the size we're talking about.

9   That tells me that we're missing something. With the

10   investment that's being made, we need to make sure we have

11   access to all the stuff out there that's really relevant.

12   I'm concerned that we don't have that today.

13   MR. CAMERON: It's one of the values of the

14   Advisory Review Panel, as pointed out, that this type of

15   information comes on.

16   MR. SILBERG: But as I said, I don't think that

17   needs to be something that's a part of this panel or an

18   adjunct to this panel, but it sure would be nice to have it

19   done.

20   MR. CAMERON: Well, we can't advise on

21   procurements anyway in the way that some people are talking

22   about. I don't we can.

23   MR. ALEXANDER: This wasn't so much related to

24   procurement. There was a question about our system that was

25   raised by OMB and it was a goldplated, was it going to do

1   the job, would it work when we scaled it up from our test

2   bed to full size, what's the likelihood of it failing, what

3   would the performance be, would it be slow.

4   I happen to think some of the timings I'm hearing

5   here are very slow for text searching. I would think

6   anything over a second for text searching would be

7   unacceptable. At least in our world it is.

8   MR. MURPHY: Over a second for what?

9   MR. ALEXANDER: Response time. When you put in a

10   query to a text database, to wait 30 seconds or a few

11   minutes is -- I wouldn't --

12   MR. MURPHY: Not for my purposes.

13   MR. ALEXANDER: It depends on what your purposes

14   are. But if you do that and you're doing it many times over

15   a large database, after a while, you get tired.

16   MR. MURPHY: For your purposes --

17   MR. ALEXANDER: Yes, for our purposes.

18   MR. MURPHY: It wouldn't work.

19   MR. ALEXANDER: It depends on your requirements.

20   MR. SILBERG: For instance, on this chemical

21   abstract system, are they on a one-second delay?

22   MR. ALEXANDER: It's less. It's about seven-

23   tenths of a second.

24   MR. BALCOM: Is that a full text system?

25   MR. ALEXANDER: Full text, complete inverted file,

1 all except the stop words, go in search capability. But

2 it's a license product. That isn't one we developed and we

3 wouldn't want one. They developed for their chemical

4 abstract databases.

5   MR. BALCOM: Wasn't one of their components part

6 of the original PTO system?

7   MR. ALEXANDER: It was one of the original parts.

8 That was one them that passed muster when the review team

9 looked at it, because it was optimized for search. Now, I

10 don't know a lot about InfoSTREAMS, but I get the impression

11 that it's optimized for document handling, document

12 creation, and not for text search and they're getting ready

13 to add a text search capability.

14   So now is a good time to look at text search

15 systems meeting your requirements. You certainly pay more

16 for a higher performance system. There's no question about

17 it.

18   MR. MURPHY: Of course you do.

19   MR. HALLNOR: Of course, part of the performance

20 issues were the type of volume and retrievals available

21 there and we certainly want to have all the standard things

22 in there.

23   We also felt that advanced retrieval methods were

24 important and those are beginning to get integrated into

25 these commercial products right now, things like expansion.

1   There's a thesaurus that you can add to the search. For

2   example, match searches are going to increasingly important.

3   I think that sample may be something that LSS people would

4   use significantly. That allows you to extract documents of

5   similar content very easily.

6   The other thing we looked at also, which -- of

7   course, many of these products are an integral part of a

8   close products. In some instances, we may have a product

9   that has a very good system demonstration feature, but

10   something that may not necessarily integrate well into the

11   InfoSTREAMS architecture.

12   But we are looking at things like on-line backup

13   and indexing, the support recovery, the audit transactions

14   in the text search, collecting of statistics, security and

15   access. Some of those, of course, may fall outside of the

16   InfoSTREAMS architecture and outside of text searching

17   itself.

18   The products -- the evaluation resulted in the

19   four highest ranked products and they were very close, the

20   way we did our judgment, and they are listed here in terms

21   of alphabetical order. Comquest Software, Incorporated is

22   newly started up. They have about 30 individuals in the

23   company and they have some very novel techniques.

24   So they are a very interesting concept, especially

25   in advanced retrieval. The technology and information

1   dimensions are known now in this world. They have solid

2   systems on the market that actually use a variety of

3   applications and they have a larger marketshare than the

4   others listed here. Ameritech, Incorporated now has a very

5   nice product that works well for this kind of application.

6   The one thing I want to stress is that this was a

7   preliminary study to just get variance and obviously other

8   systems should be looked at, too. So the selection has not

9   been made.

10   Our suggestion is that we do some more in-depth

11 technical discussions with vendors out there to look at how

12 well these products will integrate in the InfoSTREAMS

13 architecture and, above all, also get a better handle on the

14 performance characteristics within the world that we live

15 in.

16   What I think we have to do is get down to the

17 point of trying to get sample databases that they can

18 possibly load up in their own systems and test against them,

19 but it's very hard to do that.

20   So that's where we stand today. Are there

21 questions?

22   [No response.]

23   MR. NARTKER: I meant to invite any of you who

24 have time this afternoon, after you adjourn this meeting,

25 after lunch, if you'd like, drop by the university and visit

1   our lab. You're certainly welcome. We'd be glad to conduct

2   a little tour for anybody who is around.

3   If you'd like, please let me know or just come on

4   by. My office is in Room B-382. Our lab is in -- we're in

5   the Engineering Building. Our lab is Room B-333 on the

6   third floor. We'd be glad to invite you. If you'd like to

7   wander around, we'll give you a short tour.

8   MR. HOYLE: Thank you, Tom. Why don't we take a

9   break now and come back and talk about the topical

10   guidelines.

11   [Recess.]

12   MR. HOYLE: I think all the members are back in

13   the room. Why don't we try to get started again, please.

14   Let me make an announcement. First, there are a

15   few in the room who are going out to Yucca Mountain

16   tomorrow. There will be a DOE bus arriving here at the

17   lobby entrance at 6:45 tomorrow morning, 6:45. It's going

18   to leave promptly at 7:00. There are eight or nine or ten

19   of us going out there who need to be ready to leave at 7:00.

20   The topical guidelines is the discussion we want

21   to turn to now. Mr. Murphy suggested that we do this

22   yesterday. I would like to note that I didn't bring very

23   many copies along, but I had sent it out to the members when

24   I sent the paper and the Commission position on the

25   Alternative 3. I think that letter was dated June 14 and I

1   sent the topical guidelines along at that time.

2   The announcement of availability of the draft

3   topical guidelines for comment then appeared a month or so

4   later, July 27, 1993, in the Federal Register. The document

5   itself is dated July. So we did try to get it into the

6   hands of the Committee members, but I did not specifically

7   ask for comments back to me.

8   But with that as background, let's talk about

9   them. Mal?

10   MR. MURPHY: Yes. I don't think this is going to

11   take very long. One of the reasons I brought it up was

12   procedural, John. It seems to me that one of the functions

13   of this Advisory Review Panel, certainly a function we

14   performed in our meeting in Reno in 1991, I guess it was, or

15   1990, was to review the topical guidelines and we went

16   through a very, very heated process of providing input and

17   advice to the Commission staff on them.

18   I just assumed that when the draft NUREG was

19   issued and the new topical guidelines were proposed that as

20   a matter of course, they would be brought back to this body

21   for its outside the Federal Register notice and comment sort

22   of process, that they would be brought back to this body to

23   see, for example, whether or not the later that Jay Silberg

24   so carefully drafted and which you then turned into the memo

25   to Bob Bernero had been responded to the way we hoped it

1   would be.

2   So I was surprised to see that the topical

3   guidelines were not on the agenda and that's why I brought

4   it up.

5   Substantively, I hope, at least, that the concerns

6   we raised at the meeting in Reno and which you expressed to

7   Bob in your memorandum have been addressed in the new draft

8   of the topical guidelines, but I need to clarify that. Chip

9   may be the one to answer this or maybe Joe Hallanich.

10   The argument was over primarily the exclusion of

11   environmental information and transportation information.

12   That has now apparently been included in the topical

13   guidelines and I need to satisfy myself that there are no

14   limitations on the environmental or transportation

15   information that the topical guidelines will encompass.

16   Let me just ask that question. Are we referring,

17   for example, to national transportation information, all

18   transportation information that the Department of Energy

19   relied on in drafting its environmental impact statement?

20   That appears to be what is said.

21   MR. CAMERON: The inclusion of the environmental

22   and transportation issue is tied to the adoption of the EIS.

23   I think that what's included follows from that premise; in

24   other words, keying on the scope of the Department's

25   environmental impact statement.

1   I would recommend, though, that as individual

2   members of the panel comment on the topical guidelines, that

3   they be very, very specific about their concerns in that

4   regard so that we can directly address any of those

5   concerns.

6   MR. MURPHY: How about environmental? At one

7   point in time in the topical guidelines, the socioeconomic

8   information was included. That is not -- that's gone now,

9   but the environmental information is in there, as well as

10   transportation. Does environmental information include the

11   socioeconomic environment? Is DOE going to -- and us --

12   going to be putting socioeconomic information into the LSS?

13   MR. CAMERON: I guess, again, that turns on what

14   the scope of the Department's environmental impact statement

15   is going to be.

16   MR. MURPHY: Well, they have to address

17   socioeconomic. They can't draft an environmental impact

18   statement without socioeconomic information, unless they

19   want -- that's a guaranteed reversal.

20   MR. CAMERON: Then I would think that that would

21   be within the scope. But comment on that and let us clarify

22   that.

23   MR. MURPHY: I think that's probably going to be

24   necessary. I think the NUREG itself should indicate that

25   the term "environment" includes the socioeconomic

1   environment.

2   MR. CAMERON: Rather than just the birds and --

3   MR. MURPHY: The physical environment.

4   MR. CAMERON: -- bunnies.

5   MR. MURPHY: Right.

6   MR. CAMERON: I think the analogy is that if we

7   weren't adopting the Department's environmental impact

8   statement -- and I guess this is the issue.   If we weren't

9   adopting the environmental impact statement, if we were

10   preparing an environmental impact statement on our licensing

11   action, what would be in the NRC's environmental impact

12   statement?   What should be in the NRC's environmental impact

13   statement on more licensing action?

14   I think that we need to further clarify that.

15   Robert?

16   MR. HOLDEN: Included in the socioeconomic studies

17   should be, in bold letters, cultural resource management

18   issues, because that's been quite an issue for tribes,

19   particularly in the Yucca Mountain Project Office area.

