



**Consumers  
Power  
Company**

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February 26, 1980

Director, Nuclear Reactor Regulation  
Att: Mr Dennis L Ziemann, Chief  
Operating Reactors Branch No 2  
US Nuclear Regulatory Commission  
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 -  
PALISADES PLANT - RESPONSE TO  
WATER HOLE PEAKING QUESTION

Consumers Power Company was requested by letter from Mr D L Ziemann (NRC) to Mr D A Bixel (CPCo) dated July 11, 1979, to submit information which would provide assurance that water hole peaking was appropriately considered in the calculation of flux distributions. On September 10, 1979, the requested response was submitted to the NRC containing a comparison between Exxon Nuclear Company's PDQ model and the casmo program which was run at Consumers Power Company.

During a meeting held in Bethesda, Maryland, on November 15, 1979, Mr Bruce Webb of Consumers Power Company was informed by Messrs Cy Weiss and Thomas Alexin, both of the NRC, that the information submitted on September 10, 1979, was insufficient; however, a comparison between the PDQ and a Monte Carlo calculation for the Palisades Plant would be acceptable.

The attached figure represents such a comparison for an octant of a Palisades Plant Reload H Assembly with the intersection of the wide water gaps at the upper left corner, center, and lower right corner of an assembly. Four energy groups with Mixed Number Density (MND) thermal cross sections yielded the closest agreement with the Monte Carlo calculation for the heterogeneous Palisades Plant lattice. This method will be used in the evaluation of peaking factors for future fuel cycles at the Palisades Plant.

David P Hoffman  
Nuclear Licensing Administrator

Attachment - 1 page

CC: JGKepler, USNRC

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S/11

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1.223	1.121	1.078	1.083	0.0	1.072	1.032	1.017
1.240 <sub>+0.03</sub>	1.105 <sub>+0.02</sub>	1.072 <sub>+0.01</sub>	1.072 <sub>+0.01</sub>	0.0	1.072 <sub>+0.01</sub>	1.030 <sub>+0.01</sub>	1.023 <sub>+0.02</sub>
-1.37	1.45	0.56	1.03	*	-0.09	0.19	-0.59
	1.013	.961	1.097	1.118	1.114	1.070	1.042
	1.020 <sub>+0.02</sub>	.957 <sub>+0.01</sub>	1.081 <sub>+0.01</sub>	1.115 <sub>+0.02</sub>	1.131 <sub>+0.01</sub>	1.059 <sub>+0.01</sub>	1.026 <sub>+0.02</sub>
	-0.69	0.42	1.48	0.27	-1.50	1.04	0.58
		.897	1.006	1.026	0.0	1.003	.968
		.904 <sub>+0.01</sub>	.999 <sub>+0.01</sub>	1.063 <sub>+0.01</sub>	0.0	1.021 <sub>+0.01</sub>	.969 <sub>+0.02</sub>
		-0.77	0.70	-3.48		-1.76	-0.10
			.962	.958	.962	.938	.917
			.985 <sub>+0.02</sub>	.973 <sub>+0.01</sub>	.943 <sub>+0.01</sub>	.931 <sub>+0.01</sub>	.913 <sub>+0.02</sub>
			-2.34	-1.54	2.01	0.75	0.44
				.915	.900	.890	.884
				.906 <sub>+0.02</sub>	.911 <sub>+0.01</sub>	.892 <sub>+0.01</sub>	.885 <sub>+0.01</sub>
				0.99	-1.21	-0.22	-0.11
					.879	.876	.878
					.885 <sub>+0.01</sub>	.864 <sub>+0.01</sub>	.856 <sub>+0.02</sub>
					-0.68	1.39	2.57
						.890	.909
						.884 <sub>+0.02</sub>	.907 <sub>+0.02</sub>
						0.68	0.22
							0.0
							0.0

\* Guide Bar Location

Palisades H Fuel, XMC vs PDQ 4-gr MND