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 MURLEY,T.E. Office of Nuclear Reactor Regulation, Director (Post 870411)

SUBJECT: Notifies that util modifying accelerated stability testing portion of QA requirements for diesel generator fuel oil.

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Iowa Electric Light and Power Company

September 13, 1988

NG-88-2051

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Quality Assurance Requirements for
Diesel Generator Fuel Oil

- Reference: 1) Letter, L. D. Root to Darrell G. Eisenhut
"Quality Assurance Requirement Regarding
Diesel Generator Fuel Oil" LDR-80-111,
April 21, 1980.
2) NRC Letter to all LWR Licensees except
ANO 1 and 2 from D. Eisenhut, dated
January 7, 1980.

File: A-106

Dear Dr. Murley:

In order to ensure initial and continuing quality of Standby Diesel Generator fuel oil, Duane Arnold Energy Center (DAEC) adheres to surveillance test requirements set forth in the DAEC Technical Specifications and commitments discussed in our submittal "Quality Assurance Requirement Regarding Diesel Generator fuel oil" (Reference 1). This submittal responded to an NRC letter dated January 7, 1980 (Reference 2).

The purpose of this letter is to notify you that we are modifying the Accelerated Stability testing portion of this program.

Presently, we perform monthly diesel fuel oil surveillance testing in accordance with DAEC Technical Specifications. Fuel oil is tested for viscosity, water and sediment. The results must meet the limits specified in Table 1 of ASTM D975-77 or the diesel is declared inoperable.

Quarterly, a sample of stored fuel is sent to an off-site laboratory and checked against parameters and acceptance criteria specified in Appendix B of ANSI N195-1976. This is an accelerated stability test undertaken pursuant to Reference 1 and is not required by the Technical Specifications. If the test results exceed the ANSI N195-1976 limits (2mg insolubles per 100ml) the fuel oil must be replaced within seven days.

A review of this quarterly test program indicates there is little or no correlation between the accelerated stability test and fuel suitability. According to our testing facility, this test measures stability of distillate fuels under accelerated oxidizing conditions. It is performed in an extreme testing environment and results only in an index of long term storage stability. If all other tested parameters are within limits of ASTM D975-77, fuel oil

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exceeding the insolubility limits of ANSI N195-1976 Appendix B will remain stable for a period ranging from months to years. An EPRI study on fuel stability (EPRI AP-5506), although focused on residual fuels, provides a background summary on distillate fuel stability problems. It characterized the acceptance criteria of <2mg/100ml as demonstrating that the fuel can be stored for 1 to 1.5 years without unacceptable sediment formation.

There are uncertainties but it is clear that exceeding the 2mg/100ml criteria does not immediately jeopardize the functional performance of the fuel oil. Therefore, we are modifying our diesel oil testing program to provide for an additional, confirmatory accelerated stability test and to extend the fuel oil replacement time limit.

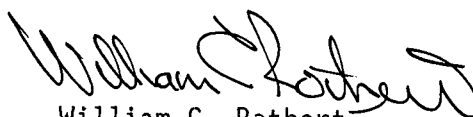
The modification requires re-sampling the fuel oil within seven days from receipt of the failed accelerated stability test result. This second sample will undergo the full analysis specified in Reference 1. The three additional parameters (viscosity, water and sediment) assure that fuel quality continues to be satisfactory. Should this second sample fail to meet the specified stability limits, the fuel oil will be replaced within 30 days of this second-test failure. If stability results are satisfactory, the fuel oil will be deemed acceptable and our regular sampling program will be resumed.

During the period before the fuel is replaced, weekly tests will be performed to confirm that water, sediment and viscosity remain within the specified surveillance values. If a sample fails to meet those values, the Technical Specifications require the corresponding diesel or diesels be declared inoperable.

A 10CFR50.59 Safety Evaluation was performed and has determined this change does not result in an unreviewed safety question. A summary of this Safety Evaluation will be included in our next annual 50.59 report.

At all times, fuel oil quality is maintained and verified in accordance with the Technical Specifications. We believe this modification of the existing DAEC Surveillance testing program complies with the intent of Regulatory Guide 1.137, 10CFR part 50 Appendix B and Reference 1. Please contact this office if you require further information.

Very truly yours,


William C. Rothert
Manager, Nuclear Division

WCR/PMB/pjv+

cc: P. Bessette
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