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My name is Steven Lockert. I am making this statement, ^{'84 JUN 21 AIO:4} without threats or inducements, to Tom Devine who is an attorney working with the Government Accountability Project (GAP).

I am making this statement because I have knowledge of false statements made by PG&E, Bechtel and Pullman Power Products employees. False statements made in signed affidavits before the Atomic Safety and Licensing Appeal Board March 19, 1984. False statements made to the Office of Nuclear Reactor Regulation in response to a GAP 10 CFR 2.206 petition dated March 1, 1984 (PG&E letter DCL-84-166, with attachments.)

The references to the Breismeister affidavit are a shorter address to the F.C. Breismeister, C.M. Neary, H.W. Karner, and R.D. Kerr affidavit dated March 19, 1984. The references to the Karner affidavit are a shorter address to the H.W. Karner and R.D. Etzler affidavit dated March 19, 1984. The text of the affidavit focuses on five areas of construction quality assurance.

1.) Welded studs: Thousands of welded studs may have been installed with no knowledge of the material's ability to withstand impact loading. The heat effected zone of the welded stud is indeterminate as to impact toughness from an uncontrolled purchase of steel and poor welding procedures.

2.) Inadequate welding procedures: The safety significance of this

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item is many welds made outside the scope of present procedures may not be sufficiently represented by testing done to date. Special problems limited to specific materials or material configurations had not been addressed before the welding was performed.

3.) Rupture restraints: Welded structural steel boxes designed to contain high energy breaks in pipe and contain pipe whip, may not function as designed due to falsified QA records generated during fabrication/installation.

4.) Adherence to procedures: The inability of QC inspectors to keep production working within the procedures was due to inadequate support from QC management. This resulted in a degradation of good working standards and a lowering of the total safety factor applied to the plant.

5.) Welding equipment standards: The significance of deficient welding machines means the welds were not as good as they could have been. Further, costs due to repairs was significantly increased because "stone age" welding equipment produced more welds requiring repair.

1. WELDED STUDS

1.1 The subject of welded studs and welded "standard fas-

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teners" that appear to be studs has been discussed extensively since January. Pullman, with PG&E 's knowledge and approval, has welded:

- ASTM A-307 grade B bolts
- ASTM A-325 high strength bolts (type 1)
- ASTM A-490 alloy steel, high strength bolts

1.2 All the installations were improper, performed without the benefit of an approved welding procedure, and constitute code violations to both ASME and AWS code specifications. Yet, each installation (there are thousands) was signed off by both contractor and utility QA groups as meeting all contract and code specifications.

1.3 More distressing, after the facts have been shown the utility still insists that the installations are proper and acceptable. Pullman has researched the A-307 grade B bolts and correctly found that this is an unacceptable practice, Pullman 's QA/QC Manager, Harold Karner, had deleted reference to A-307 Gr. B bolts in a Discrepancy Report sent to PG&E. This act can only be interpreted as some kind of cover-up of defective installations.

1.4 The use of A-307 Gr. B "Mechanical Fasteners" is improper because the bolts were not ordered by Pullman to be specifically made from A-36 steel. Heats of steel were not traced to each product batch because the distributor was not responsible for segregation of different heats when selling bolts. A-307 non-headed anchor bolts can be ordered to A-36 steel specifica-



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tions as stated in scope part (D) of ASTM-A-307-74 but, unfortunately, this was not done. Bolts purchased as mechanical fasteners without the proper metallurgical identity were made to appear as non-headed anchors when Pullman cut the head off the bolt and then presented the item in the field as a weldable stud. Contrary to Breismeister at 33, 34, and 35 such "Diablo made" welded studs are not P1 materials and cannot be welded with Pullman's present welding procedures. Contrary to PG&E's response to GAP's March 1, 2.206 Petition (Schuyler at 9, 30); A-307 Gr. B bol ordered "Mechanical Fasteners" with no supplementary requirements for checking limitations of carbon and manganese contents are not P1 materials.

