

JUL 24 1975

DOCKET NOS: 50-275 AND 50-323

APPLICANT: PACIFIC GAS AND ELECTRIC COMPANY (PG&E)

FACILITY: DIABLO CANYON NUCLEAR POWER STATION, UNITS 1 AND 2

SUMMARY OF ACRS FULL COMMITTEE MEETING HELD ON JUNE 5, 1975

An ACRS Full Committee Meeting regarding the Diablo Canyon Nuclear Power Station was held in Washington, D. C. on June 5, 1975. A complete list of attendees is given in Enclosure No. 1. The agenda for the meeting is attached as Enclosure No. 2.

Introductory Remarks by Applicant

Mr. Lindblad of PG&E briefly described the site location and gave the status regarding construction, fuel loading and commercial operation. He indicated that fuel loading for Unit 1 would be in late January of 1976, with commercial operation estimated for July of that year.

Project Review Summary and Status Report

Mr. Allison of the NRC staff gave the status of the review and schedule for completion. He indicated that geology/seismology is still the limiting item in the review, and that it is planned for the staff's evaluation of this item to be completed in time for an October ACRS Full Committee Meeting. This would lead to a completion of licensing activity around February of 1976. With regard to outstanding unresolved items, the status was nearly identical to that reported at the Diablo Canyon Subcommittee Meeting on May 23, 1975. The principal exception was the item of insulation used inside containment; this matter was resolved by the staff since the May 23, 1975 meeting.

Tornado Characteristics/Criteria

After a brief description of the site characteristics related to geography, demography, and meteorology, Mr. Ghio of PG&E summarized the tornado capability studies which they had undertaken at the request of the staff (See Transcript, starting page 129). Mr. Grimes of the staff indicated that the tornado protection for the plant had been reviewed in terms of concrete thicknesses which provide protection,

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and in terms of location and redundancy of safety-related equipment. He stated that three areas had been identified where the protection is weak:

1. The barriers provided for the diesel generator air intakes;
2. The component cooling water surge tanks and associated connecting piping; and
3. The 4 kV switchgear rooms located in the corner of the turbine building.

Grimes indicated that discussions will be held with the applicant to determine what additional protection might be feasible within the constraints imposed by the as-built facility.

Reactor Design

Mr. Little of Westinghouse summarized the status of several WCAP reports related to the 17 x 17 fuel design (See Transcript, starting page 139). The review of several of these reports has been completed by the staff, and information is still outstanding on several others.

Dr. Peacock of Westinghouse discussed the status of the ECCS/LOCA evaluation with regard to Diablo Canyon (See Transcript, starting page 141). The revised Westinghouse ECCS model has been approved recently, although the analysis for Diablo Canyon has not been completed based on the revised model. However, it is expected that the Diablo Canyon analysis will result in substantial margins to the Appendix K requirement of $T_{\max} = 2200^{\circ}\text{F}$.

Mr. Little then discussed in detail the Westinghouse Augmented Startup Program Proposal (See Transcript, starting page 143). This presentation was nearly identical to that made at the Diablo Canyon Subcommittee Meeting on May 23, 1975 (See Transcript of that Subcommittee Meeting, starting page 231). Little emphasized that this program was developed in an attempt to address the concerns which ACRS and the staff have expressed at various times. He indicated that Westinghouse felt that the program would be most effective if it had between 3 and 5 participants.

Regarding ATWS, Dr. Peacock stated that the Westinghouse evaluation model and technical position had been submitted in WCAP-8330, and that one round of formal questions from the staff regarding this WCAP had been answered. The staff evaluation of the Westinghouse position on ATWS is expected to be completed later this summer. Resolution of this issue for Diablo Canyon will follow.

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Accident Considerations

The following items were discussed:

(1) Reactor Coolant Pump Overspeed

Mr. Gangloff of Westinghouse stated that WCAP-8163 on this subject had been filed in September of 1973. The conclusion of this report was that there is reasonable assurance that the reactor coolant pump will remain intact under blowdown conditions. Westinghouse is continuing with test work in an attempt to substantiate this conclusion (See Transcript, page 173). The staff indicated that the review of the WCAP should be completed later this summer, and that a meeting with Westinghouse would be held to discuss this review.

(2) Steam Generator Integrity-Slug Flow

Dr. Peacock referenced the presentation on this item at the May 23, 1975 Subcommittee Meeting (See Transcript of that meeting, starting page 62). He stated that they had investigated the fluid-hydraulic regimes that would exist for both large and small breaks, and had compared them to a number of literature correlations to assure that conditions would not be appropriate for the onset of slug flow. Dr. Okrent asked that the staff and the applicant be prepared to discuss (at a future meeting) some of the slug flow issues raised previously by the Subcommittee. Mr. Allison indicated that the staff's position on tube rupture is that adequate assurance be provided that tube ruptures will not occur following a LOCA, and that chemistry control and inservice inspection are used to help provide this assurance. In connection with this, the steam generator tube inspections at Point Beach were discussed in some detail.

