

CASE No.5-82-019

**United States  
Nuclear Regulatory Commission**



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# **Report of Investigation**

**Palo Verde Nuclear Generating Station:**

**Alleged Construction Deficiencies Regarding Piping  
Systems**

**Office of Investigations**

Reported by OI:  
RV

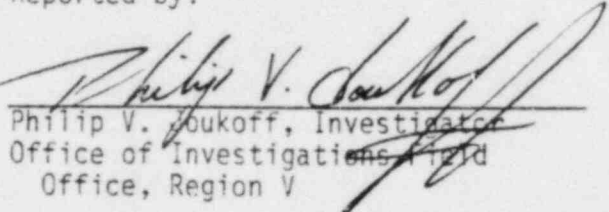
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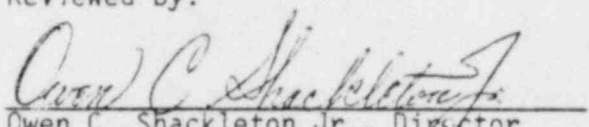
Title: PALO VERDE NUCLEAR GENERATING STATION  
ALLEGED CONSTRUCTION DEFICIENCIES REGARDING PIPING  
SYSTEMS

Licensee:	Case Number:	5-82-019
Arizona Public Service Company P. O. Box 52034 Phoenix, Arizona 85072	Report Date:	June 19, 1985
	Control Office:	OI:RV
	Status:	CLOSED

Reported by:

  
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Office of Investigations Field  
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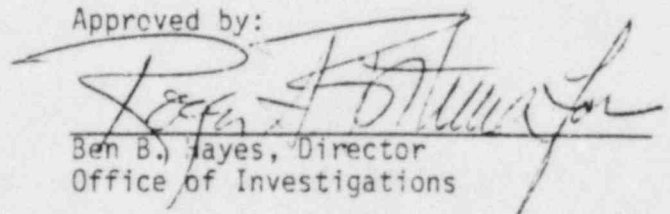
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## SUMMARY

This investigation was initiated to determine the validity and the circumstances involving concerns expressed by a former pipefitter (hereinafter termed the alleged) employed by the Bechtel Power Corporation (BPC) at the Palo Verde Nuclear Generating Station (PVNGS), Maricopa County, Arizona. The alleged had worked for BPC for 2 years and 2 months from approximately March 1980 until May 1982.

After terminating his employment at PVNGS, the alleged, in June 1982, wrote letters to Steven BECHTEL, Chairman of the Board, BPC; the Pipefitters International Union; and the Pipefitters Union Local in Phoenix, Arizona; demanding a total of \$20,000,000 as compensation for on-the-job injuries the alleged stated that the alleged had received while employed at PVNGS. The alleged subsequently withdrew the demands made of the Pipefitters Union Local in Phoenix, Arizona and issued a public apology in the form of a classified newspaper advertisement, which appeared in the Arizona Republic Newspaper.

By letter dated August 1, 1982, the alleged forwarded to the U.S. NRC in Washington, D.C. the alleged's concerns regarding PVNGS. As a result, the alleged was located and interviewed by two U.S. NRC investigators on December 20, 1982 in Corpus Christi, Texas.

During the course of the interview, the alleged expressed concerns regarding the activities of Arizona Public Service (APS), the licensee; BPC, and the U.S. NRC at PVNGS. The alleged's concerns, which are hereinafter referred to as allegations, were as follows:

- Allegation No. 1. Inside the containment Building of Unit 1, a 14-inch stainless steel pipe that connects to a Safety Injection Tank 2A is made of unacceptable metal.
- Allegation No. 2. At the 40'-0" elevation of the Auxiliary Building of Unit 1, there is a four-inch drain line in which there exists an undocumented or "hidden" weld.
- Allegation No. 3. At the 100' elevation of the Radwaste Building of Unit 1, there is a pump that the alleged thought would be used to pump "rad waste" material. The alleged overheard a conversation in which the installation of a catch basin was being discussed for the packing gland of this pump that would catch leakage and drain it to a floor drain. The alleged stated that this catch basin and a leaking packing gland did not seem proper for a pump moving "rad waste."
- Allegation No. 4. The pipe supports for large piping in the Main Steam Support Structure (MSSS) appeared, to the alleged, to be welded to inadequate (only one-inch thick) steel imbed plates.

- Allegation No. 5. At the 156' elevation (roof top) of the Turbine Building and the Control Building of Unit 1, the alleged stated that there are "cold laminations" in some of the ten-inch pipes that connect to "chillers" located on this roof.
- Allegation No. 6. In the Radwaste Building of Unit 1, the alleged stated that there is a pipe support that is welded across the width of a large I beam. The alleged advised that he had been taught not to weld across a beam as this weakens the beam.
- Allegation No. 7. The alleged stated that he was critical of inspections performed by the NRC at PVNGS since the NRC inspectors rely on documentation provided by BPC and do not talk with individual workers.
- Allegation No. 8. The alleged advised that while employed at PVNGS, both drugs and alcohol were openly sold and used on the site.
- Allegation No. 9. The alleged expressed concerns regarding the location of PVNGS as there are two old volcanoes located near the site.
- Allegation No. 10. The alleged stated that while working on a large pipe at PVNGS (approximately 30 inches in diameter), the alleged was directed by a foreman to "cold spring" the piping system to achieve the correct "fit-up." The alleged advised that it was necessary to "cold spring" the pipe as a 90° elbow that was previously installed on the pipe was not straight. According to the alleged, the foreman did not want the elbow removed and reworked so that it would be straight. The alleged added that it was while working on this pipe that the alleged was seriously injured.

