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ON THE DIABLO CANYON NUCLEAR POWER PLANT

before the

NUCLEAR REGULATORY COMMISSION

February 10, 1984

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Thank you for the opportunity to appear today on behalf of the San Luis Obispo, California, Mothers for Peace. I am Thomas Devine, Legal Director of the Government Accountability Project of the Institute for Policy Studies. Since November 1983, GAP has been interviewing current and former employees from the Diablo Canyon nuclear power plant to investigate alleged design and construction quality assurance (QA) violations. To date, my partner John Clewett and I have spoken with 30 current or former employees, about two-thirds of whom still work at the plant. We have taken eight affidavits from these workers. In addition, we nave reviewed and forwarded to the Nuclear Regulatory Commission (NRC) staff thousands of pages of documents that provide evidence for the allegations of Diablo Canyon whistleblowers.

Although we do not yet have all the details, our preliminary conclusions are clear: in terms of quality assurance, Diablo Canyon equals the worst lemons in the nuclear industry.

It is clear that the scope and intensity of the quality assurance breakdown rank with those at Zimmer, Midland, and the Three Mile Island cleanup. On February 2, 1984, through

a petition under 10 CFR 2.206, the Mothers for Peace filed the first 170 allegations from GAP's ongoing investigation. We hope to supplement that record in approximately a week with the results of GAP's most recent investigative efforts.

In the petition the Mothers for Peace requested that the Commission defer any decision on whether to grant a low-power operating license to the Diablo Canyon Nuclear Power Plant (Diablo Canyon or DCPP) until completion of --

(1) a comprehensive, third party reinspection program of all safety-related construction in the plant, with full authority by the independent organization to identify and impose corrective action on any nonconforming condition that deviates from 10 CFR 50, Appendix B, the Final Safety Analysis Report (FSAR) or plant specifications, through implementation of corrective action;

(2) an independent audit of design quality assurance, including the reliability of conclusions from remedial design verification programs imposed since 1981 such as the seismic design review;

(3) development of a full factual record on Pacific Gas and Electric's (PG&E) character and competence to operate the Diablo Canyon nuclear power plant, including

(a) a management audit by an independent organization, and

(b) publication of a report by the NRC Office of Investigations (OI) following a full investigation to determine the causes of construction and design QA violations at Diablo Canyon, including issues such as harassment and retaliation, subordination of quality assurance to cost and scheduling concerns, destruction of records and false statements, and deliberate violations of the Atomic Energy Act; and

(4) a full program of public participation for the selection and oversight of independent organizations described in #1-3 above, including NRC review and approval of independent organizations from nominations submitted by either PG&E or any interested member of the public, and creation of a public oversight committee consisting of equal representation by state and local representatives and the intervenors with the authority to obtain all requested information and to conduct legislative-style public oversight hearings.

I. CONSTRUCTION QUALITY ASSURANCE BREAKDOWN

A. Scope of the violations

A sample of violations, alleged in affidavits from whistleblowers and confirmed by internal documents, include -- (1) uncontrolled welding and weld repairs, due to unqualified, incomplete or irrelevant procedures; (2) uncontrolled materials for important safety-related work, such as the use of common hardware metal that, when welded to sensitive nuclear-grade materials, could cause brittleness or corrosion; (3) uncontrolled installation of structural steel hardware due to incomplete procedures that failed to cover all of the relevant work assignments, and purchase of the wrong size or shape hardware which was then chiseled into shape or otherwise forced to "make do" on an ad hoc basis; (4) suspect "approved" procedures, because the same procedures flunked laboratory tests, but were resubmitted up to three times until they "passed" -- meaning that the hardware in the field may not be any more reliable; (5) unreliable Nondestructive Examination results, due to unqualified procedures, references to procedures that weren't even issued when the examinations occurred, or manipulation of the results; (6) unreliable tests for the measurement of minimum valve thickness, due to unqualified procedures, use of inappropriate equipment which did not accurately measure all

surfaces, and failure to include all of the relevant valves; (7) ineffective quality control for vendor-supplied equipment used to measure and test the adequacy of hardware generally; (8) PG&E management orders not to inspect welds supplied by outside vendors, after contractor quality control personnel discovered repeated defects such as cracks; (9) suspect qualifications for welders and weld inspectors, due to cheating on exams and poor training; (10) hydrostatic tests on piping that must be redone, because the first time they were conducted without QC oversight, consistent procedures, or the proper temperature and pressure to demonstrate that the pipes will hold; and (11) consistent management circumvention of reporting requirements to the NRC, from routine nonconformances to significant events, in the construction, engineering, and QA departments.

