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UNITED STATES OF AMERICA⁸⁴ JUN 15 11:09
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of)

PACIFIC GAS AND ELECTRIC COMPANY)

(Diablo Canyon Nuclear Power)
Plant, Units 1 and 2))

Docket Nos. 50-275 O.L.
50-323 O.L.

JOINT INTERVENORS' REPLY TO PG&E AND
NRC STAFF RESPONSES TO MOTIONS REGARDING
DESIGN QUALITY ASSURANCE,
CONSTRUCTION QUALITY ASSURANCE,
AND LICENSEE CHARACTER AND COMPETENCE

On May 23, 1984, this Appeal Board issued an order concerning the Joint Intervenor's pending (1) Motion to Augment or, in the Alternative, to Reopen the Record on the Issue of Design Quality Assurance; and (2) Motion to Reopen the Record on the Issues of Construction Quality Assurance and Licensee Character and Competence. The Joint Intervenor's hereby respond to

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that order by filing this Reply, which relates to both of the foregoing motions.^{1/}

A. General Contentions

Both PGandE and the NRC Staff rely on certain contentions that bear equally upon both of the pending motions, including the so-called "principle of administrative finality," the relevance of the ongoing NRC and PGandE investigations and reviews, the motives of the Joint Intervenors and the affiants, and the insufficiency of the evidence to warrant reopening of the record. To a substantial degree, the Joint Intervenors have already addressed those issues in their March 15, 1984 Reply to Answer of Pacific Gas and Electric Company to Motion to Augment or, in the Alternative, to Reopen the Record ("Reply"), previously served on the Board and all parties. Rather than reiterate those arguments here, the Joint Intervenors incorporate them by reference in reply to the PGandE and NRC Staff responses to both of the pending motions. See Reply, at 2-24.

In addition, this Board is respectfully referred to the May 7, 1984 Memorandum and Order of the Appeal Board in

^{1/} The motions have each been supplemented by the Joint Intervenors through additional filings, including:

- A. Motion to Augment (Design)
 - (1) March 1, 1984 Supplement
 - (2) March 15, 1984 Reply
 - (3) April 6, 1984 Supplement
- B. Motion to Reopen (Construction and Character and Competence)
 - (1) March 3, 1984 Supplement

Commonwealth Edison Company (Byron Nuclear Power Station, Units 1 and 2), in which many of the same arguments were raised by the utility and the Staff, but rejected by the Board. For example, in response to the claim that an operating license could be issued and any remaining safety questions delegated to the Staff and the utility for resolution, the Appeal Board answered with an unequivocal "no":

We find nothing in Callaway that suggests, let alone holds, that an operating license can issue despite the presence of a cloud overhanging the adequacy of safety-related facility construction. Further, we are totally satisfied that the record before the Licensing Board was insufficient to disperse the cloud here. . . . Although the applicant insists that it can and should now be left to the staff to undertake that exploration outside of the adjudicatory arena, we think otherwise. Because the efficacy and outcome of the remedial programs are central to a finding of reasonable assurance of proper facility construction, the intervenors are plainly entitled to have their day in court prior to a possible resolution of the quality assurance matter in the applicant's favor.

Id. at 21-22 (emphasis added).^{2/}

This principle is controlling here. As the Joint Intervenors have established through the numerous affidavits filed in support of their motions -- including those attached

^{2/} In a footnote, the Appeal Board cited the fact that "[t]he . . . Commission has long held that, '[a]s a general proposition, issues should be dealt with in the hearings and not left over for later (and possibly more informal) resolution.'" Id. at 22 n.45. See also Consolidated Edison Co. of New York (Indian Point Station, Unit No. 2), CLI-74-23, 7 AEC 947, 951 (1974); Louisiana Power and Light Co. (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1103 (1983); Public Service Co. of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-461, 7 NRC 313, 318 (1978).

hereto -- a "cloud" hangs over the adequacy of the safety-related design and construction at Diablo Canyon. That cloud can only be dispersed by a thorough examination on the record of the issues outlined in the pending applications. Moreover, it must be dispersed prior to issuance of an operating license, as the Byron Appeal Board recognized, even if there is no evidence of actual safety significant construction defects:

As the Licensing Board at least implicitly acknowledged in its initial decision, and the intervenors explicitly conceded at oral argument, the record is devoid of anything establishing the actual existence of uncorrected construction deficiencies of potential safety significance. Rather, as both the Board and the intervenors see it, operating license denial is justified because the ascertained quality assurance shortcomings precluded a finding of reasonable assurance that any and all serious construction infirmities have been detected and rectified.