20   MR. CAMERON: Good point, well taken.

21   MR. HOLDEN: With tribal advisory boards, the

22   whole nine yards in terms of cultural resource management

23   issues.

24   MR. SILBERG: I think that the basic philosophy

25   has to be that any information that's going to be developed

1   to answer environmental issues in the NRC process or which

2   is relevant to that needs to be in the system.

3   This wording, looking at it, may be a little too

4   restrictive, because it talks about the issues are limited

5   to those needed to determine whether it's practical to adopt

6   -- for NRC to adopt the EIS. I think the bottom line is

7   whatever is in the NRC EIS, all that information and what

8   leads up to it needs to be in the system.

9   MR. CAMERON: You mean in the DOE --

10   MR. SILBERG: No, no. In the NRC EIS and to the

11   extent that the DOE EIS is adopted.

12   MR. BECHTEL: Since that appears to be -- the

13   environmental appears to be open to interpretation right

14   now, would it be any -- I know at one time, we had a section

15   that specifically said socioeconomic. I would recommend

16   that, as a representative of an affected local government,

17   that we would like to have it included as a separate section

18   again.

19   MR. SILBERG: Right now they just have the one --

20   MR. BECHTEL: I know.

21   MR. SILBERG: -- line that says environmental.

22   MR. BECHTEL: Yes, I know. And that's open to

23   interpretation. If, in fact, it does encompass the entire

24   EIS, I guess it would be part of it, because that's part of

25   the scoping. But it's no real clear as noted.

1   MR. BAUGHMAN: Mal, I think it's also important to

2   note that the EIS would also include transportation. The

3   transportation is broken out as a distinct topic. It was my

4   sense that in the last couple of years, whenever we were

5   working hard together, that we had reached some general

6   consensus on the inclusion of socioeconomics explicitly and

7   now we see that it's been taken out and I'm not quite sure

8   why.

9   MR. SILBERG: I think the only reason it's been

10   taken out is because they've put in a one-liner which they

11   think is global or at least --

12   MR. CAMERON: Yes. That's the idea.

13   MR. MURPHY: I think Chip assumes that

14   socioeconomic information is subsumed, and Joe is nodding

15   his head, is subsumed within the phrase "environmental." I

16   just think that that ought to be made clear. We'll include

17   that in our written comments.

18   MR. BAUGHMAN: I guess the other thing I'm curious

19   about is the inclusion of environmental issues seems to be

20   kind of couched again in letting us figure out whether or

21   not it's practical to adopt EIS. It seems to me as though

22   the parties that might become party to the actual licensing

23   process may challenge other aspects of licensing, like the

24   risk assessment work, which would involve population

25   exposure and some of these things which would come back to

1   economic demographics of population kinds of issues.

2   I guess I'm a little concerned that the only

3   perhaps justification for including environmental issues is

4   couched in determining whether or not we adopt the EIS.

5   There may be a lot of other reasons to consider

6   environmental issues and, particularly socioeconomic issues

7   as different aspects of licensing are challenged.

8   MR. SILBERG: That would fall, as I read this,

9   under other parts of the analysis, like the 5.3.3

10   consequence analysis for radioactive releases. That

11   obviously has to include your doses in the individual

12   population, which obviously has to include where is the

13   nearest person and where are your populations and where are

14   your projected populations out however long you want to go

15   out.

16   MR. CAMERON: I would agree with Jay on that,

17   Mike. I think that your point is just another example of

18   why it is efficient to put the environmental information and

19   environmental, in the broad scope, into the licensing

20   support system.

21   MR. SILBERG: I do have a question on the

22   guidelines. I don't know if you can answer it, Chip. In

23   1.10, where it says information relevant to NRC findings

24   regarding compliance with statutes other than, and then it

25   says the Atomic Energy Act, Energy Organization Act, the

1   NWPA, and then it adds like the American Indian Religious

2   Freedom Act and the Endangered Species Act, but it doesn't

3   list NEPA in either the first group of statutes or the

4   second group of statutes. I'm just curious as to why NEPA

5   is --

6   MR. CAMERON: So you found a hole in this. No.

7   The idea there, Jay, is that often the compliance with other

8   statutes, such as Endangered Species, American Indian

9   Religious Freedom Act, is all wrapped up in the NEPA

10   compliance document. We didn't mean to exclude NEPA there

11   and we better spell that out.

12   MR. SILBERG: I just think your primary set of

13   statutes on which NRC findings are required --

14   MR. CAMERON: NEPA should be up in the front.

15   MR. SILBERG: I would think NEPA ought to be

16   included in there.

17   MR. CAMERON: Good point.

18   MR. HOYLE: Any other comments?

19   MR. BALCOM: I have a small issue I want to raise

20   on behalf of the state. I'm doing this on the basis of

21   incomplete information. It won't take but a second.

22   The state is attempting to depose some scientists

23   now and there is a concern -- Harry Swainston has a concern

24   that there may be something in the rule or the topical

25   guidelines that would exclude those depositions maybe on the

1   basis of deliberative process or some other basis.

2   So I simply want to raise that concern. I've

3   talked to a couple people informally and there may not be an

4   issue there, but I want to put it out there anyway, having

5   said that.

6   MR. HENKEL: The state wants those definitions

7   inserted in the LSS?

8   MR. BALCOM: Yes.

9   MR. SILBERG: If those depositions take place.

10   MR. BALCOM: If the depositions take place,

11   there's a slight concern that they may not make it into the

12   LSS for some reason. Once again, I don't have the whole

13   story here.

14   MR. HOYLE: Whose documents would they be?

15   MR. BALCOM: Well, they would be the state -- the

16   state would take the depositions.

17   MR. SILBERG: The state can put them in.

18   MR. BALCOM: Right, but there may be a

19   deliberative process problem.

20   MR. SILBERG: If there is a privilege, then it

21   goes in under the rules in Subpart J that deal with

22   privilege.

23   MR. BALCOM: And since Harry's --

24   MR. SILBERG: I'm not sure I understand why that

25   --

1   MR. MURPHY: Well, I think he must be concerned

2   about exhibits to those depositions, memoranda and stuff

3   that these scientists may have written.

4   MR. SILBERG: If those memoranda or statements

5   that they make are somehow privileged, we'll already have

6   developed some procedures to handle privileged information.

7   I would think those procedures probably will work.

8   MR. MURPHY: But, again, the privilege attaches to

9   the scientist in that case, if there is one. If the state

10   can get its hands on that memorandum, the state can put it

11   in the LSS, if it's got it, if it's successful in taking the

12   deposition.

13   MR. SILBERG: But it may be in the LSS with a

14   privilege flag attached to it is all I'm saying.

15   MR. CAMERON: I would agree with what Jay and Mal

16   are saying. Again, speaking from even less information

17   perhaps than Kirk has, I thought that the problem was that

18   the Department of Justice might have raised concerns about

19   those depositions going into the LSS.

20   MR. BALCOM: Could be. Harry is not here, so I

21   can't give you the full story. We may address it in the

22   comments somehow.

23   MR. HOYLE: Okay. I would remind the members that

24   although I would include your comments on the topical

25   guidelines in my own writeup of the meeting, but comments

1   should also be sent by you as individual organizations to

2   the agency. There is an address and everything for that.

3   It would be most helpful if they were received by the end of

4   October.

5   Any other business to talk about before we go back

6   over where we are and what we want to do?

7   [No response.]

8   MR. HOYLE: Let's talk about where we are and what

9   we want to do. The issue of control was raised yesterday,

10   control of non-DOE participants' documents. I think we

11   ought to see if there's more to discuss on that today.

12   Otherwise, I think we -- we left it that we would owe the

13   Committee members some additional information. I think

14   let's clarify exactly what information members might want to

15   help decide within a couple months, if that timing is all

16   right by DOE, that Alternative 3 or some variation of it is

17   the way to go.

18   DOE needs to get going on its design now. So I

19   open the floor for discussion.

20   MR. SILBERG: Let me frame a question to Mal and

21   Kirk and Bob and anybody else who I think has or might have

22   had a philosophical problem with DOE control.

23   That is are there circumstances -- well, first of

24   all, does that philosophical problem still exist today?

25   MR. BECHTEL: Yes.

1   MR. SILBERG: Second, are there circumstances or

2 controls which you can envision which would sufficiently

3 alleviate that concern for you that you would be willing to

4 accept DOE control?

5   MR. MURPHY: I think that's what we need to talk

6 more about, but let me -- it seems to me we went through

7 this same analogy during the original negotiations, but let

8 me do that again. Let me analogize this to litigation,

9 which you and I might be more familiar with, Jay.

10   If we conceive of this as a large antitrust action

11 in which someone -- some plaintiff is suing the General

12 Motors Corporation and the Federal Court is going to decide

13 whether or not the General Motors Corporation engaged in

14 price fixing and the Federal Court says we're going to do

15 this by an electronic data and document information

16 management system.

17   So that all of the data that you guys generate

18 from each other in the course of discovery is going to be

19 handled electronically during discovery, as well as during

20 the trial itself. And we want you, the plaintiff, or we

21 want you, the defendant, General Motors Corporation, to turn

22 over your documents for entry into that system to the

23 plaintiff.

24   The Department of Energy here is the plaintiff in

25 my analogy. No way, absolutely no way, under any

1   circumstances, would, in any other context, a defendant be

2   required to give their documents to the plaintiff to input

3   into a system and manage that.

4   Using that sort of philosophical analogy, I cannot

5   conceive of any circumstances under which we who, in a very

6   loose term, may be considered in the same sort of position

7   as a defendant in litigation, would be willing to give our

8   documents to the license applicant for inputting into the

9   system.

10   MR. SILBERG: Let me put the question a little

11   differently or term the analogy a little differently. If,

12   in fact, there is discovery and you are asked by the

13   plaintiff to turn over all your documents, he will, in fact,

14   to the extent he receives those documents, put them into his

15   system.

16   MR. MURPHY: That's right.

17   MR. SILBERG: So the question is not so much are

18   you required to turn over your documents to the plaintiff,

19   but are you entitled and can you rely on using his system as

20   a way of searching those documents and his own -- and the

21   plaintiff's own documents, with some controls.

