



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

AUG 14 1980

TO: Ed Weizinger, SD

FROM: Richard A. Hartfield, Chief, LOEB, MPA

SUBJECT: MPA NEEDS FOR NPRDS

MPA has several roles in the analysis and use of operating and failure data. To a large extent MPA is a service organization, in charge of maintaining various data bases and producing both special and routine reports using these data bases and other sources of information. MPA has prime responsibility for the Licensee Event Report (LER) file, the abnormal occurrence reporting system and the bimonthly power reactor events document. It is mainly in connection with the last two programs that MPA has a need for NPRDS type information. To fulfill our role as a service organization, our needs, as outlined below, would be best served by a mandatory NPRDS, with changes that include features not now installed.

As part of the abnormal occurrence program, MPA reviews all Licensee Event Reports (LERs) to determine whether or not an abnormal occurrence (A.O.) has happened. The abnormal occurrence program often is the trigger for initiating NRC corrective action. NPRDS will serve as an important input to the A.O. program by assisting in establishing whether or not a generic problem is involved. NPRDS is very useful for this purpose since it was designed to be a component and system failure reporting system.

Power Reactor Events (PRE) is a document that feeds back operating experience to licensees and the industry so that all can benefit from the experience. NPRDS data will be reviewed and analyzed and PRE articles will be prepared to highlight failure experience and the corrective actions taken to reduce or eliminate the problem. The analysis of NPRDS data will provide the nuclear industry with an additional source for feedback of operating experience.

In our role as a service organization, we note data user requirements when asked to provide data searches. Many times MPA is asked for detailed component engineering data to supplement the information in the LER reports. That complete detailed engineering information would only be available to us if NPRDS were to be made mandatory. Also, since the LER file was not created as a statistical data base, NPRDS would be the sole source for statistical/reliability data.

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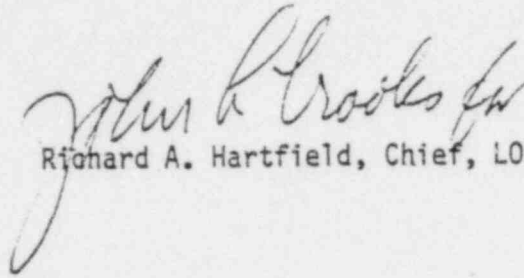
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Ed Wenzinger, SD

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The changes MPA would recommend for NPRDS are those recommended by the NPRDS Working Group. In particular, we think that demand data (success data) and human error data should be collected by NPRDS.

If you have any questions on this memo, please contact me on X27834 or E. L. Boyle on X27724.



Richard A. Hartfield, Chief, LOEB, MPA

cc: E. L. Boyle
J. L. Crooks
R. A. Hartfield

ENCLOSURE 3

NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

Operational Data Gathering

AGENCY: Nuclear Regulatory Commission.

ACTION: Advance notice of proposed rulemaking; response to comments.

SUMMARY: After reviewing comments concerning amendments to NRC regulations that would require power reactor licensees to submit data to the Nuclear Plant Reliability Data System (NPRDS), the NRC has decided to defer rulemaking that would make NPRDS mandatory in its present form. The NRC plans instead to develop a single reporting system by combining and restructuring the NPRDS and the NRC's own reporting system, the Licensee Event Reports (LERs). The new reporting system will be called the "Integrated Operational Experience Reporting (IOER) System." The NRC is seeking general comments on an IOER system concept at this time. The NRC will request more detailed comments on the forthcoming proposed rule when details of the system are developed.

DATES: Comments received after (45 days after publication in the Federal Register) will be considered if it is practical to do so, but assurance of consideration cannot be given except as to comments filed on or before (45 days after publication in the Federal Register).

ADDRESS: General comments may be sent to: Secretary of the Commission
U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. ATTN: Docketing
and Services Branch

FOR FURTHER INFORMATION CONTACT: Eric W. Weiss (301) 443-5913

SUPPLEMENTARY INFORMATION: The present Nuclear Plant Reliability Data System (NPRDS) is a voluntary program for the reporting of reliability data that was described in the Advance Notice of Proposed Rulemaking (ANPRM) published on January 30, 1980 (45 FR 6793). That ANPRM also described the historical background for the proposal to make the NPRDS a mandatory system. The ANPRM invited public comments on 21 specific features being considered for a proposed rule.

To date, 44 public comment letters have been received in response to the ANPRM. A detailed analysis of the comments is available for inspection and copying at the NRC Public Document Room 1717 H Street N.W., Washington, D.C. The predominant theme in the comments was an overwhelming opposition to making participation in NPRDS mandatory.

