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NUCLEAR REGULATORY COMMISSION REQUIRES MONITORING OF NUCLEAR POWER PLANT MAINTENANCE PROGRAMS

The Nuclear Regulatory Commission is amending its regulations to require utilities licensed to operate nuclear power plants to monitor the effectiveness of maintenance activities for safety-significant plant equipment in order to minimize the likelihood of failures and other events caused by the lack of effective maintenance.

The new requirements result from the Commission's conclusion that proper maintenance is essential to the safety of nuclear power plants and on its assessment of criteria proposed by its staff to be used in determining the need for a maintenance rule. As a result of this assessment, the Commission found that:

- Maintenance Team inspections by the NRC staff have shown that licensees have adequate maintenance programs and have exhibited an improving trend in implementing those programs; however, some common maintenance-related weaknesses were identified such as inadequate root cause analysis leading to repetitive failures, lack of equipment performance trending and the consideration of plant risk in the prioritization, planning and scheduling of maintenance.

- The industry, through the Nuclear Utilities Management and Resources Committee (NUMARC), expressed a general commitment to improving performance in the maintenance area; however, no written commitments were received from individual licensees and the Commission believes that the indirect, industry-wide commitment does not constitute a sufficient commitment from licensees in this regard.

- The industry, through NUMARC, indicated that all licensees will perform comprehensive assessments of individual licensee maintenance programs on a one-time basis over a period of four years, against performance objectives established by the Institute for Nuclear Power Operations (INPO). In addition, INPO will continue to conduct periodic evaluations of nuclear power plant performance including maintenance. However, the Commission believes these efforts, which largely are programmatic assessments and evaluations, will not alone suffice since the effectiveness of maintenance programs must be assessed on an

ongoing basis to ensure that key structures, systems and components are capable of performing their intended function and that there is feedback of the results of such assessments.

Accordingly, each utility licensed to operate a nuclear power plant will be required to:

- Monitor the performance or condition of structures, systems or components against licensee-established goals that are designed to provide reasonable assurance that they are capable of fulfilling their intended functions. These goals are to be established commensurate with safety and, where practical, take into account industry-wide operating experience. When a structure, system or component does not meet established goals, appropriate corrective action is to be taken. A monitoring program will not be required in instances where it can be demonstrated that the performance or condition of a structure, system or component is being effectively controlled and remains capable of performing its intended function through a preventive maintenance program.

- Evaluate, at least annually, the performance and condition monitoring activities and associated goals, taking into account, where practical, industry-wide operating experience, and adjust as necessary. Adjustments are to take into account the objective of preventing failures while, at the same time, minimizing the unavailability of structures, systems and components due to monitoring or preventive maintenance. In addition, in performing monitoring and preventive maintenance activities, an assessment is to be made of the total plant equipment that is out of service to determine the overall effect on the performance of safety functions.

- Include, in the scope of the monitoring program, all safety-related structures, systems and components that are relied on to remain functional during and following design basis events to ensure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe, shutdown condition and the capability to prevent or mitigate the consequences of accidents that could result in potential offsite radiation doses comparable to guidelines specified in the NRC's regulations.

- Also include, in the scope of the monitoring program, non safety-related structures, systems and components that: are relied on to mitigate accidents or transients (off-normal operating events) or are used in plant emergency operating procedures; or whose failure could prevent safety-related structures, systems and components from fulfilling their safety related function; or whose failure could cause a reactor scram or actuation of a safety-related system.

The amendments to Part 50 of the NRC's regulations will become effective in July 1996.

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