22   For instance, if EDS, the data processing arm of

23   General Motors, I think they still are, were being used by

24   GM to run their database, a kind of separate company, and

25   the defendants, as part of discovery, turned their documents

1   over to EDS and General Motors turned their documents over

2   to EDS and the Court appointed a special master to monitor

3   how EDS operated its database to make it available to all

4   parties and accuracy and all that stuff, that's, I think, a

5   little bit more the analogy that we're talking about here.

6   That still may not be acceptable and I can

7   understand that, but there are some differences and there

8   are some controls and it's not quite the same private

9   adversarial nature, because while DOE is the license

10   applicant, it is also a governmental entity which, I think,

11   puts it in a little bit different position.

12   In addition to its responsibility to its

13   shareholders, it's got political oversight, it's got public

14   accountability, etcetera.

15   MR. MURPHY: Have you read the public trust and

16   confidence report?

17   MR. SILBERG: Yes.

18   MR. MURPHY: Do I need to say anything more?

19   MR. SILBERG: I think you still need to respond to

20   the analogy.

21   MR. MURPHY: Let me just respond to that. I don't

22   mean to be directing this to any individual in this room or

23   in the Department of Energy, but this Alternative 3 is

24   asking the State of Nevada, Nye County, other affected units

25   of local government, American Congress of -- National

1   Congress of American Indians, individual indian tribes,

2   environmental organizations to turn over their documents and

3   to rely on a department for the accurate and timely

4   inclusion of those documents into the LSS, to rely on a

5   department which has, on more than one occasion, on numerous

6   occasions given parties such as I represent ample reason for

7   doubting the integrity of that department.

8   All you need to do is look at the proceedings of

9   the Secretary of Energy's Public Trust and Confidence Task

10   Force to understand what I'm talking about. We are not

11   willing to do that.

12   But you also have to keep in mind that what this

13   -- what we are talking about here is the result of a

14   compromise. The parties to the negotiated rulemaking gave

15   up their right to conduct hard copy discovery under

16   currently existing Nuclear Regulatory Commission discovery

17   processes, gave up their right to stretch this licensing

18   proceeding out for seven to ten to twelve years while we

19   looked at every single paper copy of data that was produced.

20   In turn for compromising away that right to hard

21   copy discovery, we got what we felt, at least, was an

22   assurance from the Nuclear Regulatory Commission that the

23   system which was going to manage the documents which the

24   Department of Energy produced, as well as the documents

25   which Nye County produces, would be under the control of the

1   neutral adjudicatory body, the Nuclear Regulatory

2   Commission; that we would not be required to turn over our

3   work product.

4   I'm not worried about the massive amounts of

5   documents that we get from the Department of Energy or from

6   Sandia or Livermore. I'm talking about the documents that

7   we ourselves produce, that we would no be required to turn

8   that work product over and rely on the Department of Energy

9   to input our documents before they input their own.

10   MR. CAMERON: Just a question, Mal. The concern

11   is somehow that the Department would deliberately input

12   those documents incorrectly. Is the concern that the

13   Department would not put those documents in in a timely

14   manner? Those concerns, I think, could be met through

15   controls.

16   MR. MURPHY: Well, they can be met through

17   controls, but, by the same token, you're asking those of us

18   on this side of the project to rely on government, to

19   control government in carrying out this function and in

20   protecting the rights of the affected units of local

21   government in the state.

22   We compromised down to the point where we said we

23   were willing to rely on the NRC as an independent regulatory

24   agency to do that. I think it's unreasonable to expect us

25   to compromise further or to accede to the -- and I want to

1   use this word advised now -- accede to the NRC's reneging on

2   that promise and requiring us to now accede to or agree to a

3   process that some of the parties in the negotiation, at

4   least, vehemently opposed in arriving at the consensus that

5   we all worked so hard to get.

6   The NRC has already on one occasion taken back

7   from some of the parties, governmental organizations, the

8   Indian tribes, etcetera, not so much the state and Nye

9   County, but in its second round of rulemaking in cranking

10   down on intervention and the timeliness of contention

11   filing, etcetera, they already took away half of the benefit

12   of the compromises that the environmental organizations and

13   the tribes and others made.

14   Now you're asking us to agree to give back some of

15   the other compromises that we got the benefit of. I am not

16   going to recommend to my principals in Nye County, the Nye

17   County policymakers that they agree to do that.

18   MR. SILBERG: Is the concern with the inputting of

19   the documents?

20   MR. MURPHY: The concern is in turning over

21   control of this system to the Department of Energy.

22   MR. CAMERON: There's two issues here. One is the

23   integrity of document input and the second issue is control

24   of the system. You indicated that there may be a way that

25   controls could solve the problem in terms of the input.

1   There may be a way that controls can also solve the concerns

2   in terms of control of the system.

3   But talking about what people gave up in the

4   negotiating Committee sessions, I think that the giving up

5   of hard copy discovery, the quid pro quo there was the fact

6   that we were going to get a full text system that would make

7   all of the parties' jobs easier in going through the license

8   application. I think that that's still an important point

9   here.

10   If you look over the past three or four years

11   since the rule was negotiated, it hasn't been that the NRC

12   or the Department hasn't been trying to get this system

13   moving, get it under development. I think that what the

14   Commission believes at this point is that this type of

15   division of responsibility, which is sort of administrative,

16   running the system, system design, is the best way to bring

17   the LSS to fruition; in other words, that quid pro quo for

18   giving up hard copy discovery.

19   It's a practical issue, as far as I'm concerned,

20   and trying to see a system come into effect that works and,

21   yes, the NRC is going to have to monitor DOE's inputting of

22   the documents and DOE's administration of the system.

23   MR. MURPHY: The NRC is currently monitoring DOE's

24   conduct of its site characterization program and talk to Joe

25   about how frustrating that can be when the Department of

1   Energy, on a daily basis, just blightfully ignores all of

2   the technical advice and guidance that they're given by the

3   NRC, the State of Nevada, the Technical Review Board,

4   National Academy of Sciences, everybody else in the world.

5   My own personal feeling is that if they wanted

6   this whole bloody Yucca Mountain project conducted more

7   efficiently, they ought to turn it over to the Office of

8   Information Resources Management, because they've been able

9   to accomplish something in the Department of Energy and

10   nobody else has.

11   MR. SILBERG: You're talking about the fee

12   collection part of it.

13   MR. MURPHY: The fee collection, they do okay,

14   too. But it comes down asking us to give up the benefit of

15   our bargain in return for we don't see -- sure, we may get

16   an LSS out of it that way, but we're going to get an LSS in

17   any case because the Department of Energy is -- they're

18   going to do this under any circumstances.

19   And now you're asking us to give up the benefit of

20   a bargain that we fought hard for in 1988. I don't see why

21   we should be willing to do that when there's an alternative.

22   Why don't the non-DOE parties just turn over their documents

23   and rely on the LSS Administrator for inputting the non-DOE

24   documents?

25   MR. CAMERON: Into what system?

1   MR. SILBERG: Yes. That's part one. The second

2 part is control, operation and maintenance of the system.

3   MR. MURPHY: Even under the current rule, it was

4 always envisioned that the Department of Energy design and

5 develop the system and get it running and functioning and

6 then turn it over to the Licensing Support System

7 Administrator.

8   We're now talking about perhaps the DOE keeping

9 the system for a little bit longer than we had originally

10 envisioned, but that's more a detail than a real substantive

11 concern, I think.

12   They are still required -- they would still be

13 required to turn over the -- before licensing starts, turn

14 over the system to the LSSA. I think even under Alternative

15 3, the staff is suggesting a rule amendment to require them

16 to do that within -- I can't remember, what it is -- three

17 years now?

18   MR. SILBERG: No, not to turn over the system. As

19 I understood it, Alternative 3 was the system would remain

20 in DOE's care and feeding.

21   MR. MURPHY: That's right.

22   MR. SILBERG: And the document input would be all

23 done within the DOE -- by the DOE worker bees. I don't

24 recall anything about turning the system over to the LSSA

25 for operation and maintenance. The staff recommendation was

1   to require the system to be up and running three years

2   before license application. That was rejected by the

3   Commission in favor of --

4   MR. MURPHY: You may be right. Let me ask John

5   what this -- maybe I'm not reading this language correctly.

6   I'm looking at the last sentence beginning on the bottom of

7   Page 11 on the SECY 93-107 and proceeding to the top of Page

8   12.

9   It says "In order to give DOE more incentive to

10 assure that the LSS will be available, this provision should

11 be changed so that the NRC determines when and under what

12 procedures it will accept the DOE license application for

13 staff review. This change will tie NRC acceptance of the

14 DOE application not only to the completeness of their

15 application, but also to DOE's success in furnishing the LSS

16 as a vehicle."

17   I read that as under the current LSS rule,

18 furnishing the LSS to the LSS Administrator.

19   MR. CAMERON: No. Furnishing is used in the sense

20 of having the system up and running. Furnishing is value-

21 neutral in terms of who is running the system in the context

22 of the language you just read.

23   So if you go back to the discussion description of

24 Alternative 3, the big point there, the big change is that

25 DOE would be maintaining and running the system, albeit with

1 supervision and oversight from the LSS Administrator.

2   MR. MURPHY: Then I have the same sort of a

3 problem. I think at some point in time, that system has to

4 come under the direct control of the NRC.

5   MR. HENKEL: Mal, I have another question for you.

6 I may be struck dead for suggesting that the DOE bring on

7 another contractor, but is it conceivable that perhaps since

8 the InfoSTREAMS system would be managed by a contractor,

9 i.e., TRW, anyway, that some sort of an independent

10 contractual relationship be set up with another contractor

11 such that they will be satisfied?

12   MR. MURPHY: I'm only speaking for Nye County.

13   MR. HENKEL: That's true, but Nye County, the

14 state, and other parties.

15   MR. MURPHY: It wouldn't satisfy my concern. My

16 concern is that the system be controlled by the adjudicatory

17 body that's going to make the decision as to whether or not

18 to grant the construction authorization. Maybe you can ramp

19 up the compliance and audit program to a point sufficient

20 that it becomes virtual control. I would be willing to

21 consider that.

22   It could become the functional equivalent of LSSA

23 control. I'm no worried about nomenclature. I'm worried

24 about who in the office on a daily basis is going to have

25 the authority to say do this, do that or you're fired. I

1   don't want that to be a Department -- I don't want Dan to be

2   put in the position of having to tell his supervisor I'm

3   working on Nye County data today, I'm not working on DOE

4   data, and be told you're getting paid by DOE, we're putting

5   DOE data in.

6   MR. SILBERG: One part of the equation that we

7   haven't talked about, which I think ought to go some

8   distance to satisfy your concern, is the role of the pre-

9   licensing application by the Safety Licensing Board,

10   whatever we call that. There you do have a body independent

11   of NRC staff and, indeed, independent of the LSSA that you

12   could bring any complaints to.