Allegation numbers 1 through 9 are contained in a signed sworn statement executed by the alleged. Allegation number 10 was provided verbally to U.S. NRC investigators by the alleged after the alleged had signed the statement.

Allegation numbers 1 through 6, 9, and 10 were determined to be issues of a technical nature, and were referred to the Regional Administrator, Region V (RV), U. S. NRC, for their evaluation and possible inspection and enforcement action. The results of these inspections are documented in U.S. NRC Inspection Report Nos. 50-528/83-02, 50-528/83-11, 50-528/83-17, 50-528/84-36, and 50-528/84-65.

In January 1983, after initial inspection by RV inspectors, RV requested that the Office of Investigations Field Office, Region V (OI:RV) provide assistance to the RV inspectors in determining the circumstances surrounding



the completion of an undocumented Quality Class 1 weld, that the RV inspectors had located, which was completed in violation of NRC rules/regulations (Allegation No. 2). RV further requested the assistance of OI:RV to ascertain whether or not welder/pipefitter supervision directed the improper installation of Quality Class 1 piping by directing that piping be elastically deformed or "cold sprung" during installation (Allegation No. 10). RV inspectors had confirmed, from their inspection, that the alleged "cold springing" had occurred.

As a result of the above, the Director, OI:RV, directed that an investigation be conducted into Allegation Numbers 2, 7, 8, and 10.

In respect to Allegation Number 2, investigation determined that two BPC craft workers, a welder and a pipefitter, completed the weld in question. The two workers completed signed sworn statements attesting that they completed the weld of their own volition to correct a mistake they had made, and were not directed to do so by any APS/BPC supervisors or APS/BPC management representatives. Investigation further revealed this incident to be an isolated case; however, the investigation also uncovered that a BPC foreman may have had knowledge, after the fact, that the weld in question had been completed and did not take any corrective action. The foreman in question was interviewed twice by OI:RV investigators, but did not admit to any knowledge of the weld in question. The foreman in question subsequently retained an attorney who would not allow further OI:RV contact with the foreman without the foreman first being granted immunity from prosecution by the U.S. Department of Justice (DOJ). During the investigation of this allegation, a total of 15 craft workers and craft worker supervisors were interviewed, and no evidence of the existence of any other similar welds was developed.

In respect to Allegation Number 7, the alleged stated that he was critical of the methods used by NRC inspectors at PVNGS (i.e., reviewing documentation provided by APS/BPC and not talking with craft workers). The alleged added that craft workers at PVNGS are directed by their supervisors not to talk with NRC inspectors. The alleged did not, however, make any allegations of wrongdoing on the part of any NRC inspectors. Investigation into this concern revealed that both the NRC regionally based and NRC resident inspector(s) routinely talk with craft workers during their inspections. The NRC inspectors that inspect at PVNGS further advised that they conduct their inspections at times alone and sometimes accompanied by APS/BPC representatives, and that the high majority of their inspections are conducted without prior notification to APS or BPC. During the course of this investigation, 15 craft workers and craft worker supervisors were interviewed and it could not be substantiated that craft workers were directed not to talk with NRC inspectors.

In respect to Allegation Number 8, the alleged stated that both controlled drugs and alcohol were openly sold and used at PVNGS. The alleged was advised that the NRC was concerned with the practice of such illicit activities on a nuclear construction site; however, the NRC had

no jurisdiction in such matters since they are the responsibility of the local law enforcement agency in the area in which a plant is located. Therefore, in accordance with current NRC practices, all available information regarding drugs was provided to the licensee, APS, for appropriate action. No further action was taken by the Office of Investigations concerning Allegation Number 8.

In respect to Allegation Number 10, the alleged stated that while employed at PVNGS, he/she was directed by a supervisor to "cold spring" or plastically deform a large 30-inch pipe in violation of normal installation procedures. Initial inspection by Region V inspectors determined that the alleged "cold springing" had occurred. Initial investigation by OI investigators determined that the alleged's foreman had ordered the "cold springing" as was alleged. The foreman could not recall whether or not he had the "cold springing" approved by BPC engineering prior to directing that it be completed. The foreman further stated that none of his superiors directed him to order the "cold springing." On January 25, 1985, RV issued their final inspection report on this allegation concluding that although some "cold springing" did occur, the "as-found" conditions of those piping systems analyzed were technically acceptable.

## ACCOUNTABILITY

The following portions of this ROI (Case No. 5-82-019) will not be included in the material placed in the PDR. They consist of pages 5 through 23.

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## DETAILS OF INVESTIGATION

### Purpose of Investigation

The purpose of this investigation was to determine the circumstances surrounding the completion of an undocumented Quality Class 1 weld at the Palo Verde Nuclear Generating Station (PVNGS), Arizona, by welders/-pipefitters employed by the Bechtel Power Corporation (BPC). This investigation was further conducted to ascertain whether or not welder/-pipefitter supervision (i.e., foreman, general foreman, and superintendents) directed the improper installation of Quality Class 1 piping by directing that piping be elastically deformed or "cold sprung" during installation.

### Background

The Palo Verde Nuclear Generating Station (PVNGS) consists of three nuclear power units under construction. PVNGS is located in the desert region 36 miles west of the western boundary of Phoenix, Arizona. The construction permits were issued to the Arizona Public Service Company (APS) by the U.S. Nuclear Regulatory Commission (NRC) for PVNGS 1, 2, and 3 on May 25, 1976. The Bechtel Power Corporation (BPC) is the architect-engineer and constructor for these three pressure water reactor plants.

By letter dated August 1, 1982, the Reverend Dewey E. WILLIAMS, a former pipefitter employed by BPC, forwarded to the NRC in Washington, D.C., his concerns regarding improper construction practices at PVNGS. A copy of this letter was forwarded to U.S. NRC Region V (RV) and also the U.S. NRC Office of Investigations Field Office, Region V (OI:RV), for inspection/-investigation (see Exhibit 1).

