

23 JUL 1987

MEMORANDUM FOR: Dennis F. Kirsch, Director
Division of Reactor Safety and Projects
Region V

FROM: George W. Knighton, Director
Project Directorate V
Division of Reactor Projects - III,
IV, V and Special Projects, NRR

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SUBJECT: RESPONSE TO TECHNICAL ASSISTANCE REQUEST - DIABLO CANYON
SEISMIC EFFECTS ON PARTIALLY LOADED CORE (TAC NO. 63468)

By memorandum dated October 6, 1986, Region V requested NRR's technical assistance to look at seismic effects of a partially loaded reactor core. A partially loaded core would have vacancies next to fuel assemblies that would allow fuel assemblies to tilt or tip off vertical under seismic motion. Since fuel assemblies are held in the vertical position by their bottom nozzle, it would not take much ground motion to cause fuel assemblies to tip or fall and of course the question is not unique to Diablo Canyon.

Whereas we can see that a number of tilted or fallen fuel assemblies would create some handling difficulties, there have been about 30 fuel handling mishaps in the nuclear industry over the years, including drops more severe than would result from tilting or falling, and none have resulted in any detectable release of radioactivity. This operating experience supports the conclusion that the standard fuel handling accident described in the Diablo Canyon Updated FSAR (Section 15.5.22, page 15.5-38) is more severe than the consequences to be expected from tilted or fallen fuel assemblies as a result of a seismic event.

As for any critically concerns, the most reactive configuration of the fuel assemblies exists when they are standing on the lower core plate, adjacent to each other, with shutdown margin controlled by high boron concentration. Any other configuration such as might result from tilted or fallen fuel assemblies would be less reactive and therefore have a greater shutdown margin.

This completes NRR action on your October 6, 1986 technical assistance request.

George W. Knighton, Director
Project Directorate V
Division of Reactor Projects - III
IV, V, and Special Projects, NRR

cc: M. Mendonca
P. Narbut
J. Burdoin
J. Ridgely
C. Trammell

*See previous concurrence

*DRSP/PDV
CTrammell:ca
7/10/87

*PSB
JCraig
7/17/87

DRSP/PDV
GKnighton
7/23/87

RSB
W. Hodges
7/22/87
7/23/87

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DRSP/DPDV
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7/18/87

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JCraig
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7/ /87

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

July 17, 1987

50-275/323 Diablo Canyon

MEMORANDUM FOR: Chief, Document Management Branch, TIDC
FROM: Director, Division of Rules and Records, ADM
SUBJECT: REVIEW OF UTILITY EMERGENCY PLAN DOCUMENTATION

The Division of Rules and Records has reviewed the attached document and has determined that it may now be made publicly available.

Donnie H. Grimsley

Donnie H. Grimsley, Director
Division of Rules and Records
Office of Administration

Attachment: As stated

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