13   As someone who has adjudicatory authority over

14   everybody, it would certainly have the ability to order DOE

15   or NRC staff or LSSA to do things that you thought were not

16   being done and should be done.

17   So I think you already have existing in the rule a

18   mechanism to provide substantial independent oversight and

19   control.

20   MR. MURPHY: All of those things are true, but the

21   political reality is that you're asking Nye County, Nevada

22   to agree to a process where the project manager and the

23   county administrator and the county commissioners are going

24   to go back to their people and say guess what we've done,

25   we've agreed to turn over our documents to the Department of

1   Energy, but don't worry, in this case, you can trust them.

2   We are not going to do that without some further

3   neutral non-DOE assurances that this system is going to

4   function the way we bargained for it.

5   MR. SILBERG: I guess I don't understand why you

6   have a concern over turning over your documents. I would be

7   more concerned about access to DOE's documents than I would

8   be about your documents. Turning over your documents --

9   MR. MURPHY: We're also concerned about that.

10   MR. SILBERG: But turning over your documents is

11   no different than normal paper discovery when you drive the

12   truck up to the back door to their lawyer's offices and say

13   take these 94,000 cartons and have fun.

14   You do that regularly in any big case litigation

15   and the fact that you're turning over your documents,

16   actually copies of your documents to your adversaries, who

17   cares? I don't think that loading up the LSS with your

18   documents or my documents or Nevada's documents or tribes'

19   documents or whoever is any different than that.

20   My concern -- you know, there is an accuracy

21   concern, which I look at as, pardon the insult, concerning

22   the computer nerds of the world, as to how much accuracy we

23   can get out of these machines and is it good enough.

24   I can't see that anybody is going to sit there in

25   that room and say, well, for Nye County's documents, I'm

1   going to delete all the "ands" and change them to "nots" or

2   something like that. We're not talking about mechanical

3   kind of electronic operations that are party-neutral.

4   MR. MURPHY: We're concerned about the priorities

5   that are going to be given to various kinds of work,

6   management of the system, the things of that nature. But we

7   also have the perception issue.

8   MR. SILBERG: I agree that --

9   MR. CAMERON: That seems to be the key issue.

10   MR. SILBERG: The politics and the perception is a

11   significant concern that you guys have. I understand that.

12   In the commercial world, what people do is called out-

13   sourcing. People turn over their entire data processing

14   operation to some third party and they contract for it.

15   MR. MURPHY: That's good. That's what we

16   originally wanted in the negotiations. We wanted someone

17   other than DOE or the NRC to run the LSS. We'll agree to

18   that.

19   MR. SILBERG: In fact, that's what you're going to

20   have if you're going to have some contractor doing that.

21   MR. MURPHY: I don't mean a contractor. I mean

22   someone with independent standing in the Federal Government.

23   Turn it over to the Patent and Trademark Office.

24   MR. CAMERON: Boyd, do you want that?

25   MR. ALEXANDER: Let me work up an estimate for

1   you.

2   MR. MURPHY: Just a simple yes or no will do.

3   MR. ALEXANDER: Anything is possible. We work for

4   a fee. We don't get any taxpayer money. So I'm more than

5   happy to talk.

6   MR. SILBERG: Put in those terms, I'm sure Jay

7   Silberg's firm would be happy to do it.

8   MR. MURPHY: I don't want to hog all the time

9   here, John. Other people have concerns, as well.

10   MR. HENKEL: I think this is the principal issue,

11   Mal. I don't think you're hogging the time at all. We've

12   put off the cost issues until further information. The

13   question is will the local units of government in the State

14   of Nevada, are they willing to accept DOE as the primary

15   manager of Option 3.

16   MR. CAMERON: I think that turns on how it's

17   presented, too. We've talked a lot about controls, about

18   the fact that turning over documents is similar to what you

19   would have to do during physical discovery, that a

20   contractor would be running the system for DOE, that we have

21   a pre-license application Licensing Board.

22   There's a lot of things that could mitigate the

23   public perception about, hey, guess what, we just turned

24   over all of our documents to the Department of Energy or put

25   it as boldly as you want it.

1   So is there a way to deal with the public

2   perception problem by working out an alternative system

3   here?

4   MR. SILBERG: The first part, to say you're

5   turning over all your documents, that's kind of a --

6   MR. CAMERON: I understand that.

7   MR. MURPHY: That's used loosely.

8   MR. HOYLE: I think another element that we

9   haven't mentioned today and we didn't really get into the

10 cost issue much yet, but the Commission started off with

11 trying to see if there was a way to save or avoid major

12 costs. They didn't just arbitrarily decide to renege, as

13 you put it, on an earlier promise.

14   MR. MURPHY: They did.

15   MR. HOYLE: But they decided to look for an

16 approach that would save some money. I think that has to be

17 kept in the mix here. If there were no cost avoidance, if

18 there were no cost saving, the Commission wouldn't have been

19 proposing this.

20   MR. MURPHY: This approach saves the NRC money.

21 It doesn't save the total system any money.

22   MR. SILBERG: That's the question we have.

23   MR. HENKEL: That's the exact question we have.

24   MR. MURPHY: It just transfers costs to the

25 Department of Energy. I can understand that the NRC -- and

1   I agree with the NRC's concern in that respect. They ought

2   to be more worried about making sure that the Division of

3   High Level Waste Management has enough money to adequately

4   oversee the technical work that's being done out there. I'm

5   not arguing. I'm not faulting the NRC for that concern.

6   But that's what Alternative 3 does. It doesn't

7   save the licensing support system any money. It just saves

8   the NRC money.

9   MR. SILBERG: We don't know that.

10   MR. MURPHY: That's right. You don't know that

11   and we won't know that until we see the cost information.

12   MR. CAMERON: Take another cost issue that is more

13   important than just where the pool for the money comes from.

14   Making -- and this goes to sort of changed circumstances, in

15   a sense, since we did negotiate the rule.

16   When you get more involved in the design of these

17   complex and implementation of these costs or these systems,

18   you find out that making a handoff from DOE, as the system

19   designer and developer, and its contractors to another

20   agency, the NRC and its contractors to run the system, this

21   creates the potential for massive cost problems and

22   inefficiencies.

23   Dan might be able to speak more to that,

24   definitely could speak more, and Boyd, than I could. I'm

25   not saying it's impossible. It's just we recognized when we

1   got involved in this that that would be a big problem and

2   it's a con that's identified -- it's either a pro or a con,

3   an issue identified in the Commission paper.

4   Dan, you had something to say before.

5   MR. GRASER: No. I was going to speak back to

6   just an additional comment on the control issue. I would

7   just like to verbalize a concern also that everybody is

8   affected by this control issue and obviously looking out in

9   the long term, Mal gave a hypothetical situation about a

10   truckload of stuff driving up at the 11th hour and why

11   didn't you get it in on time sort of issue.

12   The other one that I'd like to raise obviously is

13   that if DOE were operating the system and responsible for

14   maintaining the operation of that system during the critical

15   periods, pre-license hearing and during the license hearing

16   timeframes, that we would probably also have to have some

17   kind of an environment where we would have a comfort level

18   that if the system had normal technical problems during any

19   of those critical timeframes, that that would not reflect on

20   our status during the license hearing, as well, as if it

21   were something that were being done intentionally.

22   Obviously, being honest people in an honest

23   environment, we would say the mainframe crashed, but the

24   optics of the situation, depending on the timing, could

25   perhaps put the Department of Energy in a situation where

1   the optics of it look terrible.

2   And talk about bad PR in the past, there is

3   another opportunity for that sort of bad PR in the future,

4   even though it was totally innocent and totally unprotected.

5   So I think in terms of control, we also have to be forward

6   looking and say does it put us in a potential situation

7   where I would have to go to my management say I don't think

8   we should place ourselves in a situation of an act of -- not

9   an act of God, but it's like an act of God in the computer

10   world when you have a crash and it impacts on everybody's

11   ability to move forward during a critical period.

12   So that's a concern, as well, and I just wanted to

13   make sure I verbalized that.

14   MR. BAUGHMAN: I guess beyond perception, one of

15   the things that I think may be -- DOE is struggling right

16   now with this budget in terms of getting work done out on

17   the site, to characterize the site and actually get itself

18   to the point of being able to submit a license application.

19   I wonder if they assume this program entirely.

20   How do we know that resources that are required to get this

21   system up and operating aren't going to be deferred to

22   support site characterization activities and, in the end, we

23   don't have the system that you all are looking for or

24   perhaps the system isn't quite up to snuff because we've

25   made some tradeoffs along the way.

1   I think there are some real concerns in terms of

2   resource allocation, whereas at least, the way it was

3   envisioned, those monies would flow to the NRC and the NRC

4   would be responsible for implementing that system.

5   MR. GRASER: We still have that problem, because

6   the design and implementation under the rule right now is

7   still being done under DOE money.

8   MR. BAUGHMAN: But there is some compelling -- you

9   are accountable to another party, in a sense, to keep coming

10 forward with that product, whereas if you have it all

11 internalized, then everybody is looking in to see what

12 you're doing, but you have control.

13   MR. SILBERG: The rule recognized that and we

14 created the doomsday device. Subpart J self-destructs and

15 we revert back to Subpart G if the LSS isn't up and running

16 by six months before submission of the license application.

17   MR. MURPHY: I like the alternative even better.

18 If you don't have it ready within three years, we won't take

19 your license application. I mean three years in advance of

20 licensing.

21   MR. BAUGHMAN: I don't think that's what the SECY

22 says.

23   MR. CAMERON: The SECY says that the Commission

24 rejected that proposal. But I think on Mike's point, we've

25 already seen that particular phenomenon happening where

1   money that should have been spent in developing the system

2   was traded off to the technical.

3   MR. BAUGHMAN: I agree, and that's where it comes

4   back to this public perception thing again. I feel in some

5   ways we've been led to this decision by the DOE and its

6   contractors because of their own management actions. By

7   making choices along the way, we have been led into this

8   point where we're assuming that the NRC is now kind of

9   throwing up its hands and saying we're not going to be able

10   to do it ourselves, guys, and we're not going to be able to

11   have the resources, we have not been given the resources.

