



**Consumers
Power
Company**

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May 27, 1980

Director, Nuclear Reactor Regulation
Att Mr Dennis M Crutchfield, Chief
Operating Projects Branch No 5
US Nuclear Regulatory Commission
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 -
PALISADES PLANT - TMI UPDATE -
RELOCATION OF AREA MONITOR

Consumers Power Company committed, by letter dated February 27, 1980, to relocate a containment area radiation monitor to a location that would provide better coverage of activity in the letdown heat exchanger.

A special test procedure, testing containment area monitors, was performed on April 15, 1980 to evaluate the monitor response to a radioactive source in the heat exchanger and determine if it was adequate to provide a 2 out of 4 logic signal for containment isolation. A .95-curie Ir-192 source was attached to the underside of the heat exchanger at its midpoint and the readings recorded. These readings were compared to TLDs placed on either side of the monitors and an additional TLD in a possible relocation area.

The monitors tested for response which are located beneath the heat exchanger quickly responded upscale to the source and the response stabilized after a few seconds. The retrieved TLDs gave consistent results but the observed response of the monitors was approximately 20% of the calculated levels based on the results of the TLDs. This is probably due to the low-energy spectrum of the Ir-192 source, monitor shielding and response at the unusual angle of incidence.

The results of the test were compared to the activity concentrations following a TMI-2 type accident. Data indicates that an accident resulting in 100% failed fuel will result in an activity of approximately 2×10^6 curies in the letdown heat exchanger. A reading of 20 mRem/hour with 95 curies in the heat exchanger was measured; therefore, it will take approximately 2.14×10^4 curies to isolate the containment with a set point of 4.5 Rem/hour which corresponds to approximately 1% failed fuel. Conversely 100% failed fuel will give a response of approximately 4×10 Rem/hour. Based on this data and

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give a response of approximately 4×10^2 Rem/hour. Based on this data and analysis, a 2 out of 4 isolation will occur at a level which is adequate to meet TMI requirements.



David P Hoffman
Nuclear Licensing Administrator

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