Obviously, so long as legitimate uncertainty remained respecting whether the Byron facility has been properly built, the Licensing Board was obliged to withhold the green light for an operating license. Thus, assuming the Licensing Board justifiably concluded that such uncertainty existed, it necessarily follows that it rightly declined to authorize license issuance. . . .

Id. at 8-9 (emphasis added) (footnote omitted).

Thus, the fundamental contention by PGandE and the Staff that further review, investigation, and corrective action can and should be left to them can be reconciled neither with the long history of this case nor the recent decision of this Board in the Byron proceeding. Accordingly, it must be rejected, and the Joint Intervenors' motions must be granted.

B. Additional Evidence

1. Introduction. In its May 23, 1984 Order, the Board directed, in essence, that the Joint Intervenors' reply be accompanied by an affidavit of a qualified individual and "clearly establish" for each matter raised "why the staff and the applicant responses are insufficient, what issues of disputed material fact (if any) remain, and the significance to plant safety" of the matter raised. Order, at 2-3. In an attempt to comply with this Board's Order in the two and one-half weeks permitted, the Joint Intervenors have compiled and obtained numerous reply and corroborating affidavits from past and present workers at Diablo Canyon to supplement the affidavits and extensive documentation already submitted. While those affidavits address many of PGandE's and the Staff's responses, they do not individually address all of the hundreds of matters raised in the initial motions and supplements, because a full reply to the PGandE and Staff responses -- which were developed and prepared during the past six to eight months -- simply cannot be prepared in the less than three weeks allowed by the Board. Thus, the affidavits necessarily comprise an illustrative, rather than a comprehensive, reply.

The lack of a specific response to each of the matters raised is not a concession by the Joint Intervenors that PGandE and the Staff have adequately resolved the matter. To the contrary, by their contentions of "insignificance" or "error of fact" or "improper inference" in response to the Joint Intervenors' motions, PGandE and the Staff have established the

existence of disputed issues of material fact that require a hearing. The Joint Intervenor's have demonstrated -- and the Staff has largely confirmed -- that design and construction quality assurance deficiencies exist at Diablo Canyon in direct contradiction of PGandE's on the record testimony. PGandE has denied the significance or accuracy of those deficiencies, even in the face of the highly critical findings of NRC Staff Inspector Isa Yin. The dispute is clear, and the public hearings are required to resolve the dispute and dispel the uncertainty that now clouds the record. See discussion of standard of review in Joint Intervenor's Reply, at 5-9, and cases cited therein.

With regard specifically to the issue of "significance to plant safety" as that phrase is used in the Board's Order, the Joint Intervenor's submit that, as with quality assurance deficiencies generally, few deficiencies will be demonstrably "significant" if considered individually. However, because quality assurance is a process that must be fully complied with to ensure confidence in the plant's design and construction, the deficiencies must be viewed cumulatively in order to determine their potential impact on, or implications for, plant safety. The Appeal Board in Byron recognized this fact in affirming the denial of a license based on a history of quality assurance deficiencies, even though no evidence had been proffered of actual construction defects. See discussion supra at 2-4. Implicitly, therefore, the Board recognized the cumulative significance to plant safety of a deficient quality assurance

program. As a minimum, that analysis applies here as well, totally independent of any actual deficiencies in design and construction that have been disclosed, either by the Joint Intervenors or by the Staff.