12   It's been a dogfight between the NRC and DOE on

13   resources on this issue. I have a sense we're kind of just

14   throwing in the towel and saying, well, we lose. My view is

15   so do all the other parties and I'm not sure that's the way

16   to go about doing business.

17   MR. HENKEL: Mike, we have to recognize that DOE

18   is responsible for developing the nation's waste management

19   system. It's their management decisions that are going to

20   determine success or failure of the system. We can't begin

21   to try and determine every management decision they make

22   that makes or breaks the system.

23   If they understand that failure to have the LSS

24   operating in a timely manner is going to postpone or

25   preclude their license application, then that's a management

1 decision they have to make.

2   We're going to hold them accountable. We're not

3 going to be pleased if they postpone things because this the

4 system wasn't up and operating. But I don't think we should

5 try to control their management process because of the LSS

6 system.

7   MR. MURPHY: And I think it's primarily Congress'

8 responsibility, not DOE's. If DOE had been given all the

9 money that they asked for by Congress, I assume the LSS

10 would have been under development. Correct?

11   MR. GRASER: That's fair.

12   MR. CAMERON: Maybe a way to work at this is,

13 picking up on some things that Chris said and that Mike

14 said, is that we -- we at the NRC ran into two problems that

15 led us to this point now.

16   One, and this is no reflection on Dan or Barbara

17 or anybody at DOE, getting some progress to be made on

18 design and development of the system in terms of the

19 schedule that we thought was necessary, etcetera, etcetera,

20 etcetera, and that was a resource problem at DOE.

21   The second one was getting any sort of assurance

22 that we were going to be able to get the money to run the

23 system. The Commission, operating on an agreement that was

24 reached during the negotiated rulemaking, where the money to

25 run the system, for our running of the system, would come

1   from DOE, not being able to really get anywhere with DOE on

2   that, but primarily, at least at the later portions of this

3   debate, because OMB, under the Bush Administration, said

4   that we don't want a split between program responsibility,

5   that is, running the system, and budget responsibility,

6   where that money is going to come from.

7   Mike is right. It's been a real dogfight on both

8   of those issues. We're looking for a way to try to resolve

9   that. The cost savings issue, I think, may be neutral.

10   It's saving money by using InfoSTREAMS. We can still do

11   that through whatever -- however we configure this thing.

12   That's what brings us to this point, trying to

13   figure out some way to get the system completed.

14   MR. HOLDEN: At this point, I would like to weigh

15   in on how NCAI is probably come down on this. We probably

16   need to go back and talk with one of our representatives, a

17   consultant who tracked this issue, worked with a lot of you

18   folks at the table here in previous years.

19   At this point, it seems to me, as I recall, that

20   the parties come down and support Mal's supposition there.

21   But, in addition, NCAI is a constituent organization and

22   those tribes -- we can't speak in the place of those tribes.

23   We can supplement their positions.

24   But in the meeting in Las Vegas in the spring, 20

25   tribal representatives from 20 tribes and bands in this

1   area, the Yucca Mountain project area, informed DOE of the

2   lackluster performance of DOE in just providing them basic

3   public information.

4   On top of that, some tribes in this area are

5   involved in numerous litigation over minerals and water.

6   Lots of Las Vegas is run by Indian water. Those water

7   rights went under significant and lengthy litigation and the

8   tribes, whenever these court decisions say that, well, the

9   counties, the state or whomever is entitled to have this

10   water, some of the people say that the tribes want half the

11   water rights. No, we lost. When we win, we lose because

12   those tribes had all of it at one time.

13   And these even innocent studies, hydrological and

14   mineral data, that are performed by USGS, the Bureau of

15   Indian Affairs, so forth, when it makes its way into certain

16   files and archives, it can be brought up and used against

17   them. So that's something else that's a concern in terms of

18   privileged data.

19   But I probably need to speak with those tribes,

20   many tribes, particularly in this area in terms of what they

21   come down on this. If they don't think it's going to be

22   positive in terms of what they were saying in March, I'll

23   just have to get back to them on that, get back to this

24   Committee on that.

25   MR. HOYLE: Dennis?

1   MR. BECHTEL: I can't speak for all the counties,

2   but I think with respect to Clark County, I think it would

3   be our preference to have an independent entity controlling

4   the information. I think the perception is a large issue

5   and I think -- I don't think you're going to be able to

6   avoid it and I think the only way to avoid it would be to

7   have an independent entity, preferably the NRC, controlling

8   the system.

9   With regard to your other question about

10   information we may need, I think it's important that we have

11   this technical document that looks at the 11 alternatives

12   and any backup to that document. As far as the document

13   itself, Dan, maybe you might be able to answer this, were

14   there any options considered that looked at a non-DOE

15   control of the system?

16   MR. GRASER: Yes.

17   MR. BECHTEL: We're just kind of curious. Why

18   were those not considered further?

19   MR. GRASER: How can I say this delicately? A

20   number of options and alternatives were discussed and when

21   initially presented to the Chairman, the response back from

22   the Chairman was that they were not in line with his

23   expectation. That's the most close to characterization that

24   I can place on it.

25   There were a number of other alternatives. For

1   example, having the database, in fact, be maintained and

2   operated by someone, like Mead Data Center or Chem

3   Abstracts, there were distribution alternatives in terms of

4   just publishing CD-ROM versions of the entire database and

5   making them available to everybody and not having the grand

6   design of telecommunications and so forth.

7   A fair large number of technical, because the

8   focus and the mandate that was given, is it technically

9   feasible to reuse InfoSTREAMS. If you're going off on any

10   other tangent, that wasn't what Chairman Selin wanted to see

11   at the time. That's my interpretation of it.

12   MR. CAMERON: Dan, can I ask you a question about

13   that? I may have misspoke before. What some members of the

14   panel are espousing, I think, fit into Alternative 2, as

15   presented to the Commission.

16   MR. MURPHY: That's right.

17   MR. CAMERON: In other words, we would still use

18   InfoSTREAMS to capture non-DOE data. But at some point, the

19   system would be turned over to the NRC to operate. Now,

20   there would still be cost savings realized associated with

21   using InfoSTREAMS; maybe not the full cost savings that we

22   were talking about if DOE would continue to operate it, but

23   there would still be cost savings associated.

24   MR. GRASER: All three of the alternatives that

25   were finally elucidated showed some degree of cost savings,

1   yes.

2   MR. BAUGHMAN: Isn't it likely, Chip, that a

3   contractor would actually run this for you, as well?

4   MR. CAMERON: That's right. I wanted to point

5   that out. For the NRC, we would be using a contractor.

6   MR. BAUGHMAN: And DOE is using a contractor. In

7   my experience with the work here at Yucca Mountain, when you

8   have a change in contractors, the key personnel move with

9   the contract. So my sense would be that if DOE were to

10   develop this system and they're paying TRW or SASC or

11   whomever, they've got contractors doing this and they know

12   how to run and operate the system and they are the ideal

13   candidate to manage that system.

14   When it gets turned over to NRC, NRC's contractor

15   assumes responsibility this, that person is going to go to

16   work for that contractor. There's a very high likelihood of

17   that. So this handoff -- the issue of handoff being

18   difficult and all that strikes me, though, that these things

19   are handed off all the time.

20   I don't know why it wouldn't work.

21   MR. HENKEL: That's precisely why I was thinking

22   that perhaps another contractor, other than TRW, should

23   develop and implement InfoSTREAMS and then when the handoff

24   was made, it's just the source of funding for that contract

25   issue.

1   MR. BAUGHMAN: And the contractor is actually

2   under NRC.

3   MR. HENKEL: That's what I'm saying.

4   MR. BAUGHMAN: The individual now is employed

5   under NRC.

6   MR. HENKEL: That's what I'm saying. Rather than

7   relying on a theoretical handoff of these employees, you

8   just transfer the contract, lock, stock and barrel from DOE

9   to NRC.

10   MR. GRASER: Illegal. Can't do that.

11   MR. HENKEL: There's no way to do that.

12   MR. GRASER: No. There's no way to do that.

13   MR. BAUGHMAN: The difficulty, also, would be that

14   TRW isn't de facto to perform it, as well.

15   MR. HENKEL: That's one of the reasons that I'm

16   suggesting that perhaps a contractor other than TRW should

17   be the one running the system. Again, I will probably be

18   struck dead for suggesting that.

19   MR. CAMERON: The thing would be that the scope of

20   work would include design and development, operation and

21   maintenance for this particular contractor, and I think this

22   gets to the illegal part. It's can you change who your

23   funding agency is.

24   MR. GRASER: You can have an interagency transfer

25   of funds.

1   MR. CAMERON: You would have two different

2   contracting officers.

3   MR. GRASER: The issue is who controls the dollar.

4   Whoever controls the dollar controls the pace, the tempo and

5   the direction of the work. Fundamentally, you can channel

6   it any direction you want, but whoever ultimately is the guy

7   who has -- I'm taking from the Treasury and I'm giving to

8   accomplish a mission, whoever is in that catbird seat has

9   the control of the resource.

10   That is control down to a very technical level.

11   It is not really just a question of day-to-day maintenance,

12   because I think the oversight plan that was presented would

13   respond to that. They were actually talking about having

14   on-site representatives of the ARP -- not the ARP, the

15   LSSA's office being right there.

16   So in terms of the actual management of the

17   system, that's a much smaller issue and it's certainly

18   workable. It's just like the actual transfer. Yes, indeed,

19   it can be done. The expectation is it can be happening

20   overnight with no disruption of service.

21   Loosely using the term guarantee, I could no

22   guarantee that we could unplug it from the DOE FTS network

23   on a Friday afternoon at 5:00 and plug it in to an NRC FTS-

24   2000 network and not experience any disruption in our

25   telecommunications network.

1   And it goes beyond the people, because certainly

2   people transfer. But the amount of work and the amount of

3   coordination that would be necessary, for example, to

4   transfer software license maintenance agreements and

5   hardware maintenance agreements, not saying it can't be

6   done, but it is certainly a larger effort for an

7   administrative churning drill.

8   If people were really concerned about costs, there

9   would have to be a certain period of overlap between the

10   contractors and everything and it's an administrative cost

11   to do that. We're not saying it can't be done, but we're

12   just saying that is not, certainly from a management

13   perspective, the best way to go about doing it.