After considering the comments received and all the technical issues involved, the NRC finds that the NPRDS as now implemented does not fulfill NRC objectives because of a number of fundamental deficiencies:

1. Although the reportable scope as defined relies on the use of existing accepted industry generated classes of equipment, utilities have interpreted these classes differently when determining specifically which components should be included in the NPRDS. For example, the number of components reported by various plants varies from 1500 components per plant to almost 5000 components per plant.
2. The procedures manual for NPRDS is not sufficiently detailed or specific enough to ensure consistent reporting of engineering data and failures.

3. The scope of NPRDS does not include all components of interest (e.g., ASME Safety Class 3 components, balance-of-plant systems, vessel internals, and certain sizes of pipes and valves).
4. Data on successes are not adequately reported. Consequently, failure rates are difficult to determine accurately.
5. Participation is low and, thus, data are sparse.
6. A large percentage of the data reported to NPRDS duplicates that reported to the LER system.
7. There is no consistency in equipment and system identification from plant to plant as reported to NPRDS. Consequently, data are difficult to correlate accurately.
8. Data on test/maintenance unavailability are not adequately reported.

*Described in NRC Regulatory Guide 1.16. Reporting of Operating Information-- Appendix A Technical Specifications and NUREG-0161. Instructions for Preparing Licensee Event Reports, available from the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. The LER system was developed to provide a centralized source of information concerning incidents occurring at nuclear power plants. These incidents, termed Reportable Occurrences, must be reported to the NRC as required by technical specifications accompanying a station license. For additional pertinent information, see a recent report from the Advisory Committee on Reactor Safeguards to the Commission, "Review of Licensee Event Reports (1976-1978)," NUREG-0572, September 1979.

The NRC staff, on the other hand, has identified a strong need for probabilistic and detailed engineering data similar to that reported to NPRDS. The staff need for probabilistic and detailed engineering data is associated with the following types of activities:

1. Performing probabilistic risk assessment calculations of accident probabilities and public risks.
2. Revising component test intervals and allowed downtimes.
3. Quantifying the impacts of human errors.
4. Identifying trends and patterns in operating experience.
5. Obtaining detailed component engineering information.
6. Relating current incidents to previous failures.
7. Determining where identical components are installed.
8. Relating current failures to previous testing.
9. Issuing Abnormal Occurrence Reports.
10. Issuing Operating Experience Journal of "Power Reactor Events."

LICENSEE EVENT REPORT SYSTEM (LER)

There were approximately 3,100 LERs submitted in calendar year 1979 and the number is expected to steadily increase as new plants begin operation.

Review of these LERs indicates a number of deficiencies and shortcomings such as:

1. Component and system codings are inconsistent and nonuniform.
2. Only a single failure can be included in the coded fields despite the fact that a single event may include more than one component failure.
3. The format of the LER form is oriented toward computerized data processing of a single component failure rather than toward a technical, engineering analysis of the event.
4. The scope does not include all systems important to safety, for example, failures of so called "nonsafety" systems (e.g., most control air systems) that challenge safety systems are not included. As a result, events of interest are escaping the system.
5. The scope covers components only while in technical specification (i.e., normal) service, and defects found during nontechnical specification inspections or during shutdowns are not reported. For example, no LER is

required for failure of a low-pressure coolant injection pump while transferring water from the torus to the radwaste system, or failure of a charging pump being used to hydrostatically test a pipe weld repair.

6. Many events that are not individually significant are reported. Although these events may be important because of their frequency of occurrence or because they indicate trends and patterns, they tend to distract from the few significant event that require detailed engineering analysis or in-depth study. For example, a high percentage of LERs tend to be concerned with instruments out of calibration.

Consequently, the staff has recognized that major revision of the LER system is also warranted.

INTEGRATED OPERATIONAL EXPERIENCE REPORTING (IOER) SYSTEM

In order to obtain the necessary improvements in the LER and NPRDS reporting programs, the staff has developed conceptually a revised reporting program. The Integrated Operational Experience Reporting (IOER) System would:

1. Reduce LER reporting by eliminating the requirement for LER reports for most component failures or malfunctions covered by the NPRDS. The NRC would require LERs only for those component failures or malfunctions that are of major safety significance. However, the technical content of each

report would be substantially improved by requesting a technically detailed and comprehensive report suitable for engineering review. Thus, the LER system, which was not designed to produce reliability data, would no longer attempt to provide a basis for equipment reliability studies; the NPRDS, which is designed to produce such reliability data, would perform this service.

2. Require the reporting of less significant component failures or minor incident events by means of a type computer-oriented form. The reportable scope, however, would be extended to include all systems and components that are important to safety including selected support and service systems and components. The reporting form would be simplified for ease of data entry by nonengineering personnel and would allow failure rates to be determined to support NRC and industry statistical/probabilistic studies.