Prior to receipt of this letter, OI:RV had been verbally advised, during July 1982, by Arizona Public Service (APS) personnel, that a Reverend Dewey E. WILLIAMS had sent letters to Mr. Steven D. BECHTEL, Chairman of the Board, Bechtel Power Corporation; Mr. M. WARD, President, Pipefitters International Union; and Mr. Ray BROOKS, Business Manager, Pipefitters Union Local 469 (Phoenix, Arizona); in which WILLIAMS made allegations concerning PVNGS and a workman's compensation claim. APS personnel at that time advised that they were investigating these allegations.

Copies of these letters were provided to OI:RV by Mr. William IDE, Site QA Supervisor, APS (see Exhibit 2).

On December 20, 1982, WILLIAMS was interviewed by OI:RV Investigators O. C. SHACKLETON and P. V. JOUKOFF in Corpus Christi, Texas, and a signed sworn statement was obtained, which outlined WILLIAMS' concerns (see Exhibit 3). In addition to the statement, WILLIAMS made one verbal allegation to the Investigators. A review of all the allegations made by WILLIAMS determined that of a total of ten allegations, eight were of a technical nature. These eight allegations were forwarded to RV for inspection. The remaining two allegations, one pertaining to the methodology of inspections by NRC (Allegation No. 7), and the other regarding alcohol/narcotics usage at PVNGS (Allegation No. 8), were

retained by OI:RV for investigation and/or referral to the appropriate office.

In January 1983, after initial inspection by RV inspectors, RV requested that OI:RV provide assistance to the RV inspectors in determining the circumstances surrounding the completion of an undocumented Quality Class 1 weld, that the RV inspectors had located, which was completed in violation of NRC rules/ regulations (Allegation No. 2). RV further requested the assistance of OI:RV to ascertain whether or not welder/- pipefitter supervision directed the improper installation of Quality Class 1 piping by directing that piping be elastically deformed or "cold sprung" during installation (Allegation No. 10). RV inspectors had confirmed, from their inspection, that the alleged "cold springing" had occurred.

As a result of the above, the Director, OI:RV, directed that an investigation be conducted into Allegation Numbers 2, 7, 8, and 10.

Allegation No. 2 - Existence of an Unauthorized and Undocumented Quality Class 1 Weld

Interview of Allegor

On December 20, 1982, between 1900 and 2110 hours, Dewey E. WILLIAMS, a former pipefitter employed by the Bechtel Power Corporation (BPC) at the Palo Verde Nuclear Generating Station (PVNGS), was interviewed at the Sandy Shores Motel, 3200 Surfside Blvd., Corpus Christi, Texas, by Investigators O. C. SHACKLETON and P. V. JOUKOFF. During the interview, WILLIAMS furnished the following information regarding this allegation:

WILLIAMS stated that in approximately May 1982, a welder employed at PVNGS by BPC by the name of Ken WARREN completed welding on a four-inch drain line located at the 40' elevation of the Auxiliary Building of Unit 1. WILLIAMS advised that during the process of completing this welding, WARREN fabricated a short piece of pipe, commonly called a "pup" piece, which WARREN welded into the line. WILLIAMS stated that WARREN further buffed and ground the pipe to hide the weld. WILLIAMS added that WARREN did the above act without authorization and that x-ray analysis of the weld was not done. WILLIAMS averred that the insertion of such a "pup" piece and the grinding and buffing of the weld to make it not identifiable was contrary to construction practices he had learned for nuclear power plants.

Investigator's Note: Welding of an unauthorized and undocumented Quality Class 1 weld in a nuclear power plant is contrary to regulatory requirements--specifically 10 CFR 50, Appendix B, Criterion V, which states, in part: "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with their instructions, procedures, or drawings...."

Information Obtained from Paul P. NARBUT, Reactor Inspector, U.S. NRC

On January 24, 1983, Paul P. NARBUT, Reactor Inspector, U.S. NRC, RV, contacted Investigator P. V. JOUKOFF and advised that during the week of January 17-21, 1983, he physically inspected the drain line involved in this allegation while at PVNGS. NARBUT stated that his inspection revealed that an unauthorized and undocumented Quality Class 1 weld had been completed as WILLIAMS alleged.

NARBUT advised that from his review of BPC welder and welding records, he determined the names of 12 engineers, welders, and quality control (QC) inspectors that were involved with the drain line. NARBUT stated that his interviews of all of these individuals failed to determine what person(s) willfully directed and/or completed the unauthorized and undocumented weld in question. After review of the violation by the Director, OI:RV, an investigation was initiated.

Interview of Kenneth Wayne WARREN

On January 19, 1983, between 0800 and 0945 hours, Kenneth Wayne WARREN, a welder employed by BPC at PVNGS, was interviewed at the NRC Resident Inspector's office at the Palo Verde site by Investigator P. V. JOUKOFF. During this interview, WARREN furnished substantially the following information regarding this allegation:

WARREN admitted that he and the pipefitter that was working with him during February 1982, Robert JANTHO, completed the undocumented Quality Class 1 weld that is involved in this case. WARREN stated that he and JANTHO did the weld to "fix" a mistake that they had made. WARREN further stated that he and JANTHO did the weld of their own volition and were not directed to complete the weld by anyone. WARREN completed a signed sworn statement regarding his involvement in this weld (see Exhibit 4).