2. INADEQUATE WELDING PROCEDURES

2.1 During my inspection activities, I came across many situations where welding procedures were being used outside the scope of their original limits. The most blatant violation of weld procedure limits was the welding of Rupture Restraints with WPS 7/8. As discussed by Breismeister at 9, changes in "essential variables" within the procedure require additional requalification measures. Also discussed by Breismeister at 12 iii) is the fact that joint design is an essential variable for the AWS D1.1 code. Breismeister states "both codes require that the allowed joint configurations be described in the WPS or in documents which are used with the WPS."

2.2 This is a false statement in that joint configurations (plural) require WPSS (plural). Not WPS (singular) as indicated by Breismeister. D1.1-83 paragraph 5.1.2 states "All prequali-

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fied joint welding procedures to be used shall be prepared by the manufacturer, fabricator, or contractor as written procedure specifications...." Note the use of plural "specifications" rather than the singular "specification." This is because all changes in essential variables requires additional WPS's to be written.

2.3 Using AWS D1.1 Procedure Qualification Criteria the only joint design qualified by the 7/8 procedure is the joint design used in the Procedure Qualification Record (PQR). Apparently, no one has ever tried to track the essential variable, joint design, through the PQR because the traceability gets lost. Using the four PQR 's used by WPS 7/8 all refer to the original joint dimension by pointing to sheet 2 of 10. Seeing how WPS 7/8 now has only 6 pages and page 2 shows eight different joint designs, the original qualified joint design per AWS requirements has been lost in the shuffle.

2.4 This means that the procedure 7/8 cannot be considered qualified within the AWS D1.1 code because the essential variable, joint design, has been lost. Further, Pullman and PG&E have attached additional joint designs on to the 7/8 procedure through the Welding Technique Specification (WTS) AWS 1.1. Breismeister himself states that changes to "essential variables" require requalification. Yet WPS 7/8 shows eight different joint designs and AWS 1.1 shows an additional nine joint designs all grouped under one procedure.

2.5 Breismeister states at 10 "If the WPS is written in accordance with restrictions within AWS D1.1, the WPS is termed

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"prequalified" and no PQR is needed." This statement is correct but Pullman's and PG&E's application of the above statement as a technique specification is wrong. Neither WPS 7/8 or AWS 1.1, separate or together, incorporate all aspects of AWS D1.1. One quick look at page three of WTS 1.1 will show that the AWS prequalified joint dimensions and tolerances have been subverted by PG&E's detail sketch. The point being--PG&E has taken authority reserved to AWS by AWS for determining prequalified status and given it to themselves. PG&E does not hold the authority to determine prequalified status over and above the code body.

2.6 Breismeister has made false statements at 42, 43, 45, and 51 all relating to the assumption that WPS 7/8 + AWS 1.1 exceeds AWS code requirements. Karner, similarly, makes false statements at 40 stating "There is no evidence that the use of WPS 7/8 on Rupture Restraints is inadequate." As pointed out to Russ Nolle, a QC supervisor, on Oct. 24 and Nov. 16 and Harold Karner, the QA/QC Manager, on Nov. 2 and Nov. 16 the use of 7/8 with or without WTS AWS 1.1 is a deficient procedure because changes in joint design are not adequately accounted for.

3. RUPTURE RESTRAINTS

3.1 The Diablo Canyon Rupture Restraint program is probably the most illustrative element of not just one failing in quality assurance but repeated, many, failings in construction quality assurance. The first failings started with the vendors who supplied the Rupture Restraints with nonconforming welds and over-size bolt holes. The repeated, numerous, failings that follow have been PG&E's incomplete resolutions to those same problems.

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3.2 Breismeister at 55 makes a false statement when he states "All older heavy section welds in Rupture Restraints were re-inspected beginning in 1979 and repaired, as necessary, to requirements in AWS D1.1." Breismeister at 121 provides the proof to dispute what he stated as fact at 55 "The program was based on magnetic particle and ultrasonic examinations of enough welds on installed Rupture Restraints to obtain an adequate sampling for thorough engineering analysis, evaluation, and corrective action." An adequate sampling does not constitute a 100% inspection as indicated by Breismeister at 55.