2. Design. This Board's May 23, 1984 Order authorizes the Joint Intervenors to "reply to any of the staff or applicant responses to Mr. Yin's findings. . . ." Order, at 2. With respect to the Staff, the Joint Intervenors are unaware of any specific "response" to Inspector Yin's findings that has been filed with this Board. Indeed, the Staff's response to the motion itself failed even to mention Mr. Yin or his findings, a fact that the Joint Intervenors continue to find shocking in light of his key role in the Staff review and of the critical nature of his findings. To the extent, however, that the Staff believes that its continuing review of the facility -- including its follow-up on Inspector Yin's findings -- constitutes an adequate resolution of the matters raised by the Joint Intervenors and substantially confirmed by Inspector Yin, we disagree emphatically. Not only does the Staff's record in this proceeding provide no basis for confidence, but the status and progress of the ongoing review is currently unknown. If, indeed, the review has resolved the matters raised, the Staff must establish that fact on the record in hearings, under the full scrutiny permitted by opposing witnesses and cross-examination.

With respect to PGandE's responses, the Joint Interveners have attached two detailed affidavits by Charles Stokes that note numerous inadequacies in PGandE's submissions, concerning both his own allegations and the Yin findings. These affidavits supplement the Reply affidavit previously prepared by Mr. Stokes in support of the Joint Interveners' March 15, 1984 Reply. Briefly stated, these affidavits -- Exhibits 1 and 2 hereto -- concern the following PGandE responses and specific issues:

(1) Exhibit 1 -- Reply to PGandE response to Yin findings (Letter No. DCL-84-131 (April 4, 1984)) -- inadequacy of training, failure to address root cause of small and large bore piping errors; lack of timely corrective action; failure to document reasons for delay in corrective action; uncontrolled manuals and procedures; insufficient documents and access to documents; use of thermal gaps in modeling of seismic restraints; use of joint releases in pipe support design; deficiencies in, and uncertainty regarding accuracy of, as-built drawings; inadequate training and lack of design information in "Quick Fix" program; lack of review of "Quick Fix" modifications; breakdown in reporting of deficiencies due to Quick Fix; failure to implement reporting procedures; and deficient audit programs.

(2) Exhibit 2 -- Reply to PGandE responses to Stokes allegations and Yin findings (Letter Nos. DCL-84-164 and DCL-84-166 (April 7, 1984 and April 11, 1984)) -- improper

use of tube steel in safety-related pipe supports;
inadequate tube steel radius in flare bevel welds;
inadequate training of engineers and QC inspectors;
incomplete and inaccurate as-built drawings resulting from
"Quick Fix" program; deficiencies in calculation of loads;
failure to impose sufficient methodological controls in
modeling; failure adequately to address warping phenomena;
insufficient justification for violation of AISC Code with
respect to allowable stresses of angle sections in bending;
and deficiencies in baseplate calculations.

With respect to the weld symbols concerns raised by Mr. Stokes in his February 9, 1984 affidavit and subsequently addressed by PGandE in its responses, detailed replies are provided, first, in an affidavit attached hereto as Exhibit 4 and, second, in Board Notification 84-069, previously served on the Board and all parties by the Staff, at Part 3, Attachment 5. See discussion infra. These affidavits flatly contradict the responses by PGandE in numerous respects, from the applicability of the relevant AWS Code section at Diablo Canyon to the adequacy of the weld symbols training received by engineering and construction personnel. Thus, the existence of disputed issues of material fact is undeniable.

Finally, the range of QA/QC deficiencies found by Isa Yin and documented in his Draft Inspection Report (B.N. No. 84-071) is overwhelming evidence of the need for further hearings. Independent of any other evidence, his report constitutes substantial evidence that the quality of design at

Diablo Canyon remains uncertain. The pervasive "Quick Fix" program adopted to expedite design changes resulted in a virtual circumvention of quality assurance and in numerous discrepancies between the as-built drawings and the actual plant. Deficient training, erroneous calculations in small and large bore piping, hardware problems involving rigid restraints and snubbers -- these and other QA-related deficiencies must be addressed before the requisite confidence for licensing exists. Under the Appeal Board's decision in Byron, Staff and utility reviews are not a legitimate substitute for public hearings. Accordingly, the Joint Intervenors' application for further hearings must be granted.

