



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUL 25 1988

MEMORANDUM FOR: Francis X. Cameron
Office General Counsel

FROM: Philip M. Altomare
System Engineering and Evaluation Branch
Division of High-Level Waste Management

SUBJECT: COMMENTS ON DOE LICENSING SUPPORT SYSTEM CONCEPTUAL DESIGN
ANALYSIS

Enclosed are comments on the subject report for incorporation with other Agency comments. I would be interested in seeing the comments you have received and if you desire, will assist in compiling these into a final package.

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Philip M. Altomare
System Engineering and Evaluation Branch
Division of High-Level Waste Management

Enclosure: as stated

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COMMENTS ON DOE REPORT
LICENSING SUPPORT SYSTEM CONCEPTUAL DESIGN ANALYSIS

The document is well written and is quite thorough in presenting the LSS concept. As a conceptual document, details on specifications of the system were not expected and therefore no attempt is made to add such detail in the comments. Comments on the design concept are presented below.

- 1) Pg ii, item 5: "readers" should be headers
- 2) Pg iii, end of second paragraph: It is indicated that consideration is being given to removing the Tracking Systems. The LSS primary purpose is to retain and retrieve documents related to the licensing of a high-level radioactive waste repository, however, it is beneficial to have access to the tracking systems in parallel with the use of the LSS. In this way documents referenced in the Tracking System can be retrieved directly from the LSS. Accordingly, it is recommended that the tracking system be available to LSS users on separate software systems but have the capability to transfer to the LSS to retrieve related documents.
- 3) Pg 2, last paragraph: See above concerning retention of tracking systems.
- 4) Pg 8, third paragraph: Although there are arguments pro and con as to whether original document spelling errors should be corrected, the time saving use of an automated spelling checker to correct the 3 to 15 probable OCR errors per page would seem to justify its use. The document image would, of course, represent the document as originally prepared.
- 5) Pg 11, first sentence: Catalogers should be well trained; however, the use of a controlled vocabulary or authority list could allow some of this effort to be undertaken by the document preparer, (i.e., submitters would prepare the header). Also, full-text capability should reduce the extent of cataloging required.
- 6) Pg 15, Section 2.2.2.1.1: As noted above, consideration should be given in the conceptual design to requiring header information to be provided by the major documents submitters. Also, some of the fields described are not clear, e.g., Baseline Data Flag.
- 7) Pg 18, Section 2.2.2.2.3: A privileged document may also be ordered placed in special, limited access, file.
- 8) Pg 19, first full paragraph: If package headers are created after the separate records have been created, there may be difficulties in adding

or updating a header. A document retrieval software that provides for automatically retrieving related records, as for example by sensing the ascension numbers would be helpful to handle this and other special problems.

- 9) Pg 19, section 2.2.3, first paragraph: As above, a document retrieval software that will retrieve related or updated regulations will be helpful.
- 10) Pg 20, Section 2.2.4, first paragraph: Electronic mail for the licensing hearing should be added as a fifth item.
- 11) Pg 21, top line: Is the 9,000 supposed to be 90,000?
- 12) Section 2.3.2.1: The structured-index could also be used as a basis for designing separate computer files such that a search could be conducted on a specific file without having to search the whole document data base each time
- 13) Pg 27, item 2 in the middle of the page: CD-ROM is too small to be considered for mass storage of documents although it is an excellent means of distributing selected information. The CD-Rom 5 $\frac{1}{4}$ inch disc holds approximately 540,000 bytes or 180,000 pages whereas the larger 12 inch disc will hold more than 3 gigabytes or more than 1 million equivalent pages of information. This storage capacity is expected to be substantially increased in the future.
- 14) Pg 27, last paragraph: While it may or may not be practical to provide images at each work station it is not necessarily clear that it is impractical to provide full-text or select image capability at major user facilities. For example by 1994, just prior to license application, 54 to 126 Gytes of text information storage is indicated to be needed, or 18 to 32 larger optical discs (this would probably be further reduced by higher density storage capability discs). Image storage would require 20 times the number of discs but user interest will generally be directed to a much smaller quantity of documents, i.e. the more recently generated information. Cost benefit studies may exclude the total image distribution approach, however, the cost of transmitting images may call for some limited distributed image access capability.
- 15) Pg 29, Section 2.5.2: The discussion of Capture Station to Storage Communication is appropriate for newly created documents. However, documents from earlier years to be entered would not usually require as fast a turn around. Accordingly, older hard copy documents could be sent by less expensive means possibly providing for more efficient and cost effective central station capture processing.