3.3 Contrary to the resolution of Nonconformance report DC2-80-RM-002 Pullman did not do a documented inspection of all bolted and welded connections and applicable documentation. I personally observed oversize bolt holes, nonconforming welds, and out of tolerance washers on Rupture Restraints as late as December of 1983.

3.4 It 's interesting to note that the 100% re-inspection of "all bolted and welded connections" was cut short as early as April 3, 1980 as evidenced by a M. E. Leppke memo presented as exhibit 7 to the Breismeister affidavit dated March 19, 1984. It should be pointed out here that the Leppke memo also instructs Pullman to deviate from AWS D1.1. Apparently Leppke holds Diablo Canyon above AWS requirements by stating "Pullman should use judgement when removing construction induced defects on shop welds. For example, it is not necessary to 'chase ' defects uncovered by grinding arc strikes." Compare this statement to AWS D1.1 paragraph 3.10 requirements "Cracks or blemishes caused by

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arc strikes shall be ground to a smooth contour and checked to ensure soundness."

3.5 Pullman QC Supervisor, Russ Nolle, also showed no interest in observing welds that did not conform to good workmanship standards. I informed Russ Nolle about welds under the unit two pressurizer that would be "absolutely unacceptable under any code." Russ told me that it wasn't Pullman's job to inspect another contractor's work. I agreed that this was a reasonable stance for the company but in the interest of making the plant right someone should fix it. Russ told me that it was another contractor's work, already accepted, and to stay within Pullman's scope of responsibility. As I remember it, Russ Nolle did not suggest to me to write a DR as noted at 124 of Breismeister affidavit.

3.6 Finally the statement by Schuyler in response to GAP, March 1, at 56 states "To the best of our knowledge, this established process of resolving each instance of an oversized bolt hole on a case-by-case basis has resulted in the resolution of all concerns involving oversized bolt holes, either by repair or by member replacement." This statement is totally false in light of my own inspection experience on Rupture Restraints in late 1983. Oversized bolt holes in rupture restraints were not being reported nor was corrective action being taken to address the problem. I was severely reprimanded for an accidental reinspection and rejection of some other inspector's work where unreported oversized holes existed in 1983.

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4. ADHERENCE TO PROCEDURES

4.1 As a welding inspector at Diablo Canyon I was required to check the welders ' adherence to the procedures. One such procedure using the GTAW process requires an argon shielding gas flow over the weld of 20 cubic feet per hour (CFH). A welder was getting ready to start the process when I noticed the flow meter that he had with him was not attached at or near his torch. I requested that the flow meter be attached so that the inspector could verify compliance to the procedure. The welder refused the inspector 's request, and when a QC supervisor was requested to help the inspector, the QC supervisor failed to support the inspector 's request.

4.2 Breismeister at 98 and 99 makes two false statements in response to the incident. At 98 "At no time did Pullman QC management establish a policy of deferring to construction (production personnel) when they [sic] voiced an objection." At 99 "...the contract does not require checks of argon gas flow. The contract requires regulators, but not flow meters."

4.3 This incident is enlightening in that it shows the ignorance of not only the QC supervisor but the QC manager, welding engineers of both contractor and licensee, and the top Bechtel manager of Research and Engineering. I find this distressing because all the above mentioned individuals have heavy responsibilities toward insuring the plant is constructed to the commitments of code, contract, FSAR, and Federal Regulations.

4.4 The Welding Procedure Qualification (WPS) is the document that field engineers, welders and QC inspectors usually have

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to give them direction in the field. The WPS for the weld in question required a 20 CFH minimum flow rate of argon gas. My job as an inspector should have been to verify compliance to the WPS.

4.5) The welder refused to mount the flow meter- at or near the torch. The welder wanted the inspector to run up two elevations to the 140 ' deck and check an unspecified gas bottle in an unspecified location. The gas bottle could have been one of many bottles on the 140 deck because there were many welders in containment.

4.6 The flow rate at the bottle did not necessarily mean the flow at the torch would be the same due to possible junctions, cracks, crimps, and holes in the long hose. The flow rate of the gas at the bottle is meaningless. The flow rate should properly be measured at or near the torch. This was explained to the welder and the QC Supervisor at the time of confrontation. The QC Supervisor denied my request to mount a second, readily available, flow meter at the torch and in doing so prevented me from implementing the QA program.

