5. SEARCHING THE LSN

5.1 How the LSN Search Engine Works

The LSN search engine uses advanced neural network techniques, probability, and communication theory. It translates a user's search into patterns that are compared to stored indexes of all the documents located in each participant's collection. These neural techniques help overcome the many variations in the way that an idea might be written or differences in how words are used.

5.2 Effective Search Strategies or Search Tools

The LSN can be searched by a simple keyword query. The user can type words or concepts into the search box, in any order or sequence. This is called a natural language interface. CAUTION: If the user types in only one or two terms, this will usually result in a ***large number of hits*** and the LSN may ***report that many of the documents are highly relevant*** to the user's request. This is because many LSN documents are on the same topic and many use the exact same terms.

The LSN can be searched using classic Boolean statements, proximity operators, and relational operators. For example, a user could enter in the FROM DATE field "07/01/2000" and enter in the TO DATE field "07/31/2000" and enter "ground water contamination" in the DOCUMENT CONTENT field. This would result in a list of documents dated in July 2000, with the most relevant to "groundwater contamination" listed at the top. Using more defined searches helps because it ***lowers the number of "hits" and the software has an easier time determining what is truly relevant***. In general, the more information a user provides in his search, the more precise the results will be.

The LSN also features a very powerful "like document" capability. Users can provide "source text" in the search block and tell the LSN to "find more documents just like this." This works by highlighting a block of text in a document that the user likes, using the browser cut-and-paste, and pasting it into the search block.

5.3 Displaying Search Results

LSN searches generate a documents results list. The list of documents is displayed in order by relevancy as determined by the search engine software. The search engine uses information from the documents themselves to determine how relevant they are to the user's search.

To provide full text search capability for relevant documents, § 2.1003(a)(1) of the LSN Rule requires the NRC, DOE, potential parties, parties, and interested governmental participants to provide an "electronic **file**" for all documentary material. For "graphic-oriented" documentary material, an "electronic **image**" must be provided under § 2.1003(a)(2) in lieu of the text file. A bibliographic header file is required to be submitted to the LSN with either type of documentary material. Although not required, online electronic images (as well as the required electronic text files) may be provided for all documents, not just for "graphic-oriented" documentary material, to meet obligations under § 2.1003.

If an electronic image is not associated with the bibliographic header, the Comments field in the bibliographic header should be used to document where an image version of a document may be acquired.

If an electronic image is associated with the bibliographic header, the user may have to download a viewer. The central LSN site contains information about how to locate and download the applicable viewer.

5.4 User-Defined Topical Interest Searches

Priority users (see LSN Guideline 6, Passwords) will have the ability to establish "agents." Agents are essentially "canned" queries or searches for subjects or other content criteria that an individual user can set up for their own use, or for sharing only within their working group. Additionally, the LSN Administrator can establish agents that operate across the entire LSN site. The LSN user interface screens of priority users will also allow those agents to be run unattended and to generate an e-mail message to a user that the topical interest search has identified newly posted materials in participant collections that meet the search criteria in the agent. The search agents set up by priority users are limited to access only by the priority users designated by the priority user creating the agent. Participants' agent searches are neither visible to nor accessible by the LSN Administrator or support contractors.

General public access users will not have this capability.