- 16) Pg 30, second complete paragraph: It is indicated that dial up access might be provided only for those needing ASKII. It is conceivable that capability to receive images on a remote personnel computer (PC), even at only one per minute using 9.6 Kbps, would be desirable and even necessary for some graphic materials. Therefore, a relatively inexpensive though slow capability for image receipt at a PC should be considered in the conceptual design.
- 17) Pg 31, section 2.6.2: In reference to capture of E-mail, it is noted the NRC hearing board will require control over the official "hearing record". While this could be a separate hard copy file at the NRC, design consideration should be given to, a separate electronic file under their control.
- 18) Pg 32, section 2.7.1: In reference to usage monitoring, concern has been expressed as to tracking what documents any one user is retrieving. On the other hand a system that identifies the most used documents could possibly be utilized to provide a select image data base to users. Users might also be given the option of requesting a select text and image data base be provided to them so as to reduce telecommunications cost and the load on the central station(s).
- 19) Pg 33, section 2.7.3.1: Concerning correcting erroneous entries, some form of temporary storage and access must be provided to ensure that an LSS document entry was made correctly and to make corrections prior to final entry to the LSS. In order to protect the integrity of the data base. It has been intended that once an entry was verified and entered into the LSS, it could no longer be changed. Noting that errors will still be made, the system should have the capability to attach notes and to call up related documents when the original is retrieved. This could be done by "sensing" the accession number. This method could also be used to attach document updates and important other related documents.
- 20) Pg 37, last paragraph: The procedure calls for the QC cataloger to work from hard copy. It is suggested that the bit-mapped image could be provided on a split screen such that more efficient QA could be performed (also, more efficient initial cataloging could be done this way).
- 21) Pg 38, third paragraph: In order for a submitter to verify the correctness of document entry in five days, they will need electronic (telecommunications) access to the temporary storage for both text and images.
- 22) Pg 39, first full paragraph: As noted above, access will be needed by a submitter earlier than five days.

- 23) Pg 39, second full paragraph: It would seem that the LSS could be accessible almost 24 hours except for time required to update the data base or service the system.
- 24) Pg 39, last paragraph: It is stated that full text search would not be available for the tracking system. Full text search on tracking systems has been done and could be done here.
- 25) Pg 40, section 3.2.3.2: It is suggested that further consideration be given to more sophisticated monitors for Level 2 work stations. Monitor cost are coming down and there are advantages to displaying text and image side-by-side, (i.e., split screen).
- 26) Pg 47, second paragraph: It is noted that microfilm is required for archival purpose. It is possible that optical disk could be accepted for archival purposes and this option should be pursued if there are significant advantages.
- 27) Pg 52, section 4.1.1.5: It is suggested that high capacity hard disk be included for Level 1 workstations to allow downloading of large amounts of information to the user. The user could then work with this information without tying up the main system. This also provides for more efficient system use and also allows the user to begin using information immediately while additional information, such as images, are being loaded into their workstation.
- 28) Pg 52, third paragraph: It is indicated that images would be available to Level 1 workstations only through hard copy mail. Small numbers of images could be transmitted to Level 1 stations, by telefax if not through the PC. This might very well be a requirement during the hearing process.
- 29) Pg 53, table "Number of Workstations": The projected number of workstations seems low considering that LANS networking is planned. However, the peak load of 350 users seems reasonable.
- 31) Pg 58, item 2: As previously suggested, Level 1 stations should have data storage capability for large quantities of text as well as for images.
- 32) Pg 72, first paragraph: It is not clear that rekeying will reduce the possibility of document duplication.