

November 16, 1981

Docket No. 50-255
LS05-81- 11-034



Mr. David P. Hoffman
Nuclear Licensing Administrator
Consumers Power Company
1945 W. Parnall Road
Jackson, Michigan 49201

Dear Mr. Hoffman:

SUBJECT: SYSTEMATIC EVALUATION PROGRAM TOPIC V-7, REACTOR COOLANT
PUMP OVERSPEED - PALISADES

Enclosed is a copy of our evaluation of Systematic Evaluation Program (SEP)
Topic V-7. This topic is being reviewed generically by NRC under generic
issue B-68 "Pump Overspeed During LOCA".

For the reasons described in the enclosed SER this topic is considered
complete.

Sincerely,

Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
Division of Licensing

Enclosure:
As stated

cc w/enclosure:
See next page

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

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Sincerely,

for Thomas V. Wambach
Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
Division of Licensing

Enclosure:
As stated

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SYSTEMATIC EVALUATION PROGRAM

TOPIC V-7

PALISADES

Topic: V-7 Reactor Coolant Pump Overspeed

I. INTRODUCTION

The purpose of this topic review is to assure that, in the event of a major LOCA, a reactor coolant pump assembly is not driven to a speed which would cause a structural failure of the unit and result in missiles which could increase the consequences of a LOCA.

II. REVIEW CRITERIA

Standard Review Plan (SRP) Section 5.4.1.1, Regulatory Guide (R. G.) 1.14.

III. RELATED SAFETY TOPICS AND INTERFACES

111-10.B, Pump Flywheel Integrity

IV. REVIEW GUIDELINES

See Evaluation

V. EVALUATION

A review of reactor coolant pump overspeed due to LOCA is part of an ongoing generic review. The related generic task is B-68, "Pump

Overspeed During LOCA." The results of the NRC generic investigation to date have not identified additional protective measures that should be required to prevent excessive pump overspeed during a LOCA.

The pump flywheel integrity at Palisades has been assured by an inservice inspection of the flywheel to detect flaws which could lead to flywheel failure. The staff safety evaluation of the Palisades Pump Flywheel ISI program was issued on May 15, 1981.

The probability of attaining an overspeed following a LOCA which is sufficient to cause loss of flywheel integrity is very remote. This probability would be the product of the conditional probabilities of a break of a large primary system coolant pipe, the probability of failure of the pipe restraints so that the break could become a double-ended guillotine break (calculations show a significantly smaller overspeed for a realistically constrained guillotine break) and the probability of a loss of electric power to the pump so that there is no electric braking effect and the pump is permitted to accelerate freely. Also, the pump would have to remain free spinning. Seizing of the shaft or motor components could prevent overspeed.

On the basis of low probability of the sequence of events necessary and because of the licensee's performance of an inservice inspection program for the flywheel, continued operation of the Palisades reactor is acceptable. If upon completion of the staff's generic review of task B-68, new requirements are determined to be necessary to minimize pump overspeed in the event of a LOCA, these new requirements will be reviewed for applicability on all operating reactors.