Investigator's Note: During WARREN's interview on January 19, 1983, WARREN requested that his name be kept confidential and a confidentiality agreement was executed (see Exhibit 5). On January 20, 1982, while executing his signed sworn statement, WARREN stated to Investigators E. J. POWER and P. V. JOUKOFF that he had told his superintendent at PVNGS, Robert LONG, that he had admitted to the NRC that he had made the undocumented weld in question. WARREN was advised by JOUKOFF that due to this act on his part, the NRC will consider him to have waived his right to confidentiality.

Interview of Robert E. JANTHO

On February 3, 1983, between 1830 and 1915 hours, Robert E. JANTHO, a pipefitter employed by the BPC at PVNGS, was interviewed at his residence, 5425 E. Terry Drive, Phoenix, Arizona, by Investigators O. C. SHACKLETON and P. V. JOUKOFF. During this interview, JANTHO furnished substantially the following information regarding this allegation:



JANTHO admitted that he and Kenneth WARREN, the welder with whom he was working in February 1982, completed the undocumented Quality Class 1 weld that is involved in this case. JANTHO stated that he and WARREN did the weld to "fix" a mistake that JANTHO had made while cutting the pipe that they were working on. JANTHO further stated that he and WARREN did the weld of their own volition and that no supervisors or anyone else told them to do it. JANTHO added that his crew foreman, James PAGE, was aware that he and WARREN had completed the weld in question.

JANTHO completed a signed sworn statement regarding his involvement in this weld (see Exhibit 6).

#### Interview of James R. PAGE

On January 19, 1983, between 1040 and 1120 hours, and on April 4, 1983, between 1410 and 1515 hours, James R. PAGE, a welder and former foreman employed by BPC at the PVNGS, was interviewed at the NRC Resident Inspector's office at the Palo Verde site. The first interview was conducted by Investigator P. V. JOUKOFF while the second interview was conducted by Investigators E. J. POWER and P. V. JOUKOFF. During the course of these two interviews, PAGE furnished substantially the following information regarding this allegation:

PAGE was questioned regarding the four-inch drain line located at the 40'-0" elevation of the Auxiliary Building, east side, of Unit 1 at PVNGS. PAGE stated that he was contacted by NRC inspectors in the early part of 1983 regarding this drain line. PAGE added that he could recall the "tees" that were used on this job as they originally would not fit in the line and had to be modified by the APS machine shop at the site in order to be used. Other than remembering the "tees," PAGE advised that he could recall little else about this job. PAGE did recall that at the time this job was done, he was a foreman and did have workers on his crew "in and out" of the area, but PAGE could recall little else about the job.

After being shown BPC time cards regarding this job, PAGE recalled that two workers on his crew, Kenneth WARREN and Robert JANTHO, worked on the job. PAGE added that he thought that his general foreman, Paris ROGERS, took him down to the area and showed him the job originally; however, the only four-inch "tees" that were available on the site were schedule 40, and the piping system involved required scheduled 10 "tees," according to PAGE. Consequently, PAGE recalled, the "tees" were sent over to the APS machine shop located on the site where they were counter-bored to fit. PAGE added that he recalled there being a "rush" to get the job done; however, it took quite a while for the machine shop to complete the counter-boring and return the "tees" for installation.

PAGE was questioned regarding the fact that BPC time sheets indicate that WARREN and JANTHO spent a total of 44 man hours working on this job without apparently completing a great deal of work. PAGE agreed that it was a long time to spend on such a job and stated that when the job was in progress, he was not cognizant of the large number of man hours being expended.

PAGE stated that during the time period that this job was in progress, he was a foreman and, as a usual rule, would check on each of his crews once in the morning and once in the afternoon. PAGE recalled that he checked on WARREN and JANTHO while they were doing this job, but did not recall observing any peculiar work being completed such as WARREN and JANTHO inserting a "pup" piece or working on an undocumented weld. PAGE, in response to questioning, stated that he did not shake his head in a negative manner while looking at the work that WARREN and JANTHO were doing as JANTHO had stated in his signed sworn statement.

PAGE was questioned regarding the number of hours on the BPC time sheets that he charged to the job in question. PAGE advised that it was and is customary practice to charge a foreman's time basically in an evenly distributed manner among the jobs that workers on his crew were doing on any particular day. PAGE added that a foreman's time is not charged to the specific job on an actual basis, so he may not have spent numerous hours on this job as the time sheets reflect.

PAGE stated that the first time that he became aware of the undocumented weld in question was in early 1983. According to PAGE, a member of his work car pool told PAGE that WARREN had been called in to see a U.S. NRC representative regarding an undocumented Quality Class 1 weld. PAGE reiterated that prior to this instance, he had no knowledge of the weld in question.

PAGE was questioned regarding his knowledge of any other undocumented Quality Class 1 welds at PVNGS and he stated that he had never done such welds, had never seen anyone else do such welds, had never directed anyone to do such welds, nor did he have any knowledge of such welds in any of the units at PVNGS. PAGE added that, to the best of his knowledge, none of his supervisors had any knowledge of this undocumented Quality Class 1 weld.

Investigator's Note: As a result of the two interviews of PAGE, a draft signed sworn statement was prepared for review, possible modification, and signature of PAGE (see Exhibit 7). On April 6, 1983, in the presence of Investigator P. V. JOUKOFF, PAGE reviewed the draft statement and stated he would not sign the same without it first being reviewed by an attorney that he had retained. PAGE was asked by JOUKOFF if the statement was essentially correct as written and PAGE refused to answer stating, "Call my attorney." PAGE then supplied the name and telephone number of his attorney, a Ross ANDERSON of Phoenix, Arizona.

