



# Kadak Associates, Inc.

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*Andrew C. Kadak, Ph.D.*  
*President*

January 29, 2024

Dr. Peter Lam, Chairman  
Diablo Canyon Independent Safety Committee

Dear Dr. Lam:

As instructed by the Diablo Canyon Independent Safety Committee (DCISC), we have retained an expert in reactor vessel embrittlement to conduct an independent evaluation of the Diablo Canyon Unit 1 reactor vessel and public concerns. We began this study with a careful review of a number of qualified experts from which the DCISC chose Dr. Mark Kirk, formerly of the Nuclear Regulatory Commission (NRC) and now an independent consultant, as the best able to perform the independent review requested.

In response, we have prepared two separate reports: the first to provide a generic background on reactor vessel embrittlement and how such analyses are performed. In addition, in Report 1 we address the specific concerns expressed by the San Luis Obispo Mothers for Peace, Friends of the Earth, and Mr. Bruce Severance in many communications with DCISC.

The second report deals directly with the embrittlement status of Diablo Canyon Unit 1 based on the latest information available. In addition to reviewing the regulatory compliance information, Dr. Kirk also performed an independent evaluation using a supplementary analysis not yet officially accepted by national code setting bodies, but which is currently being reviewed for acceptance.

Both reports have been reviewed by DCISC's other consultants and individually by each Committee Member, and by Pacific Gas and Electric and Westinghouse technical staff for the sole purpose of making sure we have not made any errors of fact or omitted any relevant data.

Dr. Kirk's conclusions are that Diablo Canyon currently complies with Nuclear Regulatory Commission requirements on reactor vessel embrittlement and that it can meet NRC's requirements for up to 60 years based on surveillance capsules already removed and tested. Dr. Kirk did conclude that removal of capsule B would be helpful to address the NRC guidance for license extension to 60 years. Additionally, the supplementary analysis suggests that the NRC's Upper Shelf Energy screening criteria could be reached by 2029-2030 noting that additional analysis of the reactor vessel which has been successfully performed in the past on other reactors in the US could be performed to demonstrate the continued operating integrity of the Unit 1 reactor.

Attached are the two reports entitled:

Report 1: "An Evaluation of the Status of Diablo Canyon Unit 1 with Respect to the Reactor Pressure Vessel Condition Monitoring and Prediction"

Part 1: Addressing Public Concerns

Report 2: "An Evaluation of the Status of Diablo Canyon Unit 1 with Respect to the Reactor Pressure Vessel Condition Monitoring and Prediction"

Part 2: An Evaluation of Diablo Canyon Unit 1 Embrittlement

We are pleased to present a summary of both reports at the next public meeting of the DCISC scheduled for February 21, 22, 2024

Sincerely yours,



Andrew C. Kadak, Ph.D.

Cc: Robert Budnitz, Committee Member  
Per Peterson, Committee Member  
Robert Rathie, Asst. Legal Counsel  
Mark Kirk, Phoenix Engineering Associates, Inc.  
Richard D. McWhorter, Jr, Technical Consultant  
R, Ferman Wardell, Technical Consultant