

ENCLOSURE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	Docket No. 50-275
)	Facility Operating License
PACIFIC GAS AND ELECTRIC COMPANY)	No. DPR-80
)	
Diablo Canyon Power Plant)	Docket No. 50-323
Units 1 and 2)	Facility Operating License
)	No. DPR-82
)	
)	License Amendment Request
)	No. 88-09

Pursuant to 10 CFR 50.90, Pacific Gas and Electric Company (PG&E) hereby applies to amend its Diablo Canyon Power Plant (DCPP) Facility Operating License Nos. DPR-80 and DPR-82 (Licenses).

The proposed changes amend the Technical Specifications (Appendix A of the Licenses) as regards Technical Specifications 3.1.3.5 and 4.1.3.5 and Figures 3.1-1a and 3.1-1b. Information on the proposed changes is provided in Attachments A and B.

These changes have been reviewed and are considered not to involve a significant hazards consideration as defined in 10 CFR 50.92 or require an environmental assessment in accordance with 10 CFR 51.22(b). Further, there is reasonable assurance that the health and safety of the public will not be endangered by the proposed changes.

Subscribed in San Francisco, California, this 19th day of December 1988.

Respectfully submitted,

Pacific Gas and Electric Company

By *J. D. Shaffer*
 J. D. Shaffer
 Vice President
 Nuclear Power Generation

Howard V. Golub
 Richard F. Locke
 Attorneys for Pacific
 Gas and Electric Company

By *Richard F. Locke*
 Richard F. Locke

Subscribed and sworn to before me this 19th day of December 1988.

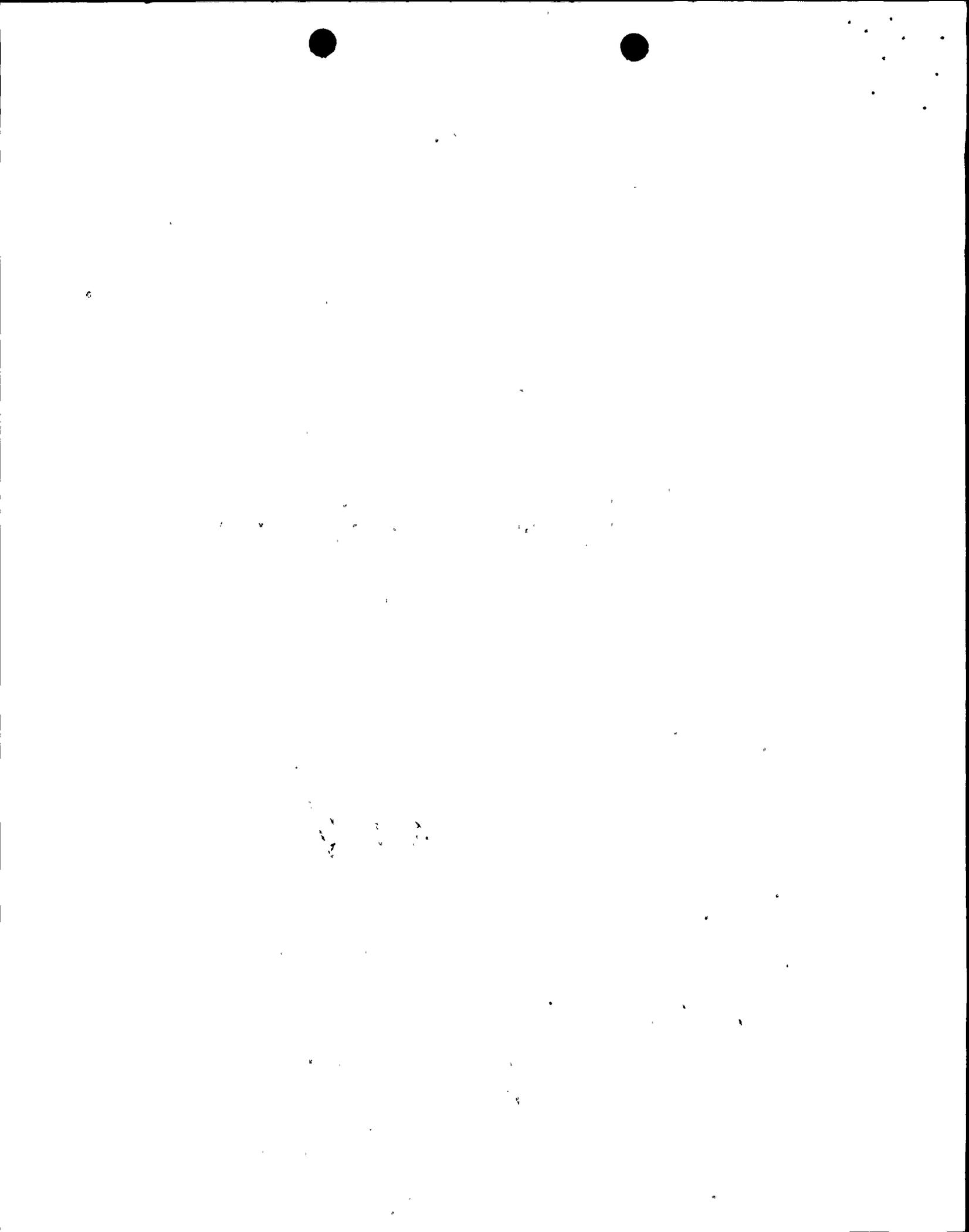
Therese Toliver
 Therese Toliver, Notary Public in
 and for the City and County of
 San Francisco, State of California

