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Arkansas Power & Light Company
ATTN: John M. Griffin, Senior
Vice President - Energy Supply
P. O. Box 551
Little Rock, Arkansas 72203

Gentlemen:

This letter is to inform you of an emergency communications capability that the NRC is considering establishing with licensed nuclear power facilities and an upcoming site visit by an NRC contractor to obtain information on how such a system would interface with your facility.

The emergency communication capability being considered is called the Emergency Response Data System (ERDS). The ERDS concept has been determined by the NRC to be a design which best addresses the requirements of the NRC with minimal impact on the licensee. The development of the ERDS concept began with an assessment of what is the NRC's role in an emergency at a licensed nuclear facility. The Commission determined that the NRC's primary role is one of monitoring the licensee to assure that appropriate recommendations are made with respect to offsite protective actions. To fulfill this role the NRC requires accurate, timely data on four types of parameters: (1) core and coolant system conditions must be known well enough to assess the extent or likelihood of core damage; (2) conditions inside the containment must be known well enough to assess the likelihood of its failure; (3) radioactivity release rates must be available promptly to assess the immediacy and degree of public danger; and (4) the data from the plant's meteorological tower is necessary to assess the distribution of potential or actual impact on the public. A list of the particular parameters considered necessary to these assessments is included as Enclosure 1.

Experience with the voice-only emergency communications link, currently utilized for data transmission, has demonstrated that excessive amounts of time are needed for the routine transmission of data and for verification or correction of data that appear questionable. Error rates have been excessive; initiations have been slow; frequency of updates have been unreliable. In addition, the current system creates an excessive drain on the time of valuable experts at the NRC and at the facility. When errors occur, they frequently create false issues which, at best, divert experts from the real problems for

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seriously long periods of time. At worst, incorrect data may cause the NRC to respond to offsite officials with inaccurate or outdated advice that results in the implementation of inappropriate protective actions.

Several options were considered for upgrading the data acquisition capabilities at the Operations Center. The options included various means of acquiring the data: manually, automatically using existing systems, or automatically using new systems. Appropriate options for transmitting the data to the Operations Center were considered: electronically formatted data, image facsimile, or by voice through specially qualified communicators.

The criteria used to compare these options involved accuracy, reliability, timeliness, completeness, cost (in dollars and expert personnel), and backfitting requirements. The NRC determined that automatic transmission of selected parameters from licensees' existing electronic data systems is most capable of providing acceptably complete and reliable data on a timely basis at reasonable cost with the minimum potential for burdening licensee in an emergency. Most licensees either already have developed or are developing electronic data systems for their emergency response facilities (ERFs). Because the role of the licensees' ERFs is similar to the role of the NRC during emergencies, the licensees' data systems already include most of the parameters desired by NRC. Those few parameters which are not included in any particular licensee's system can be communicated by voice over the Emergency Notification System (ENS), thus avoiding backfitting requirements on the licensee to include additional parameters on their electronic data systems. Data would be accepted in whatever format the licensee uses and reformatted at the Operations Center, as necessary. Because of the diversity of data systems utilized by the licensees, the best means for extracting the NRC's parameters from each system would be determined on a case-by-case basis. The licensees would have control over transmission and would use the system only during emergencies. This option is the Emergency Response Data System (ERDS). The design concept for the ERDS is outlined in Enclosure 2.

Previous discussions with several licensees and two tests of the ERDS concept which were conducted with Duke Power and Commonwealth Edison have indicated that the ERDS concept has the potential to significantly improve the NRC incident response function and our response relationship with licensees. Therefore, to determine more specifically the factors that would effect implementation of an ERDS we have initiated an effort to survey the equipment and facilities at licensees' sites and determine the hardware and software requirements of such a system. You should expect to be contacted in the next week by a member of this regional office to arrange a site visit by a NRC Headquarters staff member accompanied by a NRC contractor to speak with you on this subject. The visit is an information gathering process. It is oriented toward determination of:

The availability of a particular set of PWR or BWR parameters in digital form.

The verification and validation method, if any.

Characterization of the available data feed point(s).

Access will be needed to documentation and knowledgeable individuals typically from Instrumentation and Control, technical, telecommunications, and computer systems cadres within the plant staff. Should you have any questions on this site visit please contact Mr. Gene Bates at (817) 860-8233.

Should you have any question on the ERDS concept in general please contact Ken Perkins with the Incident Response Branch at NRC Headquarters. He can be reached at 301-492-7361.

Sincerely,

"Original Signed by:"

E. H. Johnson, Director
Division of Reactor Safety and
Projects

Enclosures: As stated

cc: w/enclosures:
J. M. Levine, General Manager
Arkansas Nuclear One
P. O. Box 608
Russellville, Arkansas 72801

Arkansas Radiation Control Program Director

bcc to DMB (A045)

bcc distrib. by RIV:

*RPB	*Resident Inspector	R. D. Martin, RA
*R&SPB	*Section Chief (RPB/B)	*D. Weiss, LFMB (AR-2015)
*RIV File	DRSP	*RSB
*MIS SYSTEM	*RSTS Operator	

PWR PARAMETER LISTS

Primary Coolant
System

Pressure
Temperatures - hot leg
Temperatures - cold leg
Temperatures - core exit thermocouples
Subcooling margin
Pressurizer level
RCS charging/makeup flow
Reactor vessel level (when available)
Reactor coolant flow
Neutron flux - startup range

Secondary Coolant
System

Steam generator levels
Main feedwater flows
Auxiliary/Emergency feedwater flows

Safety Injection

High pressure safety injection flows
Low pressure safety injection flows
Safety injection flows (Westinghouse)
Borated water storage tank level

Containment

Containment pressure
Containment temperatures
Hydrogen concentration
Containment sump levels

Radiation Monitoring
System

Reactor coolant radioactivity
Containment radiation level
Condenser air removal radiation level
Effluent radiation monitors
Process radiation monitor levels

Meteorological

Wind speed
Wind direction
Atmospheric stability

EMERGENCY RESPONSE DATA SYSTEM (ERDS)
DESIGN CONCEPT

Data Acquisition

Parameter inputs to ERDS would be obtained from an existing computer system (e.g. SPDS, plant computer, EOF data systems, etc.) at the plant.

Data Transmission

Data will be transmitted to the NRC Operations Center by modem to commercial telephone line or a dedicated line maintained by NRC (e.g. ENS).

Data Collection

A processing system maintained by the NRC will receive the data stream by modem. The system will be designed to receive all varied data streams and to reformat the data into a consistent format. The reformatted data will be output to CRTs and printer.

Parameter List

The parameter list would include those parameters necessary to ensure that appropriate protective action is being taken with respect to offsite recommendations. The list would be limited to those parameters involving plant status, radiological and meteorological conditions.

Licensees will not be required to backfit their systems to include additional parameters to provide data on NRC's parameter list. Data that is not available from the electronic data stream can be provided by voice over existing phone lines.

Transmission Frequency

The updating frequency of the licensees' systems will determine transmission frequency to NRC. If more frequent updates are required than those provided electronically by a particular licensee, the increased frequency will be accomplished (for a very limited subset of parameters) by voice over existing telephone lines.

Control

The licensee will have complete control over data transmission. ERDS would be "switched on" by the licensee in the early stage of a declared emergency.