4.7 Mr. Breismeister states the contract does not require checks of argon gas flow. Mr. Breismeister is wrong. Contract 8833XR requires that all Rupture Restraint welding be performed to the AWS code. The AWS code requires that all welding be performed within the stated parameters of the WPS. The AWS code further requires the inspector to verify that welding does conform to the WPS. The contract requires the inspector to check not only the shielding gas flow but the voltage, current, travel speed and any other process parameters that effect the quality of the deposited weld metal.

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5. WELDING EQUIPMENT STANDARDS

5.1 In January of 1984, I reported to the USNRC the use of deficient GTAW welding machines by Pullman Power Products Corporation. at Diablo Canyon Nuclear Power Plant. The licensee has responded to the charge by stating (Breismeister at 82) "...Pullman has never violated the contract, since PG&E supplies the welding equipment as allowed by contract 8711...."

5.2 Breismeister failed to supply applicable documentation of the stated paragraphs of contract specification 8711 showing how the contractor was relieved of its responsibility to use adequate, dated, welding equipment as described in paragraph 7.10.1. Since the Breismeister affidavit choose not to present the facts, one can only speculate why the utility choose to withhold the information.

5.3) The Breismeister affidavit references paragraph 3.21 and I related statements found in paragraph 7.10.1, bor' from section 1 of contract specification 8711. Paragraph 7.10.1 stated all GTAW welding shall be performed with a power supply equipped with:

- 1.) High frequency for all initiation.
- 2.) Rheostat for stepless control of current.

5.4 I was forced to bring the matter to the NRC 's attention because both Pullman and PG&E could not resolve the issue within their respective QA organizations. After my discovery of the contract requirements in September of 1983, I wrote a memo to Pullman 's QA/QC Manager, Harold Karner. Mr. Karner was unwilling to put his response on paper but did tell me verbally "If PG&E doesn 't enforce the contract Pullman doesn 't intend to."

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5.5 Mr. Karner, not surprisingly, has apparently had a lapse of memory regarding our conversation and now denies ever making such a statement (Brmr at 86.) Further, Mr. Karner now states that he contacted PG&E 's QA Engineer Russ Taylor soon after I contacted Mr. Karner. This appears to be a false statement because I contacted Mr. Taylor with my concerns after being referred to him by another PG&E employee, Dave Stupi. From Mr. Taylor 's reaction, it was apparent that as late as Oct. 25, 1983, he had not been contacted by Karner about the subject because he requested several days to become familiar with the subject.

5.6 Subsequently, Mr. Russ Taylor agreed that the contract stated all GTAW welding machines required the additional controls already mentioned. I asked what did PG&E intend to do about it since Pullman didn 't seem to care. Russ Taylor stated that the contract would be changed.

5.7 This series of discussions does not show proper handling of the matter as alleged by Breismeister (at 87), but rather a pass the buck attitude resulting in a change of the contract instead of an upgrade of the welding equipment to the specifications requirements. Breismeister stated at 87 "It is also clear that Mr. Lockert had gone far from normal channels in pursuing this baseless issue...." The actions I took on the matter dealt with people that went up the ladder of responsibility. The contractor QA Manager had aptly expressed himself and it was clear to me that he had no corrective action in mind. Next, I went to

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the licensee 's welding engineering representatives who were unwilling or unable to correct a contract violation. Final resolution of the matter resulted in a verbal promise to change the contract six years too late. This hardly shows a functioning QA system. Breismeister 's answer that paragraph 3.21 relieves PG&E of its contractual commitments was not shown to be true.

I have read the above 13 page affidavit and it is true and correct to the best of my knowledge and belief.

Steven Lockert

Steven Lockert

STATE OF CALIFORNIA)
)ss.
COUNTY OF SAN LUIS OBISPO)

On June 7, 1984, before me, a Notary Public in and for said County, personally appeared STEVEN LOCKERT, known to me and proven on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument, and acknowledged to me that he signed the same.

WITNESS my hand and official seal.



Lisa R. Wenter

Notary Public in and for
said County and State.