14   MR. MURPHY: Let me just clarify something, Chip.

15   I misspoke. What we would prefer is Alternative 1, not

16   Alternative 2.

17   MR. CAMERON: I know you would prefer Alternative

18   1. I was making an assumption that we still might be able

19   to realize the cost savings -- some cost savings by using

20   DOE InfoSTREAMS to capture documents. It seemed to me that

21   the big issue that it really is coming down to here is not

22   that DOE is capturing our Nye County documents, but DOE is

23   controlling the system.

24   So I thought that, okay, at least we might be in

25   the Alternative 2 ballgame, which is realizing some cost

1   savings from using InfoSTREAMS. DOE is still doing the

2   design and development of the LSS based on the InfoSTREAMS

3   design and development, but at some point there would be a

4   turnover to NRC to operate and maintain the system. That

5   comes down to the money issue.

6   Originally conceived as money being in DOE's

7   budget and being transferred to NRC to run the system or

8   having the money directly in the NRC budget to run the

9   system. Betsy, did you want to clarify something?

10   MS. SHELBURNE: I just want to make sure --

11   correct me in terms of how we did Alternative 2 versus 3.

12   If there was to be an LSS based on InfoSTREAMS development,

13   we would still have to develop a separate system from

14   InfoSTREAMS that you would hand over to us. Right? So

15   we're no talking about handing over --

16   MR. CAMERON: InfoSTREAMS.

17   MS. SHELBURNE: -- what they envisioned under

18   Alternative 3, because that's basically an expanded records

19   management system. They're not going to hand over. They're

20   going to replicate the 90 percent, separate machines, if

21   that's what Alternative 2 is.

22   MR. CAMERON: Alternative 2 is more expensive than

23   Alternative 3.

24   MS. SHELBURNE: The delta, if you look at the

25   paper, between one and two, the savings would only be about,

1   I think, only 17 or 18 million, because of the idea of a

2   separate system that we took control of. So it's not moving

3   a contractor in and out. It's replicating that --

4   duplicating something.

5   I just want to make sure that that's clear in

6   terms of -- there will still be an InfoSTREAMS management

7   contract for DOE's purposes.

8   MR. BAUGHMAN: Is InfoSTREAMS presently an

9   underutilized system?

10   MR. GRASER: It's presently a system that is in

11   the process of being developed.

12   MR. BAUGHMAN: So presumably, though, if this

13   program becomes the major -- which I assume it would become

14   the major funder of development of InfoSTREAMS. This

15   strikes me as though this initiative would be the largest

16   use that InfoSTREAMS could match.

17   So the dollars that are supporting building

18   InfoSTREAMS are going to flow primarily for this single

19   purpose. It would strike as though that all the additional

20   equipment you acquire, all the technical capabilities and

21   licensing and all these things that are set up, if done

22   correctly, could all be done in such a way that they were

23   moved through interagency agreement or whatever.

24   From day one, the intent is -- because if your

25   system right now is -- you know, you're going to have to buy

1   more equipment. You're going ot have to -- everything is

2   --you're, in a sense, building this up from the ground. So

3   all of that can be designed to move.

4   There's no additional cost, then. That's what I'm

5   saying.

6   MR. SILBERG: If they move it, DOE will still want

7   to maintain the entire InfoSTREAMS database, which will

8   include the LSS database and you'll have the database in the

9   LSS portion of that in two different places instead of only

10 in one place.

11   MR. BAUGHMAN: Right. But I think that that

12 should be a lesser objective. If DOE wants to do that,

13 fine, but that's a lesser objective than meeting the three

14 licensing requirements of the NRC. If that means that they

15 have to give up a lot of capability in the short run and the

16 NRC all of a sudden has it and you've got to now in several

17 budget cycles pick up that equipment, whatnot, to get back

18 to that capability you had before you let all this stuff go,

19 so be it.

20   MR. HENKEL: I guess at least a question I have

21 had is is there a way to develop InfoSTREAMS and the LSS

22 within the InfoSTREAMS system such that it is somewhat

23 independent of DOE from day one, so that it addresses your

24 concerns, as well as is available to DOE to facilitate its

25 day-to-day management of the program.

1   MR. SILBERG: You mean have InfoSTREAMS itself be

2   independent of DOE?

3   MR. HENKEL: I don't think you could do it totally

4   independent, but is there some middle ground here?

5   MR. CAMERON: The rule contemplated that if DOE or

6   any other party wanted to use the LSS as its records

7   management system, that it could do so. But I know that

8   there are legal requirements associated with agency

9   recordkeeping and things like that that could be satisfied,

10   I suppose, by hard copy documents.

11   One of the things that we looked at originally,

12   and it's mentioned in the Commission paper, was a proposal

13   that the NRC take over design, development, operation and

14   maintenance; in other words, centralize the whole thing.

15   MR. SILBERG: Of InfoSTREAMS and LSS?

16   MR. CAMERON: No, of LSS. We would be -- that

17   proposal would have the LSS independent of anything that DOE

18   was doing, although DOE's development of InfoSTREAMS would

19   be DOE's way of complying with their LSS document

20   preparation and submission requirements.

21   So now we've gone to the other extreme of having

22   DOE design, develop, operate and maintain.

23   MR. CRANFORD: I just want to respond to Chris'

24   question about developing a separate LSS on an InfoSTREAMS

25   basis. From a technological standpoint, and Dan can either

1   agree or disagree with me on this one, it certainly can be

2   done, but all of the time and effort that has gone into

3   InfoSTREAMS development up until now, unless Dan had the

4   presence of mind to assume that we'd ever get to a point

5   where we'd ever ask to make this type of a decision, that

6   you'd basically be starting from scratch.

7   So whatever you would have saved in your

8   InfoSTREAMS development you would have to, in all

9   likelihood, repeat those costs. So it's not like you can

10 just take a tool that you designed for a particular purpose

11 and then in the middle of that development cycle decide,

12 well, I'm going to use it for maybe something else.

13   MR. HENKEL: I think maybe you misunderstood me a

14 little bit. I was suggesting that is there a compelling

15 reason why InfoSTREAMS itself has to be internal to DOE. If

16 there isn't, can we separate out the entire InfoSTREAMS

17 system, as well as the LSS as an integral part of that

18 system, and somehow set it up somewhat independently so that

19 we can address some of the concerns that have been expressed

20 here from day one?

21   MR. MURPHY: Could you say that, in a paper to the

22 Commission and by rule, that DOE would design, develop,

23 install, operate and maintain the LSS information storage

24 and dissemination capability within InfoSTREAMS under the

25 control and direction of the LSS Administrator?

1   MR. CAMERON: Depending on what you mean by

2 control.

3   MR. GRASER: Let me respond to one of the

4 statements that Chris asked, is there a compelling reason

5 why infoSTREAMS at all even needs to be developed. The

6 answer is yes, because InfoSTREAMS has as its primary

7 mission our internal records management for which we have 36

8 CFR obligations, we have DOE order obligations, we have NARA

9 requirements.

10   We are doing InfoSTREAMS. We conceived of, we

11 implemented, we are moving forward with InfoSTREAMS in

12 response to our own internal requirements. It was not the

13 Department of Energy's idea to seize upon making InfoSTREAMS

14 do double duty. That was at the request of Chairman Selin

15 that that be examined. We were not the ones to put that on

16 the table.

17   MR. HENKEL: You missed a key phrase in what I

18 said. I'm not saying that InfoSTREAMS is perhaps not

19 justified. I'm saying does it have to be internal to the

20 Department of Energy. It can still serve the same function.

21   MR. GRASER: Yes. It has to be internal to the

22 Department of Energy because we are solely charged with our

23 responsibility for maintaining a system of records in

24 response to 36 CFR type requirements. Yes. I have a

25 mandate, Federal reg mandate that I be able to maintain and

1 control the system of records.

2   MR. CAMERON: How does that tie in with Mal's -- I

3 won't call it a suggestion, but Mal's question about control

4 and supervision? I don't remember your exact words.

5   MR. MURPHY: Why not just say DOE would design,

6 develop, install, operate and maintain the LSS information

7 storage and dissemination capability within InfoSTREAMS,

8 under the control and direction of the Licensing Support

9 System Administrator?

10   MR. CAMERON: And then you get down to what is

11 control and supervision.

12   MR. MURPHY: Just the LSS portion of InfoSTREAMS,

13 under the LSS Administrator's direction and control.

14   MR. CAMERON: How is that different from maybe

15 what we thought we had in Alternative 3?

16   MR. SILBERG: There's a difference between audit

17 and oversight and control.

18   MR. MURPHY: Right.

19   MR. HENKEL: Exactly.

20   MR. CRANFORD: What Mal is suggesting implies to

21 me that we would have presence on the site in the day-to-

22 day. The database administrator would be either one of our

23 contractors or one of our employees, that type of thing. In

24 order to effectively have control, you've got to be the DBA.

25 There's no --

1   MR. MURPHY: Well, I don't know about that.

2   That's within your ability, but somehow --

3   MR. CAMERON: Database administrator, DBA.

4   MR. MURPHY: But somehow when the kind of

5   decisions that Dan referred to come up, the decisions are

6   made by the LSSA or subject to that control.

7   MR. GRASER: I don't want to offer a design from

8   the hip and I don't even want to entertain design by

9   Committee. What I would like to hear is what environment do

10   you expect the LSS to be developed in and under what sort of

11   control constraints.

12   If I can identify what the requirement is, if

13   there will be a requirement, then perhaps, within a certain

14   amount of time, we can turn around and say, architecturally,

15   what we have done with InfoSTREAMS --

16   MR. SILBERG: No. We're not talking about the

17   design of the database and the architecture of the software

18   or anything. We're talking about management administration

19   and control over the people.

20   MR. GRASER: The feasibility will -- the

21   InfoSTREAMS technological infrastructure will support a

22   means whereby the entire plateau of 15-plus million pages

23   over and above what InfoSTREAMS was going to have, how can

24   that be controlled, effectively controlled by somebody

25   outside of the Department of Energy?

1   I need to have time to examine whether or not the

2   architecture would support setting up a separately

3   controllable adjunct database environment, which is the LSS

4   collection.

5   MR. SILBERG: Put aside the computer aspect of the

6   question. From the standpoint of a government agency's

7   requirements, can one government agency or a group of

8   government employees within one agency put itself under the

9   control of another government agency. I think that's the

10   major question.