(3) Subcompartment Pressure Calculations

Dr. Stratton asked about the sensitivity of the containment liner plate or typical heat sinks to the total containment pressure. Mr. Gallagher of Westinghouse indicated that the liner effect was in the neighborhood of 3-6 psi.

On a related problem, the staff informed the Committee of a recent generic problem involving consideration of forces on the reactor vessel supports from the blowdown following a LOCA. The problem first arose on the North Anna docket, but is being investigated on a generic basis.

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(4) Water Hammer

The staff indicated that they had not yet completed their review of this item. In the meantime, PG&E is proceeding with the fix of shortening the feedwater lines.

(5) Lockout of Power Operated ESF Valves

Mr. Lindblad of PG&E stated that they had already agreed to lock out power to certain motor-operated valves specified by the staff. Some discussion followed involving the time available to take certain corrective actions.

Protection Against Propagation of Damage From Fires

Mr. Nielsen of PG&E made a presentation which included some comparisons of fire protection practices at Diablo Canyon and Browns Ferry (See Transcript, starting page 193). This item was also covered in detail at the May 23, 1975 Subcommittee Meeting (See Transcript of that meeting, starting page 211).

Electric Power Systems

Mr. Hoch of PG&E made a presentation regarding shutdown capability with prolonged loss of all a-c power (See Transcript, starting page 199). This item was also covered in detail at the May 23, 1975 Subcommittee Meeting (See Transcript of that meeting, starting page 176). Hoch emphasized that they considered in this analysis circumstances which are outside the plant design envelope. The conclusion of the analysis was that the reactor could be brought to hot standby for about six hours if all a-c power was lost.

Emergency Plan

Dr. Moeller inquired about the status of the State of California Emergency Response Plan. Mr. Hiron of the staff indicated that this plan was being formulated during the course of the Diablo Canyon review, but that it had not been reviewed completely by the staff at the time. Mr. Shiffer of PG&E indicated that this state plan is in final form, with an April 1975 draft being the latest version. The plan is expected to go to the California Legislature for approval within a short time. Within NRC, the Office of International and State Programs will also review this plan. Dr. Moeller asked several other questions related to the Diablo Canyon Emergency Plan and the authority which is delegated to the Local Sheriff's Department.

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Dr. Okrent then asked the applicant what progress they had made with regard to instrumentation to follow a serious accident. Mr. Shiffer of PG&E made a detailed presentation on this subject (See Transcript, starting page 214). He indicated that they are developing some detailed procedures for this using available instrumentation, but that also he had been pushing EPRI to fund a generic study on this subject, with particular emphasis on implementation of the proposed Regulatory Guide. As a result, EPRI has given a contract to Nuclear Services Corporation to study the instrumentation of a large PWR on a generic basis. Their first report should be published in the near future.

Summary

After a brief caucus, Dr. Kerr indicated that the Committee would write a letter which will constitute a partial review of the operating license application for the Diablo Canyon Units.

Original Signed By
Dennis P. Allison

for

Thomas J. Hiron
Light Water Reactors
Project Branch 1-3
Division of Reactor Licensing

Enclosure No. 1:
Attendance List

Enclosure No. 2:
Meeting Agenda

cc w/encl:

Mr. John C. Morrissey
Philip A. Crane, Jr., Esq.
Andrew J. Skeff, Esq.
Mr. Frederick Eissler,
Ms. Raye Fleming
Ms. Sandra A. Silver
Mr. John Forster
Mr. William P. Cornwell
Mr. W. J. Lindblad
Mr. Gordon Silver

OFFICE ➤	RL:LWR 1-3				
SURNAME ➤	Hiron, T.J.				
DATE ➤	7/24/75				

JUL 24 1975

ENCLOSURE NO. 1

ATTENDANCE LIST

DIABLO CANYON ACRS FULL COMMITTEE MEETING

JUNE 5, 1975

ACRS

Dr. W. Kerr
D. D. W. Moeller
Mr. J. H. Arnold
Mr. M. Bender
Dr. S. H. Bush
Dr. M. W. Carbon
Mr. L. W. Fox
Dr. S. Lawroski
Dr. D. Okrent
Dr. C. P. Siess
Dr. W. R. Stratton

ACRS STAFF

J. Conran

PACIFIC GAS AND ELECTRIC COMPANY (PG&E)

