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NUCLEAR MANAGEMENT AND RESOURCES COUNCIL

1776 Eye Street, N.W. • Suite 300 • Washington, DC 20006-2496
(202) 872-1280

Joe F. Colvin
Executive Vice President &
Chief Operating Officer

December 21, 1990

Mr. Samuel J. Chilk
Secretary
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Docketing and Service Branch

Re: Revision to 10 C.F.R. Part 50 - Emergency Response Data System - 55 FR 41095 (October 9, 1990) - Proposed Rule

Dear Mr. Chilk:

These comments are submitted on behalf of the nuclear power industry by the Nuclear Management and Resources Council, Inc. (NUMARC) in response to the request for comments by the U. S. Nuclear Regulatory Commission (NRC) on the proposed rule change to require licensees to participate in the Emergency Response Data System (ERDS) and to set a definite schedule for implementation.

NUMARC is the organization of the nuclear power industry that is responsible for coordinating the combined efforts of all utilities licensed by the NRC to construct or operate nuclear power plants and of other nuclear industry organizations in all matters involving generic regulatory policy issues and on the regulatory aspects of generic operations and technical issues affecting the nuclear power industry. Every utility responsible for constructing or operating a commercial nuclear power plant in the United States is a member of NUMARC. In addition, NUMARC's members include major architect-engineering firms and all of the major nuclear steam supply systems vendors.

In 1988, the NRC initiated ERDS as a voluntary program representing a cooperative effort between the NRC and individual utility licensees to establish a data network which is recognized as beneficial, but not mandatory, in maintaining adequate and reasonable emergency preparedness capabilities. The industry, through NUMARC, has supported the voluntary program and has appreciated the opportunity to participate in a number of NRC/industry interactions regarding ERDS. Our participation in the ERDS voluntary program has provided valuable experience for the industry regarding this system. Since the volunteer program was introduced by Generic Letter 89-15, more than 50 percent of the 113 plants with operating licenses have volunteered to implement ERDS, many have already performed system modification studies and software development, and three plants presently have ERDS in place and fully operational.

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We continue to support a voluntary program. Actual experience with the installed systems during the voluntary program has demonstrated that there are substantial operational concerns that still need to be addressed. We strongly recommend the Commission work with the licensees through NUMARC until there is more experience with the system and the generic concerns can be addressed and resolved. With over half of the plants willing to assist in this effort, we question the need and the justification for a rule.

Our major concerns are addressed in general terms below; detailed comments are provided in the attachment.

Actual experience continues to show that NRC activities can interfere with licensees' management of plant operations during events and incidents. Specific examples of NRC interference with event management by licensees are provided in the detailed comments. We are very concerned that the added availability of data via ERDS will exacerbate the situation and impact the licensees' ability to properly manage and mitigate operational events. A continuation of the voluntary program with more ERDS systems operating and being used during exercises is appropriate to afford the opportunity for experience and training to correct this potentially serious operating problem.

The proposed ERDS design includes user ports for access by the States. State governments may not have the technical expertise necessary to interpret the raw plant parameter data provided by ERDS. Nevertheless, once in receipt of this additional data, the States will want to fully understand the data and its implications; this may burden NRC or licensee expertise at a time when the primary objectives are to mitigate the event and stabilize the plant. If this occurs, it will clearly detract from full attention being applied to accomplishing those objectives. Assurance needs to be provided that the States use the data appropriately with no impact on plant operations, and that it not be utilized in public information releases. Once again, experience needs to be gained to avoid any potential problems.

The proposed 10 CFR 50.72 changes the current requirement for notification within one hour of an Alert or higher emergency declaration to a mandatory immediate activation of ERDS at the time the NRC is notified. The requirement for immediate activation of ERDS may detract from effective licensee emergency response during the critical early phase of an event, may impact a licensee's ability to complete required notification of State and local officials in a timely manner, and could delay activation of the licensee's emergency response organization. The current one hour time requirement corresponds to the activation of the Technical Support Center (TSC). Therefore, we recommend that the NRC require the ERDS to be activated within one hour of the declaration of an Alert or higher.