My commission expires December 25, 1990

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Attachment A

TECHNICAL SPECIFICATIONS 3.1.3.5 and 4.1.3.5 AND FIGURES 3.1-1a AND 3.1-1b FULLY WITHDRAWN POSITION FOR SHUTDOWN AND CONTROL ROD BANKS

A. DESCRIPTION OF AMENDMENT REQUEST

This license amendment request (LAR) proposes to revise Technical Specifications 3.1.3.5 and 4.1.3.5 and Figures 3.1-1a and 3.1-1b. This revision would allow the fully withdrawn position for the shutdown and control rod banks to be redefined as 225 steps or greater, rather than 228 steps, with insertion limits remaining the same. This revision will provide the flexibility to reposition the rod banks as part of a control rodlet wear management program.

This change would reduce the likelihood of occurrence of the potentially significant safety problem identified in IE Information Notice 87-19, which described several examples of perforation and cracking of rod cluster control assemblies from excessive wear in Westinghouse PWRs.

Also, this license amendment proposes to add x and y axis intercepts to Figure 3.1-1a. This will provide clarity to operations personnel as to the value of rod bank positions for these power conditions. Values for the x and y intercepts were provided from the Diablo Canyon "Precautions, Limitations and Setpoints Document".

Changes to the Technical Specifications of Operating License Nos. DPR-80 and DPR-82 are noted in the marked-up copy of the applicable Technical Specifications (Attachment B).

B. BACKGROUND

In IE Information Notice 87-19, "Perforation and Cracking of Rod Cluster Control Assemblies," the NRC notified Westinghouse PWR licensees of a potentially significant safety problem that could result from the perforation and cracking of rod cluster control assemblies. Based on this information notice and recent experience at other Westinghouse PWRs, PG&E is taking actions to mitigate this concern at Diablo Canyon.

The reactor coolant system (RCS) is monitored for the presence of rod absorber material (Ag-110 in a metastable state) to provide early detection of significant control rodlet wear prior to experiencing operational problems. This approach is based on Westinghouse recommendations from data collected at other Westinghouse plants with control rodlet wear problems. To mitigate potential significant wear problems, one of the recommendations includes axially repositioning the rod banks to extend component life and allow continued operation until replacements are obtained. The absorber material is stable in the reactor coolant. The only known mechanism for dispersion of absorber material into the coolant is by fretting against the upper internals guide plate due to flow induced vibration.



PG&E plans to implement a wear management program for the control rodlets based on RCS chemistry and inspection findings at DCPD and projections based on data from other Westinghouse plants. PG&E anticipates implementation of the wear management program towards the latter part of Cycle 4 for each Unit (late 1990 for Unit 1 and early 1991 for Unit 2).

