UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATIVE TO A FIRE PROTECTION DEVIATION REQUESTED FOR

INDIANA MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2

DOCKETS NOS. 50-315 AND 50-316

1.0 INTRODUCTION

By letter dated May 30, 1986, the Indiana Michigan Power Company (the licensee) informed the NRC that carpeting had been installed in both units' control rooms to close out human factors concerns as a result of the Detailed Control Room Design Review. The licensee stated that this carpeting had a flame spread rating of 30 which is higher than the 25 recommended by NRC staff guidance. The carpeting also has a radiant flux rating of .98 watts/cm^2.

2.0 EVALUATION

The carpeting installed in the control room deviates from NRC staff guidance because the flame spread rating is higher than identified in Section D.1.d of Appendix A to BTP APCSB 9.5-1. The concern is that a fire involving carpeting with a high flame spread could propagate rapidly, potentially damaging safe shutdown equipment and also making the control room uninhabitable. However, the flame spread of the carpeting installed in the D.C. Cook control rooms is only slightly higher than staff guidance, 30 versus 25.

Since the issuance of the staff guidelines, objections have been raised in the fire protection industry regarding the measure of flame spread to evaluate floor coverings. The test method used to evaluate flame spread, NFPA 255, "Surface Burning Characteristics of Building Materials," holds the test specimen upside down in a position that bears no resemblance to its position when it is installed. In a effort to correctly assess the flame spread hazard of floor coverings, the concept of radiant flux was used and NFPA 253, "Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source" was developed. NFPA 253 involves subjecting a horizontal floor covering specimen to a radiant energy flux which decreases along the length of the specimen according to a standard energy flux vs. distance profile. The higher the critical heat flux rating a carpet has, the more resistive it is to flame spread.

The subject carpeting has a critical heat flux of .98 watts/cm^2. This rating is significantly higher than the minimum of 0.45 watts/cm^2 used to define a Class I interior finish in NFPA 101, "Life Safety Code." Since the control rooms are continuously manned, fires would be detected quickly and extinguished using portable fire extinguishers. Based on the above, there is reasonable assurance that the slightly higher flame spread rating of control room carpeting would not adversely affect plant safety.

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3.0 CONCLUSION

Based on the above evaluation, the staff finds that the installation of carpeting in the control rooms which has a flame spread rating of 30 is an acceptable deviation from the guidance provided in Appendix A to BTP APCSB 9.5-1, Section D.1.d.

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