The basis and regulatory analysis for the proposed rule fails to adequately justify the claim of an increase in safety as a result of mandatory ERDS installation. The program will provide NRC with enhanced data acquisition capability. However, it has not been demonstrated that this will

substantially increase protection of public health and safety. This concern was also expressed by the Advisory Committee on Reactor Safeguards (ACRS) in its letter to Chairman Carr of June 12, 1990.

The proposed rule specifies a mandatory 18 month implementation schedule despite the fact that in some cases modifications to install ERDS will require plant shutdown. The staff indicated at the June 8, 1990, ACRS meeting that a reason for requiring this schedule is to satisfy the current agreement NRC has with its ERDS contractor. It is neither appropriate nor cost effective to require an 18 month mandatory implementation schedule, especially since the earlier phases of the program have slipped.

In summary, we believe that the proposed rule requiring all plants to install ERDS is premature and unjustified, and may be potentially detrimental to management of emergencies. The responsibility for all aspects of onsite accident management rests solely with the licensee/operator. We fully recognize the NRC's and the State's desire for this information but are truly concerned that ERDS may detract from each of us fulfilling our responsibilities. We believe more experience with ERDS is necessary before a final decision can be made regarding the appropriateness of the system becoming a requirement. This issue has been under consideration for ten years so it seems only appropriate to test the program to evaluate its benefits and drawbacks.

NUMARC appreciates the opportunity to provide these comments on the proposed ERDS rule. We remain available to assist by providing a unified avenue of communication between the industry and NRC.

If you have any questions, please call Tom Tipton or Alan Nelson of my staff.

Sincerely,

Joe F. Colvin

JFC/APN:mls

Attachment

cc: Thomas E. Murley
Edward L. Jordan

DETAILED COMMENTS

The following major concerns that remain to be resolved support the position that a voluntary program should continue to be pursued.

Operator Impact

Currently, 10 CFR 50.72 allows one hour for notification following an emergency declaration, which provides a reasonable time for licensees to perform more pressing actions. The proposed rule requires immediate activation of ERDS at the time the NRC is notified of the declaration of an Alert or higher emergency class. The need for this immediacy is not justified and may detract from effective licensee response during the critical early phases of an event. Therefore, we believe that ERDS activation within one hour of the declaration of an Alert or higher is a more appropriate requirement.

Control Room staff is a resource that should be utilized as a direct participant in emergency response operational activities rather than as a telephone responder to answer questions. Attempting to respond to NRC questions on data and operational activities will distract the operating staff from their primary accident response function, i.e., mitigating the accident and placing the plant in a safe and stable configuration. We believe that NRC has underestimated the amount of Control Room attention required by ERDS. Therefore, we emphasize the need for ERDS activation to be made from the Technical Support Center (TSC) rather than from the Control Room. The additional manpower to operate ERDS is expected within one hour of a declared alert or higher emergency. The NRC augmentation is expected to take a similar amount of time; therefore, it would be beneficial to activate ERDS by the augmentation organization (TSC) to reduce the impact on the Control Room staff during the initial stages of the emergency. The additional manpower to activate ERDS and to be responsive to NRC inquiries can be more readily available in the TSC and no additional burden would be placed on the Control Room staff that would already be deeply involved in mitigating the consequences of the accident.

NRC Role During an Emergency

There is a concern that once the plant data are available, the NRC will modify its oversight role into one of more active participation. The following discussions support this concern.