Contact of Ross ANDERSON, Attorney for James R. PAGE

On April 6, 1983, Investigator P. V. JOUKOFF telephonically contacted Ross ANDERSON. ANDERSON stated that he had been retained by PAGE to act as his legal counsel. ANDERSON further stated that he did not want PAGE to execute a signed sworn statement or talk further with NRC investigators without ANDERSON reviewing the statement and/or being present. ANDERSON added that he wanted immunity from prosecution for PAGE by the Department of Justice prior to any further interviews.

Investigator's Note: On April 8, 1983, a copy of the draft statement of James R. PAGE was hand delivered to ANDERSON's office in Phoenix, Arizona by Investigator P. V. JOUKOFF for ANDERSON's review. After numerous telephone contacts, ANDERSON finally supplied, on August 1, 1983, a revised signed statement for PAGE (see Exhibit 8).

Review of Revised Statement of James R. PAGE

A review of the revised signed statement of PAGE submitted by ANDERSON shows that certain information provided by PAGE during his interviews (see Exhibit 9) with OI:RV investigators and incorporated in his draft statement had been eliminated. Specifically, the following two references to PAGE having knowledge of the unauthorized and undocumented Quality Class 1 weld at the time it was completed were eliminated from the revised signed statement:

1. "I recall that I did check on WARREN and JANTHO while they were working on this job, but I know I didn't see anything peculiar being done. I know that I didn't see either WARREN or JANTHO inserting or welding a "pup" piece or working on an undocumented Quality Class 1 weld. I further know that I did not go into the area where WARREN and JANTHO were working and look at their work and then shake my head in a negative manner."
2. "...nor did I have any knowledge that it had been done until I heard on the way to work in the early part of 1983 from a member of my car pool that WARREN had been called in to see a U.S. NRC representative about an undocumented Quality Class 1 weld."

Investigator's Notes:

1. The elimination of these relevant passages from the signed statement of PAGE raises the question that PAGE may have supplied false/-misleading information to U.S. NRC Investigators E. J. POWER and P. V. JOUKOFF during his two interviews. During both of the interviews, PAGE stated that he had no knowledge of the weld in question until the U.S. NRC started inquiries into the matter although JANTHO, in his sworn statement, stated that PAGE was aware of what transpired when the weld was being done.
2. When PAGE's attorney, ANDERSON, was contacted by Investigator P. V. JOUKOFF on April 6, 1983, ANDERSON stated that he would not allow further interview of PAGE without immunity from prosecution being granted by the U.S. Department of Justice. Consequently, the issue of PAGE's knowledge/involvement in the completion of the weld could not be pursued further during this investigation.

Interviews of Other Involved Individuals

During the course of the investigation of this allegation, the following additional individuals were also interviewed:

<u>Name</u>	<u>Title</u>	<u>Employer</u>	<u>Results of Interview Location</u>
Frederick Bernard HERMAN	Welder	BPC	Exhibit 10
Abraham (NMN) ROSIN	Pipefitter	BPC	Exhibit 11
Gregory Finis MILLS	Welder	BPC	Exhibit 12
Charles Allen NELSON	QC Inspector	BPC	Exhibit 13
Samuel John GRIGGS	QC Engineer	BPC	Exhibit 14
Nicholas Jack MAVROLAS	Welder	BPC	Exhibit 15
David Matthew BENNETT	Welder	BPC	Exhibit 16
Louis Oran FREEMAN	Pipefitter	BPC	Exhibit 17
Paris (NMN) ROGERS	General Foreman	BPC	Exhibit 18
Lloyd Wayne HESTAND	Pipefitter (former foreman)	BPC	Exhibit 19
Robert Heinz LONG	Superintendent (piping)	BPC	Exhibit 20
Nelson R. NOFSINGER	Pipefitter (former General Foreman)	BPC	Exhibit 21

The overall results of these interviews and the signed sworn statements executed revealed no evidence that APS or BPC management or supervision directed that the unauthorized and undocumented weld in question be completed. Also, the interviews developed no evidence that other similar welds exist at PVNGS.

Furthermore, no evidence was revealed that APS or BPC management or supervision had knowledge that the weld in question was completed with the possible exception of PAGE, whose testimony could not be pursued further without immunity from prosecution being granted by the U.S. Department of Justice.

Based upon the above facts, further investigation into the issue of PAGE's knowledge of the weld prior to the U.S. NRC inquiry could not be pursued at the time of this investigation.



Allegation No. 7 - NRC Inspectors Rely on Documentation Provided by BPC and do not Talk with Workers; Workers Told not to Talk to NRC Inspectors

Interview of Allegor

On December 20, 1982, between 1900 and 2110 hours, Dewey E. WILLIAMS, a former pipefitter employed by BPC at PVNGS, was interviewed at the Sandy Shores Motel, 3200 Surfside Blvd., Corpus Christi, Texas, by Investigators O. C. SHACKLETON and P. V. JOUKOFF. During this interview, WILLIAMS furnished the following information regarding this allegation:

WILLIAMS stated that he was critical of NRC inspections made at PVNGS as the NRC inspectors rely on documentation presented by BPC and do not talk with individual workers. WILLIAMS further averred that workers at PVNGS are told by their supervisors not to talk with NRC inspectors. WILLIAMS added, however, that he was not aware of any falsified documents at PVNGS, nor did WILLIAMS allege that any specific NPC inspector was derelict in his duties.