C. JUSTIFICATION

Excessive wear could potentially result in the collapse or breach of the control rod cladding and could impair the free movement of the shutdown and control rod banks into the core. To minimize the likelihood of significant fretting wear, this LAR proposes to redefine fully withdrawn as greater than or equal to 225 steps. Periodic axial repositioning moves the worn control rodlet cladding away from the guide plate, thus minimizing any significant loss of absorber material and eliminating further cladding degradation at wear scar elevations.

D. SAFETY EVALUATION

An evaluation of the effects of redefining fully withdrawn operation with the rod banks positioned to 225 steps or higher, instead of at 228 steps as currently defined, was performed by Westinghouse. Westinghouse determined that positioning rod banks at 225 steps would have a negligible effect on power distribution and Departure from Nucleate Boiling Ratio (DNBR) and the impact on shutdown margin would be slight. Evaluations performed by Westinghouse are summarized below.

The effect on power distribution from insertion of the rod banks to 225 steps was considered. At 225 steps, the rod absorbers are inserted less than 0.3 inch into the active core. Since the top of the core is a low reactivity worth region, the small difference between fully withdrawn at 225 or 228 steps will have a minimal effect on power distribution. Based on core calculations and measured power distributions for the past and the current cycle, the Total Peaking Factor (maximum power divided by the average linear power) is expected to increase by less than one percent in the bottom of the core, and Axial Offset will be more negative by less than one percent. Diablo Canyon Units 1 and 2 have sufficient peaking factor margin to allow for both of these effects.

The effect on shutdown margin from insertion of the rod banks to 225 steps was considered. As stated previously, at 225 steps, the rod absorbers are inserted less than 0.3 inch into the active core. Since the top of the core is a low reactivity worth region, the small insertion difference between fully withdrawn at 225 or 228 steps will have a minimal effect on shutdown margin. Moreover, sufficient shutdown margin in excess of technical specification requirements exists with the rod banks inserted to 225 steps.

The effect on DNBR from insertion of the rod banks to 225 steps was considered. The parameters that affect DNBR are flow, temperature, pressure, and power (heat transfer rate). The first three parameters are not impacted by rod position. Since the rods would only be inserted 0.3



inch (at 225 steps) into the core periphery, the insertion would not be deep enough to significantly impact the power component of DNBR and sufficient thermal margin exists to compensate for this effect.

Based upon the information provided above, PG&E believes that there is reasonable assurance that the health and safety of the public will not be adversely affected by revising the definition of the fully withdrawn position of control and shutdown rod banks.

E. NO SIGNIFICANT HAZARDS EVALUATION

PG&E has evaluated the no significant hazard considerations involved with the proposed amendment, focusing on the three standards set forth in 10 CFR 50.92(c), as quoted below:

The Commission may make a final determination, pursuant to the procedures in paragraph 50.91, that a proposed amendment to an operating license for a facility licensed under paragraph 50.21(b) or paragraph 50.22 or a testing facility involves no significant hazards considerations, if operation of the facility in accordance with the proposed amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