Any final rule promulgated by the Commission should clearly state that the NRC's role is strictly one of monitoring the licensee. As stated in NUREG-0728, Revision 2, "NRC Incident Response Plan", Section 2.2.2, "In this role, NRC response is essentially passive and confined to information acquisition and assessment"; and the NRC's advisory role is as stated in Section 2.2.4, "Primary responsibility for coping with the incident, however, still resides with licensee." Correct emergency response actions are best assured by keeping responsibility for onsite emergency planning and accident management in the hands of licensee personnel. The implementation of a mandatory ERDS would strongly imply expanded NRC involvement in accident

control and mitigation, resulting in the weakened authority of the licensee. Given this data exchange, it is difficult to anticipate that the NRC would restrain itself from requesting additional dialogue with licensee personnel who would be in the midst of determining appropriate response measures. It does not appear that the increased interface and communication which would result from implementation of the proposed rule have been sufficiently analyzed from a human factors viewpoint, to determine whether there would be a net overall degradation of conduct of operations in an emergency situation. This could be resolved through drills with the NRC as part of the ongoing volunteer program during which qualified licensee representation observes activities in the NRC's Operation Center for the purpose of offering suggestions regarding NRC emergency response oversite activities.

The following examples of NRC intervention support our concern along with concerns identified in NUREG-1395, "Industry Perception of the U.S. Nuclear Regulatory Commission on Nuclear Power Plant Activities", March 1990.

Most recently an ERDS volunteer plant determined that due to the circumstances at hand they would manually scram a unit. The NRC Resident Inspector for that facility was notified while attending a meeting at the NRC regional office. Although no emergency was imminent nor any precursors evident, the Resident Inspector, from a distant location, requested that ERDS be activated so he could monitor plant conditions. The licensee activated ERDS at the inspector's request. This action by the Resident Inspector contradicts the NRC's stated position that ERDS will only be activated at the Alert or higher level.

On March 7-8, 1989 Duke Power Company's McGuire Station experienced a steam generator tube rupture event. The following is an excerpt from an April 4, 1989 docketed Duke letter regarding the communication between the licensee and the NRC during this event:

> The NRC (Region 2) experienced difficulty understanding plant response and Duke's management of the plant during the event. They had questions about our (Duke's) procedures and choices of actions, such as our choice of cool-down method, steam generator blow down path, and primary-to-secondary differential pressure. They (NRC) also had questions about <u>why</u> we were doing what we were doing.

The letter went on to say that the NRC felt that they used restraint in their asking of questions of the Emergency Coordinator. They said, "that in a more severe event, the NRC would have been asking even more questions." The Duke Emergency Coordinator felt that the questioning interfered with the execution of his duties. The NRC response letter dated July 14, 1989, stated that the "NRC had difficulty obtaining details of the progress of the event and the licensee's response to the event, particularly <u>details associated with the reasons for performing or not performing certain actions. ...It should be recognized that the NRC's primary function during emergencies is to monitor the licensee's actions which requires as full an awareness as possible on changing plant conditions.</u>" (Emphasis added). The original premise for ERDS was to monitor the adequacy of protective action recommendations to the State; however, as was experienced in an actual situation, the NRC staff not only

monitored the tube rupture event at McGuire but required the licensee to justify or explain the reasons for performing or not performing operational activities. This incident indicates the difficulty the NRC will experience in preventing expansion of the NRC role beyond that which is appropriate and which is stated in the proposed rule. ERDS data availability will increase the temptation of the NRC to become even more involved in the management of plant operations during an emergency. The proposed ERDS rule could thereby lead to "inappropriate NRC involvement in the management of any future nuclear power plant accident," as stated by the Advisory Committee on Reactor Safeguards (ACRS) in their June 12, 1990 letter to Chairman Carr.

An incident concerning NRC inspector impact was discussed in NUREG-1395, "Industry Perception of the Impact of the U. S. Nuclear Regulatory Commission on Nuclear Power Plant Activities," March 1990. This document included a statement that "[a]n augmented inspection team (AIT) response to an event was considered to interfere with the licensee's response because the AIT was at the site before the plant stabilized. In addition, when reviewing the event, the AIT so dominated the licensee's resources that the licensee's ability to independently investigate the event was impaired." Another section of NUREG-1395 it states that, "NRC inspectors are unreasonable in dealing with licensees where judgement is required in determining whether licensing requirements are being met."