B. Impact on the hardware

The effects of the quality assurance breakdown on the plant's hardware have been dramatic. Whistleblowers have described "truly abominable" vendor welds so ragged that they tear clothing; site weld backing bars that fall off when lightly tapped with a hammer; undocumented overwelding that increases the stress on piping and systems but has not been factored into engineering design calculations; crooked or loose beam clamps that help support electrical cable trays; and numerous instances where the hardware is in different locations than specified on the plant's approved drawings, such as with the shims for base-plates. As one whistleblower told me on Tuesday, the best that can be said is that "they don't know what they've got out there."

C. "Quick Fix" programs

In theory the "Quick Fix" program, later renamed the Pipe Support Design Tolerance Clarification (PSDTC), is a field engineering correction action program. In reality, whistle-blowers have convinced GAP that it is an uncontrolled, underground engineering program with the authority to casually overrule the approved design, and to substitute informal repairs for the legal quality assurance (QA) reporting and corrective action system. It spans both the design and construction quality assurance breakdowns at Diablo Canyon.

Management only issued instructions defining the Quick Fix program to a handful of the participating engineers, and to none of the QC inspectors affected by this extraordinary authority to veto the design. Even then, the guidelines were deficient; they failed to disclose preconditions for PSDTC action, such as the scope of and extent of a PSDTC engineer's authority.

The Quick Fix program substituted for the normal nonconformance reporting system throughout the design and construction QA process. This could mask deficiencies from NRC audit and review. The Quick Fix sheets demonstrate significant hardware problems and should be systematically reviewed by the staff.

The Quick Fix authority was abused. It was used to completely redo the design of hangers, to delete hangers and to delete weld symbols, all without any engineering calculations. The latter practice was the technique used to override QC inspectors. In theory the Quick Fix determinations were subjected to later engineering review. But the reviews were

spotty at best, and management told Mr. Stokes that 98% of the PSDTC's in his group were approved. To put the program in perspective, in an affidavit a Pullman quality control inspector described it as "one of the worst aspects of the whole system at Diablo Canyon."

D. Causes of the quality assurance breakdown

While the effects of the QA breakdown are complicated, the causes were simple: the subordination of QA to construction. Neither PG&E nor Pullman management had the commitment to enforce QA requirements. QA management viewed itself as a support unit for the construction department, rather than an independent check on the quality of work performed by construction. In fact, there was not even consistent agreement among site management whether there was a commitment to build the plant to 10 CFR 50, Appendix B.

The QA breakdown permeated the organization at Diablo Canyon. In some cases, such as welding threaded studs, the system of checks and balances broke down at every stage successively for the same work.

The management philosophy resulted in a loss of organizational freedom for quality assurance personnel. Management failed to provide copies, and even denied access to personnel seeking professional codes and other necessary research materials. Pullman QA management ordered inspectors to stop inspecting work after problems were identified, to stop issuing reports and to stop tracing where faulty procedures had been used.

Management enforced its restrictions on organizational freedom by retaliating against those who did not know their place. Harassment, attempted intimidation, and personnel reprisals permeated the entire QA program, not just those activities concerning special processes. The pattern extended within other departments as well, such as PG&E construction. The harassment has been occurring at least since 1978, and has intensified during the last three months. The methods include such tactics as physical threats by construction employees, threatened job actions, reprimands, denial of raises, isolation, and dismissal. It is an understatement to conclude that there has been a "chilling effect" from the reprisal crisis at Diablo Canyon. A quality assurance Ice Age would be more accurate.

Due to the pervasive repression, an unknown number of deficiencies have not been reported. As a former auditor explained, "Those who persist in reporting the violations are dismissed, or harassed relentlessly until they resign, or give up and stop trying." A current QC inspector concluded, "One of the biggest threats to effective QC work at Pullman Power Products is the fact that inspectors know they can be fired for doing their jobs too well."

The effects of the organizational breakdown have extended to falsification of records and destruction of documents. Witnesses have indicated that these practices have occurred in the design, construction and quality assurance programs.

At best, management's approach to corrective action has been prospective only. Whistleblowers repeatedly have confirmed

this phenomenon. Old work, such as that covered in the 1977 Nuclear Services Corporation audit of Pullman, is left as is. We do not believe that it is acceptable to "let bygones be bygones" and pledge to do it right in the future, when PG&E says the plant is done.

