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MEMORANDUM FOR: Richard H. Vollmer, Director, Division of Engineering, NRR

FROM: James H. Sniezek, Director, Division of Resident and Regional Reactor Inspection, IE

SUBJECT: DUKE POWER COMPANY (DPC) PROPOSED CONFIRMATORY TESTS ON ELECTRICAL CONNECTORS AND STAFF INTERPRETATION OF REQUIRED TEST MARGINS

As you know, DPC is conducting additional qualification tests on the McGuire electrical penetration assemblies (EPA) including the mating connectors and cables. These confirmatory tests are being conducted as the result of failures in the electrical connectors which have been attributed to the accelerated aging method used during NRC sponsored, Sandia-conducted tests on a similar unit. During recent discussions of the proposed DPC testing which is scheduled to start November 2, 1981, Zoltan Rosztoczy expressed his view that all current testing of electrical equipment must include an additional margin at temperature of 1 hour for any temperature transient calculated to be less than an hour. Therefore, equipment required to function during or after the high temperature, short duration MSLB event would have to be tested to the peak temperature for the additional 1 hour. We are not aware of any requirement or technical argument to support this view.

IEEE 323-1974, Section 6.3.1.5, provides the basis for applying margin and identifies the subject values. None of the values exceed 10% of the service conditions. The staff has endorsed these values in NUREG-0588, Section 3(2). The only requirement for a 1 hour margin is in NUREG-0588, Section 3(4). This requirement is for the additional time that equipment must remain functional if it performs its safety function during the initial portion of an event. The arbitrary imposition of a 1 hour margin at temperature to short term, high temperature transients will impact those industry tests which are in progress (e.g. Westinghouse tests on Limitorque valve operators and the Wisconsin Electric Power Company transmitter tests being conducted for several utilities) without technical merit.

CONTACT: D. G. McDonald, IE
49-24766

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This matter came to my attention because of IE's involvement in laboratory accreditation and verification testing. We feel there must be some miscommunication regarding the time at temperature matter. Please advise.

James H. Sniezek, Director
Division of Resident and Regional
Reactor Inspection
Office of Inspection and Enforcement

cc: R. C. DeYoung, IE
H. R. Denton, NRR
V. Stello, DEDROGR

VSP:RRRI:IE C:VSP:RRRI:IE D:DRRRI:IE

DMcDonald GWReinmuth JHSniezek
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