Based on the examples provided and continuing difficulty experienced with NRC activities interfering with licensee incident management activities, we are very concerned that the added availability of data via the ERDS system will exacerbate the situation and impact licensees' ability to properly manage and mitigate operational incidents. A continued demonstration using the volunteer program with more ERDS systems operating during emergency exercises is appropriate to afford the opportunity for experience and training in this regard to minimize this potential.

Offsite Data Transfer

The proposed ERDS design includes user ports provided by the NRC for State access. State governments may not have the technical expertise necessary to interpret the raw plant parameter data provided by ERDS. Nevertheless, once in receipt of the data, the States will want to fully understand the data and its implications; this may burden NRC or licensee expertise at a time when the primary objectives are to mitigate the event and stabilize the plant. If this occurs, it will clearly detract from pursuit of these objectives and place additional burden on the licensee and NRC to provide knowledgeable individuals in the State Emergency Operation Center or on the telephone to interpret this data and ensure it is utilized appropriately. We are very concerned that ERDS data will be misused for public information releases. The possibility exists that the State or local authorities may take unnecessary protective action measures based on erroneous conclusions drawn from the ERDS data.

If States are to be permitted access to ERDS data, formal program requirements should limit such access to States within the 10 mile plume Emergency Planning Zone. State access to ERDS during an accident should be

controlled by software configuration, only permitting the State access to data for those plants for which the State has an emergency response role. Prior to permitting State access to ERDS, a Memorandum of Understanding (MOU) should be developed between the NRC and the State. The MOU should identify regulatory authority, the State's responsibilities and an ERDS protocol. The industry would be happy to continue to work with the NRC and States in developing a generic MOU. Individual licensees should be included in discussions between the NRC and States involved in their individual Emergency Plan.

RDS Compliance

The basis and regulatory analysis of the proposed rule fails to adequately justify the rule as a backfit based on an increase in safety realized by using the ERDS program. There is little doubt that the program will provide enhanced data acquisition capabilities for the NRC. However, it s not been adequately demonstrated that the rule will substantially increase the level of protection to the health and safety of the public. Whether the program will improve licensees' performance of health and safety protection responsibilities during an emergency is debatable; as discussed above and supported by the Advisory Committee on Reactor Safeguards in its letter of June 12, 1990, the opposite could result.

NRC's original position, expressed in a letter from Edward L. Jordan to licensees regarding ERDS voluntary participation, dated March 7, 1989, was "[t]he ERDS will follow, not drive licensee equipment modification." It appears the 18 month implementation schedule will drive significant computer systems "upgrades" sooner than originally scheduled. A number of these upgrades must be performed during outages because of operability requirements. The staff has indicated that one of the reasons for this difficult schedule is to satisfy NRC contractor requirements. As discussed at the ACRS meeting of June 8, 1990, the staff stated, "[o]ne of the driving forces behind this [schedule] could be a contract that we have with the contractor, which is going to be over in 1992." It is neither appropriate nor cost effective to now require an 18 month mandatory implementation schedule just to satisfy the NRC's schedule with its contractor. The resulting cost to the industry cannot be justified, especially since the early stages of the contract slipped at least six months due to no fault of the licensees. The NRC also stated at that ACRS meeting that the Emergency Notification System (ENS) is an "adequate" means of data transmission in an emergency. The perceived need does not warrant such a difficult schedule. Provisions should be made such that the licensee would not be driven unnecessarily to a shorter than planned compliance date.

As stated in Mr. Jordan's correspondence of March 7, 1990, NRC's original position was that, "...An update set of data point values should generally be provided at least every 60 seconds, although this may be adjusted slightly based on licensee system capabilities..." This philosophy is altered in the proposed rule, with the stated data transmission "...time intervals not less than 15 seconds or more than 60 seconds" (Federal Register Notice on Proposed Rulemaking, Appendix E, VI (iii) b). We recommend that the transmission frequency be as originally stated.