11   Hardware we can solve at some cost, but, legally,

12   is there a mechanism by which three DOE employees can say

13   we're going to listen to this guy over at One White Flint.

14   If he tells us to jump, we will jump. If the guy up in

15   Forestville tells me to jump, I'm going to say go talk to

16   the guy in White Flint.

17   Is that --

18   MR. CAMERON: Is there any analogies --

19   MR. SILBERG: -- permissible under the way the

20   U.S. Government operates?

21   MR. MURPHY: We're reinventing government these

22   days.

23   MR. CAMERON: That's right. I forgot. I'm sorry.

24   MR. MURPHY: I don't want to hear this we've never

25   done it that way before.

1   MR. MURPHY: Dan had a good point. What about

2   that DOE would design, develop and install the LSS system

3   under InfoSTREAMS and would operate and maintain it subject

4   to the direction and control of the LSS Administrator?

5   MR. SILBERG: Can you do that bureaucratically?

6   MR. MURPHY: That's the question.

7   MR. GRASER: I have no idea.

8   MR. MURPHY: Well, let's find out. That might

9   solve a big problem.

10   MR. HOLDEN: I'm not sure of the mechanics or

11   procedurally how it's done, but isn't that what IPAs are all

12   about, the individual and the temporary?

13   MR. CAMERON: Governmental personnel.

14   MR. HOLDEN: Transfer or something, whatever it

15   is.

16   MR. ALEXANDER: The point that Dan made earlier,

17   really control rests where the dollars are. If the dollars

18   are still in DOE, I don't know how effective that control

19   would be. He's going to control he dollars. He'll just say

20   I won't pay for that.

21   MR. GRASER: It was the dollar issue that launched

22   some of this discussion in the first place.

23   MR. ALEXANDER: If you want to ask for special

24   legislation in your authorization, if you really want to do

25   this with a temporary transfer of the funds and the people

1   to overcome this objection, propose legislation to allow

2   that to occur.

3   That's the best way to do it, if you really want

4   to do it.

5   MR. CAMERON: I think we need to think about what

6   is the basic base roots of the problem here. It's not

7   necessarily the turnover from one contractor -- one agency's

8   contractors to another, although that's problematic. It

9   seems like it comes down to who is going to be able to get

10   the money.

11   There is another part. There are cost savings

12   involved with one agency, with DOE doing the whole thing.

13   Then there's the big issue of where do the dollars come from

14   to do this. I guess the thought was that it would be easier

15   for DOE to have the dollars to do this in terms of operation

16   than NRC. That's an untested supposition.

17   But if we had -- let me just throw this

18   hypothetical out there. If we knew -- if Congress said

19   we're going to give you, NRC, so many millions of dollars a

20   year to operate and maintain this system, no big deal, would

21   we really be here today examining these alternatives.

22   MR. BAUGHMAN: One has to ask what has prevented

23   Congress from doing that.

24   MR. MURPHY: Lack of wisdom.

25   MR. BAUGHMAN: If that's the root problem, aren't

1 we working a little downstream in terms of problem solving

2 and maybe we ought to go to the root problem?

3 MR. CAMERON: I guess it's going more upstream

4 from that. It comes down to does the Commission -- is the

5 Commission ready to ask the Congress to give us those funds

6 to operate and maintain the system.

7 Is that a true statement, John?

8 MR. MURPHY: I think you got your answer to that.

9 MR. HOYLE: All along, I think the Commission has

10 been very concerned about funding this project within its

11 own budget. Its budget is relatively small. This would be

12 a very large amount in the budget. Congress comes along and

13 says, all right, we're going to cut ten percent. They might

14 say and don't take it out of the LSS.

15 So NRC's small budget get cut a larger amount. So

16 I don't know if the Commission is prepared to go any

17 further.

18 MR. CAMERON: And I don't want to downplay the

19 Chairman's or the Commission's concerns, either, with the

20 potential cost savings involved from having the InfoSTREAMS

21 design used for capture of operation and maintenance.

22 I know that some of you remain to be convinced

23 about the cost savings because you want to see the data, but

24 I don't want to downplay the fact that there are some

25 substantial cost savings associated with Alternative 3.

1   MR. MURPHY: Also, I don't want anybody to get the

2   impression that I think the LSS should take precedence over

3   the technical oversight, either. If there's a choice

4   between developing the LSS and making sure that the science

5   out at Yucca Mountain is done correctly, then the science is

6   obviously going to take precedence.

7   I think I've said this before. In that respect,

8   I'm no arguing that the NRC's fear that budget cuts will

9   impact more severely their ability to technically oversee

10 this characterization program, we don't want that to happen.

11   We think more needs to be done in that area than

12 less.

13   MR. HOYLE: Well, we've got a number of issues

14 that we've brought out. I think Mal and others have made a

15 valiant attempt here to look for that sacred middle ground

16 that will work. He also said a few magic words a moment

17 ago, reinventing the government.

18   I think we are looking here for a solution that

19 might be a little bit unique, but when you put that up

20 against perceptions, concerns that have built up over a

21 period of time by those out here in Nevada, particularly,

22 you almost meet a brick wall and you can't go beyond.

23   So I think we still need to spend a little time at

24 this. I don't know whether there's some other way or forum

25 in which we could do it, other than just plowing through it

1   like we're doing.

2   MR. CAMERON: I think at some point, we can go

3   back and report to the Commission on what transpired at this

4   meeting, but I think at some point it might be useful, apart

5   from the cost issue that we're going to take up later, if

6   the sense of the panel was expressed to the Commission --

7   and I know there is not consensus here.

8   I don't know if there was non-consensus, but I

9   don't want to assume that there is consensus among the panel

10   on their feelings about Alternative 3. But even majority,

11   minority -- I mean, that's one option is to have the panel

12   develop some type of a response to the Commission on this.

13   That means you're going to have to sort of try to

14   figure out how to coordinate it, but --

15   MR. SILBERG: Well, we can do what we did the last

16   time. This time I guess I'd let Mal -- I think it's his

17   concern more than mine. What we did last time is one party

18   draft a letter, circulate it around, and to the extent

19   people had different views, we wound up with a letter from

20   John that kind of summarized the views and laid out some

21   variance on those views and at least one party submitted its

22   own separate views. We can certainly do that.

23   I don't think it would take an inordinate amount

24   of time to do that. I think we all understand everybody

25   else's positions on this.

1   MR. HOYLE: Mal, what do you think?

2   MR. MURPHY: I'd be certainly willing to do that,

3   but I think you also -- don't you need to report on the

4   results of this panel meeting? In that report, you're going

5   to have to say what you think you heard. But, sure, I'd be

6   willing to -- I sort of hesitate to try to put Dan's

7   concerns in words, but I can try that.

8   I'll circulate a letter that certainly expresses

9   the concerns that I feel on the control issue. I will

10   perhaps suggest some language as an alternative that might

11   go some way towards satisfying those concerns.

12   MR. CAMERON: We can report back on this meeting

13   and say strong message to follow.

14   MR. MURPHY: Send a telegram, Chip.

15   MR. BALCOM: In terms of any recommendations, I

16   would also ask that Boyd be involved in that process. I

17   heard him mention a couple things and you may be a little

18   more familiar with some interagency ways of dealing with

19   issues like this and simply to make sure that, if you're

20   willing, that you put your two cents in there about that.

21   I also want to say that the State of Nevada also

22   is opposed to Alternative 3, probably more from the

23   standpoint of the control of Department of Energy documents

24   than its own documents.

25   MR. HOYLE: Mal, I will look through the

1   transcript and share with you, as well, my initial thoughts

2   on what I see out of here on this topic and then will

3   circulate, as soon as I can, some material to everyone.

4   MR. SILBERG: Can I suggest -- I don't know who

5   the right person is to do this, but the solution that Mal

6   posed about having DOE folks who were running the LSS

7   portion be under the control of an NRC person.

8   The NRC and the DOE folks who understand

9   government bureaucracies, I would encourage someone to take

10   a look at that and see whether that's a non-starter or

11   whether that's feasible. If it's feasible, I don't think it

12   bothers us one way or the other, from our standpoint.

13   .   Alternative 3 is probably acceptable, but if this

14   is a solution which will allow cost savings, if any, from

15   Alternative 3 to go forward, but solve problems of Mal and

16   Kirk and others, it's probably okay. But let's find out

17   whether, bureaucratically, it's possible or not.

18   MR. GRASER: It may, in fact, be feasible, but

19   still objectionable. In terms of saying I have an

20   InfoSTREAMS that is also the LSS and it is doing double

21   duty, I don't know if it would pass muster within the IRM

22   and records management, powers that be within the Department

23   of Energy, while the system is doing that double duty, to be

24   able to say those guys are working for NRC.

25   So obviously we would have to look very closely

1 --I'm just saying we will look at whether or not it's

2 feasible. We will address the issues of whether or not

3 that's going to cause other sorts of administrative

4 headaches to the extent that we would say no. But I will do

5 as suggested and go off and explore whether it's feasible.

6   MR. MURPHY: But don't look at it as though

7 they're working for the NRC. There's lots of circumstances

8 in life where we operate independently, but somebody else is

9 controlling the intersection or the street we move down when

10 we come to an intersection. That's all I'm talking about.

11   MR. GRASER: And all I'm saying is that DOE

12 bureaucracies tend to look at what they see in black and

13 white rather than what the operative world really reflects.

14   MR. HOLDEN: In terms of cost and what's happening

15 up to this point, if anything goes down the tubes, all that

16 investment goes down the drain. That wouldn't be the first

17 time something like that has happened within this program,

18 going back to the second repository days and so forth and

19 even in the days of when sites were narrowed down to three.

20   There was a drill that sat on Gable Mountain at

21 the reservation, which was a visionquest site for the Yakima

22 Indian people, that sat there at over a million dollars a

23 day cost to the taxpayers just waiting to drill and it sat

24 there for over a year.

25   MR. MURPHY: I want to make one other point before

1   we leave, and that has to deal with the technical

2   feasibility of InfoSTREAMS to do this job. I think, Dan,

3   that without InfoSTREAMS currently having the ability -- I

4   shouldn't say ability.

5   Without InfoSTREAMS currently capturing that

6   Defense high level waste information, you've got a big, big

7   problem that somebody needs to take a look at. You are not

8   going to have an acceptable licensing support system when

9   the time comes to do whatever we're going to do with it,

10   unless you've got all of that Defense high level waste

11   information into that system.

