



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, D. C. 20555

ACRS R-1115

January 15, 1985

Mr. William J. Dircks  
Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Dircks:

SUBJECT: DIESEL-GENERATOR FAILURES AT NORTH ANNA POWER STATION, UNIT 2

During its 297th meeting, January 10-12, 1985, the ACRS heard a presentation from representatives of the NRC Staff on an incident involving the diesel generators at North Anna, Unit 2, in which diesel generator testing requirements may have contributed to early damage and reduced reliability of the diesel engines powering these generators. During this briefing, we also became aware that the engine testing requirements being used for Unit 1 were significantly different than those being used for Unit 2, due to the NRC use of a later version of the Standard Technical Specifications which implemented requirements in Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," for the newer unit. The testing differences were not due to any difference in the performance requirements for the two units. This matter was also discussed at a Reactor Operations Subcommittee meeting on January 9, 1985.

The diesel engines for Unit 1 did not experience damage comparable to that found in Unit 2, perhaps due to the less rigorous test requirements for Unit 1; thus, if a real emergency should occur, they would provide more reliable power than those for Unit 2, which were subjected to the more severe start and run tests.

In the attached letter of September 16, 1982, the ACRS suggested that operability of diesel generators may be demonstrated without resorting to the exclusive use of fast start testing. We would like to know what NRC Staff attention is being given to the possibility of modifying the diesel-generator testing requirements.

We were also informed that the Japanese are experiencing unusually successful diesel-engine start experience; if true, there may be valuable lessons to be learned from this data. We would like to hear about this in greater detail.

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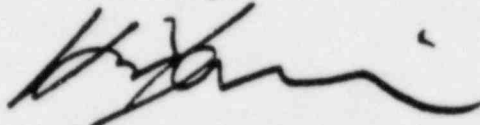
Mr. William J. Dircks

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January 15, 1985

We wish to be informed concerning the status of this work at an ACRS meeting in the near future.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. W. Lewis', written in a cursive style.

H. W. Lewis  
Acting Chairman

Attachment:  
Memo for William J. Dircks, EDO, from  
R. F. Fraley, ACRS, Subject: Testing  
Requirements for Diesel Generators,  
dated September 16, 1982

September 16, 1982

MEMORANDUM FOR: William J. Dircks  
Executive Director for Operations

FROM: R. F. Fraley  
Executive Director, ACRS

SUBJECT: TESTING REQUIREMENTS FOR DIESEL GENERATORS

The ACRS Subcommittee on AC/DC Power Systems Reliability met on September 8, 1982 and discussed with your staff the NRC's current testing requirements for diesel generators. These requirements are currently being reviewed by the NRC Staff with consideration being given to the accumulated industry operating experience. Current test requirements involve starting and loading the diesel generators in a manner which simulates the rapid starting which would be required in the event that the plant experienced a large LOCA concurrent with loss of offsite power. It is generally agreed that this type of testing, which requires fast start and loading, imposes severe mechanical stress and wear on the diesel engine. A review of industry maintenance experience and LER data would be useful in establishing the degree to which such testing has resulted in engine damage and has impacted availability.

The ACRS suggests that operability of the diesel generator may be demonstrated without resorting to the exclusive use of fast-start testing. It is recommended that the NRC Staff review include consideration of moderated operational verification testing requirements, in particular those associated with LCO Action statements, to establish whether fewer tests and testing which would involve less severe loading of the diesel engine could fulfill some of the testing goals. It is probable that such changes would result in improved diesel generator reliability.

cc: ACRS Members  
H. Denton, NRR  
R. Minoque, RES  
E. Goodwin, IRR  
V. Stello, IZE  
K. Savio, ACRS

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