Consumers Power Company

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Harold R Denton, Director
Office of Nuclear Reactor Regulation
Division of Licensing
US Nuclear Regulatory Commission
Washington, DC 20555

MIDLAND NUCLEAR COGENERATION PLANT
MIDLAND DOCKET NOS 50-329, 50-330
EQUIPMENT QUALIFICATION - SYNERGISTIC EFFECTS
OF LOW RADIATION DOSE RATES ON CABLE
FILE: 0505.2/B8.1 SERIAL: 18843

Consumers Power Compnay has been actively involved in the environmental qualification of safety related electrical and mechanical equipment for the Midland Plant. This effort was inititated to demonstrate conformance with the NRC's criteria delineated in NUREG-0588.

Consumers Power Company has reviewed a substantial amount of material during this task and has paid particular attention to regulatory documents and the impact of changing criteria. Of particular recent interest are the Sandia documents NUREG/CR-2156 and -2157, which deals with synergistic effects of low radiation dose rates on cabling.

The Midland Plants use the following cable insulation and jacketing systems:

1. cross-linked modified Polyolefin and Polyphenylene with a cross-linked Polyolefin jacket

2. Ethylene-Propylene rubber with Neoprene jacket or Hypalon jacket

3. cross-linked Polyolefin with Neoprene jacket

In order to accurately access the applicability of the Sandia documents reports to the cable used at Midland or the potential impact on qualifications, we request the following information:

1. Is the NRC aware of any dose rate data that would indicate that the cable used at Midland will degrade faster in the Plant than under the dose rates used for environmental qualification of the cable? If so, please identify the data and source that you consider applicable.

2. Which of the cables tested by Sandia Laboratory are identical to those used at Midland?

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3. Is the NRC aware of any cable failure caused by exposure to radiation that would support a contention that the Midland cable is not adequate to perform its intended function for the 40-year plant life? If so, please identify the data and sources that you consider applicable.

   Is the NRC aware of any data that supports a conclusion that cable with a percent elongation remaining value (e/eo) of 0.4 will not perform its electrical function? If so, please identify the data and source you consider applicable.

5. Is the NRC aware of any correlation between the mechanical properties of a cable insulating system and the electrical performance of cables? If so, please identify the correlation, data and source you consider applicable.

6. Please provide full size copies of the original graphs used to produce figures 1, 2 and 3 in NUREG/CR-2157, or used to produce any other graphs applicable to the cabling used at Midland.

We are hopeful a timely response with the information requested will be forthcoming since it is important to our environmental qualification effort and also the Midland ASLB contention No 7 on synergisms. Your cooperation in this matter is greatly appreciated.

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BCC MIMiller, IL&B
PPSteptoe, IL&B
DBMiller, Midland (3)
JEBrunner, M-1079
JJZabritski, P-14-408
NRC Correspondence File
GSKeeley, P-14-113B
PWJacobsen, P-14-402
RWHuston, Washington
PDiBenedetto, Nutech, Bethesda
DFLewis, BPC
RBurg, BPC

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