3. Construction. One of the principle documents submitted by the Joint Intervenors in support of their motion to reopen the record on the issue of construction quality assurance was the 1977 Nuclear Services Corporation ("NSC") audit of Pullman Power Products, the primary piping contractor at Diablo Canyon. Both PGandE and the NRC Staff have denigrated the significance of that report, contending that NSC's findings were erroneous, insignificant, or concerned with deficiencies already corrected. Therefore, in support of their motion, the Joint Intervenors submitted affidavits from Pullman employees -- including its Internal Auditor -- that flatly contradict the PGandE and Staff assurances, thereby establishing obvious disputes of material fact regarding the full range of

deficiencies disclosed by NSC, many of which, according to the affiants, continue to exist.

As further evidence of the deficiencies at Pullman -- as well as deficiencies in the QA programs of other construction contractors -- the Joint Intervenors have previously submitted to the NRC numerous additional affidavits, all of which have been served on the Board through Board Notifications ("BN"). In particular for purposes of this Reply, the Board is referred to part three of BN No. 84-069 -- previously referenced in this proceeding by the Staff in its April 25, 1984 Response to Joint Intervenor's Supplement -- and, specifically, to the following sworn affidavits attached thereto:

(1) Attachment 5 -- Reply to PGandE responses regarding its welding program and that of its piping contractor, Pullman. It includes specific replies to 21 PGandE responses concerning training of welders, use of weld symbols, weld stresses, communication between engineering and construction, and significance of the deficiencies.

(2) Attachment 6 -- Steve Lockert -- Reply to PGandE responses concerning (a) qualification of Pullman QC inspectors; and (b) welding of A-325 high strength bolts for use on Class I piping supports associated with the CCWS.

(3) Attachment 7 -- Reply to PGandE responses regarding (a) welding on water-filled CCW pipes; and (b) welding of A-325 bolts.

(4) Attachment 9 -- Corroboration of deficiencies in Pullman QC, including inadequate training, inadequate drawing and design control, and intimidation of inspectors.

(5) Attachment 8 -- Corroboration of similar deficiencies in G.F. Atkinson QC, including inadequate training, falsification of documents, harassment, noncompliance with welding procedures and regulations, and inadequate attention to QC generally.

(6) Attachment 10 -- Corroboration of deficient QA at Pullman and G.F. Atkinson, including deficient welding practices, acceptance of deficient work, noncompliance with specifications, falsification of documents, 60% failure rate in welds already QA-approved, improper removal of red tags by production personnel, inadequate welder qualification, undocumented welds, lack of weld rod control, inadequate corrective action, and harassment and intimidation of QC personnel by construction.

(7) Attachment 11 -- Corroboration of QC deficiencies at Foley and reply to PGandE responses, including inadequate training of inspectors, deficient certification of inspectors, and noncompliance with red tag procedures.

(8) Attachment 12 -- Corroboration of QC deficiencies at Foley, including falsification of inspection records, inadequate training and qualification of welders and inspectors, lack of material traceability, inadequate corrective action, lack of QA in "Quick Fix" program,

inadequate access to applicable codes, and outdated QC procedures.

In addition to these previously submitted reply and corroborating affidavits, a number of recently obtained reply affidavits are attached hereto as Exhibits 3-10. Although necessarily illustrative rather than comprehensive, they relate to the following matters raised:

(1) Exhibit 3 -- Reply to PGandE responses concerning Allegations 192 (excessive carbon on stainless steel piping), 194 (lack of PGandE corrective action regarding excessive carbon), 175 (use of welded studs on containment liner), 180-82 (QC coverage for welding activities); 200 (voiding of DR's); and cracked CCWS welds, deficient bolts, Quick Fix, violation of corrective action procedures, breakdown in reporting procedures, intimidation and harassment, and falsification of records.