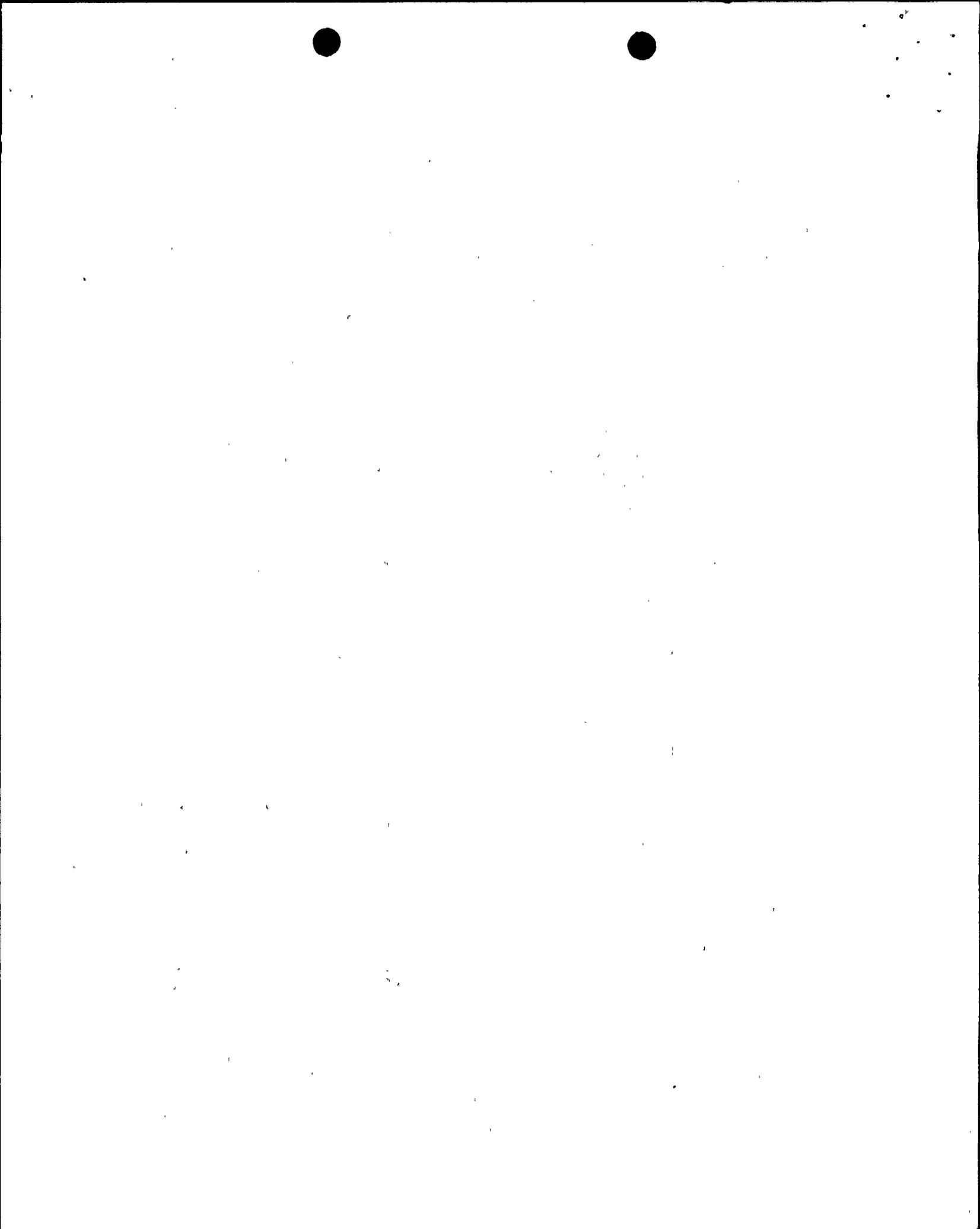
The following evaluation is provided for the no significant hazards consideration standards.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

Repositioning rod banks will reduce the possibility of wear-through of the rodlet cladding. Thus, the consequences and probability of a malfunction of the rods will be decreased while maintaining compliance with functional requirements. As discussed in the above safety evaluation, sufficient margin exists between calculated safety parameters and safety limits, such that redefining the fully withdrawn position for the rod banks to 225 steps or greater, will not significantly increase the probability or the consequences of any previously analyzed accident.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

Repositioning the rods does not involve the addition of a new plant system or significantly alter operation of the current system. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.



3. Does the change involve a significant reduction in a margin of safety?

A Westinghouse evaluation has determined that the impact of redefining the fully withdrawn position for the rod banks to 225 steps or greater has a negligible effect on peaking factors and rod worths under accident conditions. The slight change in these parameters does not result in a significant reduction in a margin of safety.

F. NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Based on the above safety evaluation, PG&E concludes that the activities associated with this LAR satisfy the no significant hazards consideration standards of 10 CFR 50.92(c) and, accordingly, a no significant hazards consideration finding is justified.

G. ENVIRONMENTAL EVALUATION

PG&E has evaluated the proposed changes and determined that the changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed changes meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed changes is not required.



Attachment B

MARKED-UP TECHNICAL SPECIFICATIONS

Remove

3/4 1-21
3/4 1-23
3/4 1-24

Insert

3/4 1-21
3/4 1-23
3/4 1-24

