

GL80024

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

March 12, 1980

TO ALL OPERATING NUCLEAR PLANTS

Gentlemen:

SUBJECT: NRC NUCLEAR DATA LINK (NDL)

In response to the Kemeny Report, established to investigate the accident at the Three Mile Island Unit 2 nuclear plant, on December 7, 1979, the President issued a number of actions to improve the safety of nuclear power plants. Included in these actions was for "the NRC to evaluate the need for a federal presence in the control room of operating reactors, such as by observers or continued computer monitoring of vital plant parameters." The staff believes that the most effective and timely response to the announced initiative would be to continue in its evaluation of a computerized monitoring system of vital plant parameters.

The staff is currently engaged in improving the capabilities of its NRC Operations Center (OC) at Bethesda, Maryland, in order to provide the Commission and senior staff members with vital plant parameters and information from licensed nuclear plants in the event of incidents or accidents. Improved capabilities which are under consideration for the OC will include automatic data processing, data storage, data display and data recall capability to be achieved through the use of digital computer. The overall objective for obtaining such information is to enable the NRC, in the event of a nuclear accident at a licensed reactor facility: (1) to monitor and evaluate the situation and potential hazards; (2) to advise the licensee's operating staff as needed; and (3) in an extreme case, to be able to issue orders governing such operations.

A system study of a digital computer based Nuclear Data Link (NDL) to bring this type of information from nuclear plants to the OC has been instituted with Sandia Laboratories. The system study has been directed toward digital communication systems because of the proven availability of the technology and the successful, reliable, operating experience, and the operating costs of well designed systems in the business community. The goal is to achieve an initial operating capability to receive, process, display, evaluate and record essential, but limited, data at the new OC installation by January 1, 1982. A subsequent program will delineate improvement and refinements to the system.

The data which are being considered for acquisition, transmission, receipt and display will consist of those plant parameters required to evaluate the

status of the core cooling process. Furthermore, event data, status of safety-related systems and radiological data would also be transmitted for purposes of evaluating licensee's actions, safety of the plant, and radiological releases. In our opinion, the quantity of data to be transmitted by the link is a small fraction of the total data required to operate and control the plant.

The purpose of this letter is to advise you of the foregoing and to encourage your cooperation and participation to ensure timely completion of the evaluation of the NDL. It is also recognized that several related programs are also being implemented based upon the results of the NRC Lessons Learned Task Force Reports (NUREG-0578 and -0585); e.g., the Onsite Technical Support Center (OSTSC) and Control Room Evaluation. These actions will interface with the NDL and the OC. It is apparent that close coordination is needed between the requirements being established for the NDL and those of the OSTSC and therefore improved control rooms at individual plants.

To fully understand the plant parameter data systems presently in use at each nuclear plant, the staff through the Office of Nuclear Regulatory Research and the Sandia Laboratories will conduct a survey over the next six months. The results of this survey will then be used to finalize the specifications for an NDL such as digitized data access protocol and transmission link design requirements. The immediate objective will be to select lead plants and data to ensure early and meaningful operation of the NDL. A copy of the initial NDL specifications is enclosed for your information. The data protocol will be a fixed format data matrix that would be transmitted by all plants. Initially, blanks would be transmitted where data access is not available at a given plant. Subsequent actions by licensees would be to upgrade their capability to complete the data protocol and ensure uniform digitized computer data capability from each nuclear plant to the OC.

We will keep you advised of our progress in the NDL program. We are presently in contact with members of INPO who are helping in establishing basic requirements.

We appreciate your help and cooperation and your personal assistance in our deliberations to date and solicit your continued support in this important matter.

Darrell G. Eisenhut, Acting Director
Division of Operating Reactors

Enclosure:
Nuclear Data Link Specifications
February 21, 1980