Consumers Power Company

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Operating Reactor Branch No 5
Nuclear Reactor Regulation
US Nuclear Regulatory Commission
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PALISADES PLANT - SEP TOPIC III-6, "SEISMIC DESIGN CONSIDERATIONS", RESPONSE TO COMMITMENT CONCERNING ELECTRICAL COMPONENTS EVALUATIONS

By letter dated August 17, 1982, Consumers Power Company provided the NRC with a status update and schedule for addressing one outstanding safety issue related to SEP Topic III-6, "Seismic Design Considerations", for the Palisades Plant. In that letter we indicated that evaluations of electrical cabinet integrity and mounting adequacy of internal components were being conducted and it was expected that this work would be completed by 12/20/82. This letter submits our response to this commitment.

The attached preliminary report by URS/John A Blume & Associates, Engineers, entitled "Seismic Structural - Integrity Evaluation of Selected Electrical Equipment at Palisades Nuclear Power Plant", provides Consumers Power Company seismic analysis of Motor Control Centers (MCC) 1 & 2. In addition to the MCC 1 & 2 analysis, component anchorage of devices (ie, transformers, circuit breakers, etc) in switchgear 1D was analyzed using the methodology developed in the attached report for evaluating anchorage of subcomponents at the Palisades Plant. It should be noted that switchgear 1D is considered to be representative of medium voltage switchgear at the plant. The methodology developed in the attached report was extended as required for additional anchorage configurations and for additional bolt diameters. In all cases, the anchorage of devices in switchgear 1D was found to be acceptable. An investigation of the control room resulted in the identification of Control Room Panels C-11, C-11A, C-12, C-13, C-04, C-06 and C-126 as safety-related control panels. In addition to the safety-related control panels in the control room, there exists safety-related Control Panel C-33 located at elevation 590'-0 of the auxiliary building . Panel C-11A has been recently added in the control room and has been qualified separately. The results of the qualification, however, are not incorporated in the attached evaluation report.

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In addition to evaluating anchorage of devices, the components in safety-related cabinets outside both the control room and the containment were checked to ensure that anchor devices (ie, bolts and screws) were in place as required by the original construction specifications. The component check revealed all anchor devices to be in place.

Some of the control room panels (ie, safety-related Panels C-11, C-12, C-13, C-04 and C-06) were part of an earlier study by URS/John A Blume to ensure stability of safety-related electrical equipment at Palisades. These panels were provided with additional base support plus bracing from the top of the control panels. Such support arrangement results in higher natural frequencies, lower response accelerations and, therefore, lower stresses in the control panel structures. Although Consumers Power Company has not performed a rigorous stress analysis for structural integrity of control room panels for the Palisades Safe Shutdown Earthquake (SSE), structural integrity of the control room panels is adequate due to their two-point support. This conclusion is also substantiated by the results of an evaluation conducted by EQE, Inc entitled "Program For The Development Of An Alternative Approach To Seismic Equipment Qualification", which indicated that adequately supported electrical equipment has proven not to be a problem during an earthquake event.

Control Panel C-33, located at elevation 590'-0 of the Auxiliary Building, is supported only at its base. Since MCC 1 & 2 are supported only at the base and they are located at a higher elevation which exposes them to higher accelerations, it was determined that MCC 1 & 2 represent the worst case for the structural integrity issue. It was, therefore, concluded that since the results of the enclosed report show MCC 1 & 2 to be structurally adequate, Control Panel C-33 is also expected to be capable of withstanding the Palisades SSE.

The issue of anchorage of subcomponents in the control panels and structural integrity of Control Panel C-126 remains to be addressed. Control Panel C-126, which is supported only at its base, contains safety-related

temperature and pressure indicators and control switches for hydrazine addition. Consumers Power Company expects that evaluations of these remaining items will show adequate seismic resistance based on our experience to date. It is expected that these evaluations will be completed by July 1, 1983.

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