Interviews of PVNGS "Mechanics" (i.e., Non-Supervisory Craft Workers)

During the course of the investigation of this allegation, the following non-supervisory craft workers and Quality Control (QC) inspectors were interviewed:

<u>Name</u>	<u>Title</u>	<u>Employer</u>	<u>Results of Interview or Signed Sworn Statement Location</u>
Frederick Bernard HERMAN	Welder	BPC	Exhibit 10
Abraham (NMN) ROSIN	Pipefitter	BPC	Exhibit 11
Gregory Finis MILLS	Welder	BPC	Exhibit 12
Charles Allen NELSON	QC Inspector	BPC	Exhibit 13
Samuel John GRIGGS	QC Engineer	BPC	Exhibit 14
Nicholas Jack MAVROLAS	Welder	BPC	Exhibit 15
David Matthew BENNETT	Welder	BPC	Exhibit 16
Louis Oran FREEMAN	Pipefitter	BPC	Exhibit 17
Kenneth Wayne WARREN	Welder	BPC	Exhibit 4
Robert E. JANTHO	Pipefitter	BPC	Exhibit 6

All of these individuals, during the course of their interviews, were asked a standard question commonly utilized by OI:RV during interviews. This question, in essence, was "has anyone ever directed or coached you on how to respond to questions posed by NRC inspectors or investigators." All the above individuals replied that they had not been so directed or coached.

### Interviews of PVNGS Supervisory Craft Personnel

During the course of investigation of this allegation, the following supervisory workers were also interviewed:

<u>Name</u>	<u>Title</u>	<u>Employer</u>	<u>Results of Interview Location</u>
Paris (NMN) ROGERS	General Foreman	BPC	Exhibit 18
Lloyd Wayne HESTAND	Former Foreman	BPC	Exhibit 19
Robert Heinz LONG	Superintendent	BPC	Exhibit 20
Nelson R. NOFSINGER	Former General Foreman	BPC	Exhibit 21
James R. PAGE	Former Foreman	BPC	Exhibit 9

All of these individuals were asked, during their interviews, if they had ever directed their subordinates not to talk with NRC inspectors or investigators, and all of the individuals stated that they had never done so.

### Interview of Lucian E. VORDERBRUEGGEN, Senior U.S. NRC Resident Inspector, PVNGS

On July 13, 1983, between 0730 and 0800 hours, Lucian E. VORDERBRUEGGEN, Senior U.S. NRC Resident Inspector (Construction) at PVNGS, was interviewed at the U.S. NRC Region V office by Investigator P. V. JOUKOFF. During this interview, VORDERBRUEGGEN furnished the following information regarding this allegation:

He stated that during the approximately three and one half years that he had inspected at PVNGS, he has not relied on documentation provided by APS, BPC, or any site contractor. VORDERBRUEGGEN advised that he routinely conducts unannounced field inspections of construction activities during which he physically inspects plant hardware during and after installation in addition to reviewing construction documentation.

VORDERBRUEGGEN stated that during his field inspection, he talks with construction workers, QC inspectors, and construction supervision to obtain their views of the construction process. VORDERBRUEGGEN advised that during the time he has inspected PVNGS, he has never heard of any field supervision directing their subordinates not to talk with him or other NRC representatives.

Interview of James H. ECKHARDT, Former Principal U.S. NRC Project Construction Inspector, PVNGS

On June 23, 1983, from 1510 to 1540 hours, James H. ECKHARDT, a principal project construction inspector employed by the U.S. NRC, was interviewed by Investigator P. V. JOUKOFF. The interview was conducted at the U.S. NRC Region V office. During this interview, ECKHARDT furnished the following information regarding this allegation.

ECKHARDT stated that he was the principal regionally based U.S. NRC inspector for PVNGS for approximately three years. ECKHARDT advised that during this time, he conducted routine unannounced construction inspections at PVNGS.

ECKHARDT stated that while conducting his inspection, he would only on rare occasions give any advance notice to APS or BPC of what items he was going to inspect. ECKHARDT added that normally, an APS or BPC engineer would accompany him on inspections to verify first hand when a problem was discovered.

ECKHARDT averred that during his inspections, he has routinely held discussions with craft workers, craft supervisors, and engineers regarding their work activities.

Interview of Paul P. NARBUT, Principal U.S. NRC Project Construction Inspector, PVNGS

On June 24, 1983, between 1415 and 1505 hours, Paul P. NARBUT, principal regionally based U.S. NRC project construction inspector for PVNGS, was interviewed by Investigator P. V. JOUKOFF. The interview was conducted at the U.S. NRC Region V office. During this interview, NARBUT furnished substantially the following information:

NARBUT stated that he is currently the principal regionally based U.S. NRC inspector for PVNGS. NARBUT advised that he had held this position since November 1982 and that during this time, he conducted routine unannounced construction inspections at PVNGS.

NARBUT stated that while conducting his inspections, he would not give APS or BPC advance notice of the areas that he would be inspecting. NARBUT advised that normally, an APS or BPC representative would accompany him during inspections to assist in arranging physical work that was required to be done for the inspection. NARBUT added that the APS/BPC representative could also observe first-hand U.S. NRC inspection findings.

NARBUT stated that during his inspections, he had routinely held discussions with craft workers, QC inspectors, field engineers, foremen, and superintendents regarding their work activities. NARBUT advised that he felt it was not possible for him to inspect only those areas that APS/BPC wanted him to.

NARBUT recalled during his interview that during 1980, a trial U.S. NRC program was tested by Lucian VORDERBRUEGGEN that involved interviewing

craft workers at PVNGS. NARBUT stated that VORDERBRUEGGEN might be able to supply further information regarding this program.

#### Re-Contact of Lucian E. VORDERBRUEGGEN

On November 17, 1983, VORDERBRUEGGEN telephonically contacted Investigator P. V. JOUKOFF. VORDERBRUEGGEN advised that he had researched his files regarding the interviews of craft workers, which he conducted during 1980.

