

June 27, 2003

MEMORANDUM TO: Chairman Diaz  
Commissioner Dicus  
Commissioner McGaffigan  
Commissioner Merrifield

FROM: Daniel J. Graser /RA/  
Licensing Support Network Administrator

SUBJECT: REPORT ON LICENSING SUPPORT NETWORK FUNCTIONALITY  
AND OPERABILITY ISSUE RELATING TO AVAILABILITY OF  
DEPARTMENT OF ENERGY DOCUMENTARY MATERIALS

In accordance with 10 C.F.R. § 2.1011(c)(5), the purpose of this memorandum is to provide the Commission with a report on the status of the functionality and operability of the Licensing Support Network (LSN) in connection with an issue recently raised by the Department of Energy (DOE) regarding the LSN availability of DOE discovery materials.

Under 10 C.F.R. § 2.1009, DOE must certify that its high-level waste (HLW) repository-related documentary material has been "identified and made electronically available" six months before the DOE license application submission. Based on recent interactions with DOE, it is my understanding DOE currently interprets this as meaning that its documents only need be "available" for the first time to the LSN portal "spider" six months prior to license application submission. From a technical perspective, however, the LSN full text retrieval software is not aware of a document until the spidering process is completed, i.e., the index for that document has been built, at which point the LSN provides search and retrieval access to the document. Because of the size of the DOE collection (recently identified by DOE as approximately 4 million documents and 37 million pages), it is anticipated it will require approximately 40 weeks for the LSN spider to create the necessary indices (assuming a spidering rate of 100,000 documents per week) for all DOE documents. DOE thus would need to begin making its collection available for spidering on or about September 1, 2003, if it wants to seek to ensure its collection is available on the LSN by June 2004 (six months before the current DOE estimate for submitting its license application).

In a June 11, 2003 one and one-quarter page letter to the LSN Administrator (LSNA), DOE requested the LSNA's opinion about whether, to mitigate or eliminate what DOE sees as the timing problem associated with the LSN system design, it can "index its own documents using the same software, methodology and auditing procedures that NRC would use . . . [and then] provide the resulting index to the NRC at the same time it submits its LSN documents. . . . NRC would be given access to audit and otherwise monitor and comment on DOE's indexing activity during the process." DOE requested this opinion by the end of June 2003.

Attached to this memorandum is a copy of the LSNA response to the June 11, 2003 DOE request. In this response, I indicate that this proposal has a fundamental technical shortcoming that would compromise the integrity of the LSN auditing system established in accordance with

the dictates of 10 C.F.R. § 2.1011(c)(4). In this regard, in an effort to ensure that potential participants to the HLW repository licensing adjudication that make documents available for spidering and inclusion in the LSN do not later modify the material without notifying the LSNA, built into the LSN spidering software is a custom auditing program that interacts with the participant's documentary material in a way that allows the LSN staff to identify any subsequent changes to a document. Without this auditing program, DOE spidering its own collection would not provide the LSN staff with an auditable data base. Yet, affording any HLW repository licensing adjudication participant access to the LSN auditing program to utilize in its spidering would provide that participant with significant technical details about the LSN data integrity scheme that could permit LSN auditing efforts to be circumvented and audit integrity compromised. Accordingly, as I indicate in the attached June 27 response, the DOE proposal is not feasible because it would preclude the LSNA from fulfilling his section 2.1011(c)(4) responsibilities regarding documentary material integrity.<sup>1</sup>

Also in connection with the June 11 DOE proposal, it should be noted that the LSN technical solution, as it is reflected in the current operating system,<sup>2</sup> is footed in the February 2000 LSN Advisory Review Panel (LSNARP) consensus guidance in which DOE participated fully. In doing so, DOE was aware of the spidering process that was involved, as evidenced in the contemporaneous reports of the LSNARP Technical Working Group supporting the recommendation to implement the portal architecture that the LSN now uses. (Of course, at that juncture, the performance characteristics of the LSN spidering software seemingly were not at issue given DOE's late 1999 report that it intended to submit only 10,000 documents and 100,000 pages of documentary material to the LSN.) Additionally, besides apparently undercutting the Freedom of Information Act request-mitigation objective recognized in

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<sup>1</sup> While this technical deficiency, in and of itself, is sufficient to establish that the June 11 DOE suggestion is not a viable approach, as is referenced in the footnote to my attached June 27 response, DOE's proposal to do its own indexing using the same software and methodology also would not provide the information needed by the LSN to make the DOE documentary material searchable and available to the participants. In this regard, although it is a vital LSN component, the Autonomy indexing software the LSN utilizes is not the system's centerpiece. Rather, it is the custom software developed for the LSN that merges the content gleaned from documents with the participant-created structured database found in the XML (extensible markup language) files for each document that makes the LSN unique. This software, however, would not be available to DOE as part of the Autonomy software it would utilize. Further, putting aside the question of the availability of the additional unbudgeted NRC manpower and significant funding resources that otherwise would be needed to implement the proposed DOE solution, there are serious concerns about whether the time remaining under the current DOE schedule would be sufficient to address the problems inherent in accommodating the huge bulk download into the LSN that the DOE proposal would require without introducing substantial additional technical uncertainty/risk.

<sup>2</sup> The LSN, found at [www.lsnnet.gov](http://www.lsnnet.gov), currently is operational and provides access to approximately 1800 items from documentary collections of the NRC staff and the Nevada counties of Lincoln and White Pine. I anticipate that additional materials from these and other HLW repository licensing adjudication parties/potential parties will be added on an ongoing basis.

adopting the LSN, the DOE proposal is inconsistent with the general premise underlying Subpart J that early, systematic disclosure of documentary materials -- including the substantial DOE HLW document collection -- increases the utility of the information to the participants as well as makes it more likely that disputes about document content will surface early on, thereby affording the Commission and the Pre-License Application Presiding Officer time in the pre-application phase to resolve such challenges without impacting the schedule for the follow-on HLW repository licensing hearing. Finally, the DOE proposal fails to recognize that the LSN was envisioned as providing the NRC staff with early access to DOE information that the staff might utilize in its license review activities, access the staff now would be denied.

Assuming DOE intends to submit its HLW repository license application in December 2004, it continues to be my hope that, in consultation with the LSN staff, DOE will agree to begin loading its HLW document collection onto its LSN-accessible server(s) no later than September 1, 2003, on a steady, uniform schedule (i.e., a regularized volume on a continuous basis) that will be sufficient to allow the LSN "spider" to create the indices necessary to make the DOE HLW documentary material collection available via the LSN by June 2004.

I can be contacted at (301) 415-7401 if you or any member of your staff has questions about this report or the attached response to the DOE June 11, 2003 letter.

Attachment: As stated

cc w/attachment:  
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