The proposed rule (Appendix E, VI. 3) would require notifying the NRC within thirty days following a parameter change. At a minimum, a reporting period of ninety days should be allowed for all hardware and software changes due to the design change control process typically employed. For major modifications, the NRC and the licensee should develop a mutually agreeable time schedule.

The following specific comments are added for consideration by the NRC in development of a practical and justifiable program.

1. 55 FR 41096 In the discussion section of supplementary information, paragraph three states, "The ERDS would become operational during (1) emergencies at the licensee's facilities and (2) emergency training exercises if the licensee's computer system has the capability to transmit the exercise data."

   The proposed rule does address operating the ERDS during emergency training exercises. For consistency between the discussion section and the proposed rule, a statement about use during emergency training exercises should be made in 10 CFR 50.72(a)(4) of the proposed rule. The following statement should be added as sentence number two under 10 CFR 50.72(a)(4): "Although there is no requirement, the ERDS may also be activated by the licensee during emergency drills or exercises if the licensee's computer system has the capability to transmit the data."

2. 10 CFR 50.72(a)(4), (55 FR 41099) The proposed rule should allow the licensee the flexibility of activating the ERDS by computer operations personnel or a software switch, instead of by a plant operator. If the rule is to be interpreted that a licensed operator must perform this function, it unnecessarily distracts him from his accident mitigation function at a time when he can least afford it.

3. Appendix E Section VI, first sentence, (55 FR 41099) The proposed rule is too prescriptive in that it requires the data link to originate from the licensee's onsite computer system (i.e. Plant Process Computer). The rule should allow each licensee the flexibility to devise the best suited arrangement for meeting the intent of the rule. To allow flexibility, delete the word "onsite" from the first sentence in Appendix E, Section VI.1 (55 FR 41099, 10/9/90) and all subsequent locations.

4. Appendix E Section VI.1, first paragraph, (55 FR 41099) The word "real-time" should be changed to "near real-time." See detailed comment number 8.

5. Appendix E Section VI.1, second sentence, (55 FR 41099)/NUREG 1394, Appendix J, Questions & Answers, #10 Because the majority of the data required by the NRC will be transmitted via the ERDS, the requirement for a full-time person manning the Emergency Notification System (ENS) during an emergency should be relaxed.

6. Appendix E Section VI.2, first sentence, (55 FR 41099) "...onsite hardware and software shall be provided at each unit by the licensee to interface with the NRC receiving system."

This statement should be clarified to indicate that the licensee will provide data from each unit via an output port on the appropriate data system and the necessary software to assemble the data to be transmitted.

7. Appendix E Section VI.2.a (55 FR 41099) Delete sentences three and four. "While it is recognized that ERDS is not a safety system, it is conceivable that a licensee's ERDS interface could communicate with a safety system. In this case, appropriate isolation devices would be required at these interfaces." Isolation requirements should be those already existing for the affected safety systems. This rule should impose no new requirements in this regard.

8. Appendix E Section VI.2.b (55 FR 41099) This is too prescriptive and eliminates use of existing licensee computer data systems already servicing the licensee's Technical Support Center (TSC)/Emergency Operating Facility (EOF), etc. The rate at which data are transmitted to the ERDS should be commensurate with the rate at which data are transmitted to the TSC/EOF as long as the data resolution is between 15 and 60 seconds and transmitted through a buffer system relatively frequently. It should be acceptable, for example, to transmit every 5 minutes to the ERDS 10 blocks of data collected at 30 second intervals if data are being transmitted every 5 minutes to the TSC/EOF and this adequately meets emergency response needs. The need for "real-time" data for ERDS should be not greater than that for facilities integral to the utility's emergency response organization.

9. Appendix E Section VI.2.c (55 FR 41099) Why, if after implementation of the ERDS the NRC changes its format, is the licensee automatically required to change its transmission of data? This requirement should be limited to a specific, initial format.