VORDERBRUEGGEN advised that from December 1979 through March 1980, he interviewed 35 craft workers and QC inspectors selected at random that were employed at PVNGS at that time. VORDERBRUEGGEN stated that the interviews were conducted as the result of a Temporary Instruction (TI) that was issued by the U.S. NRC Office of Inspection and Enforcement. During his interviews, he asked the interviewees if they had any concerns regarding the quality of construction at PVNGS or knew of any instances where construction was not being completed in accordance with specified requirements. VORDERBRUEGGEN advised that as a result of these interviews, he was unable to identify any alleged violations or deficiencies.

Investigator's Note: VORDERBRUEGGEN supplied Investigator JOUKOFF with a copy of the document he generated as a result of the interviews he conducted (see Exhibit 23).

#### Allegation No. 9 - Drug/Alcohol Usage at the PVNGS Site

##### Interview of Allegor

On December 20, 1982, between 1900 and 2110 hours, Dewey E. WILLIAMS, a former pipefitter employed by the Bechtel Power Corporation (BPC) at the Palo Verde Nuclear Generating Station (PVNGS), was interviewed at the Sandy Shores Motel, 3200 Surfside, Blvd., Corpus Christi, Texas, by Investigators O. C. SHACKLETON and P. V. JOUKOFF. During the interview, WILLIAMS furnished the following information regarding this allegation:

WILLIAMS stated that when he worked at PVNGS, there were drug and beer sales openly being conducted in the parking lots at the beginning of the day shift. WILLIAMS averred that he could smell the odor of marijuana in the staircases of the plant and saw beer cans in and around the plant. WILLIAMS could not identify any "pushers," dealers, or suppliers of controlled drugs (i.e. marijuana, cocaine, etc.) or alcoholic beverages at the site. WILLIAMS stated that this activity should have been obvious to BPC.

Investigator's Note: The investigation of controlled substances on PVNGS is not within the jurisdiction of the U.S. NRC. WILLIAMS was advised during this interview that the U.S. NRC was concerned with the practice of such illicit activities on PVNGS and would provide to local law enforcement officials the identities of any alleged drug sources. WILLIAMS could not provide any such information. The alleged sales/use of controlled substances at PVNGS was previously reported to OI:RV



investigators in case 5-82-009, and this information was furnished to Donald B. FASHACHT, Nuclear Construction Manager for APS, in accordance with current NRC practice. As a result of WILLIAMS' allegation, FASHACHT was again advised of the alleged activities by Investigator P. V. JOUKOFF. On both occasions, FASHACHT advised that APS' Security Department was working with local law enforcement personnel regarding the alleged drug traffic on the site.

Allegation No. 10 - Alleged Plastic Deformation or "Cold Springing" of Quality Class 1 Piping During Installation

Interview of Allegor

On December 20, 1982, between 1900 and 2110 hours, Dewey E. WILLIAMS, a former pipefitter employed by the Bechtel Power Corporation (BPC) at the Palo Verde Nuclear Generating Station (PVNGS), was interviewed at the Sandy Shores Motel, 3200 Surfside Blvd., Corpus Christi, Texas, by Investigators O. C. SHACKLETON and P. V. JOUKOFF. During the interview, WILLIAMS furnished the following information regarding this allegation:

WILLIAMS stated that while he was employed at PVNGS, he was directed by his foreman, Lloyd HESTAND, to "cold spring" or plastically deform a large 30-inch pipe in order to achieve the correct "fit-up" for welding. WILLIAMS advised that he and his working partner, during the involved period of time, Nicholas MAVROLAS, "cold sprung" the pipe as directed.

WILLIAMS stated that he and MAVROLAS had to "cold spring" the pipe in question because a 90° elbow that had been previously welded onto the pipe was installed such that it did not align with the remainder of the piping system that was to be welded to the elbow. WILLIAMS advised that he and MAVROLAS utilized "porta-powers" and "come-a-longs" to rotate the elbow approximately 3/4" to achieve fit-up of the joint. WILLIAMS stated that during this "cold springing" process, a nylon strap that was attached to the pipe broke, indicating that a considerable amount of force was being applied to the existing pipe and 90° elbow.

WILLIAMS advised that after "cold springing," tack welds were completed, but the next welder assigned to this job refused to complete the weld. WILLIAMS stated he did no morework on this job and was not aware of the final outcome of this weld.

Investigator's Notes:

1. WILLIAMS was shown a plant layout of PVNGS Unit 1, and he pointed out that the heat exchanger involved in this case was the "A" or "north" essential cooling water heat exchanger.
2. The "cold springing" of Quality Class 1 piping in a nuclear power plant is a violation of 10 CFR 50, Appendix B, Criterion V, which states, in part:

"Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the

circumstances and shall be accomplished in accordance with their instructions, procedures, or drawings...."

#### Interview of Nicholas MAVROLAS

On May 25, 1983, from 0845 hours to 0940 hours, Nicholas Jack MAVROLAS, a welder employed by the Bechtel Power Corporation (BPC) at the Palo Verde Nuclear Generating Station (PVNGS), was interviewed by Investigator P. V. JOUKOFF. The interview was conducted at the NRC Resident Inspector's office located at PVNGS. During this interview, MAVROLAS furnished the following information regarding this allegation.

MAVROLAS stated that he and WILLIAMS "cold sprung" the piping system in question as WILLIAMS alleged. MAVROLAS advised that this "cold springing" was done at the direction of his foreman, Lloyd HESTAND. MAVROLAS added that a nylon strap attached to the piping and being utilized during the "cold springing" did break as WILLIAMS had alleged. MAVROLAS advised that the general foreman of his crew, Nelson NOFSINGER, may or may not have been aware of the "cold springing." In addition, MAVROLAS was unable to recall whether or not the superintendent of his crew, Robert LONG, had any knowledge of the "cold springing." MAVROLAS averred that when he was working on the pipe in question, he did not realize that he was completing work in an incorrect manner.