(2) Exhibit 4 -- Reply to PGandE responses concerning Allegations 174 (preinspection substituting for QC), 295 (restrictions on reporting of problems for old work), 229 (undersized welds), 235 (lack of uniform system of weld symbols), 237 (ignorance of weld symbols), 238 (lack of documented instructions for weld symbols), 239 (inadequate construction and program controls), 240 (misuse of term "typical" to describe welds), 241 (overwelding due to weld symbols breakdown), 243 (stop work orders on weld symbols problem), 244 (management failure to process MVRs on weld symbols), 294 (harassment and intimidation of 4.5 hour per

hanger rate not maintained), 246 (failure to apply PGandE reforms to field through on-site training), 247 (inadequate control of preheating), 253 (PGandE awareness of adverse effect on quality due to weld symbols problems), 254 (prospective-only corrective action), 259 (inadequate corrective action for deficient weld inspection), 298-300 (incomplete or inconsistent drawings), 284 (communication of design information by telephone), 296 (Bechtel promise to obtain AWS Code change); and retaliation.

(3) Exhibit 5 -- Steve Lockert -- Reply to PGandE responses (Breismeister et al., Karner, and Etzler), regarding materials for welded studs, inadequate welding procedures, falsified QA for rupture restraints, production disregard for QC, and deficient welding equipment.

(4) Exhibit 6 -- Harold Hudson -- Reply to PGandE response of adequate corrective action, through case study of pipe rupture restraints and the failure to address root cause for deficiencies.

(5) Exhibit 7 -- Reply to NRC Staff regarding CCWS weld cracking, need for comprehensive testing, and improper limitations on inspectors' identification of problems.

(6) Exhibit 8 -- Walter Clark, Cal Poly Engineering Department -- Analysis of steel tubing for hangers and conclusion that materials quality is deficient.

(7) Exhibit 9 -- Larry Kinney, inspector for concrete pours and installation of rebar (1968-73) -- Corroboration regarding early QA deficiencies and, in particular, failure

to review as-built drawings, harassment of inspectors, acceptance of deficient work.

(8) Exhibit 10 -- Corroboration by former Bechtel employee regarding intimidation and deficiencies in welding, reporting, and design drawings.

These affidavits both challenge the validity of PGandE's responses and provide further evidence that deficiencies in construction quality assurance have existed since construction began and continue to exist even today. It is difficult to conceive of how a more comprehensive showing of quality assurance problems in construction than that made here could be presented. In addition to the NSC Pullman audit -- never disclosed by PGandE -- the Joint Intervenors have submitted scores of affidavits from plant workers, hundreds of individual allegations, and thousands of pages of supporting documentation. The issues are too numerous and complex to be addressed meaningfully without benefit of cross-examination and confrontation of witnesses. Moreover, they are too important to ignore once again in this proceeding. Remarkably, PGandE's construction practices have never been examined on the record in this case, despite repeated efforts by the Joint Intervenors to obtain a hearing. The evidence submitted since May 1983 clearly warrants reopening of the record. Accordingly, the Joint Intervenors' motion should be granted.

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CONCLUSION

For the reasons stated herein and in all of the prior relevant filings, the Joint Intervenor's' (1) Motion to Augment (Design) and (2) Motion to Reopen (Construction and Licensee Character and Competence) should be granted.

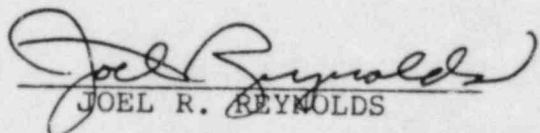
Dated: June 11, 1984

Respectfully submitted,

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NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

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CERTIFICATE OF SERVICE

I hereby certify that on this 12th day of June, 1984, I have served copies of the foregoing JOINT INTERVENORS' REPLY TO PG&E AND NRC STAFF RESPONSES TO MOTIONS REGARDING DESIGN QUALITY ASSURANCE, CONSTRUCTION QUALITY ASSURANCE, AND LICENSEE CHARACTER AND COMPETENCE, by mailing them through the U.S. mails, first class, postage prepaid, to the attached list.

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* Via Federal Express on June 11, 1984.