10. General Comment Backfit Analysis Section, Item 9 (55 FR 41098) states "...will require that all licensees develop and submit an ERDS implementation plan to the NRC within 60 days of the publication of the final rule in the Federal Register." Appendix E, Section VI.4.a (55 FR 41099, 10/9/90) states "Each licensee shall develop and submit an ERDS implementation program plan to the NRC by [insert a date 75 days after publication of the final rule]." To alleviate this inconsistency, reference to 60 days should be changed to 75 days.

11. Statements in the Regulatory Analysis of Proposed Rulemaking Concerning Emergency Response Data System (page 12, section 4, paragraph 2, and page 13, section 4.1, paragraph 1, last sentence) imply that licensees would make bad protective action recommendations without NRC oversight. These statements are presumptuous and have no clear basis. We recommend that these statements be deleted.

12. The use of "immediate notification" in the title (55 FR 41099) concerning when the ERDS is activated requires clarification. Currently 10 CFR 50.72 allows one hour for notification following an emergency declaration. This would appear to be changed based on the discussion which states in part "...begin data transmission to the NRC Operations Center immediately after declaring an Alert..." It is recommended that the word "immediately" be replaced with "within one hour" to be consistent with current regulations which provide a reasonable time period for licensees to perform more pressing actions.

13. Previously issued NRC Generic Letter 89-89, requested licensees to transmit a significant number of data sheets to the NRC during an emergency. Given the implementation of ERDS, the proposed rule background discussion should officially relieve licensees of this burden in order that limited resources can be applied to support ERDS.

14. Proposed Rule Appendix E VI 2.b requires data to "be transmitted at time intervals not less than 15 seconds or more than 60 seconds." Due to the reliance on computer software, hardware and telecommunication lines, if a breakdown of ERDS occurs, the licensee should not be subject to a violation or fine due to a failure to comply with this provision of the rule. The following words are recommended, "The ERDS system shall be designed so that data can be transmitted..."

15. 10 CFR 50 Appendix E, proposed paragraph VI.4.b states that licensees who have operational ERDS interfaces that have been approved under the voluntary program are considered to have met proposed paragraphs VI.1 and 2. Paragraph VI.4.b should be expanded to include reference to paragraph VI.4.a. Submittal of an implementation plan should not be required of licensees who have already completed implementation of an ERDS system.

    In addition, proposed paragraph VI.4.b does not address licensees in the voluntary program who have invested considerable time and resources prior to issuance of the rule, but have not received final approval. Licensees who have submitted the information required by the voluntary program along with a proposed implementation schedule should also be exempt from paragraphs VI.1, VI.2 and VI.4.a.

16. Specific comments on NUREG 1394 "Emergency Response Data System (ERDS) Implementation", are provided:

    Appendix B. Section II.A: Faster, more "state-of-the-art" communications hardware may be appropriate and should be an option.

    Appendix B, Section II.B.d: The ERDS data transmission rate is specified here as every 15 seconds. This is inconsistent with the proposed rule which states "...not less than 15 seconds or more than 60 seconds" (55 FR 41099, 10/9/90). This is too prescriptive and may eliminate use of some existing licensee computer data systems already servicing the licensee's Technical Support Center (TSC)/Emergency Operating Facility (EOF), etc. The rate at which data are transmitted to the ERDS should be commensurate with the rate at which data are

transmitted to the TSC/EOF as long as the data resolution is between 15 and 60 seconds and transmitted through a buffer system relatively frequently. It should be acceptable to transmit to the ERDS every 5 minutes 10 blocks of data collected at 30 second intervals, if data is being transmitted every 5 minutes to the TSC/EOF and adequately meets emergency response needs.

Appendix B Section II.B.2.g: More flexibility in acceptable quality tags should be provided to allow existing plant methodologies to be used. Different quality tag information is shipped for each process computer. A major software change may be required to implement the quality tag system proposed in the NUREG. This would create unnecessary added cost for licensees. These costs are not technically justified.