Thus, for significant events, an LER and associated component failure reports would be submitted. For less significant incidents and failures, only a component failure report may be necessary. The clear intent is to eliminate duplication between the two systems. We expect that there would be no significant increase in the resources needed to implement this system over that needed to properly implement the present LER and NPRD systems. Further, we believe that the implementation of the revised LER system is a natural function and is easily within the capability of the site engineering groups established to review operating experience. Thus, no changes appear necessary in organization for each plant site to implement the revised system, and there should be no significant needs for training.

The revised reporting requirements would be implemented through rule-making to assure uniform requirements, efficient utilization of staff resources, and adequate review and comment. The regulation would contain the principles or criteria licensees would use in deciding whether an LER or a failure report is required. Additional details on acceptable methods of implementation would be presented in a revised Regulatory Guide covering LER's and the NPRDS-type failure reports.

In developing the integrated reporting system, the deficiencies outlined for the NPRD and the LER systems would be specifically addressed. For example:

1. In order to assure consistent identification of components and systems, the Regulatory Guide to be developed will incorporate a suitable labeling system, such as the Unique Identification (UNID) system developed by TVA for nuclear plant components and systems.
2. NPRDS-type reports would be required for failures of all equipment important to safety (electrical, cooling water, control air, etc.). The format will emphasize rapid and simplified data entry and computerized data processing. Information on success rates will be required to permit the determination of appropriate and accurate failure rates.
3. An engineering data file, similar to that now included in NPRDS, will be continued. These files contain information on each component in the reportable scope, including manufacturer, model number, and critical operating and dimensional parameters. The LER and NPRDS reports will be linked by reference to the engineering file for involved components.

SCHEDULE

The NRC plans to develop the details of the proposed Integrated Operational Experience Reporting (IOER) System, publish the details as a proposed rule, and invite comments on that proposed rule. The NRC estimates that the proposed rule will be available for public comment in July 1981.

SIGNED AT BETHESDA THIS _____ DAY OF NOVEMBER 1980.

Samuel J. Chilk
Secretary

ENCLOSURE 4

DRAFT CONGRESSIONAL LETTER

Dear Mr. Chairman:

Enclosed for your information are copies of an Advance Notice of Proposed Rulemaking to be published in the Federal Register.

This advance notice of proposed rulemaking is being issued to inform the public of and to seek comments concerning the Commission's intention to: (1) defer rulemaking that would make the Nuclear Plant Reliability Data System (NPRDS) mandatory in its present form, (2) develop an Integrated Operational Experience Reporting (IOER) System by combining and restructuring the NRC Licensee Event Report (LER) System and the NPRDS, and (3) develop a proposed rule and supporting Regulatory Guides to implement the IOER System.

Enclosed also is a copy of a public announcement to be released by the Commission on this matter in the next few days.

ENCLOSURE 5

NRC DECIDES TO DEVELOP A SINGLE MANDATORY SYSTEM FOR THE
COLLECTION OF OPERATIONAL EXPERIENCE FROM NUCLEAR POWER PLANTS

The Nuclear Regulatory Commission is deferring a proposed rulemaking action which would have required utilities licensed to operate nuclear power plants to submit data to the Nuclear Plant Reliability Data System (NPRDS).

Instead, the Commission plans to combine the NPRDS with the NRC's own reporting system -- Licensee Event Reports (LERs) -- to create a single reporting system.

At present, the NPRDS is a voluntary program for reporting data on the reliability of specified safety-related systems and components. However, the NRC staff has identified a number of shortcomings -- utilities interpret the reportable scope differently and the procedures manual does not ensure consistent reporting of data and facilities. In addition, all of the public comments on the Commission's proposal to make the program mandatory were negative.

The staff also has identified shortcomings with the existing LER system -- it does not include all systems important to safety and components are covered only while in normal service.

In view of these shortcomings and the importance of an effective understanding and feedback of operating experience -- as emphasized by the March 1979 accident at the Three Mile Island Nuclear Power Station -- the NRC staff has developed, conceptually, a revised reporting program.

It is called the Integrated Operational Experience Reporting (IOER) System which, if implemented, would:

(1) Reduce LER reporting by eliminating the requirement to report most component failures and malfunctions now covered by the NPRDS. At the same time, the technical context of each report would be substantially improved by requiring a technically detailed and comprehensive report suitable for engineering reviews.

(2) Expand the scope of LER reporting requirements to include all systems and components that are important to safety, including selected support and service systems and components.

The revised reporting requirement would be implemented through rule-making and an effective regulation would spell out the criteria licensees would use in determining whether an LER or an NPRD-type failure report is required.

The Commission will not seek detailed public comments on an IOER System until a proposed rule is issued in 1981. General comments, however, may be directed to the Secretary of the Commission, Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Docketing and Service Branch.