If anything, the violations may be intensifying. To illustrate, on December 28, 1983, Pullman revised Procedure ESD 223 with respect to fillet weld sizes for pipe supports. The procedure was modified to add two provisions: "D. For existing installations, welding which was performed but was not required as part of the design is acceptable. . . E. For existing installations, welding which was not performed but was required as part of the design is acceptable." In other words, anything is now acceptable. While this approach officially eliminated a nagging problem, it did not solve it.

These offenses could not have occurred so systematically without negative leadership from management. Although some of the safety allegations are debatable, a consistent pattern is clear: management does not want to hear about these problems from workers; and is even more determined that no one else hears about them. The tools for this philosophy are intimidation, retaliation, records falsification, and records destruction. That is how problems remain covered up for 12 years. The results are a plant whose quality is indeterminate, at best.

II. DESIGN QUALITY ASSURANCE BREAKDOWN

GAP began its Diablo Canyon investigation in response to an urgent request from the Mothers for Peace to speak with

Mr. Charles Stokes before he left the area. Until October 15, 1983, Mr. Stokes was an engineer in the seismic design review program. Mr. Stokes and other engineers revealed a design quality assurance breakdown equally pervasive to its construction counterpart. The effects include unreliable results from the seismic review, and an unreliable Emergency Core Cooling System (ECCS). There also may have been generic breakdowns in document control, field modifications and the accuracy of design drawings. As with construction quality assurance, engineers who seriously challenged the violations consistently lost their assignments or their jobs in reprisal.

The design QA breakdown is particularly significant, because the subject has been reviewed in licensing hearings. To a great extent, the hearings did not include the allegations below. This raises questions whether PG&E has fully disclosed all relevant material to the Atomic Safety and Licensing Appeal Board.

III. NRC OVERSIGHT AND ENFORCEMENT

GAP represents five whistleblowers for purposes of disclosures to the Nuclear Regulatory Commission. Based on experiences from these interviews, GAP investigators have developed respect for the diligence and intelligence of the NRC staff assigned to the case. While we drastically disagree with some of the practices in the current inspection, we do not question that the disputes are in good faith, or that mistakes are just that.

However, the Mothers for Peace and GAP must strongly protest practices which compromise the reliability of the record as the basis for a licensing decision.

A. Failure to examine the organizational causes for the QA breakdown

This case cries out for the full participation of the Office of Investigations (OI). Unfortunately, to date OI has not begun its job for the bulk of the relevant issues, including retaliation and records falsification/destruction. In the meantime, the inspection team has openly discussed issues with PG&E and its contractors that fall under OI's jurisdiction. This offers the potential targets of criminal investigation an opportunity to identify the relevant issues and perfect their defenses, all while OI waits on the sidelines. Even worse, whistleblowers have informed GAP of records destruction following visits by the inspection team.

It would be premature to make any further licensing decisions until the allegations of retaliation and falsification are resolved. These issues are directly relevant for any licensing decision. Under 10 CFR 19.20 and 19.30, a license can be suspended or revoked for retaliation against employees. See also Union Electric Company (Callaway Plant, Unit 1), ALAB-740, 17 NRC ____, _____ step op. at 2-3 (September 14, 1983). Similary, false statements can be an independent grounds to deny an operating license. Houston Lighting and Power Company (South Texas Project, Units 1 and 2), CLI-80-321, 12 NRC 281 (1980).

Overall, a legally-valid operating license decision requires more than a narrow technical review of engineering decisions. A license cannot be granted until the licensee has demonstrated through its construction program the necessary character and competence to run a nuclear plant. (Id.) Based on the evidence obtained over the last three months, there is no basis for confidence that PG&E has met that standard. The answers will only be available after OI identifies the causes of the quality assurance breakdown at Diablo Canyon.

B. Accepting prospective-only corrective action

It would be most unfortunate if the staff's oversight mirrored this flaw in the licensee's program. Unfortunately, that may have occurred. To illustrate, in response to Allegation #93 by Mr. Charles Stokes, the staff accepted the Pullman explanation that the inspectors assumed a 45-60 degree weld angle if the information were not included on relevant drawings and instructions to guide their inspections. The staff failed to disclose, however, that this practice only began on June 23, 1983, when an internal memorandum was issued after Mr. Stokes refused to accept a weld in the Quick Fix program otherwise. In other words, the staff based its decision on facts only accurate for the last seven months. The problem is that welds during the first 13½ years of construction could be just as significant for public safety. Again, the enforcement program is too narrow.