#### Interview of Lloyd HESTAND

On May 25, 1983, between 1055 and 1135 hours, Lloyd Wayne HESTAND, a pipefitter and former foreman employed by the Bechtel Power Corporation (BPC) at the Palo Verde Nuclear Generating Station (PVNGS), was interviewed at the Resident Inspector's office at the Palo Verde site by Investigator P. V. JOUKOFF. During the interview, HESTAND furnished the following information regarding this allegation:

HESTAND stated that he was the foreman supervising WILLIAMS and MAVROLAS while they were working on the piping in question. HESTAND recalled that there was a "fit-up" problem with the piping; however, he could not recall specifically how he resolved this problem. HESTAND averred that it was normal practice, when a "fit-up" problem existed, to contact a BPC field engineer to determine how to handle any "cold springing." HESTAND advised that in this instance, he could not recall if he did or did not contact BPC field engineering. HESTAND added that it is possible that he made the decision to "cold spring" the pipe and if this was incorrect, then it was his mistake. HESTAND stated that none of his superiors directed him to "cold spring" this or any other pipe that his crews worked at PVNGS. HESTAND further stated that at the time that this incident occurred, there was "pressure" being placed on him and his crew to complete as much work as possible, but this "pressure" was normal production pressure.

#### Interview of Robert LONG

On May 26, 1983, from 1325 hours to 1420 hours, Robert Heinz LONG, a Superintendent employed by the Bechtel Power Corporation (BPC) at the

A review of these reports was conducted to ascertain the technical findings of the inspections and to determine what violations of NRC rules/regulations had occurred.

In report 50-528/83-02, dated March 2, 1983, RV substantiated the allegation that "the amount of cold springing exceeded the allowable amount in the licensee's procedures" and further stated, "The inspector does not consider the substantiated allegation to be of immediate concern." However, RV retained this item as "open pending the results of the licensee's investigation." RV did not issue any Notice of Violation regarding this allegation.

In report 50-528/83-17, dated May 24, 1983, RV addressed assessments made by the licensee (APS) regarding cold springing of piping both in this specific case and generically. This RV review determined that the NRC inspector "concurs that the piping and exchanger are satisfactory in the as-left (relaxed) condition." This RV inspection also identified seven examples in which cold springing may have occurred on safety-related piping systems. The RV review further requested that additional training of craft workers be performed regarding cold springing. In closing, RV retained this item as open "pending resolution of the analysis of the NCRs and completion of craft training." RV did not issue any Notice of Violation regarding this allegation.

In Report 50-528/84-36, dated September 24, 1984, RV evaluated analysis completed by the licensee (APS) on four of the seven examples of cold springing and determined that the NRC inspector "did not consider that the analysis of four nonconformances provided a great deal of confidence that the condition of piping was satisfactory."

In this same report, RV noted that the licensee (APS) agreed to consider further analysis as other nonconformances had been identified which revealed cold sprung conditions. The cold springing item was retained as an "open" item pending further licensee action. The item pertaining to craft training was closed in this report as training was conducted in June 1983. RV did not issue a Notice of Violation regarding this allegation.

In report 50-528/84-65, dated January 25, 1985, RV closed the open item pertaining to cold springing. This report noted, "The licensee's review identified ten nonconformances. Each was analyzed for the as-found condition and found to be technically acceptable." The report continues to state, "...although it is clear some cold springing of piping did occur during construction, the cases available for analysis show the as-found conditions were technically acceptable." RV did not issue a Notice of Violation regarding this allegation.





# LIST OF EXHIBITS

<u>Exhibit No.</u>	<u>Description</u>
1	Rev. Dewey E. WILLIAMS letter to NRC dated 8/1/82
2	Rev. Dewey E. WILLIAMS letters to: Ray BROOKS and Local 469 dated 6/28/82; Mr. WARD, undated; and the Legal Department of BPC dated 6/28/82
3	Signed Sworn Statement of Rev. Dewey E. WILLIAMS dated 12/20/82
4	Signed Sworn Statement of Kenneth W. WARREN dated 1/20/82
5	Confidentiality Agreement of Kenneth W. WARREN dated 1/19/83
6	Signed Sworn Statement of Robert E. JANTHO dated 4/7/83
7	Draft Sworn Statement of James R. PAGE, undated
8	Signed Sworn Statement of James R. PAGE dated 7/15/83
9	Results of Interview of James R. PAGE dated 1/19/83
10	Results of Interview of Frederick B. HERMAN dated 2/2/83
11	Results of Interview of Abraham (NMI) ROSIN dated 2/2/83
12	Results of Interview of Gregory F. MILLS dated 2/2/83
13	Results of Interview of Charles A. NELSON dated 5/24/83
14	Results of Interview of Samuel J. GRIGGS dated 5/24/83
15	Results of Interview of Nicholas J. MAVROLAS dated 5/25/83
16	Results of Interview of David M. BENNETT dated 5/27/83
17	Results of Interview of Louis O. FREEMAN dated 5/27/83
18	Results of Interview of Paris (NMI) ROGERS dated 4/8/83
19	Results of Interview of Lloyd W. HESTAND dated 5/25/83
20	Results of Interview of Robert H. LONG dated 5/26/83
21	Results of Interview of Nelson R. NOFSINGER dated 5/26/83
22	Results of Interview of Lucian E. VORDERBRUEGGEN dated 7/13/83
23	Results of Interview of James H. ECKHARDT dated 7/23/83
24	Results of Interview of Paul P. NARBUT dated 6/24/83
25	SPENCER (RV) memo to THORNBURG (IE:HQ) dated 5/12/80 - Subj: Interviews with Craftsmen at Construction Sites - TI 2512/4