D900814

The Honorable Kenneth M. Carr
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Carr:

SUBJECT: PROPOSED RESOLUTION OF GENERIC SAFETY ISSUE B-56, "DIESEL GENERATOR RELIABILITY"

During the 364th meeting of the Advisory Committee on Reactor Safeguards, August 9-11, 1990, we reviewed the NRC staff's proposed resolution of Generic Safety Issue (GSI) B-56, "Diesel Generator Reliability." Our Subcommittee on AC/DC Power Systems Reliability also reviewed this matter during a meeting on August 8, 1990. During these reviews, we had the benefit of discussions with representatives of the NRC staff and of NUMARC. We also had the benefit of the documents referenced.

In our view, this proposed resolution includes unjustified imposition of maintenance requirements on the licensees, in contravention of the Commission's decision to defer issuance of a maintenance rule pending assessment of licensees' maintenance programs.

The proposed resolution of GSI B-56 involves two steps. First, Section C.6 of proposed R.G. 1.9, Rev. 3, contains an explicit example of a diesel generator reliability program, including maintenance, with detailed checkoff and corrective action lists. Second, the staff proposes to require adoption of R.G. 1.9, Rev. 3, by a generic letter pursuant to 10 CFR 50.54(f).

As background, GSI B-56 is related to the Station Blackout Rule (10 CFR 50.63). The staff issued R.G. 1.155, "Station Blackout," to provide guidance for compliance with this rule. R.G. 1.155 identified the need for a reliability program to achieve and maintain diesel generator minimum reliability levels of 0.95 or 0.975 per demand, depending on the blackout duration coping requirements calculated for a particular plant.

R.G. 1.9, Rev. 3, provides guidance for a reliability program by integrating into a single regulatory guide pertinent guidance now addressed in R.G. 1.9, Rev. 2, R.G. 1.108, Rev. 1, and Generic Letter 84-15. In addition, R.G. 1.9, Rev. 3, endorses IEEE Standard 387-1984. This guide also describes a means for meeting the minimum diesel generator reliability goals contained in R.G. 1.155.

In developing the guidance contained in R.G. 1.9, Rev. 3, for the diesel generator reliability program, the staff has taken cognizance of related industry initiatives and programs, and for the most part is consistent with current industry practices. Both the staff and the industry seem to be in agreement concerning R.G. 1.9,

Rev. 3, except for those parts of Section C.6 and accompanying figures and tables that prescribe in detail the requirements for a diesel generator reliability program.

NUMARC maintains that the licensees have committed to monitoring diesel generator reliability, and have docketed their commitments to maintain the chosen target reliability levels to comply with the Station Blackout Rule. NUMARC considers that these commitments together with their initiatives are sufficient to ensure acceptable diesel generator reliability.

Both the staff and NUMARC agree that diesel generator reliability has improved and the industry as a whole is maintaining reliability above the chosen target levels. NUMARC maintains that these efforts and results are adequate and that the prescriptive guidance contained in R.G. 1.9, Rev. 3, is unwarranted.

We believe that the commitments of the licensees to monitor and maintain diesel generator reliability above the chosen target levels and the industry initiatives are sufficient to ensure acceptable diesel generator reliability under the Station Blackout Rule. If plants fall below the target levels, these plants should be identified and corrective actions will be taken.

We recommend that the prescriptive guidance contained in R.G. 1.9, Rev. 3, Sections C.6-2 through C.6-7 be removed, along with the related figures and tables. In addition, the staff should not issue a 50.54(f) letter to impose adoption of R.G. 1.9, Rev. 3.

Additional comments by ACRS Member Harold W. Lewis are presented below.

Sincerely,

Carlyle Michelson
Chairman

Additional Comments by ACRS Member Harold W. Lewis

First, I don't see the problem this program is supposed to solve. Everyone seems to agree that diesel reliability is good and improving, and that each diesel failure should be analyzed for root cause, to reduce the likelihood of recurrence. The remaining issue is the relevance of the threshold values.

Clearly, failure experience is an indicator of the underlying reliability -- the question is how to use the data. I am surprised that such a trivial measure as a collection of arbitrary threshold values has been chosen. Once the failure data have been collected, it is no harder to make full use of the data, by calculating a set of confidence limits on the underlying reliability. Such a procedure makes optimal use of the data, and can be recalculated after each attempt to start, with the expenditure of a few microseconds of computer time. The trends and their significance

can then be monitored. I see no excuse for throwing away data, once collected. Despite the staff assertions that this would be far more difficult, it would in fact be trivial.

References:

1. U.S. NRC Regulatory Guide 1.9, Rev. 3 (June 14, 1990), Working Draft, "Selection, Design, Qualification, Testing, and Reliability of Emergency Diesel Generator Units Used As Class 1E Onsite Electric Power Systems At Nuclear Power Plants."
2. U.S. NRC Regulatory Guide 1.9, Rev. 2 (December 1979), "Selection, Design, Qualification of Diesel-Generator Used as Standby (On-Site) Electric Power Systems at Nuclear Power Plants."
3. Nuclear Management and Resources Council, NUMARC 87-00, (Revision 1), "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout At Light Water Reactors," Appendix D, "EDG Reliability Program," May 2, 1990
4. IEEE Standard 387-1984, "IEEE Standard Criteria for Diesel-Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations," June 1984.
5. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.155 (Task SI 501-4), "Station Blackout," August 1988.
6. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.108, Rev. 1, "Periodic Testing of Diesel Generators Used As On-Site Electric Power Sysems At Nuclear Power Plants," August 1977.
7. Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," July 2, 1984.