W. J. Lindblad
J. B. Hoch
H. J. Gormly
E. P. Wollak
R. M. Laverty
V. J. Ghio
D. Nielsen
R. A. Young
J. R. Herrera
J. C. Carroll
R. A. Ramsay
J. D. Shiffer

WESTINGHOUSE

D. W. Peacock
W. Gangloff
A. J. Abels
J. Little
P. Blau
J. Gallagher

OFFICE ➤						
SURNAME ➤						
DATE ➤						

Enclosure No. 1

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NRC - STAFF

D. P. Allison
T. J. Hiron
O. D. Parr
B. K. Grimes
D. G. McDonald
M. S. Dunnenfeld
P. S. Check
F. M. Almeter
P. Hearn
D. Fisher
P. Seiffert
F. Litton

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OFFICE						
SURNAME						
DATE						

PROPOSED AGENDA FOR THE
ACRS PARTIAL OL REVIEW OF DIABLO CANYON
June 5, 1975 - Washington, D. C.

PRINCIPAL SPOKESMEN: Wm. Lindblad, PG&E (Proj. Eng. - Diablo Canyon)
Dennis Allison, DRL (Proj. Mgr. - Diablo Canyon)

- (5 min.) I. INTRODUCTORY REMARKS BY APPLICANT (PG&E)
A. Brief Description of Site and Facility
B. Construction Status/Fuel Load Schedule/Schedule for Operation
C. Organization/Assignment of Responsibilities for Project
- (30 min.) II. PROJECT REVIEW SUMMARY & STATUS REPORT (NRC)
A. Status of NRC Review - Schedule for Completion
B. Update and Summary of Unresolved/Incomplete Items
- (15 min.) III. BRIEF SUMMARY OF SITE CHARACTERISTICS (EXCEPT GEOLOGY/SEISMICITY/HYDROLOGY)
A. Geography, Demography, Meteorology (PG&E)
B. Tornado Characteristics/Criteria (PG&E)
1. Brief Summary by PG&E
2. Degree of Conformance to Current Criteria
3. Systems for Safe Shutdown Weakly Protected from Tornado
C. Basis for Acceptability of Tornado Design (DRL/NRC)
- IV. REACTOR DESIGN (PG&E/NRC)
(5 min.) A. Remaining Questions on 17 x 17 Core
(10 min.) B. Power Distr. Control - ECCS/LOCA Evaluation
(10 min.) C. Augmented Startup Program Proposal
(5 min.) D. ATWS
- V. ACCIDENT CONSIDERATIONS
(5 min.) A. Containment Insulation
(5 min.) B. RCP Overspeed
(5 min.) C. Steam Generator Integrity
(5 min.) D. Pipe Breaks Outside Containment
(5 min.) E. Subcompartment Pressure Analyses
(10 min.) F. Water Hammer
(5 min.) G. Lockout of Power-Operated ESP Valves
- (15 min.) VI. PROTECTION AGAINST PROPAGATION OF DAMAGE FROM FIRES (PG&E/NRC)
- VII. ELECTRIC POWER SYSTEMS (PG&E)
(5 min.) A. Reliability Considerations
(10 min.) B. Shutdown Capability with Loss of AC Power
- (10 min.) VIII. EMERGENCY PLAN (PG&E)
A. Interaction/Coordination with State and Local Govts.
B. Instrumentation/Procedures to Follow the Course of an Accident
- IX. OTHER ITEMS (as appropriate)

Distribution:

Docket File (2) ✓
LWR 1-3 File (2)
NRC PDR (2)
Local PDR
NRR Reading (M. Groff)
R. C. DeYoung
V. A. Moore
D. Skovholt
D. Muller
R. Denise
K. Goller
W. Butler
J. Stolz
R. Clark
T. Speis
D. Vassallo
K. Kniel
O. D. Parr
A. Schwencer
R. Purple
D. Ziemann
P. Collins
G. Knighton
G. Dicker
B. Youngblood
W. Regan
R. Vollmer
W. Houston
G. Lear
V. H. Wilson
J. Wetmore
M. Dunnenfeld
F. Almeter
F. Litton

R. W. Klecker
M. Williams
F. Schroeder
R. Heineman
R. Tedesco
J. Stello
R. Maccary
H. Denton
V. Benaroya
J. Collins
G. Lainas
D. Ross
T. Ippolito
J. Knight
S. Pawlicki
L. Shao
B. Grimes
W. Gammill
R. Ballard
P. Fine
T. Novak
M. Spangler
J. Kastner
EP Project Manager - W. Ross
Project Manager - D. Allison/T. Hiron
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L. Davis
P. Seiffert
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ACRS (14)
D. G. McDonald
P. Check
P. Hearn
D. Fischer