C. Advance disclosure of proposed violations

In a January 31 public meeting at PG&E offices, the NRC warned PG&E that certain draft proposed violations are barriers to recommending a low-power operating license. The staff then distributed a handwritten draft copy of the proposed violations and offered the licensee a week to change the staff's mind. GAP and the Mothers recognize the need to obtain all relevant facts prior to proposing violations. Indeed, we seek to extend that principle to the licensing decision itself. But offering draft violations to licensees for informal rebuttal is going too far. Surely the Commission's policy not to release draft copies of inspection reports should apply to significant portions of the reports, such as the findings of illegality. The draft violations are enclosed as Exhibit 1.

D. Gag order on February 7, 1984 plant tour

On February 7, 1984 GAP attorney John Clewett and a whistleblower accompanied a Commission representative on a plant tour. Due to the objections of PG&E's attorney, the two citizen representatives were not permitted to speak to the Commission representative except in response to his questions. He did not have any of a substantive nature. As a result, the NRC missed an opportunity to observe significant evidence of the effects from QA violations. The whistleblower had come prepared to point out examples of specific defective hardware and welds. The Mothers for Peace request that another plant tour be scheduled when the whistleblower has the organizational freedom within the NRC's program to identify safety hazards.

In conclusion, we believe that under these circumstances, any decision on a low-power operating license for Unit I would be premature. If even a significant portion of the whistle-blower allegations are confirmed, the plant is not close to meeting Atomic Energy Act requirements. Its quality would be indeterminate and its management untrustworthy. Because PG&E already may have circumvented accountability in the last NRC remedial program, an improved structure of independent fact-finding and intensified public oversight is necessary to reestablish legitimacy and to obtain reliable results.

Diablo Canyon 1 Exhibit 1 1.

Proposed Violation Item Assessment

Item No.	Item Description	Against 10CFR 50 Appendix B, Criterion	Findings observed during	
			Followup Allegation, No.	NRC overview
1.	The site small bore piping design group personnel authority and duties were not established and delineated in writing.	II	--	V
2.	There has been inadequate program provisions for personnel indoctrination and training. The S/B pipe support engineers were not familiar with important elements in both licensee QA and technical programs.	II	(82)	--
3.	S/B QA program deficiencies and design nonconformances had not been identified and corrected promptly.	XVI	(84)	--
4.	Defective document control system observed at S/B design groups:	VI		
	a. Design procedures out-of-date.		(79)	V
	b. Use of Inter-office memorandum in lieu of work procedures.		(79)	V

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Proposed Violation Item Assessment

Item No.	Item Description	Against 10CFR 50 Appendix B, Criterion	Findings observed during	
			Followup Allegation, No.	NRC overview
	C. Procedure listings out-of-date.		79	✓
5.	Inadequate Design Procedures:	V		
	a. Design change request		--	✓
	b. piping movements within rigid restraint gaps		88	--
	c. Use of out-side reference and data.		84, 79	--
6.	Fail to follow procedures:	V		
	a. S/B support calculation input checking		--	✓
	b. personnel training		82	--
7.	Inadequate Design Control:	III		
	a. Design criteria conflict in controlling pipe restraint structural frequencies. ITR 60.R1		--	✓

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Proposed Violation Item Assessment

Item No.	Item Description	Against 10CFR 50 Appendix B, Criterion	Findings observed during	
			Followup Allegation, No.	NRC overview
	b. Extensive errors that had been identified in both preliminary and final support calculations.		--	✓
	c. Lack of program provision to verify telephone provided preliminary design information.		--	✓
	d. Lack of design consideration of synchronizing loading between closely spaced rigid/rigid restraints, and rigid restraint/anchor.		88	✓
	e. Snubbers were made inoperable by placing them in close proximity with rigid restraints and anchors.		--	✓
	f. Lack of design ALARA consideration for snubbers.		--	✓

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Proposed Violation Item Assessment

Item No.	Item Description	Against 10CFR 50 Appendix B, Criterion	Findings observed during	
			Followup Allegation, No.	NRC overview
8.	Inadequate licensee technical QA audits and surveillances to identify and correct the many design control and program deficiencies revealed during this inspection / investigation.	XVIII	--	✓