



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

MAY 30 1984

MEMORANDUM FOR: James P. Knight, Assistant Director  
for Components & Structures Engineering  
Division of Engineering

FROM: TASK GROUPS FOR DIABLO CANYON LICENSE CONDITIONS 2, 3  
& 6

SUBJECT: REPORT OF VISIT TO PG&E OFFICES IN SAN FRANCISCO AND  
DIABLO CANYON PLANT SITE DURING THE PERIOD MAY 21-25,  
1984

B. Saffell, T. Burr, K. Morton and the writer visited the offices of PG&E on May 21, 22, 23 and 25 and the plant site on May 24. During that period we audited approximately 50 TC packages and 25 DP packages including original design, authorized changes, as-builts and final calculations representative of license condition #6. The technical bases for the criteria related to close proximity supports, license conditions 2 and 3, were discussed with PG&E as was the current status of their review effort. During the site visit specific hangers selected during the TC/DP audit were viewed for conformance with documentation. In addition, with respect to license conditions 2 & 3, examples of rigid supports and snubbers being placed close to other rigid supports, snubbers, anchors, and equipment nozzles were reviewed and viewed at the site.

The task group conducted an exit interview with PG&E on May 25. A summary appears in the attachment.

On May 22 the task group participated in an evening transcribed interview with persons associated with GAP.

Isa Yin was not present and did not participate in our reviews. He was present for the GAP meeting and we briefly spoke with him at that time.

The task group for license condition #6 wishes to make two recommendations which come out of our May 21-25 deliberations in order to address concerns which lie beyond the scope of the task group. The recommendations follow and are applicable to both units 1 and 2:

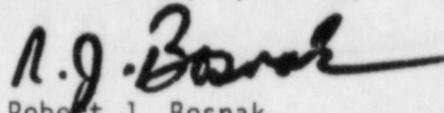
- (a) Since a common concern of many of the allegations appears to be a perception that the quick fix (TC) is used to circumvent QC/QA, the task group recommends that Region V confirm that there is adequate QC/QA action on TC authorized construction modifications.
- (b) Review by SGEB personnel or other personnel knowledgeable in concrete construction of the structural concrete practice involved in performing pipe support baseplate modifications. This review

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should include the practice addressing: (1) abandoned anchor bolt holes and abandoned anchor bolts resulting from the relocation of baseplates with respect to repair and proximity to relocated holes, and (2) in-place attachment by welding of "wingplates" to baseplates (effect of welding on concrete properties).



Robert J. Bosnak  
Task Group Leader

Enclosure:

Exit Interview with PG&E for  
License Conditions 2, 3, 6

cc w/encl:

R. Vollmer  
B. Saffell, Battelle Columbus  
T. Burr, INEL  
K. Morton, INEL  
I. Yin  
H. Schierling

Exit Interview for License Conditions 2, 3, 6

on May 25, 1984

1. PG&E is to clarify how the "Z" configuration was actually used in its analyses. It is understood that the "L" values, rather than "L'", were conservatively used in most, if not all, configurations. (Refer to PG&E 5/18/84 submittal) License Condition 2.
2. Clarify statements made in the May 18, 1984 submittal regarding exclusion of piping 2" and smaller. Specifically, items to be clarified are the criteria for restraint proximity and the summary of results, attachment 2-4. License Condition 2.
3. PG&E is to clarify its use of the proximity criteria for snubbers. It is understood that rigid-rigid proximity criteria was 5D, while snubber-rigid criteria was 3D for diameters equal to or greater than 8" and 5D for diameters below 8". License Condition 2.
4. For License Condition 6 PG&E was advised that the task group has concluded that it believes that PG&E did not comply with the intent of its procedures governing the Pipe Support Design Tolerance Clarification Program (PSDTC), in that many TC's reviewed by PG&E, and audited by the task group, and others reviewed by the task group alone included significant design changes. However, even though that condition was present, the as-built support was analyzed and found to be acceptable as evidenced by the task group's audit of TC packages, as-built drawings, final calculations and



as-built supports at the site.

PG&E was requested to identify procedural changes to be made for unit #2 construction to achieve a condition in which TC's would not be used to effect design changes in violation of TC programmatic intent. (see item (e) below)

PG&E was requested to provide the following reports and additional documentation of items for the TC and DP programs:

- (a) Provide TC and DP program flow charts similar to the preliminary versions discussed during the May 21-25 audit week. The flow charts should be accompanied by a glossary and the two individual charts should clearly show their interrelationship. The glossary and individual charts should show all pertinent terms. A term requested to be clarified was "minor revision to a DCN". The two major interfaces of a support TC should clearly be shown on the flow charts. These interfaces are with the Civil Structural and the Pipe Stress Groups. The flow charts should indicate how QC/QA is included in TC authorized construction modifications.
  
- (b) PG&E is to present its design control procedures and criteria for relating pipe support design and installation to civil engineering structures to achieve civil verification. Specifically, the criteria relative to concrete for: (1) proximity of supports, (2) proximity of anchor bolt holes on relocation of baseplates and the

type of required repair for abandoned anchor bolt holes and abandoned anchor bolts, (3) anchor bolt embedment depth vs available wall/floor thickness, and (4) wall/floor integrity with respect to global and local support loading. The above material should be complete in itself but may refer to other documents, such as ESD 223, where the criteria may be found.

- (c) PG&E is to present its design control procedures and criteria for the use of wingplates on support baseplates. Specifically, procedures for determining when wingplates are permitted and when the baseplate should be replaced without the use of a wingplate. The types of welds permitted for wingplate attachment, analytical treatment of wingplate weldments in baseplate flexibility analysis and the effects of welding wingplates to in-place baseplates on adjacent concrete properties should be specifically covered.
  
- (d) A summary of the recent review evaluation program of the small and large bore completed TC's on unit #1 is to be presented. The preliminary results were discussed with the task Group. PG&E is to present its final results including the types of modifications which were identified in the sample it evaluated in order to respond to license condition 6(a). As previously stated, the task group has concluded that it believes that the intent of the programmatic procedures governing the PSDTC program was not complied with, since many of the TC's contained significant design changes.

- (e) PG&E is to present its plans for Unit #2 for minimizing the number of support design change deviations permitted by the TC program in order to improve compliance with programmatic stated intent.
  
- (f) A summary of recent review evaluation of the Diablo Problem (DP) program on unit #1 is to be presented. The preliminary results were discussed with the Task Group. PG&E is to present its final results including the number of DP's which transmitted pipe support design information and the number of DP's still unresolved.
  
- (g) In order to respond to license condition 6(b) and 6(c) PG&E is to state whether it has concluded that any of the TC or DP activities are unresolved and whether any significant differences exist between the as-built configuration and the final revised as-analyzed design configuration of plant pipe supports.

R. Bosnak, B. Saffell, T. Burr, K. Morton