12   MR. GRASER: As long as everybody is taking the

13   opportunity to say one last thing, I would just like to make

14   the offer before all of the members of the panel that we

15   have had hour-long or hour-and-a-half-long snapshots at

16   InfoSTREAMS and I know there are a number of the members of

17   the panel who have a strong foundation in ADP activities and

18   in the complexity of systems.

19   I would just like to extend the offer to anyone,

20   but specifically those who feel that they would really like

21   to get down and ask very specific questions about the

22   hardware and the software and the architecture that we're

23   building for InfoSTREAMS, I'd like to extend the offer that

24   if you get in touch with me after the meeting, I will be

25   happy to set up a point in time where you can sit down and

1　talk with the system architects and engineers and ask very

2　specific technological questions that may leave you with a

3　feeling of unease right now.

4　　　　In addition to offering that availability for in-

5　depth technical discussions, in the February timeframe, we

6　will be rolling out our Increment 2, which will complete our

7　whole desktop office automation side of the system, and I'd

8　like to extend the opportunity to everybody, at that time,

9　also, please, if you have an interest in seeing a

10　demonstration of the system, get in touch with me.

11　　　　The third piece of technology is that we have an

12　operational document capture system. We have a template for

13　using it in a very similar manner to the way the document

14　capture systems would be used under the old SAIC design.

15　They are essentially standalone, remotely located and feed

16　into a central processing environment.

17　　　　We have developed a paper documenting how that can

18　be distributed in an enterprise-wide environment and I'd

19　like to offer that we provide John with a copy of that and

20　that it be included with additional package information.

21　　　　It may very well be that when you see how we are

22　doing document capture system in a distributed environment,

23　that may be at least one piece of the discomfort level that

24　you could look at, at least, and having something in your

25　hands to give you a foundation for making an analysis.

1   So I will get my hands on a copy of that report

2 and get it to John. I want to encourage you to look at it

3 critically and see if it fits or doesn't fit.

4   But the bottom line is that pieces of technology

5 are being developed by the Department of Energy in a context

6 where, if you look at them, they all come very close to

7 meeting pieces of the licensing support system

8 functionality.

9   If you wanted to take a philosophical look at it,

10 even though we haven't had LSS line item budget money

11 because of the OMB feedback on the 1989 budget cycle, the

12 bottom line is that pieces of licensing support system

13 technology, for all intents and purposes, are being built.

14 The degree of reusability is something that I need to come

15 to closure on and I would like everybody to walk away

16 understanding that I have a certain degree of urgency in

17 knowing whether or not I should be designing a big bread box

18 or a medium size bread box or a small bread box.

19   That's the stake that I have in getting some

20 movement on these issues.

21   MR. HOYLE: If we got and circulated information

22 and corresponded with one another through me, perhaps, do

23 you feel that if we had another meeting in, say, the middle

24 of January timeframe, would that still be timely, in your

25 view, if a decision were made at that point as to

1   Alternative --

2   MR. GRASER: Yes, that would be timely. I

3   certainly did not have any expectation that we would get any

4   closure on these issues during this meeting. I did expect

5   that there would be a period of time that would be required

6   to work these issues through. So January is fine with me.

7   MR. MURPHY: I think that's a good idea.

8   MR. HOYLE: I don't see any need to set up any

9   subcommittees at this time to look at any particular

10   individual things, unless -- I saw one hand shoot up in the

11   back of the room, but we need to do first things first here,

12   in my view.

13   What do you want to talk about?

14   MS. SHELBURNE: Well, several of the issues that

15   Dan brought up yesterday, the header definition, the

16   copyright -- I've forgotten the other one -- whether or not

17   LSS would be independent or part of InfoSTREAMS, that stuff

18   needs to be discussed.

19   I would like to suggest, and I think other people

20   that have left the room now have got issues related to

21   locking in the header definition and the indexing groups.

22   MR. HOYLE: Betsy has suggested that at least we

23   breathe new life into Kirk's Subcommittee on Headers. Kirk,

24   are you willing to restart?

25   MR. MURPHY: Sure.

1   MR. CAMERON: Enthusiasm.

2   MR. HOYLE: Volunteers for that subcommittee?

3   MR. BECHTEL: I can volunteer a member of my staff

4   who is not here.

5   MR. HOYLE: So at least we would have Clark County

6   and DOE, NRC, and the State of Nevada.

7   MS. SHELBURNE: What about the copyright issue?

8   MR. HOYLE: Could that same group study that

9   issue?

10   MR. GRASER: We need to do some more work on that

11   first before it goes to --

12   MR. CAMERON: We're not sure that that's an

13   unalterable position.

14   MR. HOYLE: How about DOE's word changes to the

15   rule based on technology advancement?

16   MR. GRASER: There is very much contention on the

17   foundational issues.

18   MR. SILBERG: I don't think, from our standpoint,

19   that those are tied to control. Do you want to have the

20   rule make sense technologically? I don't think anybody is

21   going to object to that kind of stuff. Those, I think, are

22   going to be uncontroversial.

23   MR. MURPHY: I think that's right.

24   MR. SILBERG: To the extent we have to make

25   changes later, you just do that and that will go through. I

1   wouldn't bother with a separate --

2   MR. GRASER: But not as a separate drill. Do it

3   all once and then decide which direction we're going to go.

4   MR. SILBERG: I don't see any philosophical

5   problem with making those kinds of changes to the rule, to

6   just make it make sense in today's environment, do you?

7   MR. CAMERON: And if we need to do a rule change

8   to reflect whatever alternative is selected here, then we

9   could wrap that all up into one.

10   MR. SILBERG: Yes. Unless there is some other

11   reason to start playing around with Subpart J, to go through

12   another rulemaking docket at this point for those changes

13   makes no sense.

14   MR. CAMERON: I agree.

15   MR. BALCOM: Let me just briefly add about the

16   header working group. It seems a lot of those changed are

17   tied to InfoSTREAMS. I wonder if there's a potential here

18   for InfoSTREAMS to be in jeopardy and maybe the working

19   group could meet once to talk about this.

20   But if InfoSTREAMS doesn't end up being the

21   vehicle, then --

22   MR. GRASER: The original 28 fields would still

23   stand. Although there probably are a couple of fields that,

24   regardless of what happens with InfoSTREAMS, you might want

25   to consider including WBS numbers or QA status, for example.

1   I think that is something that the Committee could focus on

2   which is InfoSTREAMS dependent.

3   MR. SILBERG: Just for my naive understanding,

4   would all of those fields be mandatory?

5   MR. GRASER: No.

6   MR. SILBERG: Because to the extent you're putting

7   it in on DOE documents and you need those for InfoSTREAMS

8   purposes, a lot of that looked to me non-essential for LSS

9   purposes, particularly for non-DOE participants.

10   MR. GRASER: But if you had it as a freebie, you

11   would take it.

12   MR. SILBERG: To the extent that it didn't

13   increase the effort we had to take to create the header in

14   the first place.

15   MR. CAMERON: At least by the participant.

16   MR. SILBERG: Right.

17   MR. GRASER: Right.

18   MR. HOYLE: Okay. I will go through the

19   transcript and try to pull out all the pertinent things.

20   Are there more promises that were made here that we want to

21   talk about? I'll find them in the text.

22   MR. BECHTEL: Just one other --

23   MR. HOYLE: Dan promised excerpts of DOE's --

24   TRW's review of the text processing products.

25   MR. GRASER: Right.

1   MR. HOYLE: Dennis?

2   MR. BECHTEL: Just to make sure that all the

3   affected counties that weren't here maybe are able to get

4   the handouts.

5   MR. SILBERG: What do we want to do in terms of

6   comments on the compliance assessment program? It seems to

7   me that that's -- the effort in going through that and

8   recasting it or improving it or whatever doesn't make sense

9   at this point in time, until we understand where we're going

10   on Alternative 3 or whatever.

11   MR. CAMERON: Only one part of it deals with the

12   system audit and the rest would apply regardless of what

13   alternative was chosen. But it still might not make sense

14   to comment at this point. What's the contracting situation?

15   What do we need to do on that?

16   MR. DRAPKIN: What we need to do is obviously to

17   come to closure as quickly as we can. What I would like is

18   our suggestions. These may not be comments specific to the

19   document that you have, but addressing your concerns and how

20   better controls, better audit controls, more teeth, whatever

21   you think would be appropriate given in the context of

22   Alternative 3 for those portions that apply just to

23   Alternative 3.

24   The portions that apply generally, we would like

25   your comments as quickly as we could get them. There's

1 nothing that precludes us from having another comment

2 period.

3   MR. CAMERON: So you would like comments on those

4 portions of CAP that are not dependent on Alternative 3.

5   MR. DRAPKIN: Right. And if you have problems

6 with Alternative 3 and you want to express some opinion on

7 how to solve that problem through the compliance assessment

8 program, I'd certainly like to hear about it.

9   MR. SILBERG: The reason you want this now is so

10 you can wrap up this contract you have or other reasons?

11   MR. DRAPKIN: It's principally a contracting

12 issue, I think. We have a schedule and funds that get

13 expended at a certain rate. We'd certainly like to make use

14 of that in a productive way.

15   MR. HOYLE: Is there anything else? Jay, were you

16 finished?

17   [No response.]

18   MR. HOYLE: Thank you very, very much. I will set

19 up -- well, I will be sending you material and then we'll

20 look -- please think about mid-January. Do you want to come

21 east?

22   MR. HENKEL: No. Tahoe.

23   MR. CAMERON: In January?

24   MR. HOYLE: Reno.

25   MR. HENKEL: We don't want to go to Reno either,

1   right?

2   MR. HOYLE: Reno's great.

3   MR. HENKEL: And get really close to a weekend,

4   too.

5   MR. HOYLE: I should have made the offer to anyone

6   in the audience, any member of the public who would like to

7   make any statements. You may submit them, if you'd like,

8   but is there anyone who wants to make a statement at this

9   time?

10   [No response.]

11   MR. HOYLE: Thank you very much.

12   [Whereupon, at 12:21 p.m., the meeting was

13   concluded.]

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REPORTER'S CERTIFICATE

This is to certify that the attached proceedings
before the United States Nuclear Regulatory
Commission
in the matter of:

NAME OF PROCEEDING: Licensing System Review Panel

DOCKET NUMBER:

PLACE OF PROCEEDING: Las Vegas, NV

were held as herein appears, and that this is the
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